

Crowdfunding research agenda: Semantic analysis of the media and geography of investments

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This paper proposes a current research agenda on crowdfunding from two different perspectives, mass media and geography. It is believed that these two elements must exert some kind of influence on the dynamics of the investments made in that market. Semantic analysis of mass news can be a useful tool for investors to assess their exposure to risk as well as help predict financial returns. Geography, on the other hand, can be used on the origin of the capital contributions and, therefore, present information on the location and regional characteristics of the investors.

Keywords: Crowdfunding; semantic analysis of the media; geography of investments; technology; innovation.

1. Introduction

Crowdfunding is a way of reducing the funding gap for emerging businesses.¹ This is a new modality of financing for a diversity of businesses, among which stand out the enterprises in the field of culture and technology, among others. These businesses receive funds from donors (in the case of equity, investors) who finance entrepreneurial activities in exchange for products, services or even financial returns. This financial model has assumed an important role in the world economy, since it alleviates the traditional banking restrictions² and allows the democratization of the capital.³ Conventional financial institutions request audited financial statements to provide financing for emerging businesses, which often fail to comply with such requirements.⁴ In addition, the required contractual relations⁵ and the growing demand for real guarantees⁶ end up restricting access to capital. In this way, entrepreneurs are forced to resort to external capital, usually offered by angels and venture capital funds.⁴ Such financing alternatives do not usually require the formalization of complex contracts, but require some type of guarantee, which in most cases involves the personal patrimony of the entrepreneur.⁷

The number of business projects that have sought, in recent years, the funding of resources through crowdfunding

is growing and promising.⁸ The use of this financing option in relation to traditional sources of resources intensified its expansion in several countries,^{9,10} indicating its economic, social and innovative value in the development of new businesses. If, on the one hand, the popularity of crowdfunding increases, on the other, the academic understanding about this financial model remains limited,¹¹ as only few studies have explored its functioning with due attention.¹² Thus, it is understood that crowdfunding is a current research topic¹ and that its investigation can bring about as yet undisclosed contributions on the process of innovation of financial services.¹³

Research agendas may offer new research opportunities on crowdfunding, considering unexplored elements or enhancement of studies already undertaken. In this sense, Lehner¹⁴ indicates the study of crowdfunding in the context of social entrepreneurship, outlining research topics that can provide valuable information for the academy, professionals and political agents. Stiver *et al.*¹⁵ argue that crowdfunding has the potential to address a range of adverse needs. These authors deepen the study on civic crowdfunding, illustrating the challenges and opportunities in their implementation. The media expresses the positive or negative feeling contained in the news, in-depth narratives or expert summaries, revealing

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meaningful information for investors, industries and the financial market.¹⁶

Literature already addresses geography in crowdfunding (see Table 1), but there is no consensus in the literature about the effect of geographic distance on funding, and little is known about the origins of the financial contributions made, i.e., about the locations and characteristics of investors. This

research suggestion corroborates the recommendations of Agrawal *et al.*,¹⁷ and Mollick,¹⁸ who argue that geography can have a significant economic effect on crowdfunding. In considering the future research suggestions pointed out by Lehner¹⁴ on the behavior of investors, this paper aims to propose a current research agenda, addressing the influence of mass media and geography on the dynamics of investments

Table 1. Review of media and geography literature in crowdfunding.

Authorship	Data source	Goal of the study	Results
Agrawal <i>et al.</i> ¹⁷ (2011) ^(g)	Prosper.com	Examining crowdfunding that connects artists and entrepreneurs with investors through the Internet to finance musical projects.	Spatial proximity has played a reduced role in the distance between artists and entrepreneurs; the effect of geography is circumvented by personal connections (family and friends); crowdfunding platforms do not eliminate all social frictions related to distance.
Herzenstein <i>et al.</i> ⁸⁶ (2011) ^(m)	Kiva.org	Analyze the herd behavior in the crowdfunding market of loans.	The creditors presented a strategic behavior of herd; a positive association was found between the herd behavior and the performance of the loan concessions.
Larrimore <i>et al.</i> ⁸⁷ (2011) ^(m)	Prosper.com	Examine the use of language and persuasion success in P2P loan applications.	The use of extended narratives, concrete descriptions and quantitative words related to people's financial situation was positively associated with the success of the financing. The humanization of people's particularities indicated a negative association with success.
Yörük ⁸⁹ (2012) ^(m)	Surveys	Investigate the effect of a national fundraising campaign on charitable donations.	The mass media has considerably influenced voluntary activities.
Burtch <i>et al.</i> ⁶² (2014) ^(g)	Kiva.org	Analyze transaction patterns among users of crowdfunding loans (P2P).	Lenders prefer borrowers with closer cultural and geographical characteristics.
Lin <i>et al.</i> ⁶⁶ (2013) ^(g)	Prosper.com	Investigate the functioning of the online market for P2P loans.	Friendships increase the chances that the financing will be successful, help reduce interest rates and have been associated with lower default rates; friendships play an important economic role in funding.
Moissejev ⁸⁸ (2013) ^(m)	Kickstarter	Analyze the effect of social media on the results of crowdfunding projects.	Social networks can influence project outcomes and contribute to successful funding.
Mollick ¹⁸ (2014) ^(g)	Kickstarter	Provide a description of the success and failure dynamics of crowdfunding projects.	Personal networks and quality are associated with the success of crowdfunding ventures; the geography is related according to the nature of the projects and with the successful fundraising.
Kim and Hann ⁵⁴ (2014) ^(g)	Kickstarter	Investigate crowdfunding's ability to democratize access to financial capital.	Small cities seem to derive disproportionate benefits from crowdfunding when compared to larger cities; the difficulty of access to conventional credit boosts crowdfunding initiatives.
Lu <i>et al.</i> ²⁹ (2014) ^(m)	Kickstarter	Analyze the associations between the results of fundraising via crowdfunding and the publicity of projects campaigns in social media.	The first promotional activities of the projects impact on the final results of fundraising; the simultaneous dissemination of projects in different social networks contributes to the success of funding.
Hui <i>et al.</i> ⁹⁰ (2014) ^(m)	Kickstarter, Indiegogo and RocketHub	Analyze how crowdfunding participants use social networks to help fundraising.	The use of social networks leverages crowdfunding campaigns.
Lin and Viswanathan ⁶³ (2015) ^(g)	Prosper.com	Investigate if there is a local bias in the P2P loan market.	Local bias was found in crowdfunding lending decisions; behavioral elements may influence decisions to release financial resources.
Agrawal <i>et al.</i> ⁵³ (2015) ^(g)	Kickstarter and Sellaband	Examine the social and economic aspects of a crowdfunding platform that connects entrepreneur and artists with project funders.	The Internet reduces friction connected with the physical distance between artists and investors; local investors seem to be more sensitive to the information presented in the projects; social relations boost crowdfunding.
Gao and Lin ⁹¹ (2015) ^(m)	Prosper.com	Analyze the informative value of the texts of borrowers of P2P loans.	Investors consider textual descriptions at the time of investment; text resources can be used to explain default; investors interpret the textual value of requests for some but not all requests.

Table 1. (Continued)

Authorship	Data source	Goal of the study	Results
Gorbatai and Nelson ⁹² (2015) ^(m)	Indiegogo	Explore the importance of language in the success of online fundraising.	Women have higher textual quality than men; projects led by women were more successful.
Dorfleitner <i>et al.</i> ⁹³ (2016) ^(m)	Prosper.com	Investigate the relation of the description of borrowers' projects with the success in the financial collection.	Spelling mistakes, text size and words that evoke positive emotions are considered in funding decisions.
Mendes-Da-Silva <i>et al.</i> ⁶⁷ (2016) ^(g)	Catarse	To verify the existence of associations between the investor-entrepreneur distance and the propensity of the investors for the funding.	Closer contact networks can play a central role in funding; a negative and significant association was found between the distance and the value of investments in projects.
Yuan <i>et al.</i> ⁹⁴ (2016) ^(m)	Chinese platforms	Develop a methodology based on semantic analysis of textual descriptions of projects to predict results of crowdfunding campaigns.	Semantic analysis can be used to identify the most influential characteristics contained in the project descriptions and thus should help to improve project publicity.
Giudici <i>et al.</i> ⁷⁶ (2017) ^(g)	Italian platforms	Investigate characteristics of geographic areas that affect crowdfunding campaigns.	The level of local altruism can influence the amount raised in the collective financing campaigns.

Note: This table presents a review of the studies that approached media use (m) and geography (g) in crowdfunding.

allocated to crowdfunding. The motivation behind this work is the lack of a coherent research proposal with elements that could influence in some way the investment process and interfere in the efficiency of the crowdfunding market.

2. Literature Review

2.1. Mass media and investor behavior

One of the first studies to stand upon the influence of news on the financial market was that of Pearce and Roley.¹⁹ The authors investigated the daily responses of stock prices on the ads of money supply, inflation, real economic activity and discount rate. The results showed that the surprise contained in the announcements moved stock prices, especially when it came to monetary policy information. Morck *et al.*²⁰ corroborate this view and add that the evolution of theory and good empirical results have helped to spread the idea that markets are not influenced only by financial information, but also by beliefs, investor feeling and idioms.

The news spread by the mass media can influence local markets and the entire economies of countries.²¹ In this sense, Klibanoff *et al.*²² found evidence of significant associations between the weekly news release on the front page of newspapers and the equity valuation of funds from international countries. These authors found that in the news release week asset prices reacted with higher intensity.

Another very important study of market behavior in the face of news is that of Tetlock.²³ This author explored the effect of mass media linguistic content and accounting reports on investor behavior in the famous *Wall Street Journal* column. His research revealed that the informational content of the column was associated with the movement of the market the day before the news came out and the forecasts of analysts and brokers. It was also observed that high values of

pessimism promoted a strong reduction on market prices and the level of pessimism influenced the volume of trading in the market.

Tetlock *et al.*²⁴ refine Tetlock's research²³ and apply the textual analysis technique in the *Wall Street Journal* and the *Dow Jones News Service*; that is, in the totality of these two means of communication and not only in the previously analyzed column. The findings suggest that a greater concentration of negative words in certain company news can predict reduced financial performance, especially if their financial composition is related.

Fang and Peress²¹ applied the sentimental analysis in the news of four major newspapers in the USA. From the empirical evidence found in the research, the assets without media coverage showed a larger return than those covered by the newspapers. According to these authors, the reach of the media contributes to the reduction of information asymmetry between the agents and also affected the prices and the amount of carried out business.

Engelberg and Parsons²⁵ analyzed the influence of the media on investors from the geographical variation of a particular news item in 19 local markets in the USA. The idea of these authors was to compare the behaviors of investors with access to different media coverage on the same news. It was found that media coverage was able to predict S&P 500 index gains in local trades even after controlling proxies for yield, investors and newspaper features.

Gurun and Butler²⁶ investigated the relationship between disclosure of negative media information and the value of local businesses, finding that the media uses fewer negative words for local businesses than nonlocal ones. According to these authors, this bias is due to the amount of expenses incurred in local media by companies and the value of companies is related to the inclination of investments made in both national and local media. This study concluded that

local news releases generated abnormal portfolios in certain types of portfolios and allowed for high economic gains for some investors.

Liu and McConnell²⁷ argue that the development of the media can increase the number of news sources and increase the speed with which information disperses among investors, causing a kind of overloaded information to be considered in the investment decision-making process. This may lead the investor to disregard more relevant information in the selection of more advantageous opportunities.²⁸

Entrepreneurs using crowdfunding could use data from the media to make predictions about business failures and investments in general, adjusting new information to their strategic decisions. On the other hand, investors could also use this data to select the projects that are most likely to offer higher returns in exchange for their investments.²⁹

This research understands that the behavior of investments in collective projects could be exploited through textual sentiment. This technique can express the tone of investors' discourse in news contexts that disclose good or bad information on a variety of issues that may impact the dynamics of financial resource allocation. The analysis of textual sentiment has been widely used in financial markets,¹⁶ presents theoretical support in the financial literature^{30,31} and could be used in the crowdfunding market.

Faced with the growth of mass media consumption²⁸ and the expansion of financial innovations,^{12,32,33} it is understood that there may be significant statistical associations between the impact of traditional media news and the total value of resources captured by projects and companies via crowdfunding.

2.2. Textual feeling and semantic content of the media

The theoretical foundation that supports the influence of the news published by the media on the financial environment is consolidated in the hypothesis of market efficiency,³⁴ which advocates that no agent will be able to obtain above average returns from new information because they are disclosed at the moment of investments and incorporated into the market. However, later studies present reports indicating that the price of the assets does not adjust totally to the new information, presenting a delayed reaction in the prices.³⁵⁻³⁷ Such a clash has promoted the publication of good research that studies the use of the impact of the media in the financial market through the implementation of proxies for the textual feeling of the news.

In 1980's, there are works that defend that the news spread by the media influenced the stock prices. The work of Cutler *et al.*³⁸ gained strong repercussion when investigating the impact of information on macroeconomic news on the stock market. At that time, the literature indicated that price changes could be associated with the return of new information. The findings of these authors suggested that the news little explained the great swings in the market. Thus, this open

question motivated more research efforts in the sense of improving the understanding of the relationship between news releases by the media and the response of market prices.

By the end of the 1990s, most of the published researches used news as a latent variable, considering that the criteria for measuring qualitative information presented subjective decisions.²⁴ In this way, subsequent studies sized their research into quantitative data to explore market behavior. In this scenario, a great collection of literature on the analysis of the movements of actions was generated based on mainly numeric information.³⁹

Next, another landmark in the advancement of financial studies was the use of Natural Language Processing (NLP), which enabled the more precise analysis of nonnumeric information and the optimization of qualitative variables. The NLP made possible a greater diffusion of studies that use qualitative measures, such as investigations about narratives.⁴⁰ In relation to textual information, most of the characteristics investigated in the research are: readability, which can be understood as the level of understanding of the text^{40,41}; and textual feeling, which makes reference to the interpretation of the information, being of an optimistic or pessimistic nature.³⁹ Textual feeling can be understood as a form of human speech, public, news, blogs and other modes of written, oral and visual communication.¹⁶ Textual analysis has been used in the studies because it can explore assumptions attributed to investor behavior, organizational income and financial market systematics.^{37,42}

The investor's sentiment about media news may also be related to the economic and financial reality of a country, especially in times of instability. At such times, bad news tends to have a stronger effect on the market, given that investors may be more sensitive to this type of information.²¹ Veredas⁴³ analyzed the influence of macroeconomic news on US Government bonds and found that market responses to this type of news depend on the country's economic context.

Still on this subject, García⁴⁴ studied the impact of the news on the price of certain assets throughout periods of rise and economic recession of the American market. This author realized that the highest predictability standard for news about the expected return on assets was concentrated in periods of recession; noting also that, in uncertain situations, investors were more sensitive to the exposure of financial media news.

As for the crowdfunding market, research efforts that investigate the textual sentiment of investors are still initial, but they can be promising. Most of the studies on crowdfunding that addressed some qualitative information technique concern the impact of entrepreneurs' writing style on project success (Table 1). So far, we have no knowledge of studies that have explored the sentiment of investors in the crowdfunding market.

Mass media research may reveal explanations about a possible link between the textual sentiment of the news and the distribution dynamics of crowdfunding investments, so

investors can analyze the feasibility of using textual sentiment as a financial tool to reduce risk exposure. This study believes that the development of research that uses the tone of the media news discourse in crowdfunding can provide a current and relevant theoretical contribution, since the textual communication between the parties involved in the funding can impact the success of the funding campaigns⁴⁵ and serve to disperse quality signals of the investments made.⁴⁶

2.3. Geography in crowdfunding

The traditional economic theory suggests that there is a certain spatial dependence between the investor and his investments.^{47–49} This relationship tends to be more easily found in venture capital ventures because firms of this model may prefer to agglomerate in specific regions that contain some previous success story.⁵⁰ Coval and Moskowitz⁵¹ define this propensity for geographic adjacency as a home bias effect, which reveals a clear propensity of investors for certain types of ventures because of the physical distance during the financing process.

Hau⁵² believes that much of the home bias effect is explained by differences in the level of information between the parties involved in the financing. This informational stress can cause disproportionate concentrations of companies that invest in only certain types of projects, i.e., those projects that are not in areas adjacent to the investor's preference, risk not being able to obtain the desired financing and face serious problems of access to credit.

In the opposite direction of traditional theory, crowdfunding appears, which has managed to soften a part of the informational frictions⁵³ and made possible democratic access to financing.⁵⁴ Crowdfunding can accommodate a diversity of endeavors and serve the wider community without distinguishing between people and business ideas.⁵⁵ Any individual can develop a project and plead collective resources through virtual platforms. It is enough to present a structured proposal with the idea of a viable business.⁵⁶ The way to do business via crowdfunding, whether by investment or financing, has attracted a large number of participants, as its flexible accessibility to capital features is interesting for a variety of business ventures.

The geographic dispersion of crowdfunding investments is a striking feature of the dynamics of the collective fundraising process. This is a feature of what has been discussed in current theories about spatial proximity between entrepreneurs and investors, mainly because of distance-related costs.⁵⁷ One of the reasons for this is the extensive use of the Internet, which is said to be responsible for the approximation of the actors involved in funding. The Internet has helped reduce geographic isolation in financial operations at a distance^{58,59} and may bypass problems of market asymmetry.⁶⁰

Studies on the funding platform suggest that geographical distance has a reduced effect on some types of investment¹⁷

and may only impact some products or services.^{42,61} However, Burtch *et al.*⁶² state that lenders of a lending platform have shown preference in choosing borrowers with similar culture and the closest geographical location. For the authors, the lack of trust may be related to this result, since projects physically closer, with stronger cultural ties or that were part of a community, obtained greater success in fundraising.

Lin and Viswanathan⁶³ analyzed the trend of crowdfunding financial transactions in geographically concentrated areas and found evidence of local bias in the lending market. The authors argue that local preference is an element that interferes with investor behavior and is derived from informational friction. Local lenders tend to offer more credit to local borrowers because they can assess the underlying risk of transactions, and this behavior is motivated by informative attributes rather than by preferences.⁶⁴ According to Anderson and Van Wincoop,⁶⁵ the geographical proximity of local creditors can ensure faster and less costly access to information. According to these authors, informational frictions related to geography (research costs, communication barriers and contracting costs) can reduce transactional efficiency when the parties are physically separated from each other. However, social networks (friends and family) established in crowdfunding can promote the reputation of entrepreneurs and increase investor confidence in collective ventures.⁵³

Lin *et al.*⁶⁶ explored a large set of P2P loan applications and found that friendships between creditors and borrowers served as signs of credit quality, increasing the likelihood of success of the loans. The authors believe that the economic effect of friendships helps expand the debt market and less intermediate the financial market. Mendes-Da-Silva *et al.*⁶⁷ investigated the existence of associations between investor–entrepreneur distance and the propensity to invest in projects. The results presented by the authors corroborate with the thought about the value of the network of contacts about the financing, however, they contradict the argument that crowdfunding reduces the inhibiting impact of the geographic distance between investor and the entrepreneur.

According to Mollick,¹⁸ the success of enterprises financed by traditional credit options can be strongly limited by geography, since the need for initial monitoring of the resources originated and the grouping of industries of similar essence contribute to the concentration of resources in specific areas. On the other hand, the extensive use of the Internet and online tools has provoked changes in markets and transformed conventional thinking about the influence of geography on financial relations.⁶⁸

According to Kim and Hann,⁵⁴ the study of the impact of geography on the crowdfunding market is a very relevant theme, since the regulation of new financial models can promote a series of effects that were not considered in the economic relationship between entrepreneurs and investors.

3. Proposal for a Research Agenda

Based on the current literature and some initial empirical evidence already discussed, this research agenda proposes an investigation into the effect of mass media and geography on the investments made in crowdfunding. Figure 1 illustrates the visual scheme with the suggested topics of research, in which the first part represents the effect of mass communications on the behavior of capital contributions and, second, the influence of geography on these investments. The media serve as a tool for spreading project quality signals, building reputation and success stories, as well as legitimizing crowdfunding initiatives.¹⁸ In this way, it is possible to think that mass media exerts some kind of influence on the behavior of investments in crowdfunding. Good or bad news can direct the amount of resources invested, just as with the traditional financial market.²³ The qualitative information contained in the news can be extracted through the analysis of textual sentiment, which allows to understand the impact of information contained in this news through the investor feeling.

It is possible that the same news may have different effects on crowdfunding models, for example, negative news about the country's economy may cause a negative feeling in the equity investor crowdfunding, but may be perceived as a business opportunity for the investor of lending crowdfunding, since, in times of financial recession, people tend to resort to loans. Another interesting example can happen with donations, since the same bad news about the economy could be interpreted as an opportunity for financial aid for people with financial needs. That is, crowdfunding investor sentiment may vary according to its modality and, when compared to the traditional investor, may also be discrepant.

Mass media research can yield results that allow crowdfunding investors to more accurately assess their exposure to risk, as the literature suggests that there are limitations to the selection of new investment products as a result of the lack of knowledge in finance or innocence of individuals of lower social classes.⁶⁹ Based on the textual analysis of the mass

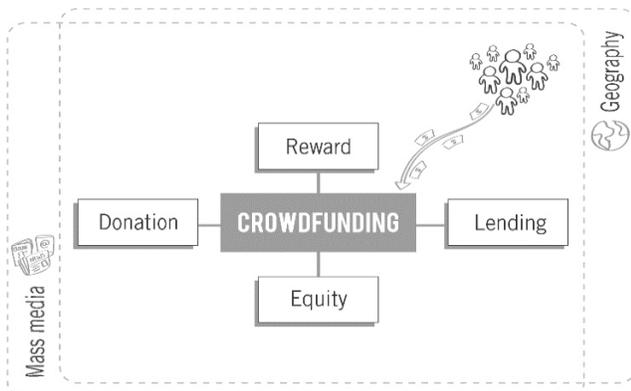


Fig. 1. Crowdfunding research scheme.

media, crowdfunding investors will be able to use the news to predict financial returns as well as to mitigate risk and divert opportunistic intentions from business owners.⁶⁰

The machine language was practically not implemented in the studies on crowdfunding, mainly, as far as the behavior of the investors of this market. This reveals a good research opportunity, since economic information that should be considered in understanding the dynamics of investments in collective initiatives should be underestimated. Social media has already been explored in some studies on crowdfunding, but in the sense of boosting the campaign for project collection. However, other sources of qualitative information (newspapers, radio, magazines, blogs) have not been widely researched.

This research suggests that the analysis of the content of media news is carried out by NLP. This method allows the extraction of an opinion, as presented by Dale⁷⁰ in Fig. 2. According to this author, it takes five steps to obtain an opinion on a certain subject from the NLP. The first phase consists of tokenizing the raw text, i.e., defining the initial and final position of each structure of the analyzed words.

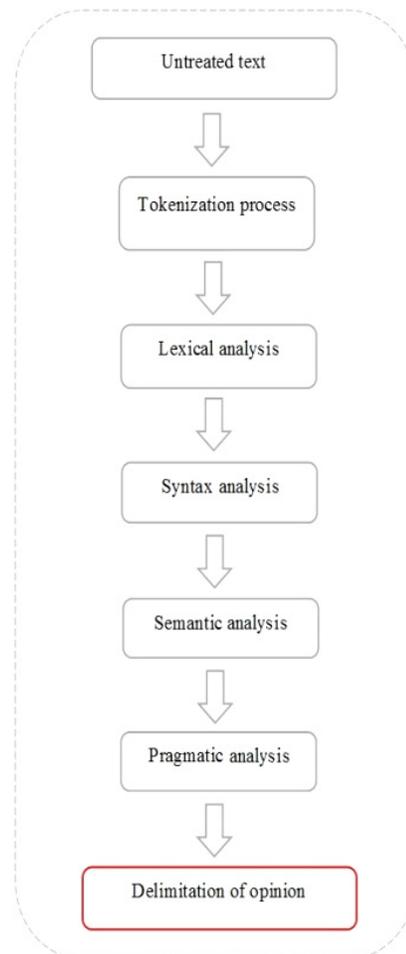


Fig. 2. Natural language processing, adapted from Ref. 71.

Next, the lexical procedure is analyzed, which analyzes the morphological relations of the words and performs a collection of words to form the corpus.

The third step is the syntactic analysis, which is responsible for the diagnosis of a set of words by means of a structural investigation in each information considered. Next, we have the semantic analysis, which observes the content of the words, complete sentences and expressions in a certain context. It is at this stage that the conversion of signals into meanings occurs.⁷¹

Finally, the pragmatic analysis is performed, which in turn serves to ascertain the definition of an oral sentence in a given situation. From this procedure comes the delimitation of an opinion on a particular sentence or context.

A well-accepted textual (or news content) analysis methodology is that of Loughran and McDonald,³¹ which stands out for its clarity in the procedures adopted and not only based on the frequency of words. These authors applied the Vector Space Model (VSM) method as a tool for weighing the textual feeling for a diverse set of sentences and managed to smooth the errors of classifications of the words that most classic dictionaries presented. The VSM assumes that the documents are vectors, disregards the less important parts of the text and then assigns a weight to each generated event.⁷²⁻⁷⁴

According to Loughran and McDonald,³¹ the analysis of the pitch of a news discourse can be obtained by weighing the terms ($W_{i,j}$) in (1):

$$W_{i,j} = \begin{cases} \frac{[1 + \log(tf_{i,j})]}{[1 + \log(a_j)]} \log \frac{N}{df_i} & \text{if } tf_{i,j} \geq 1, \\ 0 & \text{otherwise.} \end{cases} \quad (1)$$

In the above equation $tf_{i,j}$ = amount of events of a word i in a document j ; a_j = total set of words counted in a document j ; N = universe of documents in the sample; and $df_{i,j}$ = total documents with at least one event of the word i .

From the use of this methodology it is possible to obtain variables of interest that can represent the textual feeling of good or bad news about the economic, political or social scenario of a given region or country. However, it is emphasized that there is not only this mode of extraction of qualitative news content. Kearney and Liu¹⁶ present a systematic review of the main methods indicated for the analysis of qualitative contents in finance and offer excellent tips for choosing these techniques.

As far as geography is concerned, some studies have already investigated whether geographic distance influences the success of crowdfunding, but did not observe the geographical characteristics of the origins of the contributions, with the exception of Agrawal *et al.*,¹⁷ Mollick¹⁸ and Mendes-Da-Silva *et al.*,⁶⁷ who are the first to study a portion of these elements. However, most studies focus only on the borrowing and rewards market (see Table 1), indicating that there is room for further research on the other crowdfunding

models or even the possibility of comparing results already with markets not yet exploited.

In addition to the physical distance between entrepreneurs and investors (see Ref. 17), the geographic characteristics of the place of origin of the projects and from which the investments arise can also be used to generate more knowledge about the dynamics of allocation of capital contributions in crowdfunding projects. Some recent studies bet on this thinking and have already discovered initial evidence that local aspects can influence the success of projects and the flow of investments made.

In this sense, Josefy *et al.*⁷⁵ presented findings that reinforce the belief that local cultural attributes found in the communities where the crowdfunding projects originate may be important for fundraising campaigns. Giudici *et al.*⁷⁶ agree with the effect of geography on funding and add that the level of local altruism and localized social capital are very valuable elements for crowdfunding projects developed in certain regions to obtain wanted funding.

In view of the arguments set out above, it is understood that a greater theoretical and empirical understanding of the effect of geography on crowdfunding campaigns is necessary. The use of geography in the study of financial relations, in addition to providing information on the social and economic development of a given region, can reveal cultural aspects as a factor of diversity and creativity, as well as contribute to research on drivers of social innovation.⁷⁷

4. Final Considerations

Markets supported by the crowd have recently emerged as a capital option.⁷⁸ The growth potential of these markets is expressed by the volume of financial resources transacted in recent years, especially crowdfunding.⁷⁹ The future of crowdfunding is promising and the studies carried out to date help the development of this market,⁸⁰ which plays a fundamental role in democratic access to credit for entrepreneurs and entrepreneurs.⁵⁴ Recognizing the importance of crowdfunding, this study encourages the exhaustion of research on this topic and offers new content to be explored.

The research agenda recommended here should serve as an initial framework for researchers to deepen their understanding of the dynamics of contributions made in crowdfunding ventures, thus revealing new information on the impact of the media on the collection of funding and on the profile of investment sources (i.e., regional, demographic and census characteristics). The study of these research topics may have broader economic implications on crowdfunding,⁸¹ considering that most of the studies already produced are new¹ and there is a latent need for understanding about the dimensions of this phenomenon.⁸²

This paper presented current research suggestions related to crowdfunding and reviewed the literature on the use of mass media and geography to analyze the behavior of the

investments allocated to this financial model. This research may contribute to the current literature, insofar it presents new aspects of research on a recent theme that has attracted the interest of researchers, policymakers and professionals, mainly due to its impact on economies and societies.^{18,83}

The exhaustion of the issues started here may reveal enlightening information about the process of capital allocation in crowdfunding. Future studies on this theme should emerge and may serve as an addition in the current literature aimed at technologies and innovations in the field of financial entrepreneurship.⁸⁴ From the managerial point of view, the topics discussed in this study can contribute to the efficiency of multi-donor funding requests. New strategies for entrepreneurs should emerge and risk mitigation tools could be used by investors in that market.

Finally, the importance of investigating the behavior of investments made in crowdfunding, whether influenced by media or geography, focuses on the possibility of building knowledge about the dynamics of resource allocation in collective projects. This field of knowledge contributes to the management of resources oriented to the financial efficiency of personal and market investments.^{63,85}

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