

Initial Coin Offerings as a Contemporary Financing Alternative: Successful Ways to Raise Funds

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Abstract—Initial coin offerings (ICOs) have emerged as a modern alternative financing instrument capable of connecting economic agents, entrepreneurs, and investors from all over the world. The benefits of blockchain technology in terms of privacy, security, and immutability make these financing tools particularly attractive. In this article, we analyze ICOs through the world's largest global database of ICOs. The analysis has been carried out through fsQCA methodology to a sample of 75 projects funded through this funding tool and aims to answer what are the possible ways to achieve success in fundraising in an ICO. The results shed light on the importance of financial factors, such as the risk of the operation, but also related to communication and user communities for the success or failure of these campaigns. The aim of this article is to provide entrepreneurs with a tool to help them plan their ICOs, develop them in a suitable way to attract the largest amount of funds, and mobilize investors' resources, achieving a synergy between the entrepreneur and the investor, with impactful, innovative, and profitable projects. It is also intended to contribute to the academic development of the subject with comparative qualitative studies.

Index Terms—Blockchain, fsQCA, funding sources, initial coin offering (ICO), startups.

I. INTRODUCTION

IN RECENT years, the financial sector has undergone a significant transformation, driven by technological progress and digitalization. In this context, the Fintech industry has begun to develop, which refers to business models based on financial solutions combined with digital technology [75]. The applications generated in this segment are diverse and extensive, ranging from payment solutions and neobanks to investment platforms in equity and debt for individuals and companies that traditionally did not have access to such financial instruments. Fintech companies have contributed to financial inclusion, the democratization of the sector, and greater efficiency and competitiveness in the financial industry [18].

In this regard, technologies and innovations, such as artificial intelligence, big data, and blockchain, have served as driving forces for new financial solutions based on software or digital

solutions [10]. These innovations have enabled the creation of new products and services and access to capital and credit under different economic, financial, and temporal conditions compared to those existing in the traditional financial sector. Consequently, the reduction of dependence on intermediaries, such as banks, notaries, or other highly bureaucratic institutions, has energized the startup sector, providing them with new tools to access financing. In this context, initial coin offerings (ICOs) emerge as a new fundraising tool based on blockchain technology.

In the landscape of entrepreneurial finance, ICOs have manifested as a compelling departure from traditional channels, such as venture capital and crowdfunding. This distinctive fundraising paradigm involves the issuance of digital tokens or coins, in return for cryptocurrencies like Bitcoin or Ethereum, an innovation that bears noteworthy implications for the economic ecosystem. The tokens, traded on cryptocurrency exchanges, derive their valuation from the intricate interplay of market forces, an aspect underscored in the work of Campino et al. [15].

The ascendancy of ICOs in underwriting nascent entrepreneurial initiatives has experienced a meteoric rise over recent years. The quantum leap in funds, surpassing \$13.7 billion in 2018, marks a paradigm shift, effectively doubling the figures of 2017, as chronicled by Campino et al. [14]. According to the most recent industry information available, in 2020, 2329 projects were financed through these financial instruments, especially with regard to financing platform projects, business services, and cryptocurrencies [67]. The trajectory of the sector has been characterized by nuanced dynamics post-2020. Following a period of gradual decline, ICOs experienced a renaissance in subsequent years. Despite a measured deceleration in fundraising levels during 2022 and 2023, ICOs continue to exert an irresistible allure as a financial instrument for entrepreneurs and startups alike. This trajectory is anticipated to endure, propelled by an expanding recognition among entrepreneurs and investors of the resounding potential of ICOs as a potent fundraising mechanism. Notably, the evolutionary arc of ICOs has witnessed a discernible pivot toward projects centered on utility tokens, designed to access specific services or products within a given platform. This transformation has catalyzed the emergence of novel business models grounded in blockchain technology and cryptocurrencies [31], a theme expounded by Ackermann et al. [2]. ICOs, as elucidated by the European Parliamentary Research Service [22], empower entrepreneurs to mobilize capital for avant-garde projects by issuing digital tokens in exchange for cryptocurrencies or fiat currencies. Beyond their immediate financial impact, ICOs harbor the transformative

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potential to democratize global financial investments, affording universal access to capital for groundbreaking ideas. ICOs, as a component agent of the Fintech landscape, are fundamental to financial development [26]. Moreover, their transitory yet substantial value to investors positions ICOs as a pivotal funding source for sustainable initiatives, particularly in regions where conventional banking infrastructure remains underdeveloped. As posited by Bitetto and Cerchiello [9], ICOs bear the potential to contribute significantly to the economic development of such regions by facilitating access to capital for pioneering projects [27].

Nevertheless, the seemingly boundless allure of ICOs is tempered by inherent risks. The unbridled nature of the industry, bereft of regulatory moorings, has precipitated a proliferation of fraudulent or deceptive ICOs, prompting a discerning scrutiny from regulatory bodies and governments worldwide. Against this backdrop, wherein ICOs emerge as an alternative financial conduit for entrepreneurial ventures, the current inquiry capitalizes on the evolving nature of this nascent subject. In this regard, the literature on the subject is not very numerous due to the novelty of the technology. The few scientific studies that have explored project variables so far have not focused excessively on financial variables, or those directly related to the financial determinants of the success of this type of operation. In this sense, the aim of this article is to fill this gap detected in the literature review, performing an exhaustive analysis in the largest public database of ICOs on the financial variables that can determine the success or failure of an operation. In the article, we have included the variable of fundraising time, the volume requested, the credit rating, the professional assessment of the management team, the community around the project, the degree of user interaction, as well as the degree of verification of the management team by the verification platform. The aim herein is to conduct a nuanced comparative qualitative study leveraging fsQCA, with a core mission to unravel the multifaceted factors that underpin the success or failure of an ICO. Likewise, the ultimate goal of this article is to find out the keys to the success of entrepreneurial projects that have resorted to this innovative way of financing their business, based on the empirical and theoretical studies developed in other alternative financing channels, such as crowdfunding or crowdlending. In this sense, the new ways of financing companies through digital channels share the importance of the community of users, so starting from this basis, we have selected the study of variables related to this characteristic, such as the size of the community of investors in a project, its interactive capacity through different channels, platforms and social networks, or the project management team, key to the generation of trust in the community.

The rest of this article is organized as follows. In Section II, we will elaborate theoretical framework of the article, building the propositions that we will try to demonstrate with the subsequent study. Subsequently, in Section III, we will describe the data and the comparative qualitative methodology with which we have worked, as well as the software used for it. After that, in Sections IV and V, we will show the results obtained in the article and discuss them by establishing relationships between them and the previous bibliography on this subject. Finally, Section VI concludes this article.

II. THEORETICAL BACKGROUND

ICOs constitute an innovative fundraising mechanism, affording entrepreneurs the means to secure capital for their projects through the issuance of digital tokens, which are exchanged for either cryptocurrencies or conventional fiat currencies. The foundation of ICOs rests upon blockchain technology, a decentralized and distributed ledger system designed to meticulously record transactions in a secure and transparent manner [74]. This revolutionary innovation engenders a tamperproof and immutable transaction record, obviating the necessity for intermediaries, such as banks and financial institutions [41]. ICOs constitute together with crowdfunding, cryptocurrencies, and blockchain technologies a vibrant framework for financial and entrepreneurial interaction and development [11]. The incorporation of blockchain technology in ICOs yields several merits, encompassing reduced transaction costs, expedited processing times, and an augmentation of transparency and security. Academic research about ICOs starts in 2017 and 2018 with the some first works, such as those of Górka and Pietruk [29], Gutfleisch [33], or Kampakis [42] in which they investigate the benefits of that incipient way of financing, the potential it had to go around and the legal framework in which this financial instrument could be developed in the European Union. Research on ICOs has advanced and grown significantly in recent years, showing an upward trend in terms of publication of scientific articles on the subject, with four of them registering more than 200 citations each, among which are the works of Adhami et al. [3], Chen [16], Fisch [24], and Xu et al. [78].

ICOs conventionally transpire in two discernible phases: the presale and the public sale. In the presale stage, the project team extends token offerings to a select cohort of investors at a discounted valuation. This phase is typically earmarked for high net worth individuals and institutional investors. Subsequently, the public sale stage unfolds, opening to the general public and facilitating the sale of tokens at a predetermined fixed price.

The popularity of ICOs as a fundraising mechanism for startups is underscored by their efficacy in swiftly accumulating substantial capital. However, it is imperative to acknowledge the attendant risks associated with this mode of fundraising, including fraud, regulatory uncertainties, and market volatility. Prudent investors are strongly urged to undertake exhaustive due diligence before embarking on ICO investments, thereby navigating the multifaceted landscape of this innovative financial paradigm with circumspection and informed decision-making. With the aim of supporting the decision-making process of entrepreneurs, people involved in ICO operations, and investors, we are going to develop a theoretical framework that will serve as a basis for establishing the seven propositions that form the backbone of this article. These seven propositions have been proposed based on the gap detected in previous article on financial variables (or variables that significantly condition key financial variables, such as profitability and risk of a project), and which of course condition the success or failure of a campaign, understood as the amount of funds raised in relation to the amount initially requested. In this sense, we begin by constructing the theoretical framework that has served for the enunciation of the propositions that we will try to analyze in the following study.

A. Financial Variables of the Project

ICOs have multiple characteristics to analyze at the time of their launch. Undoubtedly, variables that directly impact the financial aspect of the investment are very important to analyze, as they are crucial variables in the investor's decision-making process [43]. When launching a project to the market to raise funds, it is essential to determine the fundraising period. This period may vary depending on the nature of the issuance, potential demand, and the financial instrument being used. Previous articles conducted on IPOs, ICOs, crowdfunding projects... with other methodologies and in other markets suggest that shorter fundraising periods are usually related to a higher amount of money raised [6], [58]. The fundraising period is a vital period in which the project is presented to the market, with all its components that characterize it, mission, vision, values, objectives, management team... Therefore, it is necessary to prepare the project's market presentation, especially from the moments before the ICO when communicating, and during the fundraising period [61]. Similarly, other previous articles indicate the importance of the amount of money demanded in other fundraisings. In this sense, it is important to adjust the amount demanded to the real needs of the project. However, in this article, we want to verify which type of projects attract investment from ICO investors, those that request large amounts of money or those that request smaller amounts. In this line, it is interesting to analyze another key variable in debt or equity issuances of all types of financial instruments; the credit rating [47]. Previous articles by Choi [17] suggest that determining an initial value of the token, as well as an amount requested that is not too small (but not too high), is relevant for fundraising. The rating indicates the risk that the investor assumes when investing in a particular project or company. The risk determines another key variable for the investor, which is the expected return on investment. Until now, this factor has not been analyzed in ICOs, so there is a gap in the literature on the subject that we want to complete with this article that we will develop in the following sections.

Based on the above premises, we establish the following propositions.

Proposition 1: The fundraising period is a relevant condition for the achievement of the financing objectives of a project that carries out an ICO to raise funds.

Proposition 2: The amount of money requested is relevant to obtain the fundraising goal established in the ICO.

Proposition 3: The risk rating of the issue is an important variable to obtain the funds required for the development of the project.

B. Human Resources as Key Variables for the Success of the Project

Human resources are a key factor in the business management of any organization. According to the Human Capital Theory, economic resources dedicated to employee training are seen as an investment, since they ultimately benefit the company, and therefore also social benefit and the development of a country [59], [71]. Improving employees' knowledge and soft skills

has a positive impact on their productivity and the company's innovation capacity, which generates a positive impact in the long term on business results. In this sense, it is important to have a team with the necessary technical knowledge to be able to develop their work satisfactorily [40], [51], [64]. Likewise, for the project to be sustainable in the long term, a multidisciplinary and complementary team must be available [53]. The variety of profiles gives the company the ability to solve problems from different points of view [55], [73]. Recent studies on the subject point out the importance of having a multigenerational team, in which senior profiles with experience and commitment coexist with junior profiles with highly developed digital skills and a novel and unbiased vision of company management and/or the job position [21]. On the other hand, it is also worth noting the benefits of having a multicultural team, which, given its idiosyncrasy and different approach to problems, allows the human team to complement each other [7], [72]. Other studies on the subject have investigated the importance of these factors in the ability to raise funds in debt and capital issues, either through traditional means or through alternative financing methods, such as crowdfunding and crowdlending. In this sense, the human factor is key, both for the success of the project and for the ability to raise funds [38]. Currently, there are few research studies on the role of the human team in the success of ICOs, although Campino et al. [14] pointed out its importance in their previous article. These studies serve as a starting point for us to try to contribute to the literature and previous article.

In this sense, we have also considered it of paramount importance to study the role of verifying the existence of the human team in projects to drive fundraising in ICOs. Confidence in the project's success and the capabilities of its founders and managers is of vital importance in any investment process [36], [81]. In this regard, it is worth noting the context of high uncertainty that characterizes the cryptocurrency issuance sector. The youth of this instrument, the boom it experienced from 2018 onwards, and the absence of specific regulation have made it possible for fraudulent projects to occur, whose fundraising campaign only aimed to raise funds without subsequently developing a real project [30], [35]. Therefore, it seems logical that the verification of the existence, experience, and capabilities of the project management team can be considered as one of the key variables for fundraising in ICOs. It is also worth noting that previous articles by Kim et al. [48] and Wymer and Cacicja [77] have demonstrated the importance of being able to build a brand image and reputation that can give investors' confidence in the project fundraising team, as well as improve the donation experience, which is a clear variable for potentially increasing fundraising. It should be noted that these previous articles focus mainly on fundraising campaigns through alternative financing platforms that are primarily donation-based projects. In this sense, we have detected a gap in the study area regarding fundraising operations with ICOs for business projects. Based on the beforementioned, we propose the following two propositions of the article.

Proposition 4: The human team that makes up the project is a relevant variable to raise money from investors in the ICO.

C. Community and Communication as Key Variables to Successfully ICOs

Every company needs customers to make sales and ensure its continuity over time. Nowadays, companies have great tools to connect with their customers in a direct, simple, and relatively inexpensive way through instruments, such as social media. This is especially important for companies based on digital business models [1], [4], [7], [52]. The company's activity on social media can generate engagement with the community, weave a network that feeds the company through constant or recurring feedback, or develop online actions to obtain market data and information that can be used later in the development of products or services that meet the demands of society collected through the market [34]. On the other hand, the company's interaction on social media can also generate synergies with other business projects to develop new products or improve the company's value proposition [28]. Being able to have a community on social media can also be interpreted as a signal of market interest in the company and allows the transmission of informative and/or commercial messages in an agile and efficient way, or to build a powerful and consumer-friendly brand image [20], [45], [66]. Likewise, the correct interaction on social media by the company can serve to improve consumer confidence in the project [56], a very relevant aspect, and complementary to Proposition 7, which deals with the importance of verifying the team to build investor confidence in a volatile and uncertain sector.

If having a community on social media is important for business success and signaling interest to investors, public communication to that community and to the general public is crucial for success in ICOs [68]. Previous articles by Kshetri [46] have shown that communication is a very important element in successfully executing an ICO. Active communication by project managers should serve as an element to facilitate understanding of its operation, structure, objectives, and goals [13]. Likewise, it is vital to keep the investor informed about the progress on the project roadmap. The need to carry out subsequent ICOs to continue raising funds for the project makes it necessary not only to build a relationship of trust but also to maintain it over time. Good and fluid communication is very important to reduce information asymmetry, be transparent, and as a consequence, send a message of reliability to the market, which can boost current and potential investors of the project.

Based on the above premises, we propose the following propositions.

Proposition 5: Having a large community in social networks is a relevant condition to achieve the funding goal established in the ICO.

Proposition 6: The active communication of the ICO managers is an important variable to raise funds from investors.

Proposition 7: The verification of the existence of the project promoters is an important condition to reach the ICO funding goal.

III. DATA AND METHODOLOGY

This analysis has been conducted based on a database compiled with information provided by ICOholder, an aggregator

platform for ICOs and initial exchange offerings. The company is a smart tracker, a global analytics platform with the world's largest crypto database, providing financial and business information and creating ratings for various ICOs worldwide [5]. The database, compiled from information published on the platform, consists of 245 projects, encoding financial, business, community follower-related, and project security variables (verification of the same). After cleaning the database, we conducted the analysis on 75 projects, as the remaining ones did not contain all the information required for this article. According to Schneider and Wageman [65] studies, a sample size greater than 50 cases is sufficient for fsQCA studies.

In this article, we have employed the fsQCA methodology given the nature of our research question, which basically deals with what characteristics an ICO must have to raise a high proportion of funds relative to the total requested from the market in the issuance. This methodology has been used in this article, considering the nature of the research question, which tries to explore the conditions that lead to successful fundraising in ICOs. In this sense, the ability of fsQCA to show us different paths that can lead to this result makes the methodology the perfect tool to answer the research question. This methodology is relatively young; however, in recent years, it has enjoyed great popularity in subjects related to social sciences, specifically entrepreneurship and management [50]. fsQCA is a comparative qualitative methodology that seeks to find combinations of conditions (called variables in quantitative terminology) that lead to a specific outcome [57]. It is a methodology suitable for working with medium-sized samples, and whose variables present complex and nonlinear relationships [65]. The method works based on Boolean algebra, as well as fuzzy set theory [36]. The results show the complex causal relationships between variables, showing us different paths that can lead to the outcome under study. These paths are called configurations, and each of them presents a different combination of variables that serves to achieve the analyzed outcome [25], [63]. The results show the necessary and sufficient conditions for the occurrence or nonoccurrence of the outcome [69].

Table I shows the conditions and outcome considered in this article.

A. Calibration

Before proceeding to perform the analysis that will allow us to determine the necessary and sufficient conditions to reach the outcome, it is necessary to carry out the calibration process [79]. In fsQCA, the calibration process tries to convert raw numerical values into numbers that are between 0 and 1 and that indicate the degree of membership in fuzzy sets [49]. Without having all the data calibrated and understood between 0 and 1, the fuzzy analysis cannot be performed to determine the necessary and sufficient conditions. To carry out the calibration, we have followed the instructions established in previous articles by Pappas and Woodside [60]. The calibration process has been carried out through fsQCA 4.1 software. To carry out the calibration, we have set the 90th percentile as the full membership point, the 50th percentile as the crossover point, and the 10th percentile as

TABLE I
VARIABLES

Condition /outcome	Definition
Time (condition)	Time period that the project has set in the ICO to raise funds.
Amount (condition)	Amount of money (in dollars) that the company has set as a fundraising target in the ICO.
Rat (condition)	Rating assigned by ICOholder to the project carried out by the ICO. The rating has been determined by its team of expert analysts and ranges from 1 to 5, where 1 indicates a low rating and 5 a high rating, i.e. a high-quality project.
Team (Condition)	Score given by ICOholder to the founding and managing team of the project that is launching the ICO.
Com (condition)	Community of followers in social network X (formerly Twitter) that the project has.
Users (condition)	Interaction that users have with the company launching the ICO. ICOholder rates it with a score ranging from very low to very high. We have coded this score on a scale of 1 to 5.
Verif (Condition)	Percentage of the ICO management team whose existence is verified by ICOholder.
Goal (outcome)	Percentage of the fundraising obtained in the ICO with respect to the set target (may exceed 100%).

TABLE II
STATISTICS

	TIME	AMOUNT	RAT	TEAM	COM	USERS	VERIF	GOAL
Full membership (90th percentile)	147.9	11706965	4.32	4.649	15078.9	5	1	1.798
Crossover point (50th percentile)	59	2001039	3.98	4.05	3809	5	0.44	0.68
Full non membership (10th percentile)	20.3	200000	3.501	3.459	559.6	2	0	0.06
Maximum	609	36000000	4.64	4.8	78010	5	1	10.27
Minimum	5	22900	2.04	1	0	2	0	0.01
Average	81.59459	4174352	3.945811	4.02	8568.149	4.081081	0.487432	1.010541
Median	59	2001039	3.98	4.05	3809	5	0.44	0.68
Standard deviation	90.33422	6328646	0.393342	0.544776	16192.5	1.202244	0.410246	1.680196

TABLE III
NECESSITY ANALYSIS

	HIGH LEVELS OF GOAL ACHIEVEMENT		LOW LEVELS OF GOAL ACHIEVEMENT	
	Consistency	Coverage	Consistency	Coverage
FSTIME	0.508	0.579	0.547	0.558
~FSTIME	0.611	0.601	0.586	0.516
FSAMOUNT	0.562	0.673	0.434	0.465
~FSAMOUNT	0.553	0.522	0.695	0.587
FSRAT	0.630	0.643	0.520	0.475
~FSRAT	0.485	0.530	0.609	0.595
FSTEAM	0.609	0.622	0.553	0.505
~FSTEAM	0.516	0.563	0.587	0.573
FSCOM	0.541	0.641	0.471	0.500
~FSCOM	0.578	0.550	0.662	0.563
FSUSERS	0.772	0.571	0.756	0.500
~FSUSERS	0.325	0.599	0.351	0.580
FSVERIF	0.590	0.623	0.519	0.490
~FSVERIF	0.517	0.546	0.601	0.568

the full nonmembership point as can be seen in Table II, after a preliminary study of some basic statistics.

IV. RESULTS

In this section, we will then develop the results obtained in the necessity and sufficiency analysis of this article, in order to determine the conditions and their configurations that make it possible to achieve the outcome studied.

A. Necessity Analysis

According to the work of Ragin [62], we can establish a relationship of necessary condition for the occurrence of an outcome when the level of consistency is higher than 0.9. Consistency is a measure that indicates the degree to which a causal condition leads to an outcome. In this case, when it reaches levels above 0.9, we will say that it is a necessary condition, i.e., the outcome needs its presence (or absence) for it to occur.

According to the results obtained, as we can observe in Table III, there is no condition, or lack thereof, that exceeds a consistency level of 0.9, so we cannot say that in this case there is any condition necessary for the occurrence of the outcome.

B. Sufficiency Analysis

Next, we present the results obtained in the sufficiency analysis, both for high levels of fundraising in the ICO and subsequently for reduced levels. The sufficiency analysis aims to identify the combinations of conditions (variables) that are sufficient for the occurrence of an outcome. In fsQCA, the sufficiency analysis is based on the nonlinear relationships between conditions and the equifinality of the results. This means that we are going to obtain different combinations of variables that lead us to the same outcome [62]. This represents a relevant variation compared to other purely quantitative methodologies that show

only one solution. The comparative qualitative technique allows us to capture complex relationships between variables, and this factor is ideal for social science studies like this, since the reality of ICOs and businesses is ultimately conditioned by human interaction and action, which is not linear, predictable, and variables cannot be isolated. The sufficiency analysis is based on Boolean logic and fuzzy set theory. Through reductions of truth tables, we obtain three different solutions in the fsQCA analysis: the complex solution, the parsimonious solution, and the intermediate solution [76]. It is relevant to note that, according to Ragin (2006), it is necessary to reach a consistency level of at least 0.75 in order to consider the study as academically representative. In this article, we present the results obtained according to Fiss [25], combining the intermediate and parsimonious solutions. In this sense, black circles indicate that the condition reaches high levels (or presence) for the occurrence of the outcome, while white circles indicate that the variable will register low levels (or absence) for the occurrence of the outcome. Large circles indicate that the condition is present in the intermediate and parsimonious solution, while small circles indicate that it is only present in the intermediate solution. The absence of circles indicates the irrelevance of the condition for the occurrence of the outcome.

1) *High Levels of Goal Achievement:* In the following, we will show the results obtained for high levels of fundraising in the ICOs analyzed.

Configuration 8, which registers the highest levels of consistency, 0.905, indicates that those projects that manage to reach a large relative amount of funds in ICOs are characterized by being large projects that request large amounts of money, have solvent teams with a high score in terms of capabilities, have a high rating, i.e., they are relatively safer projects, and users value them adequately, having a good interaction with them. On the other hand, they tend to be projects with short fundraising periods, few followers on Twitter, and with a small proportion of verified members. This configuration has a raw coverage of 0.139.

Configuration 2, which reaches a raw coverage level of 0.182, i.e., it represents 18.20% of the cases in which the projects achieve high levels of fundraising, are characterized by being ICOs in which a large amount of money is requested, have a large community of followers on Twitter, a large part of their management and founding team is verified, and present good interaction with users. On the other hand, they are projects whose fundraising period is short. The configuration presents a consistency level of 0.864.

Configuration 3, which represents the highest number of cases, 28.9%, shows us that for the ICO to be successful and achieve its financing objectives, it is necessary for it to have a high rating, a large community of followers on Twitter, its management team and founder to be verified, and to achieve a good score in terms of management capabilities. This configuration presents a consistency level of 0.807.

2) *Low Levels of Goal Achievement:* Configuration 3 suggests that those ICOs that raise a low amount of funds are characterized as projects with a long fundraising period, a large community of followers on Twitter, and good interaction with

TABLE IV
SUFFICIENCY ANALYSIS: HIGH LEVELS OF GOAL ACHIEVEMENT

	1	2	3	4	5	6	7	8
TIME		○			○	○	○	○
AMOUNT	●	●		●	●	○	○	●
RAT	○		●	●	○	○	○	●
TEAM			●	○	○	○	●	●
COM	●	●	●	○	●	○	●	○
USERS	●	●	●	○		○	○	●
VERIF	●	●	●	○	○	●	○	○
Raw coverage	0.179	0.182	0.289	0.109	0.156	0.104	0.098	0.139
Unique coverage	0.022	0.010	0.127	0.008	0.037	0.023	0.015	0.043
Consistency	0.825	0.864	0.807	0.884	0.852	0.881	0.868	0.905

Solution coverage: 0.509. Solution consistency: 0.791.

users, but that nevertheless have few verified team members, the team has a low valuation and a low rating. This configuration has a consistency level of 0.884 and represents 14.6% of the cases of ICOs that record low fundraising.

Configuration 4 shows us that the ICOs that register low levels of fundraising with respect to those initially required are those projects that have a high fundraising period, a large Twitter follower community, request large amounts of money, and present a good interaction with their users. On the contrary, their team has a low rating and most of it is unverified. This configuration has a raw coverage level of 0.156 and a consistency level of 0.862.

Configuration 1, which represents 15% of the cases in which ICOs register a low level of fundraising, suggests that these projects are characterized by long fundraising periods, reduced rating, insufficient interaction with users, requesting a small amount of money, their team is not well valued and has a small community of followers on Twitter. This configuration has a consistency level of 0.806.

V. DISCUSSION OF RESULTS

The results obtained in the article indicate, first of all, the importance of the project's fundraising deadlines. As shown in Table IV, ICOs that raise a large amount of funds are characterized by short fundraising periods, while those that do not reach their funding targets, or even remain at low levels, are characterized as ICOs with long fundraising periods. This can be interpreted as a symptom of high market demand; the project does not require a long time to raise funds. The demand from investors is so high that in a short time they complete their funding goal. A high number of investors want to be part of the project by acquiring their coins. It is also interesting to note

TABLE V
SUFFICIENCY ANALYSIS: HIGH LEVELS OF GOAL ACHIEVEMENT

	1	2	3	4
TIME	●	●	●	●
AMOUNT	○	○		●
RAT	○	○	○	
TEAM	○	○	○	○
COM	○		●	●
USERS	○	○	●	●
VERIF		●	○	○
Raw coverage	0.150	0.133	0.146	0.156
Unique coverage	0.036	0.014	0.015	0.030
Consistency	0.806	0.798	0.884	0.862

Solution coverage: 0.267. Solution consistency: 0.821.

that in most cases the projects that manage to raise the proposed funds are usually projects that request a large amount of capital from the ICO. In contrast, as we can observe in Table V in the study carried out to determine the characteristics of the projects that register a low amount of compliance with the financing goal, they tend to be projects that request little money. These findings are in line with what was previously proposed by Deng et al. [19] in fundraising campaigns on crowdfunding platforms.

On the other hand, we have also recorded that in most of the configurations that indicate success in fundraising ICOs are characterized by the positive component of their community: it is important to have a large community of X (Twitter) followers and to present a good interaction with users. These results are in line with what was previously studied in analyses by Kaur and Gera [44]; having large follower and user communities improves brand engagement and visibility, and is able to redirect more traffic to the website and can positively impact fundraising campaigns. However, it is striking how in half of the projects with poor fundraising results, these two factors are also present. We can infer that this is because other factors come into play in fundraising through ICOs, and in the case of projects that do not achieve their goals, we identify that these factors coexist with the absence of a well-valued team and low team verification. as well as sometimes reduced ratings.

In this regard, also comment on the importance of equipment verification to achieve the objectives in the ICO campaign. Although in this study there is some ambiguity as to the factor played by the valuation of the team in ICOs, since the results are ambiguous.

On the other hand, it is worth commenting that although it is a characteristic feature of ICOs that fail in their fundraising task that they have a low rating, it is also present in a large part of the configurations that lead to the success of ICOs. This may be due to the risk profile that the investor in the crypto market usually has. This is an investor more prone to risk-taking in investment, and may be looking for extraordinary returns in this market, also coupled with a lower rating, following the classic risk-return tradeoff in finance.

VI. CONCLUSION

The crypto and blockchain sector applied to the financing of entrepreneurial projects has experienced rapid evolution in recent years. It is a young industry, with rapid but irregular evolution, marked by the volatility of this market [70], [80]. In this context, ICOs, coin issuances based on blockchain technology, have positioned themselves as a driving force for the financing of entrepreneurial and disruptive projects in many sectors, such as the financial sector, the industrial application sector or the fashion industry, among others [39]. The ability to be part of these projects and raise funds simply by having an Internet connection, allowing connection with creditors and debtors from around the world, is a lever for financial inclusion that allows the development of areas where there is little developed financial or banking sector. In this context, more and more entrepreneurs and companies are interested in accessing this type of tool.

A. Practical Implications

The study carried out has allowed us to extract a series of conclusions that will guide those projects that plan to raise funds through ICOs. The first conclusion we draw is the importance of the community in the ability to raise funds in an ICO; having a large number of followers on social networks and interacting correctly with users is a key variable to generate engagement, awareness, direct traffic to the campaign and the platform of the ICO promoter, and mobilize funds. These findings are in line with previous articles by Belleflamme et al. [8] on other types of participatory and digital finance instruments, like ICOs. Likewise, we can conclude that large-scale projects that establish short fundraising periods are characteristic features of successful ICOs. That is, the relevance of the image that is transmitted to the market is observed: large and ambitious projects that impose reduced fundraising periods because they know their potential and trust that the investor will demand their project. These results are in line with and somewhat complement previous article by Brown et al. [12], emphasizing the importance of branding in ICOs, similar to what happens in crowdfunding campaigns. Having a good brand image to raise funds, and using fundraising to build brand image, a synergistic relationship that feeds back positively to generate value and trust in the market. The results obtained in the study align with previous articles by Zafar et al. [81] and Ferrer et al. [23] regarding the relevance of trust in this market: the need to have a verifiable team with good management capabilities is crucial to the success of the ICO and other participative financing sources. In such a volatile and uncertain market as crypto, where cases of fraud or scams have been recurrently reported, it is very important that the human factor is honest and capable, and that it articulates coherent, informative, and transparent communication to the community.

B. Theoretical Implications

With this article, we also aim to contribute to the previous literature written on ICOs and blockchain applied to business and entrepreneurship. This article aims to shed light on some unexplored areas of study in ICOs so far, such as the importance of the

fundraising period, the amount demanded, or the verification of the founding team. Likewise, we have contributed academically to studies on ICOs with the novel fsQCA methodology. So far, very few studies have been developed with this methodology in this subject, and we wanted to shed light on this area of study with the comparative–qualitative methodology, capturing complex relationships and showing different paths to achieve success in ICOs.

C. Limitations and Future Research Lines

The article is not without limitations, among them the reduction of cases that we have experienced as a consequence of the absence of some of the information in the aggregator platform. Also, this platform, although it provides the largest database of ICOs in the world, does not contain all the ICOs, so other projects may have different characteristics from the results obtained. It should be noted that the results obtained in the analysis emanate from an international database, with the presence of projects from multiple countries, geographic regions and different societies. While this brings great richness to the article, since the generalizations and extrapolations that can be derived from it have significant potential, it should also be mentioned that there may be regional particularities that may cause some of the results obtained to vary.

In this sense, we have also included variables that we have been able to locate thanks to the aggregator platform, including seven conditions in the fsQCA study, given that this is the maximum accepted by the methodology, by way of future lines of research, it would be interesting to include other variables that may impact fundraising, such as regulatory or environmental variables and develop another study with larger datasets and different methodologies.

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