

DOI: <https://doi.org/10.17323/j.jcfr.2073-0438.16.3.2022.95-110>

JEL classification: G30, G32, G39



# Determinants of Successful Crowdfunding Campaigns: Evidence from Russian Crowdfunding Platform Boomstarter

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## Abstract

According to practice, about half of the projects on crowdfunding sites (based on rewards) do not collect the declared amount of funding. This is largely due to the lack of experience in running crowdfunding campaigns and ignoring important factors that are important to take into account when managing crowdfunding campaigns. Many foreign publications have studied the nature of the influence of various determinants on the success of fundraising on crowdfunding platforms, in particular, on Kickstarter, Indiegogo, Ulule, Eppela and others. As for research on Russian crowdfunding platforms, there is an extremely small number of such studies. Based on the construction of OLS regressions for 300 projects from July 2020 to May 2022 by the end date of the project from the Russian crowdfunding platform Boomstarter, we firstly obtained that such determinants as choosing a reasonable financial goal of the project, the number of sponsors, the number of project comments and the availability of video materials about the project have a positive impact on the success of the crowd campaign. In addition, we have developed a model based on logit regression testing, which has a high predictive power. This model can be used to predict the results of a crowd campaign with given parameters.

In further research in this area, it is possible to increase the number of observations, change the set of factors that potentially affect the success of a project's fundraising on crowdfunding platforms, and also consider the influence of factors depending on the category of the project. A promising area of research is the analysis of social interactions between investors in the framework of crowdfunding campaigns and the identification of the nature of the dependence of the volume of collected financial resources throughout the entire project financing cycle in the Russian market.

**Keywords:** crowdfunding, crowdfunding platforms, funding, sponsor, reward-based crowdfunding project

**For citation:** Makarova, S., Ulitina, D. Determinants of Successful Crowdfunding Campaigns: Evidence from Russian Crowdfunding Platform Boomstarter. *Journal of Corporate Finance Research*. 2022;16(3): 95-110. <https://doi.org/10.17323/j.jcfr.2073-0438.16.3.2022.95-110>

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## Introduction

Over the last years crowdfunding has become a popular source of fundraising for startups, however, more than a half of the projects fail to collect the necessary amount of financial resources declared by organizers. Thus, at one of the largest platforms Kickstarter in June 2020 the overall rate of success in fundraising amounted to less than 38% while 88.34% of all unsuccessful projects finally achieved less than 20% of their initial goals [1, p. 27713].

At the same time collection of sufficient amounts allows to create high-demand high-tech products, embody promising creative ideas and carry out charity projects. Many studies [2, p. 147; 3] confirm social and economic importance of crowdfunding. Crowdfunding projects result in establishing of new companies which later generate significant revenues, hire thousands of employees, facilitate innovation growth [2, p. 146]. Therefore the purpose of this paper is revealing the most important factors which may have a positive impact on collection of a sufficient amount by means of crowdfunding. This will enable project promoters to organize the collection process with higher quality and the sponsors – to define expediency of investments in a certain idea taking into consideration characteristics of the projects which they wish to support.

The logic of the paper is as follows. In the Literature Review we systemize results of previous studies concerning influence of various determinants on success of crowdfunding and select factors for empiric testing. Then we generate and substantiate hypotheses for further empiric verification of the nature of influence of such factors on fundraising by means of crowd campaigns. We consider the main methods and models used in scientific publications in this sphere. In the next section we substantiate the study design: used models, description of the sample, preliminary data analysis. On the basis of the research results we show the way in which the considered determinants influence fundraising by means of crowd campaigns. The obtained results allowed us to offer recommendations concerning the parameters of project promotion on which their promoters should focus. In the conclusion we summarize the results of the author's research.

## Literature Analysis and Substantiation of the Research Hypotheses

Crowdfunding platforms offer to entrepreneurs far-reaching possibilities for publishing their project ideas and fundraising in order to put their ideas into action. The fact that the author is sure that his/her project should be implemented and that his/her idea is promising does not mean that there will be persons wishing to join the project. It is important to present the project, disclose its details, otherwise investors will not be interested in the marketing message. In order to conduct a successful crowd campaign one needs time, a thorough preliminary planning of the project, organizing and management of the campaign. The

project promoter needs to make sustained efforts in order to collect the necessary amount. Consequently, the issue of what and to which extent influences successful financing of projects, i.e. getting the target amount, is of great importance. The modern literature generalized experience and determined the important reasons for success of a project or for failure of fundraising.

In the first instance, the interrelation between the authors and sponsors makes the most important contribution in the campaign success [4]. It is impossible to overestimate the importance of interrelation with prospective project sponsors. When shaping the idea and further at the stage of its presentation an entrepreneur has to answer the question of how to make a successful pitch for fundraising at a crowdfunding platform. Linguistic styles used to make projects more intelligible for sponsors enhance the success of social projects [5]. It is important to find the right words so as to convince investors to take part in the project. It is possible to attract audience if the idea is described not just with great talent but also in a way intelligible for investors.

It is important to note that sponsors are more prone to react positively to the projects where entrepreneurship is considered as an opportunity to help others and less positively – when the project is presented as fundraising for a business idea [6]. It is remarkable that sponsors' cognitive features and the context in which an investment decision is taken have a serious impact on sponsors' motivation to support the project but they have been scarcely studied. Besides, declaring that the project is a charitable one and sponsor's personal motives influence the decision on participating in the project [7].

According to studies there is a range of factors which exert a negative impact on the project success, they are, but not limited to, as follows: a stretch financial goal, too long period of funds' collection, spelling mistakes in the project description, no video on the page and no updates (publishing of news) [8]. However, there is an opposite view in the literature concerning the abovementioned parameters. There are studies [9] which do confirm the negative relation between enhancing the financial goal and the degree of success but confute the negative influence of the project duration on the campaign success. The research also points out that prospects of success are related positively to the amount contributed by sponsors on the same day.

Social capital and the author's experience level increase the chances for success of the project. Some researchers apply a complex approach to define the factors which influence crowdfunding success considering the problem of failure to obtain the target amount both from the point of view of the project promoter and from the point of view of the investor [10]. The authors of this paper assert that the project founder's previous experience in creating other crowdfunding projects has no significant impact. In our opinion, it is a questionable statement, because when the author uses the platform again he/she already knows in detail this fundraising instrument. Among other matters the project description of the project page, existence of images and videos characterizing the project and the issue wheth-

er the project founder has supported (but has not been a promoter) other projects facilitate successful fundraising. However, the opposite opinion is confirmed by the fact that crowd campaigns initiated by the entrepreneurs who have previously supported others have a higher success rate, attract more backers and collect more funds [11].

The latest studies [12] offer to consider positive psychological capital. *Positive psychological capital* is the level of psychological resources of a person or organization which consists of hope, optimism, firmness and assurance [13], it is considered as a significant signal in crowdfunding. Investment in positive psychological capital allows to enhance productivity of persons working on the project. Sources of competitive advantage result from the resources which are difficult to be copied by competitors because they are of a specific nature or closely interwoven with the corporate history, its culture. In this case positively-oriented strengths of human resources and psychological abilities which may be developed and managed for productivity enhancement are used [13]. The research of a sample of 1,726 crowdfunding projects on Kickstarter showed that the projects which applied positive psychological capital achieved better results in fundraising [12, p. 470]. Papers in the sphere of economics of information confirm the hypothesis that the probability of obtaining funding by the project grows when: a) the project author (promoter) is an experienced player in the studied market; b) outside information sources are used (like mass media) for project promotion. The authors assert that in case of such conditions concerns of information asymmetry in relation to the project quality and confidence in the founder are mitigated [14].

Publications dedicated to the modern crowdfunding market comprise such aspect as gender identity of projects' founders. Studies showed that sex of a certain project promoter provides no advantage in fundraising on a crowdfunding platform. The authors note that "discrimination against women is mitigated due to "wisdom of the credit crowd" [15].

Ability of crowdfunding as a form of financing of projects offered by social and other entrepreneurs which face a limited access to traditional sources of capital increases when an enterprise / project is oriented to sustainable development. Besides this interrelation depends on project creativity and approval of third parties (for example, mass media) [16]. However, the sustainable development context is not always justified in fundraising at crowdfunding sites. In particular, no positive relation is observed between the environmental orientation of crowdfunding projects and probability of their successful funding [17]. Thus, we can assume that certain qualitative characteristics of the project will not exercise the expected positive impact on company's success, it is necessary to conduct further research.

Xie et al. in their research [18] on the basis of an innovative method made interesting conclusions: a set of variables which define success of a crowdfunding campaign varies depending on the project category. If one enters the page Recordholders in the crowdfunding platform Boomstarter he/she will notice that the projects which managed to collect the amounts significantly larger than the ones declared at the project launch belong to such categories as film production, making games, publishing comic books, album records, socially important projects. Therefore, taking into consideration the category when studying the considered problem is of interest.

Summarizing multiple studies in this sphere carried out by foreign authors one should emphasize that a lot of factors influence efficiency of a crowd campaign. In Table 1 these factors have been divided into three categories (project characteristics, author's characteristic features, communication), and it states the papers in which the authors made a certain conclusion concerning the nature of influence of these determinants on success of crowd campaigns (help to succeed / impede success / the nature of influence has not been defined).

**Table 1.** Groups of factors which influence success of a crowd campaign

Factor	Helps to succeed	Impedes success	Nature of influence has not been defined
Communication	Third parties' approval (for example, comments)	Calic and Mosakowski (2016); Courtney et al. (2016)	–
	Publishing through other mass media	Courtney et al. (2016)	Mollick and Kuppuswamy (2014)
	Updates / news	Kuppuswamy and Bayus (2015); Efrat et al. (2019)	–

	Factor	Helps to succeed	Impedes success	Nature of influence has not been defined
Author's characteristic features	Author's previous experience	Zvilichovsky et al. (2015); Courtney et al. (2016)	-	Koch and Siering (2015)
	Author's sex	-	-	Barasinska and Schlafer (2014)
Project characteristics	Design of the project page (adding photos, videos etc.)	Koch and Siering (2015); Courtney et al. (2016); Anglin et al. (2018)	-	-
	Explanation of the idea (getting it through)	Allison et al. (2014); Koch and Siering (2015); Parhankangas and Renko (2017); Anglin et al. (2018)	Allison et al. (2014)	-
	Narratives (history behind the project)	Allison et al. (2014); Calic and Mosakowski (2016); Parhankangas and Renko (2017); Hoegen et al. (2018)	Hörisch J. (2015)	-
	Project duration	Cordova et al. (2015)	Mollick and Kuppuswamy (2014)	-
	Financial goal	-	Mollick and Kuppuswamy (2014); Cordova et al. (2015); Kuppuswamy and Bayus (2015)	-
	Amount of funds already collected	Cordova et al. (2015); Kuppuswamy and Bayus (2015)	-	-
Number of backers	-	Kuppuswamy and Bayus (2015)	-	

Source: compiled by the authors

As for the papers about Russian crowdfunding platforms we should mention the research based on analysis of 100 projects placed at the Boomstarter platform for 2013–2019 in four categories (technology, equipment, software, books and games). The author made the conclusion that the following has impact on success of the crowd campaign: “four factors: the declared amount and such social-economic factors as number of news published by the author, comments left by sponsors and number of reposts in social networks” [19, p. 398]. However, in our opinion, results of this research require an additional verification. This is due to a rather small sample of the research comprising 100 projects and a rather long period of observation from 2013 to 2019 in which crises occurred in the Russian economy. Apart from that the Boomstarter platform founded in 2012 in the abovementioned period was in the formative stage, the model of attracting financial resources was forming, a small number of projects was placed on the platform. Besides, our research is of relevance because there are almost no empiric papers concerning determinants of successful crowd campaigns dedicated to Russian crowdfunding platforms. In our research we will increase the number of projects for analysis, specify the period of projects and will offer the author’s set of factors for testing on a Russian crowdfunding platform.

After analysis of foreign and Russian literature and study of the opportunities of data collection concerning certain factors which influence a successful choice of means within a crowd campaign we determine the following factors:

- financial goal of the project;
- number of sponsors, comments, new of the project and offered remuneration;
- minimal contribution;
- project duration;
- author’s previous experience;
- presence of photos / videos about the project.

Now we pass on to generation and substantiation of research hypotheses concerning influence of key factors on success of crowdfunding projects. On the basis of the factors stated in table 1 we form and substantiate nine hypotheses which will be verified on the sample of projects placed on the Russian Boomstarter platform.

We start analysis with the amount of funds which a promoter of a crowdfunding project plans to collect or with the financial goal of the project. As rightly remarked in the studies, “inflated monetary expectations diminish the project’s chances of success” [19, p. 405]. The project promoter has to review experience of implementation of similar projects on the existing crowdfunding platforms and establish a realistic amount of funds to collect. On the Boomstarter platform which we use to analyze projects in this research two fundraising models are used: all-or-nothing and keep-it-all. As long as there is a small number of studies from this platform we will use studies from the American platform Kickstarter which also applies the model of all-or-nothing or a threshold model when the project promoter may

take the sponsors’ money only if the project financial goal is achieved. An overambitious funding goal may result in fundraising failure [20]. The studies which analyzed projects on the Kickstarter platform showed that increase of the amount of the project goal is related negatively to the campaign success [8; 9]. If an investor participates in a large project he/she understands that his/her contribution is unlikely to be decisive for the project, therefore it is more important for him/her to like the project. An average contribution represented by a percentage of requested amount is higher in small projects, consequently, the investor’s contribution is more important for success of small projects [8].

We should mention that a project has to collect the whole amount within a limited period, otherwise the money promised by some sponsor will not be transferred to the project initiator. In this case the project promoter may contribute his/her funds in order to support the crowdfunding campaign and collect the necessary amount by means of self-financing. Obviously, this way of “saving” suits small projects better than large ones. Therefore, in this case also the project for which a rather low financial goal has been set may expect to succeed.

Projects with the fundraising model keep-it-all used on the Boomstarter platform also need a realistic financial goal because a stretch goal will raise investors’ doubts about implementation of the project because collection of a large amount may take too much time. Taking into consideration the abovementioned reasons we have generated the following hypotheses.

*Hypothesis 1.* When the financial goal of the project increases the ratio of the collected amount to the declared one decreases.

A crowdfunding campaign is intended to attract backers who fund projects. At the same time studies on Kickstarter showed that there is a positive relation between the absolute value of the number of sponsors and crowd campaign success [8, p. 122]. Although it is an expected interrelation significance and contribution of each sponsor in the final amount of collected funds are not totally clear. For this reason study of the following hypothesis is of interest.

*Hypothesis 2.* Increase in the number of sponsors has a positive impact on success in fundraising as a part of a crowd campaign.

The number of comments on the project page shows the audience’s interest in the concept offered by the author. Comments are a channel of investors’ communication between themselves and with the promoter. A large number of comments may be a sign of sponsors’ confidence in the project. When prospective sponsors take a decision on investing in a project they read comments of other investors about it. It allows to reduce information asymmetry of a crowdfunding project [21, p. 41]. So it seems reasonable to test the following hypothesis.

*Hypothesis 3.* As the number of comments increases the ratio of the collected amount to the declared one grows.

After the campaign launch the promoter has to keep up interest of the existing audience and inspire interest of the

prospective one. This may be done by publishing news about the project on its page. Thus, the author makes his/her project more “transparent” for the sponsor: people may get information on some specific features of the project, thus, getting involved in the project.

*Hypothesis 4.* As the number of news on the project increases the ratio of the collected amount to the project financial goal grows.

For crowdfunding platforms based on remunerations (such as Boomstarter and Kickstarter) it is extremely important to offer to the project sponsors attractive awards (products or privileges). Without unconventional attractive awards the project will not “take off” [22, p. 79]. The remunerations are usually ranged depending on the amount of contribution: a higher remuneration is offered to the investors who have made a more significant contribution into the project. Often sponsors’ motivation to make a contribution into a crowd project is related to the desire to get the product in which creation they invest their contributions. So, in the project of smart watch by Pebble Smartwatch the majority of sponsors (96% out of 68,929) promised to contribute at least 99 US dollars which was the minimum threshold. If it was exceeded the sponsors could get the product, namely the watch [23, p. 86]. So, the number and diversity of offered remunerations increase sponsors’ interest which manifests itself as frequency and amount of their contributions, therefore we generate the following hypothesis.

*Hypothesis 5.* The more remunerations are expected from the crowd campaign the higher the ratio of the collected amount to the financial goal.

As long as nonprofessional participants are often investors on crowdfunding platforms they can make just a small contribution. When the project authors define a large minimum amount for a contribution to the project it may limit participation of some project backers. This may happen because they do not understand reasonability of the participation threshold as well as because they cannot contribute the necessary amount for personal reasons. As a result promoters will fail to attract funding from a significant number of backers. This is why we test each hypothesis.

*Hypothesis 6.* The larger the minimum contribution the smaller the ratio of the amount collected by the project through a crowdfunding platform to the financial goal.

Usually the more complex the project and larger the necessary amount of funding the more time it takes to collect funds. Such project should spark the interest of its backers, otherwise it will be impossible to collect the necessary amount. As for influence of the fundraising campaign duration on its success the literature does not offer an uncontroversial conclusion. A series of papers proves that for a sample of large projects as well as for all Kickstarter projects a positive relation between the project duration and a successful fundraising was revealed because the longer the period of fundraising the higher the probability that contribution will equal or exceed the amount declared by the promoter [9, p. 120]. At the same time according to V. Kuppuswamy and B.L. Bayus the project duration has

a negative relation with funding success. The authors note that on Kickstarter the maximum project duration was reduced from 90 to 60 days. This is due to the fact that the principal amount from sponsors comes on the first and last weeks of the project financing cycle, the length of the interim period is of low importance for the final success of the project [20, p. 173]. On Boomstarter a part of the projects may be implemented on the basis of the keep-it-all model, so it is important to evaluate the way the duration of Russian promoters’ projects is related to their success.

*Hypothesis 7.* The longer the declared duration of a crowd campaign the smaller the ratio of the collected funds to the declared amount.

Such factor as entrepreneurial expertise or experience in crowd campaigns of the author is an important signal for investors which facilitates decrease of information asymmetry concerning the project quality and enhancement of trust to the promoter [14]. The studies emphasize that sponsors on crowdfunding platforms are often inexperienced in investment and also, as a rule, make no official verification of projects [24]. Hence, as A.H. Anglin et al. rightfully note, crowdfunding is often conducted without unbiased information on the company (author) which declares fundraising, formal standards of conduct, requirements to inspection of companies, and investment is often made by unsophisticated investors. The investment process on crowdfunding platforms is conducted in such a way that unpaid signals concerning project quality may have an impact on investors. Entrepreneurial experience is one of such signals and is indicative to investors of the entrepreneur’s ability to launch and develop the project successfully [12, p. 473]. Experience which project promoter has in conducting crowdfunding campaigns means that he/she knows better how to launch a campaign. It is necessary for successful fundraising and, as a result, it is a signal for investors that he/she is capable of fulfilling the promises concerning the project and remunerations [12, p. 477]. However, there are papers where the author’s previous experience in creating projects on the platform does not have a significant impact [10]. Therefore empirical verification of the following hypothesis is of interest.

*Hypothesis 8.* The author’s previous experience in creating projects on a platform has a significantly positive impact on success of a crowdfunding campaign.

Nowadays a person is information-laden, therefore a prospective sponsor may be discouraged by reading of a large monotonous text on the project (more so that hundreds of ideas are placed on crowdfunding platforms and there is always a choice), therefore it is easier to watch a video. According to statistics 40% of site visitors first watch videos and only if the video is interesting they pass on to reading the text [22, p. 71]. But in case of crowdfunding contribution of each sponsor is important. J. Rich in his practical guide on crowdfunding asserts that a promotional video is the most powerful crowdfunder’s instrument of persuasion which attracts prospective sponsors and it is also an instrument of presale and customer attraction to the project page. The video should be informative, enthralling for

the viewer from the first seconds, it should disclose the quality level of the product or service [25, p. 121]. Unique and thought-out photos and videos on the project page are instruments for visualization of the project idea. Apart from attracting sponsors' attention these instruments may be used to simplify understanding of the project concept value which will also, probably, result in growth of the

number of prospective investors [10]. In view of this we put forward the following hypothesis.

*Hypothesis 9. Adding of photos / videos to the project increases the ratio of the collected amount to the declared one.*

The hypotheses tested for verification of the abovementioned influence are indicated in Table 2.

**Table 2.** Hypotheses on influence of factors on success of fundraising on the Russian crowdfunding platform Boomstarter.

Regressor	Presumable influence* (zero hypothesis)
Financial goal of the project	-
Number of sponsors	+
Number of comments	+
Number of news on the project	+
Minimal contribution (if any)	-
Number of offered remunerations	+
Project duration in days	-
Previous author's experience in creating projects (if any)	+
Existence of a video about the project	+

Note: "-" – negative influence, "+" – positive influence.

Source: compiled by the authors.

Table 3 offers the variables which will be used in further research and units of measure of variables and their designation in the models which will be built in our research.

**Table 3.** Factors of influence on effectiveness of a crowdfunding campaign of fundraising.

	Variable	Variable description	Unit of measure	Designation
Variable of interest (dependent variable)	Collected amount	A crowdfunding platform provides an opportunity to collect the amount exceeding the project financial goal. In view of this, study of the ratio of the collected amount to the financial goal amount, in percent, is of interest.	%	Fact
Regressor (independent variable)	Financial goal of the project	Funds in roubles planned to be collected by the crowd campaign	RUB	Goal
	Number of sponsors	Number of project investors	pc.	NBackers
	Number of comments	Number of comments on the project page left by users	pc.	NComm
	Number of the project news	Number of news on the project page placed by the author	pc.	NNews
	Minimal contribution (if any)	Minimal contribution in roubles established by the project author	RUB	SumMin
	Number of offered remunerations	Number of various noncash remunerations offered by the project author on the project page	pc.	NFee

	Variable	Variable description	Unit of measure	Designation
Regressor (independent variable)	Project duration	Number of days for raising funds	days	NDays
	Previous author's experience in project creation (if any)	Number of projects created by the author previously	pc.	NProj
	Existence of videos about the project	Binary indicator equaling 1 if there are photos / videos on the project page, and 0 – otherwise	0/1	Video

Source: compiled by the authors.

## Model Research

Studies of the factors which influence success of crowdfunding are stated in dozens of modern papers. Let us list the main methods and models used by modern authors.

- 1) In order to evaluate the factors which may show to the sponsors which project is more likely to fail logit and probit regressions are often used in studies when the probability of project success is regressed according to the variables chosen by the author [2; 9].
- 2) The panel data model is rarely used for study of dynamics of project funding during its cycle [20, p. 153]. Although crowdfunding campaigns last just for several weeks V. Kuppuswamy and B.L. Bayus on the basis of analysis of projects on Kickstarter studied dynamics of support of projects for the period of their implementation using panel data. On the basis of daily dynamics the authors made the conclusion that sponsors' support during the project financing cycle is U-shaped, i.e. the sponsors are more likely to make contributions in the project on the first and last week, and are less likely – in the middle of the project implementation cycle [20, p. 169].
- 3) OLS is used rather extensively in study of crowdfunding projects, often together with other methods mentioned above. In particular, paper by A. Cordova et al. along with probit regression uses OLS regression in which the authors add only successful projects. The overfunding indicator, i.e. the amount for which the collected funds exceed the project financial goal is used as the dependent variable. Regressors are the same indicators as in the probit model [9]. The OLS advantage consists in the opportunity to study influence of various factors on success of a crowdfunding campaign.

In our research we use a linear-logarithmic OLS regression and logit regression. Thus, apart from defining the nature of influence and extent of effect of each significant factor there is an opportunity to assess the probability of achieving the financial goal by the project with specified characteristics.

First, we consider the first specification of the OLS model where the financial goal is included with the logarithm (Model I).

Model I:

$$Fact_i = \beta_1 + \beta_2 \cdot NBackers_i + \beta_3 \cdot NComm_i + \beta_4 \cdot NNews_i + \beta_5 \cdot SumMin_i + \beta_6 \cdot NFee_i + \beta_7 \cdot NProj_i + \beta_8 \cdot Video_i + \beta_9 \cdot \ln(Goal_i) + \varepsilon_i. \quad (1)$$

Further we use the classification model (Model II) where we choose the *Success* variable as the dependent variable which equals 1 if the project is successful and 0 – otherwise. In an explicit form we have Model I:

$$Logit(F) = \frac{1}{1 + e^{-F}}; \quad (2)$$

$$p_i = P(Y_i = 1) = Logit(F_i) = \frac{1}{1 + e^{-F_i}} - \text{probability of a favorable outcome}; \quad (3)$$

$$F_i = Fact_i = \beta_1 + \beta_2 \cdot NBackers_i + \beta_3 \cdot NComm_i + \beta_4 \cdot Video_i + \beta_5 \cdot \ln(Goal_i). \quad (4)$$

## Description of the Research Sample

The initial sample comprised 300 projects from the web site of the Russian crowdfunding platform Boomstarter (boomstarter.ru) in the period of 17.07.2020 to 31.05.2022 according to the project completion date. We chose this period, first, in order to exclude the pandemic shock and, second, use the most relevant data. Sponsors' behaviour on crowdfunding platforms may be considered as an indicator of the economic cycle phase. Thus, according to comments of analysts from the leading Russian crowdfunding platforms (Boomstarter, Planeta.ru) during crises the average amount of contributions decreases but the number of transactions grows. It should be noted that the chosen period is rather homogenous in terms of the state of macroeconomic parameters. At the same time the issue of investors' behaviour on crowdfunding platforms during crises requires a separate research.



## Data Analysis

Let us perform a preliminary data analysis. We should note that the projects have been divided into 20 categories: *Music, Design, Photo, Publishing, Society, Sports, Technology, Theatre, Tourism, Skolkovo, Art, Business, Film and Video Production, Choreography, Education, Events, Fashion, Food, Games, Health*. If the project did not belong to the

basic categories we assigned it to one of specific categories (for example, the project with the category of Fictional Film was assigned to Film and Video Production).

As long as for the majority of projects from the sample there is no data on project duration in days we decided not to consider this regressor. See the descriptive statistics of the research variables in Table 4.

**Table 4.** Descriptive statistics of the initial sample

Indicator	Observations	Mean value	Standard deviation	Min.	Max.
Fact	300	35,887.76	619,069.00	0	10,722,677.00
Goal	300	899,866.90	5,809,661.00	1	98,000,000
NBackers	300	128.25	272.93	1	3,497
NComm	300	3.42	11.34	0	117
NNews	300	5.96	11.93	0	123
SumMin	300	242.19	494.38	0	7,000
NFee	300	10.19	6.88	0	75
NProj	300	2.00	4.70	0	19
Video	300	0.52	0.50	0	1

Source: compiled by the authors.

Let us analyze the results concerning the *Fact* variable. Descriptive statistics show that the sample is heterogeneous because there are projects which collected dozens times as much funds as the declared financial goal. Most probably, those projects were placed on the platform for

marketing purposes. We will adjust the sample excluding such projects which will amount to approximately 10% of the sample. After reductions we have 276 observations. Let us consider the descriptive statistics for the reduce data in Table 5.

**Table 5.** Descriptive statistics of the adjusted sample

Indicator	Observations	Mean value	Statistical deviation	Min.	Max.
Fact	276	101.01	106.83	0,03	869.97
Goal	276	976,420.90	6,051,764.00	100	98,000,000
NBackers	276	116.33	176.75	1	1,601
NComm	276	2.92	9.50	0	117
NNews	276	6.16	12.20	0	123
SumMin	276	239.69	490.76	0	7,000
NFee	276	10.05	7.04	0	75
NProj	276	0.91	1.96	0	19
Video	276	0.49	0.50	0	1

Source: compiled by the authors. Observations 1–276 were used.

Now statistics related to the *Fact* variable look satisfactory. Let us consider values for other variables. The mean value for the *Video* variable means that in our sample 136 out of 276 projects have videos on their pages.

As for the results of the *NBackers* variable we may make the conclusion that on average the projects included in the sample had about 116 investors. Besides, the sample does not comprise projects without sponsors. The minimum number of sponsors is 1, the maximum – 1,601.

Let us analyze results for the *NComm* variable. Table 5 shows that on average projects have at least three comments on their page. At the same time there are projects in the sample without comments at all. The situation is similar with the number of news on the project page.

Let us consider descriptive statistics for the *SumMin* variable. Table 5 shows that the average minimal amount of the original contribution is RUB 239.69. The sample also comprises projects without a minimum contribution. The largest minimal contribution among all projects is RUB 7,000.

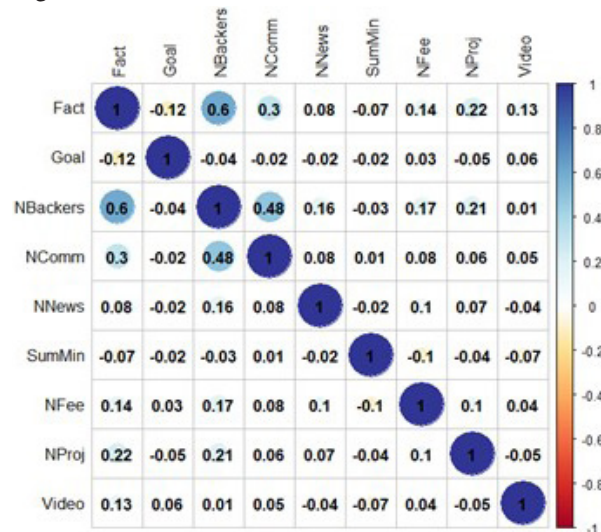
As for the factor of previous authors' experience in creation of projects on the Boomstarter platform we have the following information. The most experienced author took part in 19 projects. However, the overwhelming majority of authors have not presented projects on the considered platform before.

Let us analyze results for the *NFee* variable. Table 5 shows that the sample comprises projects without alternative (non-fee) remunerations.

### Correlation Matrices

In order to study relations between variables and to detect the possible multicollinearity we will build and consider a correlation matrix of variables (Figure 1).

Figure 1. Correlation coefficients



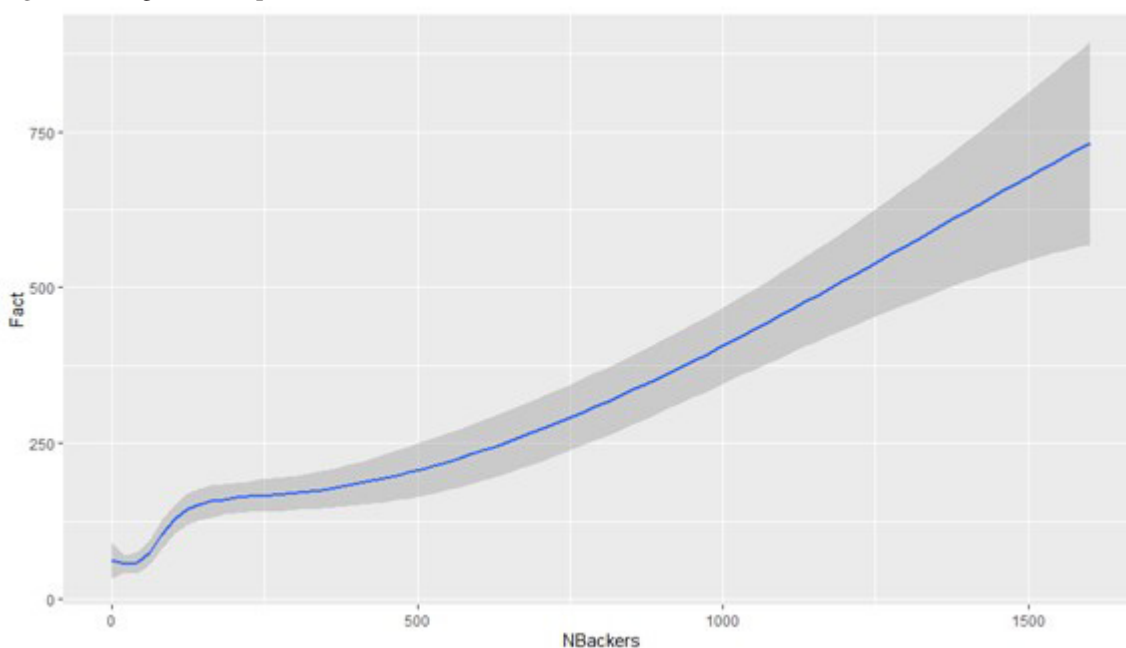
Source: compiled by the authors. Observations 1–276 were used.

The *Fact* variable correlates positively with the *NBackers*, *NComm*, *NFee*, *NProj* and *Video* variables.

Taking into consideration a respectively substantial significance of correlation we see that the projects which authors are experienced in creating projects on the platform, on average conduct crowd campaigns more successfully. The projects with a significant number of investors and comments (which is quite predictable) have more success in financing.

One can notice a small negative correlation between the *Fact* and *Goal* variables. This relation implies that a too high financial goal impedes success of crowd campaigns. In this case an additional analysis is necessary.

Figure 2. Diagram of dependence of *Fact* on *NBackers*



Source: compiled by the authors. Observations 1–276 were used.

In general values of correlation between regressors do not imply multicollinearity.

### Scatter Diagrams

In order to establish the type of relation between variables we build a scatter diagram which characterizes dependence of the amount of collected funds (campaign success) on the number of sponsors, i.e. *Fact* on *NBackers* (Figure 2).

As is the case of pair correlation coefficients a positive relation is observed between the variables.

The scatter diagrams for other variables imply use of logarithms of variables. However, the logarithm may be used only for the *Goal* variable. If we apply the logarithm to other variables we will face the problem of omitting a significant amount of data and, consequently, erroneous results.

## Research Results

Evaluated *Model I.1*. Robust errors added.

$$\widehat{Fact}_i = 347,44_{(26,34)} + 0,40_{(0,05)} \cdot NBackers_i + 0,10_{(0,71)} \cdot NComm_i - 0,01_{(0,33)} \cdot NNews_i - 0,0004_{(0,004)} \cdot SumMin_i + 0,72_{(0,72)} \cdot NFee_i + 1,75_{(4,29)} \cdot NProj_i + 18,70_{(9,06)} \cdot Video_i - 25,63_{(2,15)} \cdot \ln(Goal_i)$$

$$n = 276 \quad Adjusted R^2 = 0,526.$$

Equation (5) is in general significant (because a corresponding P-value = 0.000 < 0.01), hence, it makes sense to interpret it. The following variables are among the ones significant at a 1% significance level: logarithm of financial goal and number of investors, at a 5% level – existence of videos on the project page. Then we exclude variables using the Akaike criterion. Model I.1 is converted into Model I.2.

Model I.2.

$$Fact_i = \beta_1 + \beta_2 \cdot \ln(Goal_i) + \beta_3 \cdot NBackers_i + \beta_4 \cdot NProj_i + \beta_5 \cdot Video_i + \varepsilon_i.$$

Observations 1–276 were used.

Evaluated *Model I.2*. Robust errors added.

$$\widehat{Fact}_i = 357,98_{(29,18)} - 25,88_{(2,38)} \cdot \ln(Goal_i) + 0,41_{(0,05)} \cdot NBackers_i + 18,84_{(9,09)} \cdot Video_i$$

$$n = 276 \quad Adjusted R^2 = 0,532.$$

Equation (7) is in general significant (because a corresponding P-value = 0.000 < 0.01), hence, it makes sense to interpret it. The following variables are among the ones significant at a 1% significance level: the logarithm of financial goal and number of investors, at a 5% level – existence of videos on the project page.

Comparing models on the basis of the Wald test one can make the conclusion that a short regression is better than a long one because the corresponding P-value is larger than any reasonable significance level. The second model is also

more attractive from the point of view of a larger value of adjusted  $R^2$ . Among other matters we conducted verification for multicollinearity detection using the variance inflation factor. In the modifications of Model I multicollinearity was not detected.

Then we conducted the Ramsey test for Model I.2. The zero hypothesis of correctness of equation specification is accepted because the corresponding P-value = 0.940 > 0.000.

The Box-Cox test for including the dependent variable logarithm showed that it was unnecessary.

Thus, after testing modifications of Model I we got the result indicated in Table 6.

**Table 6.** Results of evaluation of Model I modifications

Model	Model I.1	Model I.2
Dependent variable:	Fact, %	
Const	347.442*** (26.337)	357.982*** (29.175)
ln(Goal)	-25.633*** (2.150)	-25.878*** (2.378)
NBackers	0.402*** (0.045)	0.414*** (0.051)
NComm	0.096 (0.706)	-
NNews	-0.007 (0.330)	-
SumMin	-0.0004 (0.004)	-
NFee	0.724 (0.721)	-
NProj	1.754 (4.287)	-
Video	18.703** (9.062)	18.841** (9.093)
Number of observations	276	276
R2	0.540	0.537
Adjusted R2	0.526	0.532
F-statistics	39.190	104.998

*Note.* All models are evaluated by means of OLS. Robust standard errors are indicated in brackets under coefficient estimates. The Symbol of \*\*\* means significance at a 1% level, \*\* – significance at a 5% level, \* – significance at a 10% level.

As for hypotheses confirmation see Table 7.

**Table 7.** Results of hypotheses verification

Hypothesis No.	Factor	Expected sign, according to hypothesis	Factor significance, OLS	Hypothesis confirmation
1	Project financial goal	-	1%	Yes
2	Number of sponsors	+	1%	Yes
3	Number of comments	+	Insignificant	No
4	Number of news in the project	+	Insignificant	No
5	Number of offered remunerations	+	Insignificant	No
6	Minimum contribution	-	Insignificant	No
7	Project duration	-	excluded factor	-
8	Author's previous experience in project creation	+	Insignificant	No
9	Existence of video about the project	+	5%	Yes

Source. Compiled by the authors.

### Interpretation of Results of Model I Modifications

On the basis of the results of constructed models and veracity of corresponding tests we may make the following conclusions.

First, the financial fundraising goal established by the project produces a significantly negative impact. Therefore it is necessary not to overstate its amount. All else being equal, when the financial goal increases by 1% the ratio of the collected amount to the financial goal decreases on average by 0.26%. The larger the project financial goal the harder it is to achieve and, consequently, to fulfill obligations to the sponsors. For this reason sponsor's motivation concerning investment in a project with a high financial goal decreases as well as the probability of achieving of the financial goal by the project.

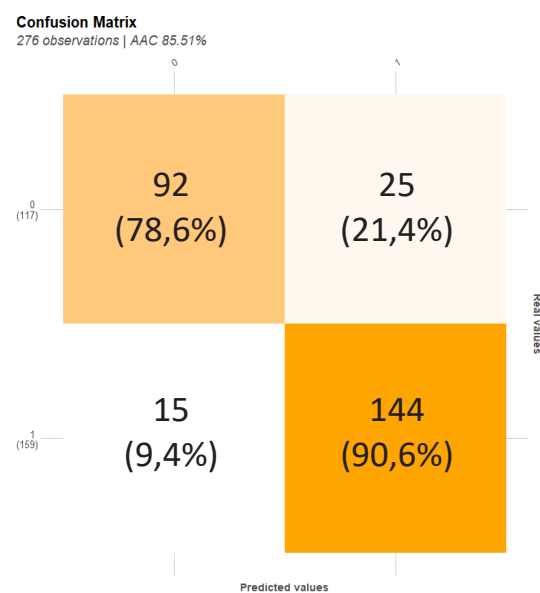
Second, we can talk about a significantly positive influence of a large number of investors on efficiency of crowdfunding projects. All else being equal, when the number of sponsors increases by 1 the ratio of the collected amount to the declared one increases on average by 0.4%. Partially this may be due the "herd effect": a sponsor decides to invest in the project because he/she realizes that it is popular among investors. The impact of this regressor on the dependent variable is insignificant, so further consideration of the amount contributed by one sponsor and the factors influencing the contribution size is of interest.

Third, the supposition that design of the project page (expressed in terms of existence of videos on the page) has the greatest positive effect among significant factors. All else being equal, on the studied platform projects with videos on the page have the ratio of the collected amount to the financial goal on average higher by 18.8%. In some cases just photos or a textual representation is not enough for complete understanding of the project concept. Besides, a video is a simpler way of getting information than a text. If there are no video materials about the project some visi-

tors of the project page may not even try to get information necessary for making a decision on funding. More so that after watching a video a prospective investor may feel more acquainted with the project content and decide to make a contribution.

The project duration factor was excluded from the research due to insufficient data. Besides, other research factors turned out to be insignificant. Consequently, hypotheses concerning their influence are not confirmed. This may be due to insufficient number of observations. Over time, when Boomstarter will host more projects the sample may be expanded.

Now we pass on to analysis of quality of the classification model. First, we will consider a contingency table for *Model II* (Figure 3).

**Figure 3.** Contingency table

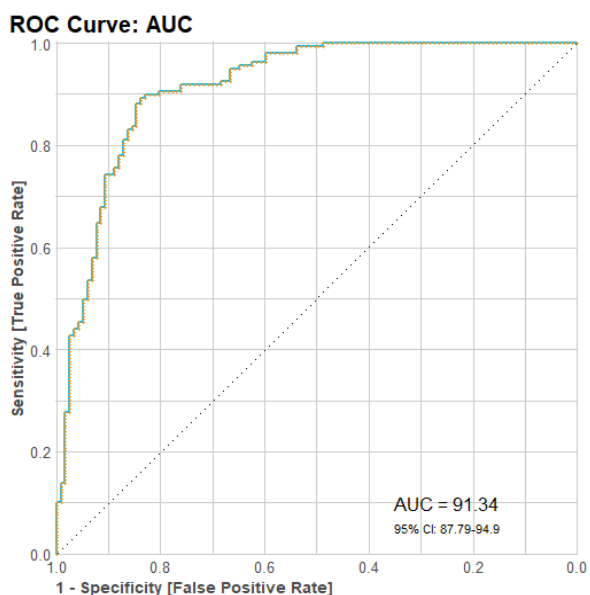
Source: compiled by the authors.

In particular we have the following results:

- percentage of correctly predicted results = 85.51%;
- percentage of correctly predicted successful projects = 90.57%;
- percentage of correctly predicted unsuccessful projects = 78.63%.

Then we will consider Figure 4 representing the ROC curve.

Figure 4. ROC curve



Source: compiled by the authors.

The area under the ROC curve is 0.913. In general it is indicative of the model's higher quality and that it may be used to predict results of crowd campaigns.

Then we may pass on to the results of evaluation of the classification model stated in Table 8.

Table 8. Results of evaluation of the classification model

Model	Model II
Dependent variable:	Success
NBackers	0.020*** (0.007)
NComm	0.186** (0.091)
Video	0.559* (0.333)
ln(Goal)	-1.006*** (0.201)

Model	Model II
Dependent variable:	Success
Constant	10.363*** (2.219)
Number of observations	276

Note. Assessment was performed using OLS. Robust standard errors are indicated in brackets under coefficient estimates. The Symbol of \*\*\* means significance at a 1% level, \*\* – significance at a 5% level, \* – significance at a 10% level.

Apart from a high predictive power of the model we confirmed robustness of the results obtained before and defined the coefficients of evaluating the success probability of a project with preset parameters. In order to perform a quantitative interpretation of the results we calculated corresponding marginal effects indicated in Table 9.

Table 9. Marginal effects

Dependent variable	Success
NBackers	0.003*** (0.001)
NComm	0.032** (0.014)
Video	0.097* (0.061)
ln(Goal)	-0.176*** (0.035)
Constant	1.808*** (0.376)
Number of observations	276
Akaike informative criterion	224.813

Source: compiled by the authors

Interpretation of the obtained results as a part of testing of Model II:

- 1) the probability of success of a crowd campaign increases by 0.3% when the number of sponsors grows by 1;
- 2) the probability of success of a crowd campaign increases by 3.2% when the number of comments grows by 1;
- 3) the probability of success of a crowd campaign increases by 9.7% if there is a video on the project page;

- 4) the probability of success of a crowd campaign decreases by 17.6% when the financial goal logarithm increases by 1.

Finally Model II is as follows:

$$p_i = P(Y_i = 1) = \text{Logit}(F_i) = \frac{1}{1 + e^{-F_i}} -$$

–probability of a favorable outcome

$$F_i = \text{Fact}_i = 10,363_{(2,219)} + 0,02_{(0,007)} *$$

$$*N\text{Backers}_i + 0,186_{(0,091)} \cdot N\text{Comm}_i +$$

$$+0,559_{(0,333)} \blacklozenge \text{Video}_i - 1,006_{(0,201)} \blacklozenge \ln(\text{Goal}_i). \quad (8)$$

## Recommendations

In order to start raising funds on a crowdfunding platform a project should be approved by a moderator of the corresponding platform. However, even after a successful completion of this stage many projects fail to collect the necessary amount because they do not focus on further project promotion. On the basis of our research results we defined the nature of influence of the key determinants on successful fundraising as a part of crowdfunding and now we pass on to stating empirically justified recommendations for entrepreneurs who wish to get the necessary funding for their projects on crowdfunding platforms.

First, it is useful to remember that a stretch financial goal is often not achieved and a diminishing return takes place. Besides, it is reasonable to explain in detail how exactly the sponsors' money will be spent indicating the principal expenditure items in order to decrease information asymmetry. So, it is highly important for the promoters to calculate the financial goal of the project and not to overstate its amount.

Second, the more sponsors the project promoter can attract and the larger each sponsor's contribution the higher the probability of the campaign success. That is why it is so important to make regular efforts in order to keep interest to the project and provide traffic on the project page.

Third, it is important to place a video about the project on its page. However, it is necessary to know the technique of making videos in order to make the project stand out from a large number of other projects. The practical guide by J. Rich describes in detail principles of making promotional videos for a project [25, p. 120].

Fourth, it is important to maintain communication with sponsors by means of publishing comments. When a sponsor supports the project he/she will be interested to observe its progress, get replies to questions, express his/he opinion about the project and finally get information about the successful project implementation. Therefore, it is important for the project authors to answer investors' comments on a regular basis disclosing additional information on the project and emphasizing the importance of feedback from sponsors.

## Conclusion

Crowdfunding is a way of collective funding for creative and social initiatives. It has advantages and disadvantages in comparison to alternative sources of initial investment. The most significant advantages of the studied type of financing are related to communication of the project authors with prospective consumers of products / services behind the projects. The disadvantages are, on the one hand, related to immaturity of this way of fundraising due to scarce experience, on the other hand – to poor elaboration of the project promotion strategy.

Crowdfunding is performed through special Internet platforms which service the financing process. American Kickstarter is the most famous crowdfunding platform which maintains the model of collective financing by means of contributions. This platform is known worldwide and each year increases the amount of collected funds. The Russian equivalent of the American platform is Boomstarter. This platform is committed to the initial concept of crowdfunding – opportunity of attracting funds from ordinary people, possibly, having nothing to do with real business. In view of this the research has been made on the basis of data collected on the abovementioned platform.

In order to define the factors which influence successful fundraising by means of crowdfunding platforms and to generate hypotheses as a part of the research we analyzed Russian and foreign literature. We found out that among the key factors which influence successful fundraising by means of crowd campaigns the following factors may be distinguished: financial goal of the project, number of sponsors, comments, news of the project and offered remunerations; minimal contribution; project duration; author's previous experience; photos / videos about the project. On the basis of the selected factors we defined the variables for further econometric research. Analysis also allowed to generate nine hypotheses concerning influence of the studied factors on achievement of the financial goal by the project.

Based on data of 300 crowdfunding projects from the Russian platform Boomstarter which was collected from July 2020 to May 2022 by the end date of the project, we built regression models and determined parameters which have a significant influence on successful project implementation. The issue was considered both from the point of view of the amount of collected funds and from the point of view of probability of obtaining the target amount.

On the basis of the research results we made the conclusion that the number of investors, video materials about the project have a positive impact on the ratio of the collected amount to the financial goal. The same factors (as well as the number of comments) exert a positive impact on achievement of the financial goal by the project. Consequently, in order to attain success and augment the amount of collected funds on crowdfunding platforms it is necessary to increase indicators of these parameters. The established financial goal of the project has a significantly negative influence both on the ratio of the amount of

collected funds to the declared one and on the probability of achieving the target amount. It is better to raise funds for small projects on crowdfunding platforms. Influence of other factors is insignificant. Thus, we defined the key factors which influence successful fundraising by means of crowdfunding platforms and determined the nature of influence and extent of effect of each significant factor. Besides, we defined coefficients to determine the probability of achievement of the financial goal by the project with preset parameters.

Successful fundraising on the crowdfunding platform for each project is a marker of the society's interest in prospective service / product or the one offered by the investor. This factor may become a driver for attracting additional financing from alternative sources.

The scientific potential of the present paper consists in expansion of the sample, change of the set of factors likely to influence the success of fundraising by a project through crowdfunding platforms and in considering the impact of factors depending on the project category. Additionally, one can study the factors which contribute to growth of the number of sponsors and examine into other crowdfunding platforms. Apart from that, one may focus on influence of positive social capital on success of crowd campaigns. Study of social interaction between investors as a part of crowdfunding campaigns may be of interest. Behavioral aspects of crowdfunding on Russian platforms, in particular, defining the dependence of the sponsor's contribution amount on the stage of the financing cycle are still insufficiently studied.

## References

5. Chen, MY., Chang, JR., Chen, LS. et al. Identifying the key success factors of movie projects in crowdfunding // *Multimedia Tools and Application*. – 2022. – 81, C. 27711–27736.
6. Mollick E. Crowdfunding as a Font of Entrepreneurship: Outcomes of Reward-Based Crowdfunding // *The economics of crowdfunding*. – Palgrave Macmillan, Cham, 2018. – C. 133-150.
7. Belleflamme, P., Lambert, T., Schwienbacher, A., 2014. Crowdfunding: Tapping the Right Crowd // *Journal of Business Venturing*, 29, 585–609.
8. Efrat K., Gilboa S. Relationship approach to crowdfunding: How creators and supporters interaction enhances projects' success // *Electronic Markets*. – 2020. – T. 30. – №. 4. – C. 899-911.
9. Parhankangas A., Renko M. Linguistic style and crowdfunding success among social and commercial entrepreneurs // *Journal of business venturing*. – 2017. – T. 32. – №. 2. – C. 215-236.
10. Allison T. H. et al. Crowdfunding in a prosocial microlending environment: Examining the role of intrinsic versus extrinsic cues // *Entrepreneurship Theory and Practice*. – 2015. – T. 39. – №. 1. – C. 53-73.
11. Hoegen A., Steininger D. M., Veit D. How do investors decide? An interdisciplinary review of decision-making in crowdfunding // *Electronic Markets*. – 2018. – T. 28. – №. 3. – C. 339-365.
12. Mollick E. The dynamics of crowdfunding: An exploratory study // *Journal of business venturing*. – 2014. – T. 29. – №. 1. – C. 1-16.
13. Cordova A., Dolci J., Gianfrate G. The determinants of crowdfunding success: evidence from technology projects // *Procedia-Social and Behavioral Sciences*. – 2015. – T. 181. – C. 115-124.
14. Koch J. A., Siering M. Crowdfunding success factors: The characteristics of successfully funded projects on crowdfunding platforms. – 2015.
15. Zvilichovsky D., Inbar Y., Barzilay O. Playing both sides of the market: Success and reciprocity on crowdfunding platforms // Available at SSRN 2304101. – 2015.
16. Anglin A. H. et al. The power of positivity? The influence of positive psychological capital language on crowdfunding performance // *Journal of Business Venturing*. – 2018. – T. 33. – №. 4. – C. 470-492.
17. Luthans F., Youssef C. M. Human, social, and now positive psychological capital management: Investing in people for competitive advantage // *Organizational Dynamics*. – 2004. – T. 33. – № 2 (2004), C. 143–160. doi 10.1016/j.orgdyn.2004.01.003
18. Courtney C., Dutta S., Li Y. Resolving information asymmetry: Signaling, endorsement, and crowdfunding success // *Entrepreneurship Theory and Practice*. – 2017. – T. 41. – №. 2. – C. 265-290.
19. Barasinska N., Schäfer D. Is crowdfunding different? Evidence on the relation between gender and funding success from a German peer-to-peer lending platform // *German Economic Review*. – 2014. – T. 15. – №. 4. – C. 436-452.
20. Calic G., Mosakowski E. Kicking off social entrepreneurship: How a sustainability orientation influences crowdfunding success // *Journal of Management Studies*. – 2016. – T. 53. – №. 5. – C. 738-767.
21. Hörisch J. Crowdfunding for environmental ventures: an empirical analysis of the influence of environmental orientation on the success of crowdfunding initiatives // *Journal of cleaner production*. – 2015. – T. 107. – C. 636-645.
22. Xie K. et al. Success factors and complex dynamics of crowdfunding: An empirical research on Taobao platform in China // *Electronic Markets*. – 2019. – T. 29. – №. 2. – C. 187-199.
23. Замбалаева Т. Б. Факторы успешного

- краудфандингового финансирования (на примере российской платформы Boomstarter) // *Journal of Applied Economic Research*. – 2020. – Т. 19. – №. 3. – С. 398-412.
24. Kuppuswamy V., Bayus B. L. Crowdfunding creative ideas: The dynamics of project backers // *The economics of crowdfunding*. – Palgrave Macmillan, Cham, 2018. – С. 151-182.
  25. Vismara S. Signaling to Overcome Inefficiencies in Crowdfunding Markets // *The economics of crowdfunding*. – Palgrave Macmillan, Cham, 2018. – С. 29-56.
  26. Лиленко-Карелина И. Краудфандинг. Как найти деньги для вашей идеи. – Москва: Лайвбук, 2018. – 176 с.
  27. Hainz C. Fraudulent Behavior by Entrepreneurs and Borrowers // *The economics of crowdfunding*. – Palgrave Macmillan, Cham, 2018. – С. 79-99.
  28. Ahlers, G.K., Cumming, D., Günther, C., Schweizer, D., 2015. Signaling in equity crowdfunding. *Enterp. Theory Pract.* 39, 955–980.
  29. Рич Дж. Краудфандинг. Справочное руководство по привлечению денежных средств - М.: СмартБук : И-трейд, 2015. – 360 с.

**Contribution of the authors:** the authors contributed equally to this article. The authors declare no conflicts of interests. The article was submitted 20.10.2022; approved after reviewing 21.11.2022; accepted for publication 02.12.2022.