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Effects of Influencer Marketing in the Cryptocurrency Sector

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Affidavit

I hereby confirm that this thesis is the result of my work and ideas, in addition, it also includes sections where relevant sources were used and acknowledged through proper citation.

This thesis or any other similar version of it was not submitted to or published at other academic institutions apart from this university.

Date: 12th June 2023

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Abstract

In recent years cryptocurrencies have become a popular subject of discussion, with prices of well-known large market capitalization coins such as Bitcoin and Ethereum soaring to all-time highs. Although cryptocurrencies are a relatively new investment opportunity, having been around since 2009 when Bitcoin was first made public, there has been a large change in prices. This can be partially attributed to the vast number of investors being attracted by advertising through social media. Before becoming popular cryptocurrencies were the topic of discussion for financially sound individuals and blockchain experts. As a result of the influx of popular influencers spreading the topic online, cryptocurrencies have become a more relevant topic of discussion among the general public. Having said this, the ease of accessibility coupled with the vast amount of advertising means that even those with little to no experience in cryptocurrencies are joining due to the fear of missing out. Although many may not have a clear understanding of the volatility that comes with cryptocurrencies, the influence of social media and the influencers on these platforms are attracting a vast audience. This audience seems to rely heavily on the popularity of influencers. Many investors are easily swayed creating a bandwagon effect that sees them disregarding the pitfalls of investing. Without proper research into the topic, many rely on the hype that influences create, which they hope may eventually drive up prices and result in a quick turn of profits.

This research paper highlights how influencer marketing on social media affects people's perceptions and decision-making processes related to cryptocurrencies. Past research has highlighted how specific factors such as perceived risk, perceived benefits, and trust can influence investment choices. This paper identifies how these factors can be motivated and changed by influencers and understand the overall impact on the perception of cryptocurrencies. Additionally, this paper analyses why certain influencers may be more or less effective in changing perceptions as well as why certain people may be more or less impacted by influencers in general. To better understand the aforementioned topics an online survey was conducted to find out the extent to which influencers impact consumers and investors alike.

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1 Introduction

In comparison to other forms of investments, cryptocurrencies are considered a relatively new asset class. The first ever digital coin which was accessible to the public was launched in 2009, namely Bitcoin, created by an anonymous coder known only by the name Satoshi Nakamoto (Warmke, 2021). At the time of release, not much was expected from this relatively small and invaluable digital currency. Since 2009 cryptocurrencies have become more relevant as the application for such technologies has increased past that of just being a digital coin (Csiszar, 2022).

Several factors differentiate digital currencies from conventional investments. Arguably the most relevant reason is the idea of de-centralization and the highly secured and well-thought-out blockchain system which enables it (Lee, 2019). The main concept on which cryptocurrencies rely is the idea of a de-regulatory system, meaning it is not controlled by a hierarchy of larger institutions such as banks. This concept coupled with its revolutionary yet disruptive technology has attracted a large audience to this new investment opportunity (Kraaijeveld & De Smedt, 2020). By the year 2017 cryptocurrencies were the most talked about subject online giving it a dot.com bubble type of hype. Furthermore, the unprecedented returns that early investors were witnessing made it ever-more attractive for newcomers to enter the market (Kraaijeveld & De Smedt, 2020).

Due to the new and arguably volatile nature of cryptocurrencies, most resources and news articles relating to them are not shared on mainstream news (Kraaijeveld & De Smedt, 2020). This has enabled social media networks such as Facebook, Youtube, and Twitter to become the primary sources of information concerning topics related to cryptocurrencies (Hyder, 2020). Each platform seems to serve a different purpose, some catered more towards an educational and formal approach whilst others for purely promotional services. As social media is an easy way to promote for many it can cause a rise in misinformation.

It is well known that Elon Musk is a supporter of cryptocurrencies, being an early adopter himself, which he often openly admits to the public. A powerful figure such as himself comes with a large audience that will often trust and believe in many things that he says or follows. Being influential comes with great responsibility, as one simple post or share on social media may attract the attention of millions of people (Shahzad et al., 2022). Cryptocurrency prices work similarly to conventional stocks, the more it

is trusted and the higher the investments are the higher the price will go. It's no doubt that influencers are becoming more influential in today's economy and this research paper wishes to analyze just how much they can potentially influence the market and overall perceptions of cryptocurrencies.

1.1 Practical relevance

The research presented in this paper will hopefully be of significance to the existing literature in several ways. Firstly, the aim is to understand how consumers' online exposure and previous knowledge of cryptocurrency might affect future investment decisions. Secondly, it wishes to highlight the increasing effects of social media influencer marketing on targeted groups. Thirdly, how do certain target groups react to investment recommendations, and what factors may influence their perceptions of cryptocurrencies.

This topic is relevant for two main reasons. Firstly, cryptocurrencies have had a major impact on both the internet as well as the financial sector. Most importantly, there seems to be a huge difference in the views and perceptions of cryptocurrencies amongst the public therefore it's key to understanding what is changing this perception. Moreover, it wishes to highlight which groups will be more inclined in investing into cryptocurrencies and why that might be the case. Lastly, social media influencer marketing has become vastly popular, particularly through the use of popular social media websites and applications such as Twitter and Instagram, therefore analyzing the effects it has in the cryptocurrency sector may give insights into past and future market events.

1.2 Aim of research

This research paper aims to further explore how influencer marketing can impact the perceptions of cryptocurrencies and therefore consumers' choices by analyzing their investment decisions and trust. The online survey will serve as an indicator as to which target groups may be particularly vulnerable or resilient towards influencer marketing and cryptocurrencies in general.

RQ: How do consumers' perceptions of cryptocurrencies change when exposed to different types of influencer marketing?

Several questions need to be taken into consideration when answering the main research question, such as:

- To what extent does knowledge in blockchain technologies moderate the effects of influencer marketing?
- Do certain influencers have a greater impact on changing perceptions of cryptocurrencies than others?
- How much can influencers affect the overall trust in the cryptocurrency space?
- To what extent does the credibility and trust of an influencer play a role in changing consumers' perceptions of cryptocurrencies?

The aforementioned questions will be discussed and answered by evaluating existing literature mentioned in the literature review as well as the survey conducted online.

2 Literature Review

2.1 Cryptocurrencies

In recent years, cryptocurrencies have emerged as a novel type of digital currency. The most popular cryptocurrency Bitcoin currently holds the largest market share, with a total of 46.4% of the total market share as of 2023 according to coinmarketcap.com. The popular coin, which was launched in 2008 by an unidentified person or a suspected group of individuals under the pseudonym Satoshi Nakamoto, revolutionized the rise in digital currencies (Nakamoto, 2009). Since then, several other cryptocurrencies, namely Ethereum, Ripple, and Litecoin, have been established. Several characteristics differentiate normal FIAT currencies and cryptocurrencies, but one of the major elements is the aspect of decentralization. The influx of normal FIAT currencies is controlled by governments and central banks, while cryptocurrencies allow direct transactions with no intermediaries. An important differentiating factor of cryptocurrencies is the fact that they run on decentralized networks that are based on blockchain technologies, meaning they are not issued by one single central body (Gowda & Chakravorty, 2021). Blockchain technology was first introduced by an anonymous developer Satoshi Nakamoto, who revolutionized the financial system in 2009 with the introduction of Bitcoin (Lee, 2019). This new type of currency completely inhibits the involvement of central banks or governments, which usually handle the flow of normal FIAT-traded currencies. (Gowda & Chakravorty, 2021). Blockchain and decentralization seek to improve transparency as well as security to improve this new space and attract more investors into the space (Lee, 2019). Without the need for intermediaries controlling cryptocurrencies are readily available to anyone with an internet connection. This not only facilitates transactions made from user to user but also facilitates the ease and speed with which someone can invest (Lee, 2019; Treiblmaier, 2023).

2.2 Consumer's Perceived Benefit of Investing in Cryptocurrencies

For many people, cryptocurrencies are still considered a relatively new topic and asset class. This means that overall knowledge in this space varies greatly amongst the general population (Treiblmaier et al., 2021). People will only embrace new models if they can understand the perceived benefits that may arise from investing in them. In the case of cryptocurrencies, it could be the current bias of "avoiding the middleman" or the decentralized nature of cryptocurrencies (Dumitrescu, 2017). Individuals' decisions to use new technologies will be affected by the perceived value that they can associate with the particular good (García-Monleón et al., 2023) as well as the associated risks (Treiblmaier & Chong, 2011). In the context of cryptocurrencies main drivers which have been proven to be of interest to consumers are ease of use and perceived usefulness (Nadeem et al., 2021). The applications and benefits of cryptocurrencies go far beyond simple economic incentives (García-Monleón et al., 2023; Treiblmaier & Petrozhitskaya, 2023). As previously mentioned, it's important to note that cryptocurrencies have a broad scope of application, although this section will mainly concentrate on the perceived benefits of cryptocurrencies for consumers rather than the broader scope of applications for other parties. When looking at the perceived benefits of cryptocurrencies from merely an investment standpoint two factors stand out. Both financial literacy and investment experience play an important role in cryptocurrency investing (Zhao & Zhang, 2021). This highlights that previous exposure and general knowledge of cryptocurrency may play an important role in what consumers perceive of potential cryptocurrency investments. Establishing that financial literacy to consumer's perceived benefits in investing it's important to outline what exactly is meant by the term financial literacy. Financial literacy was described by (Remund, 2010) as a measure of one's understanding of fundamental financial topics and one's capacity to confidently manage resources through wise decision-making whilst developing a strong long-term financial strategy. Furthermore, financial literacy can be categorized into two sub-categories namely subjective and objective financial literacy. Subjective financial literacy outlines personal interpretations of financial knowledge and individuals' overall confidence in what they perceive to be the best decision (J. Alba & Hutchinson, 2000). Objective financial knowledge refers to the general understanding of financial concepts and instruments which can be accepted (J. Alba & Hutchinson, 2000)

Both subjective and objective financial literacy plays an important role in consumer investment decisions, outlining the importance of educating consumers before presenting them with potential investment opportunities. This may be especially important when considering highly volatile and risky investment decisions, which is the case when discussing cryptocurrency markets. As is known by the financially literate population, cryptocurrencies can be categorized as highly volatile (Zhao & Zhang, 2021). Someone who regularly follows market trends may be aware of this and may have second thoughts about investing if the risk to reward is simply too high.

Past surveys have shown that in general, most cryptocurrency users tend to be young, male, well-educated, and financially literate (Steinmetz et al., 2021). An eye-opening survey from Deutsche Bank conducted in 2018 found that only "4% of the respondents considered their knowledge to be "very good", 6% selected 'good', 39% chose 'less good', and 41% indicated 'not good'" (*Postbank Digitalstudie 2018*, 2018), which may explain the adoption rate of cryptocurrencies. Most studies, therefore, highlight the importance of education in making correct investment choices to properly understand the perceived benefits of investing.

Each consumer may have a different motive and therefore a different perception of the benefits associated with cryptocurrencies. Literature has proven that the main characteristics that interest investors are speedy transactions, transparency, freedom of investment without government control, and anonymity (García-Monleón et al., 2023). As previously mentioned, due diligence and education in the field should be present for consumers to understand these concepts and truly understand the perceived benefits associated with cryptocurrencies.

2.3 Risk Analysis in Investment

Risk analysis is critical when making any choice, especially when analyzing a future investment opportunity. A good business should always analyze its opportunities to gain a better understanding of potential gains and risks associated with that particular investment (Virlics, 2013). This same statement is true for an investor analyzing the current cryptocurrency market. One should always be attentive to every detail and analyze each company or cryptocurrency to gain a better understanding of the possible risks and benefits that are being carried out. Ultimately what one investor may perceive as a risky investment may not be entirely true for someone else. This is because the demand to invest is influenced by the profit that one has already made and the prediction of future prices (Virlics, 2013).

If an investor has been very successful in the past and predicts a steady increase in prices then the risk factor would not be very high. On the other hand, an investor who has incurred large losses and is not well enough informed may change their opinion on the price, meaning the risk factor being carried out would be much greater (Virlics, 2013). Uncertainty plays an important role in risk assessment as it is the reason why risk in investment exists in the first place (M.Bernadete et al., 2015). If an investor knew future prices then there would be no uncertainty, and therefore no risk. Unfortunately, it is impossible to predict exact prices regardless of how much background knowledge or research is conducted, therefore making every investment to some extent 'risky'(M.Bernadete et al., 2015). One way to decrease uncertainty would be to increase knowledge in the specific field. In the field of investment, this may be done through calculations, looking at past fluctuations or even reading the news (Savvakis, 1994). All of these may increase the understanding of a specific investment and narrow the margins of uncertainty to allow for a more accurate forecast of the future (Savvakis, 1994). It should be highlighted that what an individual is willing to invest in is highly dependent on individual risk assessment. Risk is mostly related to the level of uncertainty, it could be true that that investment may be higher based on overall background knowledge (Savvakis, 1994).

2.4 Influencer Marketing

Influencer marketing is best known as the practice of compensating certain well-known or high-status individuals to post about a product or service on social media(Campbell & Farrell, 2020). Just like any marketing strategy the purpose of doing so is to attract

more users and ultimately increase the popularity of the service or product. Influencers are individuals who, through the use of their social media accounts, post particular products and services in exchange for compensation (Campbell & Grimm, 2019). In this day and age, influencers are particularly effective using these strategies through social media, this is due to several different reasons.

Firstly, consumers have shifted much of their attention from conventional television and print advertising to online media(Campbell & Farrell, 2020). This shift in attention is also highlighted by the fact that consumers have a much higher likelihood of seeing advertising as they spend a large portion of their time on social media. Secondly, consumers seem to react differently when they encounter advertisements online. Studies have shown that the proliferation of online advertisements has caused consumers to become less aware, or simply less interested in advertising techniques that were once common online(Chang-Hoan & Hongsik, 2013). Banner ads once littered the internet, but studies in the last decade have shown a rapid decline in the click-through rate of such advertising techniques. Experts refer to this rapid decline as, 'Banner Blindness, a term used to describe users' tendency to avoid fixating on anything that might look similar to a banner advertisement (Chang-Hoan & Hongsik, 2013). Advertising through these older mediums has become impractical, which may be another reason influencer marketing has had an increase over the last few years.

Finally, the internet, and social media specifically, enables marketing firms to easily split consumer groups and target them based on their specific wants and interests (Campbell & Farrell, 2020). Advertising with influencers through social media can create a much more personal interaction than conventional advertising in the past. By advertising online, marketers can target the information each user receives. Targeted promotion is based on geographic, demographic, as well as behavioral information that each user has (Treiblmaier & Pollach, 2007; Zeljko et al., 2018). With this information, less time and resources are wasted in conveying the information to the desired target market. Companies can easily advertise their product or service directly to the audience they believe are most likely to purchase.

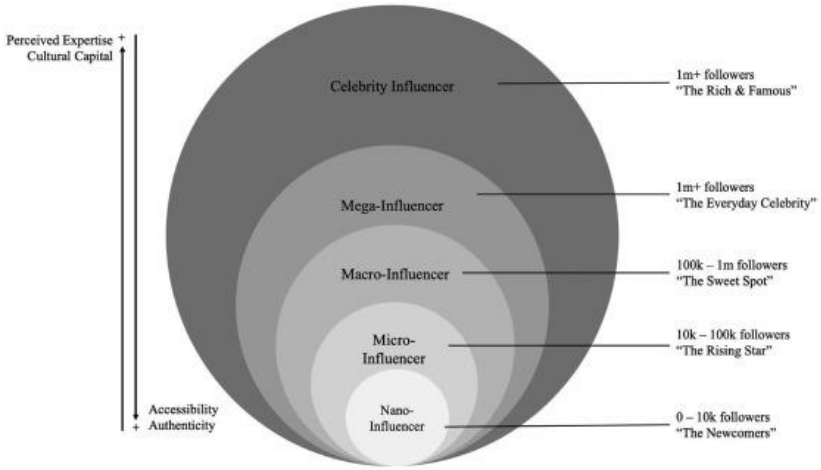

Figure 1 (Campbell & Farrell, 2020)

The sheer size of this marketing strategy has paved the way for many different types of influencers that range in style as well as overall influence on consumers. With many different types of social media, each with its characteristics, it has enabled the term 'influencer' to expand beyond just celebrities. What this implies is that smaller influencers in other categories such as sports, gaming, food, lifestyle, etc., are also able to excel. Nowadays influencers range in branding, focus, follower base, engagement rates, skill sets, and monetary requirements shown in figure 1 (Campbell & Farrell, 2020). This hierarchy of influencers gives a perspective of accessibility and expertise that ranges from bigger to smaller. Marketers and firms may decide on which influencers to implement depending on their strategy and budget. Each category of influencer comes with its benefits and drawbacks. Whilst celebrities may have the most followers and reach larger audiences, they won't be as authentic as smaller influencers, on top of being very expensive (Campbell & Farrell, 2020). Nano-influencers will often ask very little and would be happy to advertise simply to better establish their brand (Campbell & Farrell, 2020). Additionally, their message is more personal, and because they may not even be getting paid it gives them much higher authenticity when spreading a message (Campbell & Farrell, 2020). Brands should always keep in mind which influencers want to be associated with their brand. Associating yourself with an influencer means the brand is supporting their views and opinions, which may sometimes work against the brand image.

2.5 Consumer Decision-Making Process

When consumers are given multiple products and services to choose from, they are required to choose what to purchase. The process of consumer decision-making is perhaps the most important aspect of marketing firms (Payne et al., 1992). Understanding how and why consumers react to certain advertisements would help companies improve their marketing strategies and ultimately be more successful (Kenney, 2017). Consumers are often faced with many different products, leading to an overload of information and therefore choices in which they must consider trade-offs when deciding to purchase a new product (Payne et al., 1992). The main challenge, in this case, is how marketing firms can influence buying behaviors of their targeted consumers in favor of their services and products (Kenney, 2017).

Figure 2 (Kotler et al., 2017)

An example of a traditional behavioral decision-making process is the "five-stage process model of the consumer buying process" as seen in figure 2. This model of buying behavior highlights the most important steps that consumers move through when purchasing a product or service (Kotler et al., 2017). Multiple decision-making process models have been introduced and updated as new advertising techniques have emerged, although the traditional five-stage model serves as a baseline for most of the models. Consumers are most susceptible to advertising techniques at the begging of the process, the so-called 'Need recognition'. In this stage the consumer will recognize an unfulfilled need that a product or service may satisfy, this is when a consumer will want a product (Kenney, 2017). The marketers can create a circumstance within the consumer to make them feel as if they need this product, or else they will feel insecure without it. What follows shortly after is the search for information for products begins, where he/she will be looking at alternatives of the product/service that will fulfill the need (Kenney, 2017). Of course, decision-making in real life is not as linear and

straightforward as depicted in the example. There can be many internal and external factors that can influence decision-making that have to be considered by marketers.

Growing bodies of literature have also investigated the importance of consumers' knowledge when coming to a decision. For example, consumers will react differently to products depending on the negative and positive associated attributes that are associated with the brand itself (J. W. Alba & Marmorstein, 1987). To gain more positively associated attributes brands will compare themselves to others in certain attributes that they stand out to make the product look better and more attractive to consumers (Harris, 1977). By doing this, even though the product may be worse overall it is still able to stand out. By selecting specific attributes to advertise that look better than its competitors it will have an edge in the evaluation of alternatives stage (Harris, 1977). This technique can be misleading and consumers may be persuaded if the message is convincing and the semantics of the messages are ignored (Harris, 1977). Many techniques can be deployed to mislead consumers to make purchases or investments that they will later notice were not necessary.

2.6 Influencers and Cryptocurrencies

Several studies have researched the impact of social media influencers and their influence on consumers' perceptions and willingness to invest in cryptocurrencies. These studies have shed light on the role that they play in shaping consumer decisions. Many consumers are often found using several social media platforms, which is where many of the influencers can be found giving advice or opinions on investment choices. Common platforms such as Twitter serve as channels for influencers to disseminate information and create awareness about various blockchain topics (Piñeiro-Chousa et al., 2023). Studies have shown that heavy social media users are four times more likely to follow others blindly when trading online than light social media users (Bizzi & Labban, 2019). Influencers try and establish a sense of connection and authenticity through these platforms, to the point where consumers are more likely to listen to their advice regardless of how informed they are. More specifically it's been found that 54% of heavy social media users are influenced by influencers compared to 29% of light social media users(Bizzi & Labban, 2019). Before the rise of social media as a mainstream news source conventional news outlets were the basis for most information for many investors (Piñeiro-Chousa et al., 2023). However, the meteoric rise in popular social media platforms has made investors' attention shift, meaning it now acts as a

main news outlet for many smaller-scale investors (Piñeiro-Chousa et al., 2023). There may be several reasons why social media has taken precedence over conventional news outlets, one being the greater authenticity and connectivity that investors perceive when being exposed to posts on social media (Piñeiro-Chousa et al., 2023). When concentrating on the topics of decentralized financed, it seems that investors prefer user-generated content, as it may provide a greater level of authenticity (Bradley et al., 2021).

A compelling example illustrating how the influence of user-generated content plays an important role in cryptocurrency space is the Elon Musk and dogecoin saga. In the early stages of 2021, the Tesla and SpaceX CEO took to social media to express his personal opinion on the so-called meme coin Dogecoin (Shahzad et al., 2022). What followed was an explosive influx of investments into the coin which drove its prices to an all-time high. Several studies have shown a correlation between Elon Musk's tweets and changes in prices in cryptocurrency. This phenomenon has led many investors to follow his social platforms creating trading strategies associated with closely monitoring the posts of large influencers (Shahzad et al., 2022).

By frequently engaging with their audience, influencers aim to create a large group of followers creating a network of traders who interact with one another (Pütter, 2017). Once the followers are convinced they may eventually post about their trading decisions and investments and therefore encourage one another to further trade (Pütter, 2017). The increase in posts on a certain topic will increase cryptocurrencies credibility, as investors hope that it will bring high returns. Businesses that invest in influencer marketing aim to establish a trustworthy source of electronic word of mouth, to convey both authenticity in the message, as well as establish themselves as a trendsetter in the specific niche (Evans et al., 2017).

As cryptocurrencies are becoming more popular on social networks, social metrics have the potential to impact market reactions and price volatility in the sector. As previously discussed, influencers have the potential to change the sentiment of cryptocurrencies, which in turn can influence prices. Studies have shown that positive or negative sentiments expressed by influential figures or communities can lead to increased trading volume and price fluctuations (Pütter, 2017). In this case, the social metrics being discussed are changes in the number of tweets, the number of followers, as well as the number of likes that the posts produce (Pütter, 2017). Tracking social metrics

allows for the identification of potential market movements triggered by influential social media posts or community discussions.

Lunarcrush.com is a prime example of how influential social metrics and social media have become for consumers who are actively trading cryptocurrencies. This website analyses coin metrics and popular influencers as well as large cryptocurrency-related communities to find potential trends (Harini & Santhanam, 2021). This is done by analyzing certain phrases and key words, to determine if a certain coin may increase or decrease in popularity (*LunarCrush, About*, n.d.). As past events have shown, as well as previous research on this particular topic, it's clear that fluctuations are a regular occurrence in this space and can often be correlated with the number of times it's being mentioned on the internet (Bizzi & Labban, 2019).

3 Methodology

3.1 Study design

This thesis used an experimental quantitative research approach in the form of an online survey to determine if there is a relationship between Influencer marketing and perceptions of cryptocurrencies. In more detail, this research aimed to collect information about the consumers' background and exposure to different kinds of influencer advertisements and determined how this might affect their investment choices and perceptions of trust and safety in cryptocurrencies. To collect the data an online survey was chosen to reach out to audiences that already had regular online exposure. Users taking this survey must have had some form of online exposure and/or social media presence, as their likelihood of knowing anything about cryptocurrencies or influencers would be very unlikely. This could have created problems when analyzing results as people with no online presence would not know the information being displayed in front of them. Through statistical tools in Jamovi analysis of several variables including, knowledge of cryptocurrencies, willingness to invest and trust in influencers, etc. was analyzed to gain a better understanding of the RQ and the sub-questions.

3.2 Quantitative Experimental Research Design

Collecting primary data is critical in any research paper as it is relevant for the discussion of the research question being discussed. This research paper used an

experimental research design as it was the best fit for the research being discussed. In an experimental design, one or more variables are systematically manipulated to evaluate how the alteration in the variables affects one or more of the desired outcomes (Creswell & Creswell, 2018). It is essential in this type of study that all other variables, apart from the dependent variable, are kept constant to determine if the treatment and not any other factor is the cause of the outcome (Creswell & Creswell, 2018). Having established the type of design of the survey an outline of which variables were changed and which ones would be analyzed was necessary. This experimental design tested the effects of influencer marketing, making it the independent variable, and analyzed how it affected consumer perceptions of cryptocurrencies, which in this case was the dependent variable. As previously mentioned, this experiment was conducted in the form of a survey, which means that it was sent out online ensuring that all participants had access to the internet. Participants in this research were exposed to different influencers to analyze the effects of the different advertising methods and influencers which in this case was the dependent variable. Regardless of the responses to the initial questions, all the participants were exposed to the same advertisements. As previously mentioned, it's important that all participants were regular internet users and therefore were aware of these kinds of advertising techniques. Participants who were not internet users and/or had never encountered influencer marketing would therefore be excluded from this survey. Additionally, to concentrate on the effects of the advertising technique alone all the advertisements being shown to the participants were based on the same cryptocurrency. This was done to remove any differences between varying coins that may have impacted the overall effectiveness of the advertisement. Additionally, this meant that more than one variable would be changed therefore influencing the outcome of the experiment. This procedure eliminated the possibilities of systematic differences amongst the characteristics of the participants that may affect the overall outcome so that all outcomes can be attributed to the manipulated variable (influencer marketing) (Creswell & Creswell, 2018).

3.3 Data Collection and Analysis

As previously mentioned, the survey was used as the main source of primary data collection in this research paper. This survey was created to cover all sub-questions relating to the main research questions. The survey will ask the same demographic questions as well as the same questions regarding financial knowledge. It's important to note that the coin being presented was made up solely for this research paper, as to

eliminate any bias that participants would have with cryptocurrencies, they already owned in the past. Although this cryptocurrency does not exist, it will be made to look realistic and believable. Additionally, at the beginning of the survey participants were asked not to search for any news articles or current market prices to avoid changing their perceptions of the coin during the survey. By giving participants a single type of cryptocurrency, the researcher can analyze the effects of the influencer marketing technique alone without taking into consideration the perceptions of existing coins. To further analyze the effects of influencer marketing the participants were exposed to 3 different advertisements. The three advertisements were created and displayed in 3 different ways, one through a twitter post, and one through an Instagram post, whilst one will be a simple image advertisement that can be seen across different platforms such as a YouTube advertisement. Additionally, when comparing these results with the control group it will also help understand which characteristics in a person may

3.4 Hypothesis Development and Framework

This research paper concentrates on how influencer marketing affects the perceptions of cryptocurrencies. To measure exactly how this is done and quantify the effects of influencer marketing four different hypotheses were created to analyze possible relationships regarding the topic.

The literature review has already highlighted how influencers may shape views and change perceptions of cryptocurrencies; the first hypothesis concentrated on how different influencers may impact the willingness to invest. This hypothesis was important to understand if the overall status of the influencer may have positive or negative effects overall, or if perhaps other variables are more relevant. It's important to note that although influencer marketing concentrates on the impact that the individual influencer brings, the perceptions and overall decision to buy the product are also determined by the perceptions created by the ad itself (Knoll, 2016). As three different influencers were included in the survey it will highlight how certain differences between them and the advertisements may have changed the perceptions of the cryptocurrency being advertised. The main differences between the influencers were overall status, online presence and relevance, the line of work/industry they are involved in, and their involvement in the cryptocurrency section. The main differences in the ads were which platform they are based on, as well as the wording included and overall appearance. The following hypothesis highlighted how the aforementioned characteristics of each influencer may shape an individual's overall decision to invest:

Hypothesis 1: *The type of influencer impacts the willingness to invest in a cryptocurrency.*

Further exploring the effects of influencer marketing, highlighted in the literature review, this paper aimed to further explore the effects of trust in influencers to determine if it may have any effect on the decision-making processes for consumers. The previous hypothesis concentrated on comparing differences between each influencer and determining how these may impact the overall decision-making process. The following hypothesis was created to analyze how the trust and credibility of each influencer may be able to shape an individual's investment choice and overall perception of cryptocurrencies. Studies have shown that trust can be a key determinant when investing in riskier and more volatile instruments, with individuals who believe in the benevolence of others investing more of their assets in riskier investments (Klein & Shtudiner, 2016). As cryptocurrencies are considered a volatile type of investment trust may play an important role in the decision-making process. Other studies have recognized that trust is subjective and inherently relies on one's willingness and relative security (Jøsang & Presti, 2004). This implies that some people may perceive an investment to be more trustworthy or less based on a multitude of personal factors rather than just relying on the influence and trust of others.

When creating the survey three influencers were picked with varying trust and exposure in the cryptocurrency community. Mark Cuban, who was included in the first advertisement is an American businessman who often discloses information to the public about his investment choices. Investors who are aware of his investments and his overall success may have greater trust in him on the topic of cryptocurrencies than the other influencers. The second influencer introduced in the study is Cristiano Ronaldo, he is also a very successful individual and is by far the most advertised out of the three influencers. The main difference between him and Mark Cuban is that Ronaldo became successful in his sports rather than his smart investment decisions. Investors seeing this may be more inclined to trust a businessman such as Mark Cuban when it comes to investment choices as they may assume he has greater knowledge in the space. The third advertisement presents a set of two popular YouTube influencers, both very successful and well-known among the youth population. Although all influencers presented in this study were successful their occupations differ completely, meaning the perceived level of trust that consumers have when being exposed to their advertisements about cryptocurrencies may also differ. In this case, the influencers are

often portrayed as a trustworthy source for spreading information, but to generate purchase intentions consumers must perceive them as a credible source to trust the product they are introduced to (Pavlou & Fygenson, 2006) Therefore, to understand if trust plays an important factor in the consumer decision-making process and investment decision in the cryptocurrency sector the second hypothesis was created. The following hypothesis was designed to further explore this relationship:

Hypothesis 2: *Trust in an influencer impacts the willingness to invest in cryptocurrency.*

As influencer marketing is on the rise this type of marketing scheme is employed in many business sectors with the hopes to generate better purchasing intentions for their products (Mã, 2019). Generally, influencers are employed on a specific product to spread positive facts and influence purchasing intentions positively (Evans et al., 2017). Three different advertisements were designed to test if overall the impact of influencers in the cryptocurrency sector may have a positive or negative impact on overall trust. To determine if there is a significant change in the level of trust in cryptocurrencies before and after being exposed to influencer marketing the following hypothesis was designed to further explore the effects and any relationship:

Hypothesis 3: *Exposure to influencer marketing impacts the level of trust in a cryptocurrency.*

As cryptocurrencies are growing in popularity more articles and advertisements are being presented to investors daily. This rise in this sector means that potential investors are being presented with a greater quantity of investment choices and decisions. Several studies have pointed out that an increase in the size of choices may sometimes lead to adverse consequences as it may confuse consumers therefore often leading to not making any choice at all (Nofsinger, 2007). As information is now much more easily advertised it may arise in a greater quantity of irrelevant or misleading information. Under-informed and less educated individuals may be negatively affected by this as they would be unable to identify and differentiate relevant information, leading to poorer informed choices and perhaps worse investment decisions (Virlics, 2013). However, this effect seems to diminish as the level of experience rises, as experienced individuals are more likely to concentrate on relevant and critical information that allows them to make better and more informed decisions (Bhattacharjee & Moreno, 2002).

Hypothesis 4: *Experience with cryptocurrencies moderates the impact of influencer marketing.*

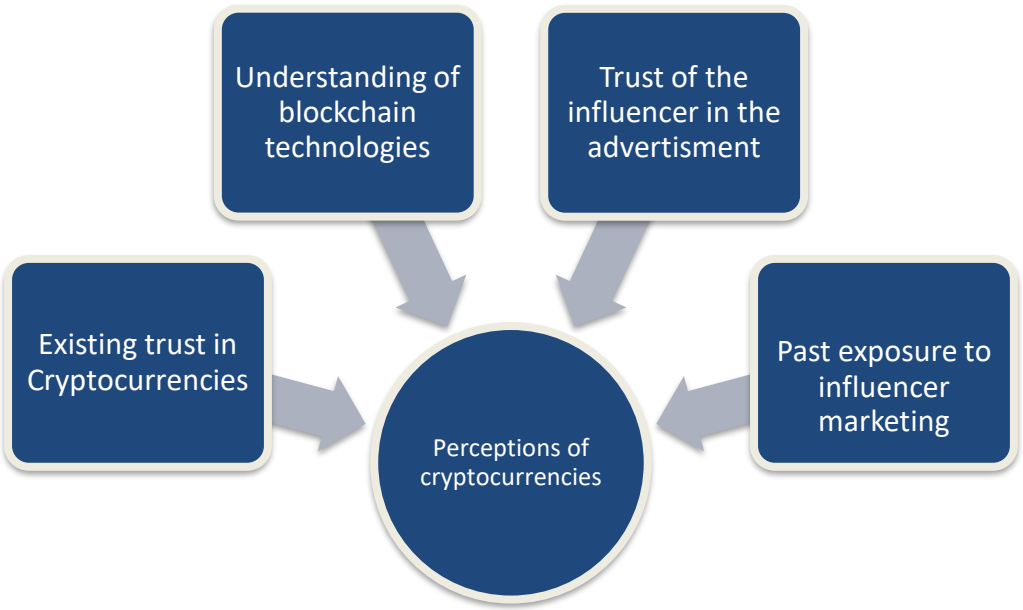

Figure 3 Theoretical Framework for hypothesis development

3.5 Survey Development

The Survey was designed using an online survey tool (QuestionPro.com) and was distributed with the use of various social media platforms such as Instagram and WhatsApp. Responses were collected over 5 days, during which a total of 72 participants were recorded and later analyzed for the discussion in the analysis section.

The online questionnaire began by asking participants general background questions about themselves. All the initial questions were tailored to get a better understanding of the general background of the participants. By analyzing the traits and characteristics of the participants it gave a better understanding of the specific demographics that may be more susceptible or less susceptible to specific cryptocurrency influencer advertising techniques. The demographic questions were concerned with age, gender, occupation, and degree level. The second set of questions was targeted specifically toward their exposure to influencer marketing as well as their status and opinions on cryptocurrency investments. The third section of the survey consisted of 3 different influencer advertisements including influencers of varying popularity, profession,

online influence, and exposure relating to cryptocurrencies. The reason for making different advertisements was not only to generate greater results for the analysis section. More importantly, this was done to provide insights into how different types of influencers may have varying impacts on the perceptions of cryptocurrencies, either positive or negative.

An important factor in the survey development was the decision to create a fake cryptocurrency to be displayed alongside the influencer advertisements. To create a fictional cryptocurrency several factors had to be kept in consideration. Firstly, the coin cannot represent any existing cryptocurrencies as some participants may already have existing views on it. This would imply that the overall effectiveness of the advertisements may be hindered as participants may have existing views on them. Secondly, although completely fictional, the cryptocurrency in question must look believable to have statistically significant and realistic results.

Figure 4 Fictional coin Lumincoin

The survey advertisements/posts included the cryptocurrency in Figure 4, Lumincoin. Lumincoin was created on the basis that it looked interesting and realistic, enabling it\ to simulate realistic results when paring it alongside popular influencers. The coin pictured in Figure 4 was paired with 3 different advertisements displaying the different influencers. These advertisements were purposely made for the survey to analyze how the difference may impact their answers. Figure 5 displays a Twitter post made by Mark Cuban, an influential cryptocurrency and important American investor. The tweet in the advertisement reads “Excited about its potential to revolutionize the crypto market. The team behind it has some game-changing ideas and a solid roadmap. Stay tuned for more updates! #LuminCoin #CryptoRevolution" - @mcuban”. Twitter was chosen for this influencer as this is where he often shares his ideas and posts about cryptocurrencies.

Figure 5: Mark Cuban Twitter post advertising Lumincoin used in the survey.

Figure 6: Cristiano Ronaldo and Lumincoin advertisement used in the survey.

The second influencer marketing post that participants will be exposed to is shown in Figure 6. In this figure, the fictional cryptocurrency Lumincoin is paired with the famous sports influencer Cristiano Ronaldo. Unlike the first influencer shown in Figure 5, Ronaldo is not a popular cryptocurrency influencer. He is best known for his influence in sports and is one of the most advertised individuals in the world. This post has no writing, only a link to the fictional website Lumincoin.org. This influencer was chosen on the basis that he is extremely well known and advertised in many different sectors ranging from sports, clothing, electronics, etc. Most individuals would have most likely seen him before and therefore it will be interesting to analyze the results compared to the other less-known influencers shown in the survey.

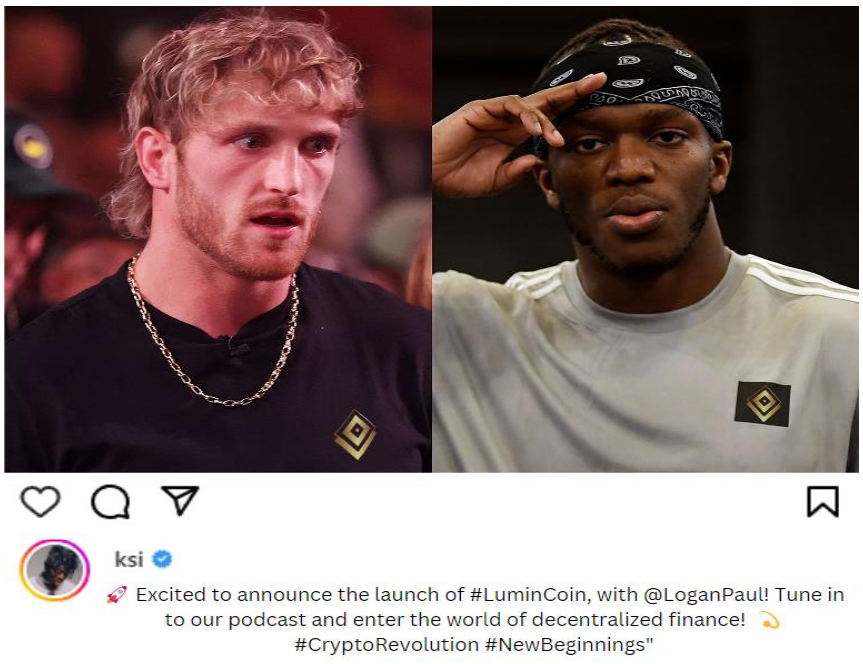

Figure 7: Logan Paul and KSI Lumincoin post used for survey.

The last advertisement depicted in Figure 7 shows two YouTube social media stars, Logan Paul left, and KSI right. The advertisement is portrayed in the form of an Instagram post, with the following description "🚀 Excited to announce the launch of #LuminCoin, with @LoganPaul! Tune in to our podcast and enter the world of decentralized finance! 💫 #CryptoRevolution #NewBeginnings". This post was made to simulate a realistic Instagram post. The two influencers in the last advertisement are perhaps the best representation of an influencer, as unlike the first two (Mark Cuban and Cristiano Ronaldo) their professions of being social media stars mean they are often referred to as influencers above anything.

Below is a list of the questions presented in the survey, leaving out the demographic questions:

Questions concerning online exposure:	**Questions concerning perceptions of cryptocurrencies:**	**Questions concerning influencer marketing:**
How often do you encounter influencer marketing (Twitter posts, Instagram, Facebook, television)	Have you ever owned or traded cryptocurrencies?	How important is this influencer to you?
Has an influencer ever convinced you to purchase something online?	Rate your perceptions of cryptocurrencies as an investment opportunity	Do you trust this influencer when it comes to cryptocurrencies?
	What is your understanding of blockchain technologies?	Are you inclined to invest in this cryptocurrency after seeing this post?

	Prior to taking this survey have you ever owned or traded cryptocurrencies?	Do you consider this cryptocurrency to be a trustworthy investment?
		Do you consider this cryptocurrency to be a profitable investment?

Table 1: Survey questions listed by topic.

3.6 Measures

The questionaries first questions were concerned with the participants' initial exposure to certain online advertisements. This is to understand if consumers have been exposed to influencer marketing in the past. Continuing, the next questions asked participants about cryptocurrency-related questions as well as their general knowledge of blockchain systems. All initial demographic questions were Likert scale with a range of 5, with 1 being nothing/low and 5 always/high. It was important to note how many participants were already invested in the cryptocurrency space, therefore a yes or no question was included. Following this was a checklist of possible coins that listed different categories such as high market capitalization course, metaverse coins, meme coins, etc. (multiple options could be checked).

The initial measurements were nominally scaled and asked about a person's Age, gender, and education. Other questions were asked such as; Was this advertisement impactful", all these questions are Likert on a scale of 1 to 5 meaning they are ordinally scaled. The main unit of measurement in this survey would be Likert and therefore ordinally scaled, to give the researcher relevant and useful information to analyze quantitatively. To quantitively analyze the data the ordinally scaled data was transformed into number values through the use of the application Jamovi. This was done to accommodate the use of quantitative descriptives and tests such as the paired T-test.

3.7 Ethical Considerations

The participants will be informed that they will remain anonymous during the survey, their data will be protected, and that the data being collected is purely for research purposes. The participant's confidentiality is key in keeping the survey anonymous and

following the proper code of conduct. In addition, the participants must be informed that all data being displayed, including the advertisements and the fictional cryptocurrency, is purely for research purposes. The images were made purely to stimulate a response and did not recommend any real-life investment decisions or recommendations related to cryptocurrencies. The survey included contact information if participants had any questions or concerns regarding their data collection and privacy.

4 Data Results and Analysis

The following section of the paper is concerned with the analysis of the results as well as the analysis concerning the survey which is the basis for the experimental design. With the following data, the main research question is: *How do consumers' perceptions of cryptocurrencies change when exposed to different types of influencer marketing?* To accurately answer this question, the participants were exposed to 3 different advertisements containing different types of influencers which at the time of the research were relevant in either the cryptocurrency space and/or on social media in general. The influencers were chosen on the basis that most of the participants would recognize them and therefore would provide varying results relevant for statistical comparison.

4.1 Demographics of Survey Participants:

		Male	Female	Total	Total Percentage
Participants	TOTAL	45	27	72	NA
Age	18 and under	0	0	0	0%
	19 - 22	19	17	36	50%
	23 – 26	20	6	26	36.1%
	27 – 30	4	2	6	8.3%
	31 or over	2	2	4	5.5%
	Primary Education	2	1	3	4.16%

Highest Degree Level Obtained	High School Diploma	7	7	14	19.44%
	Bachelor's Degree	31	16	47	65.28%
	Master's Degree or Higher	5	3	8	11.11%
Encounter Influencer Marketing	Never	1	1	2	2.78%
	Once a Month	1	0	1	1.39%
	Once a Week	6	1	7	9.72%
	Multiple Times a Week	13	7	20	27.78%
	Daily	24	18	42	58.33%
Influencer marketing leading to purchasing decision	Never	11	2	13	18.06%
	Rarely	22	8	30	41.67%
	Occasionally	11	14	25	34.72%
	Very Often	1	3	4	5.56%
Cryptocurrency Ownership	No	12	19	31	43.06%
	Yes	33	8	41	56.94%
Perceptions of Cryptocurrencies	Highly Unreliable	6	1	7	9.72%
	Unreliable	13	6	19	26.39%
	Neutral	11	11	22	30.56%
	Somewhat Trustworthy	11	9	20	27.78%
	Highly Trustworthy	4	0	4	5.56%
	Poor Knowledge	5	3	8	11.11%

Knowledge of blockchain technologies	Limited Knowledge	6	12	18	25%
	Moderate Knowledge	13	5	18	25%
	Good Knowledge	16	5	21	29.17%
	Highly Knowledgeable	5	2	7	9.72%

Table 2: Survey participant demographics.

From the following table, these results were concluded:

- A total of 72 responses were recorded over the survey period.
- Most of the survey participants were male (45) compared to females (27)
- Most of the participants were between the ages of 19-22 (50%), followed by 23-26 (36.1%), 27-30 (8.3%), and 31 or over (5.5%)
- Most of the participants have obtained or are currently pursuing a bachelor's degree (65.28%) followed by a high school diploma (19.44%), master's degree or higher (11.11%), and primary education (4.16%)
- Most of the participants encounter influencer marketing daily (58.33%) followed by multiple times a week (27.78%), once a week (9.72%), and once a month (1.39%)
- Most of the participants are rarely convinced by influencers to purchase something online (41.67%) followed by occasionally (34.72%), never (18.06%), and very often (5.56%)
- Most of the participants have owned cryptocurrencies (56.94%) compared to not owning cryptocurrencies (43.06%)
- Most of the participants believe cryptocurrencies to be neutral in terms of trust (30.56%) followed by somewhat trustworthy (27.78%), unreliable (26.39), highly unreliable (9.72%), and highly trustworthy (5.56%)
- Most of the participants feel their knowledge of blockchain technologies is good (29.17%) followed by both limited (25%) and moderate (25%) being equal, poor (11.11%), and highly knowledgeable (9.72%)

The questions regarding perceptions and knowledge of cryptocurrencies as well as their exposure to influencers were Likert scaled. This was done to give participants enough choices. Additionally, this gives the researcher more data to analyze the results and come to a better understanding of why the hypotheses in the paper may have been accepted or ignored.

4.2 Type of Influencer and Willingness to Invest

The following section analyzed how different types of influencers changed the willingness to invest in cryptocurrencies. By looking at the survey results we hoped to either prove or disprove the following hypothesis "*The type of influencer impacts the willingness to invest in cryptocurrencies"*. To correctly analyze these results the following questions in the survey were used:

- Are you inclined to invest in this cryptocurrency after seeing this post?
- Do you consider this cryptocurrency to be a profitable investment?

The questions were all Likert scaled ranging from 1 to 5, with 1 being highly unlikely and 5 being very likely. The survey contained 3 different influences, varying in popularity, profession, and overall online influence. The first individual shown advertising the cryptocurrency Lumincoin to the participants is Mark Cuban, an American businessman best known for his role in the popular investment show "Shark Tank". Mark Cuban is an avid Twitter user, with a total of 8.8 million followers as of May 2023 (*Mark Cuban (@mcuban) / Twitter*, 2023), and is also known for his infamous quotes regarding different topics in the cryptocurrency sector. Being a prominent businessman as well as an investor in new technologies he often turns to Twitter to discuss several topics regarding the space. Mark Cuban is a strong believer in cryptocurrencies, an opinion which he frequently shares with his many followers "Why have I invested in crypto? Because I believe Smart Contracts will have a significant impact on creating valuable applications. I have said from day 1, the value of a token is derived from the applications that run on its platform and the utility they create" (*Mark Cuban (@mcuban) / Twitter*, 2023). Knowing his stance and his understanding of these technologies may have a significant impact on someone who sees his posts and may therefore change their perceptions and willingness to invest.

Cristiano Ronaldo is best known for being a sporting sensation and one of the best football players of all time. Ronaldo will be the influencer displayed in AD B alongside the cryptocurrency Lumincoin. Ronaldo is arguably one of the most influential and recognized individuals on the planet, with a total of 587 million followers on the popular social media app Instagram (*Cristiano Ronaldo (@cristiano) • Instagram Photos and Videos*, n.d.). He also boasts an impressive 108 million followers on the social media platform Twitter, where he is often seen advertising many different products ranging from clothing to luxury products, as well as cryptocurrencies. Further expanding on the cryptocurrency sector, Ronaldo has already been seen pairing with Binance, the world's largest cryptocurrency exchange. This partnership took place on the 18th of November in 2022 and consisted of an NFT launch to allow his fans to enter the space of Web3 applications (Binance, 2022). This deal was part of a multi-year partnership with the exchange giants to try and enter a new space and target a new set of consumers. Out of the three influencers in this research, Cristiano Ronaldo is by far the most famous and influential and it will be interesting to see how this affects the participants in the survey.

The third and final advertisement presented to the participant presents two influencers, Logan Paul and KSI (Olajide Olayinka Williams). Both of these influencers are best known for their presence and influence on the social media platform YouTube. As of 2023, KSI has a total of 24.1 million subscribers, whilst Logan Paul has 23.6 Million. Apart from being two important figures on YouTube they also have several accounts on many other social media platforms including, Instagram, Twitter, TikTok, and Snapchat. KSI and Logan Paul are perhaps the best examples of social media influencers, as their careers are solely based on creating content and advertising through platforms (Unlike the first two Cristiano Ronaldo and Mark Cuban who became famous and influential through ordinary careers). Both influencers post daily and are very vocal

about their opinions on blockchain and cryptocurrencies. KSI can often be seen posting his opinions and trades through his separate Twitter account @KSIcyrpto, where he states "My tweets are my opinions and in no way equate to financial advice of any kind" (KSICRYPTO (@ksicrypto) / Twitter, 2022). Nevertheless, his tweets coupled with his other social media accounts reach a large audience with no doubt they may influence a large part of them. Logan Paul is also big on cryptocurrencies, and similarly to his partner KSI often engages with his audience by discussing his trades and various cryptocurrency projects through his social media. His most recent involvement in the

sector saw Logan Paul take part in a large cryptocurrency scandal involving "CryptoZoo". Marked by many news outlets as a huge scandal Logan Paul has recently come out and apologized for luring his fans into what he claimed was a "really fun game that makes you money" ("YouTube Star Logan Paul Apologises for CryptoZoo Project Failure," 2023). Before it came out as a scam many of his fans invested large funds of money in this project trusting the influencer after describing the game in the popular podcast ImPaulsive("YouTube Star Logan Paul Apologises for CryptoZoo Project Failure," 2023). The survey will give insights into how the overall sentiment, trust, and popularity of these influencers may influence and change participants' views of the cryptocurrency being advertised "Lumincoin". To facilitate the description of the data in the upcoming sections the first Advertisement with Mark Cuban will be referred to as AD A, the second advertisement with Cristiano Ronaldo as AD B, and the third advertisement as AD C.

To determine if there is there is a significant difference a paired sample T-Test was carried out between the different advertisements. The first analysis is done between AD A (Mark Cuban) and AD B (Cristiano Ronaldo). Using the statistical program Jamovi the variables being measured were "Are you inclined to invest in this cryptocurrency" for both AD A and AD B.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
"Are you inclined to invest" A - Transform 3	"Are you inclined to invest in" B - Transform 3	Student's t	−0.66	71.00	0.512

Normality Test (Shapiro-Wilk)

			W	p
"Are you inclined to invest" A - Transform 3	-	"Are you inclined to invest in" B - Transform 3	0.83	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
"Are you inclined to invest" A - Transform 3	72	1.72	2.00	0.83	0.10
"Are you inclined to invest in" B - Transform 3	72	1.79	2.00	0.95	0.11

Table 3: Influencers A and B Paired sample T-Test

When analyzing the data given in table 3 the mean value for AD A was 1.72 whilst AD B displayed a higher mean of 1.79, a change of 0.07. Both means are relatively low,

meaning that in general, most participants were not inclined to invest in the cryptocurrency Lumincoin after being exposed to the different influencer marketing posts. The paired sample t-test also revealed that individuals that indicated a low level of investment interest in AD A indicated a slightly higher interest to invest in AD B, which was shown by the positive change of 0.07 between the two Ads. The P-value calculated by the paired sample T-Test is 0.512 indicating that the difference between the two is insignificant. This implied that there is not a significant difference in the decision to invest in cryptocurrency depending on influencers A and B and the hypothesis "*The type of influencer impacts the willingness to invest in cryptocurrencies"* can be rejected.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
"Are you inclined to invest in" B - Transform 3	"Are you inclined to invest in this cryptocurrency" C - Transf	Student's t	2.03	71.00	0.046

Normality Test (Shapiro-Wilk)

			W	p
"Are you inclined to invest in" B - Transform 3	-	"Are you inclined to invest in this cryptocurrency" C - Transf	0.67	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
"Are you inclined to invest in" B - Transform 3	72	1.79	2.00	0.95	0.11
"Are you inclined to invest in this cryptocurrency" C - Transf	72	1.58	1.00	0.75	0.09

Table 4: Influencers B and C Paired sample T-Test

When analyzing the data given in table 4 the mean value for AD B displayed a mean of 1.79 whilst AD C showed a lower mean of 1.58, a change of 0.21. Both means implied that most participants were not inclined to invest in the cryptocurrency Lumincoin after being exposed to either of the two influencer marketing posts. The paired sample T-Test also revealed that most individuals that indicated a very low or low level of interest to invest in AD B indicated a lower result for AD C. The P-value for the T-Test is 0.045 implying that there is a significant difference in the decision to invest in the cryptocurrency depending on the influencer B and C. Although the difference is small and participants still expressed a low willingness to invest in both advertisements B and C, the T-Test and the P-value implied that the difference is still enough to accept the hypothesis "*The type of influencer impacts the willingness to*

invest in cryptocurrencies". Therefore, AD B has a greater positive impact on the decisions to invest in the cryptocurrency Lumincoin compared to AD C.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
"Are you inclined to invest" A - Transform 3	"Are you inclined to invest in this cryptocurrency" C - Transf	Student's t	1.40	71.00	0.167

Normality Test (Shapiro-Wilk)

			W	p
"Are you inclined to invest" A - Transform 3	-	"Are you inclined to invest in this cryptocurrency" C - Transf	0.77	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
"Are you inclined to invest" A - Transform 3	72	1.72	2.00	0.83	0.10
"Are you inclined to invest in this cryptocurrency" C - Transf	72	1.58	1.00	0.75	0.09

Table 5: Influencer A and C Paired sample T-Test

The same paired sample T-Test was run on advertisements A and C to compare the results. The data in table 5 shows a mean value of 1.72 for AD A whilst AD C had a lower mean score of 1.58, a difference of 0.14. Both ads show a low to very low interest to invest in both coins, but AD A shows higher levels of interest. The pared sample T-Test once again calculated a P-value of 0.167, implying that the difference is statistically insignificant to accept the hypothesis "*The type of influencer impacts the willingness to invest in cryptocurrencies"*. Although the means calculated showed a higher level of interest to invest in AD A, a positive change in the mean by 0.14, the P-value suggests that the different types of influencers do not change their willingness to invest in cryptocurrency. When comparing all three advertisements head-to-head the only statistically significant difference pointed out by the paired sample T-test was between AD B and AD C. This test shows that the differences between Cristiano Ronaldo and KSI/Logan Paul did have an impact on the willingness to invest in the fictional coin Lumincoin.

4.3 Trust in an Influencer and Willingness to Invest.

The next section of results will analyze how the variable of trust in an influencer changes the willingness to invest in a cryptocurrency. To do this the following questions were used from the survey.

- How important is this influencer to you?
- Do you trust this influencer when it comes to cryptocurrencies?
- Are you inclined to invest in this cryptocurrency after seeing this post?

The questions were analyzed for each of the three advertisements using a Pearson's correlation analysis test. All of the questions relating to this topic were Likert scaled from 1 to 5, ranging from very low to very high. The correlation test determined if trust in an influencer influences investment decision. This test was chosen over a paired sample T-test as it gives the researcher a more accurate description of the relationship between the variables. It's important to understand that although a high Pearson's correlation coefficient may indicate a strong linear relationship between two variables, it does not state the direction of the given relationship between the variables. Therefore, a high correlation does not necessarily imply that there is a high level of trust in the participants, vice versa a low level of correlation does not correlate to low levels of trust. What the Pearson's Correlation coefficient test does is suggest that there is a consistent pattern in the data. A high correlation coefficient suggests that if trust in the influencer increases or decreases, willingness to invest also tends to increase or decrease linearly. The correlation figure provides valuable insights into the strength of the relationship between the two variables but not the overall willingness to invest or overall trust in an influencer. To determine whether the influencer had a positive or negative impact, other descriptives needed to be analyzed. Therefore, to determine if the overall impact of the influencer was either positive or negative further data was explored.

Correlation Matrix

Correlation Matrix

		"Do you trust this influencer" - Transform 3	"Are you inclined to invest" A - Transform 3
"Do you trust this influencer" - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest" A - Transform 3	Pearson's r	0.49	—
	p-value	< .001	—

Table 6: AD A Pearson's Correlation

The following data is taken from table 6 and shows the correlation for AD A between the two questions "Do you trust this influencer when it comes to cryptocurrencies" and "Are you inclined to invest in this cryptocurrency after seeing this post". From the calculations, a Pearson's R-value of 0.49 with a P-value of <0.001 was calculated. This data suggests that there is a moderate positive correlation between trust in the influencer to advertise cryptocurrencies in AD A and willingness to invest. More specifically if a participant recorded a high level of trust in influencer Mark Cuban, he/she is more likely to invest in the cryptocurrency. Contrary if he/she recorded a low level of trust it results in a lower level of willingness to invest. The P-value is <0.05 which also suggests that the data is significant. From this data, the null hypothesis can be rejected and the hypothesis *There is a significant difference between the trust in an influencer and the willingness to invest in a cryptocurrency* can be accepted for the first AD A.

Figure 8: Scatterplot Graph showing distribution of data for AD A

Descriptives

	"Do you trust this influencer"	"Are you inclined to invest" A - Transform 3
N	Very Low	19
	Low	26
	Neutral	22
	High	4
	Very High	1
Mean	Very Low	1.11
	Low	1.88
	Neutral	1.82
	High	2.50
	Very High	4.00

Table 7: Descriptives and mean of data for AD A

The distribution of the data in figure 8 showing a scatterplot of all data points suggests that most of the participants indicated a low level of trust for the influencer when it comes to cryptocurrencies. With this information and the correlation coefficient of 0.49, it suggests that Mark Cuban has a moderately negative influence on participants' willingness to invest. Further descriptives again show that most participants were concentrated in the low to neutral areas of trust for this influencer. From the descriptives shown in table 7, we can understand the direction of the correlation, as well as get a better understanding of why it is moderate. Looking at the mean distribution of the data in table 7 we can see that most participants indicated a very low trust, also indicated a low willingness to invest at 1.11. The same thing can be said about a low level of trust with a mean of 1.88 for willingness to invest. Interestingly participants that indicated a neutral level of trust have a lower willingness to invest at 1.82 compared to those who have low levels of trust at 1.88. This may be explained by the fact that people who indicated a neutral level may have no knowledge of who the influencer is, and therefore will only use their judgment to invest in the cryptocurrency based on the overall look and name of the coin itself.

Correlation Matrix

Correlation Matrix

		"How important is this influencer to you?" A - Transform 3	"Are you inclined to invest" A - Transform 3
"How important is this influencer to you?" A - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest" A - Transform 3	Pearson's r	0.49	—
	p-value	< .001	—

Table 8: Pearson's correlation coefficient AD A

The following table 8 showed the correlation between the two questions "How important is this influencer to you" and "Are you inclined to invest in cryptocurrencies after seeing this post?". This second question is a measurement of general trust and popularity and can indicate if the influencer has had a good or bad impact on the participant in the past. Looking at the results in data table 8, which also focused on AD A, we saw identical results with the first question analyzed in table 6. A Pearson's r value of 0.49, indicated a moderate level of positive correlation and a P-value of <0.001. High levels of trust indicate a higher willingness to invest, and vice versa. As the p-value is <0.05 we can reject the null hypothesis and accept that *there is a significant difference between the trust in an influencer and the willingness to invest in a cryptocurrency* for AD A.

Table 9: AD B Pearson's Correlation Coefficient

Correlation Matrix

Correlation Matrix

		"Do you trust this influencer" B - Transform 3	"Are you inclined to invest in" B - Transform 3
"Do you trust this influencer" B - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest in" B - Transform 3	Pearson's r	0.69	—
	p-value	< .001	—

The following analysis taken from table 9 showed the correlation for AD B between the two questions "Do you trust this influencer when it comes to cryptocurrencies" and "Are you inclined to invest in this cryptocurrency after seeing this post". The calculations show Pearson's r value of 0.69 with a p-value of <0.001. This data suggested that there was a strong positive correlation between the trust in the influencer to advertise cryptocurrencies in AD B and willingness to invest in the cryptocurrency. Interestingly the data suggest that AD B had a stronger positive correlation of 0.69

compared to that of AD A at 0.49. This indicated that most of the participants were more affected or influenced by Cristiano Ronaldo compared to Mark Cuban. As the p-value is <0.05 the null hypothesis can be rejected and the hypothesis '*There is a significant difference between the trust in an influencer and the willingness to invest in a cryptocurrency'* can be accepted for AD B. To understand if AD B had a positive or negative effect additional descriptives need to be analyzed.

Figure 9: Scatterplot graph showing distribution of data for AD B

Descriptives

	"Do you trust this influencer" B	"Are you inclined to invest in" B - Transform 3
N	Very Low	35
	Low	24
	Neutral	8
	High	3
	Very High	2
Mean	Very Low	1.17
	Low	2.13
	Neutral	2.50
	High	3.67
	Very High	3.00

Table 10: Descriptives and mean values for AD B

Figure 9 showed the distribution of data on a scatterplot for AD B. This data suggested that participants did not have a high level of trust in the influencer in AD B when it comes to advertising cryptocurrencies. As indicated on the scatterplot as well as in data Table 10, most participants indicated having low or very low trust when it comes to

trusting Cristiano Ronaldo when advertising cryptocurrencies. Although there is a lower level of trust in this influencer, overall, the mean scores, which indicated the willingness to invest, were higher. While very low trust shows a mean of 1.17, low and neutral scores have a much higher willingness to invest at 2.13 and 2.5 respectively. This implies that overall Cristiano Ronaldo not only has more influence than Mark Cuban, but he also has a better chance of convincing participants to invest in the cryptocurrency Lumincoin.

Correlation Matrix

Correlation Matrix

		"How important is this influencer to you?" B - Transform 3	"Are you inclined to invest in" B - Transform 3
"How important is this influencer to you?" B - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest in" B - Transform 3	Pearson's r	0.53	—
	p-value	< .001	—

Table 11: Pearson's Correlation Coefficient AD B

Table 11 showed the correlation between the two questions "How important is this influencer to you" and "Are you inclined to invest in cryptocurrencies after seeing this post?". Looking at the results in table 11, which focused on AD B, we see that there was a significantly lower correlation compared to the data in table 9 (showing the trust of the influencer in advertising cryptocurrencies in AD B). The data shows a Pearson's r value of 0.53, indicating a moderate level of positive correlation and a P-value of <0.001. This implies that higher levels of trust indicate a higher willingness to invest, and vice versa. As the p-value is <0.05 we can reject the null hypothesis and accept that *there is a significant difference between the trust in an influencer and the willingness to invest in a cryptocurrency* for AD B.

Correlation Matrix

		"Do you trust these influencers" C - Transform 3	"Are you inclined to invest in this cryptocurrency" C - Transf
"Do you trust these influencers" C - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest in this cryptocurrency" C - Transf	Pearson's r	0.85	—
	p-value	< .001	—

Table 12: Pearson's correlation coefficient AD C

Table 12 showed the correlation for AD C between the two questions "Do you trust this influencer when it comes to cryptocurrencies" and "Are you inclined to invest in this cryptocurrency after seeing this post". Out of the three advertisements, this had the

highest Pearson's Correlation coefficient with a value of 0.85 and a p-value of <0.001. This implied that the two influencers Logan Paul and KSI had a very strong influence when it comes to willingness to invest. The p-value for this test is <0.05 so the null hypothesis can be rejected and say that *there is a significant difference between the trust in an influencer and the willingness to invest in a cryptocurrency* for AD C.

Descriptives

	"Do you trust these influencers" C	"Are you inclined to invest in this cryptocurrency" C - Transf
N	Very Low	39
	Low	28
	Neutral	4
	High	1
Mean	Very Low	1.08
	Low	2.00
	Neutral	3.00
	High	4.00

Table 13: Descriptives and means AD C

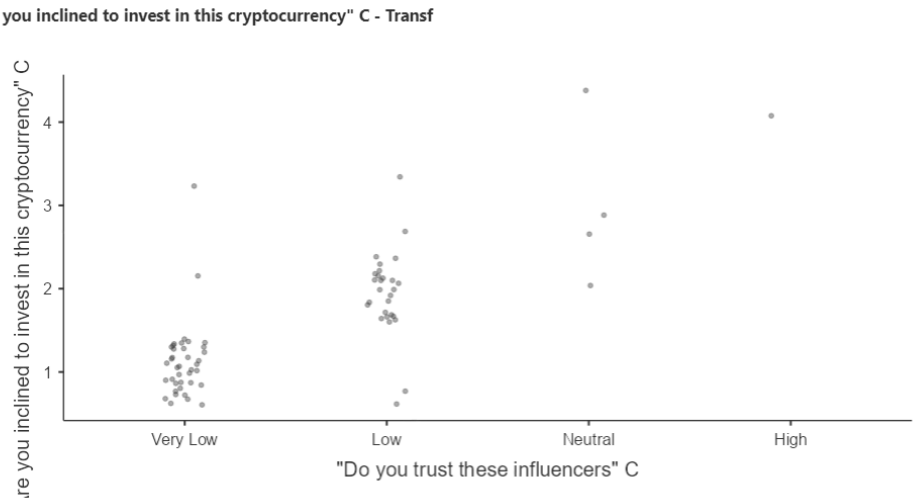

Figure 10: Scatterplot graph distribution of data AD C

Looking at figure 10 we can see that most of the data was concentrated in the lower left, meaning that most of the participants indicated a very low level of trust, as well as a very low to low level of willingness to invest. The data in table 13 also indicated that the mean values for willingness to invest were far lower than in AD A and AD B. With a very low to low mean score for investment willingness and a high positive correlation between the two variables we know participants often chose the same answer for the two questions. AD C had the highest correlation between variables and therefore it can

be said that KSI and Logan Paul have the most influence when it comes to willingness to invest. This influence on willingness appears to be very negative as the mean scores for willingness to invest were the lowest out of the three advertisements.

Correlation Matrix

Correlation Matrix

		"How important are these influencers to you?" C - Transform 3	"Are you inclined to invest in this cryptocurrency" C - Transf
"How important are these influencers to you?" C - Transform 3	Pearson's r	—	
	p-value	—	
"Are you inclined to invest in this cryptocurrency" C - Transf	Pearson's r	0.48	—
	p-value	< .001	—

Table 14: Pearson's Correlation Coefficient AD C

Table 14 showed the correlation between the two questions "How important is this influencer to you" and "Are you inclined to invest in cryptocurrencies after seeing this post?". The data shows a Pearson's r value of 0.48, indicating a moderate level of positive correlation and a P-value of <0.001. Comparing the data to table 12 of 0.85 (showing the trust of the influencer in advertising cryptocurrencies in AD C) we can see that the correlation in table 14 of 0.48 is significantly lower. This shows that the participants were not as concerned with their feelings towards the influencer or popularity and their investment choices. The stronger relationship in the question "Do you trust these influencers when it comes to cryptocurrencies" compared to the question "How important is this influencer to you" suggests that the trustworthiness of the influencer is more important than the overall popularity of the influencer.

This is not only the case for AD C, the analysis of AD A as well as AD B, had similar results. In two cases (AD B and AD C) the participants placed a significantly higher importance on the overall expertise and reliability of the influencer when it came to providing information regarding cryptocurrencies. These findings, therefore, show that an individual's inclination to invest is more dependent on the overall reputation and expertise that the influencer has in the cryptocurrency sector, rather than considering one's attachment or overall popularity of an influencer.

4.4 Trust in Cryptocurrencies Before and After being Exposed to Influencers.

The following analysis will discuss how participants' trust in cryptocurrencies may have been altered after being exposed to influencer advertisements. To determine if there were any significant relationships in and to either reject or accept the hypothesis *"Exposure to influencer marketing impacts the level of trust in a cryptocurrency*" the following questions were analyzed and tested and tested:

- Rate your perceptions of cryptocurrencies as an investment opportunity.
- Do you consider this cryptocurrency to be a trustworthy investment?

As all questions were all Likert scaled from 1 to 5, a paired T-sample test was chosen as the best descriptive for this type of data. The analysis is split into three different parts to give insights into which of the three advertisements showed the most significant change. It's important to note that the first question "Rate your perception of cryptocurrencies as an investment opportunity" was shown before being exposed to any of the advertisements and ranged from highly unreliable to highly trustworthy. The second question "Do you consider this cryptocurrency to be a trustworthy investment?" was shown after each of the three advertisements and ranged from very low to very high. By asking two similar questions before and after being exposed to influencer marketing advertisements it revealed how much each influencer changed the participants' trust in cryptocurrency. It should be noted that the initial question is asking about trust in cryptocurrencies in general whilst the following questions ask specifically about the fictional coin Lumincoin. This may also have an impact on overall assessment and response to the questions, this aspect is discussed later on in the research paper.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
Rate your perceptions of cryptocurrencies as an investment oppo	"Do you consider this cryptocurrency to be trustworthy" a - Tra	Student's t	7.54	71.00	< .001

Normality Test (Shapiro-Wilk)

			W	p
Rate your perceptions of cryptocurrencies as an investment oppo	-	"Do you consider this cryptocurrency to be trustworthy" a - Tra	0.87	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
Rate your perceptions of cryptocurrencies as an investment oppo	72	2.93	3.00	1.08	0.13
"Do you consider this cryptocurrency to be trustworthy" a - Tra	72	2.01	2.00	0.86	0.10

Table 15: Paired Sample T-Test AD A

Table 15 shows the paired sample T-test for the responses regarding the first advertisement AD A, the following data was highlighted. The T-value was given as 7.54 with a p-value of <0.001. A P-value of <0.05 told us that the differences between the perceptions of cryptocurrencies before and after the test were statistically significant. Furthermore, a t-value of 7.54 highlighted that the differences between the mean values, representing the overall trust in cryptocurrencies before and after the influence of AD A, were also large. To better understand if AD A had a positive or negative effect on the overall trust further descriptives were analyzed. The data showed that on average trust in cryptocurrencies was 2.93, this means that most participants indicated they had a neutral view of cryptocurrencies before being exposed to AD A. After being introduced to AD A the average rating of trust decreased to 2.01, this indicated that most participants had a low level of trust for the cryptocurrency Lumincoin. This change of 0.92 from 2.93 to 2.01 meant that participants decreased their level of trust for cryptocurrencies after being exposed to AD A. The values from the test showed that *"Exposure to influencer marketing impacts the level of trust in a cryptocurrency*", meaning that this hypothesis can be accepted for AD A.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
Rate your perceptions of cryptocurrencies as an investment oppo	"Do you consider this cryptocurrency to be trustworthy"B - Tran	Student's t	7.93	71.00	< .001

Normality Test (Shapiro-Wilk)

			W	p
Rate your perceptions of cryptocurrencies as an investment oppo	-	"Do you consider this cryptocurrency to be trustworthy"B - Tran	0.92	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
Rate your perceptions of cryptocurrencies as an investment oppo	72	2.93	3.00	1.08	0.13
"Do you consider this cryptocurrency to be trustworthy"B - Tran	72	1.94	2.00	1.05	0.12

Table 16: Paired sample T-Test AD B

The same analysis is done in table 16, which showed the paired sample T-test for the responses regarding the second advertisement AD B, the following data was extrapolated. The T-value was calculated at 7.93 with a P-value of <0.001. The P-value, which was <0.05, demonstrated that the differences between the perceptions of cryptocurrencies before and after viewing AD B were statistically significant. Additionally, the T-value demonstrates that the differences between the mean values, representing the overall trust in cryptocurrencies before and after the influence of the advertisements, were significant and larger than that in AD A. To determine the exact effect that AD B had on the participants further data was analyzed. The mean value identifying the level of trust in cryptocurrencies before AD B was identical to the one previously analyzed in AD A, at 2.93. However, after being introduced to AD B the mean level of trust that participants indicated fell from 2.93 to 1.94. This is a decrease of 0.99, meaning that participants went from a neutral level of trust in cryptocurrencies to a low level of trust after being exposed to AD B. Interestingly, the decrease in trust is greater in AD B at 0.99 compared to the decrease in AD A at 0.92. This meant that the influencer in AD B had an even greater negative impact on trust. The values from the test showed that the results were statistically significant and therefore the hypothesis that *"Exposure to influencer marketing impacts the level of trust in a cryptocurrency*" was correct and can be therefore accepted for AD B.

Paired Samples T-Test

Paired Samples T-Test

			statistic	df	p
Rate your perceptions of cryptocurrencies as an investment oppo	"Do you consider this cryptocurrency to be a trustworthy" C - T	Student's t	9.37	71.00	< .001

Normality Test (Shapiro-Wilk)

			W	p
Rate your perceptions of cryptocurrencies as an investment oppo	-	"Do you consider this cryptocurrency to be a trustworthy" C - T	0.91	< .001

Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
Rate your perceptions of cryptocurrencies as an investment oppo	72	2.93	3.00	1.08	0.13
"Do you consider this cryptocurrency to be a trustworthy" C - T	72	1.69	1.50	0.87	0.10

Table 17: Paired Sample T-Test AD C

Another analysis was done for AD C, table 17 shows the paired sample T-test. The T-value was calculated at 9.37 with a P-value of <0.001. Based on the P-value, which was <0.05, it demonstrated that the differences between the perceptions of cryptocurrencies before and after viewing AD C were statistically significant. A closer look at the T-value from this test demonstrated that the differences between the mean values of trust in cryptocurrencies before and after, were the highest out of all three of the advertisements. To determine which direction this difference pointed to, positive or negative, further analysis of the data was required. The descriptives showed the mean value of trust in the cryptocurrency Lumincoin was at a very low value of 1.69. Comparing the levels of trust before viewing AD C, we can see a significant decrease of 1.24 in the level of trust. This means that participants went from a neutral level of trust in cryptocurrencies to a very low level. The values from the test showed that the results were statistically significant and therefore the hypothesis that *"Exposure to influencer marketing impacts the level of trust in a cryptocurrency*" was correct and can be therefore accepted for AD B.

4.5 Blockchain Knowledge and Impact of Influencers

The next section of results discusses how blockchain knowledge may impact the effect influencers have in cryptocurrency marketing. To determine if there were any significant relationships in the data and accept or reject the hypothesis "*Experience with cryptocurrencies moderates the impact of influencer marketing*" the following questions from the survey were used:

- What is your understanding of blockchain technologies?
- Do you consider this cryptocurrency to be a trustworthy investment?

To measure how the level of cryptocurrency experience can impact the effect of influencer marketing analysis of responses the participants were separated into different categories. By using the question "What do you rate your knowledge of cryptocurrencies" we can divide the groups into two categories, "Little to no experience" and "High Experience". The question is measured on a 5-point Likert scale, ranging from Low to very high. Participants who indicated a Low to medium were placed in the Low Knowledge group, whilst participants who indicated a high to very high were placed in the high knowledge group. By having two separate groups the data was analyzed through an independent sample T-test to determine if there was a significant difference between them. The paired sample T-test was conducted on all influencer advertisements. By conducting three different tests this gave a better understanding of how the differences in each advertisement may also change the trustworthiness of the cryptocurrency Lumincoin for low and high-knowledge participants.

Independent Samples T-Test

Independent Samples T-Test

		Statistic	df	p	Mean difference	SE difference
"Do you consider this cryptocurrency to be trustworthy" a - Tra	Student's t	−0.73	70.00	0.469	−0.15	0.21

Group Descriptives

	Group	N	Mean	Median	SD	SE
"Do you consider this cryptocurrency to be trustworthy" a - Tra	Low Knowledge	44	1.95	2.00	0.78	0.12
	High Knowledge	28	2.11	2.00	0.99	0.19

Table 18: T-Test and Group Descriptives AD A

The following data in table 18 shows the independent sample T-test results regarding the first advertisement AD A. The T-value is given as -0.73 with a P-value of 0.469

and a mean difference of -0.15. This data indicated that on average the participants with a lower knowledge of blockchain perceived a lower level of trust in the cryptocurrency Lumincoin at a mean of 1.95 and 2.11 for the high knowledge group. Although there is a difference between the two mean values of the groups the P-value is higher than the chosen significance level of 0.05 at 0.469. The differences between high knowledge of blockchain and low knowledge were therefore not statistically significant. In this case, the hypothesis "*Experience with cryptocurrencies moderates the impact of influencer marketing"* can be rejected, and the null hypothesis can be accepted for AD A.

Independent Samples T-Test

Independent Samples T-Test

		Statistic	df	p	Mean difference	SE difference
"Do you consider this cryptocurrency to be trustworthy"B - Tran	Student's t	0.56	70.00	0.576	0.14	0.25

Group Descriptives

	Group	N	Mean	Median	SD	SE
"Do you consider this cryptocurrency to be trustworthy"B - Tran	Low Knowledge	44	2.00	2.00	1.06	0.16
	High Knowledge	28	1.86	2.00	1.04	0.20

Table 19: T-Test and Group Descriptives AD B

The following data in table 19 shows the independent sample T-test results regarding the second advertisement AD B. The T-value is given as 0.56 with a P-value of 0.576 and a mean difference of 0.14. This data indicated that on average the participants with a lower level of blockchain knowledge perceived a higher level of trust in the cryptocurrency Lumincoin with a mean value of 2.00 in respect to 1.86 with the group with high knowledge. Although there is a difference between the two groups the p-value is higher than the statistically significant level of 0.05 at 0.576. This indicated that the differences in the two groups were not significant and were mainly due to random chance. Because of this the hypothesis "*Experience with cryptocurrencies moderates the impact of influencer marketing"* can be rejected, and the null hypothesis can be accepted for AD B.

Independent Samples T-Test

Independent Samples T-Test

		Statistic	df	p	Mean difference	SE difference
"Do you consider this cryptocurrency to be a trustworthy" C - T	Student's t	0.96	70.00	0.340	0.20	0.21

Group Descriptives

	Group	N	Mean	Median	SD	SE
"Do you consider this cryptocurrency to be a trustworthy" C - T	Low Knowledge	44	1.77	2.00	0.96	0.14
	High Knowledge	28	1.57	1.00	0.69	0.13

Table 20: T-Test and Group Descriptives AD C

The following data in table 20 shows the independent sample T-test results regarding the second advertisement AD C. The T-value is given as 0.96 with a P-value of 0.340 and a mean difference of 0.20. This data indicated that participants with lower blockchain knowledge have a slightly higher level of trust (0.20) than participants with higher blockchain knowledge. Although there is a difference between the two groups the P-value is higher than the statistically significant figure of 0.05 at 0.340. This means that the slight difference in the mean between the two groups low and high was not statistically significant. In this case, the hypothesis "*Experience with cryptocurrencies moderates the impact of influencer marketing"* can be rejected, and the null hypothesis can be accepted for AD C.

After analyzing all three of the advertisements it seems as though the difference in experience with cryptocurrency impacted the effect of influencer marketing. All three independent sample T-Tests conducted did not show any statistically significant results as all three tests presented a P-value >0.05. Further analysis was done by calculating the mean values of all low and high-knowledge participants across all three of the advertisements to gain a better understanding. The low-knowledge participants placed a mean value of 1.95 for AD A, 2.00 for AD, and 1.77 for AD C when asked "Do you consider this cryptocurrency to be a trustworthy investment?". This meant that Low knowledge participants had an average of 1.91 across all three of the advertisements presented to them. The high-knowledge participants placed a mean value of 2.11 for AD A, 1.86 for AD B, and 1.57 for AD C when asked "Do you consider this cryptocurrency to be a trustworthy investment?". This meant that high-knowledge participants had an average of 1.85 across all three advertisements presented to them. Overall high knowledge participants placed a lower level of trust in the fictional cryptocurrency Lumincoin, with a slightly lower score of 1.85 compared to the low

group of 1.85. It should be noted that overall there were only 28 participants that were considered high knowledge and 44 participants that were considered low knowledge.

5 Conclusion

At the start of this research paper, four sub-questions were introduced as a guide to carry out the literature review and the survey. After having completed the experimental survey design the results could be used to answer the following questions. *Do certain influencers have a greater impact on changing perceptions of cryptocurrencies than others?* The paired sample T-test conducted showed that only one of the three advertisements showed a significant change in the willingness to invest in the fictional coin Lumincoin when comparing them head-to-head. More specifically, participants showed a greater willingness to invest in AD B featuring the influencer Cristiano Ronaldo than they did in the other advertisements. This could be attributed to this individual having the largest group of followers, meaning that more of the participants recognized him and would therefore trust him more. Although the data suggested that there were some differences in mean values of willingness to invest and overall trust between the three influencers, overall only differences between AD B and AD C were statistically significant. Nevertheless, it does seem that the influencers with the most overall popularity on social media have a bigger impact than others.

The same results can be seen in the overall trust factors of the influencer. Answering the sub-question "*To what extent does the credibility and trust of an influencer play a role in changing consumers' perception of cryptocurrencies?"* The data showed that overall, there was a higher correlation between the participants' trust and credibility in an influencer and willingness to invest, rather than an individual's perception of "how important this influencer is to you" and willingness to invest. The strongest correlation was seen in AD C, which had the lowest overall mean score for willingness to invest at 1.58 and the highest correlation value between trust and willingness to invest. The other advertisements, AD A and AD B had slightly lower scores for their correlations but had higher mean values for overall willingness to invest at 1.72 and 1.79 respectively. In all three tests, there was a statistically significant positive correlation between the value of trust that was placed and the willingness to invest. This means that participants who do not trust the influencer were more likely to not invest, whereas participants who do trust the influencer were more likely to invest.

Overall, the trust in cryptocurrencies from the participants in the survey was at 2.93, meaning on average participants were indicating a low to neutral level of trust before being introduced to the advertisements. After being introduced to AD A, AD B, and AD C the level of trust that consumers had decreased to 2.01, 1.94, and 1.69 respectively. In all cases, the overall impact of all the influencers was negative regarding the level of trust that participants perceived. Additionally, the most influential advertisement was AD C, where participants indicated the largest decrease in trust of cryptocurrencies with a mean of 1.69 and a difference of 1.24 from the original trust value. This answers the sub-question "*How much can influencers affect the overall trust in the cryptocurrency space?",* showing in general influencers have a negative impact on trust in cryptocurrencies. One thing to note is that the question asked about the level of trust in cryptocurrencies was referring to the whole sector in general, whilst the second question regarding trust was tied specifically to the fictional cryptocurrency Lumincoin. This may have affected the results and led to the differences in values being also partially attributed to the fictional coin rather than just the influencers present in the advertisement.

The final sub-question discusses "*To what extent does knowledge in blockchain technologies moderate the effects of influencer marketing?".* After having divided participants into two groups of high and low blockchain knowledge an independent sample T-test was used. Both groups recorded their perceived level of trust in the cryptocurrency Lumincoin after being exposed to the advertisements, and showed there were no significant differences. The differences in the mean level of trust between high and low blockchain knowledge for AD A were -0.15 and 0.14 and 0.20 for AD B and AD C respectively. This meant that low blockchain knowledge participants indicated a lower level of trust compared to higher knowledge participants in AD A. The opposite was recorded for AD B and AD C, where lower-level knowledge participants indicated a higher level of trust. An issue in this specific experiment was that the low and high-knowledge participants were not equally divided meaning that the data could not be as accurate. Nevertheless, no accurate conclusion can be drawn for this specific question as all tests were statistically invalid.

Some limitations to point out in this research paper and the survey conducted with it were as follows. One of the main limitations of the study was the fact that some users may have answered the questions in the survey differently because of the fictional cryptocurrency Lumincoin. The main aim of the survey and the research paper was to measure the effectiveness of influencer marketing. Some participants in the survey may have had existing views on cryptocurrencies, from past experiences in investing or exposure from past online advertisements. The fictional coin was created with the main objective of removing as much bias that individuals could have had for existing cryptocurrencies such as Bitcoin. Nonetheless, the fictional coin was created to look believable and realistic to simulate more accurate results. Therefore, this may have led some participants to believe that it was a coin they had previously seen and rated it positively or negatively according to their existing views. This meant that more than one variable was being changed, therefore the answers given on the survey and therefore the results in the analysis could have been impacted.

One of the less obvious limitations was that even though the advertisements were separated they were still in sequence and were introduced very quickly one after the other. One of the main problems was that the participants' views may have been altered during the experiment. Every participant was exposed to the same three advertisements all in the same order starting from AD A followed by AD B and lastly, AD C. There was no reason for the order of the advertisements, although looking at the analysis of the results it does appear as though there was a pattern forming. The responses related to willingness to invest as well as the overall trustworthiness of cryptocurrency seemed to decrease as more advertisements were presented to the participants. One possible reason for this is that participants may have gotten tired of seeing repetitive advertisements in the same currency and therefore got more frustrated towards the end.

As cryptocurrencies are an ongoing topic of discussion this research is highly susceptible to the current market demand and status of cryptocurrencies. As of June 2023, many cryptocurrencies have seen a huge decrease in price and market capitalization. This indicated that consumer demand and sentiment towards cryptocurrencies as well as other blockchain-related technologies is very low. This would explain why general sentiment towards all three of the advertisements presented in this research had a very low average towards willingness to invest as well as trustworthiness. As previously indicated in the survey demographics, around 56.7% of the users were already invested in cryptocurrencies. Likely, a majority of the

participants who were invested at the time of this survey had incurred losses in their cryptocurrency investments in the past months. This would lead them to not only have less trust in cryptocurrency but furthermore to be far less affected by the influencers and the advertisements themselves.

Another key issue in this experimental design was that there was no control group to compare the results with. The fictional coin was created to have the most realistic results and have no existing perceptions of any existing cryptocurrency and solely concentrate on the effect of the influencers. However, without having a control group there was no way of understanding if the participants would have given the same answers regarding the trustworthiness of the cryptocurrency Lumincoin, willingness to invest, and overall perceptions of it, without the exposure to influencers. To better understand just how influential the advertisements were two separate surveys could have been conducted. The first survey would have been identical to the one used in this study. The second survey would not include any influencer advertisements, instead, it would include a description of the cryptocurrency or an introduction video explaining the benefits that arise from investing in it. By doing so an independent sample T-test could have been used, similar to the one conducted in this research paper, and compare the results head-to-head with the first survey. This would imply that more participants were needed in total for the research, with an equal number of participants answering both survey one and survey two. This brings us to the last limitation of the research that was carried out which is concerned with the total number of participants that were involved in the survey conducted. As seen in the demographics section of the paper only 72 participants were asked for the analysis of the four hypotheses. Although this number is still considered to be high enough to conduct proper statistical analysis, a higher number would have solidified the findings. If more participants were present, the experiment conducted would have been more accurate, and the conclusions drawn from them would be even more valuable in the improvement of research in the sector of cryptocurrencies and marketing.

This research paper used existing bodies of literature as well as primary research in the form of an online survey in order to contribute to the pre-existing knowledge in the space of marketing and cryptocurrencies. Although not all tests were able to show accurate results due to statistical invalidity, overall, each test served a purpose by giving new perspectives and insights into the topic. By using the literature review as a basis of information for the survey design, each question presented to the participants

involved was made to incite a useful and informative set of data used for the research. Therefore, in conjunction with existing literature and the overall results of the survey designed this research explored and contributed to different paradigms relating to the main research question *"How do consumers' perceptions of cryptocurrencies change when exposed to different types of influencer marketing?".* In conclusion, this research hopes to serve as a basis for further improvement and understanding into the topics of influencer marketing and cryptocurrencies.

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8 Appendices

Appendix A: Excel file containing all results from the survey: https://www.dropbox.com/s/jf65drzqx692z43/SurveyReport-11165473-05-25-2023-T034345.869.xlsx?dl=0