Revisiting the Reliability of Initial Coin Offering Intermediaries' Ratings

Assessing the Current State of Affairs of ICO Ratings, Social Media and Regulation in the Highly Dynamic World of Cryptocurrencies

UNIVERSITY OF TWENTE.

Abstract.

This thesis examines the relationships between ICO ratings and the effects of social media on ICO success, and the effectiveness of ICO regulation in preventing scams are examined. In the young and highly dynamic industry of cryptocurrencies, change is constant and academically related works are aging fast. This goal of this study is to address the gap in the literature that has been created since ICOBench went offline in the beginning of 2020. Most of the studies are based on this source and therefore, this study aims to analyse the relationship between the rating of the current four most popular ICO rating websites ICOHolder, ICOMarks, Cryptototem and FoundICO and ICO success. Another goal is to find what social media factors are related to ICO success and if ICO regulation is effective at preventing the problematic amount of so called ICO exit-scams. To reach these goals, regression analyses and independent samples t-tests are conducted. The results show that the four websites significantly predict how much an ICO raises and increases by 3.1x for every one standard deviation increase in the rating. However, it does not predict whether a coin becomes actively traded or if the ICO will reach the soft- or hardcap. Another finding is that ICO success is partially explained by social media presence of the ICO on Twitter, presence on Bitcointalk and the amount of Reddit members of the ICO group. Lastly, ICO regulation is found not to be able to significantly reduce the amount of scams and there is no moderating effect of ICO regulation on the relationship between ICO ratings and ICO success.

Keywords:
Initial Coin Offering, ICO, rating, intermediaries, blockchain, information asymmetry, social media, regulation and scams.

Author: Jeroen (J.G.J.) Hesselman
E-mail addresses: j.g.j.hesselman@student.utwente.nl
Student number: S2401053

Master Business Administration – Financial Management
University of Twente
P.O. Box 217, 7500AE, Enschede
The Netherlands

Supervisor: Prof. dr. Robert Gutsche
Examiner: Prof. dr. Jörg Osterrieder

30th August, 2021

Table of Contents

1. Introduction.

Since Bitcoins inception in 2009, tens of thousands of other crypto-related projects have launched. In January 2021 Bitcoin made the headlines by reaching ever greater record highs. Back in 2017, when there was another explosive growth in Bitcoin (BTC) and Ethereum (ETH) price increase, this time other entrepreneurs wanted to piggyback on the success of these coins. Consequently, the amount of Initial Coin Offerings (ICOs) and their investments rose in a similar aggressive way (Florysiak & Schandlbauer, 2019), suggesting a relationship between the Bitcoin price and the amount of ICOs. As of 2021, the prices of both cryptocurrencies rose again, however, that was not the case for ICOs. The absence of the simultaneous growth of the total amount raised by ICOs with the Bitcoin price was arguably due to newly developed ICO legislation. The new regulations emerged rather quickly after the event of 2017, which were much needed to prevent scams (Bellavitis, Fisch, & Wiklund, 2020). This caused the previously unregulated ICO industry to drop below 100 ICOs per quarter by the end of 2019 (Bellavitis et al., 2020). In contrast, at its peak in Q1 2018 there were more than 800 ICOs and around US$12.6 billion was raised in 2018 alone[1]. So, significant changes have taken place in the highly dynamic and young ICO industry.

ICOs are an innovative way to raise external financing, typically used by start-ups. ICOs are enabled by smart contracts which are built on a technology called “blockchain” that are designed for entrepreneurs to raise external finance by issuing tokens without an intermediary (Momtaz, 2020). Despite the emergence of Initial Exchange Offerings and Initial Decentralized-exchange Offerings that emerged as alternatives to ICO fundraising in the crypto industry, ICOs still remain the most common way to raise funds for a crypto project[2]. ICOs provide an alternative to the established forms of external financing: bank loans, venture

[1] https://www.statista.com/statistics/804748/worldwide-amount-crytocurrency-ico-projects/

[2] https://hackernoon.com/nearly-dollar30-billion-raised-from-the-adoption-of-smart-contracts-ned-kee-zzi3zu5

capital, angel investors or crowdfunding. Using an ICO to raise funds comes with various benefits. First, blockchain-based funding has dramatically reduced borrowing and lending transaction costs (Boreiko & Vidusso, 2018). Second, there is no limit to the amount of investors as everyone can invest in ICOs via the internet from all over the world. Third, after an ICO has been closed, the issued tokens can be traded on a secondary market, making the assets liquid. Fourth, in theory, blockchain technology removes the need for an intermediary for raising funds, since the transfer, transaction payment and storage of cryptocurrency occurs on a digital ledger, this process can be called disintermediation (Gupta, Harithsa, & Seneviratne, 2020). In practice, however, there still are intermediaries involved in the ICO process, because they reduce the information asymmetry between the fund seekers and investors (Bourveau, De George, Ellahie, & Macciocchi, 2019; De Jong, Roosenboom, & Van der Kolk, 2018). During this process of reverse disintermediation, intermediaries have taken up the role of ex-ante and ex-post monitoring of ICOs (Boreiko & Vidusso, 2018). So, even though ICOs don't need an intermediary to be executed, intermediaries have arisen to close the knowledge gap between the investor and the fund seeker.

The literature on the performance of ICO rating platforms is out-dated and scarce. Several studies examine the ratings from ICO intermediaries, but their data does not cover the period after September 2018 and is often based purely or partially on data from ICOBench. Boreiko and Vidusso (2018) studied the performance of ICO rating platforms between 2013 and 2017 and conclude that ratings vary considerably across ratings websites. Moreover, they find that the ICO is more likely to be a success if it is rated by more platforms. Moreover, they report that the average rating is not a predictor of an ICO's success due to the high variability in the quality of the ratings, but do find partial evidence on the predictive power of the individual ratings. They call for more in-depth research on the impact of ratings due to conflicting data for ratings usefulness. Lunesu and Desogus (2020) the quality of the data

displayed by comparing the difference between ICO ratings from different platforms. It makes sense to study the accuracy of these ratings after the regulatory changes on ICOs in 2018 and the disappearing of ICOBench, which was deemed the most popular and complete data source by most researchers. Therefore, a new examination of the performance of ICO evaluation platforms is needed that includes data after September 2018 and analyses the most popular intermediaries that are live as of today. Following this, the goal of this research is to examine if the ICO intermediaries ratings are a good predictor of the success of an ICO after the regulatory changes made in 2018. The main question that is to be answered in this paper is: "Are ICO intermediaries' ratings a good predictor of the success of an ICO?" Furthermore, this research will try to answer the following two questions: "Are social media statistics of an ICO good predictors of the success of an ICO?" and "Is there an effect of ICO regulation on the ICO rating, the amount of scams and the amount of coins that become actively traded?"

The rest of this paper is organized as follows. Section 2 provides an overview of the literature on agency theory, blockchain, ICOs, their regulation and ICO intermediaries. Thereafter, in section 3 the research methodology and the dataset is discussed, as well as the findings of other literature. Next, in section 4 the results of the analyses are discussed. Section 5 contains the conclusion and lastly, section 6, the limitations, recommendations and findings of this study in relation to other literature are discussed.

2. Literature review.

2.1 Agency theory

Agency theory is a principle that is used to explain and resolve issues in the relationship between principals and their agents in which the agent acts on behalf of the principal. Classical problems of the principal-agent relationship are the adverse selection problem and information asymmetry. They represent examples of agency costs. One source for an agency relationship to arise is the bridging of social distance (Shapiro, 2005). In the context of ICO

intermediaries and investors, the investors can be seen as the principal and the ICO intermediary, the agent, fulfilling the task of independent, profit maximizing economic information processing system. Information intermediaries reduce agency costs by closing the information gap that exists between the retail investor and the entrepreneur (Draper & Hoag, 1978). “Firms may have perfect information about productive opportunities but possess no method to "signal” the market” (Draper & Hoag, 1978). They describe intermediaries as institutions involved in some ensemble of the following activities: acquiring information about economic entities, (2) processing information about economic entities and (3) packaging or repackaging the financial claims of these entities. The information asymmetry that these intermediaries look to address by providing accessible information to investors can be described as one of the most important sources of market friction (Ofir & Sadeh, 2019). This condition is characterized by the lack of information that potential investors need to assess the quality of an investment.

2.2 Blockchain

The innovative technology that powers cryptocurrencies is called blockchain. A blockchain is a digitized, decentralized, public ledger that stores all cryptocurrency transactions (Niranjanamurthy, Nithya, & Jagannatha, 2019). The blocks on the blockchain contain a set of transactions between parties. Each block is linked to the previous block with a signature code. These encrypted blocks are to be decrypted and verified by different computers. Once a transaction has been verified, the block is added to the chain and is then saved and stored on the public order book that contains the complete history of transactions on the blockchain. All these different computers running the network together make the blockchain decentralized and extremely safe. Blockchain removes the need for a single trusted financial intermediary to make transactions makes blockchain decentralized and trustless. All in all, blockchain is a

technology that is a decentralized, transparent, digital and trustless way of making transactions.

Blockchain technology creates numerous benefits over traditional forms of financing. Cryptocurrencies can bank the unbanked, which as of today 1.7 billion people are still. With this technology, all someone needs is a phone or a computer and an internet connection to be able to send, lend and borrow money. Moreover, transactions can be processed faster and cheaper than banks do. In contrast to bank transfers, transactions on the blockchain can take place 24/7 and with no additional time or cost associated for transactions across countries[3]. There are also numerous benefits of blockchain technology for businesses. For entrepreneurs it means that smart contracts can be programmed to act as securities, which revolutionizes the way start-ups obtain financing. The process can take place fully automatically and without an intermediary. However, there is a downside. Blockchain transactions typically consume significantly more energy than bank transfers, making it less eco-friendly, though this is debatable as banks use natural resources as well. Another drawback is that the technology is new and is therefore not yet standardized or fully integrated with legacy systems. Additionally, data on the blockchain is immutable; therefore the technology only applicable in certain situations, as in some cases it is data has to be mutable as well. So, it is clear that there are a lot of advantages, however, there are still some problems to overcome for the technology for it to become mainstream. One thing is clear though; blockchain can be regarded as a revolutionary new technology that enables entrepreneurs to raise funds cheaper and faster through Initial Coin Offerings.

2.3 Initial Coin Offerings

Blockchain technology has made a new way of fundraising possible: the Initial Coin Offering. Momtaz's (2020) definition of ICOs is as follows: Initial Coin Offerings (ICOs) or token sales

[3] https://www.investopedia.com/terms/b/blockchain.asp

are smart contracts based on blockchain technology designed to raise external finance by issuing coins or tokens. “Smart contracts are computer protocol, which automatically perform specific transactions without the involvement of a third party after execution criteria have been met” (Chanson, Risius, Gjoen, & Wortmann, 2018). The tokens that represent a share of the company can be paid for in the form of fiat currency or by major cryptocurrencies like Bitcoin, Ethereum and to a lesser extent Litecoin (Momtaz, Rennertseder, & Schröder, 2019). Smart contracts automate the coin offering process, which in potential could create perfect disintermediation. Florysiak and Schandlbauer (2019) mention low costs, faster time to finance, and regulation and costly financial intermediaries can be bypassed as reasons for the popularity of ICOs. Yet still, in practice intermediaries are needed to close the information gap that exists between ICO issuer and investor.

The process of an ICO campaign is different from a crowdfunding campaign or an IPO. In appendix B the main characteristics of ICOs compared to the aforementioned forms of financing are summarized (Boreiko & Sahdev, 2018). To start an ICO campaign, the project owner starts by first writing a community building (Panin, Kemell, & Hara, 2019). This is done to maximize the publicity of their project and can be done by information dissemination and social media (Boreiko & Vidusso, 2018). Then, a whitepaper is published which is the initial and most comprehensive disclosure channel, yet there is no standard for this. Whitepapers are voluntary, unregulated and unaudited disclosures, but usually describes the project technology, product, business idea, development roadmap, key milestones, management team, vesting restrictions on insider tokens, use of proceeds, and any future dividends or repurchases of tokens (Bourveau et al., 2019; Florysiak & Schandlbauer, 2019). Another way of information dissemination is to publish the code of the project on GitHub. Next, the project owner determines a hard cap and/or soft cap, which respectively define the maximum he wants to raise and a minimum amount of funds he needs (Adhami, Giudici, &

Martinazzi, 2018). Thereafter, he chooses one of four different types of tokens: 1) utility tokens, 2) security tokens, 3) equity tokens and 4) currency tokens (Momtaz et al., 2019). Utility tokens provide the buyer with the possibility to buy the company's products or services when completed, they are essentially vouchers. The value of security tokens are based on performance of the underlying asset and are subject to securities law in most jurisdictions. In contrast to equity tokens, they do not represent ownership stake in the venture per se. Equity tokens do, they are a sub-classification of security tokens and represent corporate ownership and corresponding voting rights. Lastly, pure currency tokens are digital currencies, like Bitcoin. The value of these pure cryptocurrencies is based purely on supply and demand. Bellavitis et al. (2021) find that ventures often position their tokens as utility tokens to avoid the complex securities regulations associated with STOs (Security Token Offerings). Therefore STOs are a less uncertain type and could grow in importance (Bellavitis et al., 2020). IEOs (Initial Exchange Offerings) are another emerging type of issuing tokens whereby an intermediary platform manages the token sale. These exchanges offer token issuers to examine, validate, curate and endorse their token against a payment. In the end, while other promising alternatives exist next to the traditional ICO, the latter still remains the most common way for Blockchain related start-ups.

ICOs are a completely innovative way for start-ups to attain the necessary financing, but it comes with its intricacies. The project owner can decide to develop his own blockchain technology or build on an existing platform like Ethereum. Ethereum is by far the most popular platform used for ICOs with 88.3% or alternatively Waves, EOS or NEO (Amsden & Schweizer, 2019). Smart contracts for issuing tokens on the Ethereum blockchain can be created within minutes, which is really important as time is of great value for start-ups (Boreiko & Sahdev, 2018). Moreover, some of these platforms include Anti-Money-Laundering (AML) services which are necessary as tokens can be bought completely

anonymously. The Know-Your-Customer (KYC) verification service is used to prevent the company from violating regulations in certain jurisdictions (Momtaz et al., 2019). For example, in the USA it is mandatory to provide the KYC documents so the ICO can legally let the investors participate in the ICO[4]. However, when the ICO complies with the applicable regulations and is successful, an ICO provides the token owners the financially interesting opportunity to trade their tokens on an exchange. Therefore the liquidity of the tokens is higher than shares of crowdfunded ventures. In the end, an ICO is an interesting, easy and fast way to raise funds for a project, but project owners should be aware of the country specific regulations on ICOs.

2.4 ICO regulation

As with every newly emerging disruptive technology, new regulation is needed to pave the way forward. Bellavitis et al. (2020) recognize that the regulation around ICOs is a crucial determinant in the dynamic evolution of the ICO sector. This is evident as the ICO industry has been infamous for the high amount of scams as a result from lack of regulation (Samieifar & Baur, 2020). The impact of the regulation could be related to the amount raised from ICOs, which reduced from more than 4.5 billion USD in Q2 2017 to less than 600 million USD in all of 2020. Regulation on ICOs started in Q2, 2017 and thereafter spread exceptionally quickly. In 2017 only two countries had implemented specific ICO regulations (Ecuador and Guernsey & Jersey). In Q3 of 2018, 64 countries had implemented some type of ICO regulation (Bellavitis et al., 2020). Four countries banned ICOs entirely (China, South Korea, Egypt and Indonesia). The countries with regulations in Q3 2018 were: *Netherlands, Belgium, Luxembourg, Germany, Austria, France, Spain, Portugal, Italy, Greece, Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Slovenia, Croatia, Belarus, Lithuania, Latvia, Sweden, Finland, Ireland, Iceland, Brazil, Venezuela, Mexico, Mongolia, Japan,*

[4] https://medium.com/@CoinFactory/why-kyc-is-necessary-for-an-ico-c4616e98504d

Thailand, Cambodia, Vietnam, Philippines, Malaysia, and New Zealand. Moreover in Q3 2018, Egypt, Pakistan and Indonesia banned ICOs, while Ecuador removed their ban. Before Q3 2018, the following countries had already introduced regulations: *the USA, Canada, the UK, Australia, Switzerland, Estonia, UAE, and South Korea*. Next to that, China and Ecuador banned ICOs completely. This is also illustrated by figure A1 from Bellavitis et al. (2020) in Appendix C.

The regulations enable countries to take legal action against these so called exit scams, but not only countries took action to protect investors. During the summer of 2018 major companies like Google, Facebook, Twitter and Snapchat banned cryptocurrency ads. Initially all cryptocurrency ads were banned on the platform. Before regulators stepped in to take countermeasures, scams were common practice in the ICO market. But, according to a report from Ciphertrace, the total amount of dollars lost to scams was still 4.3 billion USD in 2019, and 1.4 billion in 2020[5]. This suggests that existing regulation still lacks the capability to completely prevent scams from happening. If an ICO is a scam, the coin will not become actively traded. No prior research has evaluated the effectiveness of ICO regulation, but numerous sources conclude that ICOs are currently not sufficiently regulated[6].

2.5 Evaluation of ICO Intermediaries

It's not logical that ICO intermediaries exist, but they do, and for good reason. In theory, ICOs can take place fully automatized, which allows for decentralization and therefore renders intermediaries unnecessary (Collao & Winship, 2019). One important assumption here is that all investors are able to read code. In practice, the mix of investors includes retail investors that do not read code, which partly creates the need for information intermediaries. Another issue in the partly unregulated crypto-market is that safeguards such as disclosure

[5] https://ciphertrace.com/2020-year-end-cryptocurrency-crime-and-anti-money-laundering-report/#major

[6] https://www.whitecase.com/publications/alert/regulation-initial-coin-offerings

regulations or securities registration rules for investors are absent, which makes the need for an intermediary all the more important. Moreover, investors rely on intermediaries because they do not have the skills or time to assess the future prospects of the project (Samieifar & Baur, 2020). To the investor, ICO intermediaries' ratings form an alternative to reading a whitepaper (Boreiko & Vidusso, 2018). The statements on the rating methodology from the four websites that make up the sample of this study support this statement. Appendix D shows on what basis each rating website calculates an ICO's score. It shows that a varying amount of factors are included. Some examples of qualitative factors are: the business model, whitepaper, vision, competence and previous experience of the founders, minimum viable product and risk.

An information intermediary can be defined as an independent, profit maximizing economic information processing system performing its activities on behalf of other agents' information needs (Womack, 2002). In this role, ICO review platforms help investors by conducting a qualitative review of the ICO and so close the information gap between investor and the start-up. In doing so, they help investors make the right investment choice and keep them from investing in scams by closing the information and credibility gap that exists between fund seekers and investors (Bourveau et al., 2019; De Jong et al., 2018). Closing the information gap also means that intermediaries reduce the adverse selection problem and so improve the functioning of capital markets.

Several studies on the topic of the ratings from these intermediaries conclude that ICO ratings are significantly related to the success of an ICO, the most thorough analysis yet by Bourveau et al. (2019) provides a comprehensive analysis 2357 attempted ICOs between March, 2014 and June, 2018. They conclude that the ICO ratings provided by external information intermediaries are significantly and positively associated with the success and post-listing performance of ICOs. All ratings data in the sample comes from one source,

though: ICOBench, which makes the paper out-dated. Actually, in all studies referred to in this article related to ratings research, ICOBench is one of, or the only source used for the analyses. ICOBench was the most popular ICO intermediary at the time. In 2020, however, ICOBench went out of business, creating a new gap in the literature. Other websites also went down, which are frequently included in the studies: ICOBazaar, Crytporated, Cryptomoon, and ICOChamps to name a few. ICO-rating.com, one of the largest ICO rating providers, is still active, but they have been penalized because they failed to disclose that they received payments received from issuers to their ratings[7]. ICObench went out of business after being accused by the Securities and Exchange Commission (SEC) of violating Section 17(b) of the Securities Act of 1933 in crowdfunding and token sales[8] [9] [10]. This act states that companies may not be paid to promote securities without disclosing it if this is the case. In conclusion, the ICO intermediary landscape has significantly changed, so these results should be re-examined by using the intermediaries that help close the information gap between ICO projects and investors as of today.

Other studies conclude that the rating and coverage ratio of an ICO by intermediaries is a determinant of success, but that the average rating is not indicative of success (Boreiko & Vidusso, 2018). Additionally, De Jong et al. (2018), Bourveau et al. (2019) and Florysiak and Schandlbauer (2019) do find a positive relationship between ratings and the amount raised. All studies use ICOBench as their sample data source, though. Lastly, none of the studies mentioned before have included the time period after September, 2018 in their sample data.

---

[7] https://www.sec.gov/news/press-release/2019-157

[8] https://hackernoon.com/ico-bench-exposed-7d99335a63b3

[9] https://bitcointalk.org/index.php?topic=5258384.msg54690987

[10] https://crowdfundingattorney.com/2018/05/02/section-17b-of-the-securities-act-in-crowdfunding-and-token-sales/

2.6 Hypotheses

Figure 1 below shows the expected relationships between various independent and dependent variables on the basis of the previously discussed findings in the literature.

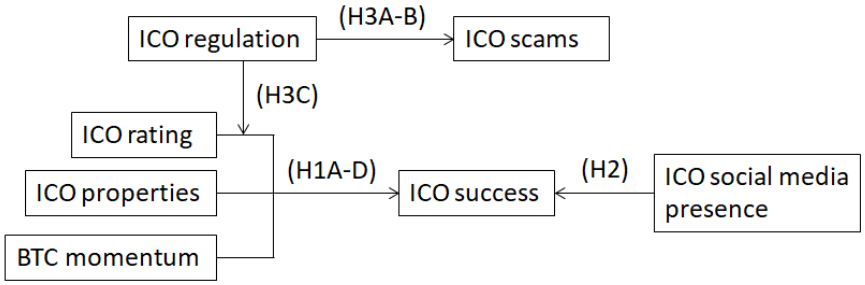


Figure 1: Conceptual framework

The first hypothesis assumes that a higher *ICO rating* is expected to correspond to a higher probability of a successful ICO measured by the log amount raised, whether or not the soft- or hardcap is reached, or whether or not the coin/token is actively traded. Thereby other variables like *ICO* properties, measured by duration, team size, ERC-20, Know-Your-Customer, sourcecode, and amount of GitHub stars and *BTC momentum* are controlled for. Firstly, this translates to the null hypothesis for ICOHolder:

H1A$_0$: There is no relationship between the ICOHolder rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

The alternative hypothesis for ICOHolder therefore is:

H1A$_a$: There is a positive relationship between the ICOHolder rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

Secondly, the null hypothesis for ICOMarks:

H1B$_0$: There is no relationship between the ICOMarks rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

The alternative hypothesis for ICOMarks therefore is:

$H1B_a$: There is a relationship between the ICOMarks rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

Third, the null hypothesis for Cryptototem:

$H1C_0$: There is no relationship between the Cryptototem rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

The alternative hypothesis for Cryptototem therefore is:

$H1C_a$: There is a relationship between the Cryptototem rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

And lastly, the null hypothesis for FoundICO:

$H1D_0$: There is no relationship between the FoundICO rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

The alternative hypothesis for FoundICO therefore is:

$H1D_a$: There is a relationship between the FoundICO rating, various ICO properties and the log amount raised, soft- or hardcap reached, and/or actively traded of the ICO.

Next, the ICO's social media presence, as measured by Twitter presence and Twitter followers, Facebook presence and Facebook likes, Telegram presence and Telegram members, Bitcointalk presence and Bitcointalk posts, and Reddit presence and Reddit members, hypothetically have a positive effect on ICO success measured by the log amount raised, whether or not the soft- or hardcap was reached, or whether or not the coin/token is actively traded. Thereby other variables like ICO rating, ICO properties, measured by duration, team size, ERC-20, Know-Your-Customer, sourcecode, and amount of GitHub stars are controlled for. Moreover BTC momentum is controlled for as well.

$H2_0$: There is no relationship between social media presence and the log amount raised of the ICO, whether the soft- or hardcap was reached, or whether the coin/token is actively traded after the ICO.

$H2_a$: There is a positive relationship between the social media presence and the log amount raised of the ICO, whether the soft- or hardcap was reached, or whether the coin/token is actively traded after the ICO.

Lastly, there is hypothetically a positive relationship between the presence of ICO regulation and the percentage of actively traded ICOs, and a negative relationship between ICO regulation and the amount of scams. The government's ability to prosecute ICO scammers should scare off scammers, resulting in more legit ICOs. A legit ICO has the possibility to become actively traded, whereas scams will never be. Therefore, if an ICO occurred in a country with regulation, a higher average amount of ICOs that become actively traded is expected. Moreover, the regulation could play a role in scaring off scammers and in doing so fulfil the function of making a pre-selection of legit projects. Projects that are scams should naturally receive a low rating, but in practice, there are still exit scam projects that ICO intermediaries are not able to correctly identify, and so receive a rating that does not correspond to their actual

$H3A_0$: There is no relationship between the presence of ICO regulation and the amount of ICOs that become actively traded.

$H3A_a$: There is a positive relationship between the presence of ICO regulation and the amount of ICOs that become actively traded.

$H3B_0$: There is no relationship between the presence of ICO regulation and the amount of scams after the regulations were introduced.

$H3B_a$: There is a positive relationship between the presence of ICO regulation and the amount of scams after the regulations were introduced.

$H3C_0$: There is no moderating effect of the presence of ICO regulation on the relationship between ICO rating and ICO success.

$H3C_a$: There is a moderating effect of the presence of ICO regulation on the relationship between ICO rating and the ICO success.

3. Research methodology.

This chapter provides a description of the dependent, independent and control variables. Additionally, a comparison of the findings from recent literature is made for every variable. Appendix A shows how each variable is measured and what the sources of the data are.

3.1 Dependent variables

Amount raised: Consistent with recent literature on ICOs (De Jong et al., 2018; Moxotó, Melo, & Soukiazis, 2021; Samieifar & Baur, 2020) the amount raised is used the main proxy of success. It is measured as the amount raised in USD. If a campaign raised their funds in Bitcoin or Ethereum, the cryptocurrency is converted to USD using the exchange rate at the time the ICO took place.

Log amount raised: Another proxy for success is the log of the amount raised, in line with other recent studies (Amsden & Schweizer, 2019; De Jong et al., 2018; Samieifar & Baur, 2020). Using the natural logarithm of the amount raised prevents the potential problem of homoscedasticity.

Soft- & hardcap reached: Other measures for ICO success are for example whether the hardcap or softcap that the ICO set for the fundraiser was reached (Adhami et al., 2018; Bourveau et al., 2019; De Jong et al., 2018; Moxotó et al., 2021). The softcap and the hardcap represent the minimum and maximum limit of a campaign, respectively. These are the measures of success that are set by the ICO project owners. If the softcap is reached, then the entrepreneur has enough funds to start the project, however, there are projects that also start without having reached their softcap (Boreiko & Sahdev, 2018). So, a reached softcap cannot

be seen as a definite measure of success. If the hardcap is reached, however, it signals the campaign as a big success as more capital than what the entrepreneur needed could have been raised. So, this compound variable measures both variables at once as a proxy for ICO success.

Actively traded: A coin/token is actively traded when it is listed on an exchange, but also when it has enough liquidity. Exit scams will not become actively traded and therefore, this variable is an indirect measure for scams as well. Amsden and Schweizer (2019) argue that the ultimate measure of success of an ICO is whether the coin/token is listed on an exchange and so becomes actively traded right after the ICO or not. Additionally, Bourveau et al. (2019) use this variable as a measure of long term success and also use Coinmarketcap as a data source. This can be measured by whether the coin/token is tracked on Coinmarketcap and can be seen as a strong measure of long term success.

Scam: Whether an ICO is an exit-scam cannot be seen at first glance, however, after the ICO has completed, investors will become aware of this rather quickly. Coinopsy.com lists a complete overview of cryptocurrencies that have been abandoned, are a scam, their website is down, has permanent issues that make the service unusable or doesn't have social updates or trading volume.

3.2 Independent variables

ICO Rating: To measure if the ratings of the intermediaries are a good predictor of the success of an ICO, the ICO ratings of the four currently most popular ICO rating websites that provide a numerical rating are collected. On their individual ratings, Boreiko and Vidusso (2018) find significant and positive results of several intermediaries: ICOBench and ICOHolder, however, no significant result for ICOMarks. These results are obtained by comparing the difference between the group that did not reach the softcap and the group that reached the hardcap. Measuring the difference between de means of these variables is not

precise enough, as ICOs that reached the softcap are left out of the equation. By analysing the relationship between the rating and the campaigns success this way, it does not become clear exactly how big the influence of the ICO rating truly is. Additionally, they call for more in-depth research on the importance of rating websites. De Jong et al. (2018) also find positive and significant results for the expert rating and the transparency rating on the amount raised and softcap reached from ICOBench. Expert ratings can be ratings given by individual expert reviewers whereas transparency ratings are generated by an algorithm by ICOBench. Bourveau et al. (2019) support this and find positive and significant relationships between ICOBench's ratings and the amount raised and between ICO ratings and actively traded. Also, they don't include other variables in their regression analysis, except for BTC momentum, which also had a significant effect on the amount raised. Additionally, Florysiak and Schandlbauer (2019) find the same relationship between ICOBench's rating and the amount raised. However, it is evident that the studies done by De Jong et al. (2018), Bourveau et al. (2019) and Florysiak and Schandlbauer (2019) are out-dated, as ICOBench does not exist anymore.

Average ICO rating: This variable measures the average of all 4 ICO rating websites. Boreiko and Vidusso (2018) also look at the average ICO rating of all intermediaries, but find no significant results for this factor as the ratings of their dataset vary too much between intermediaries.

Coverage ratio: The coverage ratio is calculated by dividing the amount of rating websites that rated the ICO by four. Moxotó et al. (2021) state that a higher coverage ratio among rating websites leads to a more successful token sale. Boreiko and Vidusso (2018) find that it is a significant positive predictor of ICO success. They do point out that the coverage ratio may also be an indicator for the budget of a certain project as some intermediaries ask for payment for an ICO to be listed on their website.

The presence on social media of a blockchain related start-up can be measured on different platforms, as several are used extensively to promote the project and create a community of followers. A bigger community should mean more investor demand, which should result in a higher amount raised (Panin et al., 2019). Furthermore, by communicating to investors about the project, project owners can close the information asymmetry gap between them and potential investors. For assessing the quality of a project, the investors use several sources.

Twitter followers and presence: Twitter is the most popular platform for ICOs to communicate updates and create a community. The amount of Twitter followers of an ICO is found to be significantly related to the (logarithm of) total amount raised (Boreiko & Vidusso, 2018). Panin et al. (2019) find no relationship between the presence on Twitter and success, because nearly every firm had one. In contrast, Bourveau et al. (2019) do find a positive and significant relationship between Twitter presence and the ICO actively traded and the amount raised.

Facebook likes and presence: The relationship between Facebook presence and the amount raised and whether the coin/token is actively traded is studied by Bourveau et al. (2019). They conclude that there is a positive and significant relationship, here. The amount Facebook likes of a certain ICO may signal a big community of investors, it is included since this is also a popular platform for ICOs to promote their projects on. This study will therefore investigate what platform is the best indicator of a community of potentially interested investors.

Bitcointalk / Reddit / Telegram users and presence: Other platforms like Bitcointalk, Reddit or Telegram are also popular platforms for ICOs to promote on. Measures for the popularity and presence on these platforms are the amount of posts on the thread of the ICO on Bitcointalk, the amount of Reddit members on the page of an ICO, and the amount of Telegram chat members. For all these platforms, the amount of users/followers is accounted

for as well as a dummy variable for whether the ICO is present on a certain platform. Between the amount of Telegram users and the amount raised, Amsden and Schweizer (2019) find a positive and significant relationship. Panin et al. (2019) support this finding, too. Bitcointalk and Reddit are also popular platforms, but their relationship with ICO success is studied less. Chanson et al. (2018) relate the ICO underpricing to the amount of Reddit posts and find a positive and significant result. This study, however, will analyse the role of the amount of Reddit members. So, this will be the first study to relate Reddit members to ICO success, the same goes for Bitcointalk thread posts.

3.3 Control variables

Year / Quarter, Country and Presence of ICO regulation: The country, the year and quarter of when and where the ICO registered are taken into account to be able to analyse the effect of jurisdiction. The effect of jurisdiction on ICO success measured by the variable actively traded or not or whether the ICO is a scam or not, is not studied yet. However, Panin et al. (2019) do find that specifying under which jurisdiction the ICO fell had a positive impact on the campaigns success. Additionally, Boreiko and Sahdev (2018) find that there is a significant difference in the amount raised between ICOs that take place in ICO-friendly jurisdictions versus ICOs that take place in non-ICO-friendly jurisdictions. So, countries with weak or no ICO regulation raised significantly more. Still, this does not say anything about the effect of the regulations on the amount of scams or amount of coins that become actively traded, as an indirect proxy for the amount scams. Moreover, there is still a lot of complexity surrounding regulations as these differ per country (Adhami et al., 2018).

Duration: Next, the duration in days of the ICO campaign is controlled for significance as well, as it is of significant influence on the success of crowdfunding campaign (Moxotó et al., 2021). De Jong et al. (2018), Boreiko and Sahdev (2018), Aslan, Sensoy, and Akdeniz (2021) and Amsden and Schweizer (2019) all support this finding.

Team: According to several studies, the quality of the management team is a first-rate indicator for the success of ICO projects (Momtaz, 2020). The team can be analysed in terms of general information, reputation and experience and size. Due to time constraints, this study will only include the team size as a proxy for the quality of the team. Bourveau et al. (2019), Lyandres and Rabetti (2018), and Amsden and Schweizer (2019) find significant and positive effect of the team size on the amount raised and actively traded. De Jong et al. (2018) conclude the same and additionally find a significant and positive effect of the amount of team members on the softcap reached, the amount raised and whether the coin/token is actively traded.

ERC-20: Another factor that should be controlled for is the platform on which the technology of the smart contract is based. Ethereum was the first to popularize and implement smart contracts, which allows the token that was built on this platform to interact with other token. Around 88.1% of the projects are based on Ethereum's ERC-20 platform (Fisch & Momtaz, 2020). Using this platform means a greater interoperability with other cryptocurrencies and may therefore be beneficial to these projects. This variable is controlled for in recent a study on ICO success by Aslan et al. (2021), however, they find no significant relationship. De Jong et al. (2018) on the other hand, find a significant and positive effect on the Ln of the amount raised, but no effect on token tradability. Panin et al. (2019) find mixed results, namely both a neutral and a positive effect.

KYC (Know-Your-Customer): KYC can reduce the number of investors as it imposes restrictions due to additional time or cost it takes to raise funds can influence the ICO's success. There is a negative but non-significant result found between KYC and the amount raised by both Aslan et al. (2021) and Florysiak and Schandlbauer (2019). Lyandres and Rabetti (2018), though, do find a positive and significant relationship between KYC requirement and the amount raised. So, there is no consensus on this, yet.

Source code: Whether the source code is available on GitHub may also be a significant determinant of success, as it presents the investors with the opportunity to analyse the quality of the code of the project. Bourveau et al. (2019) and De Jong et al. (2018) find a positive significant relationship between the amount raised and actively traded and the sourcecode availability. Another study concluded that the availability of the sourcecode on GitHub is significantly related to a higher chance of a coin becoming actively traded, however, no such relationship was found for the amount raised (Amsden & Schweizer, 2019).

GitHub stars: Additionally, the amount of GitHub stars serves as an indicator of how many people liked the sourcecode. It is an indicator of how popular a code is, but not necessarily a quality indicator of the code (Papamichail, Diamantopoulos, & Symeonidis, 2016). The amount of GitHub stars are expected to have a positive effect on ICO success, as a more popular code should correlate to a better quality code, and thus act as a quality signal for the project. De Jong et al. (2018) use a dummy variable indicating whether a project has any contributions to any of the projects GitHub repositories, but this is not related to the ICO's success in their study.

Bitcoin momentum: Finally, also the momentum of Bitcoin measured and the average in USD during the ICO period are included in the model to test for the relation between the main currency that is used for funding ICOs and the ICO's success. Bourveau et al. (2019) find a significant positive relationship, here. In contrast, no relationship is found between these variables by Boreiko and Vidusso (2018).

3.4 Logistic and linear regression analyses

This research is operationalized by using purely quantitative research methods to answer the research question. To test hypotheses H1 and H2, multiple regression analyses are conducted to measure if significant causal relationships exist between ICO ratings and ICO success and between social media presence and ICO success. Therefore, three different measures for Y_{ICO}

$_{success}$ are used in the regression analyses as dependent variables: log of amount raised, soft- or hardcap reached, and actively traded. For log of amount raised, a linear multiple regression analysis is conducted. For testing both soft- or hardcap reached and actively traded, logistic multiple regression analyses are conducted.

The reason for using regression analyses in this study is because there is hypothetically a causal relationship between the independent and dependent variables. Other research already proved the determinants of ICO success via regression analyses (Amsden & Schweizer, 2019). This supports the hypothesis that there is a causal relationship between the independent and dependent variables.

Florysiak and Schandlbauer (2019) argue that ICO ratings are partly based on the number of social media channels. Therefore, social media channels and ICO ratings are separated to prevent multicollinearity in both regression models.

The model to test H1 the relationship between ICO Rating and ICO success is as follows:

$$Y_{ICO\ success} = \beta_1*ICORating + \beta_2*Intermediary\_coverage + \beta_3*Duration + \beta_4*Team\_size + \beta_5*ERC\text{-}20 + \beta_6*KYC + \beta_7*Sourcecode + \beta_8*Github\_stars + \beta_9*Bitcoin\_momentum$$

Looking at models used in other literature, Amsden and Schweizer (2019) use a highly similar regression model to study the determinants of ICO success with a model containing ICO characteristics, financial details, team characteristics and cryptocurrency dynamics. No constant, β_0, is used, as there can be an absolute zero point of the dependent variable amount raised. There is an absolute zero point because if there is no ICO rating, the ICO is not listed on any website, the campaign lasts zero days, there are zero team members, et cetera, there would be no money raised by the ICO. This model will be applied across four different ICO rating providers and tested on three different measures of success, resulting in 12 models to test hypothesis 1.The model to test H2 the relationship between social media presence and ICO success is as follows:

$$Y_{ICO\ success} = \beta_1*Duration + \beta_2*Team\_size + \beta_3*ERC\text{-}20 + \beta_4*KYC + \beta_5*Sourcecode + \beta_6*Github\_stars + \beta_7*Twitter\_followers + \beta_8*Twitter\_presence + \beta_9*Facebook\_likes + \beta_{10}*Facebook\_presence + \beta_{11}*Telegram\_members + \beta_{12}*Telegram\ presence + \beta_{13}*Bitcointalk\_posts + \beta_{14}*Bitcointalk\_presence + \beta_{15}*Reddit\_members + \beta_{16}*Reddit\_presence + \beta_{17}*Bitcoin\_momentum$$

Also here, no constant, β_0, is included, as there can be an absolute zero point of the dependent variable ICO success. Also the model to test hypothesis 2 does not contain the ICO ratings anymore, as they are partly based on the social media characteristics of an ICO.

3.5 Independent samples t-test

To test H3A-B, the relationship between ICO regulation and ICO scams, an independent samples t-test is conducted. This test measures if there is a significant difference in means between the amount of ICOs that became actively traded or not and whether an ICO is a scam or not for ICOs that took place in countries and in a time where and when there was no ICO regulation compared to ICOs that took place when and where ICOs were regulated. Additionally, to test H3C, an altered logistic and linear regression model is used to test for the presence of a moderating effect of ICO regulation on the relationship between ICO ratings and ICO success:

$$Y_{ICO\ success} = \beta_1*Average\_ICORating + \beta_2*Intermediary\_coverage + \beta_3*Duration + \beta_4*Team\_size + \beta_5*ERC\text{-}20 + \beta_6*KYC + \beta_7*Sourcecode + \beta_8*Github\_stars + \beta_9*Bitcoin\_momentum$$

Here, the ICO rating of the individual intermediaries is replaced by the average ICO rating of all four intermediaries. The effect of this variable is then compared for differences between the group of ICOs that took place when there was ICO regulation in place versus the group with no ICO regulation in place. No constant, β_0, is used, as there can be an absolute zero point of the dependent variable ICO success.

3.6 Data

To study the reliability of the ratings that ICO intermediaries provide, a sample of 240 ICOs from Q1 2016 to Q2 2021 obtained by manually gathering data from various websites. A list

of more than a hundred websites claimed to provide some sort of rating or evaluation of ICOs. Of these, only four websites assign a numerical rating and were active from 2016 till present: ICOHolder; ICOMarks; Cryptototem; and FoundICO. The criteria in order for the website to be part of the sample data are the following: ICO review websites must assign numerical ratings to ICOs, so that the ratings are quantifiable. Moreover, the websites should contain data from at least 2017-2021. The reason for that is to be able to make comparisons in relation to H3 between different years when there was regulation versus when there was no regulation. This means that other popular websites are excluded from the sample, whereas other studies (Boreiko & Vidusso, 2018; Bourveau et al., 2019; Lunesu & Desogus, 2020) did include these in their sample. For example, website like ICOBench, Cryptomoon, TopICOlist, Cryptorated, Cryptopotato, ICOWatchlist, ICOBazaar and ICOChamps are excluded from the sample mainly because new ICOs are not covered anymore, or they do not provide (numerical) ratings, or simply went offline and are therefore excluded.

From the four websites that remain, forty ICOs are selected from every year between 2016 and 2021, totalling 240 ICOs. Due to time constraints, the dataset is limited to 240 ICOs that are analysed, while it could have consisted of more ICOs if time had not been a constraint. More data would result in a better representation of the population and potentially more significant findings. Data gathered for the variables that summarize the ICO's properties is gathered using the websites Coinmarketcap.com, Coingecko.com, Cryptorank.io, ICOHolder, ICOMarks, Cryptototem and FoundICO. Data that indicated whether an ICO was an exit-scam or not, the website coinopsy.com/dead-coins is used. After an online investigation, this website seemed the most complete and up to date as there are few alternatives. Additional information about the ICO's characteristics can be found on various websites, but the accuracy of the data is questioned by various researchers. At the moment of writing, there is not a single formal data source for ICO related information. To ensure the

highest level of data accuracy and quality, data is cross-validated using the seven websites mentioned above. The applied data gathering and selection process is essential for ensuring the validity of the analyses that are conducted next.

4. Results.

4.1 Descriptive statistics

Appendix F displays the descriptive statistics of all 39 variables in the sample. The descriptive statistics are analysed to get a clear image of the sample data. First, on the topic of the ICO ratings, the amount of ratings and the average rating provided in the sample differ: Cryptototem (230;6.7), ICOMarks (193;7.0), ICOHolder (161;6.5), FoundICO (111;6.4). Irrespective of the reliability of the ratings, this suggests that for the most complete coverage of all ICOs, investors should consult Cryptototem. Furthermore it can be concluded that ICOMarks is the most optimistic in their rating and FoundICO is the most critical judge of ICOs. Additionally, in Appendix G, the correlation matrix of the main variables is displayed. The significant correlations are in bold. There is, however, no multicollinearity problem observed. All ratings are evidently correlated, but they are not used in a single regression model together. Social media indicators for presence and amount of followers/likes are correlated, but this is expected, as team's marketing efforts are likely divided across different channels. Still, they do not measure the same thing and therefore, there is no multicollinearity problem.

Next, on the topic of the ICO properties in this sample, the average amount of days a campaign lasted was 72. The average team consisted of 9 people. 71% of the projects are built on ERC-20 technology, meaning that 29% developed their own blockchain framework for providing transactions. 36% of the ICOs required investors to verify themselves in order to meet Know-Your-Customer requirements. On average a 43% of the ICOs had a code that was

available for investors and ICO rating providers to review and 74 stars are given for the code on average (De Jong 40%). 55% of the ICOs had to deal with some level of regulation.

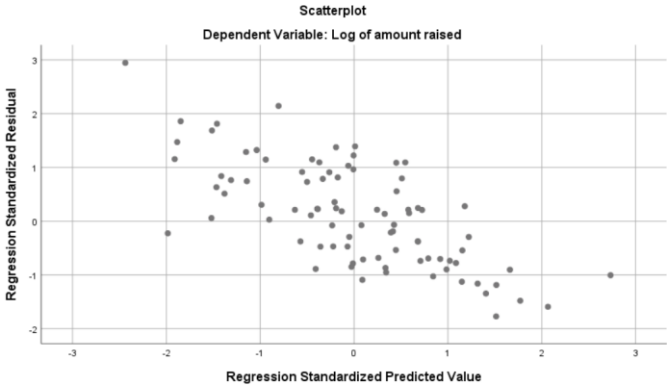
Additionally, the social media statistics of the ICOs in this sample tell that the average amount of followers on Twitter is 10942 and on average 77% of ICOs are present on Twitter. For Facebook that is 7146 likes and a presence of 68%, for Telegram 3307 members and a presence 71% on average, for Bitcointalk 1045 posts and an average presence of 63% and last, 2869 Reddit followers and a 40% average presence of ICOs on the platform.

Lastly, the average amount raised was an impressive $8.713 million, though 52% did not raise a dollar. Of all the ICOs that are held, 28% became actively traded, which equals 58.3% of the coins that raised at least one dollar. 37% raised at least $500.000, which 27% percent reached their softcap and 7% reached their hardcap. All in all, 17% reached the soft- or hardcap. Additionally, 3%, or 6 of the 240 ICOs in the sample turned out to be a scam. Of the 6 exit scams, only two raised money: Chaintrade ($31.808.389) and The DAO ($142.250.000) and got an average rating of 6.43 and 5.96, respectively. The average score the six scams received was a 5.42.

4.2 Results related to hypotheses 1A-D

First, a multiple linear regression analysis was conducted to test which variables significantly predict the ICO's log amount raised as a proxy for ICO success. Preliminary analyses are conducted to ensure there was no violation of the assumptions of normality, linearity and multicollinearity for any of the analyses. The residual plots are displayed in Appendix I: Residual plots linear regressions, in figure A2 and figure A3 for the residual plots of model (1) ICOHolder, figure A4 and A5 for the residual plots of model (2) ICOMarks, figure A6 and figure A7 display the residual plots of model (3) Cryptototem, and figure A8 and figure A9 show the residual plot of model (4) FoundICO. The log of the amount raised was used as the dependent variable instead of the amount raised as the latter did not result in a homoscedastic

distribution of the residuals. As an example, figure 3 and 4 below, show the distribution of the residuals of model (1) ICOHolder, further residual plots are displayed in Appendix I.



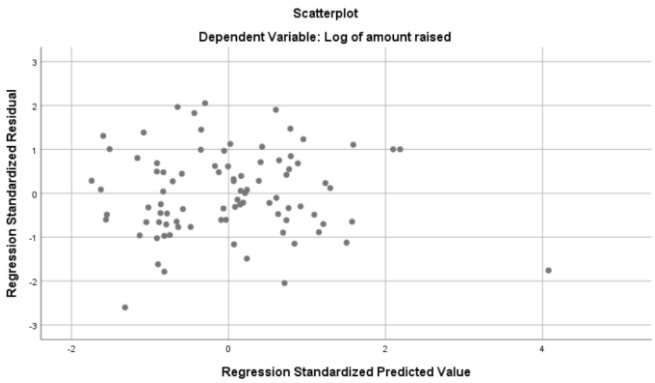


Figure 3 (left) and figure 4 (right): Residual plot of the linear regression analysis of model (1) ICOHolder. The left graph shows the regression through the origin, the right graph shows the regression with a constant.

The graph in figure 4 is shown to prove that the residual plot on the left is homoscedastic, if the constant were included. However, as there is an absolute zero point, the regression through the origin (left) has been chosen. So, even though the data is not homoscedastic, it is homoscedastic when accounted for the constant. Therefore, the unknown factor that is responsible for the heteroscedasticity is known. There is an absolute zero point because if there is no ICO rating, the ICO is not listed on any website, the campaign lasts zero days, there are zero team members, etc., there would be no money raised by the ICO.

	Linear regressions											
Dependent variables	*Log_amount_raised*											
	(1)			(2)			(3)			(4)		
Independent variables	Beta	t	p	Beta	t	p	Beta	t	p	Beta	t	p
ICOHolder_rating	0.778	9.572	**0.000*****									
ICOMarks_rating				0.194	1.966	**0.053***						
Cryptototem_rating							0.536	6.778	**0.000*****			
FoundICO_rating										0.207	1.719	**0.094***
Intermediary_coverage	3.317	4.668	**0.000*****	6.493	8.484	**0.000*****	4.496	6.461	**0.000*****	5.599	4.632	**0.000*****
Duration	-0.001	-0.806	0.423	-0.001	-0.829	0.410	-0.002	-1.865	**0.065***	-0.002	-1.452	0.155
Team_size	0.000	0.030	0.977	0.012	0.797	0.428	0.015	1.009	0.315	0.025	0.709	0.483
ERC-20	-0.051	-0.142	0.887	-0.070	-0.193	0.847	-0.063	-0.203	0.839	0.464	0.858	0.396
KYC	-1.761	-5.319	**0.000*****	-0.497	-1.427	0.158	-1.408	-4.733	**0.000*****	-0.823	-2.022	**0.051***
Sourcecode	-0.812	-2.712	**0.008****	-0.404	-1.324	0.190	-0.568	-2.051	**0.043****	-0.179	-0.474	0.638
Github_stars	0.001	2.509	**0.014****	0.001	3.199	**0.002*****	0.000	1.951	**0.054***	0.005	2.452	**0.019****
BTC_momentum	-1.883E-05	-1.462	0.148	-4.042E-06	-0.348	0.729	-7.922E-06	-0.699	0.486	4.928E-06	0.320	0.751
Adjusted / pseudo R^2	**0.964**			**0.964**			**0.961**			**0.969**		
N	88			88			99			45		
F / Chi	262.105			230.273			273.137			157.222		
DfE	9			9			9			9		
DfM	79			79			90			36		
p	**0.000*****			**0.000*****			**0.000*****			**0.000*****		

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table 1: linear regression results of models (1) – (4)

Table 1 shows a significant regression was found for model (1) in relation to hypothesis 1A (F=262.105, dfM=79, dfE=9, p<.01). The model had an R^2 of 0.964, which means that 96.4% of the variance could be explained by the model. For model (1) the following variables are found to be significant predictors of the log amount raised: ICOHolder rating (beta=.778; t=9.572; df=79; p<.01*)*, intermediary coverage (beta=3.317; t=4.668; df=79; p<.01*)*, KYC (beta=-1.761; t=-5.319; df=79; p<.01*)*, sourcecode (beta=-0.812, t=-2.712; df=79; p<.01*)*, and GitHub stars (beta=0.001; t=2.509; df=79; p<.05*)*. Furthermore, a one standard deviation increase in the ICOHolder rating results in a 6.0x increase of the amount raised by the ICO, on average (ICOHolders Beta=0,778x log amount raised = 10^.778 = 6.0x amount raised). Therefore, null-hypothesis H1A can be rejected and the alternative hypothesis can be accepted. This is also shown in appendix H: Regression analyses of ICO ratings, models (1)-(12).

A second significant regression was found for model (2) in relation to hypothesis 1B (F=230.273, dfM=79, dfE=9, p<.01). The model had an R^2 of 0.964, which means that 96.4% of the variance could be explained by the model. For model (2) the following variables are found to be significant predictors of the log amount raised: ICOMarks rating (beta=0.194;

t=1.966; df=79; p<.1), intermediary coverage (beta=6.493; t=8.484; d=79; p<.01) and GitHub stars (beta=0.001; t=3.199; df=79; p<.01). Furthermore, a one standard deviation increase in the ICOMarks rating results in a 1.5x increase of the amount raised by the ICO, on average (ICOMarks Beta=0.194x log amount raised = 10^.194 = 1.5x amount raised). Therefore, null-hypothesis H1B can be rejected and the alternative hypothesis can be accepted.

Thirdly, a significant regression was found for model (3) in relation to hypothesis 1C (F=273.137, dfM=90, dfE=9, p<.01). The model had an R^2 of 0.961, which means that 96.1% of the variance could be explained by the model. For model (3) the following variables are found to be significant predictors of the log amount raised: Cryptototem rating (beta=0.536; t=6.778; df=90; p<.01), intermediary coverage (beta=4.496; t=6.461; d=90; p<.01), Duration (beta=-0.002; t=-1.865; df=90; p<.1), KYC (beta=-1.408; t=-4.733; df=90; p<.01), sourcecode (beta=-0.568, t=-2.051; df=90; p<.05), and GitHub stars (beta= 0.000; t=1.951; df=90; p<.1). Furthermore, a one standard deviation increase in the Cryptototem rating results in a 3.4x increase of the amount raised by the ICO, on average (Cryptototem Beta= 0.536x log amount raised = 10^.536 = 3.4x amount raised). Therefore, null-hypothesis H1C can be rejected and the alternative hypothesis can be accepted.

Lastly, a significant regression was also found for model (4) in relation to hypothesis 1D (F=157.222, dfM=36, dfE=9, p<.01). The model had an R^2 of 0.969, which means that 96.9% of the variance could be explained by the model. For model (4) the following variables are found to be significant predictors of the log amount raised: FoundICO rating (beta=0.207; t=1.719; df=36; p<.1), intermediary coverage (beta=5.599; t=4.632; d=36; p<.01), KYC (beta=-0.823; t=-2.022; df=36; p<.1) and GitHub stars (beta=0.005; t=2.452; df=36; p<.05). Furthermore, a one standard deviation increase in the FoundICO rating results in a 1.6x increase of the amount raised by the ICO, on average (FoundICO Beta=0.207x log amount

raised = 10^.207 = 1.6x amount raised). Therefore, null-hypothesis H1D can be rejected and the alternative hypothesis can be accepted.

From the analysis, it can be concluded that all four intermediaries' ratings are significant predictors of the log of the amount raised. On average, a one standard deviation increase in the ICO rating equals a 3.1x increase in the amount raised. Thereby the following controlling variables are also found to be significantly related to log amount raised: intermediary coverage, duration, KYC, sourcecode and GitHub stars. However, duration was significant in only one of the four models. In contrast, team size, ERC-20 and Bitcoin momentum are found to have no significant effect on the log amount raised.

	Logistic regressions															
Dependent variables	*Softhardcap_reached*															
	(5)				**(6)**				**(7)**				**(8)**			
Independent variables	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p
ICOHolder_rating	-0.275	4.978	1	**0.026****												
ICOMarks_rating					-0.004	0.001	1	0.975								
Cryptototem_rating									-0.015	0.021	1	0.884				
FoundICO_rating													-0.131	0.507	1	0.476
Intermediary_coverage	-2.343	4.665	1	**0.031****	-2.563	5.429	1	**0.020****	-2.631	7.792	1	**0.005*****	-0.623	0.134	1	0.714
Duration	0.006	6.359	1	**0.012****	0.003	4.273	1	**0.039****	0.003	4.564	1	**0.033****	0.001	0.509	1	0.476
Team_size	0.077	5.857	1	**0.016****	0.046	3.595	1	**0.058***	0.033	2.282	1	0.131	0.074	2.905	1	**0.088***
ERC-20	1.121	3.571	1	**0.059***	-0.077	0.023	1	0.879	0.154	0.120	1	0.729	-0.306	0.189	1	0.664
KYC	1.192	5.429	1	**0.020****	0.986	4.523	1	**0.033****	0.938	5.123	1	**0.024****	-0.206	0.138	1	0.710
Sourcecode	0.711	2.383	1	0.123	0.256	0.379	1	0.538	0.169	0.201	1	0.654	0.116	0.051	1	0.821
Github_stars	-0.003	1.263	1	0.261	0.000	0.028	1	0.868	0.000	0.009	1	0.923	-0.007	0.761	1	0.383
BTC_momentum	0.000	1.858	1	0.173	0.000	7.699	1	**0.006*****	0.000	7.387	1	**0.007*****	0.000	2.462	1	0.117
Adjusted / pseudo R^2	**0.326**				**0.377**				**0.368**				**0.37**			
N	147				181				211				105			
F / Chi	58.069				85.728				96.98				48.511			
DfE	9				9				9				9			
DfM	138				172				202				96			
p	**0.000*****				**0.000*****				**0.000*****				**0.000*****			

(*p<0,1, **p<0,05, ***p<0,01)

Regression through the origin

Table 2: Logistic regression results of models (5) – (8)

	Logistic regressions															
Dependent variables	*Actively_traded*															
	(9)				(10)				(11)				(12)			
Independent variables	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p
ICOHolder_rating	0.053	0.169	1	0.681												
ICOMarks_rating					-0.203	2.036	1	0.154								
Cryptototem_rating									0.018	0.032	1	0.857				
FoundICO_rating													-0.210	1.207	1	0.272
Intermediary_coverage	-3.104	7.637	1	**0.006*** **	-2.595	4.641	1	**0.031** **	-2.520	7.605	1	**0.006*** **	-3.579	3.278	1	**0.070***
Duration	-0.007	2.150	1	0.143	-0.003	1.260	1	0.262	-0.004	2.698	1	**0.100***	-0.004	2.515	1	0.113
Team_size	0.069	3.667	1	**0.056***	0.020	0.426	1	0.514	0.026	0.956	1	0.328	0.085	3.016	1	**0.082***
ERC-20	-0.214	0.144	1	0.705	0.501	0.773	1	0.379	-0.315	0.568	1	0.451	0.734	0.858	1	0.354
KYC	0.452	0.779	1	0.377	1.804	12.621	1	**0.000*** **	0.924	5.716	1	**0.017** **	1.802	8.373	1	**0.004*** **
Sourcecode	0.844	3.623	1	0.057	1.480	10.817	1	**0.001*** **	1.064	8.979	1	**0.003*** **	1.237	4.940	1	**0.026** **
Github_stars	0.002	2.132	1	0.144	0.004	3.654	1	**0.056***	0.003	3.784	1	**0.052***	0.024	1.191	1	0.275
BTC_momentum	0.000	0.570	1	0.450	0.000	0.273	1	0.601	0.000	0.014	1	0.905	0.000	7.031	1	**0.008*** **
Adjusted / pseudo R^2	**0.334**				**0.403**				**0.318**				**0.403**			
N	147				181				211				105			
F / Chi	59.665				93.431				80.864				54.203			
DfE	9				9				9				9			
DfM	138				172				202				96			
p	**0.000*** **				**0.000*** **				**0.000*** **				**0.000*** **			

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table 3: Logistic regression results of models (9) – (12)

In relation to the other dependent variables soft- or hardcap reached and actively traded, logistic regressions are conducted. From the results in table 2 and table 3, it can be stated that only model (5) containing ICOHolders rating could significantly predict whether an ICO would reach the soft- or hardcap (F=58.069, dfM=138, dfE=9, p<.01) with a R^2 of 0.326. For model (5) the following variables are found to be significant predictors of whether the soft- or hardcap would be reached: ICOHolder rating (beta=-0.275; t=4.978; df=138; p<.05), intermediary coverage (beta=-2.343; t=4.665; d=138; p<.05), duration (beta=0.006; t=6.359; df=138; p<.05), team size (beta=0.077, t=5.857; df=138; p<.05), ERC-20 (beta=1.121; t=3.571; df=138; p<.05), and KYC (beta=1.192; t=5.429; df=138; p<.05). It seems that ICOHolders rating has a negative Beta, which suggests that a higher rating results in a lower chance of the ICO reaching the soft- or hardcap. This result seems to be an error, as it is counter logical that a higher rating results in a lower chance of success. De Jong et al. (2018) find a positive relationship between the softcap reached and the Sourcecode, GitHub stars and Bitcoin momentum did not have a significant effect on the log amount raised. Therefore, on the basis of this analysis only null-hypothesis H1A can be rejected and the alternative hypothesis can be accepted.

Models (6), (7), (8), (9), (10), (11), and (12) are significant, however, in neither of the models the ICO ratings seemed to be a significant variable. Various other variables are significant, though, with differing results per model. Therefore, on the basis of these models, hypotheses H1B, H1C, and H1D could not be rejected. So, there is a significant positive relationship between ICO ratings and ICO success, when the dependent variable is the log of the amount raised. Moreover, there is a significant negative relationship between ICO ratings and the soft- or hardcap reached. In model (5), ICOHolders Beta is negative, this result implies that the higher ICOHolders rating, the lesser the chance of a successful ICO. This statistic is probably attributable to a lack of data. In the end, models (1), (2), (3), and (4) are significant and all H1A-D null hypotheses are rejected and all H1A-D alternative hypotheses are accepted. There are significant relationships found between ICO ratings and at least one of the dependent variables, namely the log amount raised.

4.3 H1 findings in relation to the literature on the effect of ICO ratings

From the results it can be concluded that ratings are a significant predictor of ICO success, however, this finding is not robust across different measures of success. ICO ratings reliably predict the amount raised, but not whether a coin will become actively traded, or if the soft- or hardcap will be reached. The results on the effect of the ICO rating are partly in line with recent literature. The effect of ICOHolders rating supports the finding from Boreiko and Vidusso (2018), who also found the effect to be positive and significant. In contrast to their result on ICOMarks' effect, this study does find a positive and significant relationship. This is arguably attributable to the difference in Boreiko and Vidusso's (2018) measure of success and this study, as they compare the difference between the group that did not reach the softcap and the group that reached the hardcap as proxies for success. Another reason could be that their dataset is out-dated and ICOMarks' ratings got more accurate in the last few years. The findings are also in line with the findings from Florysiak and Schandlbauer (2019), Bourveau

et al. (2019), De Jong et al. (2018) on ICOBench's rating, namely that the rating is a significant predictor of ICO success. Though, this is of little importance, as ICOBench does not exist anymore.

Next, the finding of the positive and significant effect of the coverage ratio on the amount raised is in line with recent study by Boreiko and Vidusso (2018). Still, the coverage ratio may also be an indicator for the budget of a certain project. On the other hand, the coverage ratio has a significant and negative effect on both other variables: soft- or hardcap reached and actively traded.

The duration of the ICO campaign has a significant positive effect in several regressions, which is in line with recent literature (Aslan et al., 2021; Boreiko & Sahdev, 2018; De Jong et al., 2018; Moxotó et al., 2021).

The team size was found to be a significant predictor of whether the soft- or hardcap will be reached and if the coin would become actively traded. This finding is also in line with recent studies (Amsden & Schweizer, 2019; Bourveau et al., 2019; De Jong et al., 2018; Lyandres & Rabetti, 2018). However, in contrast with this study, other studies also find a significant effect on the amount raised.

In line with other studies (Aslan et al., 2021; De Jong et al., 2018; Panin et al., 2019), this study also finds mixed effects of whether the coin/token was built on Ethereums platform ERC-20 blockchain technology or not, on the success of the ICO. Only in model (5), ERC-20 was a significant predictor of whether the coin would reach the soft- or hardcap or not.

Recent studies did not reach a consensus on the effect of KYC restriction on investors (Aslan et al., 2021; Florysiak & Schandlbauer, 2019; Lyandres & Rabetti, 2018). The results from this study do not enlighten the scientific community on this, as also this study found mixed results. There is a significant negative effect on the amount raised, but a significant and positive effect on the variables soft- or hardcap reached and the actively traded.

De Jong et al. (2018) find a significant effect of whether the sourcecode was available on the amount raised. Though, their testing method is not a regression analysis, but a univariate test, which implies no causal relationship between these variables. The finding from the regression analysis in this study is that this variable has a causal effect on the variables actively traded and the natural log of the amount raised. Which is in line with the literature (Bourveau et al., 2019; De Jong et al., 2018) and partially with Amsden and Schweizer (2019). There is no such effect on the variable soft- or hardcap reached, though.

This study is the first to include the popularity of the sourcecode, as measured by the amount of GitHub stars as an indicator of ICO success. Therefore, it cannot be compared to other literature. The findings that GitHub stars are significant predictors of the amount raised and the variable actively traded are in line with expectations. A more popular sourcecode was expected to signal a higher quality project, which is expected to have a more successful fundraising campaign.

Lastly, the evidence on the effect of Bitcoins momentum is positive and in line with the literature (Bourveau et al., 2019), as there is a partial effect on both the variable soft- or hardcap reached and the variable actively traded. Additionally, there is no effect on the amount raised, which is obvious, as the amount raised is in USD and already corrected for the price of Bitcoin.

4.4 Results related to hypothesis 2

The second hypothesis envelops the relationship between social media presence of the ICO and ICO success. This relationship is again tested via multiple linear regression and logistic regression of which the results are displayed in table 4 below and in Appendix J. A significant result was found for the linear regression of model (13) ($F=39.974$, $dfM=223$, $dfE=17$, $p<.01$). The model had an R^2 of 0.855, which means that 85.5% of the variance could be explained by the model. For model (13) the following variables are found to be significant predictors of the

log amount raised: Team_size (beta=.103; t=2.877; df=223; p<.01), ERC-20 (beta=1.804; t=3.382; df=223; p<.01), Twitter_presence (beta=2.060; t=3.173; df=223; p<.01), Bitcointalk presence (beta=1.081; t=1.850; df=223; p<.1) , and Reddit_members (beta=.00003727; t=2.002; df=223; p<.05).

Secondly, a significant result was also found for the logistic regression of model (15) (F=102.126, dfM=223, dfE=17, p<.01) with a R^2 of 0.371. For model (15) the following variables are found to be significant predictors of whether the coin would become actively traded: Duration (beta=.-0.006; Wald $Chi^2(223) = 2.877$; p<.01), ERC-20 (beta=1.804; Wald $Chi^2(223) = 3.382$; p<.01), KYC (beta=2.060; Wald $Chi^2(223) = 3.382$; p<.01), sourcecode (beta=1.081, Wald $Chi^2(223) = 1.850$; p<.1), and Twitter followers (beta=.00003727; Wald $Chi^2(223) = 2.002$; p<.05) Telegram members (beta=.00003727; Wald $Chi^2(223) = 2.002$; p<.05) and Bitcointalk presence (beta=.00003727; Wald $Chi^2(223) = 2.002$; p<.05).

So, on the basis of the results from models (13) and (15) the null-hypothesis H2 can be rejected and the alternative hypothesis can be accepted. In the end, the null-hypothesis H2 can be rejected and the alternative hypothesis H2 can be accepted based on models (13) and (15). In none of the models (13), (14), and (15) a significant effect was found for GitHub stars, Facebook likes, Facebook presence, or Reddit presence.

	Linear regression analysis			Binary regression analyses							
Dependent variables	*Log_amount_raised*			*Soft_hardcap_reached*				*Actively_traded*			
	(13)			**(14)**				**(15)**			
Independent variables	*B*	*t*	*p*	*B*	*Wald*	*df*	*p*	*B*	*Wald*	*df*	*p*
Duration	0.000	0.215	0.830	0.003	3.465	1	**0.063***	-0.006	4.816	1	**0.028****
Team_size	0.103	2.877	**0.005*****	0.081	7.706	1	**0.006*****	-0.040	1.392	1	0.238
ERC-20	1.804	3.382	**0.001*****	0.681	1.561	1	0.211	-0.919	5.398	1	**0.02****
KYC	-0.702	-1.213	0.228	0.782	3.292	1	**0.070***	0.874	4.378	1	**0.036****
Sourcecode	-0.296	-0.545	0.587	0.458	1.193	1	0.275	0.913	5.954	1	**0.015****
Github_stars	0.000	0.450	0.654	-0.003	1.617	1	0.204	0.002	1.050	1	0.305
Twitter_followers	-1.891E-05	-1.536	0.128	0.000	0.544	1	0.461	0.000	2.732	1	**0.098***
Twitter_presence	2.060	3.173	**0.002*****	0.598	0.935	1	0.334	-0.083	0.026	1	0.871
Facebook_likes	1.894E-06	0.207	0.836	0.000	0.799	1	0.371	0.000	0.290	1	0.590
Facebook_presence	0.813	1.302	0.196	0.524	0.934	1	0.334	-0.142	0.103	1	0.749
Telegram_members	-5.189E-05	-0.926	0.357	0.000	1.828	1	0.176	0.000	3.701	1	**0.054***
Telegram_presence	0.763	1.255	0.213	-0.157	0.084	1	0.772	0.008	0.000	1	0.986
Bitcointalk_posts	-1.119E-06	-0.018	0.986	0.000	0.352	1	0.553	0.000	0.020	1	0.887
Bitcointalk_presence	1.081	1.850	**0.068***	-0.232	0.224	1	0.636	-0.852	4.402	1	**0.036****
Reddit_members	3.727E-05	2.002	**0.048****	0.000	1.952	1	0.162	0.000	2.534	1	0.111
Reddit_presence	0.861	1.535	0.128	0.406	0.858	1	0.354	-0.214	0.235	1	0.628
BTC_momentum	2.295E-05	0.942	0.349	0.000	4.835	1	**0.028****	0.000	0.913	1	0.339
Adjusted / pseudo R^2		**0.855**			**0.185**				**0.371**		
N		240			240				240		
F / Chi		37.974			44.978				102.126		
dfE		17			17				17		
dfM		223			223				223		
Sig		**0.000*****			**0.000*****				**0.000*****		

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table 4: Linear and logistic regression results of models (13) – (15)

4.5 H2 findings in relation to the literature on the effect social media

From the analysis it can be concluded that various social media variables related to the ICO are significant predictors of the log amount raised and the variable actively traded. The effects are not consistent, here, though. Twitter presence is a significant predictor of the amount raised, in line with Bourveau et al. (2019). So, the findings do not support Boreiko and Vidusso's (2018) finding that there is a significant relationship between these variables.

The amount of Facebook likes or the presence on Facebook had no significant effect on any of the three proxies for ICO success. This is in contrast with the finding of Bourveau et al. (2019). The potential explanation for this is that there are too many other variables in the model that do have a significant effect on ICO success.

Next, the result of the presence on Telegram and the amount of members on the groups' channel was that they were only significantly related to the variable actively traded, but not on the amount raised. This finding is in contrast to other studies, which instead find a significant effect on the amount raised (Amsden & Schweizer, 2019; Panin et al., 2019). One

possible explanation for this is that there are too many other variables in the model that do have a significant effect on ICO success.

Lastly, there was a significant and positive effect from both the presence on Bitcointalk and the amount of Reddit members on the amount raised. Nevertheless, Bitcointalk presence also had a significant negative effect on the variable actively traded. This is possibly due to a measurement error due to a small sample size.

4.6 Results related to hypotheses 3A-C

The third null-hypotheses H3A-B envelop the relationship between ICO regulation and the amount of ICO scams. To test whether these relationships exist, two independent samples t-tests are conducted. The results that are displayed in Appendix K showed that there is no significant difference in the amount of scams $t(213)=0.674$, $p=.501$ or coins becoming actively traded as a result of a country having regulation or not $t(213)=1.182$, $p=.239$. Therefore, hypothesis 3A and 3B are not rejected: There is no relationship between ICO regulation and the amount of scams or the amount of coins that become actively traded. The insignificance of the result in relation to H3A is probably due to the necessity to use the variable actively traded. The insignificance of the result in relation to H3B is probably due to the low amount of scams in the sample, which is 3% for countries with ICO regulation when the ICO occurred and 2% for countries without ICO regulation when the ICO occurred. Both results may be different if a larger sample size is used.

In addition, analyses are conducted to measure if there is a moderating effect of ICO regulation on the relationship between ICO ratings and ICO success. Thereby, an altered regression analysis from H1 is applied to two groups: one with ICO regulation and one without ICO regulation. Next, difference between the significance of the variables in the models with and without regulation are compared, specifically for the effect of ICO rating. The results in appendix L show that there is no significant difference between regulation or no

regulation when it comes to the relationship between ICO ratings on ICO success. When looking at the ICO rating, there is a slight decrease in significance for the variable amount raised, but quite a large increase in significance for the variables soft- or hardcap reached and actively traded. Nonetheless, the effect of ICO rating on ICO success did not become significant when only ICOs with regulation were used as the sample group. Therefore, hypothesis 3C is not rejected: there is no moderating effect of ICO regulation on the relationship between ICO ratings and ICO success.

4.7 H3 findings in relation to the literature on the effect of regulation

This study is the first to analyse the relationship between ICO regulation and the amount of scams and in addition the hypothesized moderating relationship of the presence of ICO regulation on the relationship between ICO ratings and ICO success. Therefore, no comparison with other studies can be made. Though it is not a part of this study and the test results are therefore not reported, there was no significant difference found for the amount raised between the groups, whereas Boreiko and Sahdev (2018) found that ICOs in jurisdictions with no or weak regulation raised significantly more.

5. Conclusion.

This research studies the relationship between ICO ratings provided by ICO rating websites and the success of the ICO. Due to the disappearance of ICOBench, ICO investors have had to rely on other sources. Other ICO intermediaries like ICOHolder, ICOMarks, Cryptototem and FoundICO remained to fulfil the role of information intermediary between investors and ICO project owners. As the findings of recent literature is based on data from ICOBench, it is out-dated and has in addition only provided limited coverage of other intermediaries' ratings. This creates a gap in the literature that this study tries to fill. Besides, neither the effect of ICO regulation on the amount of scams nor the influence of various social media channels has been fully covered. This research fills that gap by studying H1: the relationship between the

ICO ratings and ICO properties, H2: between social media presence and ICO success, and H3: the effectiveness of regulations in preventing ICO scams. In relation to that, three research questions were formulated. The answer to the first research question: "Are ICO intermediaries' ratings a good predictor of the success of an ICO?" is definite: Yes, ICO ratings from all four websites are significant predictors of the ICO's amount raised for all intermediaries, but not for the variables actively traded or soft- or hardcap reached. On average, a one standard deviation increase in the ICO rating, results in a 3.1x increase of the amount of USD raised. So, ICO rating websites assess the information asymmetry that exists between investors and ICO project owners in a reliable way. The answer on the second research question: "Are social media statistics of an ICO good predictors of the success of an ICO?" is: Yes, for social media variables mixed results were found and only the variables Twitter presence, Bitcointalk presence and Reddit are significant predictors of the amount raised. In addition, only the variables Twitter followers, Telegram presence and Bitcointalk presence are significant predictors of the variable actively traded. The answer to the third research question: "Is there an effect of ICO regulation on the ICO Rating, the amount of scams or the amount of coins that become actively traded?" is: No, there is no effect of ICO regulation on the amount of scams, or the variable actively traded. Also, there is no moderating effect of ICO regulation on the effect of ICO ratings on ICO success. Therefore, hypotheses 1A-D and 2 can be rejected and the alternative hypotheses can be accepted. In contrast, hypothesis 3 could not be rejected on the basis of these results.

By means of this study, ICO initiators know that they should focus on communicating with their potential investors mainly via Twitter, Telegram, BitcoinTalk and Reddit, and according to an earlier study, also Facebook. Furthermore, this study highlights that it is important to have a good sourcecode that is made public for inspection. Therefore, the entrepreneur should keep improving the sourcecode and so receive stars that signal project

quality. In addition, the entrepreneur should compose a team that is capable and large enough to execute on the plan to signal quality to the investors and ICO intermediaries. Besides, the rating of the ICO is something that is indirectly under the influence of the project owner, therefore the entrepreneur should focus on the overall quality the project signals to investors and ICO intermediaries.

The most important insights that ICO investors gain from this study that they can rely on the fact that all four ICO intermediaries do a good job at assessing the true quality of a project and reliably close the gap that exists between potential investors and the ICO project. Nevertheless, they should also know that none of the ICO intermediaries' ratings could reliably predict whether or not a coin would become actively traded, and reach their soft- or hardcap. On the topic of the effectiveness of regulation, no definitive conclusion can be made, as this research found no significant results from the statistical inferences.

6. Limitations, recommendations and discussion.

There are several important limitations that are worth considering in relation to this study. First of all, the data could be subject to bias. The sample of 240 ICOs is gathered from the four intermediaries that listed the ICOs on their website. Thousands of ICOs have taken place and not every ICO was rated and listed on these websites. Anyway, a selection of ICOs was made that was covered by most of the intermediaries. The reason for that is because there had to be enough ICOs for every intermediary in order for the statistical findings to be significant. This results in a slightly biased selection of ICOs that are rated by most of the intermediaries versus ICOs that were rated by few rating websites. ICOs with a higher coverage by intermediaries could be the better, more popular ICOs or ICOs with larger marketing budgets. This could result in a sample selection of this study of ICOs with a higher average rating, quality or marketing budget than the population.

Another limitation to the dataset is that because ICOBench went offline no comparison could be made with the findings from other researchers on the significance of the ratings. Therefore, it could be firstly, that the insignificant findings of this study are explained by the possibility that the ratings of the intermediaries are unreliable / inaccurate in predicting the variables soft- or hardcap reached or actively traded. Or secondly, it could be that the size of the sample is not large enough for the findings to be significant. So, if data from ICOBench could have been included in the sample, it would be clear which of these two options the case is.

A third limitation of this study is that it is hard to discern what the effects of the amount of followers/likes/etc. and the presence of the various social media channels are with a single regression analysis, as most of these variables are significantly correlated. This results in multicollinearity problems, even though they are measuring different channels. This multicollinearity could be explained by the ICO's marketing budget or the ICO's quality/future potential/popularity as the cause of its popularity across all or most platforms. Future research may take a different approach to studying the importance of various social media channels. Similar to how the ICO's ratings were analysed, new studies could do separate regression analysis of one platform at a time with the same control variables that were used in the regression analysis of the ratings. Besides, in relation to the influence of social media on ICO success, the influence of the most popular YouTube channels covering the ICO is not studied yet and could be a possible road for further research. ICO review YouTube-channels can also function as an information intermediary between investors and ICO project owners. Thereby researchers could study the content of what is said in the videos, and include variables on the amount of views, subscribers, likes, comment. The effect of these variables can then be studied across different measures of ICO success or underpricing, for

example. Sample data can be gathered from Youtube.com, converted to text and analysed on the amount of positive or negative content in relation to the ICO.

Additionally, a fourth limitation with regards to the effect of ICO regulation on preventing scams could not easily be measured by the sample data of this study. Of the 240 ICOs, only 6 ICOs were scams, as indicated by Coinopsy. Further research on this subject should analyse a sample mainly gathered from this website, so that the complete sample consists of exit scams and significant results can more easily be obtained. This study can be operationalized by measuring the amount of exit scams under certain regulation to infer which regulations are effective for taking measures against ICO scams. This research has given an indication that ICO regulation does not have a significant negative effect on the amount of scams. First of all, following studies on this subject can increase the sample size that includes more scams and repeat the methodology used in this study. Future research could also do a more in-depth analysis on which types of regulations are effective at preventing scams from occurring. Thereby, researchers can gather data on exit scams from coinopsy.com/dead-coins and compare the regulations that were applicable to the ICOs at the moment of the fundraising. To do that, jurisdictions can be grouped after Boreiko and Vidusso's (2018) example: Swiss, USA and Slovenian jurisdiction. Then, a simple independent samples t-test can be conducted to test for significance of the difference in means of the amount of scams that still occurred under these jurisdictions.

Fifth, this study does not include an analysis of the post-ICO success of a project. Whether a coin is actively traded can be seen as an indicator of short- to medium term success, yet the question remains how the price of the coin/token will develop over time. Nevertheless, there are already studies done on the factors influencing post-ICO success by e.g. Bourveau et al. (2019) and others. So, future research could include whether the current ICO intermediaries' ratings are also significantly related to post-ICO success.

As outlined in the introduction, the world of cryptocurrencies is highly dynamic. As an example, during this study, ICOBench came back online after having been offline for a year. This put into question the relevance of this study. Nevertheless, for several reasons, the findings of this study remain relevant. First of all, ICOBench was accused of being paid for positive reviews by ICO projects, which is illegal according to the U.S. Securities Act section 17 (b) which forbids the promotion of securities without disclosing the fact that the reviewers are paid. Second, ICOBench seemingly does not update their website with new ICO ratings anymore, the most recent rating stems from July 2020. So, investors cannot make use of the new and therefore have to

Also, several recommendations for further research on the relationship between ICO ratings, social media and regulations and ICO success can be done. First of all, because there is conflicting evidence with existing research, future studies should examine what the effect of the variables Twitter presence and followers, Facebook presence and followers, and Telegram members and presence is on an ICO's fundraising success, as some of the findings of this study are in contrast with the literature. Moreover, the amount of GitHub stars, the presence on Bitcointalk and the amount of Reddit members can be studied with a larger sample and affirmed by other researchers, as this study is the first to prove that there is a significant relationship between these variables. Also, while analysing this, future studies can use a larger sample of ICOs that can possibly bring forth significant findings. Several of variables that were found not to be significant in this study were found to be significant in other studies, for example the relationship between the ICO ratings and the variable actively traded.

Eighth, there are ICO information intermediaries that review ICO projects which do not provide a numerical rating, but a symbolic or categorical rating or a review in the form of an ICO assessment report. Academics could do an analysis of the effect of these reviews on

ICO success. Thereby researchers could study the following websites: ICOHotlist, ICODrops, ICOWatchlist, Crushcrypto, FoxICO, or VerifiedICOs, to new a few. Their influence on an ICO's success is still unknown. On way to study their effect is to do a textual analysis of the assessment reports and compare the difference in means of the good and the bad reviews' effect on ICO success. Further, the analysis on the categorical variables can simply be done with an independent samples t-test if there are only two categories or an ANOVA test if there are more than two groups of categories of ratings.

Lastly, the absence of a single, formal organisation that archives ICO data results in inconsistent and possibly inaccurate data. Various websites have been consulted to gather information on how much the ICO campaign raised, if there was a soft- or hardcap and how high they were, in what country the ICO registered, exactly from what date till what date the campaign lasted, and thus how many days the campaign lasted. All this may influence the findings of this study, therefore this is a call to governing bodies to create an institution that administers this.

The findings of this study are supported by the following arguments. With regards to the first hypothesis, the finding that ICO ratings have a significant and positive effect on the ICO's amount raised is in line with expectations. Comparable studies have indeed indicated that ICO ratings are positively and significantly related to different measures of ICO success. The finding that there is no significant relationship between ICO ratings and the variables actively traded and soft- or hardcap reached was not according to expectations. One possible explanation could be that the sample size was too small to find significant effects. Another reason for this is that other factors are better predictors of these dependent variables that are not included in this study. Quantitative characteristics only tell a part of the story, however, as the quality of a project is also determined by the quality of the business model, whitepaper, vision, experience, minimum viable product, competence of the founders and associated risk.

And although ratings are a single score based on a long list of these qualitative characteristics, they are only partially close the information gap between investor and the project. Whether the ICO is a good investment or not still depends on the risk avoidance or risk taking attitude of the investor and his portfolio.

An argument for support of the findings on the significant effect of Bitcointalk, Twitter and Reddit on the amount raised is that these platforms are all popular platforms to effectively build a community of investors on. The presence on these channels by ICO projects is on average 77% for Twitter, 63% for Bitcointalk and 40% for Reddit. This suggests that there is room for improvement for a lot of ICOs on these channels to build a community of investors and increase the success of the fundraising campaign. The insignificance of findings of other social media platforms could be due to multicollinearity, but could just as well be because these channels are less effective of creating a community of potential investors. Bitcointalk is of course a specialised platform in cryptocurrency projects, so it can arguably be assumed that an ICO can effectively reach their target audience. However, it is not clear why the channels Twitter and Reddit are more effective at marketing the ICO than Facebook or Telegram and can be a subject for further examination.

An argument for support on the finding in relation to the effect of ICO regulation is that it could be that regulation is just not effective at preventing scams. Regulation could be effective for protecting investors, but as stated before, ICOs can easily choose to register in an ICO friendly jurisdiction, rendering the stricter ICO jurisdiction of no use. However, if the project did choose to register in a jurisdiction with strict regulation for ICOs and scammers could be prosecuted, it would still be a possibility for scammers to steal investors' money. The fact is that cryptocurrencies can be used in full anonymity, which is a good point, but also a weak point in this case.

It can be concluded that the ICO intermediaries are able to reliably reduce information asymmetry between the initiator and potential investors. Furthermore, this study adds to the literature by providing up to date knowledge on the reliability of the most popular ICO intermediaries' ratings as of August, 2021. As regulation is still not fully developed and investor protection mechanisms such as disclosure regulation are not in place, the need for ICO intermediaries to thoroughly examine the quality of an ICO is evident.

References

Adhami, S., Giudici, G., & Martinazzi, S. (2018). Why do businesses go crypto? An empirical analysis of initial coin offerings. *Journal of Economics and Business*, *100*(2010), 64–75. https://doi.org/10.1016/j.jeconbus.2018.04.001

Amsden, R., & Schweizer, D. (2019). Are Blockchain Crowdsales the New "Gold Rush"? Success Determinants of Initial Coin Offerings. *SSRN Electronic Journal*, 1–64. https://doi.org/10.2139/ssrn.3163856

Aslan, A., Sensoy, A., & Akdeniz, L. (2021). *Determinants of ICO Success and Post-ICO Performance Determinants of ICO Success and Post-ICO Performance*. (2), 1–36.

Bellavitis, C., Fisch, C., & Wiklund, J. (2020). A comprehensive review of the global development of initial coin offerings (ICOs) and their regulation. *Journal of Business Venturing Insights*, *15*(8), 1–16. https://doi.org/10.1016/j.jbvi.2020.e00213

Boreiko, D., & Sahdev, N. (2018). To ICO or not to ICO – Empirical analysis of Initial Coin Offerings and Token Sales. *SSRN Electronic Journal*, 1–25. Retrieved from https://dx.doi.org/10.2139/ssrn.3209180

Boreiko, D., & Vidusso, G. (2018). New Blockchain Intermediaries: Do ICO Rating Websites Do Their Job Well? *SSRN Electronic Journal*, *1*(11), 2–25. https://doi.org/10.2139/ssrn.3263393

Bourveau, T., De George, E. T., Ellahie, A., & Macciocchi, D. (2019). Information Intermediaries in the Crypto-Tokens Market. *SSRN Electronic Journal*. Retrieved from https://dx.doi.org/10.2139/ssrn.3193392

Chanson, M., Risius, M., Gjoen, J., & Wortmann, F. (2018). Initial coin offerings (ICOS): The role of social media for organizational legitimacy and underpricing. *International Conference on Information Systems 2018, ICIS 2018*, (October), 1–17. Retrieved from https://www.researchgate.net/publication/328064803_Initial_Coin_Offerings_ICOs_The

_role_of_Social_Media_for_Organizational_Legitimacy_and_Underpricing

Collao, V. V., & Winship, V. (2019). The new ICO intermediaries. *Italian Law Journal*, *5*(2), 731–755. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3540250

De Jong, A., Roosenboom, P., & Van der Kolk, T. (2018). What Determines Success in Initial Coin Offerings? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3250035

Fisch, C., & Momtaz, P. P. (2020). Institutional investors and post-ICO performance: an empirical analysis of investor returns in initial coin offerings (ICOs). *Journal of Corporate Finance*, *64*(July 2019), 101679. https://doi.org/10.1016/j.jcorpfin.2020.101679

Florysiak, D., & Schandlbauer, A. (2019). The Information Content of ICO White Papers. *SSRN Electronic Journal*, 1–15. https://doi.org/10.2139/ssrn.3265007

Gupta, A., Harithsa, J., & Seneviratne, O. (2020). A Descriptive Analysis of US Initial Coin Offerings. *2020 2nd Conference on Blockchain Research and Applications for Innovative Networks and Services, BRAINS 2020*, (January 2018), 144–151. https://doi.org/10.1109/BRAINS49436.2020.9223270

Lunesu, M. I., & Desogus, O. (2020). ICO Evaluation Websites Analysis. *IWBOSE 2020 - Proceedings of the 2020 IEEE 3rd International Workshop on Blockchain Oriented Software Engineering*, 48–56. https://doi.org/10.1109/IWBOSE50093.2020.9050259

Lyandres, E., & Rabetti, D. (2018). *Are Tokens Securities ? An Anatomy of Initial Coin Offerings*. *1*(11).

Momtaz, P. P. (2020). Initial coin offerings. *PLOS ONE*, *15*(5), 1–30. https://doi.org/10.1371/journal.pone.0233018

Momtaz, P. P., Rennertseder, K., & Schröder, H. (2019). Token Offerings: A Revolution in Corporate Finance? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3346964

Moxotó, A. C., Melo, P., & Soukiazis, E. (2021). Initial Coin Offering (ICO): a systematic

review of the literature. *54th Hawaii International Conference on System Sciences*, *0*, 4177–4186. Retrieved from https://hdl.handle.net/10125/71124

Niranjanamurthy, M., Nithya, B. N., & Jagannatha, S. (2019). Analysis of Blockchain technology: pros, cons and SWOT. *Cluster Computing*, *22*(s6), 14743–14757. https://doi.org/10.1007/s10586-018-2387-5

Ofir, M., & Sadeh, I. (2019). ICO vs IPO: Empirical Findings, Information Asymmetry and the Appropriate Regulatory Framework. *Vanderbilt Journal of Transitional Law*, 1–64. https://doi.org/10.2139/ssrn.3338067

Panin, A., Kemell, K. K., & Hara, V. (2019). Initial coin offering (ICO) as a fundraising strategy: A multiple case study on success factors. *International Conference on Software Business*, *370*, 237–251. https://doi.org/10.1007/978-3-030-33742-1_19

Papamichail, M., Diamantopoulos, T., & Symeonidis, A. (2016). User-Perceived Source Code Quality Estimation Based on Static Analysis Metrics. *Proceedings - 2016 IEEE International Conference on Software Quality, Reliability and Security, QRS 2016*, 100–107. https://doi.org/10.1109/QRS.2016.22

Samieifar, S., & Baur, D. G. (2020). Read me if you can! An analysis of ICO white papers. *Finance Research Letters*, *38*(December 2019), 101427. https://doi.org/10.1016/j.frl.2020.101427

Womack, R. (2002). Information intermediaries and optimal information distribution. *Library and Information Science Research*, *24*(2), 129–155. https://doi.org/10.1016/S0740-8188(02)00109-3

Appendix A: Description of Variables.

ICO Success

Amount raised	The amount raised in USD, Bitcoin and Ethereum as sources of funding are converted to USD. Source: Various ICO intermediaries.
Raised dummy	A dummy variable that equals 1 if the ICO raised money, 0 otherwise. Source: Various ICO intermediaries.
Softcap reached	A dummy variable that equals 1 if the minimum amount to be raised has been reached and 0 otherwise. Source: Various ICO intermediaries.
Hardcap reached	A dummy variable that equals 1 if the maximum amount to be raised has been reached and 0 otherwise. Source: Various ICO intermediaries.
Softcap or hardcap reached	A dummy variable that equals 1 if either the minimum or the maximum amount to be raised has been reached and 0 otherwise. Source: Various ICO intermediaries.
Actively traded	A dummy variable that equals 1 if the currency is actively traded on an exchange and 0 otherwise. Source: Coinmarketcap.com

Table A1: Description of the dependent variables measuring ICO success

ICO rating by intermediaries

Rating by ICOHolder	The rating from ICOHolder between 0-5. Source: ICOHolder.com
Rating by ICOMarks	The rating from ICOMarks between 0-10 was divided by 2 to make it 0-5 and make it comparable to other ratings. Source: ICOMarks.com
Rating by Cryptototem	The rating from ICOHolder between 0-5. Source: Cryptototem.com
Rating by FoundICO	The rating from ICOHolder between 0-5. Source: FoundICO.com
Intermediary coverage	Measures the percentage of intermediaries that rated the ICO
Average rating	The average of the ratings given by the intermediaries between 0-5.

Table A2: Description of the independent variables measuring ICO rating

ICO social media characteristics

Twitter followers	The amount of followers on the ICO's Twitter account. Source: Twitter.com
Twitter presence	A dummy variable, equals 1 if the ICO has a Twitter account, 0 otherwise.
Facebook likes	The amount of Likes on the ICO's Facebook page. Source: Facebook.com
Facebook presence	A dummy variable, equals 1 if the ICO has a Facebook page, 0 otherwise.
Telegram members	The amount of members on the Telegram chat of the ICO. Source: Telegram.org
Telegram presence	A dummy variable, equals 1 if the ICO has a Telegram chat, 0 otherwise.
Bitcointalk thread posts	The amount of posts on the Bitcointalk thread. Source:

	Bitcointalk.org
Bitcointalk presence	A dummy variable, equals 1 if the ICO has a Bitcointalk thread, 0 otherwise.
Reddit page members	The amount of Reddit page members. Source: Reddit.com
Reddit presence	A dummy variable, equals 1 if the ICO has a Reddit page, 0 otherwise.
Social media presence	This variable measures the percentage of platforms on which the ICO was active.

Table A3: Description of the independent variables measuring the ICO's social media characteristics

ICO characteristics

Year	The year in which the ICO took place (2016-2021). Source: Various ICO intermediaries.
Quarter	The quarter in which the ICO took place (1-4). Source: Various ICO intermediaries.
Duration	The duration of the ICO campaign in days. Source: Various ICO intermediaries.
Team size	The amount of team members working for the project. Source: Various ICO intermediaries.
Country	The country, in which the ICO was registered, indicates which jurisdiction applies to the ICO. Source: Various ICO intermediaries.
Presence of ICO regulation	A dummy variable that equals 1 if there was regulation in place when the ICO registered there, 0 otherwise. Source: Bellativitis et al. (2020).
ERC-20	A dummy variable that equals 1 if the project is built on the Ethereum blockchain, 0 otherwise. Source: Various ICO intermediaries.
KYC	A dummy variable that equals 1 if the ICO has the "Know-Your-Customer" investor verification requirement, 0 otherwise. Source: Various ICO intermediaries.
Source code	A dummy variable that equals 1 if the source code has been made public, 0 otherwise Source: GitHub.com.
GitHub stars	The amount of GitHub stars acts as a quality indicator of the code. Source: GitHub.com.

Table A4: Description of the independent variables measuring the ICO's social media characteristics

Appendix B: ICO characteristics compared to IPOs, VC and crowdfunding.

Characteristics	IPOs	Venture capital	Rewards and equity crowdfunding	ICOs
Marketing channels	underwriters	private negotiations	online platforms	social media
Investor base	exclusive / local	partners	exclusive / local	inclusive / global
Intermediation	syndicates	VCs	online platforms	no
Asymmetric information	average	low	above average	highest
Funding currency	fiat	fiat	fiat	fiat / crypto
Investor protection	courts	automatic	courts	no
Regulation	standardized	standardized	country-specific	no
Acquisition of	ownership stake	ownership stake	product/ownership	ownership stake / future service
Monitoring ex-post	governance mechanisms	VCs	absent	absent
Lock-ups	owners	no	unclear	developers
Market-making	lead underwriter	N/A	no	decentralized
Liquidity	low	N/A	no	high

Table A5: The characteristics of ICOs compared to IPOs, Venture Capital and crowdfunding. This is a modified and updated version of the table that Boreiko and Sahdev (2018) use to display the most important differences between these different forms of crowdfunding.

Appendix C: ICO regulation per country per year (2016 – 2019).

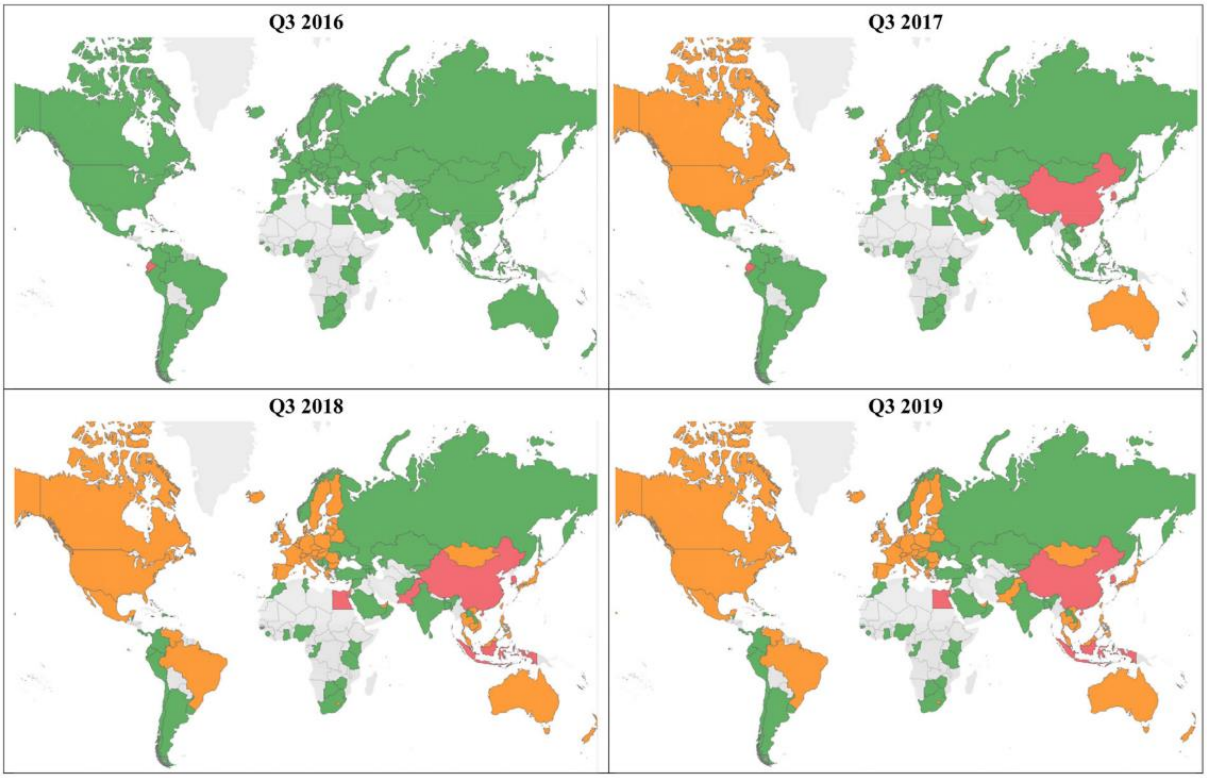


Figure A1, (Bellavitis et al., 2020): Geographical spread of ICO regulation. Notes: red = banned, orange = regulated, green = not regulated, grey = no registered ICOs.

Appendix D: Rating methodology of ICO intermediaries.

ICOHolder rating methodology

First, ICOHolder states on their website that their ratings are based on an analysis of the following six main points[11]. Their rating is based on more than 70 different parameters. Among them are:

1. Product: ICO details, **features**, structure, roadmap, technical explanation, use of token, MVP, use cases, laws & regulations.
2. Activity: Media activity, site traffic, number of subscribers, social media activity.
3. **Vision**: Whitepaper, timeline, current investments, market potential, number of existing user base.
4. **Potential**: **Risk** score and **investment potential**.
5. Team: Team rate, verification of all team members.
6. ICO Profile: Availability of all necessary information for investors.

ICOMarks rating methodology

Second, ICOMarks states on their website that their ratings are based on an analysis of the following three main points[12].

1. ICO Profile: This mark is determined by the amount of information about the ICO. The most detailed information positively affects the rating, such as: General information (Description, Video, **White paper**, etc.), financial information (Platform, Token Type, Price, Hard Cap, Soft Cap, etc.), milestones, links and activity in social networks, public information about Team and Advisors.
2. Social activity: Constant updating of news of the project and a large number of subscribers in **social networks** (Twitter, Facebook and Telegram) positively influence this mark.
3. Team Proof: This mark gets higher if Team members and Advisors have **social media** links (such as: LinkedIn, Twitter, Facebook and others) and actively update their content.

Cryptototem rating methodology

Third, Cryptototem states on their website that their ratings are based on an analysis of the following twenty-two points[13].

1. **Viable idea** (detailed and straightforward description of the project), problem and solution;
2. Market size;
3. **Business model**;
4. Real team members with active links to social networks;
5. Previous **experience** of the project founders, biographies, interviews;
6. Availability of well-known advisors (experts) and key partners (well-known companies);
7. Availability of company address, phone number, contact form on the official website;
8. Availability of pages: Terms and Conditions, Privacy Policy, Disclaimer, FAQ on the official website;
9. Different **social networks** and the number of active users (we count only real accounts, no fake engagement);
10. Availability of information about the project in reliable media or communities;
11. Detailed Whitepaper (One Pager, Presentation, Technical Paper, Pitch Deck);
12. **Minimum Viable Product** (MVP);
13. Mobile application on the App Store and Google Play;
14. Project start date (we prefer companies with history);
15. Company blog with regular posts;

[11] https://icoholder.com/en/

[12] https://icomarks.com/rating

[13] https://cryptototem.com/faq/

16. Availability of the Airdrop/Bounty program;
17. Interesting and user-friendly website design/video presentation of the project;
18. Sale of tokens (IEO) on major cryptocurrency exchanges: Binance, Kucoin, Bitforex, etc.;
19. Availability of information on the token price on Coingecko or Coinmarketcap;
20. Attraction of **investments** from large **venture funds** or business angels;
21. Large investors following your project's Twitter;
22. Any other additional information that, in your opinion, can significantly improve your rating and enhance the credibility of your crypto project.

FoundICO rating methodology

Lastly, FoundICO states on their website that their ratings are based on an analysis of the following five main points[14].

1. The general information includes: Project name; currency code; logo; website link; project description; start date and time; completion date and time.
2. Financials includes: caps; funds distribution; allowed currencies; tokens info: volume and pricing; availability of escrow.
3. Product includes: availability and completeness of **Roadmap** availability and quality of White Paper; availability of operable **prototype**.
4. Marketing includes: number of promotion channels and quality of their utilization; availability of the project video presentation.
5. Team includes: Number of team members and their identities; availability of bio, photos and links to social accounts.

[14] https://foundico.com/methodology/

Appendix E: Sample distribution.

Sample distribution							
		Frequency	Percent			Frequency	Percent
Valid	-	25	10.4		Lithuania	1	0.4
	Australia	5	2.1		Macedonia	1	0.4
	Belize	1	0.4		Malta	4	1.7
	Brazil	1	0.4		Netherlands	7	2.9
	British Virgin Islands	2	0.8		Nigeria	6	2.5
	Bulgaria	1	0.4		Philippines	2	0.8
	Canada	3	1.3		Poland	4	1.7
	Cayman Islands	4	1.7		Romania	1	0.4
	China	3	1.3		Russia	14	5.8
	Cyprus	3	1.3		Saint Lucia	1	0.4
	Czech Republic	2	0.8		Seychelles	1	0.4
	Estonia	18	7.5		Singapore	16	6.7
	France	3	1.3		Slovakia	1	0.4
	Georgia	1	0.4		Slovenia	1	0.4
	Germany	9	3.8		South Africa	3	1.3
	Gibraltar	2	0.8		South Korea	1	0.4
	Hong Kong	4	1.7		Spain	2	0.8
	Iceland	1	0.4		Sweden	2	0.8
	India	5	2.1		Switzerland	18	7.5
	Indonesia	1	0.4		Thailand	2	0.8
	Ireland	2	0.8		Turkey	2	0.8
	Isle of Man	2	0.8		UAE	1	0.4
	Israel	1	0.4		UK	26	10.8
	Italy	3	1.3		Ukraine	4	1.7
	Japan	1	0.4		USA	13	5.4
	Laos	1	0.4		Uzbekistan	1	0.4
	Latvia	1	0.4		Total	240	100.0

Table A6: Distribution across countries of the ICOs in the sample

Appendix F: Descriptive statistics.

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Coverage of the ICO by intermediaries	240	0.25	1.00	0.7219	0.18293	-0.468	0.157	0.280	0.313
Rating provided by ICOHolder	161	1.60	9.60	6.4948	1.92010	-0.591	0.191	-0.387	0.380
Rating provided by ICOMarks	193	1.10	10.00	7.0254	2.01795	-0.651	0.175	-0.245	0.348
Rating provided by Cryptototem	230	0.20	9.70	6.7165	1.98668	-0.696	0.160	-0.031	0.320
Rating provided by FoundICO	111	3.60	9.60	6.3523	1.49599	0.198	0.229	-0.879	0.455
The **average rating** of all 4 ICO intermediaries	240	1.31	9.40	6.5518	1.72428	-0.518	0.157	-0.241	0.313
Year in which (the largest part of) the ICO took place	240	2016	2021	2018.50	1.711	0.000	0.157	-1.270	0.313
Quarter of the year in which the ICO took place	240	1	4	2.41	1.207	0.138	0.157	-1.533	0.313
Recoded **time** variable measuring 1 for Q1 2016 - 22 for Q2 2021	238	1	22	12.39	6.303	-0.115	0.158	-1.206	0.314
Amount of **days** the ICO campaign lasted	240	1	772	72.25	107.832	3.864	0.157	18.138	0.313
Was there **regulation** in place for the country when the ICO registered there?	215	0	1	0.55	0.499	-0.198	0.166	-1.979	0.330
Amount of **team members** during the ICO	220	0	72	9.42	7.850	3.537	0.164	21.299	0.327
Total **amount raised** by the Initial Coin Offering	240	0	257000000	8713856.70	31221290.548	5.401	0.157	32.138	0.313
Log of amount raised	115	3.40	8.41	6.3342	1.05085	-0.438	0.226	0.220	0.447
Dummy variable whether money was **raised**	240	0	1	0.48	0.501	0.067	0.157	-2.012	0.313
> 500.000 USD raised or soft- or hardcap reached	240	0	1	0.37	0.483	0.557	0.157	-1.704	0.313
Dummy variable whether the coin is **actively traded**	240	0	1	0.28	0.447	1.014	0.157	-0.980	0.313
Specified minimum amount to be raised	130	1	170000000	6316359.70	20788046.003	6.621	0.212	47.064	0.422
Dummy variable of **softcap** reached	129	0	1	0.27	0.446	1.041	0.213	-0.932	0.423
Specified maximum amount to be raised	166	132500	2187500000	47458887.28	185288607.541	9.906	0.188	110.335	0.375

(Table continues)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Dummy variable of **hardcap** reached	165	0	1	0.07	0.260	3.321	0.189	9.139	0.376
Dummy variable for **soft- or hardcap** reached	240	0	1	0.17	0.377	1.760	0.157	1.108	0.313
Dummy variable whether the ICO was a **scam** or not	240	0	1	0.03	0.156	6.123	0.157	35.792	0.313
Dummy variable for **ERC-20** (Ethereum) blockchain technology	240	0	1	0.71	0.455	-0.922	0.157	-1.159	0.313
Dummy variable for **Know Your Customer** support	240	0	1	0.36	0.482	0.576	0.157	-1.683	0.313
Dummy variable for the availability of the **sourcecode** of the project	240	0	1	0.43	0.496	0.288	0.157	-1.933	0.313
Amount of **stars** on **GitHub** for the sourcecode	240	0	3600	73.66	389.324	7.374	0.157	58.060	0.313
Amount of **Twitter** followers	240	0	475300	10941.64	38941.444	8.365	0.157	88.424	0.313
Dummy variable for Twitter presence	240	0	1	0.77	0.424	-1.269	0.157	-0.393	0.313
Amount of **Facebook** followers	240	0	260762	7146.10	20970.582	8.494	0.157	93.334	0.313
Dummy variable for Facebook presence	240	0	1	0.68	0.469	-0.752	0.157	-1.447	0.313
Amount of **Telegram** members	240	0	61401	3306.99	7124.501	3.936	0.157	21.647	0.313
Dummy variable for Telegram presence	240	0	1	0.71	0.455	-0.922	0.157	-1.159	0.313
Amount of posts on the **Bitcointalk** forum	240	0	45357	1045.33	3914.589	7.697	0.157	74.757	0.313
Dummy variable for Bitcointalk presence	240	0	1	0.63	0.484	-0.538	0.157	-1.725	0.313
Amount of **Reddit** followers	240	0	378000	2869.18	24890.668	14.504	0.157	218.438	0.313
Dummy variable for Reddit presence	240	0	1	0.40	0.492	0.393	0.157	-1.861	0.313
Coverage of **presence** of ICO on various **social media** platforms	240	0.00	1.00	0.6367	0.27684	-0.543	0.157	-0.346	0.313
The average price of **Bitcoin**	240	372.21	54862.33	13007.8287	15738.20738	1.591	0.157	0.901	0.313

Table A7: Descriptive statistics of all 39 variables in the sample

Appendix G: Correlation matrix.

	Coverage of the ICO by intermediaries	Rating provided by ICOHolder	Rating provided by ICOMarks	Rating provided by Cryptototem	Rating provided by FoundICO	Amount of days the ICO campaign lasted	Was there regulation in place for the country when the ICO registered there?	Amount of team members during the ICO	Log of amount raised	Dummy variable whether the coin is actively traded	Dummy variable for soft- or hardcap reached	Dummy variable whether the ICO was a scam or not	Dummy variable for ERC-20 (Ethereum) blockchain technology	Dummy variable for Know Your Customer support	Dummy variable for the availability of the sourcecode of the project	Amount of stars on GitHub for the sourcecode	Amount of Twitter followers	Dummy variable for Twitter presence	Amount of Facebook followers	Dummy variable for Facebook presence	Amount of Telegram members	Dummy variable for Telegram presence	Amount of posts on the Bitcointalk forum	Dummy variable for Bitcointalk presence	Amount of Reddit followers	Dummy variable for Reddit presence	The average price of Bitcoin
Coverage of the ICO by intermediaries	-																										
Rating provided by ICOHolder	.247**	-																									
Rating provided by ICOMarks	.220**	.629**	-																								
Rating provided by Cryptototem	.199**	.705**	.683**	-																							
Rating provided by FoundICO	.212**	.365**	.264**	.287**	-																						
Amount of days the ICO campaign lasted	.144**	.159**	0.060	.155**	0.079	-																					
Was there regulation in place for the country when the ICO registered there?	0.121	.225**	0.064	.182**	-0.005	.149**	-																				
Amount of team members during the ICO	.111*	.278**	.270**	.286**	0.117	0.031	.118*	-																			
Log of amount raised	0.009	0.063	0.002	0.021	-0.021	-0.078	-0.108	0.107	-																		
Dummy variable whether the coin is actively traded	-0.098	0.125	.130*	.129*	-0.138	-.182**	-0.081	.144*	0.124	-																	
Dummy variable for soft- or hardcap reached	.195**	.257**	.233**	.256**	.159*	.128*	0.012	.208**	.302**	0.068	-																
Dummy variable whether the ICO was a scam or not	-0.070	-0.116	-0.020	-0.102	0.037	-0.033	-0.046	-0.098	.158*	-0.099	-0.002	-															
Dummy variable for ERC-20 (Ethereum) blockchain technology	.322**	.286**	.124*	.124*	-.198*	0.105	.154*	0.055	-0.009	-0.036	0.121	-0.073	-														
Dummy variable for Know Your Customer support	.275**	.467**	.385**	.387**	.200*	0.084	.195**	.247**	-0.106	0.118	.210**	-0.065	.255**	-													
Dummy variable for the availability of the sourcecode of the project	0.060	.274**	.233**	.179**	-0.019	-0.035	0.008	0.063	-0.049	.258**	0.099	-.139*	-0.036	-0.006	-												
Amount of stars on GitHub for the sourcecode	-0.008	.167**	.191**	.119*	0.009	-.107*	-0.043	.177**	0.078	.282**	0.116	-0.096	-0.110	-0.005	.668**	-											
Amount of Twitter followers	0.029	.270**	.326**	.256**	0.097	-0.072	-0.052	.142**	0.086	.357**	.159**	-0.066	-0.024	.121*	.157**	.219**	-										
Dummy variable for Twitter presence	0.082	.226**	.161**	.182**	0.106	0.000	-0.009	0.091	0.006	.207**	0.120	-0.101	0.058	0.088	0.120	.126*	.611**	-									
Amount of Facebook followers	.106*	.320**	.269**	.320**	0.030	0.066	0.002	.142**	.129*	.215**	.170**	-0.065	0.039	.158**	.142**	.150**	.395**	.323**	-								
Dummy variable for Facebook presence	.142*	.285**	.151*	.222**	0.013	0.089	-0.022	0.071	0.071	.148*	.150*	-0.003	0.103	0.116	0.098	0.051	.310**	.416**	.702**	-							
Amount of Telegram members	.136**	.375**	.359**	.350**	0.074	0.061	0.075	.107*	0.041	.278**	.143**	-.110*	.146**	.197**	.177**	.123*	.354**	.224**	.282**	.200**	-						
Dummy variable for Telegram presence	.249**	.281**	.210**	.243**	0.102	.146**	0.089	0.092	-0.006	.169**	0.096	-.132*	.234**	.198**	0.112	0.024	.191**	.275**	.183**	.220**	.673**	-					
Amount of posts on the Bitcointalk forum	0.087	.176**	.239**	.163**	.168*	0.012	-.172**	.168**	0.091	0.084	.134*	0.018	-0.101	0.011	.124*	.154**	.146**	.115*	.147**	.148**	0.077	0.045	-				
Dummy variable for Bitcointalk presence	.144*	.222**	.242**	.169**	.186*	0.045	-0.123	.163**	0.006	0.009	0.096	0.012	-0.037	0.076	0.108	0.084	.116*	.148*	.130*	.186**	0.077	0.077	.726**	-			
Amount of Reddit followers	-0.020	.210**	.199**	.196**	0.019	-0.084	-0.084	.218**	.198**	.277**	.147*	-0.037	-0.070	0.067	.178**	.192**	.258**	.143*	.171**	.139*	.191**	0.072	.256**	.215**	-		
Dummy variable for Reddit presence	0.036	.308**	.258**	.268**	0.078	-0.031	-0.025	.237**	.164*	.234**	.190**	-0.023	-0.032	.156*	.229**	.193**	.208**	0.113	.140*	.136*	.206**	0.099	.283**	.281**	.854**	-	
The average price of Bitcoin	.150**	.187**	-0.044	0.075	-0.112	.108*	.242**	-0.087	-0.023	0.016	-0.051	-0.072	.286**	0.021	0.046	-0.088	0.045	.132*	0.071	0.107	.277**	.297**	-.151**	-0.092	-.119*	-.121*	-

Table A8: This table shows the correlation matrix of all the variables that are used in the analyses. The variables that are grouped together are boldly outlined and are relevant for examination of their correlation.

Appendix H: Regression analyses of ICO ratings, models (1)-(12).

	Linear regressions											
Dependent variables	*Log_amount_raised*											
	(1)			(2)			(3)			(4)		
Independent variables	Beta	t	p	Beta	t	p	Beta	t	p	Beta	t	p
ICOHolder_rating	0.778	9.572	**0.000*****									
ICOMarks_rating				0.194	1.966	**0.053***						
Cryptototem_rating							0.536	6.778	**0.000*****			
FoundICO_rating										0.207	1.719	**0.094***
Intermediary_coverage	3.317	4.668	**0.000*****	6.493	8.484	**0.000*****	4.496	6.461	**0.000*****	5.599	4.632	**0.000*****
Duration	-0.001	-0.806	0.423	-0.001	-0.829	0.410	-0.002	-1.865	**0.065***	-0.002	-1.452	0.155
Team_size	0.000	0.030	0.977	0.012	0.797	0.428	0.015	1.009	0.315	0.025	0.709	0.483
ERC-20	-0.051	-0.142	0.887	-0.070	-0.193	0.847	-0.063	-0.203	0.839	0.464	0.858	0.396
KYC	-1.761	-5.319	**0.000*****	-0.497	-1.427	0.158	-1.408	-4.733	**0.000*****	-0.823	-2.022	**0.051***
Sourcecode	-0.812	-2.712	**0.008*****	-0.404	-1.324	0.190	-0.568	-2.051	**0.043****	-0.179	-0.474	0.638
Github_stars	0.001	2.509	**0.014****	0.001	3.199	**0.002*****	0.000	1.951	**0.054***	0.005	2.452	**0.019****
BTC_momentum	-1.883E-05	-1.462	0.148	-4.042E-06	-0.348	0.729	-7.922E-06	-0.699	0.486	4.928E-06	0.320	0.751
Adjusted / pseudo R^2	**0.964**			**0.964**			**0.961**			**0.969**		
N	88			88			99			45		
F / Chi	262.105			230.273			273.137			157.222		
DfE	9			9			9			9		
DfM	79			79			90			36		
p	**0.000*****			**0.000*****			**0.000*****			**0.000*****		

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table A9: linear regression results of models (1) – (4), dependent variable: log of the amount raised

	Logistic regressions															
Dependent variables	*Softhardcap_reached*															
	(5)				(6)				(7)				(8)			
Independent variables	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p
ICOHolder_rating	-0.275	4.978	1	**0.026****												
ICOMarks_rating					-0.004	0.001	1	0.975								
Cryptototem_rating									-0.015	0.021	1	0.884				
FoundICO_rating													-0.131	0.507	1	0.476
Intermediary_coverage	-2.343	4.665	1	**0.031****	-2.563	5.429	1	**0.020****	-2.631	7.792	1	**0.005*****	-0.623	0.134	1	0.714
Duration	0.006	6.359	1	**0.012****	0.003	4.273	1	**0.039****	0.003	4.564	1	**0.033****	0.001	0.509	1	0.476
Team_size	0.077	5.857	1	**0.016****	0.046	3.595	1	**0.058***	0.033	2.282	1	0.131	0.074	2.905	1	**0.088***
ERC-20	1.121	3.571	1	**0.059***	-0.077	0.023	1	0.879	0.154	0.120	1	0.729	-0.306	0.189	1	0.664
KYC	1.192	5.429	1	**0.020****	0.986	4.523	1	**0.033****	0.938	5.123	1	**0.024****	-0.206	0.138	1	0.710
Sourcecode	0.711	2.383	1	0.123	0.256	0.379	1	0.538	0.169	0.201	1	0.654	0.116	0.051	1	0.821
Github_stars	-0.003	1.263	1	0.261	0.000	0.028	1	0.868	0.000	0.009	1	0.923	-0.007	0.761	1	0.383
BTC_momentum	0.000	1.858	1	0.173	0.000	7.699	1	**0.006*****	0.000	7.387	1	**0.007*****	0.000	2.462	1	0.117
Adjusted / pseudo R^2	**0.326**				**0.377**				**0.368**				**0.37**			
N	147				181				211				105			
F / Chi	58.069				85.728				96.98				48.511			
DfE	9				9				9				9			
DfM	138				172				202				96			
p	**0.000*****				**0.000*****				**0.000*****				**0.000*****			

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table A10: Logistic regression results of models (5) – (8), dependent variable: soft- or hardcap reached

	Logistic regressions															
Dependent variables	*Actively_traded*															
	(9)				**(10)**				**(11)**				**(12)**			
Independent variables	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p
ICOHolder_rating	0.053	0.169	1	0.681												
ICOMarks_rating					-0.203	2.036	1	0.154								
Cryptototem_rating									0.018	0.032	1	0.857				
FoundICO_rating													-0.210	1.207	1	0.272
Intermediary_coverage	-3.104	7.637	1	**0.006*****	-2.595	4.641	1	**0.031****	-2.520	7.605	1	**0.006*****	-3.579	3.278	1	**0.070***
Duration	-0.007	2.150	1	0.143	-0.003	1.260	1	0.262	-0.004	2.698	1	**0.100***	-0.004	2.515	1	0.113
Team_size	0.069	3.667	1	**0.056***	0.020	0.426	1	0.514	0.026	0.956	1	0.328	0.085	3.016	1	**0.082***
ERC-20	-0.214	0.144	1	0.705	0.501	0.773	1	0.379	-0.315	0.568	1	0.451	0.734	0.858	1	0.354
KYC	0.452	0.779	1	0.377	1.804	12.621	1	**0.000*****	0.924	5.716	1	**0.017****	1.802	8.373	1	**0.004*****
Sourcecode	0.844	3.623	1	0.057	1.480	10.817	1	**0.001**	1.064	8.979	1	**0.003*****	1.237	4.940	1	**0.026****
Github_stars	0.002	2.132	1	0.144	0.004	3.654	1	**0.056**	0.003	3.784	1	**0.052***	0.024	1.191	1	0.275
BTC_momentum	0.000	0.570	1	0.450	0.000	0.273	1	0.601	0.000	0.014	1	0.905	0.000	7.031	1	**0.008*****
Adjusted / pseudo R^2	**0.334**				**0.403**				**0.318**				**0.403**			
N	147				181				211				105			
F / Chi	59.665				93.431				80.864				54.203			
DfE	9				9				9				9			
DfM	138				172				202				96			
p	**0.000*****				**0.000*****				**0.000*****				**0.000*****			

(*p<0,1, **p<0,05, ***p<0,01)

Regression through the origin

Table A11: Logistic regression results of models (9) – (12), dependent variable: actively traded

Appendix I: Residual plots linear regressions.

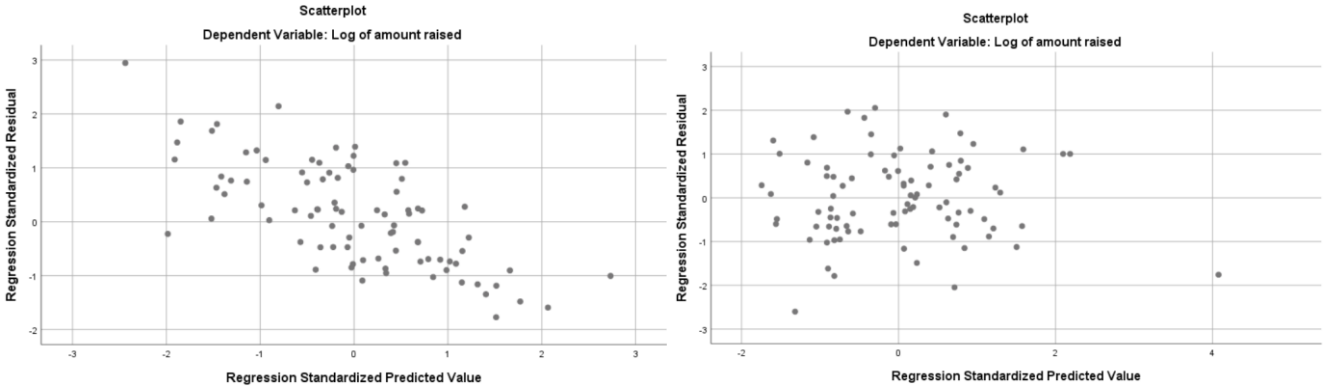


Figure A2 (left) and A3 (right): Residual plot of the linear regression analysis of model (1) ICOHolder. The left graph shows the regression through the origin, the right graph shows the regression with a constant.

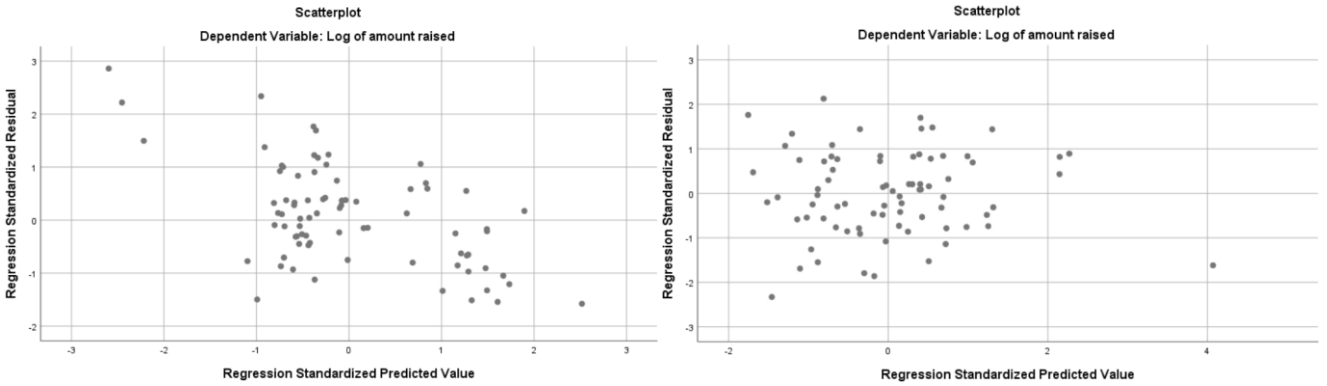


Figure A4 (left) and A5 (right): Residual plot of the linear regression analysis of model (2) ICOMarks. The left graph shows the regression through the origin, the right graph shows the regression with a constant.

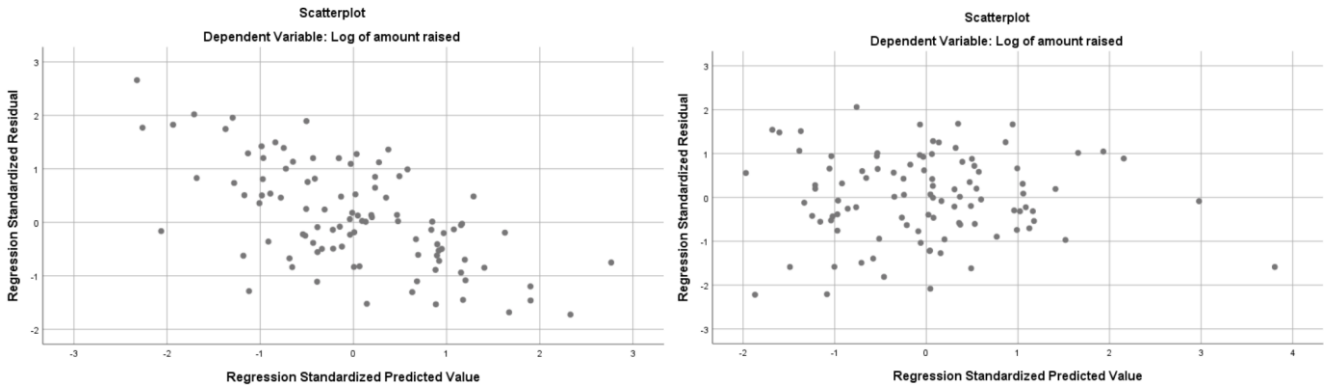
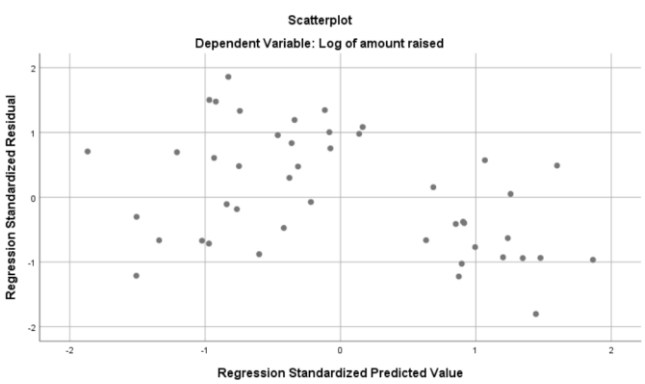


Figure A6 (left) and A7 (right): Residual plot of the linear regression analysis of model (3) Cryptototem. The left graph shows the regression through the origin, the right graph shows the regression with a constant.



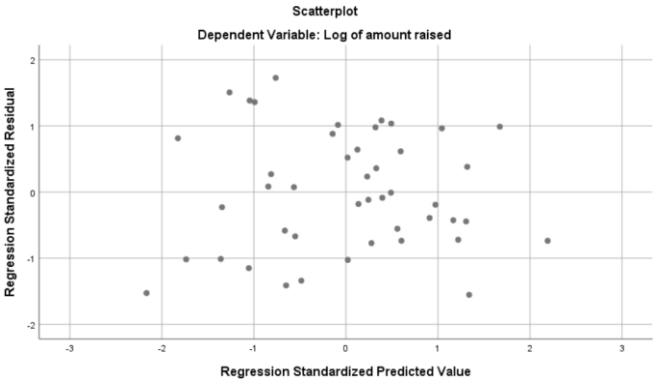


Figure A8 (left) and A9 (right): Residual plot of the linear regression analysis of model (4) FoundICO. The left graph shows the regression through the origin, the right graph shows the regression with a constant.

Appendix J: Regression models of social media, models (13) – (15).

	Linear regression analysis			Binary regression analyses							
Dependent variables	*Log_amount_raised*			*Soft_hardcap_reached*				*Actively_traded*			
	(13)			**(14)**				**(15)**			
Independent variables	*B*	*t*	*p*	*B*	*Wald*	*df*	*p*	*B*	*Wald*	*df*	*p*
Duration	0.000	0.215	0.830	0.003	3.465	1	**0.063***	-0.006	4.816	1	**0.028****
Team_size	0.103	2.877	**0.005****	0.081	7.706	1	**0.006*****	-0.040	1.392	1	0.238
ERC-20	1.804	3.382	**0.001*****	0.681	1.561	1	0.211	-0.919	5.398	1	**0.02****
KYC	-0.702	-1.213	0.228	0.782	3.292	1	**0.070***	0.874	4.378	1	**0.036****
Sourcecode	-0.296	-0.545	0.587	0.458	1.193	1	0.275	0.913	5.954	1	**0.015****
Github_stars	0.000	0.450	0.654	-0.003	1.617	1	0.204	0.002	1.050	1	0.305
Twitter_followers	-1.891E-05	-1.536	0.128	0.000	0.544	1	0.461	0.000	2.732	1	**0.098***
Twitter_presence	2.060	3.173	**0.002*****	0.598	0.935	1	0.334	-0.083	0.026	1	0.871
Facebook_likes	1.894E-06	0.207	0.836	0.000	0.799	1	0.371	0.000	0.290	1	0.590
Facebook_presence	0.813	1.302	0.196	0.524	0.934	1	0.334	-0.142	0.103	1	0.749
Telegram_members	-5.189E-05	-0.926	0.357	0.000	1.828	1	0.176	0.000	3.701	1	**0.054***
Telegram_presence	0.763	1.255	0.213	-0.157	0.084	1	0.772	0.008	0.000	1	0.986
Bitcointalk_posts	-1.119E-06	-0.018	0.986	0.000	0.352	1	0.553	0.000	0.020	1	0.887
Bitcointalk_presence	1.081	1.850	**0.068***	-0.232	0.224	1	0.636	-0.852	4.402	1	**0.036****
Reddit_members	3.727E-05	2.002	**0.048****	0.000	1.952	1	0.162	0.000	2.534	1	0.111
Reddit_presence	0.861	1.535	0.128	0.406	0.858	1	0.354	-0.214	0.235	1	0.628
BTC_momentum	2.295E-05	0.942	0.349	0.000	4.835	1	**0.028****	0.000	0.913	1	0.339
Adjusted / pseudo R^2	**0.855**			**0.185**				**0.371**			
N	240			240				240			
F / Chi	37.974			44.978				102.126			
dfE	17			17				17			
dfM	223			223				223			
Sig	**0.000*****			**0.000*****				**0.000*****			

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table A12: Linear and logistic regressions results of models (13) – (15)

Appendix K: Effect of ICO regulation on scams and actively traded coins.

Group Statistics					
Was there regulation in place for the country when the ICO registered there?		N	Mean	Std. Deviation	Std. Error Mean
Dummy variable whether the ICO was a scam or not	ICO in country with no regulation	97	0.03	0.174	0.018
	ICO in country with regulation	118	0.02	0.130	0.012

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Dummy variable whether the ICO was a scam or not	Equal variances assumed	1.829	0.178	0.674	213	0.501	0.014	0.021	-0.027	0.055
	Equal variances not assumed			0.656	173.871	0.513	0.014	0.021	-0.028	0.056

Table A13: independent samples t-test: t(213)=0.674, p=.501

Group Statistics					
Was there regulation in place for the country when the ICO registered there?		N	Mean	Std. Deviation	Std. Error Mean
Dummy variable whether the coin is actively traded	ICO in country with no regulation	97	**0.31**	0.465	0.047
	ICO in country with regulation	118	**0.24**	0.427	0.039

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Dummy variable whether the coin is actively traded	Equal variances assumed	5.424	0.021	1.182	213	0.239	0.072	0.061	-0.048	0.192
	Equal variances not assumed			1.172	197.535	0.243	0.072	0.061	-0.049	0.193

Table A14: independent samples t-test: t(213) = 1.182, p=.239

Appendix L: Moderating effect of ICO regulation.

	Linear regression						Logistic regression											
Dependent variables	*Log_amount_raised*						*Softhardcap_reached*						*Actively_traded*					
Regulation	No regulation			With regulation			No regulation				With regulation				No regulation				With regulation			
Independent variables	Beta	t	p	Beta	t	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p	B	Wald	df	p
Average_ICORating	0.825	8.365	**0.000**	0.383	2.770	**0.008**	-0.005	0.001	1	0.981	-0.110	0.393	1	0.531	-0.007	0.001	1	0.972	-0.064	0.122	1	0.727
Intermediary_coverage	3.403	4.739	**0.000**	5.219	4.447	**0.000**	-1.899	1.630	1	0.202	-2.261	2.279	1	0.131	-2.747	3.342	1	**0.068**	-3.307	4.036	1	**0.045**
Duration	-0.011	-1.998	**0.053**	-0.001	-0.901	0.373	-0.006	0.786	1	0.375	0.005	5.323	1	**0.021**	-0.006	1.827	1	0.176	-0.005	1.401	1	0.237
Team_size	-0.015	-0.718	0.477	0.030	1.538	0.132	-0.014	0.108	1	0.743	0.077	4.154	1	**0.042**	-0.021	0.149	1	0.699	0.068	2.912	1	**0.088**
ERC-20	0.172	0.471	0.640	-0.044	-0.089	0.929	0.681	0.836	1	0.360	-0.105	0.028	1	0.868	-0.386	0.340	1	0.560	0.646	0.718	1	0.397
KYC	-1.701	-4.589	**0.000**	-1.273	-3.010	**0.005**	1.834	7.203	1	**0.007**	0.519	0.814	1	0.367	1.729	6.408	1	**0.011**	0.859	2.203	1	0.138
Sourcecode	-0.540	-1.561	0.127	-0.987	-2.442	**0.019**	-0.664	1.009	1	0.315	0.656	1.528	1	0.216	1.995	10.504	1	**0.001**	0.941	3.081	1	**0.079**
Github_stars	9.213E-05	0.337	0.738	0.001	3.116	**0.003**	0.001	1.516	1	0.218	-0.002	0.406	1	0.524	0.001	1.343	1	0.246	0.009	1.369	1	0.242
BTC_momentum	-2.375E-05	-0.972	0.337	1.206E-05	0.926	0.360	0.000	1.600	1	0.206	0.000	3.942	1	**0.047**	0.000	2.321	1	0.128	0.000	0.349	1	0.555
Adjusted / pseudo R^2	**0.975**			**0.962**			**0.395**				**0.380**				**0.374**				**0.386**			
N	48			49			97				118				97				118			
F / Chi	211.33			138.114			44.277				53.609				41.236				54.542			
DfE	9			9			9				9				9				9			
DfM	39			40			88				109				88				109			
p	**0.000*** **			**0.000*** **			**0.000*** **				**0.000*** **				**0.000*** **				**0.000*** **			

(*p<0,1, **p<0,05, ***p<0,01)
Regression through the origin

Table A15: Moderating effect of ICO regulation on the ICO rating-ICO success relationship, no significant results, as there are no significant differences between the effect of ICO rating on ICO success groups with or without regulation (hightlighted).