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Innovation and Sustainability
of Agri-Food System
in the Mediterranean Area

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Financing agri-food business in the Mediterranean area through crowdfunding: Do environmental issues matter?

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Abstract

Global expectations are that crowdfunding will be able to unleash the great potential for contributing to sustainable development by providing financial resources for environmentally and socially oriented ventures. The purpose of this paper is to estimate which factors, including the orientation to sustainability, foster the likelihood of crowdfunding success in agri-food campaigns. Using a sample of crowdfunding campaigns launched in the Kickstarter platform, this paper employs a binary logistic regression model to investigate factors that motivate investment decisions. The results demonstrate that the campaigns that are rated as sustainable show a positive, statistically relevant relation to the success. In addition, improving the quality and complexity of the project, together with the realistic setting of goal increase the odds of success. In the era of innovative finance, this paper contributes to the growing literature and initiatives to promote and develop crowdfunding in the agri-food industry.

Keywords: *Agri-food crowdfunding, Sustainable, Financial innovation, Success factors, Mediterranean.*

1. Introduction

The interest of the scientific community in crowdfunding is increasingly growing all over the globe. This is not surprising when it is known that crowdfunding has become a multi-billion-dollar industry (Figuroa-Armijos and Berns, 2021). In the social Web era, crowdfunding has become an increasingly important channel for entrepreneurs to raise funds from the crowd for their start-up projects (Shi *et al.*, 2021). Furthermore, crowdfunding is expected to experience significant growth over the next 5-10 years (Tiberius and Hauptmeijer, 2021).

Crowdfunding as an innovative form of financ-

ing, with the main feature to eliminate traditional financial intermediaries (Martínez-Climent *et al.*, 2019) was originally conceived as a financial mechanism intended to help the vulnerable unbanked population, generally excluded from the formal financial markets (Figuroa-Armijos and Berns, 2021). Therefore, it is not likely that other forms of funding will be disrupted by this innovative funding technique (Tiberius and Hauptmeijer, 2021). The expectations are that crowdfunding will remain a technique reserved for SMEs and small investors and that large corporations or institutional investors will not invest through this channel (Tiberius and Hauptmeijer, 2021).

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Thus, projects which are less viable under the current system of competitive markets could be financed by small sums of investments or contributions collected from the general public (crowd) (Moon and Hwang, 2018). The perception of an entrepreneur's vulnerability still remains as one of the main characteristics contributing to successfully raising funds from the crowd. Since being rural is perceived as an individual vulnerability, viewing the entrepreneur as rural increases the likelihood that the project will be fully funded (Figueroa-Armijos and Berns, 2021). Crowdfunding is being touted as a valuable alternative to raise money for non-profit causes as well (Xiao and Yue, 2021).

Investments through crowdfunding are predominantly made by people who are not professional investors, where the motivations and actions of crowd investors were expected to be very different from the motivations and actions of professional investors. Since crowdfunding relies on the crowd (the general public), its sustainability and growth depend on the motivations of the crowd to invest in the platforms (Wasiuzzaman *et al.*, 2021). Almost a decade ago, Lehner (2013) noticed that crowd investors typically do not insist on collateral or business plan, rather on the ideas and core values of the firm. Recently, Wasiuzzaman *et al.* (2021) showed that crowd investors are not the typical investors who evaluate an investment based on its risk and return characteristics: "Instead, the crowdfunding supporter uses his/her affective process rather than the cognitive decision process and is involved in equity crowdfunding because of the desire to try something new that is aesthetically appealing and can be trusted, and that which he/she can emotionally connect to".

Thus, many scholars have investigated factors that determine the success of crowdfunding campaigns, particularly the influence of sustainability and the significance of environmental protection on projects success. The expectation that individual crowdfunding supporters are concerned about sustainability and environmental protection has initiated numerous researches to verify this assumption. Scholars also have instigated the specific characteristics of different industries, including the agri-food industry.

2. Literature review

It is clear today that the majority of crowdfunding supporters have little in common with typical financial investors. Thus, many researchers have explored their specific characteristics.

Wasiuzzaman *et al.* (2021) investigated the influence of both intrinsic and extrinsic motivators on the willingness to support equity crowdfunding and found that the extrinsic motivator (financial returns) is not significant in influencing the decision, but that the supporters of crowdfunding are mostly intrinsically (aesthetic value, emotional value, novelty and trust) motivated. Tseng (2021) demonstrates that individuals' altruism and innovativeness significantly affects crowdfunding investors trusting belief in the crowdfunding proposer as well as that the design affordance is an important antecedent of trust and risk perception. Moreover, Tseng (2021) found that trust and risk perception significantly affect individuals' attitude and further intention to donate to the crowdfunding project. Having that in mind, the finding of Chan *et al.* (2021) that communication is a key determining factor of success in crowdfunding environments, is quite expected. Moradi and Badrinarayanan (2021) show the positive influence of brand prominence, language style, and narrative length on funding success. Gruda *et al.* (2021) found that admiration was positively related to – while rivalry was negatively related to corporate fundraising success. Wasiuzzaman *et al.* (2021) found that previous investment experience has a significant negative impact on investment in equity crowdfunding. Martínez-Climent *et al.* (2020) investigated the motivation of crowdlending investors in Spain and found that when investors attach high importance to economic returns (extrinsic motivation), the percentage of wealth allocated to their investment is low. In relation to intrinsic motivation, investors who attach little importance to CSR invest a low percentage of their wealth (Martínez-Climent *et al.*, 2020).

Expectations are that crowdfunding will be able to unleash the great potential for contributing to sustainable development by providing financial resources for financing environmen-

tally and socially oriented ventures (Hörisch and Tenner, 2020). As Hörisch (2015) states, crowdfunding offers a new potential source of financing, which is frequently expected to favour environmentally oriented ventures. In this line, Böckel *et al.* (2021) claim that big expectations are put on crowdfunding to accelerate sustainability. Jovanović (2019) also states that crowdfunding has proven to be a good financial source for social or sustainability projects as several researchers found. Hörisch and Tenner (2020) found evidence that environmental orientation increases funding success. By analyzing crowdfunding oriented to activities with a positive impact on social and ecological issues in Spain, Rubio Martin (2020) concludes that crowdfunding turns out to be a very useful tool to achieve growth based on sustainability. Moon and Hwang (2018) also state that crowdfunding is a useful tool to finance sustainable projects. Bento *et al.* (2019) show that the perceived sustainable mission, positively influences the outcome of the campaign and state that an average survival rate over 70% after one year of operations suggests the creation of healthy sustainability ventures through crowdfunding. Jiang *et al.* (2021) claim that the advantage of crowdfunding may be taken to provide funds for forestry-related ecological services about public projects to further promote and develop ecosystem protection.

However, these findings could not be considered as final. As Hörisch (2015) points out, little is known if and how crowdfunding can be effectively used to favour environmentally oriented ventures. Namely, Hörisch (2015) did not find a positive influence of environmental orientation on funding success. Hörisch (2015) concluded that this influence could not be generalized because the study only showed a positive relationship between the success of crowdfunding campaigns and proposals that generate tangible products (Martínez-Climent *et al.*, 2019). Hörisch and Tenner (2020) argue that the influence of environmental orientation on funding success is found to be particularly strong in the USA. Prędkiewicz and Kalinowska-Beszczynska (2020) found that eco-projects treated as a homogenous group are no different than other types of projects present

on a crowdfunding platform and that motivational narratives do not increase chances of success for crowdfunding of eco-projects. However, they found that variations are observed when they are divided into subcategories. Prędkiewicz and Kalinowska-Beszczynska (2020) confirm that updates (positive), comments (positive) and targeted amount (negative) have the strongest impact on the success rate of crowdfunding for eco-projects. They also found a higher probability of success for projects aimed at saving water resources (Prędkiewicz and Kalinowska-Beszczynska, 2020). Chan *et al.* (2021) found a clear association between projects that offer customized rewards or social interaction rewards and funding success. Their study confirms that sustainable orientation increases the amount and number of contributions, but no visible crowding out effect of money saliency is confirmed in sustainably orientated projects (Chan *et al.*, 2021). Buttice *et al.* (2019) findings show that green campaigns differ from others along several dimensions and are more diffused in countries with a limited environmental sustainability orientation. Testa *et al.* (2020) suggest that the “emphasis on egoistic/self-centred product attributes, rather than on altruistic/society-centred attributes, is generally more crucial to facilitate CF support to sustainability-oriented projects. However, the emphasis on altruistic/society centred attributes emerges to be more beneficial for initiatives specifically supporting local products”. Testa *et al.* (2020) findings also suggest that reward-based CF is not suitable for sustainability oriented projects targeting disadvantaged individuals/groups. Bergmann *et al.* (2021) state that crowdfunding models share a societal ethos with proponents of investment in renewables and state that a positive attitude is widespread regarding crowdfunding’s potential to support renewables.

The influences of sustainability and environmental protection have been particularly explored in the energy sector. Vasileiadou *et al.* (2016) state that crowdfunding projects could change the established financial and energy system, while Dilger *et al.* (2017) claim that crowdfunding could play a fundamental role to overcome the challenges that energy cooperatives face. Lam and Law (2016) also argue

that crowdfunding can play a significant role at the start of a renewable and sustainable energy project's life cycle. They claim that "a variety of crowdfunding approaches may be used to finance the early stages of renewable energy development, particularly when stakeholders are the beneficiaries, or the concerned groups related to environmental protection and sustainability and that crowdfunding is suitable for supporting research and development efforts of innovative green technology start-ups". De Crescenzo *et al.* (2020) highlight the critical role played by social networks in the promotion of renewables and energy projects and suggest the relevance of a combined use of cooperative and crowdfunding models to foster the transition to renewable energy and achieve the ambitious climate change goals.

Among other industries, scholars explored various aspects of crowdfunding in the agri-food industry. "Unlike e-commerce, agri-food crowdfunding is a presale model in which consumers provide funds for farmers to carry out agricultural production and deliver the agri-food products directly to the consumers after the crops mature" (Li *et al.*, 2020). Agricultural crowdfunding originated in the United States and has been developing rapidly in China since 2014 (Li *et al.*, 2020, p. 554). Bunchuk *et al.* (2020) point out that the idea of crowdfunding has been actively promoted to support the development of the social sphere of rural settlements in Russia as well. An increasing number of campaigns in the agri-food industry have also been undertaken by entrepreneurs in the Mediterranean region. Li *et al.* (2020, p. 556) point out that crowdfunding investors in agricultural products may not always be rational but can be somewhere between rational and irrational. Yu and Rehman Khan (2021) noticed that an increasing number of people have been aware of the significance of agricultural sustainability and accentuate that the network of crowdfunding platforms could be useful in connecting the agricultural product suppliers and urban residents. "Agri-food crowdfunding can provide products on demand and achieve the order production of agricultural food; therefore, agri-food crowdfunding has the advantages of alleviating information asym-

metry between production and sales, decreasing circulation links and reducing costs" (Li *et al.*, 2020). Yu and Rehman Khan (2021) point out that the current transformation of agricultural product supply into a green agricultural product supply chain needs financial support and more consumers' recognition. Namely, "for agricultural product supply chain, because of a long cycle and uncertainty of agricultural products, financing from the bank has been very difficult, which makes high bank financing costs for agricultural product suppliers" (Yu and Rehman Khan, 2021). Furthermore, Yu and Rehman Khan (2021) argue that the agricultural food suppliers prefer to cooperate with a network crowdfunding platform for financing because crowdfunding platform provides higher returns, so the urban residents are more willing to invest their money through the network crowdfunding platform.

Li *et al.* (2020) investigated the factors influencing quick cash by the crowd in agri-food crowdfunding campaigns and found that "lowering the investment threshold, improving publicity, and increasing the benefits of a campaign can increase the decision weight assigned to a campaign, thereby motivating the crowd to make quick investment decisions". Li *et al.* (2020) point out that "improving the product's reputation, enhancing campaign promotion, and diversifying the reward scheme can increase the crowd's expected value of the campaign – another motivation for a quicker cash decision".

Li *et al.* (2020, p. 553) argue that agricultural crowdfunding campaigns launched on the Kickstarter platform have similar characteristics, such as the adoption of ecologically sustainable agricultural production models and the consumers' preference for fresh products.

3. Methodology

3.1. Data

This study builds on a dataset of crowdfunding campaigns from the Kickstarter, one of the largest and oldest crowdfunding platforms worldwide. The platform is restricted to "all-or-nothing" funding model, implying that only projects that obtain the full amount of fi-

nancing (successful projects) can be cashed in and the backer will receive rewards. In other cases, if a campaign fails, i.e. creator does not collect the entire requested amount of funding, the backers will not get a reward, neither will the creator receive any part of the funding. The data were obtained from the “Kaggle.com” open-source repository. We used the dataset covering the period from 2009 up to the first half of 2019 with entries of about 430,938 Kickstarter campaigns. Before performing the statistical tests, we applied filters. We used only failed and successful campaigns, and left out active projects (the ongoing ones, since we do not know the results of the campaign), cancelled projects (by the creator, before the end of duration and before the goal) and suspended projects (by the Kickstarter team for reasons such as violating the rules, misrepresentation or other) (Liang *et al.*, 2020).

The platform is opened for funders from all over the world, and there is no upper limit in setting the goal in terms of the amount of money the creator can attract during the campaign. The scale of funding goals varies across the campaigns posted on Kickstarter. In line with Mollick (2014), Calic and Mosakowski (2016), Cumming *et al.* (2017) and Liang *et al.* (2020), we have reduced the initial sample and left out campaigns below \$500 and above the 99-percentile of the distribution, which was in the case of our sample with a value of over \$600,000. Projects with a small amount represented non-serious efforts to raise funds (Mollick, 2014), target family and friends (Cumming *et al.*, 2017) and cannot compete with funding through more established or traditional sources such as angel investors and financial institutions (Calic and Mosakowski, 2016). Creators can post in several currencies. Whenever the currency was other than USD, the funding goal was converted into USD using the exchange rate in effect when the project was live.

Although Kickstarter enables posting campaigns in several project categories (art, comics, dance, design, fashion, film and video, food, games, music, photography, publishing, technology and theatre), our focus was only on the category Food. This way we reduced the

population size to 15,639 campaigns, failed or successful in the Food category. We used this sample to determine the differences in patterns between the whole sample and the sample of Southern European Mediterranean countries. According to the latest data on Kickstarter statistics (from <https://www.kickstarter.com/help/stats?ref=global-footer>), the most popular categories include Film&Video, Music and Games, whereas the category Food is 6.05% of total projects. The success rate is rather low for the category Food compared to the other categories. Recent data show that the success rate for Food is 25.49%, opposite to 61.68% for the category Dance, or 60.69% Comics (the average success rate is 38.40%). On the other hand, the amounts pledged worldwide in the Food category, put it in the eighth place, with the amounts collected significantly higher than the just mentioned categories. On February 5, 2021, the funds pledged in the Food category amounted to \$178.27 million.

A final filter limited our main sample to the countries of the Southern European Mediterranean coast, namely Portugal, Spain, France, Italy, Malta, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece and Turkey. Thus we completed our final set of 337 campaigns in the category Food from the Southern European Mediterranean countries. Besides, we deleted thirty campaigns from the final dataset, because their authors deleted the project page from the Kickstarter platform, so we could not collect relevant information on them.

Our main task was to identify project oriented to the concept of sustainability. Environmental attributes of a product or a campaign are more difficult to evaluate and consumers or backer find it hard, sometimes costly, or even impossible to verify a product's or campaign environmental features (Jahn *et al.*, 2005). Attitude and understanding of sustainability among backers can be different, thus this analysis may be biased. In the theory, there are two approaches in identifying environmental campaigns, analysis searching predetermined words in the text (Calic and Mosakowski, 2016; Cumming *et al.*, 2017; Vismara, 2019) and machine learning algorithms (Butticè *et al.*, 2019).

In defying the words for text analysis, we were guided by definitions of Jahn *et al.* (2005) and Wagner (2007) and in line with Cumming *et al.* (2017) and Vismara (2019). Our final word set contained: Sustainability, Sustainable, Ecological, Eco-innovation, Eco-efficient, Eco-effective, Eco-design, Ecology, Environmental, Green energy, Renewable, Circular economy, Recycle, Biomass, Cleantech, Greentech, GHG, Low-carbon, Fuel consumption, Organic. This way we have identified 714 campaigns as environmental in the total sample in the category Food and 37 campaigns in the sample related to the Southern European Mediterranean countries. We have expanded the initial set of data related to the Southern European Mediterranean countries with attributes related to the quality and complexity of the projects.

3.2. Variables

For the subset of Southern European Mediterranean countries, in line with similar studies on the crowdfunding performance, as a dependent variable, we used crowdfunding success, referring to whether the funding goal was met or not. We coded our dummy depended as one if the funding amount is higher than the target amount, i.e. if the funding goal is met, or zero otherwise. We used text analysis to distinguish projects that are considered to be environmental which enabled us to construct a dependent variable that is dummy, indicating if the crowdfunding campaign can be rated as sustainable (*environmental*=1) or not (*environmental*=0). Although there is still no conclusive, evidence about the connection of environmental orientation and success of crowdfunding projects, we expect that sustainable orientation increases the chance of success.

In addition to the environmental orientation, we derived multiple variables of the project characteristic from the Kickstarter, in line with previous studies on different aspects of sustainability crowdfunding that have documented their influence on the success of the campaign: project goal, duration of the funding period, number of backers, campaigns tags, project quality, measured by the number of pictures and video posted and complexity, measured by the num-

ber of rewards level and the length of the project short description.

The platform is restricted to “*all-or-nothing*” funding model, with no upper limit in setting the campaign target, where creators are freely valuing their ideas. Although many factors influence the project goal, it is reasonable to expect that higher target values will be less likely to reach. Due to the high skewness of the distribution data related to the target value, we used the logarithm of the target capital (*log_target*). Duration of the project (*campaign_duration*) is likely to be negatively connected with the success of the campaign, that is, the shorter the campaign, the higher chances for success (Mollick, 2014; Hörisch, 2015; Cumming *et al.*, 2017; Butticiè *et al.*, 2019; Liang *et al.*, 2020). We also included the *staff-pick* variable to distinguish projects that are designated by Kickstarter team members as a “favourite” while active. These projects go through an endorsement process in which platform staff assesses a campaign’s quality (Wessel *et al.*, 2016). Here, we expect a positive relationship between these two variables. As proxies for quality, we used dummy variable taking value one if the creator posted a *video*, zero otherwise and *number_of_pictures* posted (Mollick, 2014; Hörisch, 2015; Calic and Mosakowski, 2016; Cumming *et al.*, 2017;). Finally, to capture the complexity, we included the *number-of-rewards* offered (Hörisch, 2015; Calic and Mosakowski, 2016; Cumming *et al.*, 2017; Liang *et al.*, 2020) and the *blurb_lenght* as the number of letters counted in the project short description. We expect project quality and complexity to have a positive relationship to the success of a campaign. We noticed that *language* of the campaign can be one of the success factors, thus we tested the odds in our second model. International platforms, such as Kickstarter have English as the default language, however, creators can post a campaign in different language including several languages of choice. Posting in English or in several languages expands the global reach of a campaign by increasing the number of potential connections (Rykkja *et al.*, 2020). We assume (as in Lagazio, Querci, 2018) that projects presented in English can be understood by more individuals and increase the odds for the project to be financed.

Table 1 - Comparison between two samples.

	<i>Southern European Mediterranean</i>	<i>Other</i>
Observation	337	15,272
<i>success</i>	0.19 (0.39)***	0.38 (0.484)***
<i>log_target</i>	46,288.31 (84,405.12)***	28,313.79 (57,733.09)***
<i>no_backers</i>	24.36 (79.46558)***	83.18 (315.9059)***
<i>amount_pledged</i>	2,092.35 (5,525.95)***	8,082.76 (38,843.95)***
<i>campaign_duration</i>	37.88 (13.55)***	34.13 (11.83)
<i>environmental</i>	0.11 (0.31)***	0.04 (0.21)***
<i>staff-pick</i>	0.05 (0.22)***	0.13 (0.34)***
<i>blurb_lenght</i>	18.92 5.19	19.22 4.98

Standard errors are in parentheses.

*** Significance level: 0.01.

The vast majority of the campaigns posted on Kickstarter designates to the US. The second most common location of crowdfunding in Canada, followed by the UK and Germany. Amongst the Countries of the Southern European Mediterranean coast most active in the category Food are Italy, Spain and France. Furthermore, the US and the UK have a long tradition of alternative and innovative ways of financing from the capital-based market. With this in mind, it is reasonable to expect that the average campaign from the Southern European Mediterranean countries will differ along several dimensions in comparison to the other campaigns. Table 1 shows statistical differences in the dimension of two samples using t-test statistics. We have a total of 15,2727 vs 337 campaigns in the sub-sample of Southern European Mediterranean countries. Campaigns located in sub-sample have less chance of success (0.19 against 0.38, p-value < 0.01), attract a significantly smaller number of backers (24.36 vs 83.18, p-value < 0.01) and collect almost four times smaller amounts (2,092.35 compared to 8,082.76, -value < 0.01). Despite this, their target amount is almost twice as large (46,288.31

opposite to 28,313.79, p-value < 0.01), and duration is longer (37.88 to 34.13, p-value < 0.01). Nevertheless, they are more environmentally oriented, where almost 11% is classified as environmental, opposite to only 5% in the total sample. We do not find any significant difference in the length of the project blurb.

We can consider several reasons for these major differences. As earlier mentioned, the vast majority of campaigns are designated to the US. There, the financial system and traditions of collecting funds are different. While start-ups and innovative entrepreneurs in the US are oriented to the capital market and innovative ways of financing, such as crowdfunding, in the Mediterranean countries, they are more oriented to bank financing and various national development programs. On the other hand, the effects of crowding out for financing sustainability projects are known in those countries where this issue is at the top of priorities (Butticè *et al.*, 2019). Finally, financial innovations, such as crowdfunding are still not a common way of financing in Europe to the extent that they are in North American countries.

Table 2 - Descriptive statistic.

Characteristic	Sample
No. of projects	337
Successful projects (%)	63 (18.7%)
Environmental projects (%)	11%
Average no of investors mean (median)	24.36 (2.00)
Average funding target (in 000) mean (median)	46.29 (15.27)
The average amount of pledged (in 000) mean (median)	2.1 (0.03)
Duration of the campaign (median)	37.88 (30.00)
Staff Pick (%)	18 (5.30%)
Video available (%)	184 (54.6%)
Number of pictures (median)	4.76 (3.00)
Number of rewards (median)	6.12 (6.00)
<i>Language</i>	
EN	203 (60.2%)
ES	40 (11.9%)
FR	46 (13.9%)
IT	11 (3.3%)
Multi	37 (11%)
<i>Country</i>	
BA	2 (0.6%)
ES	103 (30.6%)
FR	86 (25.5%)
GR	11 (3.3%)
HR	2 (0.6%)
IT	126 (37.4%)
PT	3 (0.9%)
SI	3 (0.9%)
TR	(0.3%)

In Table 2, we have reported the descriptive statistic of the related sample used in this study. The number of successful projects is at the level of 18.7% and below the statistic related to the Food category on the Kickstarter platform. However, during the considered time window, 11% of the campaigns were classified as sustainable. In absolute and relative terms English language used in the campaigns is dominant. Most campaigns originate from Italy (37.4%), Spain (30.6%) and France (25.5%).

4. Results

To test our claim that the campaigns with the elements of sustainability have the greater odds

of success, we run two logit estimates, since our dependent variable is a dichotomous variable which takes a value of either 1 or 0 (as in Hörisch, 2015; Calic and Mosakowski, 2016; Cumming *et al.*, 2017; Buttice *et al.*, 2019; Vismara, 2019; Liang *et al.*, 2020):

$$P1(Y_i = 1) = \frac{1}{1 + e^{-(\alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 \beta_8)}}$$

as model 1
and

$$P2(Y_i = 1) = \frac{1}{1 + e^{-(\alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 \beta_8 + X_9 \beta_9 X_{9i})}}$$

as model 2.

- $X_1 =$ *environmental*
- $X_2 =$ *log_target*
- $X_3 =$ *campaign_duration*
- $X_4 =$ *staff-pick*
- $X_5 =$ *video*
- $X_6 =$ *number_of_pictures*
- $X_7 =$ *number-of-rewards*
- $X_8 =$ *blurb_lenght*
- $X_9 =$ *language*

This way, we estimated which factors, including the orientation to sustainability, foster the likelihood of achieving the self-set targets. Table 3 reports the results of our estimates. Model 1 only consists of the control variables and the dependent variable. In the second model, we added the variable language to test the odds of a campaign success posted on a different language. Both models are statistically significant

Table 3 - Binary logistic results.

<i>Model summary</i>	<i>Model 1</i>	<i>Model 2</i>
Dependent variable	Funding Success	Funding Success
Pseudo R ² (Nagelkerke R Square)	0.579	0.610
Significance of the model	0.000	0.000
<i>Parametric rating</i>		
<i>environmental</i>	1,152*** (0,584)	1,321*** (0,625)
<i>log_target</i>	-2,411*** (0,377)	-2,661*** (0,423)
<i>campaign_duration</i>	-0,012 (0,015)	-0,019 (0,016)
<i>staff-pick</i>	2,772*** (0,705)	2,9*** (0,756)
<i>video</i>	1,783*** (0,513)	2,082*** (0,556)
<i>number_of_pictures</i>	0,125*** (0,039)	0,133*** (0,043)
<i>number-of-rewards</i>	0,119*** (0,049)	0,126*** (0,051)
<i>blurb_lenght</i>	0,040 (0,041)	0,039 (0,041)
<i>Language=EN</i>		0,554 (0,614)
<i>Language=ES</i>		-0,966 (1,103)
<i>Language=FR</i>		1,704*** (0,8119)
<i>Language=IT</i>		-1,636 (1,729)
<i>Language=Multi</i>		0 ^a /
<i>Constant</i>	4,423*** 1,484	4,802*** 1,75

($p < 0.01$) and explain the relevant share of the variation of the dependent variable (Pseudo R^2 Nagelkerke R Square 0.579 and 0.610). Campaigns that are rated as sustainable in both models show positive, statistically relevant relation to the success (1.152 in model 1 and 1.321 in model 2). Being sustainable increases the odds to be successfully funded for more than two times. As expected, we found a negative, statistically significant regression coefficient for the funding target (-2,441 and -2,661). Projects with higher targets are less likely to be successful, and each increase in the amount of funding target decreases the odds of success respectably. Our assumption for the variable duration was set correctly and the longer the campaign, the odds for success are lower. However, we did not identify a significant association between duration and success. Campaigns designated by Kickstarter team members as a favourite have high positive coefficients. We interpreted this as a fact that backers have trust in the Kickstarter team and increase the odds of the campaign to be funded to a large extent. Quality and efforts made by the creator are positively related to the success of the campaign, whereas posting a video has larger positive coefficients. We used two variables to capture the influence of the complexity of campaign success and found positive, statistically relevant relation between the number of rewards and the success, where chances to be financed increase. The number of letters counted in the project blurb has also a positive coefficient, but not a statistically significant one. Finally, results related to the language used in the campaign indicate that the creators from French caught the attention of domestic backers. We interpret results compared to a baseline category where creators posted the campaign on multi-languages. However, we did not find a significant result for any other language than French. Although campaigns posted in English have a positive coefficient, it is not statistically significant. On the other hand, campaigns posted in Spanish or Italian have a negative coefficient (without statistical significance), indicating that posting in these languages decreases the odds of a campaign to be financed.

5. Discussion

Rome strongly imprinted its role as the centre of the Mediterranean world through the political ideology established by the Emperor Augustus and for that time, many generations developed under these auspices, leaving consequences on culture, language, politics, and economics today (Vujović, 2017). Nevertheless, “although the Mediterranean area is no longer a centre of the world as it was during Roman times, it is still an area of great sociological, political, and economic importance” (Salvatore, 2018, p. 3). However, in some agricultural products, such as wine (Petković *et al.*, 2020) or olive oil (García and Ruiz, 2021), the Mediterranean area still represents the centre of the world and will probably remain so for long, not only because of its specific climatic conditions, but also for the reputation of countries which “appear to be a sustainable resource, since it takes a long time to build and is difficult to imitate, and it is valuable as regards generating a superior performance owing to its ability to increase exports and attract more tourists, foreign investors, knowledge and talent, among others” (García and Ruiz, 2021). Regarding the level of development of the financing system, the battle is lost a long time ago. This concerns all Mediterranean countries. The countries of the south shore of the Mediterranean area are characterized not only by an underdeveloped economy but as well as “a tumultuous social and political situation arising to a large extent from poverty and sluggish growth, and this poses serious challenges also for the nations across the sea and beyond” (Salvatore, 2018, p. 3).

For a century it is known that there is a relationship between financial development and economic growth. Many studies confirmed a positive effect of financial development on economic growth, however often depending on the presence of certain economic conditions. (Cojocar *et al.*, 2016, p. 224). Lack of traditional sources of finance constitutes a problem for early-stage and financially constrained ventures (Gregory *et al.*, 2005), limits their growth and threatens their survival (Block *et al.*, 2018) even in counties with excellent access to bank finance. This problem is even more pronounced in the

Agri-food business, because of the unique characteristics of the sector, such as seasonality, variable weather, and market conditions. As recently Xie *et al.* (2019) argued, biological assets have a significant positive effect on the cost of debt and answering how to meet the funding needs of agricultural enterprises has become a key issue affecting its development. For many entrepreneurs, crowdfunding could be a viable mean to fill in the financing gap to reach private equity investors. However, it is much more, since it can be utilized to validate a business idea, provide access to a large number of investors, and serve as a marketing tool.

It has been found that high-growth countries have five common characteristics. “They: 1. Fully “exploited” the world economy; 2. Let markets allocate resources; 3. Mustered high rates of savings and investment; 4. Maintained macroeconomic stability; 5. Had committed, credible and capable governments” (Salvatore, 2018, p. 6). In the case of crowdfunding, we can conclude that the crowdfunding market completely independently allocates resources, facilitates the local population savings investment in the situation of low-interest rate and high risks due to the Coronavirus outbreak, and could improve the macroeconomic stability through self-employment of the innovative and productive citizens. Therefore, crowdfunding platforms facilitate financial intermediation and could promote economic growth not only by selecting those entrepreneurs with the most innovative and productive projects, but also those who take care of environmental issues.

In most of the campaigns in the agri-food sector, the supporters of crowdfunding are from the local area. But, in the case of non-profit campaigns, the supporters could come from other countries as well, particularly from expatriates living in more developed countries.

The need for looking for alternative financing mechanisms is obvious. The advent of the Internet has substantially transformed the way of life by supplying us with a wide range of possibilities that are simply unimaginable through traditional offline channels (Sahelices-Pinto *et al.*, 2020, p. 9). That ascertainment is true with regards to funding channels. Crowdfunding was

triggered by the development and emergence of internet platforms and increased number of social networks users as potential small investors. These technological changes enabled an alternative form of financing for entrepreneurs and additional investment opportunities, not only for professional investors but also for individuals. What makes it more interesting, people can invest in product or services they lack and need, they can support a local entrepreneur or just have altruistic motives. The cradle of financial innovation is the US, as in the case of crowdfunding. However, a global technology-enabled it to spread around the world. Thus, we have the emergence of an increasing number of campaigns in countries outside of North America.

New forms of alternative finance for startups and SMEs are shifting the nature of entrepreneurship, imposing a need for changes, and evolving the design of the entrepreneurial public policies (Cumming *et al.*, 2018). New public policies and financial regulations are usually drafted as a response to the financial crisis, but recently they are implemented as a result of financial innovations. Reduction of risk for small investors (Turan, 2015) and creating an environment conducive to promoting entrepreneurship (Cicchello, 2019) are basic motives for financial regulation. The European Union considers innovation as a driver of productivity and competitiveness and significant efforts are being made to improve access to finance for them, as it is crucial to their survival. As Fay *et al.* (2021) recently pointed out, even if attracting private financing is high on the agenda of policymakers concerned with closing the infrastructure gap in developing countries, private finance represents a minor share of overall infrastructure financing and the poorest countries struggle to attract any private investors. To foster the creation of enabling ecosystem and to reduce fragmentation in the digital single market, the European Commission implements a range of measures starting from early 2103. Recently, EC adopted the Digital Finance Strategy to support the digital transformation of finance in the coming years, while regulating its risks. The Strategy, together with the Digital Finance Package, is supposed to boost Europe’s competitiveness and innovation

in the financial sector, giving Fintech start-ups more choice in access to finance to scale up and grow. Parallel to this, the European Parliament approved new rules on 5 October 2020 that will enable crowdfunding platforms to easily provide services across the EU single market. All crowdfunding platforms operating across the EU will have to comply with a set of unique rules, ensuring better protection for the investors and a wider range of financial instruments to entrepreneurs. New rules will apply from late 2021 for European crowdfunding service providers that raise to €5 million per project per year.

Public policies and institutional setup are foundations for the economic and political context of an entrepreneurship ecosystem (Spigel, 2017) and may influence on development and employment of crowdfunding as financing instruments (Cicchello, 2019). Inadequate legislation (and common rules and diverging licensing across the EU) can lead to weak interest of companies to use crowdfunding opportunities, result in high compliance and operational costs, and produce higher uncertainty for investors.

In this paper, we provide for the empirical analysis of the Kickstarter campaigns from the Southern European Mediterranean countries, including the relationship of sustainability orientation and success. We found a positive and significant influence of the sustainable orientation on the funding success. Our results, on the sample of campaigns related to the Food category from Southern European Mediterranean countries, coincide with the general findings from Belleflamme *et al.* (2014), Allison *et al.* (2015) Cumming *et al.* (2017), Calic and Mosakowski (2016), Butticiè *et al.* (2019) and Chen *et al.* (2019) suggesting that a project perceived as sustainable attract more funds and contrary to the finding from Hörisch (2015), who found no positive effect of environmental orientation in terms of its likelihood of success or Moss *et al.* (2015) claiming that crowd-investors are often focused on profit-seeking opportunities. We can argue that backers are often driven by normative or altruistic motives (Lindenberg and Steg, 2007; Buettner, 2015; Steigenberger, 2017), usually focus on the entrepreneurs' core values and ideas (such as sus-

tainability, social agenda and similar) instead of focusing on business plans (Lehner, 2013), and are initiated by intrinsic motives (Allison *et al.*, 2015). This may explain why socially, or sustainability-oriented ideas stand at an advantage in acquiring resources from crowdfunding compared to the traditional capital markets (Calic and Mosakowski, 2016).

In line with the majority of research on crowdfunding, we found a statistically significant negatively connection between the goal of the campaign and success, referring to the fact that projects with higher funding targets are less likely to reach their funding targets.

We did not find consistent and statistically significant results for the relationship between success and the length of the funding period (duration). Our result suggests a negative effect of duration to the funding success, as in Mollick (2014), Thies *et al.* (2019), Cumming *et al.* (2017), Butticiè *et al.* (2019) and Chen *et al.* (2019), who reported some form of a negative relationship.

Next, we consider if the project is chosen as Kickstarter Staff Pick is a significant factor for funding success. As in Mollick (2014), Wessel *et al.* (2016) and Thies *et al.* (2019) we found a strong positive relationship, whereas staff-pick brings increased exposure via a higher likelihood of being featured on the front page (Chen *et al.*, 2019).

In the Food category, the video and the number of images seem to be very important predictors for the success of the campaign. The existence of a short video explaining a product or service is one of the most important factors (Beier and Wagner, 2015). Following the work of Belleflamme *et al.* (2014), we interpret these results having in mind that Kickstarter is a reward-based platform, where backers are future users of the products or services. In the restaurant industry, a picture is worth more than a thousand words (de Larrea *et al.*, 2019). Interestingly, our results also indicate that opposite to the conclusions of Wang *et al.* (2017) and de Larrea *et al.* (2019) videos are the best communication tool.

With regards to complexity, the results are mixed. Contrary to Koch and Siering (2015),

Calic and Mosakowski, 2016) our results indicate that the length of the description (blurb) is not a significant predictor of success. For instance, de Larrea *et al.* (2019), found that the length of the description is not a significant predictor of crowdfunding success. Neither did we. Based on the argumentation that the number of the rewards is a significant predictor of campaign success, our results follow the conclusion that the average number of rewards increases the odds of success (Lin *et al.*, 2016) and directly affects the number of backers (Zhang and Chen, 2019).

Finally, despite our expectations of greater odds of raising funds for campaigns posted in English and multi-languages, they are not more successful, although it requires additional elaboration. For instance, comparing only Italian campaigns, Lagazio and Querci (2018) report a negative relation of Italian language used in project description and success. In our analysis, we included all languages in which the campaigns were posted, French, Italian, Spanish and English as an international language. We also differentiate those who posted campaigns in several languages. Our results are mixed, and we interpret results compared to a baseline category of campaigns posted in several languages. A positive statistically significant coefficient exists only for the French language, while we did not find a significant result for other languages. We found negative coefficients for Italian (as in Lagazio and Querci, 2018) and Spanish, and a positive coefficient for English, but without statistical significance.

6. Conclusion

Without good ideas and initiatives, having access to a crowdfunding platform does not provide considerable support. But on the other hand, it has been proven that the existence of crowdfunding platforms itself bring significant changes. Brem *et al.* (2017) argue that crowdfunding platforms change the nature of user innovation, transforming it from problem-solving to entrepreneurship. Crowdfunding platforms open up and increase the occurrence of

user entrepreneurs who sell rather than just use a solution for several reasons: funding is easily available, uncertainties are reduced, and not only self-centred and need-driven users are attracted, but also more market-oriented ones (Brem *et al.*, 2017). Tan and Reddy (2021) find evidence that backers influence the outcomes of projects on crowdfunding platforms.

The causality between the level of development and crowdfunding in the agri-food business of the Mediterranean region is evident as well. In the agri-food sector, 96% of the total number of campaigns comes from Mediterranean Europe. Between them, 93% comes from Italy (39%), Spain (29%), and France (25%), which are the most developed countries in the Mediterranean area. Not less than 1 per cent is present only in Greece (3%), and Croatia (1%). Some Mediterranean European countries (Republic of Cyprus, Malta, Slovenia, and Portugal) have a higher GNI per capita than Greece but have a significantly smaller number of campaigns in the agri-food sector than Greece have.

The countries of the Levantine coast only occupy 1.77% of the total number of campaigns in the Mediterranean region. Crowdfunding in the agri-food sector is relatively underdeveloped in the Levant region. This could be explained by unfavourable climatic conditions for agricultural production. We can then see that Israel whose GNI per capita is significantly higher than the other Levantine countries, does not have significantly higher participation in campaigns.

The countries of the Northern African coast occupy 2.27% of the total number of campaigns in the Mediterranean region. Morocco participates with 67%, Egypt with 22%, and Tunisia with 10%, while no campaign in the agri-food sector has taken place in Libya and Algeria. In the case of the Northern African coast, no relationship was found between GNI per capita and crowdfunding campaigns.

In this paper, we provided for the empirical analysis on the question of whether sustainability-oriented campaigns on Kickstarter are more successful than ones without this orientation. Given the increased popularity of crowdfunding platforms, we examined 337 Kickstarter Food category campaigns from Southern Eu-

ropean Mediterranean countries to understand what factors correlate with the success of crowdfunding campaign, taking into account the concept of sustainability.

In conclusion, rewards-based crowdfunding can be considered as a way of financing innovative, sustainable projects in the Food category. When considering starting a crowdfunding campaign, creators should pay attention to the quality of the project, and put the focus on video, followed by several pictures describing the idea. Additionally, complexity, in terms of multiple levels of rewording, should be at the centre of their attention. Realistic target values together are desirable and the concept of sustainability if possible.

Although this study contributes to the literature on crowdfunding, several limitations exist. As in every binary logistic, we interpret the results as associations rather than causal relationships, so the odds for every specific variable depend on the simultaneous inclusion of other variables in the model. Next, the dataset is completely restricted to the campaigns from Southern European Mediterranean countries, which differs greatly from the general sample. Thus, we are taking into account specific local financial system, entrepreneurial spirit, different economic, cultural and political surrounding that can affect the development of the crowdfunding concepts and success. Most of the countries analysed in the paper are in the scope of the mentioned EU public policies. However, other economies, especially the ones belonging to the Levantine coast (apart from Israel), the North African coast, as well as individual countries of the Southern European Mediterranean (Albania, Bosnia and Herzegovina, Montenegro, and Turkey) do not have public policies to promote a crowdfunding and other innovative financing methods. Their crowdfunding market is extremely underdeveloped compared to other world economies. Although most Mediterranean countries have high agricultural production potential, the number of registered agri-food campaigns from these countries on crowdfunding platforms is negligible. Government support mechanisms and local, national, and international policy agendas are widely used to boost the entrepreneurship ecosystem. Local policy-

makers have the power to promote crowdfunding as a more flexible and better-suited form of financing for innovative projects. Even though crowdfunding does not have geographic barriers, the local solutions must be custom-made and adjusted to the local economic and social entrepreneurial environment.

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