

Crowdfunding Response to the COVID-19 Pandemic: Evidence from Kickstarter

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ABSTRACT

The aim of this paper was to explore the impact of COVID-19 on crowdfunding using data from the Kickstarter platform. The study period covers the COVID years from March 2020 through 2021 and three years before the pandemic. We crawled data from Kickstarter.com with custom-made software, a scraper robot. The research was based on a sample of a total of 43.977 campaigns, of which 29.5% were started during the COVID era and 70.5% were launched previously. To test our expectation that the characteristics of the campaigns during COVID-19 have changed, we applied a t-test. The results show that crowdfunding created an early response to the COVID crisis, manifested as differences between campaigns initiated during and before the pandemic period. Campaigns initiated during the COVID-19 pandemic had lower goals, much higher amounts of funds pledged, a higher number of backers, higher chances for success, and a shorter blurb description, while they were more frequently chosen as favorites by the Kickstarter staff. The coronavirus is a huge economic burden, particularly for start-ups, entrepreneurs, and small and medium-sized businesses (SMEs). As a result, the findings of this study suggest that crowdfunding, as an online option, might help fill in the finance gap during times of crisis.

Key words: *crowdfunding, COVID-19, Kickstarter*

JEL Classification: O16, G23, D26

INTRODUCTION

The pandemic of COVID-19 had a huge impact on different aspects of people's life and behavior, causing health and economic problems worldwide leading to the conclusion that existing economic and societal patterns are insufficient in times of crisis (Petkovska Mirchevska et al., 2021; Hanić, 2020). It resulted in the greatest recession since World War II (World Bank, 2020), with 114 million people losing their jobs because of temporary and permanent company closures (ILO, 2020). At the same time, McKinsey estimates that the banking sector will suffer a loss of cumulative revenue of \$1.5 trillion to \$4.7 trillion between 2020 and 2024 (McKinsey's Global Banking Annual Review, 2020). In practice, the pandemic has resulted in an economic contagion that is spreading at the same rate as the disease (Carlsson-Szlezak et al., 2020).

A tool that can be critical in minimizing the harmful consequences of crises like COVID-19 is social enterprises because it can address the financial needs of individuals and communities (Farhoud et al., 2021). In that aspect, our focus is on crowdfunding. Mollick (2014) defines

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crowdfunding as "the efforts by entrepreneurial individuals and groups—cultural, social, and for-profit—to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries". In practice, crowdfunding is an initiative proposed by someone to raise financial sources from the capital providers or the "crowd" to fund innovative new ventures (Ordanini et al., 2011; Moritz & Block, 2016; Moysidou & Hausberg, 2020). Although there are other different online techniques for raising funds, crowdfunding has become an "umbrella" term for all forms of social entrepreneurship. There are four different types of crowdfunding: donation-based, reward-based, equity-based, and lending-based (Wang et al., 2018). The major difference is in the desired outcome (Mollick, 2014). For instance, Vismara (2019) notes that in a reward-based model, proponents seek financial contributions from backers in exchange for rewards or products. Donation-based crowdfunding refers to charitable giving with no return, while in the lending-based model, there are fixed interest rates for lenders. On the other hand, in an equity-based model, entrepreneurs make an open call to sell a specific amount of equity in their company. No matter the type, every crowdfunding process includes four basic elements. The project creator is an individual that launches the crowdfunding campaign, the second element is the campaign itself, to be funded, the supporters are investors that back the project with a small amount of funds and finally, there is a crowdfunding platform as an intermediary between the project creator and its supporters (Jovanovic, 2019).

One of the major advantages in the context of crowdfunding is reducing the obstacles related to the lack of financing. According to Moysidou and Hausberg (2020), crowdfunding gave a chance to startups that had no access to traditional capital markets, considering not just the financial aspect but the feedback from potential customers (Bernardino & Freitas Santos, 2020) as a signal of approval or disapproval (Vasileiadou et al., 2016). Crowdfunding can be effective for both immediate and long-term responses in times of crisis. For instance, Berliner and Kenworthy (2017) note an increase in the use of crowdfunding to cover extra costs of health care in the US after the financial crisis in 2008, while Nagui Saleh et al. (2021) state that crowdfunding created the early response to the COVID-19 pandemic. This is consistent with Saleh et al. (2021), who found a significant spike in overall crowdfunding efforts in March 2020, owing in part to the COVID-19 pandemic. In this regard, the aim of this paper was to explore the impact of COVID-19 on crowdfunding since it can be considered as a tool that can help the community in an emergency (Farhoud et al., 2021) because "*if many people contribute small amounts, even costly projects can happen*" (Bone and Baeck, 2016). To explore how the advent of COVID-19 impacted the character of crowdfunding, authors used data from the Kickstarter platform with custom-made software, a scraper robot, covering the COVID years from March 2020 through 2021 and three years before the pandemic.

This paper is structured as follows. Section 1 reviews the relationship between entrepreneurship and crises in terms of understanding how crisis can lead to better understanding of how the crisis can lead to the creation of alternative ways to solve the financial problems of individuals and societies, since COVID-19 has shown certain shortcomings in the social systems of some countries. Section 2 presents the empirical model and data used while Section 3 contains the discussion of the results obtained. Finally, the Section 4 concludes.

LITERATURE REVIEW

The relationship between entrepreneurship and crises is influenced by the way we define crisis or threat. In general, it is a process that develops over time, or in phases, and it leads to disjunction in normal functioning (Williams et al., 2017). In that aspect, Doern et al. (2018) emphasize that crisis management and resilience are the two concepts important to understand. Considering this, Herbane (2010) stands four reasons why should entrepreneurs be interested in crisis management:

- the use of technology brought new forms of threats;
- losses from the crisis, particularly revenue, are not the only ones that should be observed but mostly damage to customer service, reputation and availability;
- local and national public authorities are concerned with business resilience and
- entrepreneurs should ensure the continuity of their operations.

Regarding the way people (entrepreneurs) deal with the crisis, Muñoz et al. (2019) conducted a two-stage exploratory study before and after Calbuco Volcano eruptions in 2015 and 2016 in Chile and found four resilience strategies: anchored reflectiveness, situated experience, breaking through, and reaching out. In the case of COVID-19, Farhoud et al. (2021) analyzed crowdfunding for social entrepreneurship in crisis based on the UK's social enterprise crowdfunding platform, *UpEffect*. When considering the intersection of social entrepreneurship and crowdfunding, the authors suggested three perspectives: social enterprise, funding crowd, and institutional perspective. This is presented in figure 1.

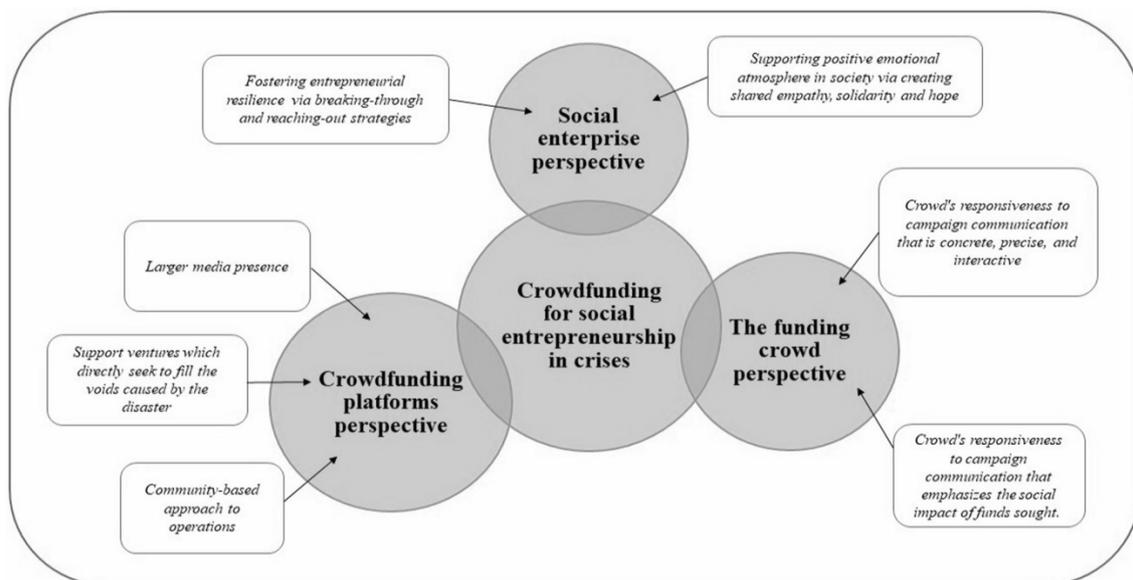


Figure 1. Strategies of how can crowdfunding contribute to serving social issues in times of crisis

Source: Farhoud et al. (2021)

These methods mean that crowdfunding platforms must support social entrepreneurs as clients, engage the community as a source of funding, and ensure consistency in funding social enterprises, particularly when emphasizing the "togetherness" aspect of crowdfunding campaigns. According to Bernardino et al. (2016), using crowdfunding in social entrepreneurship is based on "common social causes" or the "collective cooperation of people". In that aspect, social fundraising has become important, especially for the young or Y generation that is more socially and environmentally oriented (Ming-li et al., 2020; Calic & Mosakowski, 2016) and because of the accessibility and outreach that crowdfunding provides. Building on this research, crowdfunding models perform particularly effectively in situations when funding decisions are influenced by a mix of social motives and local ties, and money is required quickly. In the aspect of the use of crowdfunding during COVID-19, Igra et al. (2021) use the term coronavirus-related crowdfunding (CCF). According to the authors, there were more than 175,000 GoFundMe campaigns in the US for COVID-19 between January 1 and July 31, 2020. In this period, more than \$416 million from over 4,750,000 individual donations were raised.

In similar research, Elmer et al. (2021) analyzed launched campaigns on GoFundMe (between 27 March and 27 April 2020). On a sample of 500 campaigns, results show that matters of business, family, health, and community constituted 72% of all campaigns, which can be considered as a “call for help” or call for community fundraising on issues related to individuals. This is consistent with Wang et al. (2021), who found that categories related to individuals were more funded after than before the outbreak of COVID-19. On the other hand, in a research done by Raywa et al. (2020), on a sample of 1579 campaigns that were created on GoFundMe.com between March 3 and 20, 2020, almost 83% of non-U.S. campaigns, directed at Italy, focused on hospitals and healthcare workers (54.6%), which emphasizes the differences between the U.S. and Europe in terms of healthcare but also financial stability.

In general, the crowdfunding market is predicted to grow by \$ 196.36 bn during 2021-2025, progressing at a CAGR of 15% (Global Crowdfunding Market 2021-2025, 2021). Regarding countries that are considered the largest, US and Canada are top performers since they generated \$74 billion in P2P lending in 2020 while the UK generated \$12.6 billion followed by Asia Pacific (APAC) at almost \$9 billion with the notice that China was not included in this data (Cambridge Centre for Alternative Finance Report, 2021). When we exclude the best performers, the top 20 include both developed and emerging economies but also small economies and countries that just started to practice crowdfunding as presented in the following table.

Table 1. Top crowdfunding national markets in 2017

Rank	Country	Total volume in US
4	Australia	\$1,148,515,565.00
5	South Korea	\$1,129,918,098.00
6	Canada	\$867,577,549.42
7	France	\$747,274,513.52
8	Germany	\$672,751,878.90
9	Japan	\$348,650,302.00
10	Netherlands	\$316,287,611.90
11	Israel	\$295,455,044.29
12	Italy	\$271,919,936.14
13	India	\$268,579,820.00
14	New Zealand	\$261,621,933.00
15	Finland	\$222,314,696.19
16	Sweden	\$221,890,190.29
17	Brazil	\$216,357,244.21
18	Georgia	\$195,784,289.95
19	Singapore	\$190,821,714.00
20	Spain	\$181,620,894.27

Source: Ziegler T., Shneor R., Zhang B.Z. (2020). *The Global Status of the Crowdfunding Industry*. In: Shneor R., Zhao L., Flåten BT. (eds) *Advances in Crowdfunding*.

METHODS

In May 2021, we used custom-made software, a scraper robot, to collect data on projects and funders from Kickstarter.com for our empirical analysis. It crawled projects from the Kickstarter homepage (kickstarter.com, last entry 6 May 2021) and collected data for each campaign. Kickstarter is one of the most popular reward-based platforms. Crowdfunding platforms like Kickstarter are becoming more popular for analysis because they can provide documentation and

analysis of new financing mechanisms while also offering substantial information on entrepreneurs, investors, funding attempts, and other related elements that are typically not disclosed to outsiders in other financing mechanisms like banks and venture capitalists. We were able to collect data on 43,977 campaigns between March 2017 and May 2021, with a focus on the period of the COVID-19 pandemic; hence, the study period covers COVID years from March 2020 through 2021, and three years before the pandemic. We found 12,970 (29.5%) campaigns that were started during the COVID era and 31,007 (70.5%) campaigns that were launched previously.

Variables

We have collected several variables from Kickstarter's campaigns: campaign ID, the ID of the creator, a short, concise, effective introduction and description of the campaign, so-called blurb, goal of the campaign (\$), blurb length, currency, time of launching the campaign, duration of the campaign, number of backers, the status of the campaign (active, succeeded, suspended, cancelled, or failed), pledged funds (\$), category and subcategory, and country of the creator. We tested how selected factors of crowdfunding campaigns altered during the COVID-19 pandemic, following mainstream academic literature. The variables related to the crowdfunding campaign include goal, pledged funds, and duration of the campaign, blurb length, and the creator's country of origin. We define the campaign goal as the amount of money the creator of the campaign wants to raise. There are no upper or lower limitations on the goal on the Kickstarter. The amount of money received from investors is referred to as pledged funds. Due to the high skewness of the distribution data related to the target and pledged value, we used the logarithm of the target capital (\log_goal). We excluded all campaigns from the sample with a goal of below \$5,000 and over \$5,000,000. Campaigns with minimal aims are easy to achieve, and it has been confirmed that they are not serious fundraising efforts (Mollick, 2014). They also frequently target family and friends (Cumming et al., 2017). Campaigns with high amounts set as a goal have different characteristics from the majority of campaigns in the sample.

The duration of the project campaign is the period in which the campaign is active, and it can last from 1 to 60 days. Blurb is a project's brief description, and we calculated its length by counting the number of letters in it. It is one of the metrics used to assess the complexity of a project campaign. Individuals from 25 countries can create projects, including the United States, the United Kingdom, Canada, Australia, 16 European nations, New Zealand, Hong Kong, Singapore, Mexico, and Japan.

In that aspect, for this research, we categorized countries into 6 categories: the US, UK, Canada, Australia, European countries, and others. The stage of the campaign and the number of backers are variables that show the campaign's outcome. The campaign's status can be successful, failed, active, cancelled, or suspended. The campaign is successful if the project creator has raised the amount of money specified in the objective; otherwise, the campaign fails if he has not met the goal. At the time of this research, active projects were underway, and we had no way of knowing how they would turn out. Cancelled projects were terminated by the creator before the end of the duration, for an unknown reason. If a campaign violates platform rules, it will be suspended. All active, suspended, and cancelled projects were left out of the sample. The variable state is a dummy variable that takes the value of 1 if the campaign goal was successful, or zero otherwise, meaning that the campaign is treated as failed. Backers are people (the crowd) who support an idea in the crowdfunding world. They invest a particular amount of money in someone's idea.

To distinguish projects that are designated by Kickstarter team members as "favourite" while active, we used the staff-pick variable. The variable is a dummy, taking the value of 1 if the Kickstarter team marked it as a favourite, after an endorsement process in which platform staff assesses a campaign's quality (Wessel et al., 2016), zero otherwise. To test our expectation that the characteristics of the campaigns during COVID-19 have changed, we applied a t-test. The analysis was performed using SPSS v.25. Table 2 shows descriptive statistics. The sample consists of

43,977 projects, with a success rate of 51.9%. The average amount of money a campaign creator may raise is about \$37,000 with the sample's minimum and maximum set at \$5,000 and \$5,000,000. The average pledge amount is \$31,455 which is lower than the average goal amount. The greatest sum collected was \$11,386,449. However, only 164 of the projects in the sample received more than \$1 million. The typical project lasts 35.51 days, with an average of 301.13 backers per project and a blurb length of 104.80 words.

Table 2. Descriptive statistics of the sample

Characteristic	Sample			
No. of projects	43,977			
Successful projects (%)	22,844 (51.9)			
	Minimum	Maximum	Mean	Std. Deviation
Goal for collecting (\$)	5,000.00	5,000,000.00	37,069.97	148,253.70
Amount pledged (\$)	0	11,386,449.10	31,455.46	177,746.39
Duration (days)	1	60	35.51	12.09
Backers (No.)	0	88,887	301.13	1394.69
Blurb Length (No. of words)	4	140	104.80	31.61
Country	Number of campaigns (% of campaigns)			
US (%)	28,563 (64.9)			
UK (%)	4,266 (9.7)			
CA (%)	1,848 (4.2)			
European countries (%)	5,871 (13.4)			
AU (%)	919 (2.1)			
Other (%)	2,509 (5.7)			

Source: Authors

RESULTS

Using t-test statistics, Table 3 reveals statistical differences between campaigns launched during the COVID-19 phase and those launched prior to that period. The results show significant differences among all analyzed characteristics. The campaigns initiated during the COVID-19 pandemic have lower goals (\$33,974 against \$38,365, p-value < 0.05), much higher amounts of funds pledged (\$54,714 opposed to \$21,726, p-value < 0.05) and number of backers (517.40 compared to 211.02, p-value < 0.05) and, most importantly, higher chances for success (0.62 against 0.48, p-value < 0.05). The wide range of standard deviations for specified goals, pledged funds, and number of backers indicates that the most and least successful campaigns have vastly different outcomes.

The campaigns during the COVID-19 period have a somewhat longer duration (35.69 to 35.42, p-value 0.015), while the blurb description, as a measure of project complexity, is shorter (95.29 to 108.78, p-value 0.05). Finally, during the COVID-19 epidemic, campaigns were more frequently chosen as favourites by the Kickstarter staff (0.22 against 0.16, p-value 0.05). Crowdfunding is primarily a US phenomenon, and the vast majority of campaigns, not only on Kickstarter but also on other platforms, originate in the United States. To see how the COVID-19 pandemic period changed the origins of campaign creators across countries, we transformed a variable pointing out the country or origin of the campaign creator. The new variable has a value of 1 if the creator is from the United States, 2 if from the United Kingdom, 3 if from Canada, 4 if, from a European country, 5 if from Australia, and 6 if from any other country in the sample, zero otherwise. For all countries except Australia, the t-statistic reveals statistically significant differences. We interpret these results as a fact that the number of campaigns from the US area decreased during the pandemic caused by COVID-19. In parallel, the number of campaigns coming from other countries increased during the pandemic. European countries have seen the greatest increase in the number of campaign creators. Specifically, during the pandemic, the number of campaign creators from

European countries increased by 3%, followed by a 2% growth in the group of other countries. During the COVID-19 period, the number of campaign creators from the United Kingdom and Canada increased by 1% each.

Table 3. Differences between campaigns initiated during and before the COVID-19 pandemic

	COVID-19 period 12,970 obs		Pre-COVID period 31,007 obs		95% CI for Mean Difference	t	df
	M	SD	M	SD			
Goal for collecting	33,974*	140,945	38,365*	151,190	-7,429 - -1,352	-2.83	43,975
Pledged Funds	54,714*	259,065	21,726*	128,126	29,358-36,618	17.81	43,975
Duration	35.69*	12.45	35.42*	11.93	0.02-0.51	2.08	43,975
Backers	517.39*	2050.27	211.02*	987.55	277.92-334.83	21.10	43,975
Blurb Length	95.29*	34.03	108.78*	29.64	-14.12--12.85	-41.61	43,975
Staff Pick	0.22*	0.41	0.16*	0.37	0.05-0.06	13.71	43,975
Failed or Succeed	0.62*	0.49	0.48*	0.50	0.14-0.15	28.01	43,975
US	0.60*	0.49	0.67*	0.47	-0.07--0.05	-13.00	43,975
UK	0.10*	0.31	0.09*	0.29	0-0.02	3.18	43,975
CA	0.05*	0.21	0.04*	0.19	0-0.01	4.12	43,975
European countries	0.15*	0.36	0.13*	0.33	0.02-0.03	7.73	43,975
AU	0.02	0.15	0.02	0.14	0-0	0.73	43,975
Other countries	0.07*	0.25	0.05*	0.22	0.01-0.02	7.31	43,975

* Significance level: 0.05.

Source: Authors

DISCUSSION

The problem of financial constraints for start-ups and small and medium-sized enterprises (SMEs) is well known in contemporary literature. This issue is even more pronounced in the external disruptions and extreme uncertainty caused by crisis events. The negative consequences of the COVID-19 crisis have been demonstrated in the financial industry, where the stock market has experienced crashes and high volatility, and the banking system is under pressure to maintain liquidity (Zhang et al., 2020). In such circumstances, it is debatable whether new technologies, such as online video pitches used in equity crowdfunding, might mitigate the effect of the crisis (Brown & Rocha, 2020).

In this paper, we provide an empirical analysis of how the advent of COVID-19 impacted the character of crowdfunding by using data from the Kickstarter platform. We discovered statistical disparities between campaigns launched during the COVID-19 period and those before, as those who start campaigns (i.e., entrepreneurs) and those who finance them (i.e., the crowd) have changed dramatically (Chandler et al., 2021) following the COVID-19 pandemic.

Campaigns started during the COVID-19 pandemic have lower targets, considerably higher quantities of funds contributed (as in Saleh et al., 2021), a significantly higher number of backers, and most importantly, an increased probability of success. We argue that such an increase is related to several reasons. It is commonly recognized that social media allows for rapid dissemination of information in emergency situations such as natural disasters and large-scale crises. Given that crowdfunding is a type of social investing platform, embracing new technological trends by using the online sphere to connect people with entrepreneurs, growth in

the number of people willing to invest on the platform is reasonable. During the pandemic, communities were shut down, financial systems were only available online, government assistance programs were halted or delayed, and a large number of people turned to crowdsourcing to satisfy their needs. Campaign creators were looking to get funding for their project and investors to find opportunities in the scarce market. Increased interest in the platform has resulted in an increase in the number of investors and campaign creators, as well as an increase in the amount of money pledged. Crowdfunding reflects the community's response, and the novelty of action likely influenced a larger number of campaigns and their success. Moreover, the increased rate of success proves that natural disasters and large-scale crises unite people.

Campaigns ran for a little longer during the COVID-19 period; the blurb description, as a measure of project complexity, was a bit shorter; campaigns were more frequently chosen as favorites by the Kickstarter staff. During the epidemic triggered by COVID-19, the European countries have seen the greatest increase in the number of campaign creators, whereas the percentage of US crowding campaigns has decreased. Our results on the sample of campaigns from Kickstarter in the period between March 2017 and May 2021 coincide with the general finding from Popper and Lorenz (2020), who claim that there was an unexpected boom of activity in the midst of the global pandemic with the number of campaigns increasing by over 60% and with Rajwa et al. (2020), who found that the number of active campaigns rapidly increased with the spread of COVID-19 on the GoFundMe crowdfunding platform. The findings from the research correspond to those of Saleh et al. (2021), arguing that crowdfunding created an early response, where COVID-19-related campaigns were created more frequently, raised more money than other campaigns and had longer narrative descriptions. The results are in line with Moine and Papiasse (2020), who found that the COVID-19 crisis led to an upsurge in crowdfunding activity across France, with a proactive attitude towards accompanying emergency demands.

We can argue that even though the crowd's disposable income may be reduced, considering the economic recession, we have witnessed an extraordinary growth of crowdfunding in a relatively short time, mainly due to the harsh economic realities of the pandemic caused by COVID-19 and massive delays in government relief (Fairlie, 2020). For many existing and successful entrepreneurs, crowdfunding provided financial relief for their businesses (Farhoud et al., 2020; Saleh et al., 2021), while in contrast, many entrepreneurs have leveraged crowdfunding as an exit strategy (Chandler et al., 2021).

This research adds to the existing body of knowledge about crowdfunding because it is one of the first to look at how COVID-19 altered the nature of crowdsourcing. The consequences of COVID-19 on the nature of crowdfunding will demand a more detailed consideration in future research and policy. To do this additional research with data from other platforms such as GoFundMe, Indiegogo, Patreon and similar is needed.

CONCLUSION

The COVID-19 pandemic has drastically altered human civilization, causing a disturbance in the functioning of the current socio-economic norms. During the crisis (comparably with the financial crisis of 2008), the spread of the coronavirus represents a significant economic burden, particularly for start-ups, entrepreneurs, and SMEs. It is critical to keep them alive and prevent them from going bankrupt on a massive scale during this time of crisis. In the economic crisis, financial resources are scarce and expensive, investors postpone their investments and access to finance becomes particularly limited for innovative SMEs. To address those needs, many turned to the use of crowdfunding. Crowdfunding, as an online solution, can provide support and fill in the financing gap in a time of crisis. One of the main advantages of crowdfunding is that it can be effective for immediate and long-term responses in terms of helping the community in a time of crisis. In that aspect, this paper aimed to explore the impact of COVID-19 on crowdfunding using the Kickstarter platform.

Research results suggest that crowdfunding created an early response regarding the COVID crisis since we discovered major differences between campaigns initiated during and before the pandemic. In other words, campaigns initiated during the COVID-19 pandemic had lower goals, much higher amounts of funds pledged, including the higher number of backers and higher chances for success. At the same time, results show that the pandemic influenced the use of crowdfunding regarding the country of origin, where there was a great increase in the number of campaign creators in Europe, contrary to the US. The present COVID-19 crisis is likely to have offered much-needed assistance to local communities by promptly responding to local needs and mobilizing financial resources. European citizens are not as accustomed to using crowdfunding to respond to social issues in the way Americans are, particularly in the case of health care (Berliner & Kenworthy, 2017), since the European institutions pay more attention to social issues than in ones in the United States. In the first month of the pandemic, most European countries did not provide for an adequate policy response to the crisis, pushing for the individuals to turn to crowdfunding for requiring financial support.

As crowdfunding showed to be effective in situations influenced by a mix of social motives and local ties, where money is required quickly, local government support mechanisms should be more flexible and better-suited for financing for innovative projects. Even though crowdfunding does not have geographic barriers, the local solutions must be custom-made and adjusted to the local economic and social entrepreneurial environment.

Future research will require a more in-depth examination of crowdfunding patterns. Although the COVID-19 pandemic boosted the appeal of all internet technologies, including social lending networks, crowdfunding systems evolved organically over time as well. It's possible that the findings are related in part to this expansion and in part to the COVID-19 pandemic.

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