Bachelor's thesis

International Business

2020

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# APPLICATION OF GAMIFICATION AND CRYPTOCURRENCY REWARDING MODEL IN SOCIAL MEDIA PLATFORMS TO ENGAGE AND RETAIN USERS- BLOCKCHAIN TECHNOLOGY

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# APPLICATION OF GAMIFICATION AND CRYPTOCURRENCY REWARDING MODEL IN SOCIAL MEDIA PLATFORMS TO ENGAGE AND RETAIN USERS- BLOCKCHAIN TECHNOLOGY

Gamification is a set of processes that enables to solve problems by applying the characteristics of game elements. One of the significant characteristics of Gamification is 'engaging-users.' In Game context, Gamification techniques involves attracting players, then sustaining the players. Interaction with the players starts as soon as users enters the game like introducing players to the game and tasks. Tasks engage players and provides them with sense of fulfilment while points and rewards help with satisfaction with the game. Likewise, Gamification has been applied to various non-game contexts in various social media in order to attract maximum visitors. While Cryptocurrency Rewarding Model, that rewards users in digital currency or cryptocurrency for the time spent in social media aims for similar results. It is involved in not only attracting visitors but also engaging the visitors, so they spend more time in social media.

The purpose of this thesis is to analyze how gamification and cryptocurrency rewarding model can be applied in social media using the blockchain technology. While giving rewards to players in gaming context is usually heard of. This research analyses rewarding visitors with cryptocurrencies for their time spend on social media. The thesis further explains how user's engagement is influenced with the help of 'gamification' and 'cryptocurrency rewarding model.' The research is carried out by distributing questionnaires to a certain group of Business and IT students in Turku. Conducting an online survey and sending out questionnaires using online resources deemed to be the most appropriate form of collecting data due to novel coronavirus pandemic.

KEYWORDS:

Gamification, Cryptocurrency, Rewarding Model, Social Media, Blockchain Technology

Kabita Giri

# GAMIFIKAATION JA KRYPTOVALUUTALLA PALKITSEMISEN MALLIN SOVELTAMINEN SOSIAALISEN MEDIAN ALUSTOILLA KÄYTTÄJIEN SITOUTTAMISEKSI JA SÄILYTTÄMISEKSI-BLOCKCHAIN TEKNIKKA

Gamification on joukko prosesseja, joiden avulla voidaan ratkaista ongelmia soveltamalla, pelielementtien ominaisuuksia. Yksi Gamifikaation merkittävistä ominaisuuksista on 'käyttäjien houkutteleminen.' Pelin yhteydessä. Gamification-tekniikoilla tarkoitetaan pelaajien houkuttelemista, sitten pelaajien mielenkiinnon ylläpitämistä. Vuorovaikutus pelaajien kanssa alkaa heti, kun käyttäjät tulevat peliin, kuten pelaajien tutustuminen peliin ja tehtäviin. Tehtävät houkuttelevat pelaajia ja tarjoavat heille tyydytyksen tunteen, kun taas pisteet ja palkinnot auttavat tyytyväisyydessä peliin. Samoin Gamifikaatiota on sovellettu erilaisiin ei-pelikonteksteihim erilaisissa sosiaalisissa medioissa maksimaalisen kävijämäärän houkuttelemiseksi. Kun taas kyptovaluutalla palkitsemisen malli, joka palkitsee käyttäjiä digitaalisessa valuutassa tai kryptovaluutassa sosiaalisessa mediassa vietetystä ajasta, pyrkii samanlaisiin tuloksiin. Se on osallisena vierailijoiden houkuttelemisen lisäksi myös vierailijoiden sitouttamisessa,jotta he viettäisivät enemmän aikaa sosiaalisessa mediassa.

Tämän opinnäytetyön tarkoituksena on analysoida, kuinka gamification-ja kryptovaluutalla palkitsemisen mallia voidaan soveltaa sosiaalisessa mediassa käyttämällä blockchain-menetelmää. Vaikka palkkioiden jakamisesta pelaajille pelikontekstissa kuullaan yleensä. Tämä tutkimus analysoi vierailijoiden palkitsemista kryptovaluutoilla sosiaalisessa mediassa vietetystä ajasta. Opinnäytetyössä selitetään tarkemmin, kuinka 'gamification' ja 'kryptovaluutalla palkitsemisen malli' vaikuttavavat käyttäjän sitoutumiseen. Tutkimus on suoritettu jakamalla kyselylomakkeita tietylle ryhmälle Turun liiketalous-ja tietotekniikkaopiskelijoita. Tutkimuksen suorittaminen netin välityksellä ja käyttämällä verkkoresursseja pidettiin sopivampana tiedonkeruutapana uuden koronaviruspandemian vuoksi.


ASIASANAT:

Gamification, kryptovaluutalla, palkitsemisen malli, sosiaalinen media, blockchain-menetelmän

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# 1 INTRODUCTION

## 1.1 The objective of the thesis

About a couple of decades ago, communication was costly as well as time consuming. When sending letter was the only option to communicate, people had to wait months and months for letter to deliver and to receive it. After telephone service was available, the communication was not time consuming as sending letter, but people had to pay enormous amount of money in order to make a phone call. With the innovation of internet, social media and social networking, the limitations were eliminated, and communication became facile. Social media appear to play an essential part of people's lives around the globe. Social media is everywhere. (Gilbert, 2020) As per the website BroadbandSearch, the daily time spent on social networking has risen significantly over the period of time. As of 2019, people spend 153 minutes per day on social networking. Everyday number of people who use social media increases. As of 2020, around 3,8 million people around the world use social media. (Broadband Search, 2020)

With lots of apps and contents available on the internet, people tend to spend excessive time on social media. With lots of apps and websites emerging, the apps and websites are in pressure to create great content in order to keep the users or visitors captivated. If not, the apps become obsolete or replace by apps with better features for instance, social networking app Hi5 was replaced by Facebook (The Economic Times, 2017). Gamification is an element used by social networking websites or apps in order to attract the users or visitors and keep them engaged. Ecommerce corporation such as eBay has adopted gamification. eBay's 'eBay's bidding and feedback system' was able to make shopping experience for shoppers fun and interactive. (Chou, 2020) When a shopper won the bid, shopper was able to feel a sense of achievement. Feedback system was able to create a buyer-seller relationship, when a buyer could give his/her opinion of the product and its delivery. It also gave buyer an idea what buyer thought of the whole shopping experience and the product. (Chou, 2020)

With great content and gamification, the websites and apps are able to attract visitors and engage the visitors with an aim that visitors spend maximum time on them. While social media intends to generate utmost user satisfaction, users are also, overwhelmed with advertisements(ads). Although, some social media provides an option to become a premium user by paying one-time amount or be a member and pay monthly. The users

are losing money along with the excessive time spent on social media. Not always the ads are relevant to the users and if one does not want to become a premium member, user have to watch the whole ad or part of the ad. Websites and apps make certain amount of money when users watch ads whereas users are not rewarded for time spent watching something irrelevant. Cryptocurrency rewarding model is a model that compensate users' time spent on social media, since the currency is digital. Thus, this thesis aims to investigate whether gamification and cryptocurrency rewarding model can be applied to social media analyzing blockchain technology.

1.2 Research questions

The aim is to understand how gamification and cryptocurrency rewarding model contribute to social media users enhancing better user experience. The thesis aims to address the practicality of gamification, also how gamification could put into application in non-gaming context and provide better and longer user engagement. Whereas, intending to apply blockchain technology to build user trust and enhance user satisfaction. This thesis intents to take the effectiveness of gamification and cryptocurrency rewarding model into consideration while applied to social media.

1) How can applying gamification to social media websites and apps exercising blockchain technology contribute to greater user satisfaction?
2) How can applying cryptocurrency rewarding model to social media websites and apps exercising blockchain technology increase user participation?
3) Would gamification and cryptocurrency rewarding model exercising blockchain technology be effective if applied?

The above questions are originated from the propositions that:

I. Applying gamification in non-gaming context for example websites and/or apps provides user experience that is enjoyable.

II. Applying cryptocurrency rewarding model in social media websites and/or apps generate increase in user engagement.

III. Exercising blockchain technology assists to secure trust in users while applying cryptocurrency rewarding model as well as gamification in social media websites and apps.

The propositions are derived from the researcher's personal experience with playing video games and using social media websites and apps for years. The researcher has personally used apps that rewards one with cryptocurrencies. The researcher has first-hand observed the similarities between the techniques used in video games and most social media apps. The researcher spends considerate time on social media and often indulge in online shopping, online food orders, playing games and aims to ascertain the application of gamification and cryptocurrency rewarding model on social media. Application of blockchain technology is also assessed. Furthermore, the final purpose of the thesis is to associate the interconnection between gamification, cryptocurrency rewarding model and blockchain technology.

## 1.3 Personal Motivation

Personal Motivation comes from researcher keen interest on the topic of 'gamification,' 'cryptocurrency rewarding model,' 'social media,' and 'blockchain technology.' The researcher has been playing video games or online games since a very young age. While the researcher realizes applying 'gamification' in non-gaming context to be intriguing. While in school an educational app 'Khan academy' had assisted the researcher to perform better in school. When the researcher found studying from text materials dull at times, researcher switched to educational app 'Khan academy.' The researcher noticed app used techniques like tasks, levels and rewards that were related to game design. While the researcher found motivation to go for 'walks' when she found an app that rewards users in respect to steps taken outdoors. Such aspects led the researcher acquire more knowledge in the field.

## 1.4 Thesis Structure

The thesis assembles several chapters that intents to provide thorough theoretical information and knowledge concerning the thesis topic. The thesis is compiled into five

major chapters: Introduction, theoretical framework, methodology, analysis and conclusion. Taking the volume limitation of the thesis into consideration, the thesis aims to comprehend the relevant data and information.

The first chapter of the thesis, introduction consists of four sub chapters, objective of the thesis, research questions, personal motivation and thesis structure. 'Objective of the thesis' discusses about the aim of the thesis and descriptive actions in order to reach the aim. Sub chapter 'research questions' compiles of the questions that the research intends to answer. Research questions determines the foundation of the research method, quantitative method or qualitative method that shall be carried out in this thesis.

The second chapter delivers comprehensive analysis of chosen research topic. The second chapter will comprise of theoretical framework that initiates and illustrate the existence of the research problem. The theoretical framework shall aim to conceptualize the base of the research, examine the relation between the key terms and support it with already existing theories and data. The literature review shall provide secondary data, data that are not first-hand but shall aid in answering the research questions and provide an auxiliary viewpoint.

The third chapter is methodology. The methodology explores the research method that are implemented in the research. The methodology provides detailed information of the process carried out in order to collect the data for the research. The sub section is divided into: Research objective, research design, data collection and analysis and reliability and validity. The chapter along with sub chapters shall explain the hypothesis chosen to formulate the research questions. It will inform on the reason behind the chosen method to carry out the research that enables readers to analyze the reliability and validity of the research.

The fourth chapter is analysis that holds information that are drawn from the findings. The chapter, 'analysis' as the name suggests analyzes the data that are extracted from the carried-out research.

The fifth chapter is the conclusion, which includes the findings, relevance, generalization and possible further study of the thesis. This chapter will give descriptive information on findings and clarify the findings for better understanding. This chapter will also discuss the limitations, implications, and evaluate the research.

# 2 THEORETICAL FRAMEWORKS

A vast number of researches has been conducted on the topics 'gamification' and 'cryptocurrency'. The desired interest in the field has been represented in academic context. A few papers were on Implementation of Gamification and cryptocurrency as a rewarding method on Social Media. These theoretical frameworks intend to give definition on the terms, 'gamification,' 'cryptocurrency,' 'rewarding model,' 'social media,' 'blockchain technology,' followed by the relation between them.

## 2.1 Application of Gamification in Social Media such as Web and Apps

Social media has become an integral part of peoples' lives all over the world. As of Digital 2020 Global Overview Report (We are Social, Hootsuite, 2020), more than 3,8 billion people use social media with the trend suggesting that more than half of the world's total population will be using social media by end of June 2020. The data indicates the half of the time people are using their mobile phones on a day. They are using social and communication apps. (We are Social, Hootsuite, 2020) Apps such as Facebook and Twitter were originally created for communication purpose. Now almost every social media web and apps that been utilized as a platform for advertisement and marketing. Social media marketing aims to connect businesses with social media users to make awareness and building up a brand, increases sales. This involves creating captivating content in order to engage users. (Buffer, 2019)

Businesses has been able to learn from video games and extracting its techniques and tools that engages gamers into the games to the digital world. Playing video games has been a hobby people of different gender and age around the world. As of 2020, there were approximately 2,7 billion gamers around the word. (Gough, 2020) Video games are able to engage gamers on multiple levels by providing rewards and bonus points when accomplishing and overcoming obstacles difficulties, introducing new background or stories. Video games are able to captivate gamers by introducing them to virtual worlds where gamers tend to react well to interactive storytelling. With massive storylines, graphics and themes, game designers are able to reach 'a large number of audiences and stimulate gamers' engagement' (Erik M. Gregory, 2008).

| | Number of gamers in millions |
|---|---:|
| Asia Pacific | 1,506 |
| Europe, Midde East and Africa | 758 |
| Latin America | 234.05 |
| North America | 203 |

Showing entries 1 to 4 (4 entries in total)

Figure 1: Number of video gamers worldwide in 2020, by region (Gough, 2020)

Gamification is the application of implying game mechanics into social media in order to engage users. The term 'gamification' has been able to gather attention over past few years with companies implementing game techniques on social media marketing. Although the term 'gamification' has recently gained popularity, the concept of applying game mechanics is an old concept. Examples of applying gamification into digitalized platforms are educational computer games Munchers and JumpStart. These educational games were popular among students in USA in 80s and 90s. (Graham, 2020) In modern day, an educational based app' Khan Academy' has gained worldwide popularity. Game-based learning not only sparked interests among the students but also managed to engage users and gain popularity. According to website Skoll Foundation, 100 million people use the educational based app Khan Academy every day. (Skoll Foundation, 2013)

According to  (Zichermann & Cunningham, 2011) 'the basic game mechanics and structures are the essential building blocks of any gamified experience.' Badges, points, levels, feedback are gaming techniques that are applied to non-gaming context in order to create game-like experiences. Understanding the basics is a crucial step to master gamification. One of the game mechanics that remains a cornerstone throughout the gamification development is 'feedback.' (Zichermann & Cunningham, 2011) Feedback refers to reaction to a process or activity that provides the idea whether particular product, someone's work or outcome is liked. (Cambridge Dictionary, 2020) Feedback provides information to gamers about their progress and level they are in. As the score rises, gamers are provided with feedback that they are doing well, and the players are rewarded by being promoted to next level. Likewise, in non-gaming context, e-commerce

apps like amazon provides feedback feature to the website where buyer provides feedback about the good bought from the seller. (Zichermann & Cunningham, 2011) Apps like, Espresso house, provides 11th coffee for free, Apps for clothing store H&M provides plus membership with added benefits than basic membership after gaining certain points. Such techniques provide sense of achievement and/or gaining status after collecting a point and promoted to plus membership.  An example of a gamified web is Yahoo! Answers which is a community-driven question and answer collaboration website. It is a site that allows internet users to post questions and other users to answer the questions. The website provides encourage to the participation of the users rather than the accuracy of the answers. There is a thumbs up and thumbs down option for the answers where users give thumbs up to the answers they agree and thumbs down to the answers they disagree. This way the website encourages participation and engagement of the users and ensures enjoyment with users given freedom to answer the way they want. (Zichermann & Cunningham, 2011)

### 2.1.1 Defining Gamification

'Gamification' may be considerably new term but implementing 'game-thinking' is not a new concept. Military has been using the conception over hundreds of years. Military simulations also referred as war games that creates deception in order to test the theories of warfare. Just about 60 years ago, authors had started to write books where they explored the phycology of 'game' or 'gamify.' Slowly, the concept was seen in Hollywood movies in 1980s. (Zichermann & Cunningham, 2011) Before digital world, people would develop games and play games, in order to make games more fun and in order, teams would decide on rules. One of the early features of mobile phones was game itself. In 1998, Nokia released a version of classic snake games on its mobile devices (GamePix, 2020). Now, millions of games have been developed and millions of people engage in playing games every day (Bunchball Inc, 2020). The innovation of implementing gamification in non-gaming context is derived from the popularity of games among people. The innovators detected the opportunities and hence, experimented on the business. Gamification is a set of game design elements that is applied to non-gaming environment in order to generate or increase user participation. (Bunchball Inc, 2020) Gamification is a set of processes that is involved in engaging a participant, guiding them by providing methods and/or rules and making their experience worthwhile. Gamification uses game mechanics in order to make the user experience satisfying.

Such positive patterns are resultant of 'gameful' experiences accompanied by motivational elements executed by the service. Gamification is adopted in non-gaming context in order to stimulate similar conceptual experiences as games. (Hamari, et al., 2014) Implementing gamification led to understanding of human needs and fulfilling them, gamifying whether a product or service focused on satisfaction of the consumers. To acquire similar engagement of users when they play games, the same functions and techniques were considered such as reward system; rewards achieved when reached certain levels, collected certain points. Gamification aids in orienting businesses' interests with 'intrinsic motivations' of the users boosted by the reward mechanisms that not only attracts the user but also aids in customer retention. Different people understand gamification in different ways, some viewing it as a tool to advertise goods & services, other viewing it as a tool that direct behavioral changes. No matter how users perceive it, gamification presents diverse attributes of games into the non-gaming context initiating user participation, engaging users and solving problems. (Zichermann & Cunningham, 2011)

2.1.2 Defining Internet and Social Media Platforms

Social Media, a computer based technology, assists in communication of ideas, opinions, thoughts, information, knowledge via construction of virtual networks and communities. (Dollarhide, 2019) Social Media is internet-based, all its activities implemented by the use of internet. 'Internet is an electronic communication system that connects computer network and organizational computer facilities around the world,' Merriam-Webster Dictionary (Merriam-Webster, 2020). The electronic communication provides sharing of documents, pictures, videos, own information and knowledge with the help of electronic devices such as computers, laptop, tablet, mobile phones via web-based software or applications. (Dollarhide, 2019) Web-based software is a software operated over the internet that is accessible through an Internet Browser. (Magic Web Solutions UK, 2020) Internet Browser also referred to as web browser is a software tool that enables users to view web pages on an electronic devices with internet. Internet Browser acts as an getway to the internet. (Grauschopf, 2019) Few examples of web browser are Firefox Mozilla, Google Chrome, Safari, Internet Explorer whereas few examples of web pages are Hotmail, Gmail, Yahoo!, Wikipedia. Web-based Applications in short knows as Web App or simply App is a specific sort of software programming that allows users to interact with a remote server via web browser interface. Examples of Web-Based Applications

are online payments systems, CRM- systems to manage multiple projects, systems allowing users to book flight tickets, hotel reservations and so on. (Lvivity, 2018)

Invention of social media provided faster and cheaper communication among friends and families in comparison to sending letters and telephones (Dollarhide, 2019). However, businesses started adopting social media as a medium to communicate with the customers. Social media has successfully taken various forms such as blogging, photos and videos sharing, reviews and feedbacks, providing virtual lessons. (Dollarhide, 2019) There are many platforms of social media, popular ones are Facebook, Twitter, YouTube, Snapchat, Instagram, LinkedIn. Social Media provides various activities and opportunities on the internet. LinkedIn is a platform for connecting with people and expanding career opportunities, Instagram is a phone and video sharing platform and connecting with people with similar interests, Facebook is for connecting with friends and families, YouTube is used to streaming music videos. Social medias are a vital tool for businesses in order to connect and engage with the customers, create customer profiles, increase sales via campaigns and advertisement, providing online customer service. For e-commerce businesses social media aids in providing a platform for businesses to promote their good and services, customers to give feedback and businesses could create loyalty programs and promotions. Over one-fifth of a user's online time is said to spend on social media. (Dollarhide, 2019)

2.2 Application of Cryptocurrency Rewarding Model- Blockchain Technology

Blockchain technology originally derived for the cryptocurrency, Bitcoin by Satoshi Nakamoto who managed to gain popularity in the recent years due to its unique characteristic. Blockchain is defined as a 'time-stamped' series of data that could only be distributed but not copied. Blockchain is in fact a chain of blocks of data that are encrypted. (Rosic, 2016) Cryptocurrency such as 'Bitcoin' is a digitalized medium of exchange that uses cryptographic hash function, meaning that the same input results in same hash. According to Jake Frankenfield, 'Hash function is a mathematical function that transforms given set of data into a bit string of fixed size' (FRANKENFIELD, 2020). Cryptocurrency applies blockchain technology influencing transparency and decentralization. (Rosic, 2017) Digitalization and social media affect many industries such as e-commerce, from physical stores to online stores. Social media has influenced

customers' buying habits as people could shop from the comfort of their home. Social media also influenced the way businesses promoted their goods and services as sellers did not necessarily needed a store but just a warehouse to put the items. (Valerio, et al., 2019) Likewise, social media has impacted cryptocurrency growth and blockchain technology. Starting from the social forums of the introduction of cryptocurrency and blockchain technology to the mainstream social media channel, there appears to be a relationship between social media, cryptocurrency and blockchain technology. The relationship seems to evolve with the dynamic influence each has on the other. Less than a decade ago, the value of the cryptocurrency, Bitcoin was worth less than 0.06 cents. (Rojas, 2020) Whereas now as of data provided by 'Morningstar for Currency and Coinbase for Cryptocurrency', the value of 1 Bitcoin is 8,755.22 Euro. Social media played a role in adding value to the cryptocurrency. The buzz about bitcoin started on a social forum, Bitcoin Talk, a page dedicated to debate and exchange of views and ideas about the cryptocurrency, Bitcoin and blockchain technology. About a decade ago, a member named, 'Laszlo Hanyecz,' posted about a potential bitcoin transaction for pizzas, he particularly asked for two large pizzas for an exchange of 10,000 Bitcoins. Social media has proven as a platform for marketing blockchain technology. (Rojas, 2020) As of 2020, 3.5 billion people use mainstream social media apps/channels like Facebook, Twitter, Pinterest, Snapchat (Mohsin, 2020). According to The Guardian, social media channel 'Facebook' is drafting a launch of its own cryptocurrency, named 'GlobalCoin' in 2020. This would allow Facebook's 1.73 billion daily active users' (Clement, 2020) money into digital coins. (Sweney, 2019)

Few social media platforms have adopted blockchain technology by rewarding the users with cryptocurrency for their time spent on the social media. One example is a social media platform named 'Steem.' Steem provides rewards in terms of cryptocurrency to the users who generate content. The platform reserve the reward compared to traditional platforms where the content generators would not make much, but the shareholders of the platforms would make a lot of money. 'Steem' offers an opportunities for the content creators to be the shareholder and reap benefits out of their hard work. (Steem, 2020) Another example is 'Steemit' that provides cryptocurrency for content created by the users. Steemit rewards with three main cryptocurrencies: STEEM, Steem Dollars and Steam Power. Steemit not only rewards the content creators but also to the users who upvotes the content by liking/voting and commenting on the content. (Steemit, 2020) Platforms like 'Steem' and 'Steemit' that rewards social media users with cryptocurrency

with blockchain technology manages to bring cryptocurrency, social media and blockchain technology in one place.

## 2.2.1 Defining Rewarding System

Rewarding System refers to the system created by a company to motivate/encourage the employees' efficiency by providing rewards. Rewards are generally separate from the salary but are usually in the monetary form. The different forms of reward could be providing bonuses, sharing profits, providing shares and dividents to the company. (Inc., 2020) While companies has been applying rewarding model to encourage their employees to perform better and achieve the company's goal, reward model can also be seen in social media and online communities (Cooper, 2011). Social media platforms has changed the way seller and customer interact. With the help of social media, customers do not need to visit the store, customers can go to the internet and visit the store's website. Physical interaction has changed to virtual interaction with the help of internet and social media. Social media platforms are willing build a customer base and drive as much customers to the website. (Cooper, 2011) Application like 'Foursquare' which is a local search-and-discover mobile app recommends users places to visit based on users' previous browsing or check-in history (Kim, 2015). 'Foursquare' applies gamification techniques such as badges, pins, stamps to add value to user experience. Such gamification techniques provides the customers a sense of competitiveness to collect more badges and pins than their friends and a sense of achievement when they collect as many badges, pins and stamps. Strategy like this encourages and rewards repetitive purchases, 'get tenth coffee for free' set by the coffee shop 'Espresso House' app is an example of this. (Cooper, 2011) Airline operator 'Ryanair,' E-commerce site 'Pretty Little Thing,' Sealine operator 'Viking Line,' provides discount codes or special offers to their email-subscribers list and special price for the members who download their apps. This strategy encourages new visitors to sign up and download their app and creates a more receptive customer base who receive special offers and discounts (Cooper, 2011). 'Kurkure' a snack brand owned by PepsiCo, came up with a strategy to attract and engage more users via advertising. 'Kurkure' challenged their customers to create great recipes and whoever wins were rewarded with cash prizes and opportunity to get their faces and recipe on Kurkure package.

## 2.2.2 Defining Cryptocurrency

While traditional markets had successfully managed to go virtual, payment system also became virtual. When buying a good from a seller, buyer needed to rely on financial institutions like bank in order to do the payment (Nakamoto, 2020). The financial institutions charge fees for each transaction and store a lot of its customers' private information (Nakamoto, 2020). There remains a chance of 'unavoidable' errors which causes disputes and eventually raising transactional costs in order to resolve it (Nakamoto, 2020). Considering the limitations and hassles in the payment with the third party, Satoshi Nakamoto invented an electronic payment system. The peer to peer electronic payment system would be held between two willing parties without the need for a third trusted party. (Nakamoto, 2020) Cryptocurrency, secured by cryptography, is a digitalized form of currency. Cryptography is an art of converting plain text into codes with encryption technology. (Frankenfield, 2019) Cryptography intends to maintain secrecy by use of codes so only intended parties are able to read and process the information in the code (Frankenfield, 2019). The text to code is reversible and only be accessed and read through a private and a public key (Frankenfield, 2019). The name 'cryptocurrency' is indeed derived from the word 'cryptography.' Cryptocurrency is a decentralized form of currency, meaning no authority controls it. (Frankenfield, 2019)This feature allows cryptocurrencies to be immune from government interference and manipulation. (Frankenfield, 2019) When the currency is decentralized, there is no occurrence of hefty transactional fees that are charged by the banks who are in charge of tracking customer's balances also transactional period is shortened. (Maria, 2016)

The value of cryptocurrency is derived merely on its supply and demand. Cryptocurrency is market based. The demand for the cryptocurrency is based on the confidence of the consumers on the digital currency with no interference of government. The most popular type of cryptocurrency which is also the first successful cryptocurrency introduced to the world is 'Bitcoin' that was released on 3$^{rd}$ January, 2009 by Satoshi Nakamoto. (Reiff, 2019) The figure below illustrates the creation of coin and processes of transactions. Network of peers are involved in the cryptocurrency. Each peer has a record possess record of absolute transactions and its history, accounting every balance. When a party say X sends a cryptocurrency for instance 1 bitcoin to other party say Y, it is signed by X's private key. After signing, this transaction is transmitted to the network, operating P2P which is sent from one peer to every other peer in the network. The transaction is although instantly recognized when it is in the network, but the confirmation takes a

certain amount of time. The confirmation of the transaction can only be done by the miners. The pending transaction can be forged but after the confirmation of the transaction the transaction cannot be forged, and the action is irreversible. The transaction then becomes a record like an entry in the ledger that is connected with various records or entries. This is called blockchain technology. (Rosic, 2017)
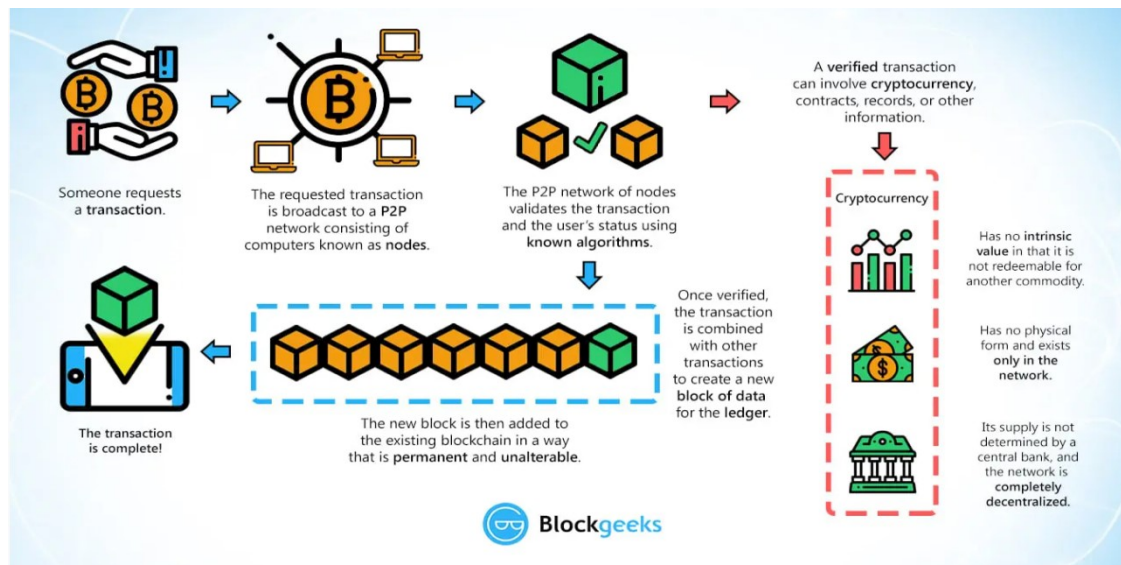


Figure 2: Transaction of cryptocurrency from one peer to other. (Rosic, 2017)

2.2.3 Defining Blockchain Technology

Blockchain technology, primarily formulated for the digital currency Bitcoin, keeps digital records of the transactions. Blockchain functions as a spreadsheet or a ledger bearing information about transactions that are entered when occurred. The technology allows digital transaction to be distributed but not copied. Once the transaction is registered and updated, it becomes impossible to forge and is irreversible. Each transaction when approved by millions of computers distributed around the net is written into a block. Each block refers to previous block, eventually forming a blockchain. (Rosic, 2016) Each transaction in the public spreadsheet or ledger is confirmed by a number of participants in the networking system, known as miners. Although, the digital currency Bitcoin has been criticized in many ways; one of the most controversial issues being its relation to the increase in illegal activities. Since, the currency is decentralized, meaning no government controls it and the transactions are anonymous, the explicit activities are

untraceable. Blockchain technology, on the other hand is immune to such controversies because the technology is said to work flawlessly. (Crosby, et al., 2015)

Two major features of the blockchain technology is 'distributed consensus,' and 'anonymity'. (Crosby, et al., 2015) Current digital world has us still trusting third parties and not only with the case of bank when transferring money from one party to another. For example, while browsing the internet, a certain certification authority informs us if the site is deceptive. Social networking sites just as Twitter, Instagram, Facebook let us know the privacy of our posts. Relying on the third parties for our activities possess risks such as data theft, hacking. (Crosby, et al., 2015) Satoshi Nakamoto developed blockchain technology to overcome such limitations. Blockchain technology applies 'digital consensus' and 'anonymity' where every individual digital transaction from past to present can be authenticated without compromising the privacy of the users. Blockchain technology can be implemented to both financial sectors and non-financial sectors. Non-financial applications can be applied when legal documents are proposed the proof of existence in digitalized and secured form. Legal documents such as artists sign record label, signing new house lease, marriage certificates are in encrypted form with privacy of the users being secured. (Crosby, et al., 2015)

## 2.3 Interconnection between gamification, cryptocurrency rewarding model and blockchain technology
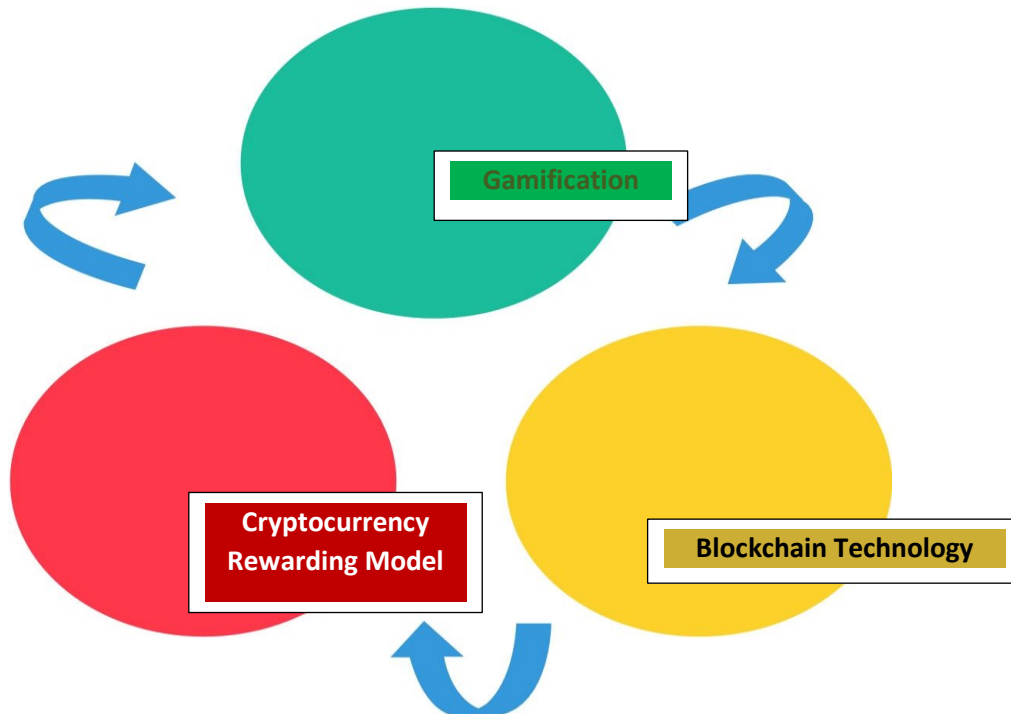


Figure 3: Vector Model: Interconnection between Gamification, Cryptocurrency and Blockchain Technology

Motivation originally derived from the term 'motive' meaning a drive or want that accrue in an individual. Motivation encourages an individual to proceed and take measures to reach their goals. In the work context, completing a specific task efficiently and effectively or simply performing their job can be motivated by factors such as salary, promotion, recognition, bonuses. (Juneja, 2020) Rewarding model emphasizes on remuneration that motivates people to perform specific tasks in exchange for a reward. An example could be a salesman who has a certain quota for example selling 50 designer watches a month in order to receive a commission or extra amount of money along with his/her paycheck. (Bravon, 2019) Another example in the workplace could be exceeding the expectations and performing above average in order to get promotion and recognition. Gamification applies remuneration as one of the tools for motivation. Gamification intents to put a user in a mindset that is motivated to complete a task in order to win a reward. (Bravon, 2019) There are two main types of motivation; extrinsic motivation and intrinsic motivation, both acting as factors in shaping human behavior (L. & M, 2008). Extrinsic

motivation occurs when one is motivated to do a task or achieve one's goal usually by external sources for an exchange of reward and/or to avoid undesirable outcome (Bravon, 2019). Examples of extrinsic motivation are: Studying for good grades because parents promised to buy a ps4, coming back home from party before agreed time with parents in order to avoid punishment. Intrinsic motivation occurs when one performs a task for one's own satisfaction rather than for any reward or to avoid undesirable outcome (Bravon, 2019). Examples of intrinsic motivation are: Cleaning one's home/apartment because one likes home/apartment clean and organized, feeling of accomplishment when one finishes one guitar lesson and learn new chords (Liew, 2020) Gamification combines both extrinsic and intrinsic motivation and applies various game techniques in non-gaming context such as in social media websites and apps. Gamification applies game mechanics such as providing rewards in forms of incentives, points, bonuses which is responsible for extrinsic motivation, whereas it provides intrinsic motivation by adding challenges and providing promotions and badges when one complete a task. (Bravon, 2019) Various websites on the internet provide cryptocurrency, digitalized currency in a form of reward for completing specific tasks. Website named 'Coinbase Earn' provides cryptocurrencies as incentives to verified 'Coinbase Earn' users in an exchange for watching short, simple explanatory videos and answering multiple choice questions correctly. Another reward-based website is Micro tasking which provides cryptocurrencies in exchange for doing small tasks such as spreading awareness about new cryptocurrency. Another example is an App called 'StormX' that compensates users for mundane tasks such as answering surveys, trying out various other recommended apps, or playing third party games. 'StromX' as well compensates users for their time spent on watching ads every 30 minutes. (Cloudbet, 2020) Application of cryptocurrency rewarding model is only possible with blockchain technology. Blockchain technology is a technical feature of cryptocurrency. Both founded at the same time, 'Bitcoin' was the first ever cryptocurrency, however the list of cryptocurrencies has grown ever since. Blockchain acts as a platform that allows cryptocurrencies to operate. Blockchain when described in simple terms is a digitalized book of transactions also knows as blocks store in a public database forming a chain. Both blockchain and cryptocurrency shares same characteristics; both are digitalized, both are decentralized, not controlled by any authority such as government or central bank. (GetSmarter, 2019) Thus, after analyzing the terms 'gamification,' 'cryptocurrency rewarding model,' 'blockchain technology,' there appears to be a connection between the terms.

# 3 METHODOLOGY

## 3.1 Research objective

The objective of the research is to answer following research questions:

1)        How can applying gamification to social media websites and apps exercising blockchain technology contribute to greater user satisfaction?

2)        How can applying cryptocurrency rewarding model to social media websites and apps exercising blockchain technology increase user participation?

3)        Would gamification and cryptocurrency rewarding model exercising blockchain technology be effective if applied?

The intent of this thesis is to provide comprehensive analysis of the research topic, 'Gamification and Cryptocurrency Rewarding Model in Social Media Analyzing Blockchain Technology,' in respect with the theoretical framework/ literature review and the answers from the questionnaires. The thesis intents to recognize the possible connection between the factors determined in the theoretical framework and the questionnaire's answers provided by the respondents. The thesis aims to evaluate whether second-hand data extracted from the literature review supports first-hand data drawn out from the answers provided.

## 3.2 Research design

The research focuses on conducting method that is explanatory research. Meaning along with including literature review, the research also conducts surveys, and study a specific group. Data for the thesis was obtained from questionnaire distributed online to specific group, for instance university level students preferably in their second or third year via email and private messaging. The foundation of the questions in the questionnaire is the theoretical frameworks as well as prepositions that are mentioned in the previous chapters, 'theoretical frameworks,' and 'research questions' respectively. The theoretical frameworks along with the literature review shall provide secondhand data whereas the answers obtained from the questionnaires shall provide firsthand data.

The language used in questionnaires was English. The questionnaires include both open ended as well as close ended questions in order to collect both qualitative as well as quantitative data. The format of the questionnaire is easy to understand and follow and clear instruction. A cover letter is attached with the questionnaire that gives information about the researcher and the purpose behind sending the questionnaire.

3.3 Data collection and analysis

The questionnaires were created via 'Google Forms' and answers collected likewise. Since, the questionnaires were open ended as well as close ended, the data extracted were both qualitative and quantitative. It was important for the questions to be relevant to the research topic as well stand neutral without any biases. Conducting the survey online was the most fitting option regarding the lockdown in the country due to ongoing coronavirus situation. Conducting the survey online also was efficient and less time consuming compared to handing out printed questionnaires individually. The questionnaires were distributed to University students, studying IT or Business as their major and preferably in their second or final year of their studies. Their answers might allow for greater understanding of their perspective to the research topic, 'Gamification and Cryptocurrency Rewarding Model in Social Media Analyzing Blockchain Technology.'

Open ended questions refers to the type of questions that are objective and allows respondents to be expressive and give meaningful answers. (Media College, 2020) Open ended questions allows for a qualitative approach letting respondents to give greater insights into the topic. The data allows researcher to get deeper meaning to the subject and connect with participant's perspective. (Birkett, 2017) Qualitative data are data that represents the quality or attributes of the data. The data are usually in detailed or expressive in form of words. (LibGuides @ Macalester, 2019)

Close ended questions refers to the types of questions with pre-populated answers that are usually 'yes' or 'no.' (SurveyMonkey, 2020) Close ended questions yield quantitative data. Quantitative data is defined as data that can be counted and be applied for statistical analysis. (Surendran, 2020) Quantitative data are used to tackle the 'what' or 'how many' aspects of research problem. (LibGuides @ Macalester, 2019)

The questionnaires of survey consisted of 13 questions. The research was carried out on 15th May 2020 and approximately 5 days were given as a timeframe to respondents to respond to the survey before writing analysis. Approximately 150 students were distributed questionnaires via online platform such as Facebook messenger, Facebook group page, WhatsApp message and school email. Among 150 students, 23 students responded to the questionnaire accounting to 15.33% final response rate.

3.4 Reliability, Validity and Applicability

Reliability, Validity and Applicability are the three concepts used to analyze the quality of research. They demonstrate the quality of the research methods; techniques used in order to collect the data and measure it. The three concepts 'reliability,' 'validity,' and 'applicability,' should be taken into consideration during the research design phase when one is planning the research method and while accounting the result, especially when carrying out quantitative research. (Middleton, 2020)

Reliability inclines towards the consistency of a measure. If same/similar data/result are obtained under the same condition employing same research method, then the data/result is considered as 'reliable.' The consistency of the data could be examined over time across different researcher. (Middleton, 2020) Psychology account three kinds of consistency: i) over time consistency also known as test/retest reliability ii) across time consistency also known as internal consistency iii) across different researchers consistency also known as inter-rater reliability. (Price, et al., 2013) Researcher took reliability into consideration while designing the questionnaires in order to measure the results against each other when performed under same occasion.

Validity refers to the accuracy of a measure. Validity of the data is correlated to the reliability of the data; higher reliability of the data indicates the validity of the data. Validity denotes how precisely a research method measures the resultant data. Validity is accessed by examining how closely the results is comparable with already existing theories and other measures of the same hypothesis. (Middleton, 2020) Research considered variables that could affect validity of a research, researcher intended to avoid biasness by involving students from two different study background, Business

Administration and IT. Questionnaires were prepared in order to discover findings that initial research questions intends to examine.

Applicability concerns to the extent where the result may be applied into practice. Applicability is also defined as the extent to which the outcome of the research measure is expected to match with the established theories from the literature review/theoretical framework. Applicability also aids while placing the literature review in context. Applicability should be considered at an early phase when the scope of review is determined and when the research questions are identified. The size of the participants in research shall affect the applicability of a research. The larger the participant, higher the level of validity and hence, applicability. (Effective Health Care Program, 2010) The response rate to the survey questionnaires accounted to 15.33% which is less than the average response rate needed to measure applicability.

In order to carry out more reliable, valid and applicable research for further studies, one would need to carry out research method besides surveys. An in-depth case studies and in-depth literature reviews, along with creating a focus group of like-minded participants aids gather considerably more data.

# 4 ANALYSIS

In order to carry out this research, questionnaires were made using Google Forms and were distributed online via Email, WhatsApp messages and Facebook group post. Second and Final year Business and IT students from Turku University of Applied Sciences were chosen for the research. The reason behind choosing TUAS students was the researcher being student at TUAS and having access to the groups. Also, the research thesis being related to Business Studies and IT. The chosen study group 'PINBOS16,' a group of BBA students (2016) at Turku University of Applied Sciences was provided questionnaire via school-email. Study group 'PINBOS17' and 'PINBOS18,' online BBA students at Turku University of Applied Sciences year 2017 and 2018 respectively were distributed questionnaire on their Facebook Group page, 'BBA International Business Online Students.' Groups named 'PINFOS17', 'PITVIS18' are group of IT students at Tuas University of Applied Sciences year 2017 and 2018 respectively were provided questionnaires via Facebook messenger. The total number of students who were distributed questionnaires combining all five groups was approximately 150. Among 150 students, 23 students responded to the questionnaire contributing to 15.33% response rate.

To gain an insight to whether age and gender of the respondent plays a role in online participation, general background of the respondents were collected by the researcher. With total of 23 respondents, 60.9% are women whereas 39.1% are men. Age of the respondents is unevenly distributed among four variables. Biggest age group is 26-30 which is 34.8%, second biggest age group 20-25 years accounting to 30.4%, 21.7% of the respondents fall under the age group 31-35 years whereas 13% were age 35 and above.
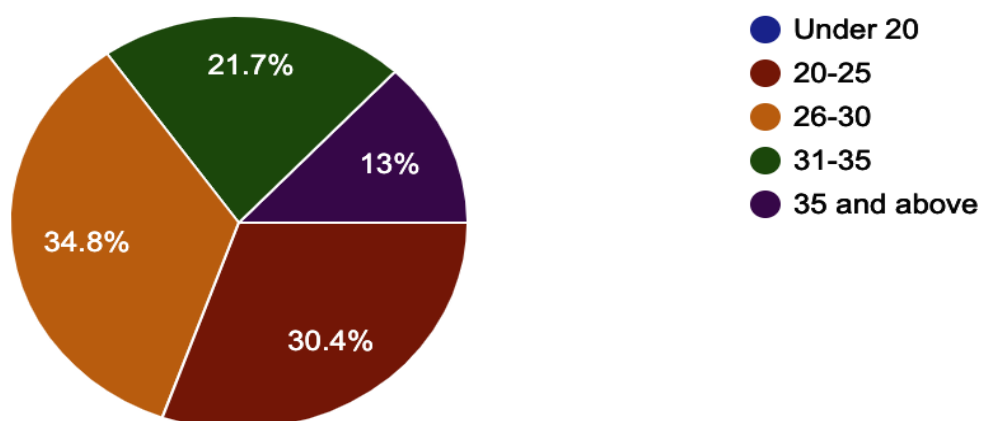
Figure 4: Respondents' Age

Out of five study groups, PINBOS16, PINBOS17, PINBOS18, PINFOS17 and, PITVIS18, three study groups were Business groups whereas three study groups were IT groups. Three business groups PINBOS16, PINBOS17 and, PINBOS18 consists of approximately 101 student members whereas two IT groups PINFOS17 and PITVIS18 consists of approximately 49 student members. This was reflected on the response rate as majority of respondents are business students. 82.6% of respondents are Business students whereas 17.4% of respondents are IT students.

Fourth, fifth, sixth and seventh questionnaire focused on collecting data and information about social media presence of students/respondents, for instance how often they use social media, type of apps respondents uses and how frequently they use them. All the respondents answered that they use social media on a daily basis. 78.3% of the respondents stated that they use apps such as Fitness tracker, language learning, food order and delivery apps. 17.4% responded to not using the apps and 4.3% answered maybe. While for the question inquiring how frequent respondents use the app, only 13% of survey participants answered daily while majority of survey participants which accounts to 47.8% answered weekly, 21.7% answered monthly whereas 17.4% answered never. Majority of respondents claimed to be using social media excessively. 43.5% of total participants claiming yes to their excessive use of social media habit, 30.4% responding maybe and 26.1% stating no.
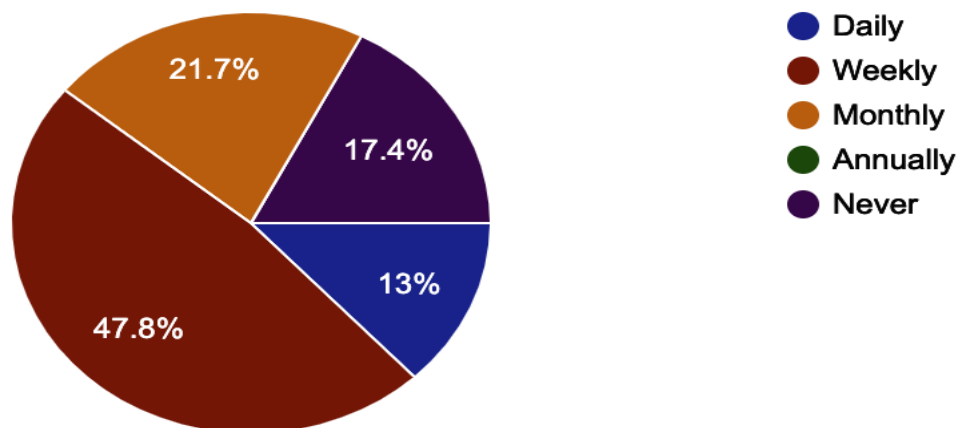


Figure 5: Frequency of using apps such as Fitness tracker, language learning and food delivery apps.

Eight and ninth questions focused on whether game mechanics such as feedback, points, rewards applied to apps such as fitness tracker, language learning and food delivery apps contributed to user engagement and satisfaction. 43.5% of the research participants claimed that apps that provides feedback, points made their user experience enjoyable, other 43.5% of research participants realizing maybe feedback and points contributes to their pleasant user experience whereas 13% did not find consider feedback and points as a factor for their pleasant user experience. Majority of respondents considered rewards provided by apps such as 'get free delivery on your next order if you recommend this app to your friend' and/or 'get a free coffee after your tenth order' as a motivating factor to use the app frequently. 47.8% of participants in the survey agreed to rewards acting as a motivating factor to use the app frequently, 26.1% disagree whereas 26.1% of respondents neither agreed nor disagree.
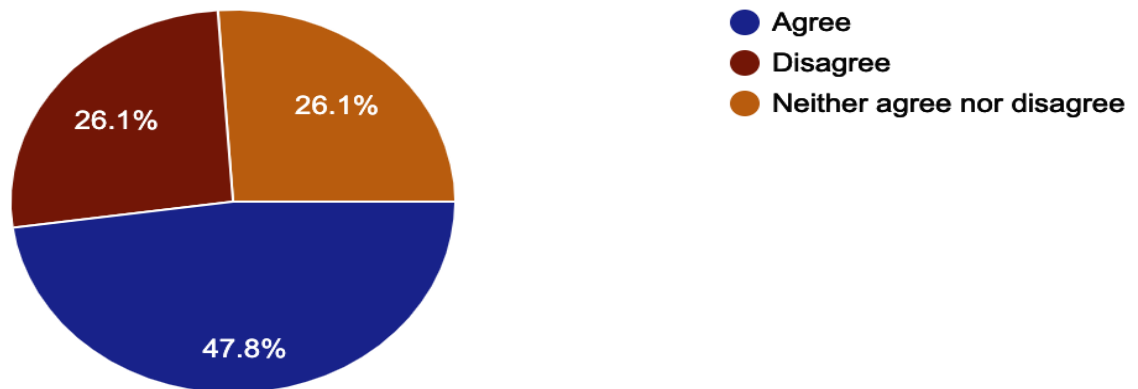


Figure 6: Reward as a motivating factor to use app frequently

Tenth and eleventh questions were related to cryptocurrencies as a reward or a motivating factor to use social media or websites or apps that provide cryptocurrencies for their time spent. While inquired with the research participants whether rewards in forms of cryptocurrencies would motivate or influence them on social media to watch full advertisement or fill surveys, greater proportion of survey participants accounting to 47.8% answered yes. 21.7% of participants in the survey responded maybe and 30.4% of respondents answered no. Participants of the survey were sought for an open question. The open question being their view towards cryptocurrency as a rewarding model on social media applied to attaining social media users to watching full advertisements and filling survey forms. More than half of participants of the survey responded positively to cryptocurrencies as a reward for their time spent on social media. 52.17% of survey participants expressed likeness towards the cryptocurrency rewarding

model by answering it would make them motivated and happy. However, 17.39% of the survey participants answered that the cryptocurrencies rewards offered deemed too small for their time and effort, 8.6% of the participants expressed their concerns on crime related to cryptocurrencies and stated that they would not participate in watching ads or filling survey where the websites and/or apps provides cryptocurrencies as reward as they deemed such websites and/or as untrustworthy. Whereas, 13.04% of the respondents stated that they were simply not interested in cryptocurrency rewards provided by social media websites and apps.
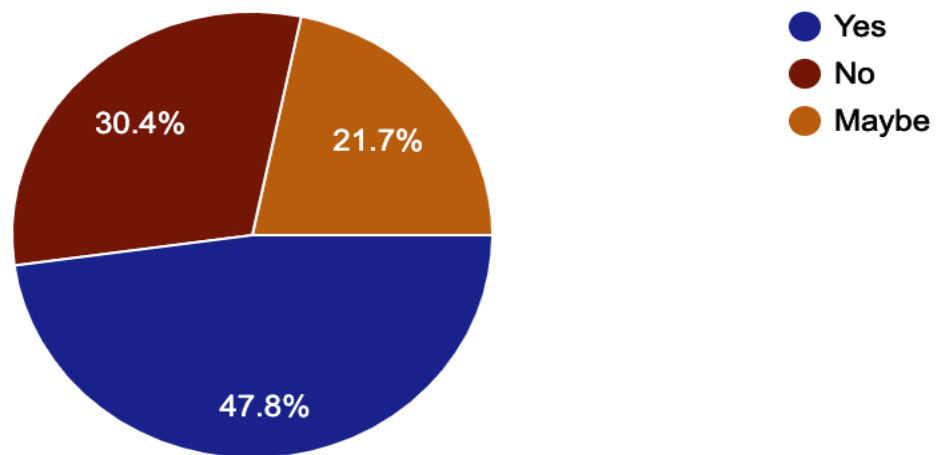


Figure 7: Cryptocurrency rewarding model on social media as a motivational factor.

The twelfth question sought the participants of survey to offer their views on gamification tools. Respondents were given four statements and asked to give their opinions whether they agreed or disagree with the statements. For the first statement, 'User Friendly Web and App with feedbacks and customer support help improve my digital experience,' majority of the respondent accounting to 34.78% somewhat agreed with the statement. While 26.09% neither agreed nor disagreed, 21.74% strongly agreed, 17.39% strongly disagreed and 4.35% somewhat disagreed. For second statement, 'Websites or apps that provides scores, rewards, loyalty, bonus, promotions for using the app's services makes my digital experience enjoyable,' same number of respondents stated that they somewhat agreed contributing to 26.09% and somewhat disagree contributing to another 26.09%, 21.74% stated they strongly agreed with the statement, 13.04% neither agreed nor disagreed, 13.04% strongly disagreed. Third statement, 'Web or app that provides cryptocurrencies as rewards for watching third parties' ads or filing surveys is appealing to me,' gathered responses where 34.78% strongly disagreed with the statement,

whereas 17.39% somewhat disagreed, 17.39% neither agreed nor disagreed, 17.39% somewhat agreed and 17.39% strongly agreed. Majority of survey participants totaling 26.09% somewhat agreed to the statement, 'Web or app providing rewards and benefits encourages my participation and refer web or app to my friends and family,' while 21.74% strongly agreed to the statement, 17.39% neither agreed nor disagree, 17.39% somewhat disagreed and 17.39% strongly disagreed.

| OPTIONS | Strongly disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Strongly Agree |
|---|---|---|---|---|---|
| User Friendly Web and App with feedbacks and customer support help improve my digital experience. | 17.39% | 4.35% | 26.09% | 34.78% | 21.74% |
| Websites or apps that provides scores, rewards, loyalty bonus, promotions for using the app's services makes my digital experience enjoyable. | 13.04% | 26.09% | 13.04% | 26.09% | 21.74% |
| Web or app that provides cryptocurrencies as rewards for watching third parties' ads or filling surveys is appealing to me. | 34.78% | 17.39% | 17.39% | 17.39% | 17.39% |
| Web or app providing rewards and benefits encourages my participation and refer web or app to my friends and family. | 17.39% | 17.39% | 17.39% | 26.09% | 21.74% |

Table 1: Gamification and cryptocurrency rewarding model factors

| OPTION | Not important at all | Not very important | Neither important nor unimportant | Fairly important | Very important |
|---|---|---|---|---|---|
| Great Content | 4.35% | 4.35% | 4.35% | 34.78% | 56.52% |
| User Friendly | 4.35% | 0 | 4.35% | 21.74% | 69.57% |
| Interactive features as Feedback | 4.35% | 13.04% | 26.09% | 34.78% | 21.74% |
| Customer Support | 4.35% | 8.70% | 17.39% | 34.78% | 43.48% |
| Monetary Rewards | 13.04% | 13.04% | 30.43% | 34.78% | 13.04% |
| Bonus, Points, Promotion | 4.35% | 21.74% | 26.09% | 56.52% | 8.70% |

Table 2: Motivational and user engagement factor for social media websites and apps

The last survey question intended to ascertain participants' perspective on gamification tools on social media and tools. 56.52% of the participants considered 'great content' as very important, 34.78% considered it fairly important, 4.35% responded as neither important nor unimportant, 4.35% stated not very important and 4.35% considered 'great content' as not important at all. For next gamification tool which is a social media websites or apps being 'user friendly,' 69.57% evaluated to be very important, 21.74% deeming it fairly important, 4.35% neither important nor unimportant and, 4.35% not important at all. Another gamification tool 'interactive features as feedback,' a total of 34.78% regarded as being fairly important, 26.09% regarded it to be neither important nor unimportant, 21.74% very important, 13.04% not very important and 4.35% viewing it not important at all. Next user engagement tool being, 'customer support,' which 43.48% of respondents considered to be very important, 34.78% deemed as fairly important, 17.39% stated it was neither important nor unimportant to respondents, 8.70% answered not very important and 4.35% claiming to be not important at all. Majority of survey participants accounting to 34.78% considered 'Monetary Rewards' as fairly

important whereas 30.43% considered it neither important nor unimportant, 13.04% considered it very important, 13.04% as not very important and 13.04% as not important at all. Final gamification tool in question, 'bonus, points, promotions,' accumulated 56.52% of the survey respondents who considered the gamification tool fairly important, 26.09% of the participants considered the tool neither important nor unimportant, 21.74% responded it as not very important, 8.70% as important and 4.35% evaluated it as not important at all.

Survey questionnaires were constructed considering research questions and analysis realizing propositions to the research results. First research question intended to instigate how applying gamification to social media websites and apps contribute to greater user satisfaction. The proposition related to the first research question being applying gamification in non-gaming context for instance in social media and apps provide user experience that is enjoyable. Survey participants responded positively to questionnaire regarding application of gamification tools in social media. Majority of participants stated websites and apps that had great content, that provided points, bonuses, promotions and interactive features like feedback, customer support made their user experience enjoyable and motivated them to refer such apps to their friends and family. Second research question intended to examine how applying cryptocurrency rewarding model to social media websites and apps increase user participation. Participants of the survey respondents to questionnaire related to cryptocurrency rewarding model in social media as a motivational tool to watch advertisement and fill surveys. However, a quarter of respondents expressed their concerns on crimes in the cryptocurrency world. Criminals are said to exploit the technology by laundering money, scamming victims. (Perez, 2019). Quarter of survey respondents also expressed their reluctancy to click third parties' websites or apps in order to earn cryptocurrency but considered monetary reward as a significant factor that influences their interest and participation.

# CONCLUSION OF THE STUDY

The general objective of the thesis was to examine the practicality of applying gamification and the cryptocurrency rewarding model to social media platform. Research participants were IT and business students attending University preferably in second or final year of their undergraduate or graduate studies in Turku, Finland. The focal point was to understand the views, opinions, ideas of the participants and create awareness of the subject among them and compare the data against prepositions. The research questions studied and investigated are listed below.

1) How can applying gamification to social media websites and apps exercising blockchain technology contribute to greater user satisfaction?
2) How can applying cryptocurrency rewarding model to social media websites and apps exercising blockchain technology increase user participation?
3) Would applying gamification and cryptocurrency rewarding model exercising blockchain technology be effective?

4.1 Research findings

Research findings depicts that the research propositions acquired from the researcher's knowledge from personal experiences and literature review were in accordance with the results attained from the survey carried out.

First section of the thesis assessed application of game mechanics in non-gaming context such as social media websites and apps. The proposition aligned, 'Applying gamification in non-gaming context for example websites and/or apps provides user experience that is enjoyable.' The proposition was supported by majority of the respondents who considered game mechanics such as feedback made their user experience enjoyable. Also, the respondents further evaluated that bonuses motivated to use the app frequently. Feedback and bonuses have been reflected in the literature review as one of the game mechanics that is applied to non-gaming contexts. Majority of respondents favored websites and apps that provided great content, customer support, rewards such as bonuses, points and promotions and were user friendly. All the same, app providing direct rewards such as 'get tenth coffee for free' and user-friendly

app with customer support and feedbacks were considered ruling factors in making user experience enjoyable.

Second part of the thesis examined application of cryptocurrency rewarding model in social media analyzing blockchain technology. The second hypothesis was 'while applying cryptocurrency rewarding model in social media websites and/or apps aids increase user engagement.' The hypothesis was tested among survey participators with vast majority of respondents responding positive to cryptocurrencies rewarding model generates motivation to watch full ads and filing surveys on social media. Majority of respondents regarded monetary values as one of the important factors responsible for user-participation on social media. Respondents answered benefits and rewards would stimulate them to recommend such websites and apps to friends and families. However, most of the respondents disagreed on influence provided by cryptocurrencies rewarding model to visit third parties' websites. While analyzing the descriptive answers given be respondents, respondents evaluated the rewards to be small and not worth the time given, whereas some respondents expressed distrust with websites and apps providing such rewards, while more than half respondents regarded cryptocurrencies rewarding model as motivating.

The third section of the thesis was to find the interconnection between 'gamification,' 'cryptocurrency rewarding model,' and 'blockchain technology.' The third hypothesis being that 'Exercising blockchain technology assists to secure trust in users while applying cryptocurrency rewarding model in social media.' The hypothesis is assessed in detail in the literature review. Whereas, examining the relationship between gamification and cryptocurrency rewarding model where both theories in practice applied points and bonuses system in order to influence user participation. While the results from survey reflected likeness of respondents towards bonuses, points, promotions and monetary rewards.

In conclusion, assumptions acquired from researchers' personal experience were comparable to results attained from secondary data such as literature review which consists reviewing various articles, books and reports and primary data such as survey.

## 4.2 Suggestions for further research

This thesis provides the theoretical as well as practical feasibility of applying gamification and the cryptocurrency rewarding model in social media analyzing blockchain technology. However, due to inadequate time and restricted volume of report writing, the research demands for in-depth theoretical framework as well as employ research methods other than online surveys. Due to the novel coronavirus situation, conducting surveys by distributing questionnaires online via social media was deemed as suitable method. While applying other methods, the study could be done among larger participants to construct valid and reliable result and for extensive study. Wider the participants, wider the perspective which could result to generalized data. Understanding people's perspective or awareness is significant; interviewing groups or studying people's behavior shall result to qualitative data. For better understanding and experimentation of the research topic, the thesis could be used as a base to test the theory into practice. For instance, concept of gamification could be applied to one's own social media apps or website. Cryptocurrency rewarding model could also be tested among social media users exercising the blockchain technology. Doing so would result to firsthand data that could be put in application for further study. However, the study could also be executed to whatever context or location new researcher wants in order to re-evaluate the strategy to overcome any limitations while focusing on relevancy.

# 5 BIBLIOGRAPHY

Media College, 2020. *Open-Ended Questions.* [Online]
Available at: https://www.mediacollege.com/journalism/interviews/open-ended-questions.html
[Accessed 22 April 2020].

LibGuides @ Macalester, 2019. *Data Module #1: What is Research Data?.* [Online]
Available at: https://libguides.macalester.edu/c.php?g=527786&p=3608639
[Accessed 23 April 2020].

Birkett, A., 2017. *A Guide to Open-Ended Questions in Marketing Research.* [Online]
Available at: https://www.business2community.com/strategy/guide-open-ended-questions-marketing-research-01778316
[Accessed 22 April 2020].

SurveyMonkey, 2020. *Closed-ended vs open-ended questions.* [Online]
Available at: https://www.surveymonkey.com/mp/comparing-closed-ended-and-open-ended-questions/
[Accessed 23 April 2020].

Bunchball Inc, 2020. *What Is Gamification?.* [Online]
Available at: https://www.bunchball.com/gamification
[Accessed 15 April 2020].

Frankenfield, J., 2019. *Cryptocurrency.* [Online]
Available at: https://www.investopedia.com/terms/c/cryptocurrency.asp
[Accessed 22 March 2020].

Rosic, A., 2016. *What is Blockchain Technology? A Step-by-Step Guide For Beginners.* [Online]
Available at: https://blockgeeks.com/guides/what-is-blockchain-technology/
[Accessed 23 March 2020].

Surendran, A., 2020. *QUANTITATIVE DATA: DEFINITION, TYPES, ANALYSIS AND EXAMPLES.*
[Online]
Available at: https://www.questionpro.com/blog/quantitative-data/
[Accessed 23 April 2020].

Middleton, F., 2020. *Reliability vs validity: what's the difference?.* [Online]
Available at: https://www.scribbr.com/methodology/reliability-vs-validity/
[Accessed 23 April 2020].

Broadband Search, 2020. *Average Time Spent Daily on Social Media(Latest 2020 Data).*
[Online]
Available at: https://www.broadbandsearch.net/blog/average-daily-time-on-social-media
[Accessed 1 May 2020].

Gilbert, E., 2020. *Thesis statement on social media.* [Online]
Available at: https://thesispanda.com/blog/thesis-statement-on-social-media
[Accessed 1 May 2020].

Chou, Y.-k., 2020. *How eBay and Amazon Wield Gamification Techniques.* [Online]
Available at: https://yukaichou.com/gamification-examples/ebay-amazon-gamification/
[Accessed 2 May 2020].

Chou, Y.-k., 2020. *The 10 best eCommerce and shopping examples that use Gamification.*
[Online]
Available at: https://yukaichou.com/gamification-examples/top-10-ecommerce-gamification-examples-revolutionize-shopping/#.U2nAsq1dVUg
[Haettu 2 May 2020].

Zichermann, G. & Cunningham, C., 2011. *Gamification by Design Implementing Game Mechanics in Web and Mobile Apps.* 1st Edition ed. Canada: O'Reilly Media, Inc, 1005 Gravenstein Highway North, Sebastopol, CA 95472.

Hamari, J., Koivisto, J. & Sarsa, H., 2014. *Does Gamification Work? — A Literature Review of Empirical Studies on Gamification.* Hawaii: s.n.

Nakamoto, S., 2020. *Bitcoin: A Peer-to-Peer Electronic Cash System.* [Online]
Available at: https://bitcoin.org/bitcoin.pdf
[Accessed 24 April 2020].

Price, P. C., Jhangiani, R. & Chiang, I.-C. A., 2013. *Research Methods in Psychology.* 2nd Edition ed. Canada: Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

Effective Health Care Program, 2010. *Assessing Applicability.* [Online]
Available at: https://www.slideshare.net/AHRQEHCProgram/assessing-applicability
[Accessed 23 April 2020].

Maria, M. D., 2016. *Profiting from Cryptocurrencies, How to Profit from Bitcoin & Other Crptocurrencies in Just 20 Mins a Day.* s.l.:The LunchTime Trader.

Reiff, N., 2019. *Were There Cryptocurrencies Before Bitcoin?.* [Online]
Available at: https://www.investopedia.com/tech/were-there-cryptocurrencies-bitcoin/
[Accessed 5 May 2020].

Rosic, A., 2017. *What is Cryptocurrency? [Everything You Need To Know!].* [Online]
Available at: https://blockgeeks.com/guides/what-is-cryptocurrency/
[Accessed 5 May 2020].

Crosby, M. et al., 2015. *BlockChain Technology, Beyond Bitcoin,* California: Berkeley University of California, Sutardja Center for Entrepreneurship & Technology Technical Report.

Dollarhide, M. E., 2019. *Social Media Definition.* [Online]
Available at: https://www.investopedia.com/terms/s/social-media.asp
[Accessed 10 May 2020].

Merriam-Webster, 2020. *Internet noun.* [Online]
Available at: https://www.merriam-webster.com/dictionary/Internet
[Haettu 10 May 2020].

Magic Web Solutions UK, 2020. *Web Based Software.* [Online]
Available at: https://www.magicwebsolutions.co.uk/web-based-software
[Accessed 10 May 2020].

Grauschopf, S., 2019. *Internet Browsers: A Layman's Guide to How They Work What's an Internet Browser? A Simple Definition Share Pin.* [Online]
Available at: https://www.thebalanceeveryday.com/what-is-internet-browser-892819
[Accessed 10 May 2020].

Lvivity, 2018. *Web-Based Application: What It Is, and Why You Should Use It.* [Online]
Available at: https://lvivity.com/web-based-applications
[Accessed 10 May 2020].

Lexico, 2020. *Meaning of human resources in English: human resources.* [Online]
Available at: https://www.lexico.com/definition/human_resources
[Haettu 10 May 2020].

Jones, T. E. & Ed.D, 2019. *PERFORMANCE MANAGEMENT Key Factors That Influence Job Performance: The Performance Pathway Model.* [Online]
Available at: https://trainingindustry.com/articles/performance-management/key-factors-that-influence-job-performance-the-performance-pathway-model/
[Accessed 10 May 2020].

Kagan, J., 2020. *Remuneration.* [Online]
Available at: https://www.investopedia.com/terms/r/remuneration.asp
[Accessed 10 May 2020].

Sosa, R., 2017. *Maslow's Hierarchy of Needs.* [Online]
Available at: https://medium.com/re-write/maslows-hierarchy-of-needs-9ead9a46cb14
[Accessed 10 May 2020].

*A Theory of Human Motivation* (1943).

We are Social, Hootsuite, 2020. *Digital 2020 Global Digital Overview.* [Online]
Available at: https://wearesocial.com/blog/2020/01/digital-2020-3-8-billion-people-use-social-media
[Accessed 13 May 2020].

Buffer, 2019. *What is Social Media Marketing?.* [Online]
Available at: https://buffer.com/social-media-marketing
[Accessed 13 May 2020].

Gough, C., 2020. *Number of video gamers worldwide 2020, by region.* [Online]
Available at: https://www.statista.com/statistics/293304/number-video-gamers/#statisticContainer
[Accessed 13 May 2020].

Skoll Foundation, 2013. *Khan Academy.* [Online]
Available at: https://skoll.org/organization/khan-academy/
[Accessed 13 May 2020].

Graham, C., 2020. *How Companies Use Gamification to Amplify Social Media.* [Online]
Available at: https://brainsins.com/en/blog/how-companies-use-gamification-to-amplify-social-media/3210
[Accessed 13 May 2020].

Erik M. Gregory, P., 2008. *Understanding Video Gaming's Engagement: Flow and Its Application to Interactive Media. Media Psychology Review. Vol. 1(1).* [Online]
Available at: https://mprcenter.org/review/gregory-video-game-engagement/
[Accessed 13 May 2020].

Cambridge Dictionary, 2020. *feedback.* [Online]
Available at: https://dictionary.cambridge.org/dictionary/english/feedback
[Accessed 14 May 2020].

Valerio, C., William, L. & Noémier, Q., 2019. *he Impact of Social Media on E-Commerce Decision Making Process, International Journal of Technology for Business (IJTB),* Bratislava: SpringWish Publisher, Bratislava,.

Rojas, N., 2020. *The Relationship Between Social Media, Cryptocurrency and Blockchain.* [Online]
Available at: https://topdogsocialmedia.com/social-media-cryptocurrency-and-blockchain/
[Accessed 15 May 2020].

Clement, J., 2020. *Facebook: number of daily active users worldwide 2011-2020.* [Online]
Available at: https://www.statista.com/statistics/346167/facebook-global-dau/
[Accessed 15 May 2020].

Mohsin, M., 2020. *10 Social Media Statistics You Need to Know in 2020 [Infographic].* [Online]
Available at: https://www.oberlo.com/blog/social-media-marketing-statistics
[Accessed 15 May 2020].

Sweney, M., 2019. *Facebook plans to launch 'GlobalCoin' cryptocurrency in 2020.* [Online]
Available at: https://www.theguardian.com/technology/2019/may/24/facebook-plans-to-launch-globalcoin-cryptocurrency-in-2020
[Accessed 15 May 2020].

Steem, 2020. *Powering Communities and Opportunities.* [Online]
Available at: https://steem.com/
[Accessed 15th May 2020].

Steemit, 2020. *Welcome to Steemit!.* [Online]
Available at: https://steemit.com/welcome
[Accessed 15 May 2020].

Bravon, 2019. *Incentives Vs Gamification.* [Online]
Available at: https://www.bravon.io/incentives-vs-gamification/
[Accessed 17 May 2020].

L., D. E. & M, R. R., 2008. *Self-determination theory: A macrotheory of human motivation, development, and health,* s.l.: Canadian Psychology/Psychologie canadienne, 49(3), 182–185.

Juneja, P., 2020. *What is Motivation ?.* [Online]
Available at: https://www.managementstudyguide.com/what_is_motivation.htm
[Accessed 17 May 2020].

Anon., ei pvm [Online].

Liew, M., 2020. *14 Examples of Intrinsic and Extrinsic Motivation and How to Use Both.* [Online]
Available at: https://www.learning-mind.com/examples-of-intrinsic-and-extrinsic-motivation/
[Accessed 17 May 2020].

Cloudbet, 2020. *Free Crypto: The Best Sites To Earn Crypto.* [Online]
Available at: https://legacy.cloudbet.com/en/blog/bitcoin-101/12240-free-bitcoin-the-best-ways-to-earn-crypto
[Accessed 17 May 2020].

GetSmarter, 2019. *The relationship between blockchain and cryptocurrency.* [Online]
Available at: https://www.getsmarter.com/blog/career-advice/the-relationship-between-blockchain-and-cryptocurrency/
[Accessed 17 May 2020].

The Economic Times, 2017. *7 social media sites that failed to become 'Facebook'.* [Online]
Available at: https://economictimes.indiatimes.com/tech/internet/7-social-media-sites-that-failed-to-become-a-facebook/all-you-need-is-app/slideshow/58881474.cms
[Accessed 18 May 2020].

Perez, Y. B., 2019. *Here's how law enforcement catches cryptocurrency criminals.* [Online]
Available at: https://thenextweb.com/hardfork/2019/12/26/bitcoin-cryptocurrency-criminals-law-enforcement/
[Accessed 20 May 2020].

FRANKENFIELD, J., 2020. *Cryptographic Hash Functions.* [Online]
Available at: https://www.investopedia.com/news/cryptographic-hash-functions/
[Accessed 9 June 2020].

GamePix, 2020. *Snake Nokia.* [Online]
Available at: https://www.gamepix.com/play/snake-3310-html5/
[Accessed 10 June 2020].

Inc., 2020. *Employee Reward and Recognition Systems.* [Online]
Available at: https://www.inc.com/encyclopedia/employee-reward-and-recognition-systems.html
[Accessed 11 Jun 2020].

Cooper, B. B., 2011. *6 Ways to Socially Reward Your Customers.* [Online]
Available at: https://www.socialmediaexaminer.com/6-ways-to-socially-reward-your-customers/
[Accessed 11 June 2020].

Kim, S., 2015. *How Foursquare and Other Apps Guess What You Want to Eat.* [Online]
Available at: https://www.eater.com/2015/4/24/8486279/restaurant-recommendation-apps-foursquare-algorithms
[Haettu 11 June 2020].

# Appendix 1 Cover Letter for the Questionnaire Form

**TURKU AMK**

TURKU UNIVERSITY OF
APPLIED SCIENCES

Date: 15th May 2020

Hello,

I am Kabita Giri and I am conducting research in order to write my thesis. I am an undergraduate student at Turku University of Applied Sciences. I hereby kindly request you to answer the attached questionnaire. The questionnaire is a part of my research and your response would play valuable role in my thesis. The questionnaire consists of 13 questions and can be filled anonymously. The survey will take 5 minutes of your precious time and following is the link.

Link: https://forms.gle/DABvQzTyZAeUE81J9

Thank you so much for your time and participation.

Regards,

# Appendix 2: Questionnaire form

1. **What is your gender?**
   i) Female
   ii) Male
   iii) Other

2. **What is your age?**
   i)     20-25
   ii)    26-30
   iii)   31-35
   iv)    35-40
   v)     41 and above

3. **What is your field of study?**
   i)     IT
   ii)    Business

4. **How often do you use social media?**
   i)     Daily
   ii)    Weekly
   iii)   Monthly
   iv)    Annually
   v)     Never

5. **Do you use apps such as Fitness tracker, language learning, food delivery?**
   i)     Yes
   ii)    No

6. **How often do you use apps such as Fitness tracker, language learning, food delivery?**
   i)     Daily
   ii)    Weekly
   iii)   Monthly
   iv)    Annually
   v)     Never

7. **Do you feel like you are using social media excessively?**
   i)     Yes
   ii)    No
   iii)   Maybe

8. **Do apps that provides feedback, points make your user experience enjoyable?**
   i)     Yes
   ii)    No
   iii)   Maybe

9. **Rewards such as 'get free delivery on your next order if you recommend this app to your friend' or 'get a free coffee after your tenth order' motivates you use the app frequently?**
   i)     Agree

ii)      Disagree

iii)     Neither agree nor disagree

10. **Would rewards such as cryptocurrencies motivate you to watch full ads or filling surveys while using social media?**
    i)      Yes
    ii)     No
    iii)    Maybe

11. **How would you feel if you were getting rewarded in cryptocurrencies for the time spent on social media such as watching ads, filling surveys?**

12. **What do you think of the following statements?**
    a) **User Friendly Web and App with feedbacks and customer support help improve my digital experience.**
       i)      Strongly disagree
       ii)     Somewhat disagree
       iii)    Neither agree nor disagree
       iv)    Somewhat agree
       v)     Strongly agree
    b) **Websites or apps that provides scores, rewards, loyalty bonus, promotions for using the app's services makes my digital experience enjoyable.**
       i)      Strongly disagree
       ii)     Somewhat disagree
       iii)    Neither agree nor disagree
       iv)    Somewhat agree
       v)     Strongly agree
    c) **Web or app that provides cryptocurrencies as rewards for watching third parties' ads or filling surveys is appealing to me.**
       i)      Strongly disagree
       ii)     Somewhat disagree
       iii)    Neither agree nor disagree
       iv)    Somewhat agree
       v)     Strongly agree
    d) **Web or app providing rewards and benefits encourages my participation and refer web or app to my friends and family.**
       i)      Strongly disagree
       ii)     Somewhat disagree
       iii)    Neither agree nor disagree
       iv)    Somewhat agree
       v)     Strongly agree

13. **How important do you think following factors are in terms of user-participation on social media?**
    **(Not important at all, Not very important, Neither important nor unimportant, Fairly important, Very important)**
    i)      Great Content
    ii)     User Friendly
    iii)    Interactive features as Feedback
    iv)     Customer Support
    v)      Monetary Rewards
    vi)     Bonus, Points, Promotion