Bibliometric map of literature on Donation-based Crowdfunding for charitable causes

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ABSTRACT: By bibliometric analyzing 92 publications in the field of pure donation-based crowdfunding for charitable causes soliciting monetary contributions, and providing a comprehensive bibliometric map with the software VOSviewer, this work overviews the prevailing themes, the main cross-cutting aspects, commonalities and differences underlying the resulting clusters, and illustrates them through a sample of key contributions in the literature distributed in different research categories.
KEYWORDS: *Pure Donation-based crowdfunding; charitable causes; bibliometric mapping; thematic clusters, VOSviewer*

RESUMEN: Mediante el análisis bibliométrico de 92 publicaciones en el ámbito del crowdfunding solidario puro para causas benéficas que solicitan contribuciones monetarias, y la elaboración de un mapa bibliométrico exhaustivo con el software VOSviewer, este trabajo sobrevuela los temas predominantes, los principales aspectos temáticos transversales, los puntos comunes y las diferencias que subyacen a los clústeres resultantes, y los ilustra a través de una muestra de contribuciones clave en la literatura distribuidas en diferentes categorías de investigación.
PALABRAS CLAVE: *Crowdfunding solidario puro; causas benéficas; mapa bibliométrico; clústeres temáticos; VOSviewer*

1. Introduction

Crowdfunding (CF) refers to a fundraising practice consisting of raising financial resources from large communities through the Internet to support different ventures.

This online fundraising formula is based on donation — *Donation-based crowdfunding* (DCF) — when contributors donate without having any expectation for (material) compensations, also known as the *pure* donation model (Massolution, 2012). Pure DCF campaigns involve the request for voluntary contributions of monetary and/or non-monetary resources for social causes aiming the common good, from research purposes to social ventures or charitable needs. These campaigns are regularly channeled through electronic spaces as apps, e-portals, websites, and digital platforms, and amplified through the use of social media where the community instantly interact in addition to financially contribute.

In a global scenario of economic strains, social challenges, and accelerated digitalization, DCF is growing rapidly in the recent years among a wide diversity of formal and informal constituted profiles of promoters (e.g. nonprofits, hybrid organizations, and research groups, among others) adopting commercial strategies to struggle to sustainable growth. In accordance with this boom, DCF has attracted also increasing scholarly attention over the last decade.

With the purpose to better understand the DCF emergence, a first compilation of the main findings was performed: by systematically reviewing 92 publications on pure DCF asking for monetary contributions for charitable causes -regardless of the promoters profile and the channels employed-, the specific literature showed the increasing prominence of academic research on this topic from 2015 onwards, mostly resulting in empirical articles using quantitative methodologies, based on a micro analysis perspective and the online nature of connections among the parties involved (Salido-Andres *et al*. 2021).

According to the aforementioned, the objective of this work is to provide a thematic clusterization of the topic from the bibliometric analysis of the literature systematically reviewed, adopting the form here of a terminological co-occurrence based bibliometric map employing VOSviewer bibliometric software. In addition, a detail sample of key literature contributions will illustrate each of the clusters bounded.

1. Bibliometric map on *pure* Donation-based Crowdfunding for charitable causes

Bibliometric analyses are used to statistically calculate and asses the existing literature on a topic, normally building on scholar and/or 'grey literature' publications (Ellegaard & Wallin, 2015). Among the different computerized data treatment-based methods, *bibliometric mapping*, also known as science mapping, are being increasingly used to conduct bibliometric analysis in the last years. Bibliometric

mapping allows the visualization of bibliometric networks within the literature, ranging from networks of citation, networks of coauthorship, or networks of co-occurrence relations between keywords -either in the form of individual or multiple words- taken from the title, abstract, and/or the author-provided list of keywords of each publication (Van Eck & Waltman, 2014; Boyack & Klavans, 2010).

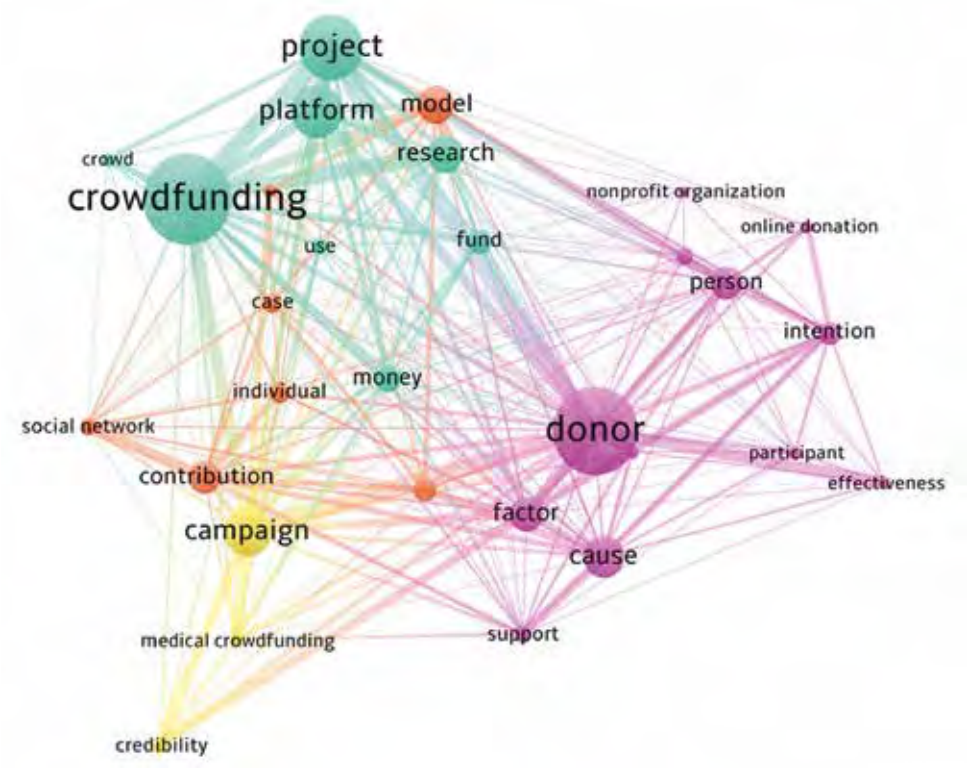
Aiming to identify the existing literature on pure DCF for charitable causes, a systematic literature review was conducted on the basis of a set of inclusion criteria in order to select the target publications (Tranfield *et al.* 2003), namely, scientific, peer-reviewed, scholarly (either theoretical/conceptual and empirical) articles and proceedings in English, not specified by time limitations, and within a set of subject areas as *Economics*, *Business*, *Finance*, *Social Issues*, *Communication*, *Technology, and Computer Science*, among others (Salido-Andres *et al.* 2021). Considering the slippery conceptual boundaries of a novel and interdisciplinary topic like pure DCF, the target literature was extracted from ISI Web of Science (WoS) and Scopus databases. Besides being those including the most comprehensive registrations of citation indexes and the largest volume of journals in all the fields (Li *et al.* 2010), the reasons guiding these specific databases selection were specifically three-fold: firstly, the required compliance with the above mentioned inclusion criteria in line with a systematic literature review aiming robustness and rigor. Secondly, selecting accordingly only databases that allowed discriminating by publications formats, covered wide indexed journal ranges of scientific fields and journals (being preferably of high-impact or at least involving only peer-review processes), avoiding the intermingling of indexed and no indexed journals, peer-reviewed and no peer-reviewed based publications, or academic and grey literature outputs. And thirdly, the selected databases should have contained search engines able to adopt an extensive Boolean search equation as the one designed, composed by a set of 58 keywords.

Once identified the potentially interesting literature, screened until delimiting the final sample (i.e. 92 publications), and descriptively analyzed, a bibliometric mapping was constructed using VOSviewer, in order to assemble the refloated findings under a set of common thematic clusters. VOSviewer is a free computer program for constructing, graphically representing, and visualizing distance-based bibliometric maps built on co-citation or co-ocurrence data, in the sense that the larger distance between the items, the weaker relation among then, and vice versa (van Eck & Waltman, 2010). The main advantage of distance-based maps is the ease with whose they allow to identify clusters composed by related keywords for instance, and how clusters relate at the same time to each other. Among the different visualization options provided by this software, the network visualization in

particular positively correlates the size of the circles and letters with the frequency of occurrence of the keywords.

Returning to the case at hand, and among all the different valid approaches through which scientific mapping can be performed, the bibliometric map on pure DCF was built on the co-occurrence of terms within the text data reviewed (i.e. titles and abstracts). The use of VOSviewer was also useful to provide a relevance scored-based automatically selection of the 30 most co-occurrent terms, via 334 links. As reflected in Figure 1, the resulting map allowed us to graphically visualize the strength of the final terminological co-occurrence through colored networks, distributed in four main clusters.

Figure 1. Co-occurrence based bibliometric map of the prevalent terms on pure DCF using VOSviewer.



According to the main content of all the articles titles and abstracts within the resulting clusters, we proceeded to label them as follows: C1. *Factors underlying Donor Support (in pink)*; C2. *DCF Research within generic CF (in green);* C3. *The Role*

of Social Media (in orange); and C4. *Medical DCF campaigns (in yellow)* (see Table 2 for further detail on the terminological prevalence per cluster).

Table 2. Co-occurrence of prevalent terms per cluster

Factors underlying Donor Support (c1)		*DCF Research within generic CF* (c2)		*The Role of Social Media* (c3)		*Medical DCF campaigns* (c4)	
Donor	77	Crowdfunding	80	Model	34	Campaign	44
Cause	37	Project	58	Contribution	29	Credibility	14
Factor	31	Platform	47	Social Medium	21	Medical Crowdfunding	11
Person	29	Research	33	Individual	19		
Intention	20	Money	23	Case	17		
Support	16	Fund	22	Social Network	15		
Level	15	Use	14	Charitable crowdfunding	13		
Participant	12	Crowd	12				
Purpose	12						
Effectiveness	11						
Nonprofit Organization	10						
Online Donation	10						

Source: Authors' own elaboration from VOSviewer data

Themes underlying these four clusters will be lightly overviewed in the following subsections, illustrated through a sample of some key contributions in the literature distributed among a set of research categories.

2.1. Factors underlying Donor Support (C1)

Cluster 1 revolves around the variety of possible factors underlying the willingness of (potential) individual donors to support charitable causes via DCF campaigns. The panoply of motivations, behaviors, experiences, expectations, beliefs, and socio-demographic variables converges here. These factors are obviously affected by (1) the intrinsic conditions of individual donors, but also by external aspects such as (2) the design of the DCF campaigns, (3) the communicative activity of promoters, and (4) the role played by the technological devices and channels employed (Table 3).

From an individual donor approach, main issues referred to: the emotional dimension of donation, (e.g. warm glow, pure altruism, or psychological engagement with nonprofits, among others); the intentional dimension is basically relative to a great or less feeling of online community involvement; the nature and frequency of donations, and the role of sociodemographic variables playing a determinant role in explaining donors' DCF behavior (i.e. age). In terms of campaigns design mix, the inclusion of elements as disclosure and imagery prevail the most. From the perspective of those promoting DCF campaigns, emotion appears as an essential ingredient to efficiently manage the communication actions. Finally,

from the technological side, the role performed by the Information Technology (IT) procedures and dynamics prevail (i.e. Electronic Word of Mouth (eWOM), and emotive web pages).

Table 3. Research categories & Key issues in cluster 1

Factors underlying Donor Support	
Research categories	Key issues
Individual Donors	Supporters are driven by the social utility and the networking motivation in the online community (Lacan & Desmet, 2017)
	CF supports particular types of donor motivation (e.g. to be part of a community, show social engagement) not supported by traditional charity models (Choy & Schlagwein, 2015)
	Potential donors' psychological involvement with charities affects the influence of sad and happy beneficiaries imagery in perceived response efficacy (Cao & Jia, 2017)
	Importance of the role for donors of *warm glow* and *pure altruism* in electronic charitable CF markets (Gleasure & Feller, 2016a)
	Impulsive behavior is more common among internet users than who shop (or donate) within physical environments (Bennett, 2009)
	Compared to income, education, gender, age makes a difference for the tendency to donate money through CF website (Cockrell et al. 2016)
	Conditional donors donate more compared to direct donors (Beltran et al. 2015)
	CF for nonprofits is mostly consisted of many donors who contribute only small amounts for a few times at most (Lee et al. 2015)
	Donors experiencing a successful first project, small projects in particular, are more likely to return (Althoff & Leskovec, 2015)
	Donors give what they think that they personally are expected to give, where the distribution of the donations of their peers –among other factors- feed into the formation of the expectation (Smith et al. 2015)
	Donor retention can be predicted on an individual level (Althoff & Leskovec, 2015)
Campaigns	Smaller goals tend to have better success ratios, while getting the pool flowing tends to attract more donors when a goal is nearly met (Cockrell et al. 2016)
	Disclosure of optional personal information all shine light on the donor's initial motivations to the CF community (Althoff & Leskovec, 2015)
	Relevance of campaign disclosure and campaign imagery in CF campaigns (Gleasure & Feller, 2016a)
	Video explaining the purpose of the community helps donors to understand and empathize with the campaign (Choy & Schlagwein, 2015)
	Campaigns with a solely philanthropic aim are well-advised to prefer a DCF model (Lacan & Desmet, 2017)
	Charitable CF campaigns afford donors the opportunity to become an active member of a community of like-minded people (Choy & Schlagwein, 2016)
Promoters	NPO communication efforts should be oriented to turn offline donors into online donors (Treiblmaier & Pollach, 2006)
	Charities that invest in the 'ask', and frame their cause effectively, position themselves more favorably with donors (Body & Breeze, 2016)
	Online charities need to activity reach out to younger audiences if attempting to solicit funds via CF (Cockrell et al. 2016)
	Charity organizations might consider emphasizing donors' motives with emotional donation messages, if the context is for a domestic charity (Chung & Moriuchi, 2016)
	Advertising effectiveness is affected by the ethnic identity of people on donation behavior and their attitude towards the charity ads (Chung & Moriuchi, 2016)
Technology	eWOM is encouraged by contributors' social utility motivation (Lacan & Desmet, 2017)
	The use of an emotively constructed web pages have a higher probability of eliciting impulsive donations (Bennett, 2009)
	The influence of micro-charity online comments on the decision making of the donors (Du & Li, 2016)
	Conditional donations as an interface mechanism for empowering and engaging donors of CF campaigns (Beltran et al. 2015)
	The affordances of CFP support types of donor motivation not supported effectively, or at all, in offline charity (Choy & Schlagwein, 2016)

Source: Authors' own elaboration

2.2 DCF Research within generic CF (C2)

The potential suitability of DCF as fundraising model and further explorations of this under more generic analyses of CF dominate in cluster 2, specifically, the conceptual development of CF, ethical challenges, or its effects on social innovation, entrepreneurship, finance, or technology fields (Table 4).

Publications highlight the philanthropic motivations of individual donors. Papers on DCF campaigns within generic approaches on CF mainly deal with boosters of the fundraising success as the amount requested, the frequency, and pace of donations, goals, disclosure duration, among others. A minor portion of research deals with the implications from the promoters, outcomes, and institutional dimensions. A set of major implications focuses on the effects of

suitable technological channels employed in general CF, and in the DCF model in particular (i.e. mainly websites, platforms and social networks), to improve the success rate of the fundraising projects.

Table 4. Research categories & Key issues in cluster 2

DCF Research within generic CF	
Research categories	Key issues
Generic CF	While not all fundraising is CF, CF is a central and enduring facet of nonprofit fundraising (Gras et al. 2017) Identification of emerging constructs on DCF (Gleasure & Feller, 2016b) DCF incurs the least risk of the four crowdfunding models (Hossain & Oparaocha, 2017) DCF is regarded as a valuable means to provide seed funding to vulnerable strata (Kim & Moor, 2017) Diversity of stakeholders, roles and work relative to legitimize these roles in philanthropic CF (Tanaka & Voida, 2016) Complementation and integration of CF and Diaspora Philanthropy practices (Flanigan, 2017) CF as a formula to engage consumers in SNS, stimulating their financial participation in projects proposed by third parties (Ordanini et al. 2011) Proposal of a mathematical model to describe CF processes (Yang et al. 2016)
Individual donors	DCF as a business model whose funders are driven exclusively by social motivation (Castillo et al. 2014) Consumers' engagement in DCF charitable initiatives is driven by social participation (Ordanini et al. 2011) Founders oriented to an event or experience with limited income potential are more suited to a "reward" or "donation" model (Beaulieu & Sarker, 2015) Philanthropic motivation is associated with early funding, funding amounts and the magnitude of the effect is higher in the earlier stages (Ryu et al. 2016) People with the highest levels of identification are typically the first ones to invest in CF (Ordanini et al. 2011) Proposal of sponsor typology which reflect the nature of CF as a new form of co-creation in the E-commerce context (Ryu & Kim, 2016)
Campaigns	Completing a DCF project leads to larger donations and greater likelihood of returning to donate again (Wash, 2013) Longer deadlines lead to slightly larger average donations, which comes from a lower amount of small donations (Damgaard & Gravert, 2017) Influence of the number of promoter's Facebook friends and the amount of words describing the project on its success (Aprilia & Wibowo, 2017) Proposal of a good practice guidelines of a successful campaigns in profit-making projects and social causes-oriented campaigns (Fondevila et al. 2015) Because of information asymmetry, nonprofit projects are likely to acquire more funding vs. for-profit projects (Yang et al. 2016) The key role of building an audience, actively engaging with it and to broad its reach in the increasing of the levels of funding (Byrnes et al. 2014) A unique feature of CF is the ability for a campaign to evolve over time (Beaulieu & Sarker, 2015)
Promoters	Nonprofit entrepreneurs tend to be more successful in using CF (Belleflamme et al. 2013) NPO are more likely to hit crowdfunding targets than for-profit ventures (Gras et al. 2017) The primary concern for fundraisers in philanthropic CF is conveying the legitimacy of their campaigns (Tanaka & Voida, 2016) Social enterprises need to raise awareness of the campaign and get the funds necessary to achieve the goals without return (Bergamini et al. 2017) Promoters probably increase their personal fundraising efforts in response to being matched (Meer, 2017)
Outcomes	If a social venture creates high social value, but low economic value, should choose the DCF model (Meyskens & Bird, 2015)
Technology	DCF platform should acts as a new intermediary integrating existing networks and improving traditional personal connections (Ordanini et al. 2011) DCF sites should explore ways to increase early donations for effective communication and coordination of donations (Solomon et al. 2015) The development of new donation methods may distribute the donations more effectively, which could benefit more DCF projects (Lee et al. 2016) Influence of the evolving conversation on the amount of capital raised depending on whether a sense of community is established (Beaulieu & Sarker, 2015) Sponsorship of campaigns is due to relations or social networks, not because of its description (Aprilia & Wibowo, 2017) Information asymmetries loom large on CFP (Belleflamme et al. 2015) Each CF model is defined by how the model is enacted through the CF website (Beaulieu & Sarker, 2015) The improvement of technological platforms will allow for greater ease of use and increased awareness of the service offered (Bergamini et al. 2017) Remarkable role that web could play in shaping this market (Budak & Rao, 2016) Proposal of "Crowdfunding Platform Design" (CFPD) model to help facilitate persuasiveness, and in turn the success of CF projects (Wang et al. 2016) CFP reaching maximum performance by applying control mechanisms (Yang et al. 2016) Functions of CF platforms to improve the success rate of projects (Yang et al. 2016) Learning about the technology platform, social networks and others' recommendations as sources of information (Bergamini et al. 2017)
Institutional features	The effects of matching grants and increasing competition on projects success ratio (Meer, 2017, 2014) Possibility of redirecting the fundraised away from the long-tail of inefficient organizations in the charity marketplace (Budak & Rao, 2016) Key role of regulative, normative and cognitive institutions of a well-developed CF ecosystem (Kshetri, 2015)

Source: Authors' own elaboration

2.3. The Role of Social Media (C3)

The third cluster is dominated by the central role of social media in the articulation of DCF, in particular by digital platforms, tools, and applications through which users generate conversation, interaction and collaboration, and beyond the technical requirements for campaigns design and promoters digital skills (Table 5).

Table 5. Research categories & Key issues in cluster 3

The Role of Social Media	
Research categories	Key issues
Individual donors	Influence of the place where users surf the Internet on offline and online monetary donations (Mano, 2014) Influence of mobile phone use and frequency of relational mobile communication with mobile donation (Chen & Givens, 2013) The intention to donate using social media in emergency/ non-emergency scenarios (Korolov et al. 2016) Likelihood to donate online by Internet users engaged in offline groups and networks (Reddick & Ponomariov, 2013) Prosocial emotions are useful factors to distinctively predict engage inclinations according to the gender (Paulin et al. 2014b) Inference of donors behavior from their SNS profile data (Zhong & Lin, 2017)
Campaigns	Previous information required in the cases of DCF campaigns (Polzin et al. 2017) Influence of ideological-based campaigns on online and offline contributions (Mano, 2014) Gaining Millennial's support for social causes through social media (Paulin et al. 2014a)
Promoters	Control of donors by NPO and the use of fourth-generation technologies (Bellio et al. 2015) NPO's "Web capacity" effect in fundraising success within the SNS context (Saxton & Wang, 2014) Security and privacy issues in the online charitable fundraising (Sura et al. 2017) Crowdfunders own learning from their success (Pak & Wash, 2017) The use of specific emotional hooks for prosocial behaviors by NPO marketers (Paulin et al. 2014b)
Technology	Internet technology features factor influence in online donation and intention to donate via SNS (Sura et al. 2017) Influence of donation visibility in social media platforms in donation patterns of users (Tan et al. 2016) On the costs and benefits of the mechanism of P2P fundraising through online SNS (Castillo et al. 2014) On the roles of computational technology in nonprofit fundraising (Goecks et al. 2008) D2N online marketplaces effect on the generation of fundraising revenues (Ozdemir et al. 2010) Key role of managers humanizing digital platforms (Bernardino & Santos, 2016) Twitter as an accurate predictor of donations in a scenario involving emergency response (Korolov et al. 2016) The incongruent (celebrity) endorsement as an effective strategy in an DCF website context (Panic et al. 2016) Advantages of a suitable atmosphere within the website in online charity fundraising situations (Bennett, 2005) DCF websites and the implementation of design solutions to learn from failure (Pak & Wash, 2017) Internet donation and mobile donation complement rather than compete with each other (Chen & Givens, 2013) The adoption of the mobile phones in the area of fundraising (Bellio et al. 2015)
Institutional features	Mobile donation as tool for civic engagement (Chen & Givens, 2013) Slowness between the moment a donation is made and the NPO collects the money (Bellio et al. 2015) On the promotion of CF information among potential social entrepreneurs by public policy (Bernardino & Santos, 2016)

Source: Authors' own elaboration

2.4. Medical DCF campaigns (C4)

The fourth cluster is very much focused on DCF campaigns with a specific orientation to medical purposes (i.e. particular medical treatments or rare diseases research), in which credibility is a central determinant of their success. Prevalent research categories are mainly focused on individuals' features (whether these are donors or beneficiaries), campaign features and institutional effects (Table 6).

From an individual perspective, the main issues relate to credibility-based factors influencing the willingness of potential donors to contribute, and the willingness of beneficiaries (i.e. patients, families, and friends) as potential obstacles against promoting medical campaigns. Implications for the design and diffusion of medical campaigns are dominant in the cluster, specifically aimed to identify those factors optimizing their effectiveness, social media literacies included. The dominance of the institutional approach is notable since medical DCF campaigns mostly emerged in a context characterized by financial distress and underinsurance in response to the Trump administration restricted health care measures.

Table 6. Research categories & Key issues in cluster 4

Medical DCF campaigns	
Research categories	Key issues
Individual donors/beneficiaries	Beneficiaries main concern when requesting money for themselves (Kim et al. 2017) Influence of trustworthiness in donors' willingness (Tremblay-Boire & Prakash, 2017)
Campaigns	Improving credibility by contributions incentives (Hsieh et al. 2011) On the effectiveness of medical CF campaigns (Snyder et al. 2016) The influence of narrative claims language on achieving fundraising target (Kim et al. 2016) Perceived-credibility set of factors in medical CF campaigns (Kim et al. 2016) Social media literacies effects on campaign success and deservingness (Berliner & Kenworthy, 2017) Requirements to run successful DCF medical campaigns (Dragojlovic & Lynd, 2014) Use of video and photos to generate strong responses (Snyder et al. 2016) The influence of disclosing the chosen charity for donation on credibility (Hsieh et al. 2011) On the association among words demonstrating precision and distinction and fundraising (Kim et al. 2016)
Promoters	The effect of not holding back and being honest in DCF medical campaigns (Snyder et al. 2016)
Technology	The emotional pull of the recipient's situation in medical DCF websites (Snyder et al. 2016) Charity selection and credibility within the site design (Hsieh et al. 2011)
Institutional features	The importance of CF as a tool for accessing healthcare (Berliner & Kenworthy, 2017) CF and public benefits (Berliner & Kenworthy, 2017) Technical and social media literacy as a barrier for CF users (Berliner & Kenworthy, 2017) Motivating factors in of CF campaigns for health care (Berliner & Kenworthy, 2017) CF and the substitution of government funding for medical research (Dragojlovic & Lynd, 2014) On medical DCF campaigns fostered by trans* subjects for gender/sexual reassignment surgeries (Farnel, 2015)

Source: Authors' own elaboration

3. Conclusions

This work presents a bibliometric map on pure DCF soliciting monetary contributions for the materialization of charitable causes, regardless of the promoters profile and the channels employed, and based on the analysis of the literature systematically reviewed on this topic (Salido-Andres *et al.* 2021). The resulting terminological co-occurrence map in VOSviewer is shown, together with a sample of some key literature contributions illustrating each of the thematic clusters bounded, and distributed here in different research categories.

The role played by the features of (potential) individual donors, and the central role of technology in the articulation of pure DCF — besides being the main thematic protagonists within the existing literature —, are also cross-cutting the four clusters here presented. Other cross-cutting aspects are related to the campaigns (i.e. design and development), the promoters (i.e. profile), and to a lesser extent, the institutional dimension of this philanthropic funding formula.

Since key issues categorized here are strongly interrelated, even sharing slippery conceptual boundaries, we found it impossible to allocate strictly exclusive thematic characters to each cluster. For instance, although implications of individual participation in DCF for charitable causes are present in all clusters, it is in cluster 1 where it is clearly dominant. Similarly, the role of technology is found in every cluster, but cluster 3 is the one most focused on this point. The coexistence thus of common thematic elements with some heterogeneity in each group has guided us in tracking their main commonalities and differences.

Within the field of commonalities, the four clusters seem to agree with the central role of the use of emotional resources in order to move potential donors to action. Emotion is strongly linked to other crucial intangible elements that trigger donor's participation such as persuasiveness, deservingness and credibility. The determinant influence of the creation of liked-minded online communities by campaigners, to maximize both a wide spread of the DCF call and the engagement of potential donors and closest networks, is another commonality. Other shared thematic streams are the role of technological devices and social media tools, the online campaigns' design-mix, and the needed improvement of online communication skills by the promoters. Equally, clusters 1, 2 and 4 share key issues on those factors explaining the success of DCF campaigns for charitable causes. Regarding their main differences, cluster 2 is the only one including a theoretical approach to DCF within a more generic analysis of CF phenomenon. The role of millennials as potential donors is limited to cluster 3; in the same way, cluster 4 entirely gathers implications of DCF campaigns specifically oriented to medical causes.

References

Althoff, T., and Leskovec, J. (2015). Donor retention in online crowdfunding communities: A case study of DonorsChoose.org. In Proceedings of the 24th International Conference on World Wide Web, 34-44.

Aprilia, L., and Wibowo, S. S. (2017). The impact of Social Capital on Crowdfunding Performance. South East Asian Journal of Management, 11(1), 44-57.

Beaulieu, T., and Sarker, S. (2015). A Conceptual Framework for Understanding Crowdfunding. Communications of the Association for Information Systems, 37(1), 1-31.

Belleflamme, P., Lambert, T., and Schwienbacher, A. (2013). Individual crowdfunding practices. Venture Capital, 15(4), 313-333.

Belleflamme, P., Omrani, N., and Peitz, M. (2015). The economics of crowdfunding platforms. Information Economics and Policy, 33, 11-28.

Bellio, E., Buccoliero, L., and Fiorentini, G. (2015). Marketing and fundraising through mobile phones: new strategies for nonprofit organizations and charities. In van S. M. Marca D. (ed.), ICE-B 2013 - 10th International Conference on E-Business, Part of the ICETE 2013: 10th International Joint Conference on E-Business and Telecommunications.

Beltran, J. F., Siddique, A., Abouzied, A., and Chen, J. (2015). Codo: Fundraising with conditional donations. In UIST 2015 - Proceedings of the 28th Annual ACM Symposium on User Interface Software and Technology, 213-222.

Bennett, R. (2005). Antecedents and consequences of website atmosphere in online charity fundraising situations. Journal of Website Promotion, 1(1), 131-152.

Bennett, R. (2009). Impulsive donation decisions during online browsing of charity websites. Journal of Consumer Behaviour, 8 (2–3), 116-134.

Bergamini, T. P., Navarro, C. L. C., and Hilliard, I. (2017). Is crowdfunding an appropriate financial model for social entrepreneurship? Academy of Entrepreneurship Journal, 23(1), 44-57.

Berliner, L. S., and Kenworthy, N. J. (2017). Producing a worthy illness: Personal crowdfunding amidst financial crisis. Social Science and Medicine, 187, 233-242.

Bernardino, S., and Santos, J. F. (2016). Financing social ventures by crowdfunding: The influence of entrepreneurs' personality traits. International Journal of Entrepreneurship and Innovation, 17(3), 173-183.

Body, A., and Breeze, B. (2016). What are 'unpopular causes' and how can they achieve fundraising success? International Journal of Nonprofit and Voluntary Sector Marketing, 21(1), 57-70.

Boyack, K.W. and Klavans, R. (2010). Co-citation analysis, bibliographic coupling, and direct citation: which citation approach represents the research front most accurately? J. Am. Soc. Inf. Sci. Technol. 61, 2389-2404.

Budak, C., and Rao, J. M. (2016). Measuring the efficiency of charitable giving with content analysis and crowdsourcing. In Proceedings of the 10th International Conference on Web and Social Media, ICWSM 2016, 32-41.

Byrnes, J. E. K., Ranganathan, J., Walker, B. L. E., and Faulkes, Z. (2014). To Crowdfund Research, Scientists Must Build an Audience for Their Work. Plos One, 9(12).

Cao, X., and Jia, L. (2017). The Effects of the Facial Expression of Beneficiaries in Charity Appeals and Psychological Involvement on Donation Intentions: Evidence from an Online Experiment. Nonprofit Management & Leadership, 27(4), 457-473.

Castillo, M., Petrie, R., and Wardell, C. (2014). Fundraising through online social networks: A field experiment on peer-to-peer solicitation. Journal of Public Economics, 114, 29-35.

Chen, W., and Givens, T. (2013). Mobile donation in America. Mobile Media and Communication, 1(2), 196-212.

Choy, K., and Schlagwein, D. (2015). It affordances and donor motivations in charitable crowdfunding: The "earthship kapita" case. In 23rd European Conference on Information Systems, 2015(May).

Choy, K., and Schlagwein, D. (2016). Crowdsourcing for a better world on the relation between IT affordances and donor motivations in charitable crowdfunding. Information Technology & People, 29(1, SI), 221-247.

Chung, C., and Moriuchi, E. (2016). The Effectiveness of Donation Advertising: An Experimental Study for Felt Ethnicity and Messages on In-Groups and Out-Groups. In K. Kim (ed.), Celebrating America's Pastimes: Baseball, Hot Dogs, Apple Pie and Marketing? 745-746.

Cockrell, S. R., Meyer, D. W., and Smith, A. D. (2016). Electronic intervention and platforms and their impacts on crowdfunding behavior. International Journal of Business Information Systems, 23(3), 263-286.

Damgaard, M. T., and Gravert, C. (2017). Now or never! The effect of deadlines on charitable giving: Evidence from two natural field experiments. Journal of Behavioral and Experimental Economics, 66, 78-87.

Dragojlovic, N., and Lynd, L. D. (2014). Crowdfunding drug development: the state of play in oncology and rare diseases. Drug Discovery Today, 19(11), 1775-1780.

Du, L., and Li, X. (2016). The Influence of Micro-charity Online Comments on the Decision Making of the Donors. In Yang, Z (ed.), Proceedings of 2016 China Marketing International Conference: Marketing Theory and Practice.

Ellegaard, O., and Wallin, J.A. (2015). The bibliometric analysis of scholarly production: How great is the impact? Scientometrics 105, 1809-1831.

Farnel, M. (2015). Kickstarting trans{*}: The crowdfunding of gender/sexual reassignment surgeries. New Media & Society, 17(2), 215-230.

Flanigan, S. T. (2017). Crowdfunding and Diaspora Philanthropy: An Integration of the Literature and Major Concepts. Voluntas, 28(2), 492-509.

Fondevila Gascon, J. F., Rodriguez, J. R., Monforte, J. M., Lopez, E. S., and Masip, P. M. (2015). Crowdfunding as a Formula for the Financing of Projects: An Empirical Analysis. Revista Cientifica Hermes, 14, 24-47.

Gleasure, R., and Feller, J. (2016a). Does Heart or Head Rule Donor Behaviors in Charitable Crowdfunding Markets? International Journal of Electronic Commerce, 20(4), 499-524.

Gleasure, R., and Feller, J. (2016b). Emerging technologies and the democratization of financial services: A metatriangulation of crowdfunding research. Information and Organization, 26(4), 101-115.

Goecks, J., Voida, A., Voida, S., and Mynatt, E. D. (2008). Charitable technologies: Opportunities for collaborative computing in nonprofit fundraising. In Proceedings of the ACM Conference on Computer Supported Cooperative Work, 689-698.

Gras, D., Nason, R. S., Lerman, M., and Stellini, M. (2017). Going offline: broadening crowdfunding research beyond the online context. Venture Capital, 19(3), 217-237.

Hossain, M., and Oparaocha, G. O. (2017). Crowdfunding: Motives, Definitions, Typology and Ethical Challenges. Entrepreneurship Research Journal, 7(2).

Hsieh, G., Hudson, S. E., and Kraut, R. E. (2011). Donate for credibility: How contribution incentives can improve

credibility. In Conference on Human Factors in Computing Systems, 3435-3438.

Kim, H., and Moor, L. (2017). The Case of Crowdfunding in Financial Inclusion: A Survey. Strategic Change, 26(2), 193-212.

Kim, J. G., Kong, H. K., Karahalios, K., Fu, W.-T., and Hong, H. (2016). The Power of Collective Endorsements: Credibility Factors in Medical Crowdfunding Campaigns. In 34th Annual Chi Conference on Human Factors in Computing Systems, 4538-4549.

Kim, J. G., Vaccaro, K., Karahalios, K., and Hong, H. (2017). Not by money alone: Social support opportunities in medical crowdfunding campaigns. In Proceedings of the ACM Conference on Computer Supported Cooperative Work, 1997-2009.

Kim, P. H., Buffart, M., and Croidieu, G. (2016). TMI: Signaling Credible Claims in Crowdfunding Campaign Narratives. Group & Organization Management, 41(6), 717-750.

Korolov, R., Peabody, J., Lavoie, A., Das, S., Magdon-Ismail, M., and Wallace, W. (2016). Predicting charitable donations using social media. Social Network Analysis and Mining, 6(1).

Kshetri, N. (2015). Success of Crowd-based Online Technology in Fundraising: An Institutional Perspective. Journal of International Management, 21(2), 100-116.

Lacan, C., and Desmet, P. (2017). Motivations for Participation and e-WOM among Supporters of Crowdfunding Campaigns. Strategic Innovative Marketing, 315-321.

Lee, U., Song, A., Lee, H.-I., and Ko, M. (2015). Every little helps: Understanding donor behavior in a crowdfunding platform for non-profits. In Conference on Human Factors in Computing Systems – Proceedings (18), 1103-1108.

Lee, Y.-C., Yen, C.-H., and Fu, W.-T. (2016). Improving donation distribution for crowdfunding: An agent-based model. Lecture Notes in Computer Science, 9708, 3-12.

Li, J., Burnham, J. F., Lemley, T., and Britton, R. M. (2010). Citation analysis: Comparison of Web of Science, Scopus, SciFinder, and Google Scholar. Journal of electronic resources in medical libraries, 7(3), 196–217.

Mano, R. S. (2014). Social media, social causes, giving behavior and money contributions. Computers in Human Behavior, 31, 287-293.

Massolution (2012). The Crowdfunding Industry Report: Market Trends, Composition and Crowdfunding Platforms. Crowdsourcing LLC.

Meer, J. (2014). Effects of the price of charitable giving: Evidence from an online crowdfunding platform. Journal of Economic Behavior and Organization, 103, 113-124.

Meer, J. (2017). Does fundraising create new giving? Journal of Public Economics, 145, 82-93.

Meyskens, M., and Bird, L. (2015). Crowdfunding and value creation. Entrepreneurship Research Journal, 5(2), 155-166.

Ordanini, A., Miceli, L., Pizzetti, M., and Parasuraman, A. (2011). Crowdfunding: Transforming customers into investors through innovative service platforms. Journal of Service Management, 22(4), 443-470.

Ozdemir, Z. D., Altinkemer, K., De, P., and Ozcelik, Y. (2010). Donor-to-Nonprofit Online Marketplace: An Economic Analysis of the Effects on Fund-Raising. Journal of Management Information Systems, 27(2), 213-242.

Pak, C., and Wash, R. (2017). The rich get richer? Limited learning in charitable giving on donorschoose.org. In Proceedings of the 11th International Conference on Web and Social Media, 172-181.

Panic, K., Hudders, L., and Cauberghe, V. (2016). Fundraising in an Interactive Online Environment. Nonprofit and Voluntary Sector Quarterly, 45(2), 333-350.

Paulin, M., Ferguson, R. J., Schattke, K., and Jost, N. (2014a). Millennials, Social Media, Prosocial Emotions, and Charitable Causes: The Paradox of Gender Differences. Journal of Nonprofit and Public Sector Marketing, 26(4), 335-353.

Paulin, M., Ferguson, R. J., Jost, N., and Fallu, J.-M. (2014b). Motivating millennials to engage in charitable causes through social media. Journal of Service Management, 25(3), 334-348.

Polzin, F., Toxopeus, H., and Stam, E. (2017). The wisdom of the crowd in funding: information heterogeneity and social networks of crowdfunders. Small Business Economics, 1-23.

Reddick, C. G., and Ponomariov, B. (2013). The Effect of Individuals' Organization Affiliation on their Internet Donations. Nonprofit and Voluntary Sector Quarterly, 42(6), 1197-1223.

Ryu, S., and Kim, Y.-G. (2016). A typology of crowdfunding sponsors: Birds of a feather flock together? Electronic Commerce Research and Applications, 16, 43-54.

Ryu, S., Kim, K., and Kim, Y.-G. (2016). Reward versus philanthropy motivation in Crowdfunding behavior. In Pacific Asia Conference on Information Systems.

Salido-Andres, N., Rey-Garcia, M., Alvarez-Gonzalez, L.I. and Vazquez-Casielles, R. (2021). Mapping the Field of Donation-Based Crowdfunding for Charitable Causes: Systematic Review and Conceptual Framework. Voluntas 32, 288-302.

Saxton, G. D., and Wang, L. (2014). The Social Network Effect: The Determinants of Giving Through Social Media. Nonprofit and Voluntary Sector Quarterly, 43(5), 850-868.

Smith, S., Windmeijer, F., and Wright, E. (2015). Peer effects in charitable giving: Evidence from the (Running) field. Economic Journal, 125(585), 1053-1071.

Snyder, J., Mathers, A., and Crooks, V. A. (2016). Fund my treatment! A call for ethics-focused social science research into the use of crowdfunding for medical care. Social Science and Medicine, 169, 27-30.

Solomon, J., Ma, W., and Wash, R. (2015). Don't Wait! How timing affects coordination of Crowdfunding donations. In CSCW 2015 - Proceedings of the 2015 ACM International Conference on Computer-Supported Cooperative Work and Social Computing, 547-556.

Sura, S., Ahn, J., and Lee, O. (2017). Factors influencing intention to donate via social network site (SNS): From Asian's perspective. Telematics and Informatics, 34(1), 164-176.

Tan, X., Lu, Y., and Tan, Y. (2016). An examination of social comparison triggered by higher donation visibility over social media platforms. In 2016 International Conference on Information Systems, ICIS 2016.

Tanaka, K. G., and Voida, A. (2016). Legitimacy work: Invisible work in philanthropic crowdfunding. In Conference on Human Factors in Computing Systems – Proceedings, 4550-4561.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. British Journal of Management, 14(3), 207-222.

Treiblmaier, H., and Pollach, I. (2006). A framework for measuring people's intention to donate online. In PACIS 2006 - 10th Pacific Asia Conference on Information Systems: ICT and Innovation Economy, 808-819.

Tremblay-Boire, J., and Prakash, A. (2017). Will You Trust Me? How Individual American Donors Respond to Informational Signals Regarding Local and Global Humanitarian Charities. Voluntas, 28(2), 646-672.

van Eck N.J., and Waltman L. (2014). Visualizing Bibliometric Networks. In: Ding Y., Rousseau R., Wolfram D. (eds) Measuring Scholarly Impact. Springer, Cham.

van Eck, N. J., and Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523-538.

Wang, B., Lim, E. T. K., and Van Toorn, C. (2016). Gimme money! Designing digital entrepreneurial crowdfunding platforms for persuasion and its social implications. In Pacific Asia Conference on Information Systems, PACIS 2016 - Proceedings. 377.

Wash, R. (2013). The Value of Completing Crowdfunding Projects. ICWSM (13).

Yang, Y., Wang, H. J., and Wang, G. (2016). Understanding crowdfunding processes: A dynamic evaluation and simulation approach. Journal of Electronic Commerce Research, 17(1), 47-64.

Zhong, Z.-J., and Lin, S. (2017). The antecedents and consequences of charitable donation heterogeneity on social media. International Journal of Nonprofit and Voluntary Sector Marketing, 1-11.