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THE ROLE OF ENVIRONMENTAL SUSTAINABILITY IN
THE SUCCESS OF INITIAL COIN OFFERINGS

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THE ROLE OF ENVIRONMENTAL
SUSTAINABILITY IN THE SUCCESS OF INITIAL
COIN OFFERINGS

A Master's Thesis

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To my dear family and loving husband



THE ROLE OF ENVIRONMENTAL SUSTAINABILITY IN THE SUCCESS OF
INITIAL COIN OFFERINGS

The Graduate School of Economics and Social Sciences
of
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by

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By Parivash Dabbaghi Dehkharghani

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ABSTRACT

THE ROLE OF ENVIRONMENTAL SUSTAINABILITY IN THE SUCCESS OF INITIAL COIN OFFERINGS

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Initial Coin Offerings (ICOs) have emerged as a popular fundraising method in the cryptocurrency sector. Previous studies have identified various factors affecting fundraising success. This study goes further, exploring the broader range of success factors in ICOs, with a particular focus on environmental sustainability, which is divided into direct and indirect categories. Direct sustainability refers to ICOs that offer products or services directly related to environmental sustainability initiatives and Indirect sustainability includes ICOs that may not have sustainability as their primary focus but contribute to sustainability goals in other ways. The research uses data from 1212 ICOs from ICO-related websites. Our findings reveal that ICOs directly linked to environmental sustainability may face challenges in fundraising success. We couldn't find any significant relationship between indirect sustainability and ICO success.

Keywords: Initial coin offerings success, Environmental sustainability, Fundraising

ÖZET

KRİPTO PARA ARZLARININ BAŞARISINDA ÇEVRESEL SÜRDÜRÜLEBİLİRLİĞİN ROLÜ

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Haziran 2024

Kripto varlık arzları (ICO'lar), kripto para sektöründe popüler bir fon toplama yöntemi olarak ortaya çıkmıştır. Önceki çalışmalar, fon toplama başarısını etkileyen çeşitli faktörleri belirlemiştir. Bu çalışma, ICO'lardaki başarı faktörlerini daha geniş bir şekilde inceleyerek, özellikle çevresel sürdürülebilirliğe odaklanmaktadır. ICO'ların çevresel sürdürülebilirlik etkisi, doğrudan ve dolaylı olmak üzere iki kategoride incelenmiştir. Doğrudan çevresel sürdürülebilirlikle ilişkili ICO'lar, çevresel sürdürülebilirlik girişimleriyle doğrudan bağlantılı ürün veya hizmetler sunan ICO'ları ifade ederken, dolaylı sürdürülebilirlik, sürdürülebilirliği ana odak noktası olarak almayan ancak başka yollarla sürdürülebilirlik hedeflerine katkıda bulunan ICO'ları içerir. Bu araştırma, ICO ile ilgili web sitelerinden alınan 1212 ICO'nun verilerini kullanmaktadır. Bulgularımız, çevresel sürdürülebilirlikle doğrudan bağlantılı olan ICO'ların fon toplama başarısında zorluklarla karşılaşabileceğini ortaya koymaktadır. Dolaylı sürdürülebilirlik ile ICO başarısı arasında anlamlı bir ilişki bulunamamıştır.

Anahtar Kelimeler: Kripto varlık arzları, çevresel sürdürülebilirlik, fon toplama

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CHAPTER 1

INTRODUCTION

Funding is vital for entrepreneurs to create novel products or services. Since research and development can be expensive, particularly for highly innovative companies, investment is crucial for their success. One of the most fundamental, yet often most challenging, steps for entrepreneurs is to find and choose between different sources of capital to fund their startup, as this decision can have an impact on future startup growth and success (Schwienbacher & Larralde, 2010). New enterprises have several ways of obtaining financial support. They may secure private venture loans from banks or credit unions, seek assistance from governmental sources, or access funding from nonprofit organizations (Garg & Shivam, 2017). During past decades, several businesses relied on angel investors or venture capitalists to finance their initial stages of development (Momtaz, 2020). However, innovative methods for securing financial support and investment for new ventures have emerged with the continual development of social media platforms and blockchain technology in various parts of business and finance. Blockchain technology is initially the name assigned to the design underpinning the operation of the digital currency Bitcoin. Bitcoin's invention combined various technologies to enable peer-to-peer transactions without intermediaries like banks. The term "blockchain technology", a technology that securely records and transmits data, emerged afterward to describe the foundational

mechanism of Bitcoin and similar decentralized systems (Ammous, 2016). Since then, the usage of digital currency progressed and become popular for financing goals.

Initial Coin Offering (ICO) has recently emerged as a new form of entrepreneurial finance where ventures raise capital by selling tokens to a crowd of investors. These tokens are digital assets protected by cryptography and implemented on a blockchain. In a typical ICO, an entrepreneur raises capital by pre-selling a “token” which gives its owner the right to utilize the company’s future product or service upon its development (Li & Mann, 2018). ICOs have achieved popularity as a funding method for businesses seeking to raise capital, offering advantages such as high liquidity, fast funding, and minimal funding costs. The Initial Coin Offering is often compared to the Initial Public Offering (IPO). An initial public offering is the process by which a private business goes public by selling stock to the general public. It might be a new, young company or an established corporation that decides to list on an exchange and, therefore, become public. However, there are various differences between these two. First of all, ICO operates in a mainly unregulated decentralized manner, while IPO is highly regulated. As a result, the flexibility and speed in fundraising in ICO are greater than in IPO. This regulation also lowers the likelihood of fraud for IPOs while ICOs face higher fraud risks, which brings challenges like a lack of trust in investors (HashemiJoo, Nishikawa, Yuka , & Dandapani, 2020). Investors may fund ventures directly through initial coin offerings, cutting out intermediaries and associated costs (Fisch & Momtaz, 2020).

Overall, ICOs have gained popularity as a funding method for businesses seeking to raise capital, offering advantages such as high liquidity, fast funding, and minimal funding costs. The growing popularity of ICOs is accelerated by their use as a protection against volatile local currencies and geopolitical concerns, skepticism of the traditional banking sector after the 2008 global financial crisis, and increased media attention (Šapkauskienė & Višinskaitė, 2020). In this financing approach, ICOs may have various fundraising goals. While certain ICOs establish minimum and

maximum funding limits, others omit them entirely, with some only specifying a minimum funding threshold. The success of an ICO funding depends on whether it achieves its minimum target amount if specified. If no minimum amount is set, other factors come into play to determine its success. Various factors influencing ICO's success have been extensively examined in the ICO literature. However, some external factors could significantly impact an ICO's success.

It is crucial to delve into the influence of factors that have received attention from researchers in recent years, such as sustainability, on these ventures. In the past few decades, attention towards sustainability increased considering the awareness and emphases made in this regard. Sustainability is a broad concept with many aspects. According to the Oxford Dictionary (Campino, Brochado, & Rosa, 2022), it is something that is (1) supportable or bearable, (2) capable of being upheld or defended, and (3) able to be maintained at a certain level. The term "maintain" refers to being supported or upheld over time. Consequently, for an action to be considered sustainable, it must be capable of enduring and being sustained over an extended period.

The concept of "environmental sustainability" now broadly includes these ideas concerning the nature of the biosphere. That is, the biosphere must support and bear businesses, products, and actions for them to be sustainable. The biosphere must also be safeguarded (defended) in the long run (Brennan, Binney, McCrohan, & Lancaster, 2011). Environmental sustainability is a topical issue that receives plenty of attention from the media and governmental organizations. This is a result of the amount of research going into assessing human activity's impact on the environment.

Environmental sustainability for businesses is the concept of minimizing the negative impact of business operations on the environment while ensuring that the business can continue to operate in the long term. It involves finding ways to use resources more efficiently, reducing waste and pollution, and mitigating the negative impacts of business operations on the natural environment. Businesses can achieve

environmental sustainability through a variety of strategies.

One of these approaches involves investigating energy efficiency and renewable energy. Businesses can reduce their greenhouse gas emissions and overall energy consumption by adopting energy-efficient practices and using renewable energy sources such as solar, wind, or hydropower. In the concept of initial coin offerings, some ICOs pay attention to this strategy. For example, Enerji coin ICO is a platform that connects consumers with smaller generators of renewable energy sources.

"Waste reduction and recycling" is another technique companies may implement. By reducing waste through efficient resource use, reusing materials, and recycling, businesses can minimize the environmental impact of their operations and reduce costs associated with waste disposal. Some ICOs also pay attention to this field. For example, Earthtoken is an ICO that provides solutions for reducing energy waste and fuel management.

Considering sustainable supply chains is also a significant step toward environmental sustainability. Businesses can reduce their overall environmental impact by sourcing materials and products from suppliers that prioritize sustainability and environmental responsibility. Also, by measuring and managing their carbon footprint, businesses can take steps to reduce their greenhouse gas emissions and contribute to global efforts to mitigate climate change. Additionally, by implementing environmental management systems, businesses can ensure that they comply with environmental regulations and take a proactive approach to environmental sustainability.

Sustainability may be crucial for enterprises in different circumstances and states. For some companies, environmental sustainability is a core value from the beginning, often integrated into the company's mission. Also, it could be part of other plans and projects for a company. Environmental sustainability serves as a pivotal advantage for some businesses when compared to their competitors. Moreover, environmental sustainability could become vital due to changes in regulations and standards (Porter

& Derry, 2012). However, organizations are increasingly being urged to assume responsibility for the impact of their operations on both societies and the natural environment, and corporate social responsibility is becoming more and more important each day.

Businesses have been considering corporate social responsibility (CSR) for a long time. CSR encourages enterprises to participate in activist or charity activities. While this practice has a long history, it only began to receive scholarly attention in the 1930s, coinciding with discussions about the role of corporate executives in academic literature (Carroll, 1999). Following is another definition from green paper from the EU Commission about CSR (Aagaard, 2022): "A company's voluntary work to integrate social and environmental concerns in their business operations and in interaction with their stakeholders."

Sustainability is a vital part of corporate social responsibility, and the United Nations defines it as the act of satisfying today's demands without compromising the ability of future generations to meet their own needs (Imperatives, 1987). Thus, companies that prioritize sustainability aim to ensure the well-being of both current and future generations. Every stakeholder, present or future, who is influenced by the actions and activities of the companies can be considered one of these generations.

Environmental sustainability for businesses is not only important for protecting the natural environment but also for the long-term viability of the business itself. By reducing waste and operating more efficiently, businesses can reduce costs and improve their bottom line. Additionally, as consumers become more environmentally conscious, businesses prioritizing sustainability are more likely to attract and retain customers. Studying environmental sustainability is crucial for businesses. Since ICOs are a new type of financing and there is limited research on them, studying the impact of sustainability on their success can be a valuable exploration for this field. This study focuses on investigating how being environmentally sustainable affects the success of an ICO.

Chapter 2 of the thesis conducts a literature review, examining factors that impact the success of Initial Coin Offerings (ICOs) and the role of environmental sustainability in small businesses' success. It also explores existing research to determine if there is a causal link between sustainability and ICOs. Chapter 3 outlines the data collection methods and methodologies used in the study. Chapter 4 discusses the findings from hypothesis testing. Chapter 5 summarizes the study's results, integrating insights from the literature review, data collection, and hypothesis testing, and offers important implications.



CHAPTER 2

LITERATURE REVIEW

In this chapter, I review the literature related to our research. The existing literature will be summarized in sub-topics of (i) ICO success, (ii) environmental sustainability (iii) environmental sustainability and ICO success.

2.1 ICO Success

The importance of ICOs relies on different reasons however, the core vision behind an ICO is issuing digital tokens, typically based on blockchain platforms such as Ethereum. Using cutting-edge technology based on blockchain could reduce the cost of capital raising by cutting off intermediaries. Also, ICOs support decentralized business models and open-source project development, which creates an inherent consumer base with a positive network effect (Adhami, Giudici, & Martinazzi, 2018). One of the fundamental characteristics of ICOs is their ability to attract investors from all over the world (Fisch & Momtaz, 2020).

The concept of Initial Coin Offerings arose as early as 2012; nevertheless, ICOs experienced notable rise in popularity and attention between mid-2017 and early 2018 (Howell, Niessner, & Yermack, 2020). This period can be considered the main peak of ICOs, with numerous projects utilizing this funding method to raise capital for

their blockchain-based ventures. Unlike traditional funding methods that are often limited to institutional investors and high-net-worth individuals, ICOs offer an inclusive platform that allows individuals from diverse backgrounds and locations to participate in early-stage financing and because of the potential for significant returns on their investments, investors are attracted to ICOs.

ICOs are highly varied due to being almost unregulated. It is up to the company hosting the initial coin offering to decide whether to build a new blockchain platform or use an existing one. Likewise, the company can determine the minimum (softcap) and maximum (hardcap) investment targets for the ICO and who can join and which cryptocurrencies it will take (Panin, Kemell, & Hara, 2019). Overall, fundraising for a startup through ICOs is perceived as significantly more convenient. However, it is important to note that the ICO market also carries risks and challenges. Many new cryptocurrencies have been used as fronts for various illegal activities, including theft, Ponzi schemes, and fraud (Chohan, 2019). The regulatory framework surrounding ICOs is constantly developing, and there is a need for clarity and oversight to protect investors from fraudulent or scam projects. Furthermore, the cryptocurrency markets' volatility and limited liquidity present risks for both issuers and investors alike (Mamiko, 2019).

As a result of the exponential growth of ICOs, there has been a considerable increase in studies focused on examining the various factors that influence the success of ICOs. By investigating these factors, researchers aim to provide valuable insights into the drivers of ICO success. There are various factors to consider when measuring the success of an initial coin offering. The amount of money raised during an ICO is an essential metric for evaluating its success and one commonly used criterion is whether this raised amount reaches the softcap. Hitting the softcap can be seen as a positive signal of project viability. If an ICO successfully reaches its softcap, it indicates that the project has secured the necessary minimum funds to proceed with its planned development and implementation. However, the threshold for success may vary

depending on the project and its goals. While reaching a specific amount, such as \$0.5 million, can be seen as a benchmark to consider a successful ICO, in some studies the ratio of raised amount and hardcap or the amount of raised amount considered as a fundraising success factor (Aslan, Şensoy, & Akdeniz, 2023; Goutte, Guesmi, & Saadi, 2019). Research indicates that setting a greater hardcap and larger softcap tends to decrease the likelihood of success in fundraising for an ICO (Aslan et al., 2023; Roosenboom, van der Kolk, & de Jong, 2020).

One another factor is the social media impact on ICO success. It has shown that while the Reddit account of an ICO has a negative effect on ICO success, its presence in bitcointalk positively affects it (Lyandres, Palazzo, & Rabetti, 2022). It has also shown that both bonus and KYC have a positive relationship with ICO success (Aslan et al., 2023).

Presale is one of the factors that took a part in investigating the ICO success. A presale, also known as a pre-ICO (Initial Coin Offering), is a fundraising phase that occurs before the official public sale of tokens or coins in an ICO. It is an option for projects to raise funds as well as attract the interest and support of early investors (Fahlenbrach & Frattaroli, 2021). When examining the impact of presales on ICO success, the findings vary. Some studies have indicated a strong positive correlation between presale initiatives and the overall success of an ICO. These studies suggest that conducting a presale can significantly enhance the likelihood of achieving fundraising goals and project objectives. By offering tokens or coins at a discounted price or providing additional benefits to early investors, presales can attract substantial capital and generate early investor enthusiasm (Adhami et al., 2018). On the other hand, there is also research that presents a contrasting perspective, highlighting the potential negative effects of presales on ICO success. These studies suggest that presales can lead to a decrease in the level of public participation during the subsequent public sale phase (Rasskazova, Koroleva, & Rasskazov, 2019). It's worth noting that the success of an ICO cannot solely be attributed to the presale

phase. However, these conflicting findings underscore the complex nature of presales and their impact on ICO success.

The rating of an ICO, which is given by experts, is another significant variable that can strongly influence the success of an Initial Coin Offering. It encompasses various characteristics and factors associated with the ICO, including the product, business model, ICO profile, social activity, and the team's credibility. The rating process involves a comprehensive evaluation of the ICO project, aiming to provide potential investors with an objective assessment of its strengths and potential risks. Profile rating is associated with ICO success such that the higher profile and expert rating has an impact on fundraising success (De Jong, Roosenboom, & van der Kolk, 2018).

One of the most important factors that has been studied is the whitepaper of an ICO. A whitepaper is an informational document published by an ICO to promote the features of a product or service that an ICO offers. It generally contains information about the business model, the technical aspects, the token details, the use of earnings, the issuing entities, the law applicable to the ICO and its regulatory status, and the road map (Goutte et al., 2019). The whitepaper is a marketing technique used to convince and convince decision-makers. Whitepapers are crucial as references for investors as well as promotional tools for businesses to outline their technical and financial project information (Wang, Chen, Xu, Tang, & Qin, 2022). Research has shown that the relationship between whitepaper informativeness and ICO success is positive (Lyandres et al., 2022). It has also been confirmed that the informativeness of a whitepaper positively influences ICO success (Campino et al., 2022). Beside informativeness, the uniqueness of information is another factor that could affect fundraising an ICO. Another study has demonstrated that ICOs featuring more unique or less common content in their whitepapers tend to raise more funds compared to others (Yen, Wang, & Chen, 2021). Analysis has indicated a positive relationship between the availability of a white paper and the success of an Initial Coin Offering. Whitepapers could also contain technical details of an ICO which can be considered

as a good signal for the quality of an ICO (Feng, Li, Wong, & Zhang, 2019).

The expertise of the team members involved in an ICO has been recognized as an important factor in ICO success. The influence of team members on the success of an Initial Coin Offering (ICO) has been studied and recognized as a crucial factor. Research has revealed valuable insights into the relationship between the team's composition and the probability of ICO success. One important aspect is the number of team members. Studies conducted have indicated a significant correlation between the number of team members and the likelihood of ICO success (Ahmad, Kowalewski, Oskar, & Pisany, 2023; Cerchiello, Tasca, & Toma, 2019).

Additionally, the team's heterogeneity is another aspect that has been investigated. Research conducted by (Xu, Wang, Chen, & Zhao, 2021) highlights the significance of team knowledge heterogeneity in determining the probability of ICO success. A team with diverse backgrounds, expertise, and knowledge areas tends to exhibit a higher probability of achieving success in an ICO. This diversity can bring different perspectives, innovative ideas, and complementary skills to the project, enhancing its overall performance. The availability of detailed information about the team's composition, along with its verification on rating portals and links to participant profiles, plays a crucial role in determining the success of a project (Alchykava & Yakushkina, 2021). While team member factors, such as team size and heterogeneity, have been identified as influential in ICO success, it's important to note that they should be considered alongside other critical factors, including market conditions, product uniqueness, regulatory compliance, investor confidence, and effective project execution. The duration of an Initial Coin Offering, defined as the period from the opening to the closing of the token sale, has been identified as a factor that can negatively impact the probability of its success (Bulut, 2022).

ICOs have emerged as a disruptive development in financial technology (Fintech), utilizing blockchain technology. They have gained prominence as an innovative form of crowdfunding, offering entrepreneurs an alternative method for raising capital.

ICOs also hold the potential to revolutionize crowdfunding across various categories, including banking, cryptocurrency, platform development, energy, and more. As each category presents unique characteristics and requirements, studying the success factors specific to each is crucial. A study explored the factors influencing the probability of success in Initial Coin Offerings within the tourism industry, shedding light on essential signals that impact their success. One key factor identified is human capital, emphasizing the importance of the team behind the ICO project (Bulut, 2022).

It is important for ICO issuers to carefully consider the country of origin and its impact on the success of their project. Understanding the regulatory landscape, government support, investor sentiment, and business environment can help ICO projects make informed decisions and maximize their chances of success. Some countries are known as ICO-friendly countries. Hence, as an emerging business, being in these countries could affect the possibility of success. A study by Ante & Fiedler (2020) demonstrates the positive impact of Singapore, an ICO-friendly jurisdiction, on funding success in Initial Coin Offerings.

In studying the success factors for ICOs, it is crucial to consider multiple variables simultaneously. Researchers have explored various factors, including the effects of offering a bonus, designing a presale, and the rating of an ICO, that contribute to its success (De Jong et al., 2018). In another study by Ante and Fiedler (2020) a positive relationship between ICO success and several key factors like human capital, target market, and experience of the team members have been studied. Lastly, the study by Aslan et al. (2023) investigated various variables' effects on ICO success and post-ICO performance. Their findings confirm that a lower soft cap and shorter duration of the offering negatively impact ICO performance, while higher ratings, larger teams, and the inclusion of more experts positively affect ICO performance.

2.2 ESG Investing

ESG investing or sustainable investing is a kind of investment strategy that considers environmental, social and governance factors during the investment process.

However, there are limited studies about ESG investing in private market. Attention to sustainability has become more critical during the past few decades. However, despite the growing recognition of its importance, sustainable entrepreneurs face a major obstacle: a lack of consumer acceptance, which is mainly arising from inadequate education on these important topics (Zhang, 2022). Adopting an ESG investing strategy also indicates that investors must follow specific environmental, social, and governance orders that could reduce the profitability of a startup due to ESG-related reforms. As a result, it might lower ESG investors' attractiveness to startups (Mansouri & Momtaz, 2022). Particularly, environmental sustainability-oriented ventures are less attractive to professional investors due to their focus on environmental and social goals, which are of equal or higher importance than profitability. As a result, they face challenges in accessing financial resources, which limits their survival and growth (Roma, Vasi, Testa, & Perrone, 2021).

In a research by Duncombe, Park, Tarsalewska, and Trojanowski (2023) no significant relationship was found between ESG positioning in fund marketing documents and fundraising success. Despite the growing importance of ESG in recent decades, it continues to encounter challenges in fundraising. A study indicates that environmental sustainability is negatively associated with the likelihood of a private equity adviser successfully raising a new fund (Campbell, Davidson, Mason, & Utke, 2023). Rosciano (2023) states that although ESG funds do not perform better than non-ESG funds, but they do improve balance sheet and income statement metrics for businesses. Even while ESG funds have a lower internal rate of return, they help build stronger brands and more resilient companies. In another study, Hörisch and Tenner (2020) examine the role of environmental orientation in crowdfunding success. The results of this study reveal no positive correlation between environmental orientation

and crowdfunding success. Roma et al. (2021) investigate the impact of environmental sustainability orientation (ESO) on crowdfunding performance and find that the presence of environmental sustainability orientation negatively affects crowdfunding performance.

However, there are some studies that have found a positive relationship between ESG and performance in the marketplace. A study by Vismara and Wirtz (2023) suggests that sustainability-oriented ventures (SOVs) with a nominee ownership structure have better short-term success chances in the equity crowdfunding marketplace.

2.3 Environmental Sustainability and ICO Success

Numerous concepts, including "green entrepreneur" and "social entrepreneur," are still evolving within the field of sustainable businesses. Green entrepreneurship aims to reduce adverse environmental impacts while concentrating on environmental concerns and business benefits. In the context of ESG and ICO success, a study by Bitetto and Cerchiello (2023) investigates the role of ESG properties in ICO fundraising. This research demonstrates that the likelihood of an ICO's success increases when the project shows an interest in ESG-related topics. Also, in another research by Guzmán, Pinto-Gutiérrez, and Trujillo (2020) the relation between attention toward global warming and ICO success has been studied for 324 environmentally friendly ICOs. Results show that during the periods that attention becomes more to global warming, the chance of fail decreases for environmentally sustainable ICOs (Guzmán et al., 2020). In a study by Mansouri and Momtaz (2022) about the ESG entrepreneur, it is confirmed that ESG entrepreneurs weaken post-ICO performance.

Since environmental, social, and governance sustainability are all included under the broad heading of ESG, it can be challenging to pinpoint which aspect of ESG contributes to an ICO's success. Some studies, however, clearly show that

environmental sustainability reduces the possibility of fundraising, while other research does not. For this reason, we will particularly focus on the role of environmental sustainability in ICO success. Hence, the first hypothesis in this thesis is as follows:

Hypothesis 1: Environmental sustainability has a negative effect on ICO success.

The main idea of this study is the division of sustainable initial coin offerings (ICOs) into two categories: direct and indirect sustainability, as described in Chapter 3. Thus, the next hypotheses are :

Hypothesis 2: Direct environmental sustainability has a negative effect on ICO success.

Hypothesis 3: Indirect environmental sustainability has a negative effect on ICO success.

CHAPTER 3

DATA AND VARIABLES

The database source employed in the present research is the database utilized in the study by Aslan et al. (2023), which offers details on initial coin offerings (ICOs) from 2015 to 2020. This data was gathered from several ICO aggregator platforms. Based on our definition of success, each initial coin offering (ICO) must provide information regarding its softcap and raised amount. As a result, ICOs without softcap information were not included in our study. Moreover, we focus on initial coin offerings (ICOs) held from 2017 until January 2020, when ICOs gained worldwide popularity. As a result, the dataset of this study contains information on 1212 ICOs from January 2017 to January 2020.

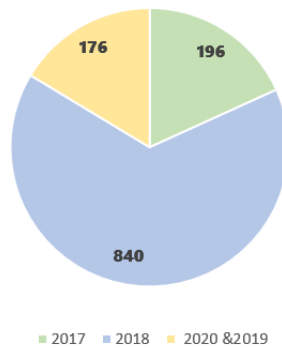


Figure 1: Distribution of ICOs according to starting date

In this study, the primary focus is on examining the impact of environmental sustainability on ICO success. As discussed before, the whitepaper of the initial coin offering is an excellent source of information about the company. Therefore, in this study, whitepapers are employed as a main reference to understand whether an ICO is environmentally sustainable or not. As a result, a search has been conducted in the search engine for whitepapers of each of the 1212 initial coin offerings. As a result of this procedure, ICOs were divided into three distinct groups:

1. The first group includes the ones whose whitepaper is available. The whitepapers of those ICOs were examined to determine their environmental sustainability.
2. The second group contains the ICOs whose whitepapers were not available but some information were obtainable from websites or LinkedIn about them. This information served as the basis for evaluating their environmental sustainability.
3. The third group contains ICOs for which no describing information was available online.

We focus on the first two categories in the study. Within these categories, whitepapers were available for 847 ICOs, whereas the information on 282 ICOs was obtained from online sources. Consequently, total data in this research is 1129.

The main focus of this work is investigating how environmental sustainability affects ICOs. To delve deeper into this subject, I decided to split environmental sustainability into two distinct areas, as demonstrated in Figure 2. Directly environmentally friendly ICOs are those that offer products or services that have a direct impact on environmental sustainability. On the other hand, ICOs in the "Indirect" category have an indirect relationship with environmental sustainability, and attention to environmental sustainability is part of their whole goal, service, or product. This classification enables us to investigate more precisely.

In this regard, after carefully examining the whitepapers, 99 ICOs have been

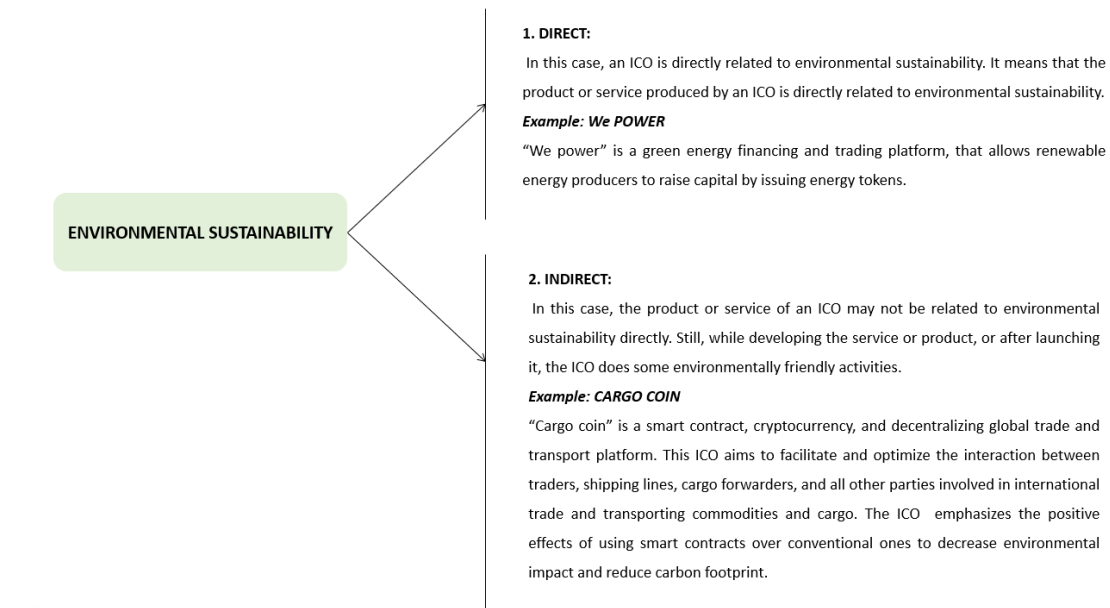


Figure 2: Direct and indirect environmental sustainability

identified as sustainable initial coin offerings. Among these ICOs, 52 are considered indirectly sustainable ICOs, while 47 are recognized as directly sustainable ICOs. Table 1 indicates direct and indirect sustainable ICO examples for this study. Appendix 1 contains an entire list of all environmentally friendly initial coin offerings. It’s important to note that technical factors, including proof of stake, were not taken into account while evaluating the whitepaper. Followings are another two examples of direct and indirect sustainable ICOs:

Directly environmentally friendly: ATFs is an agritech and Food Science Crowdfunding Project that aims to solve the world’s growing food crisis by providing relevant technological advances in agriculture, a new revenue base and supply systems, and a socially acceptable alternative to meat consumption. This alternative is plant-based meat. Using plant-based meat could solve the food problem and also reduce the carbon footprint.

Indirect environmentally friendly: Geeba is a delivery ecosystem that allows businesses to operate deliveries with autonomous vehicles and smart hubs. One of the benefits of this system is that it is city-friendly and reduces vehicle emissions and carbon pollution.

3.1 Dependent Variable

The dependent variable in this research is the initial coin offering's success. The most critical factor that makes an ICO successful in fundraising is whether it hits the softcap. Hence, the independent variable is a binary variable that takes a value of 1 if the raised amount of an ICO hits the softcap and 0 otherwise.

3.2 Independent Variables

Environmental sustainability: The environmental sustainability of an ICO is represented as a dummy variable where it takes the value 1 if an ICO is recognized as an environmentally sustainable ICO and 0 otherwise.

Direct sustainability: This dummy variable is 1 if a sustainable ICO is directly sustainable and 0 otherwise.

Indirect sustainability: This dummy variable takes 1 if an ICO is indirectly related to environmental sustainability and 0 otherwise.

Softcap: Softcap is the minimum amount an ICO needs to continue its activity. In this study, we use it as a factor for ICO success.

Duration of offering: The number of days in which a coin has been offered is the duration of offering an ICO.

ERC20: ERC20 is a standard for smart contracts and crypto exchanges. It contains some rules for transferring manners and provides high transparency. Hence, it could be a dependent variable for this study.

Rating: Each ICO has a rating that experts give to them. This rating is a number from 0 to 5, which refers to the quality of ICO from different aspects. The factors influencing this rating are profile, vision, product, and team members.

KYC/ Whitelist: KYC is a policy that makes potential investors provide some personal information regarding their IDs, addresses, and citizenship. A whitelist refers to a list of individuals or entities who are granted permission to participate in the ICO or purchase tokens before the general public. KYC and whitelist are two factors that decrease fraud and illegal activities. However, it also could decrease the number of investors since some people prefer not to share their personal information. In this study, we consider KYC and whitelist as one variable. So, it is a dummy variable that gives a value of 1 if an ICO has at least one of the factors and 0 otherwise.

Presale: A presale is a period when tokens are sold before an initial coin offering (ICO) in which anybody can participate. Pre-ICOs often have lower fundraising goals than main ICOs, and their token sales are typically cheaper. In this study, it is considered as a dummy variable that indicates whether an ICO had a presale period or not.

Bonus: A dummy that takes the value of 1 if the ICO has a bonus and 0 otherwise.

Experts: In this study, we consider the number of experts who comment on their opinions about an ICO as an independent variable.

US restriction: This dummy variable indicates whether an ICO allows investors from the United States to participate in token sales. If an ICO does not permit US-based investors due to regulatory concerns, the variable is set to 1 and 0 otherwise.

Accepted fiat: This variable indicates whether investors can purchase tokens using fiat currencies such as the US Dollar, Euro, etc. If an ICO accepts fiat currencies as a form of payment, the variable is set to 1; otherwise, it is set to 0.

CHAPTER 4

METHODS AND ANALYSIS

To develop the econometric models, the STATA17 Data analysis software is used. Since the dependent variable is binary, logistic regression was chosen as the appropriate model. Estimating the relationship between the independent variables (also known as predictors or covariates) and the likelihood of the binary outcome is the primary goal of logistic regression. Unlike linear regression, which predicts continuous outcomes, logistic regression focuses on predicting the log-odds or logit transformation of the probability.

4.1 Descriptive Analysis

Table 1 presents a descriptive analysis of the variables. The initial column lists the variables present in the dataset. The second column presents the number of observations available for ICOs. There are 1129 observations for raised amount, softcap, sustainability, ICO length, ERC20, bonus, presale, KYC and whitelist, accepted fiat, and US limitation. However, there is one missing value for rating and number of experts, which eliminated. In the subsequent columns, the tables display statistical summaries, including the mean, median, standard deviation, minimum, and maximum values of the variables under examination. On average, the amount raised

in Initial Coin Offerings (ICOs) amounts to approximately 9 million, with the highest observed value reaching 575 million. The average amount for Softcap is around 34.2 million, with a maximum value of 404 million. The mean rating of these ICOs is 3.361 out of 5, indicating a moderate overall assessment. Additionally, the average duration of an ICO is approximately 62 days, suggesting a typical duration of about two months. Furthermore, the data suggests that ICOs usually involve an average of 6 experts.

Table 1: Descriptive Analysis

Variable	Obs	Mean	Median	Std.Dev	Min	Max
<i>Raised_amount</i>	1129	9239674	3476357	2.20e+07	17	5.75e+08
<i>Softcap</i>	1129	3.42e+07	2500000	4.04e+08	0	1.00e+10
<i>Environmental_sustainability</i>	1129	0.088	0	0.283	0	1
<i>ICO_duration</i>	1129	62.052	45	55.557	1	578
<i>ERC20</i>	1129	.810	1	.392	0	1
<i>Rating</i>	1128	3.361	3.5	.671	.6	4.7
<i>#Experts</i>	1128	6.001	2	10	0	97
<i>Bonus</i>	1129	.569	1	.495	0	1
<i>Presale</i>	1129	.349	0	.477	0	1
<i>KYC/ Whitelist</i>	1129	.606	1	.489	0	1
<i>Accepted_fiat</i>	1129	.1650	0	.371	0	1
<i>US_Restriction</i>	1129	.423	0	.494	0	1

Before running any analysis, we need to detect the multicollinearity between our variables. To address this, Table 2 presents a correlation matrix that illustrates the correlation coefficients between the variables. The correlation between the variables is shown in each cell of the table. Correlation is a statistical metric that describes how much two variables change together. This correlation coefficient has values from -1 to +1, where +1 signifies a perfect positive correlation, implying that as one variable increases, the other also increases. Conversely, a correlation coefficient of -1 indicates a perfect negative correlation, where one variable's increase corresponds to the other's decrease. A correlation coefficient of 0 indicates an absence of linear correlation between the variables.

Variance Inflation Factors (VIF) is also another test for multicollinearity. Table 3 displays VIF for the variables in this study. VIF begins at 1, and if VIF has a value of 1, it means that there is no correlation at all with any other variables. A regression is

considered appropriate when the VIF falls between 1 and 5. This shows a small association. Based on the results of the VIF analysis, there appears to be little correlation among the independent variables, as demonstrated by VIF values near to 1.

Table 2: Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) <i>Softcap</i>	1.0000										
(2) <i>Environmental_sustainability</i>	0.0573	1.0000									
(3) <i>ICO_duration</i>	0.0470	0.1048	1.0000								
(4) <i>ERC20</i>	0.0331	-0.0426	0.0497	1.0000							
(5) <i>Rating</i>	0.0026	0.0174	0.0296	0.0884	1.0000						
(6) <i>#Experts</i>	0.0154	-0.0092	-0.0277	0.0660	0.4637	1.0000					
(7) <i>Bonus</i>	0.0264	0.0592	0.0881	-0.0220	0.2160	0.1449	1.0000				
(8) <i>Presale</i>	0.0001	-0.0202	0.0130	0.0461	0.1663	0.0458	0.1550	1.0000			
(9) <i>KYC/Whitelist</i>	0.0147	0.0815	0.1292	0.1117	0.3701	0.1596	0.2156	0.1015	1.0000		
(10) <i>Accepted_Fiat</i>	0.0283	0.0919	0.1360	0.0028	0.1387	0.0052	0.0786	0.0169	0.1338	1.0000	
(11) <i>US_Restriction</i>	0.0167	0.0418	0.0152	0.0636	0.2554	0.0800	0.1121	0.1479	0.4119	0.0645	1.0000

Table 3: VIF Factor

Variables	VIF
<i>Environmental_sustainability</i>	1.03
<i>Softcap</i>	1.02
<i>ICO_duration</i>	1.05
<i>ERC20</i>	1.03
<i>Rating</i>	1.53
<i>KYC/Whitelist</i>	1.38
<i>Presale</i>	1.06
<i>Bonus</i>	1.12
<i>#Experts</i>	1.29
<i>Accepted_Fiat</i>	1.05
<i>US_Restriction</i>	1.24
<i>Mean VIF</i>	1.16

4.2 Regression Model

Prior to doing any regression analysis, the data points with missing values have been eliminated. Furthermore, to enhance the model's suitability, the logarithm of the softcap and duration of offering variables are used rather than raw values. Since the dependent variable is binary, logistic regression is appropriate for this investigation to understand the relationship between the dependent variables (ICO success) and the independent variable. Before analyzing the role of sustainability, we conduct the

following logistic regression, which includes factors explored in the literature.

$$\begin{aligned} \text{logit}(\text{success}) = & \beta_0 + \beta_1 \ln(\text{softcap}) + \beta_2 \ln(\text{ICO_duration}) + \beta_3 \text{ERC20} + \beta_4 \text{Rating} \\ & + \beta_5 (\text{KYC/Whitelist}) + \beta_6 \text{Presale} + \beta_7 \text{Bonus} + \beta_8 (\# \text{Experts}) \\ & + \beta_9 (\text{Accepted_fiat}) + \beta_{10} (\text{US_restriction}) \end{aligned} \quad (1)$$

As stated in Chapter 3, this analysis uses a subset of the data utilized in Aslan et al. (2023) investigation. As a consequence, the regression results shown in Table 4 are consistent with the findings of Aslan et al. (2023). Softcap, and the duration of initial coin offerings can adversely affect an ICO's success.

Table 4: ICO success

*This table presents the result of logit regression for ICO Success considering initial coin offerings elements. The second column of the table represents the coefficient of regression, and for better understanding, marginal effects are added to the third column of the table. The regression coefficients are reported with ***, **, * representing significance levels of 1%, 5%, and 10%, respectively. The p-values are reported in parentheses.*

Variable	Coefficient	Marginal Effect
<i>Softcap</i>	-0.392*** (0.000)	-0.084
<i>ICO_duration</i>	-0.290*** (0.000)	-0.062
<i>ERC20</i>	0.080 (0.617)	0.017
<i>Rating</i>	0.294*** (0.010)	0.063
<i>KYC/Whitelist</i>	-0.030 (0.837)	-0.006
<i>Presale</i>	-0.257* (0.055)	-0.055
<i>Bonus</i>	-0.107 (0.420)	-0.023
<i>#Experts</i>	0.026*** (0.001)	0.006
<i>Accepted_fiat</i>	0.223 (0.188)	0.048
<i>US_Restriction</i>	0.005 (0.973)	0.001
<i>Cons</i>	6.118 (0.000)	
<i>Obs</i>	1212	
<i>Pseudo R2</i>	0.0911	

These results are aligned with previous findings. In this study, presale also affects the success of an ICO in a negative way. On the other hand, the number of experts and the rating positively affect the success of the initial coin offering, which is also aligned

with previous studies (Aslan et al., 2023; Roosenboom, van der Kolk, & de Jong, 2020). However, in this dataset, the success of an ICO is not significantly influenced by factors such as accepted fiat and bonus, despite significant results reported in other studies. Furthermore, the presence of factors such as ERC20, KYC or whitelist, US restriction does not have a significant effect on the success of an ICO.

4.2.1 Environmental Sustainability and ICO Success

In this part, the analysis explores the impact of sustainability (including both direct and indirect types) on ICO success. The following is a regression model for this analysis.

$$\begin{aligned} \text{logit}(\text{success}) = & \beta_0 + \beta_1 \ln(\text{Environmental_sustainability}) + \beta_2 \ln(\text{softcap}) \\ & + \beta_3 \ln(\text{ICO_duration}) + \beta_4 \text{ERC20} + \beta_5 \text{Rating} \\ & + \beta_6 (\text{KYC/Whitelist}) + \beta_7 \text{Presale} + \beta_8 \text{Bonus} + \beta_9 (\# \text{Experts}) \\ & + \beta_{10} (\text{Accepted_fiat}) + \beta_{11} (\text{US_restriction}) \end{aligned} \quad (2)$$

The results of this regression model are presented in Table 5. For a better understanding of the effects, the marginal effect was added to the analysis. Marginal effects show the change in probability when the predictor or independent variable increases by one unit. According to the findings, there appears to be no significant relationship between ICO success and the sustainability of an ICO (P-value = 0.337). However, both softcap and offering duration significantly negatively impact ICO success. The presence of a presale also has a negative impact on ICO success. Conversely, the rating and acceptance of fiat in an ICO positively influence fundraising success. Additionally, the number of experts involved in an ICO seems to correlate positively with its success, implying that as the number of experts increases one unit, the possibility of fundraising success also increases.

Table 5: ICO success and Environmental Sustainability

*This table presents the result of logit regression for ICO success considering environmental sustainability. The second column of the table represents the coefficient of regression, and for better understanding, marginal effects are added to the third column of the table. The regression coefficients are reported with ***, **, * representing significance level of 1%, 5% and 10% significance levels, respectively. The p-values are reported in parentheses.*

Variable	Coefficient	Marginal Effect
<i>Environmental_sustainability</i>	-.2169176 (0.337)	-.0466538
<i>Softcap</i>	-.3775803*** (0.000)	-.0812085
<i>ICO_duration</i>	-.2882108*** (0.000)	-.0619873
<i>ERC20</i>	.0676114 (0.681)	.0145416
<i>Rating</i>	.295669** (0.013)	.0635914
<i>KYC/Whitelist</i>	-.0125567 (0.935)	-.0027006
<i>Presale</i>	-.2756032** (0.046)	-.0592757
<i>Bonus</i>	-.0862693 (0.531)	-.0185545
<i>Experts</i>	.0253615*** (0.003)	.0054547
<i>Accepted_fiat</i>	.2956877* (0.096)	.0635954
<i>US_Restriction</i>	.0140343 (0.922)	.0030185
<i>Cons</i>	5.912301 (0.000)	—
Obs	1128	
Pseudo R2	0.0887	

4.2.2 Direct and Indirect Sustainability and ICO Success

The primary goal of conducting regression analysis in this section is to verify whether direct or indirect sustainability impacts the fundraising success of ICOs. The regression model for this part is:

$$\begin{aligned}
 \text{logit}(\text{success}) = & \beta_0 + \beta_1(\text{Direct_sustainability}) + \beta_2(\text{Indirect_sustainability}) \\
 & + \beta_3 \ln(\text{Softcap}) + \beta_4 \ln(\text{ICO_duration}) + \beta_5 \text{ERC20} \\
 & + \beta_6 \text{Rating} + \beta_7(\text{KYC/Whitelist}) + \beta_8 \text{Presale} \\
 & + \beta_9 \text{Bonus} + \beta_{10}(\# \text{Experts}) + \beta_{11}(\text{Accepted_fiat}) \\
 & + \beta_{12}(\text{US_restriction})
 \end{aligned} \tag{3}$$

Table 6 presents the findings derived from the subsequent logit regression analysis. The first column of Table 6 displays the independent variables utilized in the regression analysis. The subsequent column shows the corresponding coefficients alongside their associated p-values within parentheses. According to these results, there is a negative relationship between indirect sustainability and ICO success, while the relationship between indirect sustainability and ICO success is not significant. Regarding the coefficient of direct sustainability, approximately -0.581, it suggests that with all other variables held constant, an increase in direct sustainability correlates with a decrease in the log odds of success. This result is consistent with the second hypothesis and confirms that the presence of direct sustainability affects initial coin offering success negatively. However, we couldn't find a significant result to confirm or reject Hypothesis 3. The same variables as in previous studies are still significant in this regression model.

Table 6: ICO success and Direct, Indirect Sustainability

*This table presents the result of logit regression considering direct and indirect sustainability. The second column of the table represents the coefficient of regression, and for better understanding, marginal effects are added to the third column of the table. The regression coefficients are reported with ***, **, * representing significance level of 1%, 5% and 10% significance levels, respectively. The p-values are reported in parentheses.*

Variable	Coefficient	Marginal Effect
<i>Direct_sustainability</i>	-.581* (0.076)	-0.1246296
<i>Indirect_sustainability</i>	.101 (0.741)	0.021714
<i>Softcap</i>	-.376*** (0.000)	-0.0807206
<i>ICO_duration</i>	-.288*** (0.000)	-0.0618698
<i>ERC20</i>	.0615 (0.709)	0.0131897
<i>Rating</i>	.288** (0.016)	0.0619186
<i>KYC/Whitelist</i>	-.007 (0.964)	-0.0015102
<i>Presale</i>	-.263* (0.057)	-0.0564837
<i>Bonus</i>	-.100 (0.467)	-0.0215493
<i>#Experts</i>	.0254*** (0.003)	0.0054608
<i>Accepted_fiat</i>	.285 (0.111)	0.0610637
<i>US_Restriction</i>	.016 (0.911)	0.0034454
<i>Cons</i>	5.922 (0.000)	—
<i>Obs</i>	1128	
<i>Pseudo R2</i>	0.0903	

4.2.3 Category and ICO Success

In this section, we integrate the category factor into our analysis. Categories play a crucial role in organizing and comprehending information about an ICO. Each ICO may belong to multiple categories based on its product or service. The dataset of this study includes a list of 30 different categories. Table 7 displays the list of categories in the dataset of this study. This research will examine the top five most frequent categories, shown in Table 8, by representing them as dummy variables.

Table 7: Category List

Category List			
<i>Platform</i>	<i>Infrastructure</i>	<i>Casino/ Gambling</i>	<i>Health</i>
<i>Cryptocurrency</i>	<i>Internet</i>	<i>Manufacturing</i>	<i>Electronics</i>
<i>Business Services</i>	<i>Smart Contract</i>	<i>Tourism</i>	<i>Virtual Reality</i>
<i>Banking</i>	<i>Media</i>	<i>Legal</i>	<i>Telecommunications</i>
<i>Artificial Intelligence</i>	<i>Software</i>	<i>Sports</i>	<i>Art</i>
<i>Entertainment</i>	<i>Real Estate</i>	<i>Investment</i>	<i>Other</i>
<i>Big Data</i>	<i>Retail</i>	<i>Communication</i>	
<i>Education</i>	<i>Energy</i>	<i>Charity</i>	

Table 8: Top five categories according to frequency

Variables	Frequency
<i>Platform</i>	642
<i>Cryptocurrency</i>	476
<i>Business Services</i>	332
<i>Smart Contract</i>	218
<i>Software</i>	200

Table 9 presents the outcomes of the logistic regression analysis, where the interaction terms of direct and indirect sustainability and platform, cryptocurrency, business services, smart contracts, and software categories are considered dummy variables. The findings indicate a negative correlation between ICO success and direct sustainability. However, in no regression model does indirect sustainability show statistical significance. Furthermore, there is no significance in the relationship between any of the categories and the success variable.

Table 9: ICO success including interaction effect of top five Categories

*This table presents the result of logit regression considering the interaction effect of the top five categories with direct and indirect sustainability. The interaction terms are denoted as "Direct#" and "Indirect#". The first column represents independent variables, and subsequent columns indicate coefficients for each category. The regression coefficients are reported with ***, **, * representing significance levels of 1%, 5%, and 10%, respectively. The p-values are reported in parentheses.*

Variable	Coefficient
<i>Platform</i>	-0.144 (0.323)
<i>Cryptocurrency</i>	0.004 (0.978)
<i>Business_Services</i>	-0.113 (0.479)
<i>Smart_Contract</i>	0.093 (0.643)
<i>Software</i>	-0.060 (0.751)
<i>Direct_sustainability</i>	-1.085* (0.079)
<i>Indirect_sustainability</i>	0.398 (0.524)
<i>Direct # Platform</i>	-0.334 (0.681)
<i>Direct # Cryptocurrency</i>	0.167 (0.828)
<i>Direct # Business_Services</i>	0.450 (0.596)
<i>Direct # Smart_Contract</i>	0.719 (0.415)
<i>Direct # Software</i>	0
<i>Indirect # Platform</i>	0.078 (0.912)
<i>Indirect # Cryptocurrency</i>	0.106 (0.871)
<i>Indirect # Business_Services</i>	-0.400 (0.572)
<i>Indirect # Smart_Contract</i>	-0.460 (0.548)
<i>Indirect # Software</i>	-0.790 (0.278)
<i>Softcap</i>	-0.382*** (0.000)
<i>ICO_duration</i>	-0.300*** (0.000)
<i>ERC20</i>	0.070 (0.792)
<i>Rating</i>	0.322*** (0.009)
<i>KYC/Whitelist</i>	-0.031 (0.846)
<i>Presale</i>	-0.302** (0.036)
<i>Bonus</i>	-0.070 (0.621)
<i>#Experts</i>	0.028** (0.001)
<i>Accepted_fiat</i>	0.378** (0.050)
<i>US_Restriction</i>	0.036 (0.807)
<i>Cons</i>	6.042 (0.000)
<i>Obs</i>	1092
<i>Pseudo R2</i>	0.1016

4.2.4 Continent, Country and ICO success

Finally, we expand the study by examining regressions particular to North America, Europe, and Asia. In order to clarify the impact of these variables on direct and indirect sustainability, we used the interaction of continents with direct and indirect sustainability as an independent variable. Table 10 displays the results of this logit regression. According to the results, adding the continent variable to the regression model eliminates the significant relationship between direct sustainability and ICO success. Furthermore, none of the continents and their interactions with direct and indirect sustainability had an impact on ICO performance in the regression analysis.

Table 11 presents the logistic regression analysis results for the interaction of the top five countries and direct and indirect sustainability. The list contains Singapore, the USA, the UK, Estonia, and Russia. The findings reveal no significant relationship between direct or indirect sustainability and ICO success. According to these results, the country of Russia as a dummy variable negatively affects the success of an ICO. This means that the success of ICOs from origin of Russia is hurting because of their location. Furthermore, there is a negative relationship between factors such as soft cap, duration of offering, and presale and ICO success. However, there is no significant relationship between any country dummy variable and the success of an ICO. Also, it is notable that interactions do not have marginal effects since the marginal effect of an explanatory variable is defined as the expected outcome difference associated with a unit change in that explanatory variable, and we cannot measure it in the interaction variable.

Table 10: ICO success considering North America, Asia, Europe

*This table presents the result of logit regression considering the interaction effect of the top three continent with direct and indirect sustainability. The interaction terms are denoted as "Direct#" and "Indirect#". The second column of the table represents the coefficient of regression. The regression coefficients are reported with ***, **, * representing significance level of 1%, 5% and 10%, respectively. The p-values are reported in parentheses.*

Variable	Coefficient
<i>Direct_sustainability</i>	-1.102 (0.196)
<i>Indirect_sustainability</i>	0.096 (0.753)
<i>Asia_dummy</i>	0.173 (0.460)
<i>Europe_dummy</i>	-.167 (0.494)
<i>America_dummy</i>	0.173 (0.460)
<i>Direct # Asia</i>	.752 (0.506)
<i>Direct # Europe</i>	.525 (0.588)
<i>Direct # America</i>	1.371 (0.316)
<i>Indirect # Asia</i>	.798 (0.491)
<i>Indirect # Europe</i>	.930 (0.354)
<i>Indirect # America</i>	-.754 (0.524)
<i>Softcap</i>	-.391*** (0.000)
<i>ICO_duration</i>	-.271*** (0.000)
<i>ERC20</i>	.069 (0.680)
<i>Rating</i>	.302 (0.013)
<i>KYC/ Whitelist</i>	-.006 (0.971)
<i>Presale</i>	-.250* (0.076)
<i>Bonus</i>	-.065 (0.641)
<i>#Experts</i>	.027*** (0.002)
<i>Accepted_fiat</i>	.323* (0.076)
<i>US_Restriction</i>	.0089479 (0.951)
<i>Cons</i>	5.992953 (0.000)
Obs	1113
Pseudo R2	0.0959

Table 11: ICO success considering top five countries for ICO investment

*This table presents the result of logit regression for the interaction of top five countries with direct and indirect sustainability. The interaction terms are denoted as "Direct#" and "Indirect#". The second column of the table represents the coefficient of regression. The regression coefficients are reported with ***, **, * representing significance levels of 1%, 5%, and 10%, respectively. The p-values are reported in parentheses.*

Variable	Coefficient
<i>Direct_Sustainability</i>	-.345 (0.389)
<i>Indirect_Sustainability</i>	.062 (0.874)
<i>Singapore_dummy</i>	.275 (0.198)
<i>UK_dummy</i>	.159 (0.523)
<i>USA_dummy</i>	.034 (0.894)
<i>Estonia_dummy</i>	-.301 (0.220)
<i>Russia_dummy</i>	-.928* (0.002)
<i>Direct # Singapore</i>	-1.802 (0.141)
<i>Direct # UK</i>	-1.063 (0.383)
<i>Direct # USA</i>	1.408 (0.438)
<i>Direct # Estonia</i>	.457 (0.737)
<i>Direct # Russia</i>	0
<i>Indirect # Singapore</i>	1.394 (0.254)
<i>Indirect # UK</i>	-.968 (0.358)
<i>Indirect # USA</i>	.143 (0.917)
<i>Indirect # Estonia</i>	-1.41 (0.281)
<i>Indirect # Russia</i>	0
<i>Softcap</i>	-.401*** (0.000)
<i>ICO_duration</i>	-.269*** (0.000)
<i>ERC20</i>	.071 (0.674)
<i>Rating</i>	.307** (0.013)
<i>KYC/Whitelist</i>	-.059 (0.712)
<i>Presale</i>	-.256* (0.071)
<i>Bonus</i>	-.103 (0.468)
<i>#Experts</i>	.028*** (0.001)
<i>Accepted_fiat</i>	.286 (0.116)
<i>US_Restriction</i>	-.018 (0.904)
<i>Cons</i>	6.193 (0.000)
Obs	1113
Pseudo R2	0.1050

4.2.5 Societal Implications

This thesis contributes to a better understanding of the role of environmental sustainability on the initial coin offering success. The findings reveal a critical negative relationship between ICOs directly tied to environmental sustainability and their fundraising success. Hence, entrepreneurs and startups need to be acutely aware of the potential challenges posed by linking their ICOs directly to environmental sustainability. Understanding this negative impact can help them better strategize their fundraising efforts, possibly reconsidering their approach or focusing on other aspects of their venture to attract investors. This result gives a concern to investors as well. While environmental sustainability is an important global concern, the appearing reluctance to finance ICOs directly related to environmental sustainability may reflect broader market skepticism or a perception of danger. The lack of a significant relationship between ICO success and indirect sustainability efforts suggests that these projects might not face the same fundraising challenges. This difference between directly environmentally friendly ICOs and indirectly environmentally friendly ICOs can help both entrepreneurs and investors structure and evaluate ICOs with sophisticated approaches to sustainability.

CHAPTER 5

CONCLUSION

This study is a significant contribution to the developing body of academic research on ICOs. Initially, we review the existing literature to look at factors previously determined crucial to initial coin offering success. Findings in this part reveal that a high softcap and an extended offering duration negatively influence ICO success. So, ICOs should remember that considering a long offering duration may decrease their chance of successful fundraising as it may look like a lack of market confidence (Ante, Sandner, & Fiedler, 2018). Another factor that negatively affects fundraising success is the presence of presales. Hence, considering a presale may not be advisable for ICOs seeking funds. We also identify two factors that display a positive relationship with fundraising success: a higher number of experts involved in the project and a higher rating a project gets. These findings align with previous studies (Aslan et al., 2023; De Jong et al., 2018). This implies that ICOs stand a better chance of achieving success in fundraising if they have more experts contributing to the project and get higher ratings from experts.

Furthermore, the study analyzes the role of a new factor in this research: the environmental sustainability of an initial coin offering. we introduce direct and indirect sustainability as two distinct variables and explore their impact on ICO success. The findings suggest that ICOs associated with direct sustainability, where

the product or service offered directly contributes to environmental sustainability, tend to experience a negative effect on their success. On the other hand, our analysis indicates that indirect sustainability has no significant relationship with ICO success.

To make a comprehensive analysis, the effect of the category of initial coin offerings was also studied. ICOs could be included in different categories. However, in this study, we utilized the interaction of the top five most repeated categories with direct and indirect sustainability in the dataset to understand their effect on ICO success. The results reveal no significant relationship between these interactions and the success of an ICO. Also, none of these five categories (platform, cryptocurrency, business services, smart contract, software) has a significant relationship with ICO success. These findings support the idea that, in the specific circumstances of this study, the classification may not have a significant impact.

Finally, the interaction of direct and indirect sustainability, continents, and the top five countries has been studied. Despite thorough analysis, no significant relationships emerged from these interactions. However, a noteworthy finding emerged about the negative relationship between the performance of initial coin offerings (ICOs) and Russia's location. This implies that Russian initial coin offerings (ICOs) frequently have difficulties in becoming successful, indicating an important consideration for investors to consider when assessing choices for investments. This emphasizes how crucial it is to take geopolitical variables into account in addition to other criteria when assessing the likelihood of the success of initial coin offerings (ICOs).

The limitation of this study lies in the data, which may not be fully up-to-date. Utilizing more recent and extensive data could provide a more accurate investigation of the situation. Additionally, examining investor behavior and expectations could offer valuable insights.

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APPENDICES

List of directly sustainable ICOs

1. **WEPOWER:** It is a green energy trading platform. WePower enables renewable energy providers to raise capital by issuing energy tokens representing their intended production.
2. **ENERJI TOKEN:** In addition to building a platform that connects consumers with smaller generators of renewable energy sources. It is also a worldwide eco-system in which users are rewarded with tokens for engaging in energy-efficient behavior, Energi Mine is also developing the platform. The goal is to reduce energy consumption globally and create a token-based platform, which provides financial incentives to reward energy-saving behavior.
3. **ROBOTINA:** It reduces (per capita) and shift (in time) the consumption of electrical energy. This approach will result in significant energy cost reductions, a greener environment, and sustainable development.
4. **CYCLEAN:** The purpose of this electric vehicle rental is to encourage the adoption of clean and renewable energy sources.
5. **GOCHAIN:** Gochain wants to solve the current problems of blockchain. One of these problems is about the energy consumption of a blockchain. This ICO emphasizes that by using a trusted network of authoritative nodes there will be no mining and hence there will be no wasted energy.
6. **WPP:** World Power Production Energy Corporation (WPP) is an ICO in energy industry. Its mission is to use innovative technologies to produce and provide the world's most affordable and Efficient Green Energy.
7. **ASSETEREUM:** Assetereum will invest in social businesses with a clear social or environmental mission in their governing documents.

8. SUNEX: It is an online platform for buying solar photovoltaic. This marketplace helps accelerating the global transition to solar energy.
9. HYDROCOIN: The goal of hydrocoin is to produce coins that is a currency for clean energy products. Acceptance of this coin for producers will benefit the community as a clean-fuel provider.
10. EARTHCYCLE: The goal of Earthcycle is to finance companies that apply cutting-edge physical technology to deal with large-scale issues on earth in order to have a clean planet and healthier human.
11. ROWAN: Rowan Energy is a green energy blockchain. It enables owners of rooftop Solar to sell their energy to other consumers peer to peer.
12. GREENCOIN: It is a platform based on sustainable green systems to solve real problems in the world, connecting green systems manufacturers and local Installation companies or certified individuals directly with buyers. The ultimate goal of Greencoin is to create a productive environment, an autonomous, decentralized and business-focused community that help the sustainable development of the planet.
13. TERRAGREEN: This ICO's aim is to make the earth greener place. TerraGreen has been collaborated with businesses in order to generate renewable energy technology in more efficient and sustainable way.
14. NEW ERA ENERGY: This ICO is about Measuring and certifying clean energy.
15. SOLAREX: Solarex is a platform that will provide cheap, decarbonized, efficient and sustainable energy. The main resource of energy will be solar farms.
16. VENUSENERGY: The idea of the this ICO is to use as much renewable energy for bitcoin blockchain network computations as possible.

17. SANSOX: Sansox provides Water treatment solutions. Its innovative products offer solutions for fast and efficient oxygenation with minimal energy consumption.
18. TERRAWATT: It is a renewable energy blockchain startup, with focus on monetization and driving global L.E.D. adoption. It also plans to take on other renewable energy fields, such as solar, wind, and electric vehicles.
19. GREENX: This ICO develops a reward system that users would earn GreenX by taking environmentally-friendly actions like reducing their energy consumption, using renewable energy, etc.
20. DAGO MINING: It is a mining system with a high efficiency photovoltaic system and innovative energy storage capability.
21. RENBDO: This ICO aims to set up wind farms for the production of green energy.
22. IPUX: The aim of this ICO is to reshape the agriculture industry in Thailand by utilizing blockchain technology, smart contracts, AI, big data, and IoT. Ipux is an approach to sustainability that connects each of seven key business groups, including how we see agriculture, productivity and its effects on the environment, how we trade, and the health and wellbeing of a burgeoning population.
23. POSEIDON FOUNDATION: This ICO is a nonprofit which seeks out and develops revolutionary solutions to stop climate change and regenerate our environment.
24. EARTHTOKEN: Earthtoken has helped organizations compensate for negative environmental effects resulting from their business operations since 2009. This ICO provides solutions for waste of energy and fuel management.
25. SWACH: Swach coin attempts to micromanage wastes from households and industries and efficiently convert them into valuable products.

26. REDI: It is a blockchain-based data marketplace for renewable energy. Redi's aim is to store and allow access to renewable energy data. Using Redi will result in an increase in environmentally friendly power generation as well as a change in energy consumption from fossil fuels to renewable energy.
27. ELPIS: Elpis is a decentralized and global cryptocurrency that aims to incentivize real world environmental activity and produced solar energy.
28. AKM GLOBAL: AKM Global offers a waste-free, environmentally-friendly smart Bio food Restaurant. This has a clean production and food processing technology using minimal energy resources and is free of soil and air pollutants and chemical and industrial waste.
29. TAGOCOIN: It is climate-friendly and less subject to the fluctuations of energy charge mining operations that combine green energy sources with business diversification.
30. CCUNIVERCE: The main idea of this ICO is to build a whole network of its infrastructure like: crypto ATMs , rental electric cars with charge stations, and innovations at real estates market. CCUniverse will focus at any innovation which is made to use renewable energy sources. (It has three phases and phase 2 and 3 are more about sustainability)
31. REBGLO: This is a mining system seeks to solve the mining efficiency issue with the data transmission system (DTS) Technology, that helps to solve scalability issues and reduce power consumption in crypto-currency mining.
32. ETHERNITYMINING: It is a crypto mining project that combines green, renewable energy and a group bulk purchase of mining hardware. It will use 100% renewable resources for producing energy or on grid energy which at least has 90% green resources.
33. ETAIN POWER: Etain power is a platform based on block transactions to finance renewable energy sources.

34. **ORGANICCO:** Organicco aims to produce Organic Fertiliser and Animal Feed for farmers. Moreover, this ICO aims to build a unit for converting farm waste into electricity and methanol to use as road fuel.
35. **START WAVES:** Start Waves is a platform that focuses on startups and companies with great potential for economic growth and which positively impact society and the environment. The main purpose of Start Waves is to become the standard cryptocurrency globally for investment, trading, trading of green businesses.
36. **WINDHAN:** Windhan is platform to combine energy developers, investors, and consumers and facilitate carbon credit trading through a global and decentralized network.
37. **HASHBYTE:** HashByte is a renewable energy crypto mining company.
38. **NAMACOIN:** It aims to develop a better world to the third world countries population with an IOT device that transforms solar energy into basic services like drinking water.
39. **ATFS:** ATFS Project is the AgriTech Food Science crowdfunding project, which solves the world's growing food crisis by providing relevant technological advances in agriculture, a new revenue base and supply systems, and a socially acceptable alternative to meat consumption. Using plant based meat could solve the food problem and also reduces the carbon footprints.
40. **ODMC:** ODMCoin project aims to solve ecological problems in oil and gas field such as oil waste.
41. **AGROTECH:** Agrotech aims to make organic green food easily accessible for everyone and reduce the environmental harm caused by today's agriculture.
42. **HASHGAIN:** HashGains aims for bio-friendly mining services to reduce the high level of energy consumption and encourage feasible cryptomining.

43. SAVAGE: Savage is the carbon-neutral NFT platform made for filmmakers and photographers. carbon-neutral means that any CO₂ released into the atmosphere from a company's activities is balanced by an equivalent amount being removed.
44. 3CCOIN: This ICO provide the environmentally friendly, economical and high-tech construction of advanced revolutionary material "Composite Cellular Concrete - 3C" cellular gas-fiber concrete.
45. CRYPTOLEAF: It is a crowdfunding ecosystem for green company initiatives and projects .
46. HIVE POWER: Hive Power is a platform that considers technical aspects, such as cables, power rating, and voltage limits, to provide an optimal solution that achieves multiple objectives. It will lower the energy tariffs and reduce the payback time of renewable energy sources.
47. ECOINGOT: Ecoingot is a platform for Building the Internet of Carbon. It e performs several tasks that cause some level of impact on emitting carbon in the environment.

List of indirectly sustainable ICOs:

1. ZRCOIN: It is a derivative that manufactures and sell a highly in-demand product, synthetic zirconium dioxide (Synth. Zr₂). Zrcoin is environmentally friendly since it uses wastes from glass factories, silicone cotton factories and dumps are used as raw materials.
2. AUTHPAPER: Authpaper is a platform to build a peer-to-peer digital data delivery. It .reduces the cost and resource on printing and mailing documents. It is Environmentally Friendly since it causes saving in fuel and prevents cutting trees.

3. CAJUTEL: Cajutel is internet provider for West Africa territories. It uses solar panel to provide the needed electricity for its cell base station.
4. Lipchain: Lipchain creates an app for surfers and sailor to share their posts. Also, one of the problems it wants to solve is cleaning the ocean.
5. XERA: Xera will manage the problems and challenges traders face with cryptocurrency exchange platforms and provide an integrated solution for traders and investors. Xera also considers altcoins that follow an impact investing mindset where they aim to solve a social or environmental issue like developing clean/green energy.
6. GET ACHIEVE: This ICO is a mobile augmented reality game with a series of interactive quests in the post-apocalyptic world. One of its features is that in order to get a reward plates should o plant a tree in real time and in the real world.
7. USAT: Usat aims to to decentralise the intellectual property processes. It is a platform that is an accelerator that connects inventors of new technologies with the financial world. Currently it has two patent to use which are about environmental friendliness.
8. RUSGAS: It is a project desired for funding and subsequent implementation of research in natural gas production, processing, storage, and transportation. The project is also takes part in being more environmental friendly.
9. SANGRIDE: Snagride is ride sharing community that combines artificial intelligence with blockchain technology. This ICO plans to empower all travelers via its platform to carpool as often as possible to help significantly reduce vehicle carbon emissions.
10. ALLFORMINER: It is a service platform for cryptocurrency miners, intends to hold an ICO, and expects that this will attract the attention of miners and sellers

of equipment for mining. Allfro plans to build a Data-center using solar panels, and wind power plants.

11. VENTUREON: It is a platform that allows transactions and fundraisings to launch startups. In the whitepaper it is mentioned that the mining process is eco friendly.
12. SUPERFRUITS: Superfruits's primary goal is to facilitate the purchase and sale of superfruits through the business-to-business platform without including many supply chain links. They are based on growing crops without chemicals, so they will avoid environmental dangers.
13. SPOTCOIN: Spotcoin is a trading intermediary and an escrow service for fiat currencies and digital assets. Its mining facility utilizes renewable energy.
14. PARKERS: Parkres is a green, clean and smart parking reservation platform That is accessible over a public API and mobile applications.
15. REALPROPERTY: The goal of this ICO is to facilitate Peer to Peer Property Projects. Crypto Mining of this ICO explores innovative renewable energy technologies.
16. FIDELIUM: Fidelium is cross-exchange trading platform. Fidelium also has a donation and charity section which aim to help companies produce environmental friendly products or services.
17. REVENYOU: RevenYOU is a trading app tied to all available trading instruments, such as crypto, indices, forex, and commodities. For its ethical responsibility this ICO stimulate algorithms that invest in green initiatives.
18. AMBIT: Ambit is a mining operation located in the free economic zone, Georgia. Due to this, all mining process are powered by 100% renewable hydro energy, ensuring lowcost and clean.

19. **PHONEUM:** Phoneum is mobile-only mining solution. In the whitepaper of this ICO it is mentioned that its carbon footprint is less comparing to other cryptocurrencies.
20. **ECOMI:** Ecomi Collect is an application that allows users to buy, sell and trade premium licensed, digital collectibles and other related virtual goods. Its secure wallet is an environmental friendly hardware cold storage device that designed to be impenetrable to malicious cyber-attacks.
21. **RUBIUS:** Rubius is a software company with focus on developing cryptocurrency products, services, and solutions. The ICO plans to use computational science and numerical methods in order to make a more eco friendly platform.
22. **NAUTICUS:** This ICO provides crypto banking, payments and eCommerce solutions utilizing blockchain technology for users. It also plans to establish a environmentally friendly blockchain mining center.
23. **TRIWER:** It is a courier express and parcel (CEP) application, incorporating, CRM, price comparison, blockchain, crowd delivery and community concepts, together with a strong brand identity. In its future plan triwer plans to integrate big data analysis, artificial intelligence and energy efficient vehicles.
24. **DIPCHAIN:** Dipchain is a global art based on blockchain technology. This ICO also pays attent to green and healthier content.
25. **MARKET SPACE:** Market space is a self-regulated service for data storage, transmission and direct distribution of digital content. Its advanced equipment used by professional hosting providers is more energy efficient hence CO2 emission is reduced globally.
26. **GEEBA:** Geeba is a delivery ecosystem that allows businesses to operate deliveries with autonomous vehicles and smart hubs. One of the benefits of this

system is being city friendly and also Reducing vehicles emissions and carbon pollution.

27. REMONETA: ReMoneta is a reward-based and land-backed token system online currency to buy various products and services. It conducts positive global values, changing consumer and retail choices and behavior. its values are global unity, environment, clean energy, animal welfare, and human health.
28. SMARTVALOR: Beyond digital assets, the business uses tokenization to real-world assets, enabling more people to have easy access to specialized investment possibilities. In its product spectrum, the non-blockchain infrastructure includes project financing of renewable energy.
29. NAGRI: Nagri is an environmentally friendly composite fertilizer introduced by seed pelleting, root system watering and plant spray. It increases the growth rate and the yield, improves the appearance and nutritional properties of all types of crops.
30. MULTIVERSUM: To enable better scalability and parallelism, Multiversum offers a more complex data structure in place of data sequencing, chain splitting, and rejoining. A Multiversum transaction will have insignificant costs and next to zero environmental footprint.
31. FXPAY: It is an eco-friendly ICO that aims to create a community on a digital platform to meet the demands of Forex premium brokers and traders. It also has a social fund which supports green power individuals in order to have a clean energy.
32. ENKRONOS: Enkronos is a decentralized blockchain-based accountability system for advertising, marketing, data driven campaigns and projects. One of its apps is waste management.
33. SYNTHESTECH: Synthestech is a scientific research center in technology development for synthesis of precious metals and valuable isotopes. The goal of

further researches of this ICO is to adjust the technology and develop precise techniques for Cold Transmutation of chemical elements like platinum that its applications it is mentioned for using in environment friendly companies.

34. ALIGATO: It is a platform for payment, shopping and delivery. In its 8th phase it will create drone in order to shorten the shipment time using renewable energy.
35. AXENS: An energy-efficient ICO in import-export supply chain area. In the whitepaper of this ICO it is mentioned that using digital invoicing by this ICO, reduces paper invoices.
36. SKYFCHAIN: This ICO develops cargo robotic industry by its SKYF drone. After launching this drone, SKYF will invite other cargo robots like unnamed trucks, too. Unnamed trucks are an efficient trucks in fuel consumption and using them reduces fuel consumption.
37. LANEAXIS: It connects shippers with carriers in the process driving the global logistics supply chain into the blockchain era. Using this, helps companies to maximize the fuel efficiency of their trucks. The usage Laneaxis helps eliminating wasted miles which is also good for environment.
38. COUPON: It presents digital coupon. The ICO emphasizes that by using digital coupons instead of paper coupons prevents the waste of paper.
39. CARGOCOIN: It is designed to be a smart contract, crypto currency platform, decentralising global trade and transport. Using traditional bill of lading could increase the carbon dioxide. Smart contract doesn't have this problem.
40. HARA: HARA aims to create a profitable data exchange economy that drives the use of informed data-driven decisions in society, starting with the agriculture and food sectors. The aim is to make food sector more profitable for both consumers and farmers and Reduce the food waste.
41. RESTART ENERGY: This ICO's aim is to make connection between

producers/retailers and customers. Also, one of its goal is to create a green certificate as an award for renewable energy users.

42. MIDAS: Midas is the universal wallet for important cryptocurrency like portfolio management, etc. Midas will donate part of its fund to the projects in green agriculture, environment improvement, etc.
43. HYCON: Hycon is a cryptocurrency bi-infinity that addresses some of the challenges faced by existing blockchain technologies. It uses a mining way that reduces electricity usage.
44. BITRENT: It is a platform for decentralized organization of real estate investment based on Blockchain and Smart Contracts. By allowing clients to select the building with the most energy efficiency, BitTorrent-participating projects will comply with all comfort energy ecology regulations, minimizing any negative effects on the environment.
45. BITTOWATT: The Bittowatt is a platform for trading energy that helps users identify the best supply options. Bittowatt envisions a world of smart-consumers in a sustainable energy system with minimal costs for all parties.
46. CARGOX: The use of paper bills of lading in the shipping industry creates problems since these papers might be lost. To overcome this issue, CargoX is using blockchain technology to secure "Bill of Lading" information in an effort to transform the global transportation industry. As a result, by using less paper, this approach will not only solve the problem of lost paper but also improve environmental sustainability objectives.
47. MENAPAY: It is the Middle East and North Africa's first fully supported blockchain-based payment gateway. It is a non-bank payment solution for Islamic countries. It also uses green mining which tries to lower the price of mining and electricity.

48. **ULTRA:** Ultra is a first-class PC game publishing platform and marketplace that puts an end to the distribution monopoly. In the whitepaper, it is mentioned that this ICO has Eco-friendly low energy consumption.
49. **FIII:** Fiii enables all mobile devices to participate in sustaining the blockchain network while they are idle and charging their batteries. In this situation, mining may be done with the least amount of effort by integrating it with the use of already existing resources (mobile devices).
50. **BITNAUTIC:** Bitnautic is a decentralized shipping and cargo platform built on blockchain technology. One of the concentrations of this ICO is to reduce pollution by shipping.
51. **PROVOCO:** It is a Challenge-oriented social network with a Blockchain-empowered contract & reward ecosystem. This ICO feels responsible for taking care of the world's serious problems like environmental disasters, etc .
52. **CREATANIUM:** Creatanium aims to create an advisory service for small and medium-sized businesses (SMEs). Creatanium has the service of an eco-sustainable rig mining system (ERMS), and a massive solar-powered rig mining system, which decreases environmental costs.