

Non-rational herding in reward-based crowdfunding: a field experiment

Conducta gregaria irracional en crowdfunding de recompensa: experimento de campo

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Received on: 31/12/2022 **Revised on:** 24/01/2023 **Approved on:** 03/03/2023 **Published on:** 01/04/2023

Abstract: reward-based crowdfunding is becoming a very attractive funding alternative for early-stage entrepreneurial initiatives. Among the factors that may facilitate the success of such campaigns is herd behavior, i.e., the tendency to imitate the funding decisions of previous sponsors. The herd effect has been shown to be robust in previous research works as a rational act that supports campaigns more likely to achieve the funding goal, i.e., to succeed. This paper goes beyond that empirical result from previous literature and analyzes whether herd behavior occurs in reward crowdfunding even without the rational factor, as a simple imitation of previous behavior, regardless of the rational motivation for project success. For this purpose, a field experiment is designed and executed in a real crowdfunding campaign for a cultural project on the Verkami platform, the most powerful platform for cultural projects in Spain. This field experiment is designed to analyze the causality between the decisions of previous sponsors on the color of a reward and the choices of subsequent sponsors. The results clearly show nonrational herd behavior in the choices of subsequent sponsors in reward crowdfunding, who mostly choose the same color as the initial contributions. Practical implications for campaign design and its possible consequences are discussed in the article.

Keywords: consumer behavior, crowdfunding, experiments, field experiment, herd behavior, peer effects, sharing economy, SME.

Resumen: El crowdfunding de recompensa es una interesante alternativa de financiación para iniciativas emprendedoras en su etapa inicial. Entre los factores que facilitan el éxito en dichas campañas destaca el comportamiento gregario, es decir, la tendencia a imitar las decisiones de financiación de los anteriores mecenas. El efecto gregario, o de rebaño, se ha demostrado robusto en investigaciones anteriores como un acto racional que apoya campañas con mayor probabilidad de conseguir el objetivo de financiación impuesto, su éxito. En este artículo se va más allá de ese resultado empírico de la literatura previa y se analiza si el comportamiento gregario se produce en el crowdfunding de recompensa incluso sin factor racional, como simple imitación de un comportamiento anterior, independientemente de la motivación racional del éxito del proyecto. Para ello, se diseña y ejecuta un experimento en una campaña real de financiación de un proyecto cultural en la plataforma Verkami, la más potente para proyectos culturales en España. Este experimento de campo permite analizar la causalidad entre las decisiones de los mecenas anteriores sobre el color de una recompensa y las elecciones de los mecenas siguientes. Los resultados muestran claramente un comportamiento gregario no racional en las elecciones de los siguientes mecenas en el crowdfunding de recompensa, que escogen mayoritariamente el mismo color que las aportaciones iniciales. El artículo confirma la importancia del componente no racional en la conducta gregaria en crowdfunding.

Palabras clave: comportamiento del consumidor, comportamiento gregario, crowdfunding, economía colaborativa, efectos de grupo, experimentos, experimento de campo, PYME.

Suggested citation: Comeig-Ramírez, M. I., Ramírez López, F. and Portilla-Salas, F. (2023). Non-rational herding in reward-based crowdfunding: a field experiment. *Retos Revista de Ciencias de la Administración y Economía*, 13(25), 9-19. <https://doi.org/10.17163/ret.n25.2023.01>

Introduction

In recent times, the progress in the use of online technologies has affected all corporate areas. One of these areas is funding, which can actually benefit from crowdfunding or micro-sponsoring. The crowdfunding differs from traditional funding methods in that a crowd of individuals, the sponsors, provide funds directly to the entrepreneurs, normally online; thus, the crowdfunding platforms acquire the role of a new type of intermediary that brings together online demanders of funds and an enormous crowd of small funds providers (Cosh *et al.*, 2009; Leboeuf and Schwienbacher, 2018).

Nevertheless, this crowd of small funds providers may exhibit particular biases in their behavior, that should be known before presenting a funding campaign. The herd behavior, i.e., the trend to imitate the funding decisions of previous sponsors, stands out among these biases (Huang, Chen, 2006; Drehmann *et al.*, 2007; Muchnik *et al.*, 2013; Van de Rijt *et al.*, 2014; Sasaki, 2019; Wessel *et al.*, 2019). The herd effect has been shown to be robust in previous research works as a rational act that supports campaigns more likely to achieve the funding goal, i.e., to succeed (Zhang, Liu, 2012; Kuppaswamy and Bayus, 2017; Zaggl and Block, 2019; Chan *et al.*, 2020; Comeig *et al.*, 2020).

However, it is important to know if it also occurs a nonrational herd effect in the crowdfunding, in addition to this rational herd behavior, and how it would help to know with more depth the possibilities of the total herd effect. This would help to improve the design of such funding campaigns. Due to the large extent of the herd behavior in crowdfunding, it is enormously important for early-stage entrepreneurial initiatives to understand the mechanisms that drive the herd effect.

Therefore, to learn how nonrationality may be integrated in the herd behavior is important for designing strategies for herd managing, so that entrepreneurial initiatives may learn and use such knowledge.

The previous empirical research works have not causally and separately analyzed rational and nonrational herd behavior in the reward-based

crowdfunding campaigns. The causality factor is important because, for example, it is possible that initiatives funded by a crowd of sponsors may have gotten their support due to a big attractive or, alternatively, that they became attractive because a crowd of sponsors were backing them. This empirical limitation may be overcome with the use of random economic experiments that enable to analyze causality, i.e., the effect of a variable on the decisions (Antonakis *et al.*, 2010).

This work intends to start covering that lack of empirical analyses, designing and executing a field experiment aimed at knowing the separate effect of nonrational herd behavior of sponsors in a reward-based crowdfunding campaign. In other words, as a behavior of simple imitation of a previous behavior, independently of the rational motivation of the success of the project. For this purpose, it is designed and executed an experiment in a real funding campaign of a cultural project in the Verkami platform, the most powerful platform for cultural projects in Spain.

This field experiment can be used to analyze the causality between the decisions of the previous sponsors about the color of a reward and the choices of subsequent sponsors. Thus, the experiment enables to analyze the influence of the nonrational herd behavior on decisions in a real crowdfunding campaign, with decision-makers under market conditions, and not in lab experimental conditions with subjects from university contexts. The results clearly show nonrational herd behavior in the choices of subsequent sponsors in reward-based crowdfunding, who mainly choose the same color as the initial contributions.

The contribution of the study to the literature about the behavior of sponsors in crowdfunding is double. On one hand, it was possible to separately analyze the nonrational component and the rational component in herd behavior. On the other hand, the use of an experimental field analysis enables to observe the causality in a real reward-based crowdfunding campaign with real diversified sponsors, and not the common group of university subjects. The paper is organized as follows. A general overview of the related literature is now presented. Section 2 describes the experimental design and procedures, i.e., the meth-

odology employed. Section 3 presents the results of the field experiment and section 4 concludes the paper presenting implications for the management of reward-based crowdfunding campaigns.

Background

Types of crowdfunding

Crowdfunding, or micro-sponsoring, refers to the fact of having a crowd of funders. A crowd of different people is called in an open manner through an online platform to observe the published features of a project, and decide if they take part of its funding and under which conditions. Nevertheless, crowdfunding includes types of funding calls with different objectives and motivations. The four main crowdfunding models that traditionally stand out in the literature (Mollick, 2014; Gierczak *et al.*, 2016; Cumming and Hornuf, 2018) are: (1) donation-based crowdfunding, in which funds are obtained as donation with nothing in return, due to the altruist motivation of funders; (2) crowdlending, or loans made by a crowd of moneylenders that expect a payment of interest charges and the return of the capital loaned; (3) equity crowdfunding, in which the multiple funders obtain an ownership of a small part of the funded company, and (4) reward-based crowdfunding, in which projects creators define a reward system and the associated prices, generally linked to the project, to attract sponsors; the presale of the product is a possible type of reward (Greenberg and Mollick, 2017).

These different types of crowdfunding, with different motivations and dynamics, make it very difficult to generalize behaviors among the different types of crowdfunding, as indicated by the empirical comparison by Dushnitsky and Fitza (2018). Thus, this work is focused on one of these types, the reward-based crowdfunding, because it is often used to fund early-stage entrepreneurial initiatives and is exhibiting a fast growth.¹ It is specially highlighted the growth in Europe

during 2020, year of the COVID-19 pandemics (Chekfoung *et al.*, 2021). This growth in the interest of micro-funders, or sponsors, was also observed in Peru and Mexico in the context of the economic contingency derived from COVID-19 (Gálvez-Mayo *et al.*, 2021; Segura-Mojica, 2021), specially towards projects that could help to generate jobs or preserve the ones already existing.

Herd behavior

In contexts with risk or uncertainty, it has been observed that humans tend to imitate the decisions of the group, i.e., tend to the herd behavior (Anderson, Holt, 1997; Vismara, 2016). This behavior is considered rational when the decisions of the group observed are appropriately used by an individual to improve his/her own decisions (Banerjee, 1992; Bikhchandani *et al.*, 1992). Specifically, this behavior has been observed empirically in financial decision-making contexts and particularly in crowdfunding contexts (Huang and Chen, 2006; Drehmann *et al.*, 2007; Muchnik *et al.*, 2013; Van de Rijt *et al.*, 2014; Colombo *et al.*, 2015; Sasaki, 2019; Wessel *et al.*, 2019).

In crowdfunding, herd behavior refers to the fact that the initial contributions stimulate the subsequent contributions. Thus, when this behavior is used to back campaigns more likely to achieve the funding objective, i.e., to succeed, and not back those campaigns that seem to have more difficulty to succeed, it is considered a rational herd behavior; this has been widely observed empirically (Zhang and Liu, 2012; Kuppawamy and Bayus, 2017; Zaggel and Block, 2019; Chan *et al.*, 2020; Comeig *et al.*, 2020). The theoretical explanation of this rational herd behavior is that the observed behavior reveals information that, otherwise, would not be available for the decision-maker; this information reduces the uncertainty. Nevertheless, none of these empirical works in reward-based crowdfunding has studied the causality, separating rational and nonrational (the one that is not related with the success of the campaign) herd behavior.

¹ This fast growth in Europe is clearly observed in the Statista.com platform of statistical analyses, in the graph about Transactions (in millions of US dollars) of reward-based crowdfunding in Europe (excluding UK) in 2013-2020, based on data from the Cambridge Judge Business School, and which can be found in: bit.ly/3EGOALCC

Methodology: materials and field experiment

This empirical work has been motivated by the interest of knowing if herd behavior occurs in reward-based crowdfunding, even without a rational factor, as a simple imitation of a previous behavior, independently of the rational motivation of project success. For this purpose, it is designed and executed a field experiment that enables to deepen in the causal relationship between a choice of the color of the shirt (changing the color does not affect the amount of funding provided) and subsequent contributions. The causality may be studied by means of random economic experiments (Antonakis *et al.*, 2010).

Thus, the aim of this experiment has been to separate rational herd behavior, from herd behavior that is not motivated by rational issues (the color of the shirt). Therefore, a field experiment is carried out in a real campaign of a cultural project in the Verkami platform, with a random choice of the color of the shirt to which it is contributed a funding corresponding to 9 % of the objective at the early stages of the reward-based crowdfunding campaign.

Choosing a field experiment for the empirical analysis enables to analyze the causality in the decisions and, at the same time, to observe the dynamics of the funding reactions after the intervention. The data collection took place in a period of six weeks (from March 14 to April 23, 2021). Every two days, data was collected from the Verkami platform (one of the most important

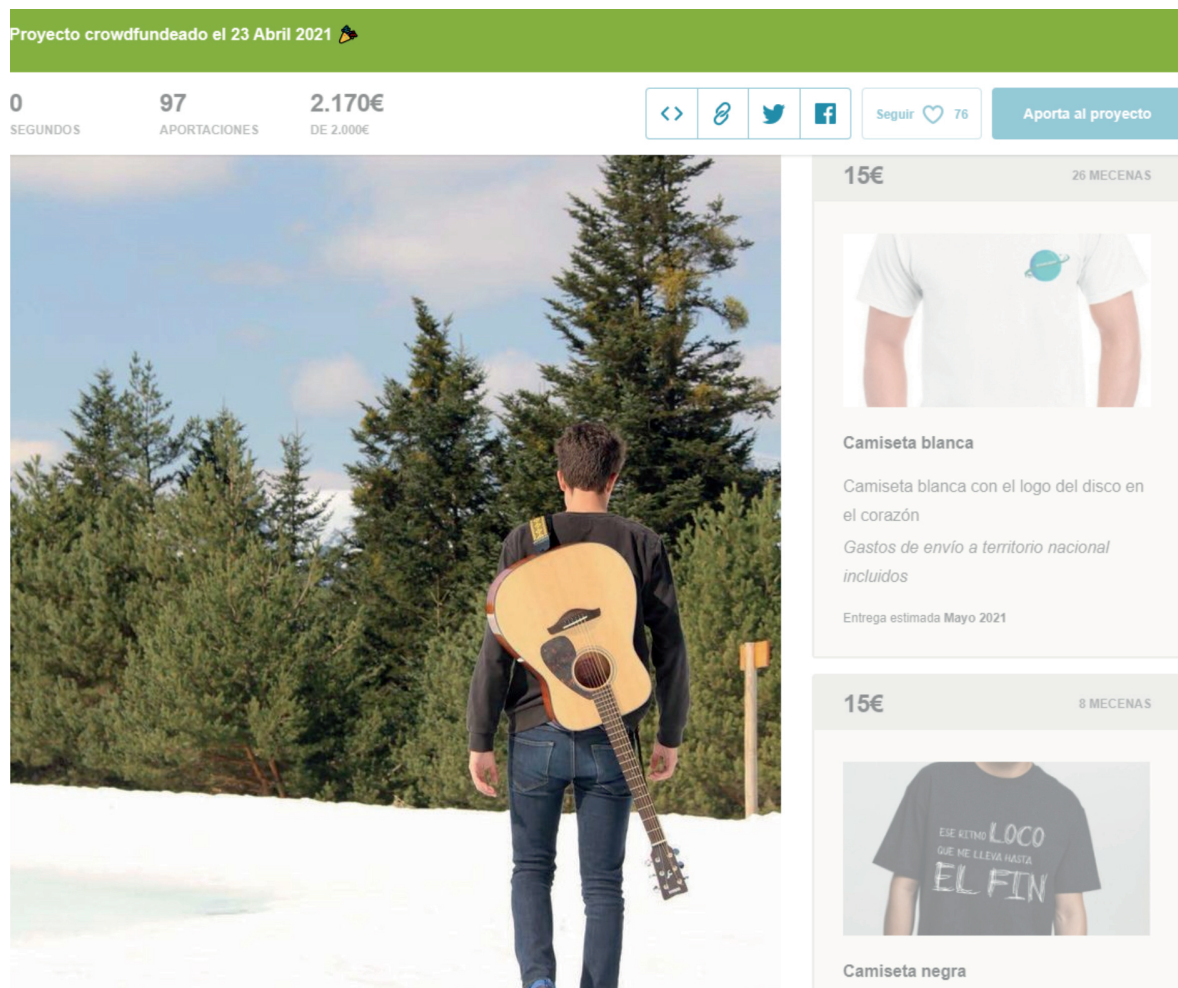
in Spain for funding creative projects, <https://www.verkami.com>); this data included information about the total amount of funds collected, the choices of the sponsors (type of reward chosen) and the number of different sponsors that were funding the project.

This campaign is based on the musical project of the singer/songwriter Álvaro Julián, whose objective was to fund the recording of his music “Mi mundo interior”, to further upload it in professional platforms such as Spotify or YouTube. To obtain such funding, 2000 euros, a reward-based crowdfunding campaign was designed in the Verkami platform, which can be observed in the link of the crowdfunding platform: bit.ly/3Kd3I7g. Figure 1 shows one of the images of such reward-based crowdfunding campaign, in which the sponsors receive musical products from Álvaro Julián, either the music recording or related products/services. Table 1 presents the rewards offered and their prices.

As it is observed in table 1, the rewards of white shirt or black shirt have the same price, 15 euros each, and the last option, of 30 euros, has the same cost choosing either black or white shirt. Moreover, with the purpose of showing balanced images between the two shirt colors, in the campaign the author is shown with a black shirt, but there is a final logo similar to the one of the white shirt, as can be seen in the link to the campaign: bit.ly/3Kd3I7g. Like in all campaigns of the Verkami platform, if the funding objective is not achieved the money contributed by the sponsors is reimbursed, and the campaign is left as without funding (all or nothing model).

Figure 1

Reward-based crowdfunding campaign “Mi mundo interior” Verkami



Note. Verkami.com in: bit.ly/3Kd3I7g

At last, an interesting feature of this platform is that the number of contributions made in each type of reward is directly visible for the rest of the investors; without this feature, it would not be possible to test the effect that the initial sponsors may have. Following the lessons of previous works which indicate the percentages that may give rise to a herd behavior in funding (Comeig *et al.*, 2020), i.e., rational herd behavior, a 9 % of

the total funding objective is purchased in the first three days of the campaign, through one of the two options of 15 euros: this has been randomly chosen by tossing a coin, and resulted in the white shirt. It was not informed to any of the participants that this campaign was going to be the subject of an experiment, and the reward to be funded as part of the experiment was kept as a secret for the collaborator artist.

Table 1*Rewards of the campaign “Mi mundo interior” in Verkami*

Price	Content of the pack
10 €	Altruist donation (without associated reward)
15 €	Black Shirt
15 €	White Shirt
20 €	Album “Mi mundo interior”
30 €	Shirt to choose, album, magnet and ticket for a future concert

Therefore, the intervention consisted in making eight contributions to the white shirt, the one chosen randomly, during the first three hours of the campaign, and four additional contributions (for a total of 12 contributions) along the next two days. Thus, the white shirt, a 15 euros option, received from the experiment designers a funding of 9 % in the first three days, i.e., 12 contributions, corresponding to a total of 180 euros. No other intervention was made by the experiment designers until the end of the crowdfunding campaign.

As it was indicated above, the purpose of this field experiment is to analyze the causality relation between the existence of initial sponsors during the early days of the campaign, and the appearance of subsequent sponsors imitating the decisions of the initial sponsors, even in issues that do not affect the success of the campaign. In other words, the objective is to examine the herd behavior not derived from rational aspects. For this reason, rather than only focusing in determining if the initial decisions have influence on the success of the campaign, as it has been demonstrated in other empirical works, it is intended to prove if they have influence on the selection of the reward.

Hypotheses

Therefore, this field experiment enables to test three hypotheses, the first two observed in previous empirical works, and the third, referred to the causality of the herd effect, even without a rational component.

The first two hypotheses refer to the rationality of the herd behavior, i.e., that early contributions affect the beliefs of the funders about the success of the campaign:

Hypothesis 1 (H1): After achieving the objective, i.e., the success of the campaign, the funding rate decreases.

Hypothesis 2 (H2): The presence of early sponsors that contribute almost a 10 % or more of the funding is related to a higher probability of achieving the funding objective, due to the rational component of herd behavior.

In contrast, the third hypothesis makes reference to the causality of the herd effect, even without a rational component:

Hypothesis 3 (H3): The presence of early sponsors in the reward of a particular color increases the possibilities that subsequent sponsors choose the same color.

Results

In the first place, it was observed the dynamics of the support to the project along the time during which the reward-based crowdfunding campaign is open. Figure 2 presents the total contributions from the start of the campaign on March 14, to the last day, April 23. In line with recent empirical results from the literature, such as the large-scale analysis by Kuppaswamy and Bayus (2017) in the Kickstarter platform, it is observed that the motivation of the sponsors to invest in the project is greater before the funding objective is achieved, 2000 euros in the experiment. Such funding objective is achieved one week after launching the campaign, and since then, during the five subsequent weeks the funding only increases from 2000 to 2170 euros, i.e., only a 7.83 % of the total funding. This result in the field expe-

riment is also in line with the results achieved in the large-scale work by Kuppuswamy and Bayus (2017), who observe that, in the behavior dynamics in the reward-based crowdfunding, the projects that achieve their funding objective, exceed it with a margin smaller than 10 %. This result confirms H1.

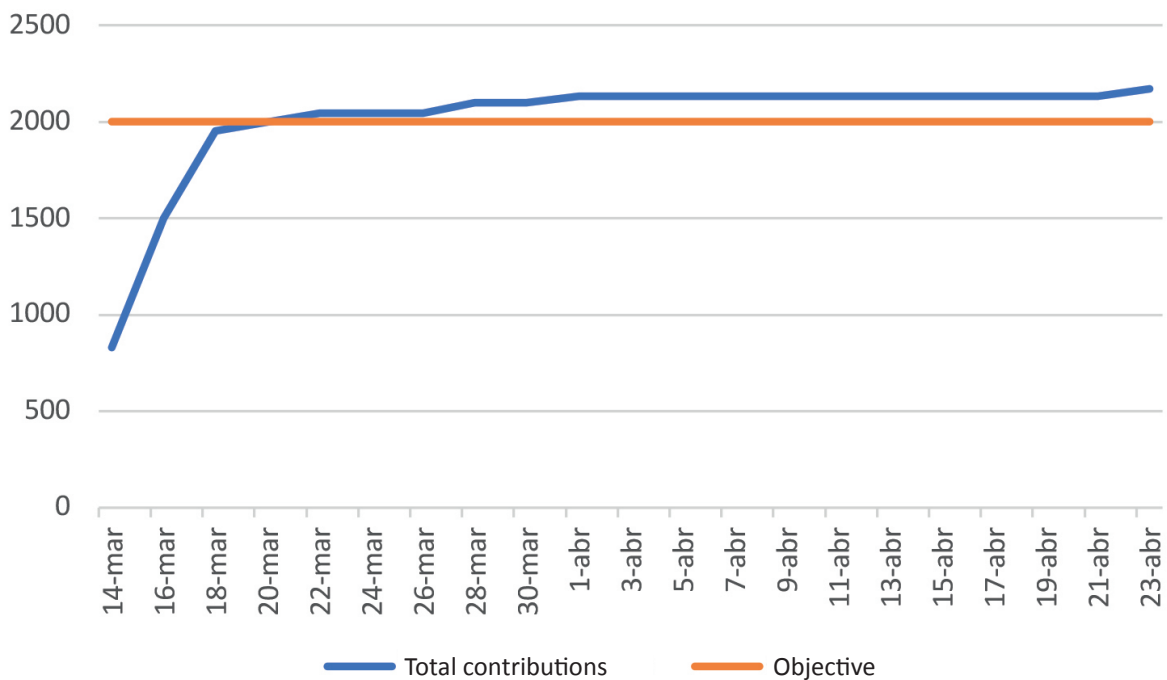
On the other hand, another of the empirical results generally observed in the previous literature (Comeig *et al.*, 2020) is reproduced here: The campaign has a higher probability of achieving its objective, i.e., of succeeding, if a percentage of contributions close to 10 % is obtained at the beginning, since this sends a signal about the

probable success of the campaign and encourages subsequent sponsors to get into the funding campaign (rational herd behavior).

As it is observed in figure 2, which shows the evolution of the contributions in the “Mi mundo interior” campaign, such 10 % funding margin was surpassed the first day and the campaign ended with success, above its initial objective. Specifically, a funding of little more than 800 euros was obtained from the sponsors in the first day of the campaign, i.e., more than 40 % of the total funding necessary for the project. This result supports H2.

Figure 2

Total contributions along the duration of the campaign



Finally, table 2 shows the results of the specific selections made by the sponsors. It should be remarked that the option that was mostly cho-

sen, “Complete pack with shirt to choose (30€)”, makes further available a private form where the sponsor individually chooses the shirt color.

Table 2*Distribution of the contributions according to the reward chosen*

Reward	Number of contributions	Funding contributed to the total	Percentage of funding
Altruist donation (10€)	8	80€	3.7 %
Black shirt (15€)	8	120€	5.5 %
White shirt (15€)	26	390€	18.0 %
Pack with album (20€)	7	140€	6.4 %
Complete pack with shirt to choose (30€)	48	1440€	66.4 %
Total	97	2170€	100 %

Table 3 specifically focuses on the subject of study of this field experiment, the number of white and black shirts chosen by the sponsors after the intervention of the experiment designers. This table 3 includes the shirts chosen privately in the form of the “Complete pack with shirt to choose

(30€)”, and the ones chosen in the only shirt options, which can be seen by subsequent sponsors. It is important to remark that table 3 does not include the 12 white shirts corresponding to the intervention of the experiment designers; it only includes the subsequent decisions of sponsors.

Table 3*Distribution of the shirts chosen by the sponsors. Statistical test for proportions*

	Reward	White shirt	Black shirt	Total
$P = 0.939$ <i>Test for proportions*</i>	Only shirt	14 63.64 %	8 36.36 %	22 100 %
	Complete pack	31 64.58 %	17 35.42 %	48 100 %
	Total	45 64.29 %	25 35.71 %	70 100 %

*Two-sample parametric test for proportions.

As can be seen in table 3 when comparing the selections made by the sponsors regarding the shirt color, white shirt compared to black shirt, it is verified the existence of a nonrational herd behavior, Hypothesis 3 (H3): in total, after the intervention the sponsors chose 45 white shirts compared with only 25 black shirts, which represents a large difference in the selections: a 64 % of the selections of the sponsors corresponded to white shirt.

On the other hand, this majoritarian selection of white shirts occurs in the “only shirt” type of reward as well as in the “complete pack” reward, as indicated by the nonsignificant result of the Test for proportions, with a $p = 0.939$. This test was carried out to analyze if the majoritarian selection of white shirts occurred similarly, with no

significant differences, among the two rewards, i.e., “shirt” and “complete pack”.

The results presented in table 3 confirm the hypothesis H3 of nonrational herd behavior.

Conclusions and discussion

With the objective of causally analyzing if herd behavior occurs in reward-based crowdfunding even without rational factor, as a simple imitation of a previous behavior, independently of the rational motivation for the success of the project, a field experiment has been designed and implemented. This field experiment was especially designed to be able to separate the nonrational component of herd behavior from its rational

factor (i.e., that the campaign achieves its funding objective). The results of the experiment have confirmed the importance of the nonrational component in the herd behavior in reward-based crowdfunding, quantifying in this experiment a difference of 28.6 percent between the option corresponding to the intervention compared to the not chosen one.

This field experiment has enabled to test three hypotheses, the first two observed in previous empirical works, regarding rational herd behavior (early contributions affect the beliefs of the funders about the success probability of the campaign) and the third, a novel one, referred only to the causality of the herd effect without rational component. The results of this experiment confirm the three hypotheses: H1, H2 and H3.

The third hypothesis makes reference to the causality of the herd effect in reward-based crowdfunding without rational component. The fact that H3 has been confirmed by these results highlights the value of rewards design and to which of them are the early contributions directed, in the creation of an emotional (nonrational) herd factor of connection with the campaign. Previous works about the psychological consequences of the participation as sponsors in crowdfunding, have remarked that reward-based crowdfunding is not only useful to obtain funding but also to create a connection with the basis of clients/funders (Bitterl and Schreier, 2018). The results of the field experiment presented confirm such capability of the crowdfunding to connect in a nonrational way with the sponsors, possible further clients.

Thus, the results of this field experiment remark the importance of the design of the campaign rewards regarding also the qualitative features, and the interventions of the context of the demander of the funding in the early stages of the campaign, since they may create a herd behavior in those bonds with clients/funders. Therefore, it is important to take into account the two components, rational and nonrational, of herd behavior.

Future research works might examine the duration of this bond created with the client/funder, generated in qualitative aspects by this herd ef-

fect. For example, this could be done designing a subsequent campaign in which a percentage of the sponsors of the previous campaign could participate. It would also be recommended to replicate similar experiments in other countries and campaigns. On the other hand, an interesting line to deepen in this type of research in crowdfunding in Latin America, and since the behavior of the sponsors might be affected by lack of knowledge, distrust and the risk of the operations (Sánchez Fontana and Tonon Ordóñez, 2020; Comeig *et al.*, 2022; Gómez *et al.*, 2022; Pérez-Martínez and Rodríguez-Fernández, 2022; Gamboa-Salinas *et al.*, 2023), would be to consider individual attitudes towards the risk when making this type of decisions.

Supports and funding of the research

Entity: Generalitat Valenciana

Country: Spain City: Valencian Community

Funded project: Irene Comeig thanks the funding from the Generalitat Valenciana-PROMETEO for research groups of excellence. Project: Economy of Strategic Behavior

Code of the project: PROMETEO/2019/095

References

- Anderson, L. R. and Holt, C. A. (1997). Information cascades in the laboratory. *American Economic Review*, 87, 847-862.
<http://bit.ly/3ZJrgFb>
- Antonakis, J., Bendahan, S., Jacquart, P. and Lalive, R. (2010). On making causal claims: A review and recommendations, *The Leadership Quarterly*, 21(6), 1086-1120.
<https://doi.org/10.1016/j.leaqua.2010.10.010>
- Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 107, 797-817.
<https://doi.org/10.2307/2118364>
- Bikhchandani, S., Hirshleifer, D. and Welch, I. (1992). A theory of fads, fashion, custom, and cultural change as informational cascades. *Journal of Political Economy*, 100, 992-1026.
<https://doi.org/10.1086/261849>
- Bitterl, S. and Schreier, M. (2018). When consumers become project backers: The psychological

- consequences of participation in crowd-funding. *International Journal of Research in Marketing*, 35, 673-685.
<https://doi.org/10.1016/j.ijresmar.2018.07.001>
- Chan, C. S. R., Parhankangas, A., Sahaym, A. and Oo, P. (2020). Bellwether and the herd? Unpacking the u-shaped relationship between prior funding and subsequent contributions in reward-based crowdfunding. *Journal of Business Venturing*, 35(2), 105934.
<https://doi.org/10.1016/j.jbusvent.2019.04.002>
- Chekfoung, T., Bakhtari, E. M., Alhammad, M. and Zolkepli, I. A. (2021). An exploratory study of creating persuasive and effective blurbs in Reward-Based Crowdfunding (RBCF). *UK Academy for Information Systems Conference Proceedings*. 19. AIS Electronic Library.
<http://bit.ly/3ZEXP76>
- Colombo, M.G., Franzoni, C. and Rossi-Lamastra, C. (2015). Internal social capital and the attraction of early contributions in crowdfunding. *Entrepreneurship Theory and Practice*, 39(1),
<https://doi.org/10.1111/etap.121>
- Comeig, I., Holt, C., Jaramillo-Gutiérrez, A. (2022). Upside versus downside risk: Gender, stakes, and skewness. *Journal of Economic Behavior & Organization*, 200, 21-30.
<https://doi.org/10.1016/j.jebo.2022.04.017>
- Comeig, I., Mesa-Vázquez, E., Sendra-Pons, P. and Urbano, A. (2020). Rational Herding in Reward-Based Crowdfunding: An MTurk Experiment. *Sustainability*, 12(23), 9827.
<https://doi.org/10.3390/su12239827>
- Cosh, A., Cumming, D. and Hughes, A. (2009). Outside entrepreneurial capital. *The Economic Journal*, 119(540), 1494-1533.
<https://doi.org/10.1111/j.1468-0297.2009.02270.x>
- Cumming, D. and Hornuf, L. (2018). Preface & Introduction. En *The economics of crowdfunding. startups, portals, and investor behavior* (pp.1-8). Palgrave Macmillan.
- Drehmann, M., Oechssler, J. and Roider, A. (2007). Herding with and without payoff externalities -An internet experiment. *International Journal of Industrial organization*, 25, 391-415.
<https://doi.org/10.1016/j.ijindorg.2006.04.016>
- Dushnitsky, G., Fitza, M. (2018). Are we missing the platforms for the crowd? Comparing investment drivers across multiple crowdfunding platforms. *Journal of Business Venturing Insights*, 10, e00100.
<https://doi.org/10.1016/j.jbvi.2018.e00100>
- Gálvez-Mayo, S. A., Lioo-Jordan, F. M., Villanueva-Cadenas, D. I. and Marín-Rodríguez, W. J. (2021). Crowdsourcing: herramienta de negocio en la creación de startup en una Universidad Pública del Perú. *Revista Venezolana de Gerencia*, 26(93), 370-383.
<https://doi.org/10.52080/rvg93.25>
- Gamboa-Salinas, J. M., Mancheno-Saá, M. J. and Hurtado-Yugcha, J. P. (2023). Competencias gerenciales y transición digital para mipymes Zona 3-Ecuador. *Revista Venezolana de Gerencia*, 28(101), 297-315.
<https://doi.org/10.52080/rvgluz.28.101.19>
- Gierczak, M. M., Bretschneider, U., Haas, P., Blohm, I. and Leimeister, J. M. (2016). Crowdfunding: Outlining the New Era of Fundraising. In D. Brüntje, O. Gajda (eds.), *Crowdfunding in Europe, FGF Studies in Small Business and Entrepreneurship*. Springer.
https://doi.org/10.1007/978-3-319-18017-5_2
- Gómez, G., Navarro-Barranzuela A. and Marchena-Ojeda, L. M. (2022). El Crowdlending como alternativa de financiamiento para las mipymes del Perú. *Retos Revista de Ciencias de la Administración y Economía*, 12(23), 161-177.
<https://doi.org/10.17163/ret.n23.2022.10>
- Greenberg, J., and Mollick, E. (2017). Activist Choice Homophily and the Crowdfunding of Female Founders. *Administrative Science Quarterly*, 62(2), 341-374.
<https://doi.org/10.1177/0001839216678847>
- Huang, J. H. and Chen, Y. F. (2006). Herding in Online Product Choice. *Psychology & Marketing*. 23, 413-428.
- Kuppuswamy, V. and Bayus, B. L. (2017). Does my contribution to your crowdfunding project matter? *Journal of Business Venturing*, 32(1), 72-89,
<https://doi.org/10.1016/j.jbusvent.2016.10.004>
- Leboeuf, G. and Schwienbacher, A. (2018). Crowdfunding as a New Financing Tool. In Cumming, D., Hornuf, L. (eds), *The Economics of Crowdfunding*. Palgrave Macmillan, Cham.
https://doi.org/10.1007/978-3-319-66119-3_2
- Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, 29, 1-16.
<https://doi.org/10.1016/j.jbusvent.2013.06.005>
- Muchnik, L., Aral, S. and Taylor, S. J. (2013). Social Influence Bias: A Randomized Experiment. *Science*, 341, 647-651.
<https://doi.org/10.1126/science.1240466>
- Pérez-Martínez, A. and Rodríguez-Fernández, A. (2022). Economía conductual: su influencia en la predicción de resultados deportivos. *Retos Revista de Ciencias de la Administración y Economía*, 12(23), 125-138.
<https://doi.org/10.17163/ret.n23.2022.08>

- Sánchez Fontana, W. M. and Tonon Ordóñez, L.B. (2020). Señalización y el éxito de las campañas de Crowdfunding latinoamericano. *Retos Revista de Ciencias de la Administración y Economía*, 10(19), 99-116.
<https://doi.org/10.17163/ret.n19.2020>
- Sasaki, S. (2019). Majority size and conformity behavior in charitable giving: Field evidence from a donation-based crowdfunding platform in Japan. *Journal of Economic Psychology*, 70, 36-51.
<https://doi.org/10.1016/j.joep.2018.10.011>
- Segura-Mojica, F. J. (2021). Crowdfunding para el rescate de microempresas. Factores y percepciones de inversionistas potenciales en México. *Retos Revista de Ciencias de la Administración y Economía*, 11(21), 71-91.
<https://doi.org/10.17163/ret.n21.2021.05>
- Statista.com (2023). Reward-based crowdfunding transaction value in Europe (excluding the UK) from 2013 to 2020. bit.ly/3EGOALC
- Van de Rijt, A., Kang, S. M., Restivo, M. and Patil, A. (2014). Field experiments of success-breeds-success dynamics. *PNAS*, 111(19), 6934-6939.
<https://doi.org/10.1073/pnas.1316836111>
- Vismara, S. (2016). Information Cascades among Investors in Equity Crowdfunding. *Entrepreneurship Theory and Practice*, 15, 467-497.
<https://doi.org/10.1111/etap.12261>
- Wessel, M., Adam, M. and Benlian, A. (2019). The impact of sold-out early birds on option selection in reward-based crowdfunding. *Decision Support Systems*, 117, 48-61.
<https://doi.org/10.1016/j.dss.2018.12.002>
- Zaggl, M. A. and Block, J. (2019). Do small funding amounts lead to reverse herding? A field experiment in reward-based crowdfunding. *Journal of Business Venturing Insights*, 12, e00139.
<https://doi.org/10.1016/j.jbvi.2019.e00139>
- Zhang, J. and Liu, P. (2012). Rational Herding in Microloan Markets. *Management Science*, 58, 892-912.
<https://doi.org/10.1287/mnsc.1110.1459>