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CRYPTOCURRENCIES AND FINANCIAL INCLUSION IN MEXICO

CRIPTOMONEDAS E INCLUSIÓN FINANCIERA EN MÉXICO

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Cryptocurrencies and Financial Inclusion in Mexico

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ABSTRACT

This study investigates on the relationship between cryptocurrencies and financial inclusion in Mexico. Using a basic, descriptive and qualitative research design, first a brief literature review is conducted in order to analyze the impact of cryptocurrencies on financial inclusion according to the state-of-the-art opinion of other researchers on the topic. Secondly, aiming to improve the understanding of the potential that cryptocurrencies may have for financial inclusion in Mexico, a digital questionnaire is applied to a sample of 415 individuals. Main results of the literature review show that fintech and blockchain technology including cryptocurrencies have the potential to improve the situation of financial inclusion, especially in developing countries. The conducted survey on consumer perceptions of cryptocurrencies reveals that there exists an important growth potential for the use of cryptocurrencies in Mexico. However, security issues, distrust, a lack of technological and financial education and deficient regulation are major obstacles on the way.

Keywords: cryptocurrencies, financial inclusion, Mexico

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Criptomonedas e Inclusión Financiera en México

RESUMEN

El estudio investiga la relación entre las criptomonedas y la inclusión financiera en México. Utilizando un diseño de investigación básico, descriptivo y cualitativo, primero se realiza una breve revisión de la literatura para analizar el impacto de las criptomonedas en la inclusión financiera según la opinión de vanguardia de otros investigadores sobre el tema. En segundo lugar, con el objetivo de mejorar la comprensión del potencial que las criptomonedas pueden tener para la inclusión financiera en México, se aplica un cuestionario digital a una muestra de 415 individuos. Los principales resultados de la revisión de literatura muestran que la tecnología fintech y blockchain, incluidas las criptomonedas, tienen el potencial de mejorar la situación de la inclusión financiera, especialmente en los países en desarrollo. La encuesta realizada sobre las percepciones de los consumidores sobre las criptomonedas revela que existe un importante potencial de crecimiento en el uso de criptomonedas en México. Sin embargo, preocupaciones de seguridad, la desconfianza, la falta de educación tecnológica y financiera, y los esquemas regulatorios deficientes son grandes obstáculos en el camino.

Palabras clave: criptomonedas, inclusión financiera, México

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INTRODUCTION

According to the World Economic Forum, the overall goal of economic development is to enhance the well-being of a nation's population (WEF, 2014). The United Nation's Agenda 2030 defines several of its Sustainable Development Goals (SDGs) regarding the economic concepts of well-being, poverty, and sustainable economic growth, such as SDG 1 (No Poverty), SDG 3 (Good Health and Well-Being), and SDG 8 (Decent Work and Economic Growth) (UN, 2015). In the Mexican context, according to the National Development Plan 2025-2030, reducing poverty and increasing the well-being of the population are key pillars of Mexico's sustainable economic development (Gobierno de México, 2025). An important determinant of poverty and thus of a population´s well-being is the level of financial inclusion, in other words, a population's adequate access to basic financial services such as, for example, debit accounts, savings accounts, bank loans, ATMs, etc. Insufficient or non-existent financial inclusion generally negatively impacts the possibility of participation in economic transactions for the affected individuals. In Mexico, there exist significant variations in the presence of the Mexican banking sector across different federal states of the republic as well as between urban and rural areas. This, in turn, implies negative consequences for the ability of financially excluded individuals to participate in economic markets which could worsen their situation of poverty and well-being.

During the last 15 years, a new category of digital money has emerged globally. The so-called cryptocurrencies are one of the most important applications of blockchain technology. These currency systems operate outside the traditional banking system based on intermediation and fulfill two of the general functions of money – medium of exchange and store of value. Due to their characteristics as autonomous, secure, and easily accessible systems, cryptocurrencies seem to be suitable for addressing financial inclusion issues. In other words, cryptocurrencies could help enable the participation of economically vulnerable groups in economic markets and thus improve their situation of poverty and well-being.

Currently, an applied scientific study for Mexico on the effect of cryptocurrencies on financial inclusion is not possible since the use of these currencies is still marginal and the regulatory landscape is still uncertain in the country.

However, an exploratory study on the overall academic opinion as well as the knowledge and perception of Mexican consumers about cryptocurrencies could be relevant for the understanding of the possible potential of these currencies to improve financial inclusion in the country.

The main research objective of the present study is two-folded. On the one hand, a brief literature review analyzes the impact of cryptocurrencies on improving financial inclusion in general and specifically in countries that are more advanced referring to the implementation and use of these currencies. On the other hand, a perception study of cryptocurrencies among Mexican consumers is conducted in order to enhance the understanding of the potential these currencies may have to improve financial inclusion.

In order to achieve the outlined research objective, the present paper is divided into five sections. After this introduction, Section 2 (Theoretical Background and Context) presents the relevant theoretical and contextual fundamentals of financial inclusion and cryptocurrencies. Section 3 (Method) outlines the methodological design of the present paper followed by Section 4 (Results) which presents and analyzes the obtained study results. Finally, Section 5 (Discussion of Results and Concluding Remarks) offers a summary of main results and recommendations for the specific Mexican context.

Theoretical background and context

Financial Inclusion

Mexico's National Banking and Securities Commission (CNBV, 2020) defines financial inclusion as the access and use of formal financial services under appropriate regulation that ensures protective schemes for users and promotes financial education to improve the financial capacity of all segments of the population. In a more simplified manner, Demirgüç-Kunt et al. (2022) define the concept as the access to and use of formal financial services.

Financial inclusion as a determinant of poverty is extensively studied in economic literature. For example, Wong, Badeeb and Philip (2023) for selected ASEAN countries, Koomson, Villano and Hadley (2020) for Ghana, as well as Chibba (2009) in general find an inverse relationship between financial inclusion and poverty, Hence, an increase in financial inclusion usually results in a decrease in poverty indicators. Also, Briano-Turrent (2025) shows for Mexico that an improved access to banking services reduces, for example, poverty, informality and inequality.

On a global scale, according to Demirgüç-Kunt et al. (2022), presenting information of the 2021 Global Findex Database, 1.4 billion adults are still unbanked, i.e. do not have a financial account. As high-income economies normally present rates of account ownership close to 100 %, the vast majority of unbanked adults live in developing economies. In fact, 53 % of the unbanked (740 million people) live in only seven economies – China, India, Pakistan, Indonesia, Bangladesh, Egypt and Nigeria. In general, especially women, poor adults, the less educated, and those outside the labor market are most vulnerable to financial exclusion.

Referring to a national context, Mexico still presents significant deficiencies regarding access to and use of basic financial services. According to Deloitte (2024), Mexico ranks only seventh (41.7 out of a possible 100 points) among eight Latin American countries (Argentina, Bolivia, Chile, Colombia, Ecuador, Mexico, Panama and Peru) analyzed by the Financial Inclusion Index (Ipsos). Furthermore, according to the National Survey on Financial Inclusion (ENIF) 2024, only 76.5% of the Mexican population (18-70 years) uses at least one financial product (a savings account, a credit, an insurance or a retirement savings account). As a result, 23.5% of the adult population in general remains excluded from such financial services. The percentage of men having at least one financial product is 80.9% and the percentage of women 72.8% – a still important gender gap which can be identified in the survey. Data also reveals that residents of rural areas (localities with less than 15 thousand inhabitants) with just 65.5%, indigenous population groups (67.8%) and speakers of an indigenous language (58.2%) also present a financial inclusion notably below the national standard (CNBV, 2025).

With respect to the use of financial technology (fintech), according to the ENIF 2024, cash payments continue to be the dominant method of payment in Mexico. At present, 85.2% (purchases of MXN 500 or less) and 73.5% (purchases above MXN 500) of the Mexican population (18-70 years) use this traditional form of payment. Nevertheless, whereas the percentage of cash payments shows a negative historical trend, the use of physical debit or credit cards (currently, 10.4% for ≤ MXN 500 and 19.0% for > MXN 500) as well as electronic transfers and mobile payments (4.4% for ≤ MXN 500 and 7.6% for > MXN 500) increase in their importance in time (compared to ENIF 2021). However, percentages of fintech-based payments are clearly still underrepresented in comparison to cash solutions.

Interestingly, the ENIF 2024 also mentions that at the national level 2.1% of the population buys or invests in cryptocurrencies (CNBV, 2025).

Cryptocurrencies

Blockchain technology has revolutionized the economic world in the last 20 years. The blockchain is a "list of validated blocks, each linking to its predecessor all the way to the genesis block (p. xxiii)". For itself a block can be defined as a "grouping of transactions, marked with a timestamp, and a fingerprint of the previous block (p. xxiii)" (Antonopoulus, 2017). According to Miraz and Ali (2018) there exist various forms of application of blockchain technology, for example, in financial services and decentralized voting systems, in distributed storage systems and within healthcare services.

Moreover, one of the most common applications of blockchain technology can be found in cryptocurrencies. Cryptocurrencies are part of the major tendencies of fintech and decentralized finance which in the last two decades expanded to all areas of the financial system and continuously disrupt traditional financial concepts. Fintech and decentralized finance offer a wide range of innovative financial solutions like, for example, real-time payments, online lending and various financial services through mobile phones. Especially since the COVID-19 pandemic those tendencies have intensified and improved financial inclusion on a worldwide scale, especially in regions which were not previously characterized by well-established payment systems, e.g. India, China and Kenya (Allen, Gu and Jagtiani, 2022).

According to Härdle, Harvey and Reule (2020), a cryptocurrency is a digital asset designed as a medium of exchange that uses cryptography to secure transactions. Similar to Allen, Gu and Jagtiani (2022), also Ponsot (2017) highlights that cryptocurrencies challenge traditional payment systems based on financial intermediation as they represent an autonomous payment system which works independently from established financial markets. In comparison to traditional bank-based payment systems characterized by centralized control and high costs, cryptocurrencies systems usually offer time and cost advantages and are easy to access. Individuals, regardless of their status, credit history or location, only need to meet the following two requirements for participating on cryptocurrency platforms: an internet connection and a digital wallet (El Hajj and Farran, 2024).

Currently, according to CoinMarketCap (2025), there exist almost 10,000 cryptocurrencies worldwide, and by far, Bitcoin is the most important in terms of market capitalization. In general, there are different types of cryptocurrencies – including payment cryptocurrencies, stablecoins, and central bank digital currencies (CBDC). With reference to their valuation process payment cryptocurrencies (e.g., Bitcoin, Ethereum) depend directly on market forces (demand and supply), and generally exhibit pronounced volatility in their prices (Demmler and Fernández, 2022). Stablecoins (e.g., Tether, USDC) seek to eliminate price volatility since their value is tied to an underlying asset with a "stable" price, for example, a unit of a traditional underlying currency, such as USD (Fiedler and Ante, 2023). CBDCs are cryptocurrencies issued by a central bank and represent the digital version of the national currency, e.g., China's Digital Yuan and Nigeria's eNaira (Allen, Gu and Jagtiani, 2022; Ozili, 2023a).

METHOD

As already mentioned, the research goal of the present study is two-folded. First, a brief literature review analyzes the impact of cryptocurrencies on improving financial inclusion in general and specifically in countries that are more advanced referring to the implementation and use of these currencies. Secondly, a perception study of cryptocurrencies among Mexican consumers is conducted in order to enhance the understanding of the potential these currencies may have to improve financial inclusion. In general, the present study can be characterized methodologically as basic, qualitative and descriptive.

The mentioned brief literature review is conducted in order to analyze the impact of cryptocurrencies on financial inclusion according to the state-of-the-art opinion of other researchers on the topic. For this reason, 10 articles – primary sources from indexed scientific journals by expert authors on the subject – were selected from the database Google Scholar, which provide an overview of the impact of the implementation of cryptocurrencies on financial inclusion in general and in different regions of the world. The search command used in Google Scholar was “cryptocurrency + financial inclusion” and the analyzed literature sample includes articles published within the period 2019 – 2024.

On the other hand, in order to improve the understanding of the potential that cryptocurrencies may have for financial inclusion in Mexico, a digital questionnaire is applied to a sample of 415 surveyed individuals (participating age groups: 18-25 years (40%), 26-32 (18%), 33-40 (10%), > 40 (32%)).

As the underlying sampling method, a non-probability sampling was realized (convenience sampling) and the survey was made available on the online platform SurveyMonkey as well as occasionally using private contact networks. The questionnaire uses closed (yes vs. no) and multiple-choice questions, consists of a total of 11 questions, and covers the following general topics: perception of cryptocurrencies, usage of cryptocurrencies in businesses, motivations, concerns and expectations for the future.

RESULTS

Brief Literature Review on the Impact of Cryptocurrencies on Financial Inclusion

Table 1 presents the relevant information from the 10 analyzed exploratory studies. As can be seen, the studies of Agarwal, Qian and Tan (2020), Mhlanga (2023) and Ozili (2023b) analyze the relationship between blockchain technology/cryptocurrencies and financial inclusion from a general and theoretical perspective. On the other hand, studies such as Adil and Fadi (2022), El Amri, Mohammed and Bakr (2021), El Hajj and Farran (2024), Kashyap, Tripathi and Rathore (2021), Maulia and Kamil (2024), Mota-Makore, Osode and Lubisi (2023) as well as Vincent and Evans (2019) investigate on the feasibility and implementation of cryptocurrencies and other examples of the digital economy in specific regions of the world and their impact on financial inclusion.

For example, Agarwal, Qian and Tan (2020) highlight the positive impact of the use of mobile phones, the expansion of the fintech sector and the growing importance of blockchain technology in financial services on financial innovation and inclusion. Mhlanga (2023) identifies the potential of blockchain technology for financial inclusion especially for developing countries as monetary transactions are standardized and the access to financial transactions, savings and loan accounts as well as insurance products could be improved and simplified. According to Ozili (2023b) fintech and cryptocurrencies (especially CBDCs) can expand financial services to consumers excluded from traditional financial systems. Nevertheless, as these new technologies imply potential risks to financial stability, effective regulation schemes are needed.

Besides the general theoretical studies shown in Table 1, there exist feasibility and empirical studies for selected regions as well.

For example, Adil and Fadi (2022) point out that, even though Morocco has not yet implemented a strong digital culture in its economy, the country possesses what it takes (infrastructure, human capital and technology) for the future growth of a digitalized economy. For Sub-Saharan Africa, where financial inclusion is significantly low, El Amri, Mohammed and Bakr (2021) show that cryptocurrencies, especially when paired with mobile money, significantly reduce access barriers to financial services. Nevertheless, digital currencies require important improvements in infrastructural development, digital education and regulatory systems. Moreover, in their survey with 1,500 respondents (from Brazil, India, Nigeria, Indonesia, and Vietnam) El Hajj and Farran (2024) find a significantly positive relationship between cryptocurrency adoption and financial inclusion.

Also, Kashyap, Tripathi and Rathore (2021) mention for India that cryptocurrencies increment its usage as saving, investment and international transaction vehicles, even though the country still lacks an adequate regulatory framework. Maulia and Kamil (2024) show in their study for Kenya, Venezuela and Nigeria using quantitative surveys and qualitative expert interviews that cryptocurrency adoption improves financial inclusion (e.g., lower transaction costs and increased financial access in rural Kenya; cryptocurrencies as stable alternative to hyperinflation in Venezuela; easier cross-border transactions in Nigeria). Mota-Makore, Osode and Lubisi (2023) conclude for their sample (South Africa, Zimbabwe, and Botswana) that the countries have the potential to achieve financial inclusion through cryptocurrencies if an adequate regulatory framework is established in the future. Finally, in their empirical study of China, India, Nigeria and South Africa, Vincent and Evans (2019) quantify a significant positive relation between the use of cryptocurrencies, the Internet, and mobile phones with the improvement of financial inclusion.

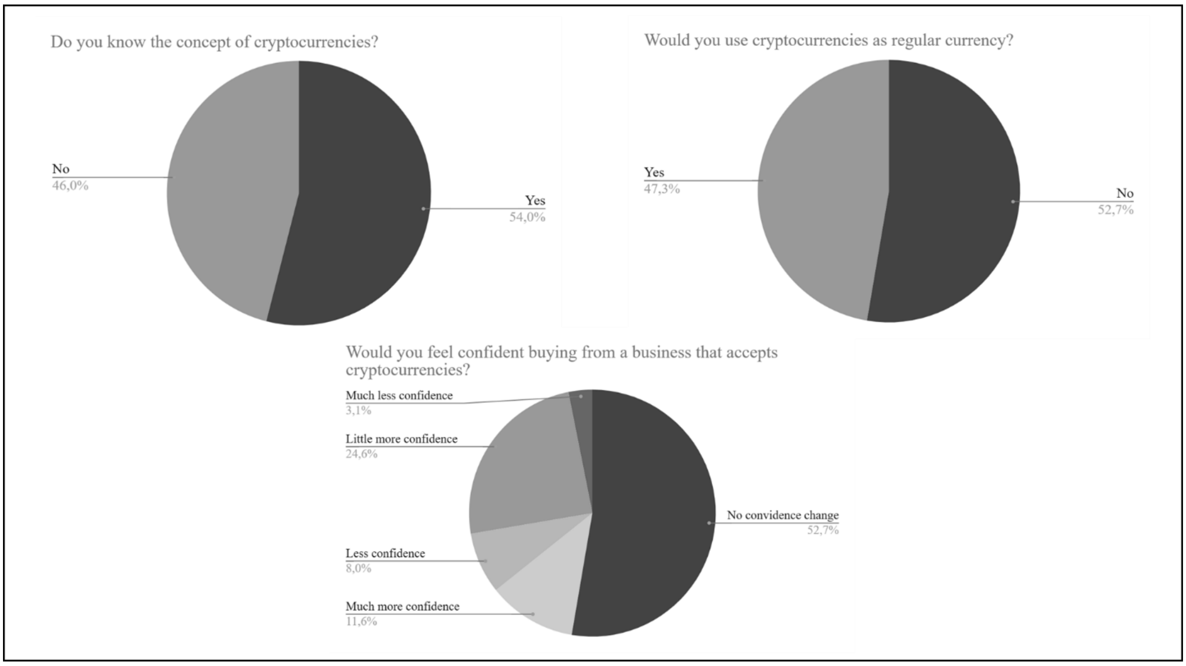
Table 1: Literature review on the impact of cryptocurrencies on financial inclusion.

Study	Scope	Main results
Adil and Fadi (2022)	case study Morocco	• Study on the possible impact of cryptocurrencies in Morocco • Morocco possesses the necessary infrastructure, human capital and technology for the future growth of the digital economy.
Agarwal, Qian and Tan (2020)	theoretical-general study	• Mobile phone adoption, advances in technological infrastructure (fintech sector, blockchain technology), big data trends, and the growing financial and technological education intensify financial innovation and financial inclusion.
El Amri, Mohammed and Bakr (2021)	case study countries Sub-Saharan Africa	• Cryptocurrencies, especially when paired with mobile money, significantly reduce access barriers to financial services. • Requirements of infrastructural development, digital education and regulatory systems
El Hajj and Farran (2024)	survey study Brazil, India, Nigeria, Indonesia, and Vietnam	• Survey study on the relationship between cryptocurrency adoption and financial inclusion in emerging markets; 1,500 respondents • Cryptocurrency adoption positively and significantly influences financial inclusion.
Kashyap, Tripathi and Rathore (2021)	case study India	• Increasing usage of cryptocurrencies as saving, investment and international transaction vehicles
Maulia and Kamil (2024)	survey study Kenya, Venezuela, and Nigeria	• Cryptocurrency adoption improves financial inclusion. • Obstacles: regulatory uncertainty and lack of technological literacy
Mhlanga (2023)	theoretical-general study	• Blockchain technology standardizes monetary transactions which results in improved financial inclusion. • For population groups traditionally excluded from the financial system, blockchain technology provides access to financial transactions, savings and loan accounts, and insurance products. • Greater importance in developing countries
Mota-Makore, Osode and Lubisi (2023)	case study South Africa, Zimbabwe, and Botswana	• Analyzed countries have the potential to achieve financial inclusion through cryptocurrencies which provide access to financial transactions as well as savings and investment products. • Lack of an adequate regulatory framework as primary obstacle
Ozili (2023b)	theoretical-general study	• Fintech and cryptocurrencies (especially CBDCs) can expand financial services to unbanked adults, but they also involve potential risks to financial stability. • Importance of establishing effective regulatory schemes
Vincent and Evans (2019)	case study China, India, Nigeria, and South Africa	• Empirical study • The use of cryptocurrencies, the Internet, and mobile phones present a significant positive relationship with financial inclusion and the development of the financial sector.

Author's elaboration.

Study on the Perception of Cryptocurrencies in Mexico

Figure 1: Knowledge and perception of cryptocurrencies



Author's elaboration.

Figure 1 presents relevant responses from selected question of the realized survey. As can be seen in the upper left part of the figure, the majority of respondents (54% of 415 respondents) have knowledge about cryptocurrencies. Hence, 191 individuals (46%) do not know about cryptocurrencies yet. As shown in the upper right part of Figure 1, of the 224 individuals, which confirm to have knowledge about cryptocurrencies, 47.3% would use them as a common currency, i.e. medium of exchange to pay in stores and businesses. Thus, 52.7% still show a reserved attitude towards using cryptocurrencies as a common tender. Furthermore, shown at the bottom center part of Figure 1, for the majority (52.7%), the option to pay in cryptocurrencies would not affect their trust when making purchases in a certain business. Another 36.2% would even increase their confidence at the moment of buying in stores which offer the possibility to pay with cryptocurrencies. Consequently, just 11.1% of the survey respondents state to have less or much less confidence.

On the other hand, according to the survey results experienced cryptocurrency users mention the following reasons for using cryptocurrencies as a means of payment (in order of importance): curiosity, lower transaction costs, faster transactions, and promotions and discounts when using these currencies.

Among the reasons for not using cryptocurrencies, respondents point out the following aspects (in order of importance): lack of understanding of the functioning of cryptocurrencies, preference for traditional payment methods, concerns about price volatility and security issues, and lack of access to a digital wallet.

DISCUSSION OF RESULTS AND CONCLUDING REMARKS

The research objective of the present study was two-folded. On the one hand, a brief literature review analyzes the impact of cryptocurrencies on improving financial inclusion in general and for specific regions of the world. On the other hand, a perception study of cryptocurrencies among Mexican consumers is conducted in order to improve the understanding of the impact these currencies may have on financial inclusion.

A lack of financial inclusion is still one of the major problems in developing countries in general (Demirgüç-Kunt et al., 2022) and specifically in Mexico (Deloitte, 2024). As financial inclusion is an important determinant of poverty and well-being, it is part of the agenda of important international and national organizations such as the United Nations (UN), the Economic Commission for Latin America and the Caribbean (ECLAC) and the Mexican Government. Cryptocurrencies surged on a global scale during the last 15 years as a new generation of digital money and have challenged traditional payment systems based on financial intermediation since then (Ponsot, 2017). Among the different types of cryptocurrencies there exist payment cryptocurrencies, stablecoins, and central bank digital currencies (CBDC). The former type is characterized by potentially high volatility of its market prices and the latter two, in contrast, are cryptocurrency alternatives without inherent market prices volatility.

So far, there are just a few scientific studies (mainly exploratory and theoretical in nature) investigating the relationship between cryptocurrencies and financial inclusion. On the one side, according to general theoretical studies (e.g., Mhlanga, 2023; Ozili, 2023b), fintech and blockchain technology including cryptocurrencies indeed have the potential to improve the situation of financial inclusion, especially in developing countries. On the other side, case studies covering distinct regions of the world present successfully implemented initiatives of fintech and cryptocurrencies which help to improve the financial inclusion of traditionally excluded and vulnerable population groups (for instance, El Hajj and Farran (2024) for Brazil, India, Nigeria, Indonesia, and Vietnam; Kashyap, Tripathi and Rathore (2021) for

India; Vincent and Evans (2019) for China, India, Nigeria, and South Africa). In general, many studies identify a lack of digital and financial education as well as deficient regulation schemes as the primary obstacles for a greater impact of cryptocurrencies on financial inclusion (e.g., El Amri, Mohammed and Bakr, 2021; Maulia and Kamil, 2024; Mota-Makore, Osode and Lubisi, 2023).

In the case of Mexico, the conducted survey on consumer perceptions of cryptocurrencies reveals that there exists an important growth potential in the use of cryptocurrencies in the country. A slight majority of the survey respondents already have knowledge about cryptocurrencies and an important part of them would consider using cryptocurrencies as a regular means of payment. Furthermore, the vast majority of respondents would not change or would even increase their confidence level at the moment of making purchases in a business which accepts payments in cryptocurrencies. However, in general, with reference to the topic of cryptocurrencies there exist significant concerns regarding issues of security, price volatility, distrust, and lack of knowledge.

The present study recommends further exploration of the potential of cryptocurrencies at the moment of improving the access of financially excluded individuals and population groups to formal financial transactions and basic financial services such as, for example, savings and loan accounts and insurance products. In line with, for instance, Ozili (2023b) due to their characteristics, especially two types of cryptocurrencies – stablecoins and CBDC (Central Bank Digital Currencies) – seem appropriate to address issues of financial inclusion. These types of cryptocurrencies are designed to not present market price volatility – one of the important concerns of the respondents of the conducted survey of the present study. This mentioned lack of volatility converts them into a less risky vehicle to combat financial exclusion.

Moreover, in line with El Amri, Mohammed and Bakr (2021), the design and implementation of an adequate cryptocurrency combined with the progress of mobile money can be recommended. Furthermore, regarding the Mexican context, improvements in financial and technological education are suggested, both in general and specifically for fintech and cryptocurrencies. In the case of the design and implementation of a governmental cryptocurrency (CBDC), the mentioned technological and financial education should be provided by a public initiative, e.g. the National Commission for the

Protection and Defense of the Users of Financial Services (CONDUSEF), which already has a long-year experience in the field of educating on financial literacy. Moreover, the implementation of an adequate regulatory framework, which currently does not exist, is necessary, in order to provide protection on an individual user level as well as on a macroeconomic level regarding financial stability. From an academic perspective, there almost does not exist any coverage of the topic of cryptocurrencies and financial inclusion in Mexico. As future areas of research, one can think of, for example, exploratory studies on the design of a possible Mexican governmental digital currency and legal studies on the required regulatory landscape.

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