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The status of cryptocurrency in Morocco

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ABSTRACT

Cryptocurrency is a new economy of transacting value whose use case is undeniable. Its only requirement is to be human, and it is borderless. In Morocco, cryptocurrency is erasing borders and gaining popularity. However, the general public opinion on this new innovation is unclear. This study aims to elucidate the popularity of this technology in the Kingdom by means of a small survey. The present study also investigates areas related to cryptocurrency, such as people's trust in banks. The results from the survey are contrasted with other countries to obtain a global perspective regarding Morocco's placement in the cryptocurrency adoption spectrum. The results also suggest that Morocco has the potential to adopt this technology. Notably, 9% of the sample population claim that they have owned, or still own, some sort of cryptocurrency. However, the country faces legal obstructions and financial restrictions that impede the progress of cryptocurrency adoption.

Introduction

Although cryptocurrency has been attracting much attention, especially in contemporary times, its relevance does not necessary stem from the robustness of its technology but rather from an increasing human need for a trustless system that manages human interactions. At face value, the invention of the blockchain¹, that is, the underlying cryptocurrency technology, seems to be a direct consequence of the 2008 financial crisis. However, its emergence can be regarded as a historical necessity, which is fueled by the advent of the Internet, and it has been growing since the world's choice of a fiat currency system in 1971 when the U.S. dollar has become untethered to gold. Since then, the U.S. dollar value has been decoupled from gold, and it has been floating on its own without any anchor to its value. Moreover, several other fiat currencies have based their value on the U.S. dollar, and the Moroccan dirham is no exception. It is partially pegged to the U.S. dollar by 40% (Eljechtimi, 2020). Thus, cryptocurrencies question the validity of today's fiat currency system.

With the growth of the quantitative easing stimulus plans of the U. S. Federal Reserve, especially in the wake of the COVID-19 crisis, more people are becoming skeptical as to why their government is in control of money in the first place, which is similar to the widespread cynicism as to why the state was in control of religion during the late middle ages. The Renaissance detached religion from the state, and now, perhaps, it is time for the blockchain technology to detach money from

the state. This global sentiment has been brewing since the Great Depression throughout the cyclic financial crises that the world has undergone. The Internet is at the heart of this sentiment, and it is decentralized by nature. Bitcoin and other cryptocurrencies are the native currencies of the Internet. Like the Internet, decentralization is the main aspect of cryptocurrencies. There is no single point of failure. There are copies of cryptocurrency ledgers in millions of computers all over the world, and there are even copies of the Bitcoin ledger in orbiting satellites (Nasdaq, 2017). The network, which self-corrects, does not need human intervention, and it cannot be cheated nor destroyed. The robustness and virus-like tendency of this technology is a threat to many governments around the world, especially countries with high inflation rates. Citizens of such countries see cryptocurrency as a safe haven to store their wealth as a hedge against their local inflated currency. Furthermore, governments that are going through periods of unrest cannot seize the assets of rebels and freedom fighters who may use cryptocurrencies to transact in order to escape government sanctions (Koffman, 2020). Morocco, as a case study in this article, is not experiencing waves of unrest and does not have an inflation problem. Nevertheless, cryptocurrency is banned in the country. Thus, this study aims to explore the state of affairs of cryptocurrency within this context. It seeks to highlight the general public opinion on digital assets and how popular they are among people. The main motivation for this article is the absence of such exploratory studies in the Kingdom.

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¹ "Blockchain technology refers to a fully distributed system for cryptographically capturing and storing a consistent, immutable, and linear event log of transactions between network actors. This is functionally similar to a distributed ledger that is consensually kept, updated, and validated by the parties involved in all the transactions within a network. In such a network, blockchain technology enforces transparency and guarantees eventual, system-wide consensus on the validity of an entire history of transactions" (Risius & Spohrer, 2017).

Literature review

Cryptocurrency in Morocco

Morocco has banned Bitcoin and cryptocurrency transactions since November 20, 2017 (Office des Changes, 2017). The ban has not been met with any resistance except from those who have stakes in the cryptocurrency space in some sort of way. Any existing resistance has been unnoticed because it has been limited to a small virtual community since then. The following is an example of people's opinion of the government:

"hiding its head in the sand by focusing on vague risks and did not measure the benefits we could reap from Bitcoin and the blockchain technology to solve thorny issues in our country."

This statement is according to Badr Bellaj, a Moroccan blockchain consultant (Jusdanis, 2017). According to the Moroccan exchange office, the reason why Morocco has banned cryptocurrency is vaguely stated. It asserts that the space needs regulation and, consequently, the lack thereof constitutes a danger to people using cryptocurrencies. Moreover, it urges people to comply with current regulations and use accredited financial intermediaries for any sort of transactions and remittances (Office des Changes, 2017). Nevertheless, a few months later, Brookstone Partners, a U.S. firm, announces that it is considering building a wind farm megaproject in the city of Dakhla (southern coast of the Kingdom) to generate clean energy to mining cryptocurrency (Hirtenstein, 2018). The ambition of the firm does not seem to consider the local laws regarding cryptocurrencies within the Kingdom; otherwise, it can be a hint of ongoing negotiations that the general public is unaware of.

The main argument that supports the legitimization of the ban for countries such as Morocco is that cryptocurrencies might challenge the local currency. As they cannot control the cryptocurrency space, it is essential that they control what people use as a medium of exchange. Another argument is that if people are allowed to use cryptocurrencies, remittances would flow through digital assets. If so, this may reduce the inflow of hard currencies, such as the euro and the U.S. dollar, to the country through the Central Bank of Morocco (Bank Al Maghrib), thereby consequently diminishing the country's foreign currency reserves. Nevertheless, if a country bans cryptocurrencies, it does not mean that its people cannot use them. Cryptocurrencies, especially Bitcoin, have survived for over a decade primarily because they are control-resistant. No country in the world has the power to stop the transactions, and the only feasible way to terminate it is to put an end to the Internet worldwide. Nonetheless, cryptocurrencies are still at an early adoption, therefore, they may not constitute a threat to local currencies yet.

As mentioned earlier, although cryptocurrencies are banned in Morocco, their use cannot be stopped. There is no practical way for any government to enforce the ban as long as people have smartphones and access to the Internet. Anybody can be part of the cryptocurrency public ledgers as neither identification (ID) nor signing up is required. The cryptocurrency network is agnostic as to whether you are an animal or human. It is a dumb network with less restrictions and limitless potential. Antonopoulos (2016) expands on this point by stating that:

"Some networks are "smart." They offer sophisticated services that can be delivered to very simple end-user devices on the "edge" of the network. Other networks are "dumb"—they offer only a very basic service and require that the end-user devices be intelligent. What's smart about dumb networks is that they push innovation to the edge, giving end users control over the pace and direction of innovation. Simplicity at the center allows for complexity at the edge, which fosters the vast decentralization of services."

Antonopoulos (2016) further gives an example of a smart network such as the telephone network. Regardless of how much the landline telephone device is improved, there is always a restriction by the telephone cable network. Conversely, the Internet and blockchain are dumb networks, and they both have the potential to host the integration of any other layer of innovation.

Generally, cryptocurrencies and blockchain technology are still in the experimental phase, and thus, there is limited literature on the topic, especially studies that investigate the effects of this innovation on society and culture. Blockchain technology is less than 13 years old as of March 2021 (i.e., since the release of the Bitcoin white paper in 2008). The major area of progress in this field is in IT development, which is mostly technical. Risius (2017) notices the lack of attention from researchers outside the IT development fields as follows:

"The amount of business-related quantitative research beyond cryptocurrencies is, however, extremely limited, and theory-driven empirical research on blockchain-related phenomena is generally scarce. On the one hand, this may be owing to the fact that blockchain technology is still relatively nascent in the hype cycle, and it took long for researchers from outside computer science to realize the technology's potential. On the other hand, it may be owing to researchers' lack of knowledge about how to collect data for meaningful quantitative analyses in an area that has long been dominated by technical jargon and conceptual fuzziness."

This inattention to blockchain technology can also explain why cryptocurrencies are still speculative markets. The academic world is yet to comprehend the rapid growth of the technology and establish a solid theoretical framework for future research. The current study provides a different perspective on the technology. It is an exploratory study that attempts to fill one of the many gaps in the literature surrounding this new topic in a very narrow geographical context.

Cryptocurrency is unstoppable

As of September 2020, 9 countries have banned cryptocurrencies. These countries are Algeria, Bolivia, Egypt, Iraq, Morocco, Nepal, Pakistan, United Arab Emirates, and Vietnam (Library of Congress, 2020). Comparatively, however, this number is inconsiderable based on the total number of countries in the world. The small number of such countries already indicates that the world is not universally against the idea of consensus networks and trustless systems.

The idea behind the blockchain technology is revolutionary, and it is here to stay. It is one of the ideas that humanity cannot unlearn, and it is similar to the idea of democracy. Once the world learned democracy in antiquity, it could not unlearn it. It kept spreading and getting stronger. Likewise, blockchain is a strong concept and has a solid philosophical foundation.

"Nothing is more powerful than an idea whose time has come" (Victor Hugo).

The idea of blockchain technology entails a tool that removes the human agency at the center of verifying transactions and interactions. It is called a trustless system in the sense that we do not trust people or institutions, but we rather trust the algorithms. This eliminates human error and corruption. Nonetheless, trust is still present as we have to trust the system to work in the same way that we trust institutions. However, institutions can make a value judgement on an individual. Blockchain is agnostic as to who you are or what you do.

Bitcoin is a virus that pays you to keep it alive. Whoever created Bitcoin can be referred to as a true anarchist. We do not know who they are, and the only trace available is a name: Satoshi Nakamoto. It is totally understandable for the Bitcoin creator to release the Bitcoin white paper, launch the Bitcoin cryptographic protocol on the internet, and then disappear; otherwise, they would be excoriated. The Bitcoin



Fig. 1. Bitcoin Legality Around the World - Howmuch.

white paper (Nakamoto, 2009) is a masterpiece and a major breakthrough in cryptography. It is revolutionary and disruptive—impregnable, censorship resistant, decentralized, and indestructible. If the supercomputers of big corporations, including Google, Apple, Microsoft, Amazon, and so on, combine with the FBI, CIA, NSA, and other government agencies attempt a coordinated attack on the Bitcoin network, they would most likely fail. This is because the network operates on the combined processing power of all the computers and supercomputers of the miners and people around the world. If the attacker's computer processing power exceeds that of Bitcoin (also known as the 51% attack), the network would fork into two Bitcoin ledgers, and the honest miners will keep adding blocks to their own fork and ignore the one created by the attacker (Hammerschmidt, 2017).

The three concepts, that is, blockchain, cryptocurrency, and Bitcoin can be confusing and sometimes might be used interchangeably. Blockchain is the technology that underlies cryptocurrencies. It is also broadly known as the distributed ledger technology (DLT). Notably, there are cryptocurrencies that do not rely on blockchain, and the IOTA cryptocurrency developed by Popov (2015) is one of them. Its mechanisms rely on a mathematical concept known as a directed acyclic graph or tangle. The tangle system is efficient and cheaper to operate. Blockchain, however, has seniority over the tangle system in terms of security and adoption rate. Another example is hashgraph, which is developed by Leemon Baird (Baird, 2016). As a ledger mechanism, hashgraph ensures the efficiency in the sense that the contribution of every network member is not lost. Conversely, blockchain is redundant and wastes network participants' mining power. All of the three (blockchain, tangle, and hashgraph) are considered part of the DLT. Thus far, blockchain has withstood the test of time. Tangle and hashgraph need mass adoption to justify their raison d'être.

Blockchain does not imply cryptocurrency. Cryptocurrencies (also known as digital assets or virtual money) are only one application of the blockchain. The blockchain technology can be used in many other areas, such as voting, digital IDs, transfer of ownership titles, copyright and royalty protection, immutable data backup, equity and real-estate ownership, ownership of non-fungible tokens (NFTs), fractional ownership of pieces of art or other valuable assets such as gold, and so on, all of which are speculated to be part of The Fourth Industrial

Revolution or Industry 4.0 (Schwab, 2016). Bitcoin is only one cryptocurrency among thousands of others, and it is the most popular because it controls the largest market capital. Its dominance hovers between 50 and 60% of the whole cryptocurrency market capital. Moreover, its large market capital stems from the fact that it is the first cryptocurrency that has been developed, which endows it with the first-mover privilege/advantage. Bitcoin has been reported to be the outcome of an innocent experiment, and it has, thus, become the most trusted cryptocurrency and the sixth largest currency in the world (Wiesflecker, 2020). However, the rank might vary depending on whether certain assets, such as silver, gold, or pegged currencies, including the Danish krone, are considered as currencies. There are thousands of cryptocurrencies competing with their use cases for the cryptocurrency market capital. Soon, corporations and governments will be attempting to creating their own cryptocurrency similar to the Facebook Libra project (Libra Association Members, 2019). However, a truly decentralized cryptocurrency will always have more popularity than crypto projects that are initiated by a government or corporation. The promise of cryptocurrency is a currency of the people, by the people, and for the people. Some companies have acknowledged this and have bought into Bitcoin rather than creating their own cryptocurrency. Some exemplary cases include Tesla with its US\$1.5 billion bitcoin purchase (Telford, 2021), and MicroStrategy with its massive US\$4.4 billion worth of bitcoin acquisition (approximately 91,000 bitcoin as of March 5, 2021; (Nagarajan, 2021), along with other major cryptocurrency assets, such as Ethereum and Litecoin. Tesla has also announced its plans to start accepting bitcoin and other major cryptocurrencies as payments in the near future (Telford, 2021). This shows that the corporate trend is moving forward with cryptocurrency adoption.

Research questions and hypotheses

As stated earlier, the aim of this survey is to describe the popularity of cryptocurrency within the Moroccan context. The few articles that one finds about cryptocurrency in Morocco are mainly related to the 2017 ban. This study attempts to fill this gap in the literature, assess

the status of cryptocurrency in Morocco, and provide some implications of the study.

The main hypotheses that this study attempts to investigate are as follows:

- It is hypothesized that Moroccan people are aware of the cryptocurrency space.
- It is also speculated that Moroccans own and use cryptocurrency assets such as bitcoin despite the ban.

The main research questions include:

- To what extent are Moroccans aware of the existence of blockchain technology?
- Do Moroccans own cryptocurrency?

Methodology

All of the above-mentioned questions will be addressed by means of distributing a questionnaire to a sample of 100 randomly selected people. The participant population includes people from various educational stages, including middle school, high school, bachelor, and graduate levels. Their ages range from 15 to 70 years. Gender-wise, 70% of the population is male whereas the other 30% is female. The survey begins by asking the participants the less known concepts in the cryptocurrency space to avoid any prejudice. For example, most people have some sort of idea of what Bitcoin is, or at least have heard of it before. However, fewer people know about the blockchain technology. The questionnaire delays the mention of the word "Bitcoin" until the respondent is near the end of the questionnaire so that they can remain unaffected by what the term "Bitcoin" entails for them. The questionnaire is entitled "Digital Assets in Morocco." This is done deliberately to avoid the use of the term "cryptocurrency" which may trigger preexisting attitudes in the participants. All of this is done to ensure that the study is as objective and representative as possible. The preliminary results do show that more people know more about Bitcoin than they do about blockchain.

Findings

The popularity of the blockchain technology in Morocco

In reaction to the question "Have you heard of Blockchain technology?" 60% respond "No", while 40% respond "Yes," as shown in Fig. 2. The majority has never heard of blockchain technology which is understandable as the technology is still in its infancy, and people are more familiar with Bitcoin than blockchain in Morocco, as confirmed in Fig. 2.

In Fig. 3, the majority of those who do know or have heard about blockchain technology (67%) think that the technology is important (27% of the total sample population and 67% of the segment of the pupation that has heard about blockchain). Furthermore, those who think the technology is "very important" constitute 30% of those who have heard it (they also constitute 12% of the total population as shown in Fig. 3). This is significant because it shows that those who have had the chance to learn about the technology are very likely to recognize its use-case potential. It is only 5% of those who know about blockchain technology and still think that the technology is unimportant (or 2% of the total population). We can thus conclude that maybe the Moroccan context is open to this new technology. We still do not know why Moroccans think this technology is "important," or otherwise for those who think it is not.

The popularity of cryptocurrency in Morocco

When the questionnaire progresses from the concept of blockchain to that of cryptocurrency, we can see the difference in the responses in the graph below (Fig. 4). It is noticed that cryptocurrency is more popular than blockchain in Morocco. Notably, 58% of the sample population have heard of cryptocurrency before. Here, the majority knows about cryptocurrency whereas only 40% of the sample population know about blockchain (see Fig. 3). This is expected because most people seem to have heard about cryptocurrency before learning about blockchain, which is mostly through cryptocurrency trading advertisements and stories of people making large fortunes from cryptocurrency gains.

Trustworthiness in banking services

In a seemingly irrelevant question, participants are asked if they trusted banks (Fig. 5). This question is included to reveal if Moroccans are satisfied with banks realizing that cryptocurrency threatens to be an alternative to banks, especially with the growing popularity of stablecoins (with the exception of fiat-backed ones). However, not all cryptocurrencies are developed to replace fiat money. The first application of blockchain (Bitcoin) was created as an alternative to fiat currencies. Fig. 5 shows that 60% of Moroccans do trust banks while 40% do not. Conversely, a recent study by DepositAccounts (2020) shows that only 40% of Americans trust their banks. Thus, according to this study, Moroccans trust banks more than Americans do. The reasons that may explain the disparity between the two countries vary, and some may be historical. However, we do not know if Moroccans will still trust their banks the same way if they obtain more knowledge about cryptocurrency and blockchain. We know from a study conducted by YouGov (Ballard, 2019) that 81% of Americans are familiar with cryptocurrency. This exposure might contribute to the negative attitudes toward banks among Americans. The lack of perspective can play a role behind the trust Moroccans have in their banks. Notably, the late (2008) financial crisis was mainly caused by the excessive risk taken by U.S. banks in granting subprime loans, which left a scar on Americans in particular and might be responsible for their current attitudes toward banks.

Trustworthiness in cryptocurrency

A follow-up question to the previous one tries to investigate whether Moroccans are open to the idea of blockchain replacing banks and the local currency. As shown below in Fig. 6, it is a multiple choice question wherein we observe an equal distribution of answers, with the majority answering "maybe." They are open to the idea of trusting cryptocurrency and using it in everyday life instead of local currency and banking services. Moreover, 25% of the participants have not heard of the term "cryptocurrency" but are open to this new technology. Furthermore, 17% of the participants would fully trust the technology to replace banks and local currency. The remaining 19% of the participants claim that they would not trust cryptocurrency. The last segment constitutes the minority within a majority that is mostly in favor of giving the technology a chance to manage their financial assets. This is a small percentage when compared to those who do not trust banks. There are more Moroccans who do not trust banks than those who do not trust cryptocurrency (60% versus 19%). These numbers play in favor of cryptocurrency.

The popularity of Bitcoin in Morocco

The following question investigates the popularity of Bitcoin in Morocco. As presented in Fig. 7, 87% of Moroccans have heard of Bitcoin. To have some perspective, according to YouGov survey, the vast majority in the U.K., that is 93%, have heard of Bitcoin before (Waldersee, 2018). Another survey shows that 75% of Americans have heard of Bitcoin before (Ballard, 2019). Morocco falls between the two countries where Bitcoin is not banned and can be easily acquired and traded.

Have you heard of blockchain technology before?

100 responses

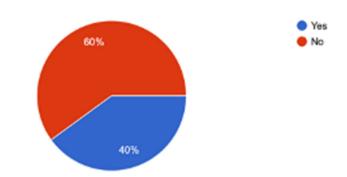


Fig. 2. Popularity of blockchain technology in Morocco.

If yes, how important do you think it is? 100 responses

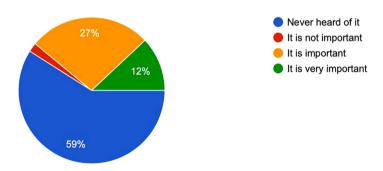


Fig. 3. The importance of blockchain for Moroccans.

Have you heard of cryptocurrency before?

100 responses

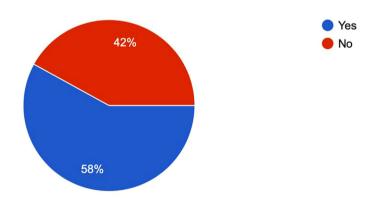


Fig. 4. The popularity of cryptocurrency in Morocco.

Bitcoin seems to be popular as a recognized brand name in Morocco. There is a significant chunk of the sample population that have heard of Bitcoin, which is similar to some crypto-friendly countries. However, we do not know *how much* or *what* people know *about* Bitcoin. In terms of adoption, the country still lags behind. Currently (as of August 2020), the Bitcoin adoption ranking of countries is as fol-

lows: Nigeria, Vietnam, South Africa, Turkey, Peru, Spain, China, U.S., Germany, and Japan. This ranking keeps adjusting due to laws and various other social factors.

The reasons behind the sudden spark in Bitcoin use in a certain country are various. For example, reliance on remittances can lead a population to resort to cryptocurrencies if the traditional remittance

Do you trust banks?

100 responses

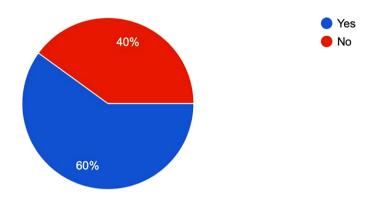


Fig. 5. Moroccans' trust in banking institutions.

If you have heard of cryptocurrency before, do you trust the technology enough to use it in your everyday transactions instead of local currency and bank services?

100 responses

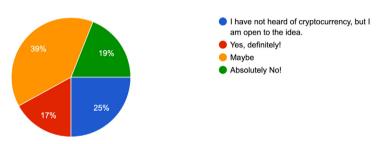


Fig. 6. Moroccans' trust in cryptocurrencies.

Have you heard of Bitcoin before?

100 responses

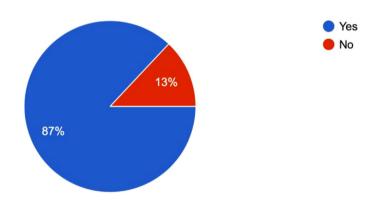


Fig. 7. The popularity of Bitcoin in Morocco.

services are expensive. This is the example of Nigeria (See Fig. 8). This very factor propels people to use cryptocurrencies for other purposes. For example, they can use them for shopping and transacting among themselves, thereby driving businesses to start accepting cryptocurrency payments for the ease and convenience they provide, especially for the unbanked and underbanked. Other reasons could be speculative investments and a hedge against traditional securities, such as stocks and futures.

Currently, there is no way for Moroccans to acquire bitcoin or any other cryptocurrency. This is because there is no cryptocurrency exchange in Morocco due to the ban and the lack of entrepreneurial ventures in this area. Additionally, Moroccans are ineligible to open an account in a foreign cryptocurrency exchange because of eligibility issues. Less known cryptocurrency exchanges may allow Moroccans to have an account, but these exchanges can have trust and security issues that pose a financial risk. Another challenge for Moroccans is

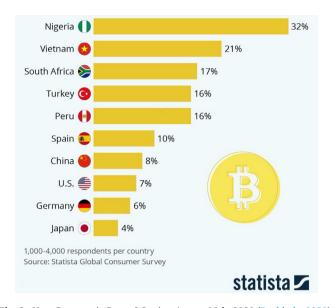


Fig. 8. How Common is Crypto? Statista August 10th, 2020 (Buchholz, 2020).

that even if they do open a foreign exchange account, they will experience difficulties in transferring money into the exchange because of the stringent regulations that restrict and sometimes prevent an easy flow of currency outside of the Kingdom. The only way for Moroccans to acquire cryptocurrency is via peer-to-peer cryptocurrency websites where people wishing to buy digital assets meet those who are willing to sell in person and then send crypto-assets to each other for cash.

The use of cryptocurrency in Morocco

Notwithstanding all of the above-mentioned challenges, Moroccans seem to still be involved in some sort of way with the cryptocurrency space. The graph below (Fig. 9) shows that 9% of Moroccans own or have owned cryptocurrencies.

Notably, 9% is a significant percentage. As of 2019, 19% of the world population own or use some sort of cryptocurrency asset (Kaspersky, 2019). In the U.S. for example, the people who own cryptocurrency constitute 14.4% of Americans in 2019 (Laycock, 2019). Furthermore, 7.4% of the population of South Korea, which is one of the leading countries in the cryptocurrency space in terms of trading volume, has acquired cryptocurrency (Cermak, 2019). In the U.K., this percentage is only 3.86% of the population (The U.K. Financial Conduct Authority; FCA, 2020). These percentages give us a perspective that shows that the rate of adoption seems to be higher in Morocco despite all of the financial restrictions.

Implications

The ban is not enforced and does not change people's practices. There has not been any case of an individual who has been caught by the authorities for transacting in cryptocurrency in Morocco. People are free to talk about cryptocurrency in social media and real life. Prominent social media influencer and YouTuber, Raghib Amine, has talked about Bitcoin on multiple occasions. In a recent Facebook post on January 7th, 2021, when Bitcoin was at approximately US\$40,000, he said:

"Bitcoin is at US\$40,000... Our children will hold us accountable in the future: *Dad, where were you when Bitcoin was at US\$200*?"

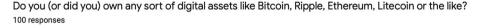
This post has received a good amount of attention and engagement from his followers. The post is implicitly encouraging people to buy Bitcoin as an investment. The government does not pay attention to this post nor any other similar posts by other social media influencers in the country. This suggests that that presence of this law is indistinguishable from its absence. In light of this study, it is suspected that the ban will eventually have to end at some point in the near future, and this will fuel further adoption.

As a result of the need to acquire digital assets in Morocco, we may see a growth in cash-based cryptocurrency transactions. If the ban ends, Moroccans would still face the challenge of buying cryptocurrencies from foreign exchanges due to the nonexistence of Moroccan ones. This challenge would eventually drive people to seek other ways to buy into the market. One of them is seeking people in close geographic proximity to meet and exchange cash for cryptocurrency. This can be noticed in the growing number of Moroccan Facebook groups where people can already meet online. The numbers in this study project an increase in cash-based exchanges of digital assets as long as there are no local cryptocurrency exchanges.

Conclusion

The U.S., the U.K., and South Korea are examples of countries where people already have easy access to cryptocurrencies via multiple exchanges and platforms that can withdraw funds from one's bank with ease. Moroccan citizens do not have such privilege. They have to acquire cryptocurrency by means of cash-based transactions that escape the radars of the government and financial institutions. The 9% of cryptocurrency holders and ex-holders in Morocco could have maybe been higher if the government were cryptocurrency-friendly. The future of cryptocurrency in Morocco seems to be bright given the data shown in this study. The progress is muffled by regulations and lack of cryptocurrency exchanges. However, that might change, especially as most people are in favor of the technology.

Morocco is a dynamic country and Moroccans are finding ways to form cryptocurrency communities on the web where they share knowl-



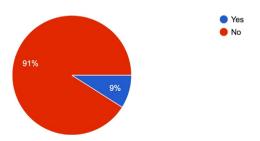


Fig. 9. Owners of cryptocurrencies in Morocco.

edge and help one another. For example, the Facebook group called "BITCOIN Moroccan Traders" currently has over 22,000 members. A sizeable number that shows this is more than a niche community. Upon carefully reviewing the activities of this Facebook group, one can notice that the members are not there to only trade cryptocurrencies and make money. Members seem to be well aware of the fundamentals of cryptocurrencies as well as their use case and potential. They understand that blockchain is a disruptive technology. This observation indicates that there is a level of understanding and awareness that is slowly evolving and expanding to other social categories.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- Antonopoulos, A. (2016). Why Dumb Networks Are Better. Medium. https://medium.com/@aantonop/why-dumb-networks-are-better-f0b94c271b76.
- Baird, L. (2016). The Swirlds Hashgraph consensus algorithm: Fair, fast, byzantine fault tolerance. Swirlds. https://www.swirlds.com/downloads/SWIRLDS-TR-2016-01.
- Ballard, J. (2019). 81% of Americans are familiar with at least one type of cryptocurrency. YouGov. https://today.yougov.com/topics/finance/articlesreports/2019/09/24/cryptocurrency-bitcoin-americans-millennials-poll.
- BITCOIN Moroccan Traders. Facebook. Group Page. https://www.facebook.com/groups/1903082579940919/.
- Buchholz, K. (2020). How common is crypto? Statista. https://www.statista.com/chart/ 18345/crypto-currency-adoption/.
- Cermak, L (2019). 7% of South Koreans bought cryptocurrency, the average investment per person is \$6,000. The Block Crypto. https://www.theblockcrypto.com/linked/ 20384/7-of-south-koreans-bought-cryptocurrency-the-average-investment-perperson-is-6000.
- DepositAccounts (2020). Americans trust their banks more than their government during pandemic. https://www.depositaccounts.com/blog/americans-trust-banksover-government-during-covid-19.html.
- Eljechtimi, A. (2020). Morocco to Widen Dirham Band to 5% on March 9—Finance Ministry. Nasdaq. https://www.nasdaq.com/articles/morocco-to-widen-dirhamband-to-5-on-march-9-finance-ministry-2020-03-06.
- Financial Conduct Authority (2020). Research Note Cryptoasset consumer research 2020. https://www.fca.org.uk/publication/research/research-note-cryptoassetconsumer-research-2020.pdf.
- Jusdanis, A. (2017). Morocco's Cryptocurrency ban will create serious "Technological Divide," warn traders. Morocco World News. https://www.moroccoworldnews.com/

- 2017/11/234805/moroccos-cryptocurrency-ban-will-create-serious-technological-divide-warn-traders/
- Hammerschmidt, C. (2017). An Introduction to Understanding Attacks and Dishonesty on Proof-of-Work Blockchains. Medium. https://medium.com/@chrshmmmr/anintroduction-to-understanding-attacks-and-dishonesty-on-proof-of-workblockchains-9e7f547ed4c8.
- Hirtenstein, A. (2018). Bloomberg. Brookstone Partners is planning a 900 megawatt wind farm in southern Morocco to power a data center and Bitcoin mining operation. https://www.bloomberg.com/news/articles/2018-07-27/bitcoinmining-private-equity-build-wind-farm-in-morocco.
- Kaspersky (2019). Cryptocurrency Report 2019. https://www.kaspersky.com/blog/ cryptocurrency-report-2019/.
- Kaspersky (2019). Uncharted Territory: Why Consumers Are Still Wary About Adopting Cryptocurrency. https://www.kaspersky.com/blog/cryptocurrency-report-2019/.
- Koffman, T. (2020). Why Bitcoin Is A Silent Protest Against Corrupt Governments. Forbes. https://www.forbes.com/sites/tatianakoffman/2020/06/13/why-bitcoin-is-a-silent-protest-against-corrupt-governments-everywhere/?sh=7c3e76923542.
- Laycock, R. (2019). A rising number of Americans own crypto. Finder. https://www.finder.com/how-many-people-own-cryptocurrency?ref=hackernoon.com.
- Library of Congress (2020) https://www.loc.gov/law/help/cryptocurrency/world-survey.php.
- Libra Association Members (2019). White Paper. https://www.diem.com/en-us/white-paper/.
- Nagarajan, S. (2021). MicroStrategy Reveals Additional \$10 Million Bitcoin Bet, Bringing Its Total Holdings Close to 100,000 Bitcoins. Business insider. https://markets.businessinsider.com/currencies/news/microstrategy-reveals-additional-10-million-bitcoin-bet-total-holdings-2021-3-1030155232.
- Nakamoto, S. (2009). Bitcoin: A Peer-to-Peer Electronic Cash System. bitcoin.org. https://bitcoin.org/bitcoin.pdf.
- Nasdaq (2017). How the Blockstream Satellite Will Drive Bitcoin Adoption: An Interview With Adam Back and Chris Cook. https://www.nasdaq.com/articles/ how-the-blockstream-satellite-will-drive-bitcoin-adoption%3A-an-interview-withadam-back-and.
- Office des Changes. (2017). Press release, Mise au point au sujet del'utilisation des monnaies es virtuelle. https://www.oc.gov.ma/fr/actualites/communique%3F-mise-au-point-au-sujet-de-l-utilisation-des-monnaies-virtuelles.
- Popov, S. The Tangle (2015). Semantic Scholar.
- Risius, M., & Spohrer, K. (2017). A Blockchain Research Framework: What We (Don't) Know, Where We Go From Here, and How We Will Get There Business & Information. Systems Engineering, 59, 385–409. https://doi.org/10.1007/s12599-017-0506-0.
- Schwab, K. (2016). Geneva: World Economic Forum. The fourth Industrial revolution. Telford, T. (2021). Tesla Invests \$1.5 Billion in Bitcoin, Will Start Accepting It as Payment The Washington Post. https://www.washingtonpost.com/business/2021/02/08/tesla-bitcoin-musk-dogecoin/.
- Waldersee, V. (2018). One in five Brits think Bitcoin will be "as common as cash or card" in future. YouGov. https://yougov.co.uk/topics/economy/articles-reports/2018/ 11/07/one-five-brits-think-bitcoin-will-be-common-cash-o.
- Wiesflecker, L. (2020). How much influence does Bitcoin really have? Medium. https://medium.com/datadriveninvestor/how-much-influence-does-bitcoin-really-have-a1b83872d080.