CULTURAL DIFFERENCES AND CROWDFUNDING: A FOUR-COUNTRY STUDY

DIFERENÇAS CULTURAIS E CF: UM ESTUDO DE QUATRO PAÍSES

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ABSTRACT: Entrepreneurial activity is important for the economic growth of nations. To promote the launch of entrepreneurial ventures it is critical the availability of funding mechanisms. Crowdfunding (CF) offers a platform that allows entrepreneurs to interact with funders and generate value through the creation of new ventures. This new tool is based on internet and information technologies that facilitate the participation of the "crowd" to fund entrepreneurial projects. Despite its importance, the availability of CF platforms and their level of market penetration varies in different countries. The aim of this study is to examine whether national culture as measured by the Hofstede's framework is associated with the level of knowledge and the predisposition to use CF. To attain this aim we used data from an online survey administered in four countries (Portugal, Brazil, Germany and North Macedonia) among well-qualified students to examine the degree of association with the cultural dimensions of Hofstede (power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, short term/long term orientation, indulgence). The investigation draws on data for 251 respondents from the four countries. The results reveal that there are cultural differences in how individuals understand and are able to use CF. Specifically, the knowledge individuals have about CF is positively related with the countries' level of masculinity and individualism, and negatively associated with power distance and

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uncertainty avoidance national characteristics. At the same time, the predisposition to use CF is positively linked to the countries' indulgence dimension.

KEYWORDS: Crowdfunding; National Culture; Hofstede; Portugal; Brazil; Germany; North Macedonia.

RESUMO: A atividade empreendedora é importante para o crescimento económico das nações. Para promover o lançamento de iniciativas empreendedoras é essencial a existência de mecanismos de financiamento. O crowdfunding (CF) consiste numa plataforma que permite aos empreendedores interagirem com financiadores e gerar valor através da criação de novos projetos. Esta nova ferramenta surge a partir da internet e tecnologias de informação, que facilitam a participação da multidão ("the crowd") no financiamento de projetos empreendedores. Apesar da sua importância, a disponibilidade e a penetração de plataformas de CF no mercado, diverge entre países. O objetivo deste estudo é avaliar em que medida a cultura nacional, medida através do modelo de Hofstede, se encontra associada ao nível de conhecimento e predisposição para o uso do CF. Para alcançar este objetivo, a investigação utiliza dados de um questionário on-line administrado em quatro países distintos (Portugal, Brasil, Alemanha e Macedónia do Norte) a estudantes altamente qualificados, que visa avaliar em que medida o CF se encontra associado às dimensões culturais de Hofstede (distância ao poder, masculinidade/feminilidade, aversão à incerteza, orientação a longo *versus* curto-prazo e indulgência).

A investigação incide sobre dados obtidos através de 251 respostas fornecidas a partir dos quatro países. Os resultados indicam que existem diferenças culturais no modo como os indivíduos conhecem e usam o CF. Especificamente, o conhecimento que os indivíduos têm sobre CF está positivamente relacionado com o nível de masculinidade e de individualismo dos países, e negativamente associado às características nacionais relativas à distância ao poder e à aversão à incerteza. Por outro lado, a predisposição para o uso do CF está positivamente associada ao nível de indulgência dos países.

PALAVRAS-CHAVE: Crowdfunding; Cultura Nacional; Hofstede; Portugal; Brasil; Alemanha; Macedónia do Norte.

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digital marketing. Besides presentations on these topics at various conferences in Portugal and foreign countries, his articles have been published in several domestic and international journals.

1. Introduction

Entrepreneurship contributes to the creation of new jobs, the reduction of unemployment rates and the generation of incomes for entrepreneurs and employees (Audretsch, 2012; Achsien & Purnamasari, 2016). At the macroeconomic level, entrepreneurship plays a critical role in innovation, technological progress and economic growth (Dheer, 2017; Celikkol, Kitapci & Doven, 2019).

The development of a new venture needs a business plan, and to finance the project the entrepreneur may resort to family, friends and financial institutions. As traditional financial institutions (such as banks) demands lending track history coupled with limited collateral and strict financial requirements, one of the options is to use alternative financial mechanisms such as CF.

CF "refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries" (Mollick, 2014, p. 2.). Compared with other funding options (business angels or venture capital funds), CF offers some advantages but also involves some risks as the relationships established between founders and funders are mainly based on the interaction facilitated by the online environment of the platforms or other social media (Belleflamme, Lambert, & Schwienbacher, 2014; Moritz & Block, 2016). Nevertheless, the virtue of the CF as a financial source has been highlighted by the literature as a "modern phenomenon arising in the world of project financing" and one of the latest and most powerful methods to finance projects, or even business" (Hommerová, 2020, p. 144).

The observation across countries of the dynamism in the CF market shows some variations that may be explained by the national culture of a country. However, only a few studies have examined the level of association between the CF market dynamism and the national culture. For instance, only one study has used the Hofestede's framework and secondary data to investigate the relationship between CF and national culture (Pietro & Butticé, 2020).

Therefore, the scarce empirical research on the relationship between national culture and CF presents a research gap that is important to fulfil from two perspectives. From a practitioner point of view, platform operators are interested in understanding how national level characteristics of culture influence individual level knowledge and predisposition to use CF in order to adapt their platforms and promotional strategies to attract new investors and

entrepreneurs. From an empirical point of view, it is useful to add more knowledge to the empirical base of the relationship between CF and national culture. To our best knowledge, the present study is the first investigation that uses primary data from a survey at individual level by country.

This research aims to determine to what extent the national cultural characteristics of a country are related with the level of knowledge and predisposition to adopt CF as a funding mechanism to help financing a new entrepreneurial project. Specifically, the objective is to investigate the relationship between the knowledge and the predisposition to use CF, and the six dimensions of the Hofstede's framework (power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, short term/long term orientation, indulgence) in four countries (Portugal, Brazil, Germany, North Macedonia). To attain this objective, we construct a dataset that includes: (i) data from an online survey undertaken in the four aforementioned countries; (ii) the corresponding values of the six cultural dimensions of Hofstede.

The article is organized as follows. First, we provide a brief knowledge of CF, including some definitions of CF, the characteristics of the different models of CF (donation, reward, lending and equity) and the benefits and barriers that could attract or deter the use of this new funding tool. Next, we present the methodology used in the investigation. The results are presented and discussed in the fourth section. Finally, the paper ends with the main conclusions, limitations and future research directions.

2. Crowdfunding

CF is an open call to provide financial resources that takes place on an Internet-based platform and links fundraisers to funders with the aim of funding a particular campaign by typically many funders (Belleflamme, Omrani & Peitz, 2015). The most important characteristics of this new financial mechanism are: i) the process that could be initiated by a group or an individual for launching a new project of cultural, social or for profit nature; ii) the funds that are obtained from the crowd via online without financial intermediaries (Lehner, 2013; Ordanini, Miceli, Pizzetti & Parasuraman, 2011; Schwienbacher & Larralde, 2012; Belleflamme, Lambert & Schwienbacher, 2014; Ahlers, Cumming, Gunther & Schweizer, 2015; Agrawal, Catalini & Goldfarb, 2015; Gajda & Mason, 2013; Baumgardner, Neufeld, Huang, Sondhi, Mursalin & Tallha, 2017).

There are four main alternative models of CF: the donation-based, the reward-based, the lending-based and the equity-based (Parhankangas, Mason & Landström, 2019). The

essence of the donation model is that backers provide funding based on philanthropic or civic motivations without expecting any financial or material return. One of the more interesting aspects of this model is that facilitates private contributions of many to support humanitarian causes (e.g. disaster relief) or supply public goods to an urban community (e.g. renovation of a public square in a neighborhood) (Parhankangas, Mason & Landström, 2019). Another model designed as non-investment is the reward model. In this model, backers provide small monetary contributions to individuals, projects, or organizations in exchange of something physical (e.g. early editions of new products or product reward) or emotional (e.g. thank-you note) (Belleflamme, Lambert & Schwienbacher, 2014; Giudici, Massimiliano & Rossi-Lamastra, 2017). The last two models are considered investment models as the investors supply funds to individuals, groups or small companies, expecting to be reimbursed after a given period, generally with interest rates, without the involvement of traditional financial intermediaries (lending model) (Guo, Zhou, Luo, Liu & Xiong, 2016). In the other investment model (equity), investors purchase the equity of a company or enter into some sort of profit-sharing agreement with a company or organization (Deffains-Crapsky & Sudolska, 2014; Ahlers, Cumming, Gunther & Schweizer, 2015).

To sum up, the first two models (non-investment) are better suited for finance social projects (donation model) or testing new products (reward model), while the other two models (investment) are used for lending money to individuals or companies (lending model) or acquire a participation in the organization's capital (equity model).

The benefits of using CF to finance a project are: the easy access to money compared with the traditional sources of fundraising (banks, venture capital, business angels). In the investment models of CF, the entrepreneur could appeal online to a large number of potential investors (backers) to provide a small amount of money to support the project (Yu et al, 2017; Cruz, 2017). In non-investment models of CF, the potential backers are likely to support the project if they identify with the social cause (donation) or the new product (reward) and the crowdfundees are willing to provide the justice of the social cause or the proof of the concept or the new product (Gerber, Hui & Kuo, 2012; De Buysere *et al.*, 2012; Burtch, Ghose & Wattal, 2013; Allison, McKenny & Short, 2013; Chemin & DeLaat; 2013; Kuppuswamy & Bayus, 2017; Cruz, 2017; Cecere, Le Guel & Rochelandet, 2017). Comparing to other funding sources, CF offers some additional flexibility as it avoids the control imposed by a shareholder that equity involves (such as business angels or venture capital) or the fixed payment charged by debt (André, Bureau, Gautier & Rubel, 2017). Also, the risk is lower as

there is no place to a financial commitment related to repayments and interest rate instalments.

Further, CF is simple because the managers of the platform made an analysis based on the credibility of the project and the promoter. It is faster because the period between the call and the money available is selected by the entrepreneur (duration of the campaign). It is less bureaucratic because there are few administrative documents to be fulfilled and no collateral warranties required compared to banks (Mollick, 2014). Also, the display of the project on a CF platform can increase the market value of the project perceived by the investors that serves as a first step for the provision of seed capital to start-ups, signaling new ventures as potential good long-term investments and enhancing venture capital investments in further rounds of financing (D'Ambrosio & Gianfrate, 2016).

Furthermore, the academic literature has highlighted some other benefits of CF, such as being a tool for market research to obtain the validation of new products' features, define pricing strategies, estimate the demand of new products, pre-sale new products, gain customer feedback and spread electronic word-of-mouth (Hommerová, 2020; De Buysere *et al.*, 2012; Baumgardner *et al.*, 2017; André *et al.*, 2017). For instance, in the reward-based CF, the investor is simultaneously a potential consumer that is available for a consumption experience and a backer for the project as the amount of the investor's contribution is associated with the reward given by the entrepreneur that could reveal the evaluation about the product or service (Agrawal, Catalini & Goldfarb, 2014; Giudici, Massimiliano & Rossi-Lamastra, 2017).

As desirable as the aforementioned benefits, entrepreneurs must deal with several obstacles in managing this tool for funding entrepreneurial projects (social or commercial). The first obstacle is that the launch of a CF campaign is a very time-consuming venture (Cruz, 2017). This almost full-time job requires performing several managerial tasks, such as post the project in the online platform, plan and make a video pitch, setting a goal (flexible or fixed funding), decide the campaign length and add links to social media (Facebook, Twitter, etc.).

Another major concern is related with the need to communicate confidential information about the specificities of the project to the general public. In order to attract potential investors, the entrepreneur needs to be transparent about the project displaying public information that could increase the risk of imitation that might reduce or eliminate the competitive advantage (Hommeravá, 2020). However, the feedback obtained from potential consumers could more than compensate for the commercial risk of losing confidentiality.

Another problem is information asymmetry that could hinder the online interaction between entrepreneurs and investors. The European Commission (2015, p. 22) refers to information

asymmetry on CF as investors having less information than entrepreneurs or borrowers about the quality of the project or the risks of expected returns of their investments. This problem could lead to the risk of moral hazard (such as fraud) and deter investors from giving their money to a given project (André *et al.*, 2017; Hommerová, 2020).

3. CF and national culture

National culture could be seen as the value system that is characteristic of a group or society and could shape individuals' motivations to behave in a certain way (Shinnar *et al.*, 2012). In this sense, the concept of national culture means that people in different societies are embedded with different values, beliefs, behaviors, habits and attitudes towards the outside world. These characteristics influence different management practices, including those related to fundraising.

A major approach in the international business literature has been to relate some topics to special cultural characteristics (Leung, Bhagat, Buchan, Erez & Gibson, 2005). The work of Hofstede (1991) has been controversial but has provided a broad framework that has inspired many researchers (Kirkman, Lowe & Gibson, 2006; Kirkman, Lowe & Gibson, 2017).

Table 1 defines the six dimensions of Hofstede's framework and refers the past research on establishing the link between CF and national culture (Cho & Kim, 2017; Pietro & Butticé, 2020; Shneor, Munim, Zhu & Alon, 2021). As the empirical literature is scant or completely absent on the direction of some of Hofstede's cultural dimensions we also include some studies in the related domain of entrepreneurship (Hofstede, 2001; Mueller & Thomas, 2001; Hayton *et al.*, 2002; Celikkol, Kitapci, & Doven, 2019).

Table 1 – Hofstede's cultural dimensions and past research

Hofstede's cultural dimension	Definition	Past Research on CF and Entrepreneurship
Power Distance	The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally (Hofstede, 1991).	Hofstede (2001) Hayton *et al.* (2002) Celikkol, Kitapci, & Doven (2019) Cho & Kim (2017)
Individualism	Individualism describes the relationship between	Mueller & Thomas

vs. Collectivism	the individual and the collectivity which prevails in a given society. It is reflected in the way people live together – for example, in nuclear families, or tribes (Hofstede, 1991).	(2001) Celikkol, Kitapci, & Doven (2019) Cho & Kim (2017) Pietro & Butticé (2020) Shneor, Munim, Zhu & Alon (2021)
Masculinity vs. Femininity	Masculinity, with its inverse femininity, looks at how distinctly roles in society are defined. It is focused on material success as opposed to concern with the quality of life (Hofstede, 1991).	Hayton *et al.* (2002) Celikkol, Kitapci, & Doven (2019)
Uncertainty Avoidance	Uncertainty avoidance is defined as the extent to which members of a society feel threatened by uncertainty or unknown situations (Hofstede, 1991).	Cho & Kim (2017) Pietro & Butticé (2020)
Long Term Orientation	Long term orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and the present, in particular, respect for tradition, preservation of face and fulfilling social obligations Hofstede (2001).	Celikkol, Kitapci, & Doven (2019) Pietro and Butticé (2020)
Indulgence	Indulgence stands for a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun. On the opposite pole, restraint stands for a society that controls gratification of needs and regulates it by means of strict social norms (Hofstede, Hofstede & Minkov, 2010).	Celikkol, Kitapci, & Doven (2019)

Source: Authors' elaboration.

Table 1 pointed out some studies undertaken about the association between national culture and CF that we briefly review to support the hypotheses for the six dimensions of Hofstede's framework.

Based on past research (Hofstede, 2001; Hayton *et al.*, 2002) it can be argued that in countries which have a high level of power distance, less powerful individuals may regard entrepreneurship as an area restricted only to a higher class, so they are not alert of the opportunities or may not have the necessary skills and access to resources (Celikkol, Kitapci, & Doven, 2019). Since entrepreneurs are individuals achievement-oriented and independent power distance will be negatively associated with the desire for autonomy (Hofstede, 2001). Cho and Kim (2017) study adds that high power distance features were less often displayed in high power distance than in lower power distance countries. Therefore, we put forward the following hypotheses:

H1a) The knowledge of CF at individual level is negatively associated with power distance at the four-country level;

H1b) The predisposition for using CF at individual level is negatively associated with power distance at the four-country level.

Individualistic societies seem to encourage entrepreneurship as they create a more favorable environment. Individualistic cultures support typical characteristics of entrepreneurs, such as high level of self- confidence, initiative, and courage (Celikkol, Kitapci, & Doven, 2019). Empirical work by Mueller & Thomas (2001) found support for the proposition that an entrepreneurial orientation, defined as internal locus of control combined with innovativeness, is more likely in individualistic than in collectivistic countries. The study of Cho and Kim (2017) found that group well-being features (collectivism) were more frequently presented in a collectivistic (Korea) than an individualistic (United States) country. Also, Pietro and Butticé (2020) reveal that individualistic societies register higher crowdfunding activity across the different typologies of CF than collectivistic societies. Further, Shneor, Munim, Zhu and Alon (2021) showed that cultural differences in behavior control are more strongly observed in an individualistic than in a collectivistic country. These arguments lead to the following hypotheses:

H2a) The knowledge of CF at individual level is positively associated with individualism at the four-country level

H2b) The predisposition for using CF at individual level is positively associated with individualism at the four-country level

Regarding the association between culture and CF there is no empirical evidence about the direction of the association. However, if we consider entrepreneurship as a variable the results are contradictory. Some studies support the idea that the successful entrepreneur scores high on masculinity (e.g. Hayton *et al.*, 2002), while others provide empirical support for the negative impact of masculinity on entrepreneurship attitudes, abilities and success (Celikkol, Kitapci, & Doven, 2019). Although empirical evidence did not allow us to infer from this cultural dimension to CF, we might predict that societies with a masculine orientation will be more focused on values such as assertiveness, domination, independence, high performance, making money, and the pursuit of visible achievements. Inversely, societies with a feminine orientation will be more focused on values such as people rather than money, interdependence, relationships and quality of life. This reasoning supports the following hypotheses:

H3a) The knowledge of CF at individual level is positively associated with masculinity at the four-country level

H3b) The predisposition for using CF at individual level is positively associated with masculinity at the four-country level

High uncertainty avoidance countries make people create many shared beliefs, while people in low uncertainty avoidance countries have fewer shared beliefs and more logical information (Cho & Kim, 2017). In a study by Pietro and Butticé (2020) about different models of CF the results indicate that less riskier models of CF (lending) is more widespread among countries characterized by higher than low uncertainty-avoidance. Mueller and Thomas (2001) also found support for the proposition that an entrepreneurial orientation, defined as internal locus of control combined with innovativeness, is more likely in low than in high uncertainty avoidance cultures. These arguments lead to our following hypotheses:

H4a) The knowledge of CF at individual level is negatively associated with uncertainty avoidance at the four-country level

H4b) The predisposition for using CF at individual level is negatively associated with uncertainty avoidance at the four-country level

Concerning long-term versus short-term orientation, the study developed by Celikkol, Kitapci and Doven (2019) provides empirical support for the positive impact of long-term orientation on entrepreneurship abilities, aspirations and success (Celikkol, Kitapci, & Doven, 2019). Recently, Pietro and Butticé (2020) work found that lending and equity crowdfunding are more widespread in long-term than short-term oriented societies as it is a challenging, risky

process oriented towards future goals and the entrepreneurs tend to have aspirations, vision, optimism, foresight, and imagination. Therefore, we formulate our hypotheses as follows:

H5a) The knowledge of CF at individual level is positively associated with long-term orientation at the four-country level

H5b) The predisposition for using CF at individual level is positively associated with long-term orientation at the four-country level

Finally, there is a positive association between indulgence and entrepreneurial attitudes, abilities and success. According to the study of Celikkol, Kitapci and Doven (2019), entrepreneurs have a high internal locus of control, personal value systems, desire to be economically independent, capacity for enjoyment and a pleasant personality which are the prevalent values in an indulgent society. This argument leads to our final set of hypotheses:

H6a) The knowledge of CF at individual level is positively associated with indulgence at four country level

H6b) The predisposition for using CF at individual level is positively associated with indulgence at the four-country level

4. Methodology

4.1 CF individual level variables

The objective of the investigation is to understand if the level of knowledge and predisposition to use CF are related or not to the characteristics of national culture of four different countries, as measured by the Hofstede's framework.

The empirical research was focused on students from higher education institutions of four different countries - Portugal, Brazil, Germany and North Macedonia. The students were selected by the critical role they could play as active investors in supporting CF projects of friends in the social media and potential entrepreneurs that could use CF for funding entrepreneurial ventures in short/medium term.

To explore this topic, we undertake an exploratory approach based on a quantitative study.

The data were obtained from a questionnaire in Portuguese and English that was displayed on a digital platform (Lime Survey). After that, an email with a link to the platform was sent to students in the four countries by each of the researchers' teams located in the country. The questionnaire was available online between January and July 2021. Before the respondents answered the questions, they agreed with the nature of the information requested.

The questionnaire was composed of three groups. The first one intended to collect information on the respondents' general characteristics, such as gender, age, and academic and professional background. The second group was designed to assess the knowledge that respondents have about CF. A five-point Likert scale was used to measure the level of agreement/disagreement the students had with different definitions of CF, where one corresponds to strongly disagree and five to strongly agree. The same type of scale was used in the third group of questions, which included questions to ascertain the respondents' predisposition to use CF. The language of the questionnaire in Germany and North Macedonia was English and Portuguese in Portugal and Brazil. The questions included in groups 2 and 3 of the questionnaire are listed in Table 2.

Table 2- Codification and description of the variables in the questionnaire

Group	Code question	Description	Variable
2	B1	Crowdfunding consists of financing entities, or their activities and projects, through electronic platforms accessible through the internet	General definition of CF
	B2	Crowdfunding raises investment tranches from several individual investors	Definition of the funders in CF
	B3	Crowdfunding is a form of financing for for-profit entities	CF as a tool for for-profit entities
	B4	Crowdfunding is a form of financing for non-profit entities	CF as a tool for non-profit entities
	B5	In crowdfunding, the financed entity pays the financing through participation (share) in the capital, distribution of dividends or profit sharing	Definition of equity-based CF;
	B6	In crowdfunding, the financed entity pays the financing through the payment of the interest rate that is agreed at the time of fundraising	Definition of lending-based CF;
	B7	In crowdfunding, the financed entity does not remunerate the funds attained, since the financing is assigned as a donation	Definition of donation-based CF;
	B8	In crowdfunding the financed entity offers some products / services, discounts or other bonuses to investors or some of the investors that support the project	Definition of reward-based CF
3	C01	In the future I intend to use a crowdfunding platform as a means of financing a possible entrepreneurial project	General predisposition to use CF
	C02	I only intend to use crowdfunding if my own resources (such as assets and savings) are not sufficient to launch/ develop my project	Use of CF for lack of own resources
	C03	I only intend to use crowdfunding if I cannot obtain funds through my network (such as family and friends)	Use of CF for lack of resources in the network
	C04	I only intend to use crowdfunding if I cannot obtain funds through traditional funding sources (e.g. bank loan)	Use of CF for lack of traditional funding
	C05	I only intend to use crowdfunding if I can't raise funds through other types of investors such as venture capital	Use of CF for lack of other investors
	C06	I only intend to resort to crowdfunding if I do not have to return the capital obtained	Predisposition to use only non-investment models of CF
	C07	I don't mind paying an interest rate for the capital I get through the crowdfunding campaign	Predisposition to use lending CF
	C08	I am available to offer products/services to the people who support my project through crowdfunding	Predisposition to use reward-based CF
	C09	I am available to offer discounts on products/services to people who support my project through crowdfunding 1	Predisposition to use reward-based CF

	C10	I am available to share a part of the profits of my project with the people who support my project through crowdfunding	Predisposition to use equity-based CF

Source: Authors own elaboration.

The data collection made it possible to obtain 251 complete answers, which were considered valid for the analysis, 60 in Portugal, 54 in Brazil, 112 in Germany and 25 in North Macedonia. The distribution of respondents by country in the final sample is presented in table 3. The profile of the sample included 7.5% students that are attending an undergraduate course, 43.3% a bachelor course and 36.3% a master. Although less frequent, the sample also includes students attending post-graduation (9.2%) or doctoral courses (3.8%). The respondents were female (57.5%) and male (42.5%). Most of the respondents are aged below 25 years (61.3%) or between 25 and 35 years old (26.6%).

Table 3 Sample profile

Variable	Categories	N	%
Country	Portugal	60	23.9%
	North Macedonia	25	10.0%
	Germany	112	44.6%
	Brazil	54	21.5%
Course	Undergraduate degree	18	7.5%
	Bachelor	104	43.3%
	Master	87	36.3%
	Postgraduate course	22	9.2%
	Doctorate	9	3.8%
Gender	Female	142	57.5%
	Male	105	42.5%
Age	Less than 25 years	152	61.3%
	Between 25 and 35 years	66	26.6%
	Between 36 and 45 years	23	9.3%
	Between 46 and 55 years	3	1.2%
	Above 55 years old	4	1.6%

Source: Authors own elaboration.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 24.

4.2 National culture variables

To measure the national culture of the four countries of the study, we have gathered information on the Hofstede cultural dimensions that were retrieved from https://www.hofstede-insights.com/country-comparison/ and added to the authors' database.

We selected our country-level data from the nations for which individual-level data were available. The application of the Hofstede's cultural dimensions to the four countries in the analysis could be seen in table 4, with the respective values.

Table 4 - Hofestede's Dimensions of National Culture

Dimensions Countries	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long Term Orientation	Indulgence
Portugal	63	27	31	99	28	33
Brazil	69	38	49	76	44	59
Germany	35	67	66	65	83	40
North Macedonia	90	22	45	87	62	35

Source: Hofstede, Hofstede and Minkov (2010)

Power distance stretches from equal relations being seen as normal (maximum 104) to wide inequalities being viewed as normal (Minimum 11). According to Hofstede, Hofstede & Minkov (2010) Portuguese, Brazilian and North Macedonian managers and organizational employees scored higher (63, 69 and 90) than Germans that scored low (35) on this dimension.

Individualism ranges from individuals acting as individuals (maximum 91) to individuals as part of a cohesive group (minimum 6). Portugal, Brazil and North Macedonia are low on individualism scoring 27, 38 and 22 respectively while Germany is relatively high (67) on collectivism.

Masculinity dimension runs from competition (maximum 95) to care about others (minimum 5). Portugal, Brazil and North Macedonia are the lowest in this dimension (31, 49 and 45, respectively) indicating a relatively level of femininity. On the contrary, Germany has a medium score (66).

Uncertainty avoidance ranges from a preference for structured situations (maximum 112) versus unstructured situations (minimum 8). Portugal and North Macedonia scored very high on this dimension (99 and 87, respectively), while Germany and Brazil scored a relatively medium values (65 and 76, respectively).

Long term orientation stands for future rewards (maximum 100) while it's opposite (short term) refers to the past and present rewards (minimum 13). Portugal scored very low (28) on this dimension, while Brazil scored low to medium (44), North Macedonia medium to high (62) and Germany scored very high (83).

Indulgence stretches from social structures that acknowledge human desires and encourage people to pursue their fulfillment (maximum100) to social structures that suppress emotions and desires and equates duty to destiny (minimum 0). Portugal, North Macedonia and Germany scored below mean (33, 35 and 40, respectively), while Brazil and scored above the mean value (59).

These six cultural dimensions of the Hofstede framework are not bound to specific individuals but reflect a generalized set of values that people have toward others in society. The Hofeste's framework has been used in a large number of comparative studies and has been recognized for its validity and usefulness (Kirkman, Lowe & Gibson, 2006; Kirkman, Lowe & Gibson, 2017; Pietro & Buticè, 2021).

5. Results

5.1 Knowledge about CF

In order to assess respondents' knowledge about CF, respondents were asked to indicate their level of agreement/disagreement with different definitions of CF, covering the different CF models. The main results attained are summarized in Table 5.

We observe that the general definitions of CF (B2 and B1) are those who gathered a greater acceptance by respondents, emphasizing the use of electronic platforms for fundraising (Mean=3.95, on a 5-point scale) or the use of a large number of funders (Mean=4.01). We also find that these definitions are well understood by respondents in 3 of the 4 countries under analysis (Portugal, Germany and Brazil). Overall, respondents consider CF slightly more related with funding non-profit entities (Mean=3.69) than for-profit (Mean=3.34) entities.

The table 5 also shows that the respondents' perception of the concept of CF is more closely linked to reward-based CF (Mean=3.69) and donation-based CF (Mean=3.55). Conversely, respondents exhibit a reduced knowledge of the lending and equity-based CF models (means of 2.4 and 2.73, respectively). Overall, this pattern is observed among the different countries. Nevertheless, it should be noted that in Brazil, respondents indicate to be more familiar with the equity-based CF model (Mean=3.26) than with donation-based CF (Mean=2.80).

Table 5- Descriptive analysis of the knowledge about CF

Code	Variable	Total (N=251)		Portugal (N=60)		North Macedonia (N=25)		Germany (N=112)		Brazil (N=54)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
B1	General definition of CF	3.95	1.116	4.02	0.965	3.67	0.850	3.95	1.142	4.00	1.318
B2	Definition of the funders in CF	4.01	1.074	4.00	0.864	3.48	0.895	3.95	1.196	4.37	0.990
B3	CF as a tool for for-profit entities	3.34	1.276	3.28	1.254	3.39	1.216	3.26	1.257	3.54	1.376
B4	CF as a tool for non-profit entities	3.69	1.264	3.79	1.140	3.35	1.052	4.08	1.100	2.94	1.446
B5	Definition of Equity-based CF;	2.73	1.251	2.71	1.262	3.29	0.873	2.36	1.098	3.26	1.420
B6	Definition of lending-based CF;	2.44	1.236	2.17	1.125	3.04	1.098	2.47	1.285	2.38	1.239
B7	Definition of donation-based CF;	3.55	1.231	3.78	1.062	3.76	0.996	3.74	1.136	2.80	1.417
B8	Definition of reward-based CF	3.69	1.161	3.67	0.928	3.95	1.020	3.55	1.282	3.87	1.175

Source: Authors own elaboration.

5.2 Predisposition to use CF

When analyzing respondents' predisposition to use CF as a possible source to fund a new venture (Table 6), we observe that the mean value obtained among the countries is only 2.55 on a 5-point scale. It is worth noting that the lowest values are observed in Germany (Mean=2.34) and Brazil (Mean=2.37), while the highest value is attained in North Macedonia (Mean=3.58).

The analysis also reveals that in all the countries in the study, the respondents are more prone to use reward-based CF than the investment CF modalities. In the latter case, overall, participants refer to be more likely to use equity-based CF (Mean=3.14) than lending CF (Mean=2.66). Even so, respondents only moderately agree that only are available to use CF if they don't have to repay the capital obtained (Mean=2.71), suggesting that respondents did not deny the possibility of using investment models. When considering the factors capable of promoting the use of CF, we observe that respondents refer to be more prone to use CF as a financing tool when they don't have enough capital for that (Mean=3.28) or could not have access to traditional funding sources such as bank loans (Mean=2.81).

Table 6- Descriptive analysis of the predisposition to use the CF

Variable	Description	Total (N=251)		Portugal (N=60)		North Macedonia (N=25)		Germany (N=112)		Brazil (N=54)	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
C01	General predisposition to use CF	2.55	1.247	2.66	1.172	3.58	1.187	2.34	1.194	2.37	1.243
C02	Use of CF for lack of own resources	3.28	1.332	3.24	1.183	3.42	1.115	3.31	1.361	3.21	1.534
C03	Use of CF for lack of resources in the network	2.69	1.300	2.64	1.325	2.78	1.116	2.70	1.278	2.67	1.424
C04	Use of CF for lack of traditional funding	2.81	1.345	2.78	1.316	3.25	1.233	2.89	1.311	2.47	1.449
C05	Use of CF for lack of other investors	2.53	1.218	2.51	1.294	2.83	0.942	2.65	1.196	2.16	1.234
C06	Predisposition to use only noninvestment models of CF	2.71	1.269	2.62	1.147	3.05	1.098	2.79	1.278	2.49	1.429
C07	Predisposition to use lending CF	2.66	1.115	2.66	1.062	3.35	1.103	2.61	1.058	2.46	1.201
C08	Predisposition to use reward-based CF	3.73	1.223	3.62	1.219	3.83	1.067	3.78	1.142	3.69	1.460
C09	Predisposition to use reward-based CF	3.76	1.204	3.72	1.117	3.87	1.092	3.75	1.194	3.75	1.385
C10	Predisposition to use equity-based CF	3.14	1.243	2.95	1.281	3.14	0.926	3.28	1.171	3.08	1.452

Source: Authors own elaboration.

5.3 Data reduction on the knowledge and predisposition to use CF

To clarify data, we performed a data reduction through Factorial Analysis (Principal Component Factor Analysis), with orthogonal rotation and Kaiser normalization. Bartlett's tests of sphericity and the Kaiser-Meyer-Olkin (KMO) analysis of sample adequacy support the suitability of the data to perform the Principal Component Factor Analysis (Maroco, 2007; Field, 2005; Hair *et al.*, 1998). Following the procedures suggested by Field (2005) and Hair *et al.* (1998), three variables were excluded from the analysis (B13, B15 and B16).

The factor analysis allowed us to attain two main components: the first, is related to the knowledge about CF; and, the second, is related to the respondents' predisposition to use CF (Table 7). Cronbach's Alpha (α) indicates that the scales obtained through the factorial solution have acceptable internal reliability.

Table 7- Factor Analysis-Principal Component Analysis

Variable	Component 1: Knowledge	Component 2: Predisposition to use CF
B1	0.690	
B4	0.676	
B2	0.612	
B7	0.526	
B8	0.494	
C08		0.733
C09		0.708
C02		0.647
C10		0.618
C03		0.612
C05		0.604
C04		0.602
C07		0.530
C06		0.471
C01		0.372
KMO	0.621	0.764
Bartlett's sphericity test	$\chi^2 = 106.317276$, $\alpha<0,000$	$\chi^2 = 949.785$, $\alpha<0,000$
Eigenvalues	1.83	3.58
% Var.	36.55%	35.78%
Alpha de Cronbach	0.558	0.794

Source: Authors own elaboration.

5.4 Comparative analysis of knowledge and predisposition to use CF at national level

After performing the data reduction described above, we computed an index for each of the principal components, based on the regression score of the factorial solution obtained (Field, 2005). Next, we have analyzed the factors knowledge about CF and predisposition to use CF at a national level, as presented in Table 8.

Table 8- Descriptive statistics of the factors related to CF

Country	Knowledge about CF				Predisposition to use CF			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
Portugal	0.1749	0.80997	-2.40	1.38	-0.0684	0.98323	-2.70	1.83
North Macedonia	0.0347	0.75920	-2.06	1.70	0.3741	0.90231	-2.62	1.75
Germany	0.2804	0.89741	-2.43	1.85	0.0438	0.93298	-2.70	1.48
Brazil	-0.7918	1.09492	-2.84	1.36	-0.1880	1.15660	-2.70	1.65

Source: Authors own elaboration.

The results indicate that the higher knowledge about CF is observed in Germany and, after that, Portugal. Differently, the higher predisposition to use CF as a funding mechanism is seen

in North Macedonia and Germany. Thus, the analysis suggests some differences across the four countries in the study regarding CF.

Consequently, to assess if these differences are statistically significant or not, we have used a statistical inference test (Kruskall Wallis). The results indicate significant differences across countries concerning the knowledge that individuals have about CF (Test statistics=38.798, df=3, α<0.000). However, regarding the predisposition to use CF among countries (Test statistics=7.243, df=3, α=0.065) the Kruskal-Wallis test suggests no statistically significant differences at 5% confidence level. In order to illuminate the differences among the countries regarding the components under study on the Kruskal Wallis test for independent samples we present the Graphic 1.

Graphic 1- Positioning of the different countries on the dimensions knowledge and predisposition to CF
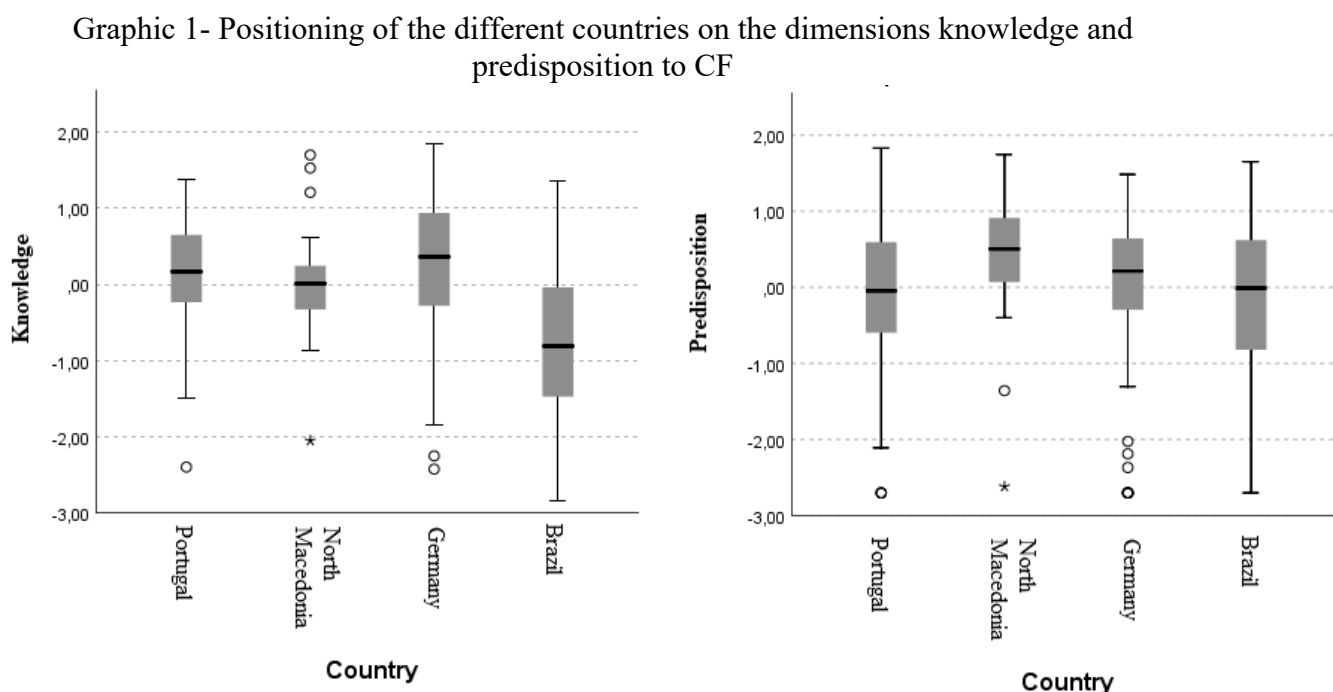
Source: Authors own elaboration.

Further, the Krusk-Wallis test allowed us to make a pairwise comparison among the different countries (Table 9) related to the knowledge about CF, since there are statistically significant differences between countries. When looking for the significance values, that were adjusted by the Bonferroni correction for various tests, we observe that Brazil differs significantly from all other countries considered individually (North Macedonia, α=0,034; Portugal, α<0,000; and Germany, α<0,000). No other statistically significant differences were found for the other pairs of countries under analysis.

Table 9- Pairwise comparison of countries concerning knowledge about CF (Kruskal Wallis Test)

Countries	Test statistics	Standard Statistic Test	Sig.	Adj. Sig.[a]
Brazil-North Macedonia	48.564	2.765	0.006	0.034
Brazil-Portugal	63.737	4.681	0.000	0.000
Brazil-Germany	73.128	6.080	0.000	0.000
North Macedonia-Portugal	15.173	0.878	0.380	1.000
North Macedonia -Germany	-24.564	-1.530	0.126	0.757
Portugal-Germany	-9.391	-0.809	0.419	1.000

Source: Authors own elaboration.

5.5 Analysis of the relationship between national culture and CF

As we have observed some differences among countries regarding the respondents' knowledge and predisposition to use CF, we intend to assess the extent to which those two factors are associated or not with the six cultural dimensions of Hofstede's framework in the four countries under study.

The values and the confidence levels of associations between the variables are summarized in Table 10. Different association measures were used, in accordance with the type of data. The Pearson's correlation coefficient was used for the six dimensions of national culture. The Spearman's non-parametric rho correlation coefficient was used for the categorical variable country (Field, 2005).

Table 10- Statistical tests of association between the knowledge and predisposition to CF and the national culture

Variable	Knowledge	Predisposition
Power distance	-0.372[**]	-0.065
Individualism	0.291[**]	0.069
Masculinity	0.144[*]	0.055
Uncertainty avoidance	-0.163[**]	-0.074
Long term orientation	0.051	0.013
Indulgence	0.087	0.142[*]

Note: Significance (**); $p<0.01$;(*) $p<0.05$

Source: Authors own elaboration.

The bivariate data analysis reveals a moderate statistically significant association between the countries and the knowledge about CF (ρ=-0.244, α=0.01), as the previous analysis had suggested. When considering each of the dimensions of national culture, a positive and statistically significant coefficient is observed for individualism (r=0.291, α=0.01) and masculinity (r=0.144, α=0.05). Differently, a negative association is found between

individuals' knowledge about CF and the country's power distance (r=-0.372, α=0.01) and uncertainty avoidance (r=-0.163, α=0.01). The dimensions of long-term orientation and indulgence, on the other hand, are not associated with the different levels of knowledge about CF.

This finding means that the higher the power distance of a country, the lower the knowledge about CF which is in line with the initial expectation that a negative relationship could exist between both variables. Therefore, hypothesis H1a) is supported, meaning that less individual knowledge about the CF is expected from countries with an unequal distribution of power. This characteristic of the national culture will be reflected in a lower desire for autonomy and less innovation by individuals which results in a lower demand for entrepreneurial activities and eventually refrain the searching for new forms of funding ((Shane, 1993; Rinne, Steel, & Fairweather, 2012). On the contrary, countries characterized by lower distance to power will tend to have people who are more qualified and empowered. Herein, there is a higher and more widespread knowledge of CF as a financing instrument, which could lead to an extensive knowledge of CF.

The hypothesis H2a) is also supported, as higher individualism of a country is typically linked to a higher knowledge about CF. This result is in line with previous empirical evidence indicating that more individualistic societies tend to be more entrepreneurial, more confident and also having a higher internal locus of control (Celikkol, Kitapci, & Doven, 2019; Mueller & Thomas, 2001). Thus, in countries characterized by higher levels of individualism, it is expected that people behave selfishly, resorting to peer-to-peer digital platforms that may facilitate funding. Thus, in more individualistic societies, individuals would tend to depend more on themselves, which may lead them to search for new fundraising tools, rather than just relying on the funding sources offered by financial institutions.

The empirical findings also support hypothesis H3a), since the knowledge about CF tends to be higher in countries exhibiting a culture characterized by higher level of masculinity. The increased desire for material success, more prevalent in countries displaying a higher level of masculinity may encourage individuals to get a more extensive knowledge of the different financing sources (including CF) that is recognize as a critical element for the success of entrepreneurial ventures (Hayton *et al.*, 2002).

Hypothesis H4a) is also supported, given that the country uncertainty avoidance seems to be inversely related to the level of knowledge about CF. The sign of the association found is consistent with the authors' initial expectations. Indeed, existing empirical evidence suggests that countries exhibiting a lower score on uncertainty avoidance tend to have a more

entrepreneurial orientation (Mueller & Thomas, 2001) and rely more on logical information (Cho & Kim, 2017). These facts, combined with not avoiding ambiguous situations, may lead to a greater willingness to seek new forms of financing, which is expressed in the level of knowledge they have about the CF. Conversely, individuals of countries having a higher uncertainty avoidance, will favor the recognition of more structured financing solutions (such as bank loans), in which the CF is not yet included due to its intrinsic characteristics and the degree of novelty involved.

The hypotheses H5a) and H6a) are rejected, as the Pearson correlation coefficient is not statistically significant for long term orientation and indulgence. The initial expectation, based on the brief review of literature on entrepreneurship, would suggest a positive relationship between the variables. Although there is a positive relationship, it is not statistically significant, indicating that the reward time horizon that prevails in a country is not associated with the level of knowledge that people have about the CF. Similarly, knowledge about CF is not related with indulgence or the society gratification of human needs.

Focusing on the analysis of the predisposition to use CF, we observe that only indulgence is statistically significant (r=0.142, α=0.05), but moderately. As the sign of the correlation is positive, we can confirm hypothesis H6b). Therefore, the result indicates that is expected in countries where national culture is characterized by values of indulgence that people could pursue their objectives of life investing and using CF. In addition, Celikkol *et al.* (2019) have already considered that people of countries with a higher indulgence score tend to have more entrepreneurial attitudes, which also implies a more innovative behavior in using new fundraising sources.

Against our initial expectations, we observe that the predisposition to use CF is not related to the other national cultural dimensions (power distance, individualism, masculinity, uncertainty avoidance and long-term orientation). Thus, hypotheses H1b), H2b), H3b), H4b) and H5b) are not supported.

It is worth noting that Hofstede's national culture dimensions are mainly related to the knowledge individuals have about CF, rather than their willingness to use it as a financing tool. This situation is observed both in terms of the number of cultural dimensions identified as statistically significant and the intensity of the relationship. This finding could suggest the (co)existence of other factors that are critical to effectively understanding CF adherence. In such context, it is also possible to discuss the possible presence of certain institutional and personal barriers that prevent individuals who have been culturally stimulated to become

familiar with CF, but do not transfer this knowledge into effective adherence to this financing instrument.

7. Recommendations and conclusion

Despite the strong growth that CF has experienced in recent years worldwide, there are still very significant differences between countries in terms of market activity in this alternative financing instrument. At the inception of the CF operations two main actors performed active roles: investors (backers); and, entrepreneurs (crowdfundees). The relationships between these two actors are fostered by an electronic platform that makes available the entrepreneurial ventures that are looking for funding from the crowd. To leverage the possibility of concretization of the operations, the adherence of the actors to the CF platforms will be important. In such context, it is critical to understand the knowledge that individuals at a national level have about this financing instrument, and their predisposition to use CF as a source of financing.

Focusing on these objectives, we intend to study whether national culture, measured by the Hofstede's framework, is associated or not with the level of knowledge and the predisposition to use CF. The study performed in four different countries reveals that the level of knowledge that individuals have about CF differs across countries and is associated with the characteristics of the national culture, which can hinder or promote the process of acquiring information about new financing instruments. Specifically, the findings indicate that the knowledge about CF is higher on individuals in countries with a national culture characterized as more individualistic, having a higher level of masculinity, a lower power distance score and also a lower level of uncertainty avoidance. In addition, the investigation also indicates that the predisposition that individuals have to use CF is slightly related to the indulgence dimension of the Hofstede framework.

The research contributes with new insights in a very promising area that still needs more new empirical studies. To the best of our knowledge, there are no studies that assess the perceptions that the citizens of different countries have about the CF. The findings obtained bring a valuable contribution to this topic and have important practical implications. Firstly, public entities could integrate the additional knowledge to the conception of public policies to stimulate entrepreneurship. For universities, the information is also relevant and should be considered in the design of courses and curricula to be offered.

The research has some limitations. First of all, the number of countries involved (four), although having different characteristics is limited, as well as, the number of respondents by

country. Thus, the research carried out has an exploratory nature, which recommends considerable prudence in the generalization of the conclusions obtained. In the future, it would be interesting to extend the research to other countries. Further, the investigation focuses on higher education students, for the entrepreneurial potential they encompass. Nevertheless, the consideration of other audiences, such as already established entrepreneurs, may also be worth being studied in the future. Additionally, understand individuals' predisposition to act as investors in CF platforms (crowdfunders) could also be very positive in the future. To further improve the knowledge on the topic, it would be interesting to study the main motivations and fears that individuals of different countries hold for the use of CF.

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