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EFFECTS OF RUSSIA-UKRAINE WAR ON CRYPTO ADOPTION AMONG PEOPLE IN
UKRAINE. THE CASE OF 001K.EXCHANGE.

Bachelor thesis

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I have written this Bachelor Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Introduction

The world of cryptocurrencies is on the rise at this moment of time in the whole world with attention from the masses from the spectrum of backgrounds round the globe. The first mention of *cryptocurrency* is dated back in 2008 with the release of Satoshi Nakamoto's paper «Bitcoin: A Peer-to-Peer Electronic Cash System. The main focus of his paper is built around the drawbacks of the existing financial instruments and institutions that are meant to be trustworthy third parties processing electronic payments (Nakamoto, 2008). If we take a look at it from the perspective of a currency, it's rather different from generally accepted fiat currencies, but rather is backed up by its users, not government and is impossible to counterfeit (Casale, 2015).

As time progressed the idea of crypto became broader and the underlying technology of it started to develop and advance throughout the time period it has been around. Once started as a getaway solution from the existing imperfections of the centralized financial systems the concept of crypto is now covering the areas of fashion and art industries, impacting the way online social life is being perceived and reshapes the offline and online business sector across the world (Baron, O'Mahony, Manheim & Dion-Schwarz, 2015). The value of crypto grew over time not only from the perspective of its monetary functions, but its technological advancement.

Consistently over the years, the number of people in whose possession were crypto assets was growing at yearly increasing rates. It was reported that by the year 2022 the number of crypto users rose to the accumulative number of 295 million users worldwide (Bolger, Hon, Wang, Wu & Zhou, 2022). According to a report conducted by Boston Consulting Group in cooperation with Bitget and Foresight Ventures (2022) with upholding the current trend lines and development direction, the number of crypto users can reach the number of 1 billion by the year of 2030, with individual investors and market participants remaining the majority of the crypto holders and users.

For the most part of the crypto world the demand and attention towards it by regular users was primarily driven by the rational individuals seeking profitability matters (Roy, 2017). The increasing media mentions of crypto during the bull market¹, the trading volumes of different cryptocurrencies breaking the records day-to-day and more institutional investors companies making the news with crypto-companies and projects acquisitions were the key drivers for new

¹ Bull market refers to period of time where the majority of investors are buying, demand outweighs supply, market confidence is at a high, and prices are rising (Coinbase, 2022)

users to enter the market with little to no experience or guidance (Aspembitova, Feng & Chew, 2021).

It is understandable to see such correlation of human behavior during the times of the positive trends on the market, however the case can be made during the situation when the market is not acting in the prosperous and positive manner. Such case can be made for the market trends of the 2022. The year was devastating not only from the perspective of the crypto market, but from the standpoint of the global economic state. The US stock market lost over 15% in its value, from the peak results of crypto market of first quarter of 2021 crypto market lost more than 50% with an approximate of 2 trillion dollars (Wood, 2022).

Among many reasons, the eruption of Russia-Ukraine war was one of the crucial reasons for such economic devastations and the cryptocurrencies market of the respective countries seen the opposite trends in its development. The times of geopolitical crisis, - when the traditional financial institutions collapsed in the time emergency state, monetary borders were limiting the free outflow of money and fiscal policies affecting the banking sector (Khalifaoui, Gozgor & Goodwell, 2022) - changed people's perception of cryptocurrencies in Ukraine and brought in itself the problems and solutions which were specific to one market but affecting it as a whole. There is enough of empirical data to track down the behavior of the Ukrainian crypto market solely from the numerical standpoint, however it is impossible to construct the picture of behavior patterns of the users. There is clear lack of literature observing the effects of the war on the adoption rates of crypto and perception of crypto in Ukraine since the beginning of the war.

Author points out that purpose of this paper is understand and analyze the effects of Russia-Ukraine war on crypto adoption of people in Ukraine. In order to fulfill the aim of the paper author will additionally provide necessary industry related terminology and literature-based research which will assist in proper analysis of the stated topic, as well as conduct semi structured interviews.

In order to fulfill the aim if the research, the following tasks are set by the author:

- Analyze technological advancement of cryptocurrencies in comparison to traditional economic tools
- Understand consumer approach towards adoption of new technologies
- Examine the crypto market reaction to the war

- Describe reasons for crypto adoption among regular users before the war eruption
- Explain the methodological approach and method for in the empirical part of the thesis
- Conduct an empirical study investigating the effects of Russia-Ukraine war on the crypto adoption in Ukraine
- Synthesize and summarize the theoretical and practical findings of the investigation, draw appropriate conclusions, and provide solutions on future functionality, forecasts, or new directions.

For the empirical part of this thesis, there are limitations on acquiring the necessary data directly from Ukrainian users, so in order to provide a clear picture the example of 001k.Exchange clientele will be used, - Ukrainian company specializing in crypto industry whose primary activity and client base is focused in Ukraine. Due to limitations of author's access to restricted corporate information, interview will be conducted with the representative of the company. Author will be able to analyze the change of the company's approach once the war started and how the client base needs changed which reshaped the company's approach to conducting their business prior to 2022.

The empirical results will help analyze the shift in adoption tendencies among users who happened to find themselves in the situation of a war affecting the previously established flow of their economic lifestyle.

The theoretical section of the paper will focus on several topics necessary for an evident understanding of this paper's purpose. Author will showcase the advancement of crypto technologies over traditional economical instruments, examine the reasons for crypto adoption under pre-war circumstances, analyze the crypto market reaction on the war and break down people's perception and adoption of new and unknown technologies.

The author will introduce the research technique and defend its choice in the empirical section of this bachelor's thesis, then perform the empirical investigation to see the shift and changes in adoption tendencies among Ukrainian users of crypto. Following that, the empirical study findings will be presented and examined, and the author will draw conclusions based on them in addition to providing further implications, suggestions and predictions.

Key words: crypto, crypto market, new technologies, adoption.

1. Theoretical foundations of crypto and human perception of it.

1.1 Traditional and Crypto technologies

In order to proceed further with the discussion of cryptocurrencies, it is important to understand and analyze the underlying fundamentals and concepts which are building the foundation for the decentralized and digitalized future of finances. In this section, the author of the paper will focus on the origins of the crypto and fundamental aspects of decentralized finance (i.e. DeFi).

The underlying and key foundation of the whole crypto-world lays on the blockchain technology and it is the origin of everything in the world of crypto. The idea of blockchain technology was first introduced by Stuart Haber and Scott Stornetta (1991). In their paper they raised an issue of clarification and modification of changes done within a document and whole assuming that in future everything will be digitalized. While not providing a clear definition, they rather focused on the idea of time stamping of the documents which later became the foundation of an actual blockchain implementation. As a summary of their proposition, they highlighted the idea of blockchain as “one-way hash functions, whose outputs are processed in lieu of the actual document, and of digital signatures” (Haber & Stornetta, 1991, p. 12).

The first modern definition was summarized by Satoshi Nakamoto (2008). While introducing the first ever digital currency – Bitcoin, he explained the blockchain as the underlying technology in its transactional nature focusing on it as “*a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions.*” (Nakamoto, 2008). This is considered to be first clarification of blockchain in history with the built-up technology to back up the idea introduced by Nakamoto whereas previously mentioned Haber and Stornetta only showed the perspective of such technology, but in 1991 it was impossible to make it happen due to as they were limited by computing capacities of their time.

As the definitions of blockchain were always vaguely explained a more technologically explained definition was provided (Yaga, Mell, Roby & Scarfone, 2018) defining blockchains as “*distributed digital ledgers of cryptographically signed transactions that are grouped into blocks*”. The approach was taken with in a more explorational manner in order to define the idea of blockchain as a technology, not a concept or trend as it was done before.

Another worth mentioning definition was provided by Iredale (2020) in which she brings out the main three concepts of the blockchain technology as follows: decentralization, transparency and data integrity.

All the above-mentioned definitions are not contradicting with each other as over the years the technology of blockchain hasn't changed in its core. Thus, the definitions from 1991, 2008 or 2020 carry same relevance to this day. The following table represents the definitions of blockchain over the years.

Table 1

Definitions of Blockchain

Author(s) and Year	Definition
Haber and Stornetta, 1991	“One-way hash functions, whose outputs are processed in lieu of the actual document, and of digital signatures”
Nakamoto, 2008	“A peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions”
Yaga, Mell, Roby & Scarfone, 2018	“Distributed digital ledgers of cryptographically signed transactions that are grouped into blocks”
Iredale, 2020	“Decentralization, transparency and data integrity”

Source: compiled by author

As every new and upcoming technology, there are various benefits and disadvantages to it. In the following section of the paper, author will focus on the main positive and negative aspects of decentralized finance.

The Decentralized Financial Applications as a whole are usually referred as DeFi (or Decentralized Finance) are the opposite of traditional financial applications which are referred as CeFi (or Centralized Finance). Decentralized Finance can be defined as “*new type of open financial applications deployed on publicly accessible, permissionless blockchains*” (Jensen, Ross & Wechter, 2021)

The decentralized network nature of DeFi applications is amongst the most notable advantages of the technology. DeFi's access norms differ from the ones that are settled in the traditional finance. It, on the other hand, adheres to the free, permissionless access approach. With the contingencies of having access to internet and being in possession of any kind of cryptocurrency wallet – any individual is able to become part of crypto user base (Popescu,

2020). Such low entry threshold results in the fact that practically everybody can be introduced into DeFi.

Informational transparency is considered to be among the most noticeable and evident capabilities of DeFi concept. In any blockchain system which follows the fundamentals all the users are able to see the details of all the transactions within the network and they are only being processed once the contract is fulfilled by both sender and receiver (Arner, Buckley & Zetzsche, 2020). The mutual trust between the network and its users is crucial as user can track down and somewhat notice unusual behavior within the network. The ability to view and audit independently is an important part of decentralized networks.

Another significant characteristic of DeFi is the speed on transactional performance. No matter the amount of currency that is being sent or the location of the receiver, the independence of the blockchain let the transactions proceed within minutes at all times (Bellavitis & Chen, 2019). Meaning that there is no wait time, depending on time of the day or the amount, the transaction is being processed

As a summary of DeFi in this chapter and comparison to CeFi the following Table 2 provides a clear differentiation between two systems from monetary and transactional standpoint.

Table 2

Comparison of DeFi and CeFi

DeFi	CeFi
Holder is in possession of their money	Financial intermediaries are in possession of holder's money
Holder controls and manages their money	Financial intermediaries are trusted to be managing holder's money
Transactions of any volume take minutes to process at any times	Transactions can take up days depending on volume, time and banking network
Pseudonymous nature of activity	Any activity is connected to holders' identity
Market is active and open at all times	Market is active and open at certain times
Accessibility to everyone	Verification process required
Informational transparency	Non-disclosed activity of financial intermediaries

Source: compiled by author based on the "CeFi vs. DeFi" (Afonin, Gervais, Lazaretti, Qin & Zhou, 2021)

Despite the variety of the monetary and technological beneficial aspects which are coming from the perspective of the Decentralized Finance, the technology is far from being flawless. A trade-off can arise in this case, as some of the benefits carry disadvantages of their own. It is worth mentioning and discussing the disadvantages which arise from the usage of the cryptocurrencies and primarily author will focus on the flaws which are most affecting towards the regular users.

One of such risks is related to the trust factor of the DeFi. While previously mentioned, in traditional financial systems the institutions and intermediaries are the players on whom the consumers are relying on with the security, control and maintenance of the money. The trust is being created around the fact that consumers rely on the integrity of the banks, and they put the necessary responsibilities on intermediaries and most of the times there is no necessity in a comprehensive understanding of the topic with consideration of both the potential benefits and the potential downsides of the technology in question. That doesn't apply in the case of almost every decentralized application, as the idea of the trustless activity presumes the user is the intermediary of his own and can verify or look into details of the transactions log or the underlying technology of the application (Aramonte, Huang & Schrimpf, 2021). Such theoretical freedom is not the reality for new users or those lacking knowledge in crypto technologies, which leads to such users addressing to third parties operating within the chosen application creating the same problem of transferring the responsibility to outside parties.

As mentioned, because the users within the blockchain network act as intermediaries of their own there is great deal of rules and concepts they need to understand. Different aspects of their position and role, alongside the risks and responsibilities they need to carry along and keep in mind. As mentioned in Table 2, user being in possession of their money implies that the security matter is also to be considered solely by the owner. The irreversible nature of the blockchain technologies also applies to the accessibility matter, related to the private key of the user. A private key is the most important tool that is necessary for processing transactions from one's wallet and accessing the assets of it (PwC, 2022). Due to the private key being mathematically related to the user's wallet, loss of the key practically means loss of the wallet. This is not simply a problem for regular users, companies with crypto assets in their balance sheets must state crypto assets as a loss in case if they lose the private key of the wallet, even supposing that the money is still there and hadn't been stolen or spent (PwC, 2022). This creates

a secondary market for third parties providing security services for the crypto wallets of different networks, which leads to the same problem of putting the responsibility for your assets protection in different hands, once again contradicting with the fundamental ideas of user being independent intermediary of his own.

One of the other issues that results from the factor of lacking knowledge about the underlying technologies of different decentralized applications is the permissionless aspect of blockchain technologies. Transactions of any volume within the blockchain network always carry irrecoverable nature, meaning the completed transaction, which is already signed and stored within the network cannot be reversed even in case if a mistake had been done. Such feature of the blockchain transactions creates exposure for users of any level of proficiency, but more commonly for newly introduced users.

Despite the idea of DeFi foundation being built on programming code rather than centralized authority, nonetheless various important aspects of it are closely related or dependent on framework created by the traditional financial instruments (Federal Reserve Bank of Atlanta, 2022). Such an example can be cryptocurrencies which value are backed up by the traditional fiat-valued commodities or real money. These cryptocurrencies are indirectly dependent on the primary issuers of the backed values and the price changes of such commodities. One the key examples of such dependency risk can be noted in the stable coins, which will be discussed and introduced later in the paper. At the time of writing this paper, stable coins account for 17.5% of the whole crypto market cap with accumulative value of 140 billion dollar (CoinMarketCap, 2022). Such a drastic element of the crypto market being primarily dependent on the intermediaries of the traditional market creates the decentralization illusion risk which it is offering to resolve.

There are other important risks associated with the crypto also require mentioning in order to further proceed with the scope of this paper. It was discussed by Foley, Karlsen & Putnins (2019) how especially abusive are the cryptocurrencies in the hands of criminals as a result of the lack of taxation imposition on the cryptocurrencies and accessibility of the crypto technologies to masses. Crimes of different levels are being secretly financed making it nearly impossible for the authorities to track down and suppress perpetrators (Foley, Karlsen & Putnins, 2019). Besides the questionable matters in which crypto can be used, every user is still affected by the constant changing levels of the price volatility and scarce acceptance of the

cryptocurrencies both on social and governmental level in most of the countries (Zhang, Xue & Liu, 2019). This creates an irrelevance picture in the minds of the masses, as governmental acceptance is amongst the factors which are crucial to users for personal acceptance of the cryptocurrencies in their lives (The Economist, 2022).

1.2 Crypto market reaction to unforeseen global shocks

Before proceeding further with this paper and analyzing the crypto market reaction to unexcepted shocks later in this sub-chapter, it is important to make a clear distinguishment on types of cryptocurrencies, as understanding of this matter will help to have an uncomplicated picture of fundamental components of the crypto market.

Essentially, the world of cryptocurrencies falls into two main categories: Coins and Tokens. For the scope of this paper, the concept of coins is important, but author will provide comparison of both and their definitions.

Crypto coins, which are more commonly referred to as cryptocurrencies, represent digital currency which intricate mathematical formulas and computer code in order to enable the transactional, storage and security functions of it (Gandal, Hamrick, Moore & Vasek, 2021). The coins are built on their own unique blockchain network and are intended to be currencies, specifically. Unlike the fiat money, cryptocurrencies are not controlled by their respective entity, as once the coins are issued, they are no longer under the circulation control of the issuer (Wu, Wheatley & Sornette, 2018). Depending on their nature, crypto coins can have either limited or unlimited supply (Gandal, Hamrick, Moore & Vasek, 2021).

On the other hand, crypto tokens are digital elements which can represent an asset or a utility and can possess a value of something tangible. One of the most important differences from the crypto coins lays within the fact, that tokens are created on an existing blockchain network, which means it simply follows the rules and protocols of the network it operates on (Cong & Xiao, 2021). It is important to point out that fact, that tokens themselves do not necessarily carry value of their own, usually they represent a value of goods and services they can provide access to.

There is variety of different crypto coins, but most commonly the cryptocurrency market is being divided into three major components: Bitcoin, Altcoins and Stable coins.

The definition of “Bitcoin” on its own is usually used in order to describe the whole ecosystem, whereas the “bitcoin” or shortly BTC is a description of a unit of currency. With the

help of the blockchain protocols, users within the system are able to engage with one another, as well use the coins in order to store them or use as a mean of exchange for commodities or different currencies (Urquhart, 2016). Bitcoin stands at the origins of the cryptocurrencies, and it is generally accepted that it does not fall into same category as other coins but stands independently from them (Zohar, 2015). Besides, the primacy of it, the currency always remained dominant in terms of market share compared to all other coins with the ranging share of 32% to 86% throughout the years (CoinMarketCap, 2022).

An altcoin, short for "alternative coin", refers to any digital cryptocurrency besides Bitcoin. Altcoins emerged after the success of Bitcoin and often try to improve upon or provide a different variation of the Bitcoin's features (Cagli, 2019). The variation of different features that altcoins provide can range from faster transaction speeds, different mining algorithms, or added privacy features. In addition to that, altcoins have their own blockchain technology which are different from Bitcoin blockchain with, previously mentioned, different own feature, as well as value and mining process.

Stablecoins are type of cryptocurrencies which are commonly denominated and one-to-one pegged to American dollar (Chohan, 2019). Just like the Gold Standard, when each printed paper money was linked to actual existing value of gold (Lioudis, 2021), stablecoins follow the same manner of production with several distinctions from gold to money relation as every printed stablecoin is backed up by an actual real life valuable asset or in other words – liquid reserve (Lipton, Sardon, Schär & Schüpbach, 2020).

The following table will showcase general information about the variety of coins, their performance at the peak of the market as well as the situation for the date of 2022. The statistics of the table also highlights the volatility of the currencies as the differences from the recent market peak are also presented.

Table 3

Overview of the Bitcoin, Altcoins and Stablecoins

The coin	Peak market cap (09.11.2021)	Current market cap (31.12.2022)	The difference	Notable examples
Bitcoin	\$1.278 trillion	\$509.5 billion	-60.1%	BTC
Altcoins	\$1.795 trillion	\$319.1 billion	-82.2%	ETH, BNB, XRP
Stablecoins*	-	\$138.5 billion	-	USDT, USDC, BUSD

Notes. *Stablecoins are increasing in their supply yearly, so there is not concept of its peak

Source: author's calculations on the basis of open-source data from CoinGecko and CoinMarketCap

In order to further proceed with the topic of this paper, it is important to analyze how does the crypto market reacts to such unexpected events of war, as the reaction of traditional stock market towards the occurrence of unforeseen events is well discussed and researched, when on the other hand the lifespan of the cryptocurrencies is not as extensive and during it events of such scale were not witnessed, so the reaction of the market from economic standpoint is important to understand in order to further move with the topic of this bachelor thesis.

Understating the behavior and course of actions of the key market players and investors of cryptocurrencies in the moment of unexpected event, such as Russian invasion of the Ukraine was analyzed shortly after the 24th of February. The methodology used by the Gnazzo (2022) leverages the event of invasion as an external shock to the investors and key market players' financial forecasts and investment portfolio predictions over a short period of time extending to longer time frame windows of several months. Calculation of the cumulative abnormal returns of coins taken in the scope of the research help to analyze the reaction of the investors over the time and see the investment tendencies of the market during the times of worldwide reaction to the war.

The results (Gnazzo, 2022) showcase the inconsistent reaction of the crypto market on the following day of the invasion. The main focus of the paper was directed on 99 most popular cryptocurrencies and out of them on the following day the 41 one of those showed an immediate positive daily return while the rest were negative. Author considers it is important to point out that amongst the 99 coins which were in the scope of the research, 8 of those were the stable

coins² and the key concept needed for the scope of this paper is the fact that stable coins are meant to remain at 1\$ value at all times. Throughout the following day the returns of the of the stable coins were ranging between negative and positive, but the difference was not significantly influential on the price as the range of the percentage returns were less than 0.1%.

When analyzing the abnormal returns of each individual crypto coin over the extending period of time, a changing pattern can be noticed. Whilst throughout the first week after the invasion majority of the crypto currencies experienced negative abnormal returns, all of the stable coins were showing positive abnormal returns and remained statistically significant. Such outcome changes towards the end of the first week after the invasion as after the first week up until later the month the abnormal returns of the stable coins started to show negative results and the rest of the crypto currencies climbed from the negative abnormal returns to positive ones. Gnazzo (2022) points out another important detail, that the coins with the increasing abnormal returns tend to be the ones with a longer lifespan. This could come from variety of reasons, the reasonings might lay in wider availability of information regarding the established currencies and longer historical activity for investment-decision analysis.

The nature of this research being more focused on exploratory matter, meaning the purpose was set to simply understand the reaction of the market to unforeseen impactful event, can help to derive few ideas for the sake of this bachelor thesis to further understand and continue with the empirical investigation. As previously mentioned, the reaction of traditional market is well researched on the matters of reaction to global economic and political shocks, and similar reaction of crypto market can be noticed in the span of the first days. The positive abnormal returns of the stable coins in the first days can be compared to Flight-to-Safety phenomenon, a decision making in risk-management explained as investors seeking safer investments while selling the investments in their portfolio with higher risk of return (Adrian, Crump & Vogt, 2015). Crypto investors followed the same pattern; however, it flipped in the opposite direction later on with stable coins coming down to negative abnormal returns. While Flight-to-Safety tend to have a continuous trend (Longstaff, 2004), shortly after crypto users started investing back into the market rather than transferring their investments into safer options, such as stable coins.

² Stable a stable coin is a digital asset that remains stable in value against a pegged external traditional asset class (Hedera, 2022)

1.3 Adoption of new technologies

The idea of cryptocurrencies is still considerably new for the understanding of the masses. Despite multi-million user base and growing audience that is being involved in the crypto market, the previously mentioned numbers of roughly 300 million users still do not make up for a wider acceptance of crypto on the societal level. According to Kaspersky report (2019), only 10% of the respondents had any level of knowledge regarding the technologies of blockchain, their underlying purpose or the concept of cryptocurrencies functionality. More than a third didn't consider the idea of crypto to be profound at any level and classified it as shortly lasting trend. In order to move further with this paper, it is important to understand and evaluate what is affecting the people perception of not just crypto on its own, but new technologies as a whole.

Identifying the factors that influence how people utilize technology has been a prominent area of study in the science of information systems, and throughout the years, many ideas and methods have been documented and researched in order to provide an understanding of this issue.

In the research focused on understanding the acceptance and readiness of people towards the new and unknown to them technologies, primarily two study frameworks were developed (Porter & Donthu, 2006). One of those frameworks is identified as representation of a cognitive approach to studying technology that emphasizes the role of individual mental processes in shaping perceptions and experiences of technological systems (King & He, 2006). This approach focuses on understanding the ways in which the inherent characteristics of a technology, such as its design, functionality, and user interface, can influence the way that it is perceived and interacted with by individual users. By examining the factors that shape an individual's perception of a technology, this framework seeks to provide insights into the psychological mechanisms underlying technology use and adoption, as well as the ways in which these perceptions can impact the overall effectiveness and utility of a technological system. Technology acceptance model or TAM posits that these two constructs are the most significant determinants of an individual's intention to use and actual use of a particular technology (Fathema, Shannon & Ross, 2015). Perceived usefulness refers to an individual's belief that using a particular technology will enhance their specific need or facilitate task completion, while perceived ease of use refers to an individual's assessment of the simplicity and effortlessness of

using a particular technology. Together, these two predictors are thought to capture the essential psychological factors that drive technology acceptance and usage behavior.

This other framework represents a personality-based approach to studying technology acceptance that emphasizes the role of individual differences in shaping attitudes and behaviors towards new technologies. This approach is based on the idea that individuals differ in their predisposition towards technology, and that these dispositional differences can influence their likelihood of accepting and using new technologies (Lin, Shih & Sher, 2007). TRI or Technology readiness index is one of the models which adopts the ideas of personality-based approach. By taking into consideration a four personality dimensions: optimism, innovativeness, discomfort and insecurity it helps to understand the approach of people towards readiness for adoption of new and unknown technologies, as those dimensions are believed to be the key motivators (Parasuraman, 2000).

The acceptance of crypto was previously analyzed on the basis of those four dimensions. It was determined that discomfort and uncertainty showcase a negative correlation in regard to perceived ease of use, when on the other hand optimism correlates positively with it (Asif, Ahmad, Sohaib, Hussain & Mazzara, 2019). The study's findings showed a substantial correlation between participants' reported ease of use of cryptocurrencies and their perceived usefulness. Additionally, a very strong positive correlation between perceived utility and the desire to utilize cryptocurrencies was found (Asif, Ahmad, Sohaib, Hussain & Mazzara, 2019).

According to Jang, Lenskiy, Khan & Wood (2017), the factors of particular outcomes, convenience usage, transparency, and accessibility have a significant favorable effect on the adoption of cryptocurrencies.

Other findings indicate that individuals who are familiar with technical advancements have greater interest in them than those who are not as profound on such topics (Cheng, Demetriou, Efthymiou & Zarifis, 2014). Additionally, studies have indicated that federal involvement in the regulation of certain technology can increase public confidence (Perkins, 2020).

There are few ideas we can extract from the mentioned research for the sake of this paper and help analyze further the chosen topic. Author suggests that it is more important to firstly focus on the people themselves and their perception towards the new technology, such as cryptocurrencies, for a better understanding on how to have them introduced to new technologies

and only after those steps had been taken it is suitable to introduce them. However, it is still important to keep in mind that maintaining perceived usefulness and perceived ease of use at high levels is important no matter the level of user proficiency. Providing explanatory measures may be one of the key drivers for higher acceptance and adoption of crypto.

2. Effects of Russia-Ukraine war on crypto adoption in Ukraine.

2.1 Analytical overview of Ukraine's crypto environment

Before researching the brought-up topic of the following thesis and working the way towards the understanding of the research aims and fulfilling the research gap of the following thesis, it is important to have a discernment of importance of the relevance of the topic that is being brought up by the author. When considering the key role of cryptocurrencies in the current economic and political state of the world, it is in a high priority to understand the importance and the influence of the internal and external environments of Ukraine. It is vital to evaluate the circumstances under which the country became so crucially important from the standpoint of digital economy. Hence, in the following part of this thesis author will cover an overview of crypto environment of Ukraine.

From the 2011, when the world's first cryptocurrency was introduced up until this point in our modern history there hasn't been a geopolitical disaster of such scale which involved countries with an importance and influence in the world of cryptocurrencies as the Ukraine. According to 2020 "Global Crypto Adoption Index" research conducted by Chainalysis, Ukraine held first place in the cryptocurrency adoption. In order to measure the rate and success of adoption of the cryptocurrencies in their rankings, several indicators were taken into consideration such as:

- On-chain value received
- On-chain retail value received
- Number of on-chain deposits
- P2P exchange trade volume

Taking into consideration and calculations of each metrics, Chainalysis (2020) came up with the results of Ukraine being so high in the ranking in terms of crypto volume inflow and outflow adjusted to the population, the number of crypto users and economic performance of them in regard to sizes of countries' economies. Whilst the users from this country do not

possess the same purchasing power and trading volume as the crypto users from China or USA possess, the engagement in variety of crypto ecosystems, frequency and number of transactions adjusted to aggregate of users and the financial crypto literacy is significantly higher and keeps steadily growing at three digits percentage terms from year to year (Chainalysis, 2020).

Nevertheless, in the nominal terms there still is a noticeable and distinctive pattern of how the number of the crypto users is high in Ukraine. As of 2021, there is an estimate of 300 million users of cryptocurrencies worldwide and out of that number, Ukraine shares 1.83% of the whole market or approximately 5.5 million users (TripleA, 2021). The share of users might seem irrelevant at first glance and not big and influential enough in the comparison to other countries on the list with far more amount of users within their territory, but fundamental difference also lays within how actively engaged the users from Ukraine are in the financial activities related to the world of cryptocurrencies. Especially in the situations when simultaneously the majority of the users are getting active and the number of new users accumulate in a very drastic manner, the shockwave of the users can cause is very distinctive and affects the market as a whole including all of its players.

Such high demand and attention from people of Ukraine for crypto started at the same times as the world's increasing attention for cryptocurrencies in their biggest cycles of 2013 or 2016, but what is more vital to understand from the standpoint of this bachelor thesis is the way the political and economic environment is being set up for the cryptocurrencies and how the government and people are accepting the digitalization of the economy and working their way to ease and adapt the new technologies in their country.

The preparation of the right environment for the cryptocurrencies in Ukraine is a responsibility of the Ministry of Digital Transformation of Ukraine. Ukraine's Ministry of Digital Transformation is the major executive authority in charge of transforming the country into a contemporary digital nation. Crypto is not the only focus of the ministry, but the policies and implementation of those policies covers various areas related to the digitalization of the economic and politic state of the country starting from e-governance and e-democracy up to web and telecommunications infrastructure development all the way to expansion of the role of the IT sector (Regulation of Ministry of Digital Transformation of Ukraine, 2019). It is also important to point out one of the abstracts from the regulation which states that one of the key aims of the ministry is *“formation and implementation of state policy in the field of development of digital*

skills and digital rights of citizens". It is crucial to understand that not only regular citizens are interested in digitalization of the economic and political activities, but also government is highly focused on doing so and making sure they can simplify this process for their citizens in order to transform the traditional to modern. And digitalization of finances is no different.

One of the other initiatives that has been undertaken by the Ukrainian government is also important to mention as it shows and highlights government's perception of the fundamentals of cryptocurrencies. That being the fact that a year later the government released a package of future regulations called "Manifesto of the Ministry of Digital Development on Virtual Assets" (2020) in which they stated the approach they are taking towards the regulation of the cryptocurrencies alongside with all the virtual aspects of the digital economy. While describing the goals and objectives that the ministry is planning and already is executing, they focus the attention on following the fundamentals of the crypto world such as building, development and promotion of new financial ecosystems on the basis of decentralization of autocratical power, proposition of new regulations based of "independence of technologies" and "best practice", collaboration of existing traditional financial markets and arising digital ones (Manifesto of the Ministry of Digital Development on Virtual Assets, 2020). In addition to that, ministry announced that it will not be regulating in any manner the crypto miner sector of the country, as they believe that there is no need in the intervention of the governmental regulations in the independent processes such as mining, because they are regulated by protocols and network participants (Baydakova, 2020).

Besides the interest and demand from the citizens of Ukraine for decentralized financial cycles, it is clear to see that the government itself is not only interested in the prospects and implementation of crypto related solutions into existing processes, but it also encourages the digitalization of the country across various sectors. In the combination of the citizens' and government's concerns and interest in digitalization, the pattern of Ukraine being extremely open for cryptocurrencies becomes justifiable and gives understanding how they gained such an impactful role in the world crypto market.

2.2 Data and Methodology

In the empirical analysis author will be discussing and analyzing the operational strategies and methods used by crypto exchange company 001k.Exchange in order to understand how Russia-Ukraine war changed the adoption trends in Ukraine. The idea is to analyze the

changing patterns in demand of their primary clientele which are located in the Ukraine and track down the trends of crypto adoption according to their changed approach towards operation their business model. The empirical analysis will include conducting interviews with CFO of the exchange, in order to have a wider insight in the financial aspects of the business and the way they had been reshaped since the beginning of the war, and with client service representatives in order to have a clear understanding from the perspective of the clientele changing behavior, demand and attitude towards the crypto adoption.

Attempts to widen the amount of gathered information were undertaken, as author tried to reach out to other Ukrainian crypto exchanges (including “Changeit”, “COIN24”, “USDinBTC”, “BITCOIN24”. “AnyExchange” and “Buybank”), but unfortunately after several attempts no feedback was provided, however the representatives of two of the exchanges reached back and mentioned that employees are not allowed to give interviews according to corporate policies.

The exchange platform 001k.Exchange is one of subsidiaries of a01k, a Ukraine based company which operates within the crypto market. Initially the company was launched as a community project for like-minded people in the world of crypto which later grew into a company which specializes in the consulting matters of individuals and businesses, crypto exchange service as well as an educational platform. Up until 2022, the brand of 001k was widely known among the enthusiasts, but since the beginning of Russia-Ukraine war when the brand faced a new wave in their clientele and different expectations from their company, it became one of the key players in CIS region, while in the meantime expanding their services across the Europe and USA.

For the purpose of this paper, the company was chosen for variety of reasons. Being a Ukraine based company, it helped to narrow down the focus and address the changes on crypto adoption specifically of people who were directly affected by the horrors of war. Author believes choosing the one case example is relevant in this case as examining the way company adjusted their operational approach to post-war situation based on the changed needs and demands of the clients, as well as new challenges that came in addition will help to track down and analyze the way war, and its economic shock, affected the crypto adoption trends in Ukraine. Surprisingly, the results of this paper showcased the way the exchange platform analyzed the new challenges from their customers and how new and small-capital clients become more open towards the ideas of crypto adoption.

It is crucial to point out and focus on the way the platform was providing their services beforehand, prior the events of the Russia-Ukraine war and how drastically different it became as time went on. 001k.Exchange provides the services of converting digital currencies to Ukraine, as well as to other countries, with either cash or non-cash payments. Platform used to be working directly with consumers in offline manner, as they were dealing with high volume transactions with businessmen and crypto enthusiasts with larger capital were the central clientele base of them. Being based in Ukraine, they were only expanding in the larger cities around the globe where most of their transactions were going to, such as Miami, Berlin or Dubai.

As the Russia-Ukraine war erupted, Ukraine stated martial law which caused several disruptions in the banking system of the country and the exchange of foreign currencies was halted, as well as spiked inflation of the Ukrainian national currency, Hryvna. Under such conditions, the crypto market was not affected by the restrictions in terms of its performance capacities. 00k.Exchange couldn't operate successfully solely on their old operational approach as more and more people turned to crypto.

Author's main focus is to analyze based on the operational approach of the company and their newly introduced services, how war reshapes people attitude towards crypto and how it affects the adoption trends of the people under the state of economic and political shock. For example, company needed to expand their services beyond the currency exchange offering, but as well the educational and consulting services in order to handle the new demand from people who were far away from the topic of the cryptocurrencies.

The main goal of the research is not only to understand the changes company implemented from financial and operational perspective based on the clients' new needs, but as well as the way they were tracking down the changing demand towards their services from the new clientele and analyze the changing picture of the primary client that was approaching them, the needs they were seeking to be met and their current relations with them. Qualitative approach will be undertaken in the case of the interviews, because due to restrictions for accessing corporate data of the company. Such approach will help to have a picture of the overall trends directly from the perspective of a company which experienced the effects of the war on their clients.

Semi structured interview questions were chosen for the interview process, which will be addressed to financial officer and client service representatives. Allowing freedom of the answer

will help analyze not only the vision of the company on the effects of the war, but also understand also hear out opinions and experiences which were faced by representatives who worked directly with clients and were on the first line of dealing with them. The interviews were conducted online with all of the respondents.

As mentioned before, I collected responses from the manager responsible for the financial aspects of the company and strategical, as well as three client service representatives who are on the first line of addressing the clients via their requests per social medias and emails. Meetings were arranged via Microsoft Teams and each of them lasted in the range of 1 hour each, slightly less with client service representative as more questions were addressed to CFO. Only CFO, Artem, allowed his name to be mentioned in the paper, as the other three respondents preferred not to. Overall information regarding the conducted interviews is listed in the Table 1.

Table 1

Information about the interviews' participants

Company	The role	Location	Format
a01k	CFO	Dubai, UAE	Microsoft Teams
001k.Exchange	Customer Support	Kyiv, Ukraine	Microsoft Teams
001k.Exchange	Customer Support	Kyiv, Ukraine	Microsoft Teams
001k.Exchange	Customer Support	Kyiv, Ukraine	Microsoft Teams

Compiled by author

In order to receive a clear picture of the topic, an interview plan was constructed which included in itself analysis of the three different timeframes: before war, start and first month of the war, current situation. This will provide data for comparative analysis of user's pre-war preferences and overall trends in the Ukrainian crypto market, as well as once the war erupted and what a reaction the company faced from their older and newer clientele and analyze the situation months after the beginning of the war and tendencies changed in comparison to previous two timeframes. Some of the questions to CFO and Customer Support representative will be the same, however author will also address questions specific to both of the groups. In the following Table 2 and an outline of the interview is shown, as well as Appendix A discloses the complete interview plan.

Table 2

An overview of the interview plan

Timeframe	Example questions to CFO	Example questions to Customer Support
Pre-war	How would you characterize your primary clientele overall financial activity before the war?	How was the approach towards dealing with the clients, information that was being gathered from them?
Start of the war and first month	Was it noticed a higher activity from your current at the time clients or spike in new ones on the dates close to the beginning of the war?	What was the reasoning of clients addressing to your company, their major concerns and questions?
Nowadays	What are the new ways you are retaining the clients?	How different are clients months after the war and is the currency exchange the primary service they are seeking from the company?

Source: compiled by author

The direction of the questions was constructed by the author individually, as discovering the corporate approach change in the operational techniques, as well as overview of their financial and customer related performance can be used in order to analyze the societal attitude towards the cryptocurrency's adoption under the circumstances of the war. Author also addressed open end questions to the participants at the end of each of the sections in order to retrieve the information the interviewee might find worth mentioning for the scope of the paper and their personal assessment regarding the topic.

Among personally constructed questions, author will also address questions on the basis of the research mentioned in the theoretical section of this paper. As according to the Asif, Ahmad, Sohaib, Hussain & Mazzara (2019) the study's findings showed a substantial correlation between participants' reported ease of use of cryptocurrencies and their perceived usefulness, as well as a very strong positive correlation between perceived utility and the desire to utilize cryptocurrencies. So, question regarding how the company attracted the users who are new to the world of crypto or uncertain regarding the services provided by the company will be asked and was the respond rate to such initiative.

Another example of a question being constructed on the basis of the previous research can be the results of the Gnazzo (2022) research. Based on the results he came up with, it was noted that at the beginning of the war more capital inflow was noted into the stable coins as the opposite effect of "Flight-to-Safety" was noted later on, when a week after the war eruption, the

abnormal returns of the stable coins became negative, and the other coins turned positive. The question will be addressed what type of cryptocurrencies exchange was in the most demand during and after the war from both older clientele with large capitals and what was the currency choice from the new clients with no prior crypto experience. As company provides the exchange rates for various altcoins as well as stable coins, this question can be expanded from the perspective of 001k.Exchange.

Such division of the questions both from the perspective of the respective time frames, as well as researched based questions will help to track down the changes in the demand of the customers from the Ukraine, as well as the new trends of the crypto market in the situation of the war. Author will be able to retrieve the necessary information and data on the basis of which the picture of the effects of the war will be concluded later in the paper.

2.2 Empirical Results

In this section author will provide summary of the answers provided by the CFO Artem, as well as key takeaways from the customer support representatives. The broad nature of the answers gives freedom of representation of the data necessary to address the aim of the paper and track down the effects of war on crypto adoption in Ukraine. Same as the interview plan, answers will be divided into same three sub-chapters referring to the time frames about which questions were being addressed.

Pre-war

The company prior to the events of the war, used to operate on the more direct way when dealing with customers, both the ones they had over the years, as well as the new ones. The main base of their clients used to be businessmen and crypto enthusiasts, who were either in need of immediate cash equivalent of their assets within the Ukraine or according to their business needs need to retrieve cash in other countries, as well as send out the money there, as their own representative would be the recipient in 001k.Exchange other office. According to Artem, the CFO of the company, they were rarely addressed on the matter of smaller volume transaction.

” Mostly, 90% of all the transactions we were processing would start from at least 5.000-10.000\$. Almost all such requests were from those, who simply needed money to be spending on a daily matters. Throughout the month we would receive maybe 10 to 15 requests of a stricter and business matter, with higher volumes which can't be disclosed”

Due to the nature of high-profile clients, before the war those services were provided from their office in Kyiv with clients real time meetings. The need and demand for providing the services offline were more preferred rather than dealing online. It was explained to author later, due to the scale of the business and the community-like relations with clients, such meetings were also a tool of marketing in order to reach out to other high-profile crypto owners. Company wasn't too invested in the idea of attracting more clientele with smaller capital, however Artem points out that the platform never intended to represent themselves as high-end company.

“The reason simply lies in the fact that the services we provided were not yet attractive to regular people, no matter whether they owned crypto or no. Such business model wasn't created firstly, we just adapted according to the demand that was in the Ukraine and at the time our name was already established and trusted, but not outside the crypto community”

Artem pointed out from his own perspective that the reason for lower reach of regular clients may be due to the fact, that before the war people's exchange or transaction needs were satisfied by their banks or other companies which provided currency exchange and transfer services, referring both to crypto owners and non-crypto owners. As the banking system was not disrupted and other traditional financial intermediaries were operating as usual, the need for crypto exchange or transfer was not simply in need. They still had clients who were addressing their company, but the number of them and the size of their requests was never significant in comparison to their bigger clients. Moreover, the majority of their clientele were the repeat clients, meaning they were addressing them over and over. Unfortunately, the exact numbers couldn't be revealed to the author, but Artem points out that they were mainly working with the same people on usual basis and on the best months, attracting at least 2 or 3 new clients was the target, while keeping them in the same pool of repetitive clients. The client retention was successful, as such people were advanced on the topic of cryptocurrencies and were trusting the brand, the security of their money.

Besides the exchange of currency, the transfer of the money to different countries also was different prior the event of the war. To put it shortly, someone in Ukraine was sending 001k.Exchange a sum amount of cryptocurrency and in their office in another country their representative would receive the cash or non-cash equivalent and vice versa. Due to the nature of their requests and the status of the clients, the primary destinations were three financially large cities of USA (Miami, New York and Los Angeles), Dubai in UAE as well as three destinations

in Europe (Barcelona, Valencia and Berlin). The company never found the need for further expansion, as the destination points remained the same among their Ukrainian clients. Artem also points out:

“Even though we had smaller clientele for our exchange services, I can count only a few requests from our smaller clients who addressed our transfer services in the 2 years”

When talking to customer support representatives, the answers about company’s pre-war activity were only answered by one of them, as the other two were hired later. This person was addressing the clients via the company’s social medias as well as the support email address. He was the first line of customer support for both new clients and the smaller clients. It was pointed out that the bigger clients they had, were handled directly by the management, so the responsibility of the background check as well as the identity verification was conducted separately during the *“introduction meeting”* with such clients. The purpose of the customer support besides the assistance of the clients in their questions was also in providing the management with the necessary paperwork for new clients before the deal in case they preferred offline format.

A descriptive picture of the interested clients and those who addressed the company was also emphasized.

“A lot of the time people I was dealing with never ended up as our clients. I could tell by the type of questions they were asking, that they were seeking absolute anonymity in order exchange their money. At the time, the only requirement for receiving our services was providing a valid document, source of the money and additionally we were asking the reason for request, but we never paid too much attention on that factor. All the time it was simply personal matters.”

As conversation moved on, it was highlighted that the greatest number of small capital clients were reached at the times of the bull markets, precisely December 2020 and March 2021 were the most successful in terms of number of operations performed as well as the number of new clients. However, out of them all only 15% used the services of the company again. According to both Artem and the representative, it was agreed that predominantly the reason for such high-performance months was related to the fact that people simply wanted to cash out the earnings and lock in the profits they were able to acquire during the bull market.

Majority of the concerns which were addressed via the messages and emails were regarding the security and safety of the operations. Representative points out that all the people he was taking on had necessary understanding of the crypto fundamentals.

The pre-war activity of the company gives very interesting insights on the cryptocurrencies in Ukraine. The company was mostly operating based on the clients' needs, there was not a specific strategy in terms of the set goals or mission. They found they high-end niche and without aggressive marketing were accumulating the premium client base, whilst not focusing too deeply on expansion of the business, in terms of both the size as well as the customer reach. And the business philosophy was based on the demand. They didn't see it from regular people, however the user base in Ukraine was so big as it was mentioned in the theoretical part.

Start of the war and the first months

During the interview, I wanted to have a better understanding on how drastically the situation changed for the company once the war erupted. Their demand-based approach towards operating their business would provide a clear understanding on how war affected not only the way they operate, but how different the demand was and how different the incoming requests became and what exactly lead for the development of their educational and consulting department of the company.

When our conversation moved along, I was able to get information regarding the changes company faced closer to dates of the war and once it erupted. According to Artem, a week prior to the events of the 24th of February, there were individual cases of their clients getting active and moving out their crypto assets from the Ukraine. The concerns were carrying more of a preventive nature, as clients were under the influence of the news of the concerns regarding a potential invasion of Russia into Ukraine. Such increased attention was not noted from their small-scale customers.

The situation changed on the day of invasion. Exchange operated from 10:00 in the morning and by that time the following day they were completely loaded with incoming requests. In the first three days, almost every exchange they were performing were the requests of their big clients and they were managing to process them all on time. According to Artem, their cryptocurrency and cash reserves were reduced by half in the matter of those three days. Being concerned that the demand will keep incoming, they became more focused on facilitating

their company's resources in case of more clients requiring their services. And they were correct. By the end of the first week, they had to be dealing with close to 400 transactions a day.

“The key problem was in the fact that we couldn't keep up with the demand, due to the size of our staff and processes not being automated enough. One of the first things we had to do after increasing the reserves of our different currencies, was increasing the number of operators who were processing the transactions as well as new customer support employees”

Due to the safety reasons of the clients, the previously successful offline model of operating their company was not relevant anymore. Another initiative was undertaken, which was focused on improving the online aspect of their business in order to have a wider reach across the Ukraine to all the people in need for their services.

The increased number of customer support members was necessary not only from the perspective of keeping up with the incoming orders, but as well as addressing the questions and concerns of new clients. All three representatives agreed that the majority of the concerns and questions were primarily targeted at the operational aspect of the exchange, – the safety of transactions, the steps necessary for applying, the overall process of exchanging and transferring the money – and could be resolved by redirecting clients to their site with those concerns being addressed. According to one of the representatives:

“It was notable that those people knew what they were talking about and all they needed was understanding the way our business operates. Once the important information was available on the site, there was way less messages related to organizational aspects of the exchange, but we were dealing more with the potential clients and those who didn't have too much of understanding about the cryptocurrencies”

Company saw the necessity in providing the complete information about the services they are providing and why they are preferable not only in the circumstances of the war, but also because they were still operating with no affection of the martial law which limited the operational capacities of the banks and other traditional financial intermediaries, as well as the beneficial aspects of exchanging crypto through their platform (including the speed of their transactions, safety of the payments and exchange rates). In order to also reduce the load on their customer support department, the “Blog” section on their site started to provide complete guides on they kind of services they are providing and how to get the required help people need. For example, a way to acquire the cryptocurrencies via the local Ukrainian banks and further use

them in order to complete a transfer transaction. This helped them in receiving new clientele who addressed them straight through the request they created, without addressing their customer support beforehand. By compiling the most common questions addressed to customer support, they were able to reach such target.

Overall, the fundamental clientele base shifted within the first two month, as according to Artem, company had to be dealing with more requests of an average value ranging from 300\$ to 2000\$, whilst previously 90% of their activity was dependent on their high-capital clients.

“We understood that 70% of the clients we were working with, were people who were trying to flee the country and needed necessary sum of money to be sent somewhere immediately. The new destination countries were one of the key factors that made us realize that, as well as made us to expand geographically, in order to help out and provide the necessary services for people. That also included not only other countries, but the cities within the Ukraine”

Besides the country capital, offices in other major Ukrainian cities (Vinnitsa, Lviv and Dnipro) were opened as those were the major cities from which people were leaving the country. Considering all the nearby located countries and taking into account the most common destinations for Ukrainian refugees, as well the new countries which were required by the clients, company expanded their offices in almost all Eastern Europe (including Poland, Czech Republic, Hungary, Moldova and Romania), Baltic countries (Estonia, Latvia and Lithuania) and additionally several other European destinations (Austria and Portugal).

It was also pointed out later in the discussion, that the people who were in need for money transfer to those countries or addressed them in newly located cities of Ukraine, in every case were requiring transactions to be made in stable coins. However, their older clients as well as those who were seeking larger transfers to USA, UAE or other big European destinations were not sticking solely to stable coins, due to diversity of their portfolio and different needs, in comparison to refugees.

Opening new locations across Europe also included a more complex KYC (Know Your Client) and AML (Anti-Money Laundering) initiatives to be undertaken, in order to be working in accordance with European legislation as well operators were not able to gather necessary documentation just on their own, automating of the processes and larger number or necessary documentation was necessary in order to continue operating the business in other countries. Collection of more personal data didn't affect the number of interested clients, as it created more

trust in their eyes, because company pointed out that the data, they are gathering is being collected in order to continue legally operated in countries they are located.

However, there were still several major issues company faced, but couldn't address at the time, as all teams were focused on meeting the demand they were facing, completing the process of settling their brand and offices in other countries as well as improving the current operational system. The company pointed out a target list which had to be addressed as soon as they were able to get back on track were. Company had interest in their services from people with no prior experience in cryptocurrencies or didn't have a crypto wallet at all, besides that as a lot of people were under stressing situation with moving to another country and access to laptop was not available for many people. Adapting their services to be available to masses was another target. As the fundamental demand for their services was now shifted towards small-capital users, they started to focus on attracting more clientele base not with strictly marketing advertisement, but through educational and explanatory resources. The way company dealt with these issues and why there was necessity in that in the first place will be addressed in the next sub-chapter.

Nowadays

The interviews were conducted at the end of December, so it had been almost 10 months since the beginning of the war and the way the 001k.Exchange operates nowadays changed drastically compared to how they always been doing before the events of the war and at the time when it happened.

In 2021, a trademark for the 001k.Consulting, a consulting agency specialized in assistance of individuals and legal entities in the field of digital assets and blockchain technologies, was registered by the company, but up until the year 2022 it wasn't functioning the same way it does now. The increased demand from Ukrainian companies, which wanted to adapt their operating and financial activities on the blockchain technologies due to disruptions their businesses faced during the war, and people, who were willing to enter the field of crypto and needed proper juridical guidance, became the factor for the consulting department of the company to address such demand from in Ukraine.

As previously mentioned, there was interest from people who were far away from the world of cryptocurrencies and understanding what blockchain technologies represent. As not every person needed comprehensive guidance like their consulting agency provides, company

started investing in their educational platforms and using their social medias for similar purposes. According to Artem:

“We knew there would be no point in advertising the services we provide to people if they don’t understand why they should even address us in the first place. Instead of forcing our services, we decided to focus on educating people regarding cryptocurrencies and blockchains, using our platforms as a tool of explaining basic concepts, analyzing the phenomenon and news happening in crypto. Giving understanding to people would attract them to use our services too and as we noted such strategy worked”

The company rebranded their social medias and started to create educational posts based on the questions and concerns they are receiving via messages, in the comments and via email. Besides content creation, company also started to use their platform in order to attract public speakers who were also educating their followers on different topics and aspects related to cryptocurrencies. As of the end of 2022, the brand accumulated over 500.000 followers across all of their platforms. Besides that, a 001k.Education was launched by the company, which is fee-paying educational platform for users who want to take their knowledge of cryptocurrencies on a higher level, where they can learn about different aspects of cryptocurrencies trading, evaluation of the projects prior to investing in them, digital assets security and many more. Company saw success in such initiative too, as they are currently close to 3000 members of their educational platform. According to Artem, roughly 2000 of those users happen to be either Ukrainians or from Ukraine and majority of the, turned to crypto after the events of 2022.

The customer support representatives also pointed out, that such approach towards providing people with explanatory information also reduced the number of questions and concerns which are being addressed to them.

As many clients were unable to have access to a computer or laptop in order to get the services the company is providing, as well as company wanted to cover a layer of customer who want to use the benefits of the cryptocurrencies and their technologies, but simply had no interest or intention of going through the whole process of creating a wallet and getting themselves introduced into crypto, new ways of covering a larger scale of people was created. One of such initiatives was creation of a Telegram-bot, which can be accessed from mobile device and used by everyone in order to access all the services the 001k.Exchange, in addition to which they can

use the bot in order to safely keep their cryptocurrency and use it as a wallet. The company is operated as intermediary in such scenario.

The company also tracked down the new inflow of clients once they implemented affiliate programs for existing clients which rewards them for inviting new users to the 001k.Exchange. The users they were able to obtain in the first months of the war stayed over the period of time and continue to use the services on the regular basis, even though there are less disruptions and issues with the banking system and other financial intermediaries continue to operate. As many Ukrainians are still away from their homes, company continued to expand their coverage in the countries where many Ukrainians need the services of their company (especially in Poland) and noted spike in activity from those regions, as well as international transfers between the main destination where people are relocated and Ukraine.

2.3 Discussion of the empirical results

With the results of the empirical research, author will address the correlations of the theoretical section of the paper as well as understand whether the aim of the paper is answered based on the conducted interviews.

As it was stated by Roy (2017), how the times of the most attention from the masses towards the cryptocurrencies happens in the times of the bull market and positive overall trends, profitability seeking rational people. Same pattern can be noticeable from the perspective of the 001k.Exchnage as the clientele base they had was quite inconsistent and the spikes in the activity of their services were happening during the times of the crypto bull markets. The prices of assets go up, as well as the prices of different cryptocurrencies which helps everybody to make money, and those who get lucky or simply find themselves in the situation when they could make the most of the situation, are the ones addressing the company's services.

Besides those facts, there was no practicality for regular people to be addressing to crypto as it was mentioned, their needs were perfectly met by their banks or other financial intermediaries. In the situation when the necessary to you tools are working just fine, one might not find any need in changing the established way of the economic life, the way people are managing their own financials. This can also be supported by the way how prior to war many people who were interested in getting the company's services never ended up as their clients, as market entry requires a deeper understanding. Such might not seem needed, to people who are

trusting the banks to manage their money, as no same level knowledge is required from them in such case.

However, with the way it was noticed a spike in the interest for 001k.Exchange services, it can be related to the way people's financials were not secure under situations when banks can simply halt the withdrawals or limit access to the money people are in possession of. No matter the circumstances of the outside world, the protocols and the technologies of the blockchain technologies are not disrupted and the flow of cryptocurrencies continues as usual. As there is also no necessity to wait days for international transactions to be complete, the quick nature of the crypto transactions as well as no limitations on the sizes of those transactions (Afonin, Gervais, Lazaretti, Qin & Zhou, 2021) were the attracting factors for those who turned to crypto with the beginning of the war, as that was what they needed at the time, for various of reasons starting for assurance of relocation as well as providing for others or themselves on a distance.

The demand and attention to the company continued months after war as people experienced first-hand the technological advancements of the cryptocurrencies and the benefits it can come with. Under the situation of the distress and when people are concerned for the safety of their money, the protocols of the blockchain networks and its technological perks is what makes people rethink their attitude towards cryptocurrencies.

It is important to keep in mind, that such demand increase was happening at the times of the crypto and traditional financial markets performing negatively and there would be no point in personal investment into the world of crypto, as the number of ways to be able to make profit of the situation is significantly less. People started to address to it for reasons outside of rational ones.

However, how it was researched by Gnazzo (2022) that once the Russia-Ukraine war erupted, for the first week all the other coins were showing negative abnormal, whilst the stable coins were positive – and then it flipped backwards, that investors turned away from the safer option of stable coins towards the riskier options. That is particularly the case in the situation of the 001k.Exchange as their more proficient clients and those who were in the crypto space for longer, were addressing them and requiring transactions in different cryptocurrencies in accordance to their needs. They have a deeper understanding of the financial aspects of different coins and what works the best for them, however that is not the case for the clients of a smaller scale. The new clientele who wasn't as advanced or were the first timers or happened to be the

ones who were fleeing the country were addressing the company with the need of the stable coins. The safety of the stable coins, its unchanging price is what became the key factors for such clients, as again – those people were not seeking for own profitability or weren't too invested in the aspects of other altcoins.

As months went by and the banking system of Ukraine started to get back on track, people were still invested in the idea of getting into the cryptocurrencies. Adoption of new technologies is always a hard and complex process for any individual. As stated per Fathema, Shannon & Ross (2015) perceived usefulness and ease of use being one of the key factors in adopting new technologies. As 001k.Exchange was trying to reduce the entry threshold for the users and make it as easy as possible, the more clients they were able to attract. As people were experiencing how easy the usage of the crypto operations was being performed, the higher demand the company faced. As well as the convenience usage, transparency, and accessibility have a significant favorable effect on the adoption of cryptocurrencies (Jang, Lenskiy, Khan & Wood, 2017) same was targeted by the company, as they eased the entry for new users, made it accessible to use their services via different tools as well as sharing openly the current reserves of the company so all the operational aspects of the company were transparent. Company ironing out more user-friendly functionalities made new users more open towards adopting cryptocurrencies in their lives and willingness to try again and again. It was previously suggested by author that it is more important to firstly focus on the people themselves and their perception towards the new technology, such as cryptocurrencies, for a better understanding on how to have them introduced to new technologies and only after those steps had been taken it is suitable to introduce them. Providing explanatory measures may be one of the key drivers for higher acceptance and adoption of crypto. Same way company started to develop explanatory and educational direction of their company, through their social medias as well as consulting and educational departments, in order to reduce the concerns, they are being addressed by their current and potential clients

In addition to that, studies have indicated that federal involvement in the regulation of certain technology can increase public confidence as per Perkins (2020) – similar situation as the way 001k.Exchange was complying with European legislation and introduced stricter AML policies, people weren't hesitant in sharing personal information and the number of created requests didn't slow down as there was a feeling of governmental security from the perspective

their cryptocurrency operations being legit and in accordance with law. Perhaps, further acceptance or involvement of the governments in the field of crypto would create a better trust among regular people.

It is hard to estimate, whether the increased attention from masses also increased the usage of the cryptocurrencies in illegal activities (Foley, Karlsen & Putnins, 2019), as in the case of crypto exchanges, they are operating with regards to the legislation of the country they are in and in order to remain a legitimate financial institution following the AML protocols is crucial, so outlaws would have hard time anonymously engage in such operations, as at least proof of the source of money or presenting documents of the client is contradicting with the nature of criminals work.

Even though, war pointed out how peoples' money is not in their control in such situations, and they won't be able to access them to full extent of their needs and made people pay more attention to solutions crypto can offer them with no similar distress, there are still concerns left open regarding the future of the crypto adoption once the war ends. Being a client of 001k.Exchange may mean that one is becoming more open towards the ideas of cryptocurrency, and they are willing to utilize the benefits that come with the blockchain technologies, but still they are being provided with services from an intermediary. Their clients started to get themselves introduced to the world of crypto, but yet there is a big piece of the clientele who are utilizing solely the services of the company. Would users of the Telegram-bot be willing to get themselves more invested in the fundamentals and have a better management of their digital assets or no, as at the moment they are trusting their coins to be held by an intermediary. Is the factor of price volatility of the cryptocurrencies or scarce acceptance of the cryptocurrencies both on social and governmental level in most of the countries (Zhang, Xue & Liu, 2019) repelling to people as further the time goes? This creates a space for further research regarding how people in the situation of war who had to accept and adopt the idea of cryptocurrencies in their lives, but with the help of intermediary will be willing to continue being invested in such field or are they only interested in utility functions the blockchain technologies provide and the ideas and fundamentals of crypto are in no interest of these people.

Conclusion

Conducting theoretical and empirical analysis author was able to identify several findings about the DeFi. Firstly, the underlying foundation of all cryptocurrencies was presented and defined – Blockchain. Starting its way all the way from 1991 being defined as the idea of “one-way hash functions, whose outputs are processed in lieu of the actual document, and of digital signatures” (Haber & Stornetta, 1991) up until nowadays when it is being given the characteristics of “decentralization, transparency and data integrity” (Iredale, 2020). Over the years technology did not change significantly, thus the definition from any year is relevant till this day.

Further the theoretical research brought up the idea Decentralized Finance with the comparison to traditional Centralized Finance. While bringing up key ideas of each of the concepts, author compiled a comparison table mentioning the differences on transactional speed, authority over the money and informational transparency.

Studies which were related to new technologies adoptions in were introduced. Author highlighted the importance of inclusion of people’s perception of cryptocurrencies, while keeping in mind maintaining perceived usefulness and perceived ease of use at high levels is important no matter the level of user proficiency. Providing explanatory measures is also one of the key drivers for higher acceptance and adoption of crypto. The study on overall crypto market reaction to the unexpected event and shock of war was also presented. Findings were shown and noted throughout the paper.

Moreover, author gave an analytical overview of the crypto environment of Ukraine prior the war, as the case of this country is being investigated.

Later on, author presented and justified the way empirical research had been conducted via the interviews and justified the choice of the questions addressed to the interviewees, as well the choice of the interviewees.

From the provided empirical analysis, author derived the idea that in the case of Russia-Ukraine war an unexpected natural shock is affecting positively on the adoption and acceptance rates of Ukrainians, as people who found themselves to be as victims of the situation. People who are in the situation of stress, are facing problems such as inability to access their capital freely or get put under restrictions of a bank where their money is at tend to witch to crypto exchanges due to accessibility, convenience and speed of technology. The results of the research

showed that people, who are under the situation of war prefer to use the stable coins as a secure and quick way to maintain the value of their money and be able to take it outside of closed monetary borders, and do not seek rational means or need in currencies with higher volatility. The results also point out an increasing interest to the cryptocurrencies and blockchain technologies in the situation of negatively performing market.

The circumstances of war showed to people that under situations of such stress, one's access to their own financials will be restricted and they are in no control over their money. Especially when there is risk for person's own life, any matters will be done by them. From the economic perspective, cryptocurrencies could provide people with the technologies they needed with no restrictions or delays at the time when they needed the most. And months later, with the underperforming market people are learning about blockchain and getting themselves and other familiar with world of cryptocurrencies.

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Appendix A

Contact Letter in English

Hello [Subject name]!

Hope this finds you well.

My name is Emil Geiushov. I am currently conducting research for my Bachelor Thesis on the topic of crypto adoption among individuals in Ukraine and how Russia-Ukraine war affected it. Collecting information from Ukrainian crypto exchanges is the priority at the moment. Would you be interested in taking part in my interview and answer few questions? The interview can be completely anonymous.

Your own perspective, as well as company's perspective on this topic would be greatly appreciated!

My contacts: [contacts]

Thank you!

Emil Geiushov

Appendix B

Interview questions and structure

Timeframe	Questions to CFO	Questions to Customer Support	Sub-topics
Pre-war	<p>How would you characterize your primary clientele overall financial activity before the war?</p> <p>What was the reasoning of them addressing your company?</p> <p>What was the coverage of your clients in Ukraine? Specifically, from Ukraine, what were the destination countries of the requests?</p>	<p>How was the approach towards dealing with the clients, information that was being gathered from them?</p> <p>How would you characterize the clients you were dealing with?</p>	<ol style="list-style-type: none"> 1) The type of clientele prior the war eruption (level of the proficiency) 2) How many of them were repeat customers) 3) The nature of requests and services provided 4) Demographic and geographic mapping 5) Perhaps the transactional volumes overall and of an average request value
Start of the war and first month	<p>Was it noticed a higher activity from your current at the time clients or spike in new ones on the dates close to the beginning of the war? What were the new countries your clients were addressing their transaction? How did you expand geographic coverage within the Ukraine and outside of it? How did you change your approach towards covering the demands of new clients (from technological and</p>	<p>What was the reasoning of clients addressing to your company, their major concerns and questions?</p>	<ol style="list-style-type: none"> 1) The new wave of clients, the nature of their requests 2) Change in geographic mapping, 3) Different level of new requests 4) How differently operational matters had to be handled with new wave of the clients 5) Primarily focus on the first 1-2 month from February, to track down the new clients and how company adapted in the beginning

	operational perspective) Was there higher demand for altcoin transactions or more stable coins one?		
Nowadays	What are the new ways you are retaining the clients and attracting new ones? What measures were undertaken to handle new demand from clients (as previously nothing was automated)	How different are clients months after the war and is the currency exchange the primary service they are seeking from the company?	1) The company's approach in the new changed environment, new ideas and projects for client's attraction and retention

Resume

Vene-Ukraini sõja mõju on krüpto vastu võtnud amongi individualid ukrainis.

Emil Geiushov

Suuremas osas krüptomaailmast ajendasid tavakasutajate nõudlust ja tähelepanu sellele eelkõige ratsionaalsed isikud, kes otsivad kasumlikkust. Sellise juhtumi võib esitada 2022. aasta turusuundumuste kohta. Aasta ei olnud laastav mitte ainult krüptoturu, vaid ka maailmamajanduse seisukohast. Geopoliitilise kriisi ajad - kui traditsioonilised finantsasutused varisesid kokku eriolukorra ajal, piirasid rahapiirid raha vaba väljavoolu ja pangandussektorit mõjutav eelarvepoliitika muutsid inimeste arusaama krüptost Ukrainas ning tõid kaasa probleeme ja lahendusi, mis olid omased ühele turule, kuid mõjutasid seda tervikuna.

Teoreetilise ja empiirilise analüüsi autor suutis tuvastada mitmeid järeldusi DeFi kohta. Esiteks, aluseks vundament kõik cryptocurrencies oli esitatud ja määratletud - Blockchain. Aastate jooksul tehnoloogia oluliselt ei muutunud, seega on iga aasta määratlus tänapäevani asjakohane.

Lisaks teoreetiline uurimistöö tõi välja idee Detsentraliseeritud Finance võrreldes traditsioonilise Tsentraliseeritud Finance. Toodes välja iga mõiste põhiideed, koostas autor võrdlustabeli, milles mainiti erinevusi.

Tutvustati uuringuid, mis olid seotud uue tehnoloogia kasutuselevõtuga. Autor tõstis esile inimeste krüptovaluutade tajumise kaasamise tähtsust, pidades samal ajal silmas tajutava kasulikkuse ja tajutava kasutusmugavuse säilitamist kõrgel tasemel, on oluline sõltumata kasutaja oskuse tasemest. Tutvustati ka krüptoturu üldist reaktsiooni ootamatule sündmusele ja sõjašokile. Leide näidati ja märgiti kogu paberis.

Lisaks andis autor analüütilise ülevaate Ukraina krüptokeskkonnast enne sõda, kuna selle riigi juhtumit uuritakse.

Hiljem tutvustas ja põhjendas autor intervjueeritavate empiirilise uurimistöö läbiviimise viisi ning põhjendas intervjueeritavatele suunatud küsimuste valikut, samuti intervjueeritavate valikut.

Esitatud empiirilisest analüüsist tuletas autor mõtte, et Venemaa-Ukraina sõja puhul mõjutab ootamatu loomulik šokk positiivselt ukrainlaste kui olukorra ohvriks langenud inimeste vastuvõtmist ja aktsepteerimist. Inimesed, kes on stressiolukorras, seisavad silmitsi selliste probleemidega nagu võimetus oma kapitalile vabalt juurde pääseda või sattuda panga piirangute

alla, kus nende raha kipub tehnoloogia kättesaadavuse, mugavuse ja kiiruse tõttu krüptovahetustele üle minema. Uurimistulemused näitasid, et inimesed, kes on sõjaolukorras, eelistavad kasutada stabiilseid münte kui turvalist ja kiiret viisi oma raha väärtuse säilitamiseks ning suudavad seda viia väljaspool suletud rahapiire ega otsi ratsionaalseid vahendeid ega vajadust suurema volatiilsusega valuutades. Tulemused juhivad tähelepanu ka suurenevale huvile krüptovaluutade ja plokiahela tehnoloogiate vastu negatiivselt toimiva turu olukorras.

Sõjaolud näitasid inimestele, et sellises stressiolukorras piiratakse inimeste juurdepääsu oma rahalistele vahenditele ja nad ei kontrolli oma raha üle. Eriti siis, kui on oht inimese enda elule, teevad kõik asjad ära nemad. Majanduslikust vaatenurgast võivad krüptovaluutad pakkuda inimestele vajalikke tehnoloogiaid ilma piirangute või viivitusteta ajal, mil nad kõige rohkem vajasisid. Ja kuud hiljem, väheste tulemustega turul inimesed õpivad blockchain ja saada ise ja teiste tuttav maailma cryptocurrencies.

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