

The Role of Donation-Based Crowdfunding In Supporting Sustainable Projects: Case Study of Bardo City, Tunisia

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Abstract

This paper evaluates the awareness level among citizens of Bardo city, Tunisia, regarding the importance of donations in crowdfunding processes to finance sustainable projects in the city, additionally it assesses their intention to contribute to it. The study follows a quantitative approach by surveying 116 citizens. The results indicate that the majority of the respondents are aware that donating to sustainable public projects is important and most of them are willing to donate to such initiative. Through data analysis using SPSS, a moderate positive relationship appears between the awareness level of the importance of donating to citizens and their willingness to donate. Moreover, the overall regression model is statistically significant. This specific focus on Bardo city and donation-based crowdfunding for sustainable projects makes the study unique and contributes to the literature on crowdfunding and sustainable projects.

Keywords: Donation-based Crowdfunding, sustainable developments, local governance, sustainable-oriented projects.

INTRODUCTION

Crowdfunding has emerged as a popular alternative financing option for various projects, including those related to sustainable development (Kelvin et al., 2018; Moon et al., 2018). Crowdfunding presents many opportunities for moving towards a sustainable society (Testa et al., 2019). It offers advantages like fostering community support and innovation while aligning with sustainability goals (Valanciene & Jegeleviciute, 2013).

However, some governments still face financial constraints (Wang et al., 2014; Caldato et al., 2020). This is particularly relevant to Tunisia, a country facing economic pressures.

This study investigates the gap in understanding how citizen awareness of crowdfunding's role in sustainability, influences their willingness to participate in such initiatives, with a focus on Bardo city, Tunisia.

By exploring the potential of donation-based crowdfunding for sustainable projects in Bardo, we aim to contribute to the field by examining this crucial link between awareness and participation.

The choice of research context is three-fold: Firstly, my participation in the second edition of the Tunisian International Conference on Islamic Economics and Finance 2023, focusing on "Islamic Finance, Impact Finance, and Sustainable Development," highlighted the importance of exploring innovative financing models for sustainable development in a country facing economic challenges, like Tunisia.

Secondly, my interest in crowdfunding stems from my Master's dissertation research. Finally, Bardo, my hometown, provides a focused research site within Tunisia. As an activist in Bardo's civil society, I have a deep understanding of the city and its community. This allows for a detailed analysis of citizen behavior regarding crowdfunding and sustainability efforts.

Specifically, this study seeks to answer the following question: To what extent does Bardo citizens' awareness level of the importance of donation-based crowdfunding for sustainable projects influence their intention to contribute?

Based on this question, the following hypotheses are proposed:

H1: Bardo city citizens have a positive attitude toward donating through crowdfunding platforms to support sustainable projects.

H2: Bardo city citizens' level of awareness about the importance of donation-based crowdfunding is positively associated with their intention to contribute.

H3: The perceived sustainability of the project influences Bardo city citizens' willingness to donate through crowdfunding platforms.

To achieve the research purpose, the study is organized in the following sections:

Section 2: This section presents the theoretical framework, delving into crowdfunding concepts, sustainable development, sustainable projects, the link between crowdfunding and sustainable projects, and factors influencing crowdfunding success for such initiatives.

Section 3: This section details the research methodology, outlining the quantitative approach adopted through a survey of 116 Bardo city citizens.

Section 4: This section presents the survey results, data analysis, and a regression model illustrating the relationships between variables.

Section 5: This concluding section summarizes the findings, discusses their implications, and suggests avenues for future research.

2. THEORETICAL FRAMEWORK

2.1 WHAT IS CROWDFUNDING?

The concept of crowdfunding involves connecting two parties: who seeks finance and others who have money to invest (funders) (Sima and Loreta, 2015; Paolo et al, 2019). The novelty of crowdfunding lies in the involvement of technology, using online web-based platforms to connect seekers of funds with funders (Jenik et al. 2017). Historically, crowdfunding has taken place in the fields of art, charity, political campaigns, and public projects even before the propagation of technology and the expansion of online platforms (the example of the Statue of Liberty is interesting) (Kuppuswamy & Bayus, 2018). Through small individual contributions from a large number of people, crowdfunding can raise important amounts to finance particular needs of other individuals and businesses, by avoiding traditional financial intermediaries using online web-based platforms (Jenik et al. 2017). Several institutional definitions of crowdfunding; According to the World Bank (2013), “Crowdfunding is an Internet-enabled way for businesses or other organizations to raise money in the form of either donations or investments from multiple individuals”...

The global crowdfunding transaction value is projected to reach US\$1.10 billion in 2023. Moreover, it is expected to show an annual growth rate (CAGR) 2023-2027 of 2.46% (Statista, 2023). Crowdfunding is considered as one of the most successful forms of alternative finance (Kelvin & Anna, 2018). It is becoming more regulated, with governments around the world implementing laws and regulations to protect investors and prevent fraud. In Tunisia a law concerning crowdfunding, which has been adopted by the parliament, on July 21st, 2020, but not applicable yet. The application of the law is dependent on the promulgation of an implementing decree (See law n° 37/2020).

In crowdfunding, there are three main actors involved in the process (Valanciene & Jegeleviciute, 2013): The fundraiser: The seeker of finance. The funder or the supporter: The part who contributes financially to support the initiative. And The crowdfunding platform: An Internet-based platform that acts as an intermediary bringing together the fund seekers and funders. The fundraiser set up an online fundraising campaign with detailed description on a crowdfunding platform, and then funders contribute to support the idea (Hossain & Oparaocha 2017).

Crowdfunding platforms operate under four major categories: donation, reward, debt and equity-based crowdfunding. According to research by the

International Organization of Securities Commissions (IOSCO) these four categories could be classified into two major sections; donation and reward-based crowdfunding can be stated as “community crowdfunding” as they form a way of fundraising for charitable causes. Unlike debt and equity-based crowdfunding, they can be collectively referred to as “financial return-based crowdfunding” (Kirby & Worner 2014). This classification is dependent on what funders expect in return for their money (Kshetri, 2015).

2.1.1 DONATION-BASED CROWDFUNDING

Donation-based crowdfunding (also called crowd-donating) allows individuals or organizations to solicit donations from a large pool of people for specific causes or projects (Mollick, 2014). Unlike reward-based or debt or equity crowdfunding, donors receive no tangible rewards or financial returns for their contributions (Belleflamme et al., 2014). While some symbolic recognition like a message of gratitude might be offered, there is no material compensation (Dietrich & Amrein, 2020). This lack of return distinguishes donation-based crowdfunding from other models.

Donation-based crowdfunding has become increasingly popular, particularly for charitable causes and social impact projects, offering individuals and organizations a valuable tool to raise funds and support causes they care about (Doherty et al., 2017; Mollick, 2014)

Several online platforms facilitate donation-based crowdfunding, such as GoFundMe, Kickstarter, Indiegogo, and Crowdfunder... (Pickett & Schenck, 2016). While donation-based crowdfunding can be an effective way to raise funds and awareness for important causes, donors should exercise caution and research the campaign before contributing (Wang & Chua, 2019).

2.2 SUSTAINABLE DEVELOPMENT: AN OVERVIEW

Sustainable development is a concept that emphasizes meeting “the needs of the present without compromising the ability of future generations to meet their own needs”. It requires balancing economic, social, and environmental considerations to create a more equitable and sustainable future (WCED, 1987). One of the frameworks for sustainable development is the United Nations Sustainable Development Goals (SDGs). The SDGs consist of 17 goals, such as eradicating poverty and hunger, ensuring access to clean water and sanitation, and promoting sustainable consumption and production. The SDGs provide a roadmap for countries and organizations to work towards a sustainable future (UN, 2015).

There is a growing body of academic research on sustainable development, exploring topics such as sustainable business practices, renewable energy, and sustainable agriculture. For example, research has shown that incorporating

sustainability into business practices can improve financial performance and enhance a company's reputation (Eccles & Serafeim, 2013).

2.2.1 SUSTAINABLE PROJECTS

Sustainable projects are designed to create positive and long-lasting impacts on the society, the environment, and the economy. Typically, they have advantageous outcomes for the general. These initiatives take various forms such as renewable energy installations, green infrastructure development, public transportation, and waste management systems (UNDP, 2015). They play a crucial role in addressing global challenges such as climate change, resource depletion, and social inequality (International Renewable Energy Agency, 2018). Sustainable projects also can make significant contributions towards creating job opportunities, stimulating economic growth, and improving the quality of life for communities (Organization for Economic Cooperation and Development, 2018). According to a study by Rana et al. (2019), sustainable projects have the potential to contribute to sustainable development by promoting economic, social, and environmental sustainability. The study further emphasizes the need for integrating sustainable development principles into public projects and adopting a comprehensive and participatory approach to project planning and implementation. In addition, research by Leal Filho et al. (2016) highlights the importance of stakeholder engagement in sustainable project development. Engaging relevant stakeholders, such as local communities, non-governmental organizations, and private sector actors, can lead to better project outcomes and enhance project sustainability. Therefore, the achievement of the SDGs requires the participation of diverse actors. It is particularly necessary to promote participation at the citizen level (Ozaki, Y. & Shaw, R. 2022).

Overall, crowdfunding may have significant contributions towards addressing the funding gap for sustainable projects. By enabling individuals and organizations to access funding from a wide network of supporters, donation-based crowdfunding can support the development of sustainable projects that benefit local communities and the environment.

THE RELATIONSHIP BETWEEN DONATION-BASED CROWDFUNDING AND SUSTAINABLE PROJECTS 2.3

Through online web-based platforms, crowdfunding allows individuals or organizations to raise funds from a large pool of contributors. While some studies suggest a positive relationship between a project's sustainability orientation and its crowdfunding success (Calic & Mosakowski, 2016; Lehner, 2013), others find no such correlation (Hörisch, J. 2015; Motylska-Kuzma, 2018). These conflicting findings highlight the need for further research that explores the specific project types, platform characteristics, and geographical

contexts that influence the success of sustainable projects on crowdfunding platforms.

In accordance with Maehle (2020), crowdfunding can be a useful mechanism for financing sustainability projects, as it can help to overcome the funding gap that often exists for such projects. In addition, crowdfunding could be a way to generate support and awareness for sustainability initiatives, which can lead to increased adoption and implementation of sustainable practices.

One example of donation-based crowdfunding for sustainable project: The “Solar Roadways Company” launched a campaign on the crowdfunding platform "Indiegogo.com" in 2014, with the goal of raising \$1 million to fund the development of a new product. However, the project ended up raising over \$2.2 million from 48,473 supporters, which was more than twice their initial funding target (Horisch, J. 2015).

2.3.1 FACTORS INFLUENCING THE SUCCESS OF DONATION-BASED CROWDFUNDING CAMPAIGN

The success of any crowdfunding campaign hinges on a delicate balance of various factors. Donation-based campaigns, specifically, require a clear and compelling project idea paired with a strategic marketing approach (Belleflamme et al., 2014; Zeco & Propfe, 2014; Manning, 2017). This includes creating a message that resonates with potential donors and leverages various "signals" to capture attention and build trust. A study by Ho et al. (2021) analyzing a specific platform identified three such signals: those originating from the campaign itself (title, description, etc.), those stemming from the fundraiser's social network, and those arising from social interaction (comments, shares). It is important to consider that the relative importance of these signals might vary depending on the platform and project type. Similarly, donor motivations extend beyond simply aligning with the project's cause (Lehner, 2013). Research suggests that social recognition or the project's innovative nature can also play a role (Mollick, 2014). Understanding these diverse motivations is essential for designing a compelling campaign narrative that resonates with potential supporters and ultimately leads to successful fundraising.

Scataglini & Ventresca (2019) highlight the potential drawbacks of platform fees on reaching fundraising goals for sustainable development projects (SDGs). They advocate for creating crowdfunding platforms dedicated exclusively to SDGs. However, the limited availability and reach of such platforms compared to established general crowdfunding platforms with a wider user base need to be considered. Similarly, Vasileiadou et al. (2015) and Michele & Marc (2019) suggest that platforms dedicated to renewable energy initiatives might fare better

than broader platforms. While these findings are promising, more research is needed to determine the overall effectiveness of specialized platforms compared to established general crowdfunding platforms in attracting donors and achieving fundraising goals. Further supporting this notion, Zeco and Propfe (2014) argue that existing popular crowdfunding platforms do not effectively support sustainability-based projects. Patrick T.I. et al. (2016) suggest that donation-based crowdfunding is suitable for small-scale renewable energy and green innovation projects, which aligns with the potential of these platforms. However, further research is necessary to identify platforms that effectively support larger-scale sustainable development projects in specific regional contexts.

Recent research has explored the role of social media in promoting crowdfunding success, particularly in developing countries. Yousaf et al. (2023) highlights the critical role of social media in promoting crowdfunding success, particularly in developing countries. Their findings demonstrate that social media platforms foster communication and online communities, which in turn raise awareness, attract donors, and ultimately increase fundraising success. This study builds on this knowledge gap by investigating the specific aspects of communication and connectivity that contribute to the success of donation-based crowdfunding models. By analyzing these factors, the research framework aims to provide valuable guidance for fundraisers and policymakers in crafting successful crowdfunding campaigns, particularly in the context of sustainable development projects.

3. METHODOLOGY

The aim of this study was to assess the extent of awareness among citizens in the studied city (Bardo, Tunis, Tunisia) of the importance of donation in a crowdfunding process to finance sustainable projects in the city.

Bardo city has an estimated population of around 71,232 according to the latest available data (Municipality of Bardo official web site). Bardo is governed by its municipality, which is responsible for managing the city's resources and providing services to its residents (local governance). The municipality allocates its annual budget to fund a range of projects and initiatives that are aimed at enhancing the city's infrastructure and improving the quality of life for its citizens. However, given the current economic situation in Tunisia, the municipality of Bardo may face financial constraints in supporting sustainable projects.

To achieve the purpose of this study, a survey was conducted anonymously among 116 randomly selected citizens, using both online and paper surveys. The online survey was conducted using Google Forms and was distributed to the

citizens virtually, while the paper survey was distributed in person to citizens who were not able to complete the online survey.

The survey included two sections. The first section consisted of three questions to gather general information about the respondents, including gender, age range, and educational level. The age range question was developed based on the United Nations classification, which includes four categories: (1) children and adolescents under the age of 20 years, (2) "young" adults 20 to 39 years of age, (3) "middle-aged" adults aged 40 to 59 years, and (4) older persons aged 60 years or over (the United Nations, World Population Ageing, 2013). The second section is consisted of ten questions related to the respondents' awareness and willingness of donation through crowdfunding for sustainable projects in Bardo. The first two questions aimed to assess the respondents' previous experience with donating to a government agency and their familiarity with crowdfunding platforms. The third question was designed to measure the respondents' familiarity with the sustainable development program approved by the United Nations. The fourth question asked the respondents to identify which of the Sustainable Development Goals (SDGs) they believed was the most important in their city. The fifth question asked the respondents which types of sustainable projects they would be willing to donate to. The options included cultural projects, green space projects, waste reduction and recycling projects, renewable energy projects, and "other" option. The sixth question aimed to identify the factors that influence the respondents' decision to donate to a crowdfunding campaign for a sustainable project. The seventh question used a Likert scale with five levels of responses (Croasmun & Ostrom, 2011) was used to evaluate the respondents' perceived importance of donations from citizens in financing sustainable projects in their town. The eighth question asked the respondents to identify the main challenges or barriers to supporting a crowdfunding campaign for one or more of the Sustainable Development Goals. The ninth question used a Likert scale (Croasmun & Ostrom, 2011) to assess the respondents' willingness to contribute to a donation to finance a sustainable project through Crowdfunding platforms. Finally, the tenth question aimed to solicit the respondents' suggestions for improving awareness of donation-based crowdfunding for sustainable projects in the city.

The collected data was analyzed using the statistical software package SPSS. Additionally, the Pearson correlation coefficient was used to determine the relationships between variables. Also, regression analysis were conducted considering The Willingness to contribute to a donation-based crowdfunding as dependent variable.

4. RESULTS AND DISCUSSION

4.1 DATA COLLECTION

Due to resource constraints, a convenience sampling approach was employed for data collection, which spanned a period of three months.

The questionnaire, developed in two languages (Arabic and French), was uploaded to various Facebook pages and groups dedicated to Bardo citizens. The researcher strived to broaden the reach by contacting five local associations in Bardo, requesting their assistance in sharing the survey. While only two associations agreed to participate, their contribution is acknowledged. Additionally, the researcher participated in citizen participation sessions organized by the Bardo municipality, yielding five valuable responses. In addition, a friend of the researcher also assisted in distributing the survey, collecting an additional 16 responses.

Reaching a representative sample through convenience sampling presented challenges. The initial response rate for the online survey was lower than anticipated. To address this, follow-up emails were sent to those who had not yet participated, politely reminding them of the study and the importance of their contribution. This strategy helped to increase the response rate. Distributing paper surveys in public spaces aimed to mitigate bias towards internet users. However, the completion rate for paper surveys was lower than online surveys.

The questionnaire comprised 13 questions designed to gather data through a mix of closed-ended multiple choice and Likert scale questions, along with open-ended questions for more detailed insights. By combining these question types, the survey would capture both quantitative data (numerical responses) and qualitative data (descriptive responses) and this provides a more comprehensive understanding of the topic under investigation.

It consisted of two distinct sections. The first section aimed to collect general information about the respondents, including age range, gender, and educational level. This data was crucial for understanding the sample composition and potentially identifying any potential biases. The second section focused on the core topic of the study, to gather data on citizens' perceptions of donation-based crowdfunding for sustainable projects.

The survey collected information with a majority of 62.1% being female and 37.9% being male. The participants were from various age groups, with 12 individuals (10.3%) aged 19 or less, 66 individuals (56.9%) aged between 20 and 39, 22 individuals (19%) aged between 40 and 59, and 16 individuals (13.8%) aged 60 or more. The educational level of the respondents varied. 5.2% of the respondents had a primary education, 20.7% had a secondary education, and 74.1% had a higher education. This indicates that the majority of the

respondents had a higher level of education, and this might not be representative of the entire population of Bardo City.

The majority of respondents, accounting for 72.4%, reported that they have not donated to governmental agencies. Additionally, more than half of the respondents (51%) reported that they are not familiar with donation-based crowdfunding.

The results of the survey indicate that a considerable proportion of the respondents, 34.5%, are not familiar with the Sustainable Development Goals (SDGs), while 32.7% reported being highly familiar with them. Among them, the majority mentioned goal n°7 " Affordable and Clean Energy" as the most important in the city, while the second most frequently mentioned SDG was n°13 " Climate Action". When asked about the type of sustainable project they would be willing to contribute to, 62.1% of the respondents expressed their interest in financing waste reduction and recycling projects such as composting programs or plastic reduction initiatives. This finding highlights the significance of waste reduction and recycling projects in the respondents' perception of sustainable projects.

Additionally, the results revealed that many factors, that encourage to donate, are mentioned such as the project's impact on society, the transparency of the campaign, and the credibility of the project initiators... However, the majority consider the added-value of the project to be the most important factor that influences their decision to donate to a crowdfunding campaign for a sustainable project.

In addition, The Likert Scale with five levels of responses was used to evaluate the importance of financing sustainable projects in the region , the results indicate that 32.7% of respondents consider donations from citizens to be extremely important, while 17.5% find it moderately important, and 15.8% slightly important. This suggests that a significant portion of respondents recognize the importance of community involvement and financial support in achieving sustainable projects. When asked about the main challenges or barriers to supporting such campaign, 27.6% mentioned the lack of financial resources due to the economic situation in the country, 20.6% reported the lack of awareness about the importance of SDGs, and 42.9% cited the lack of trust in the crowdfunding platform or the project initiator as their main challenge.

Regarding the willingness to donate, the survey found that 32.2% of respondents are extremely willing to contribute financially to a sustainable project through donation-based crowdfunding, while 23.7% are slightly willing and 23.7% are moderately willing. This indicates a significant portion of the sample is open to participating in such initiative.

To enhance the awareness of donation-based crowdfunding for sustainable projects, the respondents provided valuable suggestions. Among them, 28.4% recommended the use of social media platforms, while 25.2% emphasized the importance of sharing success stories. Additionally, 18.4% suggested using media to increase visibility. While some respondents had no suggestions, the majority (32.1%) emphasized the need for awareness campaigns to educate the public and raise their interest in sustainable projects.

4.2 DATA ANALYSIS

4.2.1 CORRELATION

Using the Statistical Package for the Social Sciences SPSS software (IBM SPSS Statistics 23), we calculate the Person correlation matrix between the variables, and we note that:

1. A statistically significant negative correlation -0.586^{**} was observed between a respondent's age range and their likelihood of having previously donated to government agencies. This indicates that younger age groups in the survey were more likely to report donating to governmental institutions compared to older respondents. This finding could be explained by several factors. Socioemotional Selectivity Theory (Carstensen, 1992) suggests older adults prioritize activities with emotional meaning, and charitable giving might be more readily associated with established organizations for this demographic. Alternatively, younger generations might be more comfortable navigating online platforms, potentially making them more receptive to crowdfunding avenues for government-backed projects.

2. The correlation coefficient of -0.253^{**} , between a history of donating to government agencies and familiarity with donation-based crowdfunding platforms, suggests that individuals who have traditionally donated through government channels might be less familiar with crowdfunding as an alternative approach. This could be due to a number of reasons. People who trust established institutions (Fukuyama, 1995) might see government agencies as the primary way to address social issues, potentially limiting their exploration of alternative giving methods. Additionally, those accustomed to traditional donation structures might be less aware of the growing popularity of crowdfunding platforms.

3. As expected, a strong positive correlation 0.399^{**} was found between respondents' perception of donation importance and their willingness to donate. This indicates that those who believe donations are a crucial factor are more likely to be personally willing to contribute to sustainable public projects. This aligns with the Theory of Reasoned Action (Fishbein & Ajzen, 1980), which posits that people's beliefs about the importance of an action significantly

influence their behavior. In this context, those who view donations as important likely hold stronger beliefs about the positive impact of contributing to sustainable initiatives.

4. A moderate positive correlation $0,342^{**}$ was identified between respondents who expressed interest in raising awareness of donation-based crowdfunding for sustainable projects and those who indicated a preference for donating to such projects. This suggests a potential link between concern for sustainability and a desire to strengthen awareness-building efforts. Those who are motivated to support sustainable initiatives through crowdfunding might also recognize the importance of raising public awareness to expand the donor pool and increase the overall impact of these projects.

5. An interesting finding emerged – a statistically significant positive correlation 0.267^{**} between the perceived challenges of supporting donation-based crowdfunding campaigns and the importance respondents placed on the most relevant Sustainable Development Goal (SDG) in their region. This suggests that when a particular SDG resonates strongly with respondents, they might be more willing to overcome challenges associated with donation-based crowdfunding to support projects aligned with that SDG. This could be because people are more motivated to address critical issues in their communities, and crowdfunding offers a direct way to contribute to those efforts, even if it requires overcoming obstacles.

6. It appears that there is a positive correlation $0,223^*$ between donation willingness and age range. This suggests that older respondents were generally more willing to donate. This finding aligns with Socioemotional Selectivity Theory (Carstensen, 1992), which proposes that older adults prioritize activities that provide emotional meaning, such as helping others. This increased focus on purpose and social connection in later life could explain their greater willingness to contribute to sustainable projects through donations.

7. An unexpected finding emerged a negative correlation -0.414^{**} between respondents' willingness to donate and their suggestions for raising awareness about donation-based crowdfunding for sustainable projects. This suggests that those who are most willing to donate may not necessarily have ideas for improving awareness. This could be explained by the bystander effect (Darley & Latané, 1968), where individuals with solutions might feel less personally responsible for taking action (donating) themselves. However, alternative explanations are also worth considering. Perhaps those most willing to donate already feel the issue is well-known, or the specific awareness suggestions provided in the survey might not have resonated with them. Additionally, limited personal resources might lead some to focus their support on direct

donations rather than awareness campaigns. Further research exploring these possibilities would be valuable.

8. A significant positive correlation $0,326^{**}$ was observed between donation willingness and the factors that respondents consider when making donation decisions. This indicates that individuals who weigh a broader range of factors in their decision-making process are also more likely to be willing to donate. This finding aligns with the concept of due diligence, where careful consideration precedes taking action. People who thoughtfully evaluate various aspects of a donation opportunity might demonstrate a higher overall propensity to contribute.

9. A statistically significant positive correlation 0.280^{**} was found between the factors considered when making donation decisions and suggestions for raising awareness about donation-based crowdfunding for sustainable projects. This indicates that respondents who weigh multiple factors carefully before donating are also more likely to have ideas for improving public awareness of this type of fundraising. This finding suggests a potential link between thoughtful decision-making and a sense of agency. Those who consider various factors throughout the donation process might be more invested in the overall success of donation-based crowdfunding for sustainable initiatives. As a result, they might be more likely to identify areas where awareness campaigns could be strengthened.

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Table n° 01 : the Pearson correlation matrix

	Genre	Age_range	Educational_Level	Gov_Donation	D-CF_Familiarity	SDG_familiarity	Regional_SDG_priorities	SDG-Project_Donations	Donation_Factors	Donation_Importance	Support-Donation_Challenges	Donation_Willingness	Sustainable_Donations_Awareness_Suggestions
Genre	1	,261**	,019	-,131	-,219*	-,229*	,002	-,050	-,140	,027	-,138	,097	-,050
Age_range	,261**	1	,147	-,586**	,141	-,041	-,103	-,070	-,062	-,154	-,257**	,223*	-,114
Educational_level	,019	,147	1	-,050	-,163	,221*	-,114	,085	,117	,027	-,012	-,042	-,112
Gov_Donation	-,131	-,586**	-,050	1	-,253**	,060	,145	-,046	,190*	,202*	,077	,023	,061
D-CF_familiarity	-,219*	,141	-,163	-,253**	1	-,053	-,052	-,061	,175	-,207*	,068	-,184*	,043
SDG_familiarity	-,229*	-,041	,221*	,060	-,053	1	-,270**	-,006	-,004	-,036	-,127	-,101	-,086
Regional_SDG_Priorities	,002	-,103	-,114	,145	-,052	-,270**	1	-,026	,096	-,025	,274**	,046	,083
SDG-Project_Donations	-,050	-,070	,085	-,046	-,061	-,006	-,026	1	,146	-,008	,276**	-,081	,342**
Donation_Factors	-,140	-,062	,117	,190*	,175	-,004	,096	,146	1	-,163	,253**	-,326**	,280**
Donation_Importance	,027	-,154	,027	,202*	-,207*	-,036	-,025	-,008	-,163	1	-,006	,399**	-,233*

4.2.2 REGRESSION

The regression analysis suggests a moderate positive correlation (R value is 0.659) between the independent variables (Genre, Age_range, Educational_level, Gov_Donation, D-CF_familiarity, SDG_familiarity, Regional_SDG_priorities, SDG-Project_Donations, Donation_Factors, Donation_Importance, Support-Donation_Challenges, and Sustainable_Donations_Awareness_Suggestions) and the dependent variable (Donation_Willingness).

$$(D_Wt) = C + \alpha_1 (G_Vt) + \alpha_2 (D_Vt) + \alpha_3 (SDG_Vt) + \alpha_4 (Suggestions_Vt) + \xi_t$$

Where:

D_Wt is the dependent variable "Donation_Willingness",

C is the constant (the expected value of Donation_Willingness when all independent variables are equal to zero),

G_V: General Variables including Genre, Age_range, and Education_level.

D_V: Donation related variables including Gov_Donation, Donation-Crowdfunding_familiarity, Support-Donation_Challenges, Donation_Factors, Donation_Importance.

SDG_V: SDG_familiarity, Regional_SDG_priorities, SDG-Project_Donations,

Suggestions-V: Sustainable_Donations_Awareness_Suggestions Variable,

α_1 to α_4 are the regression coefficients associated with each independent variable,

The independent variables:

and ξ_t is the error term.

The coefficient of determination (R squared is 0.435), which indicates that 43.5% of the variability in the dependent variable can be explained by the independent variables.

The adjusted R-squared value is 0.367, which suggests that the independent variables are moderately effective in predicting the dependent variable, even after controlling for the number of independent variables included in the model.

The F-value of 6.606 and a P-value of 0.000 indicate that the overall regression model is statistically significant. Meaning the independent variables together have a significant effect on donation willingness.

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In summary, the regression analysis suggests that the independent variables included in the model have a moderate positive relationship with the dependent variable.

Table n° 2 : Model summary

Model	R	R- squared	Ajusted R- squared
1	,659 ^a	,435	,367

Table n°3 : the Analysis of Variance (ANOVA)

Model		Sum of Squares	Degrees of freedom	Mean Square	F	P-value
1	Regression	82,438	12	6,870	6,606	,000 ^b
	Residual	107,114	103	1,040		
	Total	189,552	115			

Table n°4 : Estimation Results

Model	Standardized Coefficients/ Bêta	P-value
Genre	-0,066	0,429
Age_range	0,429	0
Educational_level	-0,106	0,193
Gov_donation	0,231	0,023
D-CF_familiarity	-0,107	0,21
SDG_familiarity	-0,087	0,294
Regional_SDG_priorities	0,051	0,535
SDG-Project_Donations	0,078	0,356
Donation_Factors	-0,224	0,01
Donation_Importance	0,292	0
Support-Donation_Challenges	0,078	0,37
Sustainable_Donations_Awareness_Suggestions	-0,306	0,001

“Age_range”, “Gov_donation”, “Donation_Importance”, and “Sustainable_Donations_Awareness_Suggestions” appear to be statistically significant predictors of the dependent variable, as their associated P-values are less than 0.05. Other variables, such as “Genre”, “Educational_level”, and “D-CF_familiarity”, do not appear to have a statistically significant relationship with the dependent variable, as their associated P-values are greater than 0.05.

5. CONCLUSIONS

The aim of this research paper is to shed light on the potential of donation-based crowdfunding as a financing mechanism for sustainable projects in Bardo City, Tunisia. While a significant portion of the population recognizes the importance of community involvement and expresses openness to participating, raising public awareness about crowdfunding and the SDGs remains crucial.

Policymakers can play a vital role by developing educational campaigns or collaborating with crowdfunding platforms to increase public understanding of these tools. Furthermore, exploring policy changes such as tax incentives for

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crowdfunding platforms focusing on SDGs or streamlined regulations for project approval could significantly encourage the growth of sustainable initiatives in Tunisia. This could unlock a new avenue for financing and empower local communities to contribute to achieving the SDGs.

Our findings, based on a survey of 116 Bardo City citizens (a limitation acknowledged), support this potential. The regression analysis revealed a moderate positive correlation between the studied variables and donation willingness. Specifically, those who consider donation important and those who expressed interest in raising awareness for crowdfunding for sustainable projects were more likely to be willing to donate. However, factors like familiarity with crowdfunding itself might require further exploration in a larger and more diverse sample. Additionally, investigating potential interaction effects between variables or conducting subgroup analysis (by age range for example) could provide deeper insights into specific segments of the population with higher donation potential. Regarding the valid hypotheses, H1 was supported as the data showed that significant portion of the population has a positive attitude towards donating through crowdfunding platforms to support sustainable projects. H2 was also supported, as the level of awareness about the importance of donation-based crowdfunding was positively associated with the intention to contribute. Finally, H3 was partially supported as the perceived sustainability of the project was found to have a significant influence on Bardo city citizens' willingness to donate through crowdfunding platforms.

Future research could delve deeper into the most effective communication strategies for raising awareness, considering factors like cultural preferences and preferred communication channels. Investigating the motivations and decision-making processes behind donation behavior could also yield valuable insights for designing more persuasive crowdfunding campaigns. Additionally, studying successful crowdfunding campaigns for sustainable projects, both within and outside Tunisia, could offer valuable lessons on design elements that influence donation success. This knowledge could be used to develop best practices for future crowdfunding initiatives focused on SDGs.

Despite limitations, this study provides a valuable starting point for understanding how donation-based crowdfunding can support sustainable development in Bardo City and potentially other areas anywhere. By promoting public awareness, developing supportive policies, and fostering knowledge sharing on successful campaign design, crowdfunding can become a powerful tool for achieving the SDGs and fostering community participation in sustainable initiatives.

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التمويل الجماعي القائم على التبرعات في دعم المشاريع المستدامة:

دراسة حالة لمدينة باردو، بتونس

مريم التليلي

طالبة دكتوراه

الاقتصاد والمالية الإسلامية، المعهد العالي لأصول الدين، جامعة الزيتونة، تونس

المستخلص

تهدف هذه الورقة إلى تقييم مدى وعي سكان مدينة باردو- تونس بأهمية التبرع في عملية التمويل الجماعي لصالح المشاريع المستدامة في المدينة وعن مدى استعدادهم للمساهمة في ذلك. وللإجابة عن هذا التساؤل تم إتباع نهج كمي عن طريق إجراء استبيان لـ 116 من سكان مدينة باردو، حيث أشارت النتائج إلى أن غالبية المستجوبين يدركون فعلا أن التبرعات للمشاريع المستدامة مهمة وأن معظمهم على استعداد للتبرع لمثل هذه المبادرة، وقد تم استخدام برنامج SPSS لتحليل البيانات، وأظهرت النتائج وجود علاقة إيجابية متوسطة بين مدى وعي الأفراد بأهمية التبرع للمواطنين واستعدادهم

للتبرع. وبالإضافة إلى ذلك، فإن النموذج الإحصائي الذي تم استخدامه يعتبر له دلالة إحصائية. تركز هذا الدراسة بشكل خاص على مدينة باردو - تونس وعلى التمويل الجماعي القائم على التبرعات للمشاريع المستدامة، مما يجعلها فريدة من نوعها ويمكنها المساهمة في تطوير أدبيات التمويل الجماعي والمشاريع المستدامة.

الكلمات المفتاحية: التمويل الجماعي القائم على التبرع، التنمية المستدامة، السلطة المحلية، المشاريع مستدامة.