

# State of the art of cryptocurrency adaptations and regulations for implementation in B2B models

## Estado del arte de las adaptaciones y regulaciones de las criptomonedas para la implementación en modelos B2B

### ABSTRACT

The acceleration of technology brings with it the rise of cryptocurrencies, a payment alternative that seeks to transform the way in which we carry out day-to-day transactions. This digital means of exchange could directly involve all economic agents in the environment, especially the business sector. Long waiting times, possible failures in the system, risk of fraud and information theft, high fees and centralization are some of the characteristics identified as unfavorable in our fiduciary system. Therefore, this paper focuses on a literature review regarding the adaptations and regulations of cryptocurrencies in B2B models, starting from a bibliometric analysis synthesizing those eximious results of the search performed. This research aims to gather information on those adaptations and regulations that have been previously carried out for their implementation in B2B models in Latin America and Colombia.

**Keywords:** Cryptocurrency, blockchain, bitcoin, regulation, adaptation, business.

### RESUMEN

El aceleramiento de la tecnología trae consigo el auge de las criptomonedas, una alternativa de pago que busca transformar la forma en que día a día realizamos las transacciones. Este medio digital de intercambio podría involucrar de manera directa a todos los agentes económicos del entorno, especialmente al sector empresarial. Largos tiempos de espera, eventuales fallos en el sistema, riesgo de fraude y robo de información, altas tasas y centralización son algunas características identificadas como desfavorables en nuestro sistema fiduciario. Por lo tanto, este trabajo se enfoca en una revisión literaria con respecto a las adaptaciones y regulaciones de las criptomonedas en modelos B2B, partiendo de un análisis bibliométrico sintetizando aquellos resultados eximios de la búsqueda realizada. Dicha investigación aspira a recopilar la información de aquellas adaptaciones y regulaciones que se han llevado a cabo anteriormente para su implementación en modelos B2B en Latinoamérica y Colombia.

**Palabras clave:** Criptomoneda, blockchain, bitcoin, regulación, adaptación, negocio.

### Introduction

Money as we know it has had different stages throughout our history. Taking as a starting point the human need to give value and exchange what belongs to him, a series of events took place that led to the emergence of barter as a form of payment in Mesopotamia, passing through the minting of gold and silver coins in the middle of the 7th century B.C. and arriving at the first banknotes as we know them today, with their first appearances in the 11th century in Mongolia.

In the current period the functions of money as a medium of exchange, store of value and unit of account reside in a single currency of national scale. Throughout most of history, different forms of money have fulfilled these functions separately and have existed for centuries (Léteraer, 2005; Greco, 2001; Douthwaite, 1996).

For thousands of years, different human communities have created their own currencies to satisfy the needs of their members, thus ensuring economic instability. Since then and up to the present day, social currency has gone through countless ups and downs and is now found in many countries around the world. National currencies, as well as supranational currencies, are clearly an ob-

stacle to its development, although some additional monetary systems are based on currencies that may have to become fiat currencies or official currency. (Corrons, 2017)

As mentioned by Cuervo, Reina, Zuluaga, Rozo, Santana and Echeagaray, money is defined as a socially acceptable medium or object of exchange, an abstract representation of value backed by authority and widely accepted to achieve a global commercial transaction. However, money is not only seen as an economic issue, it is intimately related to social, psychological and even political aspects. In a similar context, Surowiecki, Bustamante, Escoto and others define it in terms of the three functions it fulfills in the economy: as a medium of exchange, a unit of account and a store of value, all of which involve buying and selling. Indicating the fact that money will never be enough, society will consider it as the sole purpose of life. (Palacios et al., 2015).

The difference between money and currency (Galán, 1996) lies in the fact that money, represented in coins and banknotes, does not possess a value, since its value is based on what it is possible to buy with it, referring to the fact that its value is based on what can be done with it. When we refer to the term currency, we refer to the material representation of money (Banrep cultural, 2017). This representation includes paper money, formed by banknotes and

metallic coins that we usually use in all transactions with money that we carry out in our days. (Orati et al., 2019).

Currently we find ourselves in a globalized world, where technology evolves exponentially leaving in its wake different alternatives for solutions in our daily lives, if we analyze the business and economic environment there are trends to make transitions to technology-based models, because waiting times are optimized, security is reinforced, costs are reduced, and efficiency is increased.

Both international financial institutions and central banks have paid much attention to all financial innovation such as new payment systems, electronic payments and of course cryptocurrencies, innovations that clearly use cryptographic protection of information where there are also discussions under the regulatory and practical point of view (Ashimbayev, 2022). (Ashimbayev, 2022).

B2B (Business to Business) is a marketing approach in which its marketing activities are oriented towards organizations where individuals acquire products and/or services that will be used to produce both services and other products (Frias & Duque, 2014).

Currently B2B companies have undergone drastic changes in their business because, on the one hand with the arrival of the COVID-19 pandemic, business opportunities have been lost given the disappearance of congresses, fairs and other relevant events for this business model, but on the other hand said model has had a transformation and acceleration in its digitalization in about 80% of companies as indicated in the report "CEO Outlook 2020: COVID-19". "It is likely that, after the pandemic, we will face new ways of working that will allow us to innovate and drive co-creation as never before (...) It is time to drive an industrialization based on knowledge and technology. And it will be digitalization, under the umbrella of Industry 4.0, that will allow us to achieve this", (Vives A, 2020).

This industrialization has yielded positive results, as the digital economy has allowed B2B customers to have greater control and confidence when making their purchases, which has contributed to the transformation of the sales landscape. Businesses thanks to this digitization are more transparent since there is more access to information as well as more agility in the same. (González & Hernández, 2020)

There is so much significant growth in digital sales in B2B models that the trend suggests that this will continue to grow increasingly according to the Gartner Future of Sales report, which predicts that by 2025, 80% of B2B sales interactions will occur in digital channels. This scenario forces the great exponents of this model to seek new alternatives and implementation strategies for further adaptation. (Bertrán et al., 2022).

With a close observation to the global economic market, we can increasingly identify the influence of cryptocurrencies, being in evidence their acceptance and progressive use in transactions, payments and international credits, encouraging these conditions that governmental institutions begin to take regulatory measures. Therefore, it is of utmost importance to analyze the theories, cases, behaviors and decisions made by companies in industrialized countries in order to adapt them to our Latin American and Colombian environment, conducting a systematic review of the literature based on previous studies and research, seeking the consolidation of a scientific article of a publishable nature.

## Conceptual framework

### Cryptocurrency:

Cryptocurrency is a decentralized medium of exchange that uses cryptographic functions to perform financial transactions (Doran 2014). Cryptocurrencies leverage blockchain technology to gain decentralization, transparency, and immutability (Meunier 2018).

### Blockchain:

Blockchain is a digital ledger of economic transactions that can be used to record not only financial transactions, but for any object with an intrinsic value (Tapscott and Tapscott 2016). In its simplest form, a Blockchain is a series of timestamped immutable data records that are managed by a group of machines that do not belong to a single entity. (Fang et al., 2020)

### Regulations:

Regulation is a fundamentally technical normative instrument, its object is the market, specific market segments and its function, to solve the disturbances that arise in said regulated market with the purpose of ensuring the common good through stability and efficiency. Regulation attends to the dynamics of the specific markets it regulates (Guinard, 2017).

### B2B:

B2B e-commerce can be defined as the economic transaction carried out between companies using the internet and various technologies with the purpose of achieving multiple benefits, among which we can mention the following: greater efficiency, increased sales, improved customer relations and greater market penetration (Teo and Ranganathan, 2004; Ballesteros and Ballesteros, 2007 and Sila, 2015).

## Methodology

The methodology to be used is based on a previous analysis of the gray literature, followed by a bibliometric analysis with the objective of extracting and classifying the necessary information for the proposed research.

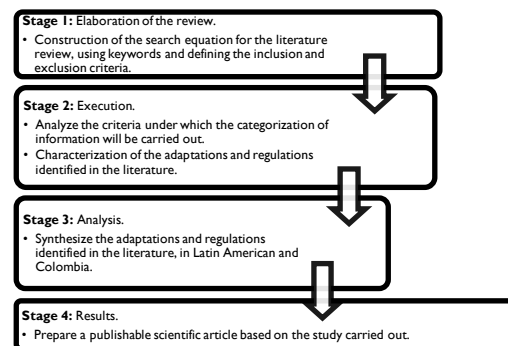


Figure 1. Methodology  
Source: Authors

### Stage 1: Elaboration of the review.

Based on the literature review proposed by (Hart, 1998), the necessary questions were posed to link with the topic and obtain a deep and precise knowledge about the state of the subject to be investigated.

What are the key theories, concepts, and ideas in the subject?
What is the epistemological and ontological field for the discipline?

What are the key sources?
What are the main issues and controversies in the subject?
What is the origin and definition of the subject?
How is knowledge about the subject structured and organized?
What are the issues and problems that have been investigated?
How has the approach to these questions increased our understanding and knowledge about the topic?

**Figure 2.** Follow-up literature review by Chris Hart  
**Source:** Hart, taken from *Doing a Literature Review*, 1998.

As a first step, it was decided to perform a superficial analysis of the gray literature, allowing us to know, clarify and reaffirm those relevant concepts based on the regulations and adaptations of cryptocurrencies, in turn contrasting those controversial and unknown theories that were raised with respect to social, economic and political issues.

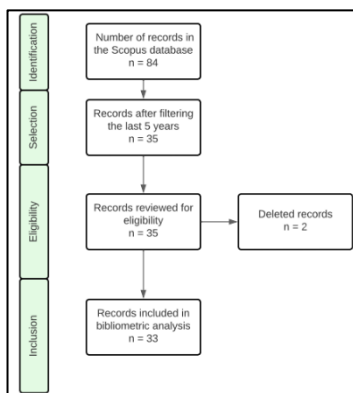
Using Google Scholar and university web repositories, we started to identify scientific articles and research papers related to cryptocurrencies to determine which will be the key words in the research and which will later be used in the search equation.

Keywords
Cryptocurrency
Regulation
Adaptation
Business
Cases

**Figure 3.** Keywords for the search equation  
**Source:** Authors.

The database chosen to carry out the research was Scopus, due to the number of articles with affinity to the research, in addition to being a reliable tool that offers guarantees for a reliable and effective research.

Next, we proceeded to limit and synthesize some results since they did not comply with our parameters considered fundamental for the research. As a first step, it was decided to exclude the Russian language since the search results showed publications in that language, so it was decided to emphasize only articles in English. In addition, the search prioritized the most recent publications, so the time criterion was included, limiting it to publications within the last five years.



**Figure 4.** Prism of criteria  
**Source:** Authors.

As a result, a reinforced and more solid search equation was obtained, which facilitated the obtaining of precise and convenient documents for the proposed research.

The following table shows the different criteria included in the final search equation.

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TITLE-ABS-KEY("cryptocurrency") AND TITLE-ABS-KEY("regulation" OR "adaptation")
AND TITLE-ABS-KEY("business" OR "cases") AND ( LIMIT-TO ( OA, "all" ) ) AND
( LIMIT-TO ( PUBYEAR,2018 ) OR LIMIT-TO ( PUBYEAR,2019 ) OR LIMIT-TO (
PUBYEAR,2020 ) OR LIMIT-TO ( PUBYEAR,2021 ) OR LIMIT-TO ( PUBYEAR,2022 ) ) AND
( LIMIT-TO ( LANGUAGE, "English" ) )
  
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**Figure 5.** Final search equation  
**Source:** Authors

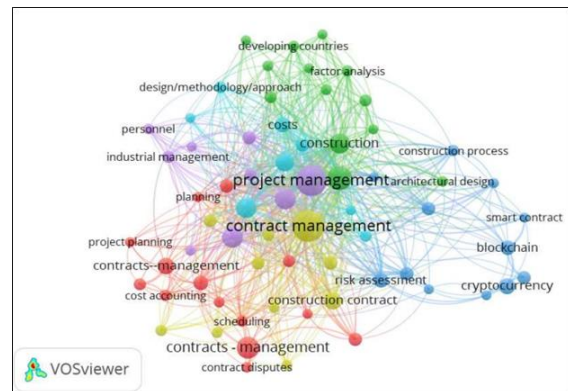
### Stage 2: Execution

As a first step, it was decided to opt for a single database which was Scopus given that according to the Spanish foundation for science and technology, 2017 provides the necessary tools to carry out complete research.

It was possible to identify 32 publications in the Scopus database, complying with the parameters previously established in the bibliometric analysis.

In accordance with ISO2788-1986, a thesaurus "is a controlled and dynamic vocabulary, composed of terms that have semantic and generic relationships between them and that applies to a particular domain of knowledge" (ISO, 2013).

In order to know the keywords most used by the authors in their respective publications, a bibliometric analysis was performed with the VOSviewer software, where the keywords of the publications found were related to the search equation, making a crossover and concurrence link between the most used words, thus selecting those with the highest interaction with a minimum of 5 interventions.



**Figure 5.** Keyword representation  
**Source:** Graph modified with VOSviewer. Taken from the Scopus database.

As a first step, it was decided to classify the search results in 4 categories, regulations, Blockchain, adaptations and Business, to carry out a pleasant and agile research. The results showed that regulations in different countries, states, governments, and councils was the most relevant topic in the publications with 44% of the publications, which shows the great impact that cryptocurrencies have had worldwide and the regulatory priority that they are giving.

In turn, adaptations were the least common topic with 16%, illustrating how the topic of currency volatility is handled, the impact on society, companies, and countries, as well as topics on the financial market. The Blockchain theme was identified with 18% where different publications were illustrated as an emerging technology and its multiple applications in different fields and finally the

Business theme with 22% which was an important theme since it shows how the business sector has chosen to include cryptocurrencies as an alternative for their commercial purposes.

We identified that in the Scopus database, we found reliable and substantial information on the adaptation and regulations of cryptocurrencies, as well as their relationship with b2b models, however the information was null with respect to Latin American countries and specifically with Colombia. Therefore, we resorted to the use of the academic search tool Google Scholar, which with the use of key words in its search engine yielded massive results, shown in the following table.

Keywords	Number of articles	Year	Language
"Cryptocurrencies" " b2b"	314	2020 - 2022	Español
"Regulations" "Cryptocurrencies" "Latin America"	745	2020 - 2022	Español
"Adaptations" "Cryptocurrencies" "Colombia"	767	2020 - 2022	Español

Figure 6. Keyword representation in Google Scholar  
Source: Authors.

### Stage 3: Analysis.

According to the 2022 cryptocurrency geographic report conducted by Chainalysis, the trend observed this year is that emerging markets are leading the list of highest adoption. If one considers the World Bank's classification to measure the level of income and economic development, defined as: high income, upper middle income, lower middle income, and low income. (Grauer, 2022)

**North America:** With a total amount of USD 1.15 trillion in cryptocurrency transfers from July 2021 to June 2022, the Americas accounts for 19% of the global activity. The United States accounts for the largest amount of the transaction (Chainalysis, 2022).

**Latin America:** This region recorded a 40% growth compared to the previous year, citizens in these countries made transfers of USD 562 billion from July 2021 to June 2022. Analyzing the chain of transactions carried out, three key uses of cryptocurrencies are identified. Storing value, sending remittances, and searching for alpha (Chainalysis, 2022).

- **Storing value:** According to a report by the International Monetary Fund, countries such as Argentina and Venezuela have an inflation rate of 79% and 114% respectively, indicating that their currencies have lost about half of their value.

This report from the International monetary fund also states that although it is true that Bitcoin does not prove to be the hedge to stop inflation, some thought that stablecoins would be, being these cryptocurrencies that remain pegged to the price of a fiat currency such as the dollar. (IMF, 2022). In fact, according to a survey conducted by Mastercard, a little more than a third of consumers in Latin American countries use stablecoins for their day-to-day purchases.

- **Remittance:** This type of payment is common in Latin America; it can be estimated that this year this market will reach \$150 billion. In El Salvador, its application Chivo, operated \$52 million in Bitcoin remittances from January to May 2022. (Vallejo, 2022)

According to Bitso's director of regulation, a high percentage of low-income families obtain remittance payments from their relatives abroad. Bitso has processed more than USD 1,000,000,000,000 in remittances from the United States to Mexico in 2022, representing a 400% year-on-year growth rate. (Vallejo, 2022).

- **Searching for the Alpha:** In this section we find that the countries with the most developed economies in Latin America use cryptocurrencies not only to save, but also as an opportunity to make profits. Therefore, many users allow themselves to bet, trade, lend, and take tokens of all kinds, being speculative operations with a high risk and increasingly rising potential (Grauer, 2022).

According to Thomaz Fortes, the crypto leader at Nubank, one of the world's largest digital banking platforms that recently launched a crypto trading platform, the main use case for crypto in Brazil right now is as a speculative investment. "Clients want a way to expand their profits," he explained. "Interest rates at historic lows in the country and the strong appreciation of cryptocurrency prices may have contributed, but adoption continues in the so-called winter cryptocurrencies." (Fortes, 2022)

**Central Europe:** Due to the great regulatory clarity presented by this continent, Central Europe with a figure of USD 1.3 trillion of cryptocurrencies between June 2021 and July 2022 remains the continent with the largest cryptoeconomy in the world. (Chainalysis, 2022).

**Central and South Asia and Oceania:** For these continents their citizens received a total of USD \$932 billion in cryptocurrency values from July 2021 to June 2022 being the third largest cryptocurrency market. Countries such as Vietnam, Philippines, India, and Pakistan lead such market globally. (Investing, 2022).

**Middle East and North Africa:** Despite being the smallest continents in terms of cryptocurrency transaction volume flow, they are the ones with the most accelerated growth at a global level. With a 48% increase over the previous year these continents received a total of USD \$566 billion of cryptocurrencies between June 2021 and July 2022. The main countries contributing to this transactional volume are Turkey, Morocco, and Egypt (Chainalysis, 2022).

### Regulations.

Regulation often evolves as a reactive function of actions and outcomes in society. With emerging technologies, a generalized phenomenon tends to occur, they enter a point of exponential evolution, which prevents them from keeping pace, and given this, regulation comes with the passage of time. (Mandel 2009).

Industrialized countries have a more advanced regulatory vision with respect to non-industrialized countries, so it is important to analyze how these countries have handled this emerging technology.

The Lummis-Gillibrand bill seeks to create a comprehensive regulatory framework for digital assets in the country. If signed into law, it would define those confusing terms and jurisdictional disputes and fully recognize cryptocurrencies as a legitimate part of the U.S. financial system. (Gillibrand, 2021).

China's central bank announced in September 2021 that all financial transactions with cryptocurrencies are illegal, a new regulatory

measure towards this market. The agency indicated that in recent years speculation and trading with btc or other cryptocurrencies have caused disturbances in the financial and economic order, with increases in money laundering, illegal fundraising, and other criminal activities. (DW, 2021)

Despite this, the Chinese government is working on its own digital currency, the digital yuan. It intends to create a model in a centralized way, which will allow absolute control of the cryptocurrency market in the country. This asset was used for the first time at the Winter Olympics in Beijing and has been in the testing phase for some years (iProup, 2022).

In May 2018 the law "On digital financial assets" was passed in the Russian parliament however this law was limited only to the description of procedures of obtaining through tokens and regulations and transactions of them, while the word cryptocurrency was excluded and in the mentioned law no regulatory guidelines alluding to transactions with digital currencies were related so the legalization and regulation of transactions with cryptocurrencies remain unresolved. (Karapetyan M, 2022)

Current regulations in France allow cryptocurrencies to have unlicensed operating activity until 2026. But this could change, due to the new proposal to be submitted to parliament in 2023, which would oblige companies to obtain a license from the financial regulator starting in October. (Grauer, 2022)

Moreover, Latin America has noticed the growth of cryptocurrencies in its markets, causing governments to act with legislative measures in response.

One of the purposes for the Salvadoran government is to be part of the fourth digital revolution (Forbes, 2019) and this is why it authorizes bitcoin as a digital currency that obeys free market criteria in its monetary integration law where several main articles stand out such as:

All prices may be expressed in bitcoin, all tax contributions may be paid with bitcoin, all economic agents must accept bitcoin as a form of payment when so offered by whoever acquires a good or service, Exchanges in bitcoin will not be subject to capital gains taxes just like any legal tender. (Brigida, 2022)

Currently Chile does not have an official regulation for issuers or intermediaries, although they are not prohibited, they are not yet supported by any bank or authority. It should be noted that the tax service has declared a tax regulation on the income obtained from the purchase and sales of cryptocurrencies mentioned in its Oficio 963, dated February 14, 2018 in which it is established that such income obtained falls under its N°5 of Article 20 of the Income Tax Law, which if it has a gain in a taxpayer company will be subject to such tax. (Servicio de Impuestos Internos, 2018).

However, on September 3, 2021, the executive branch submitted to Congress a law to regulate Fintechs and the management of cryptocurrencies whose purpose is to protect owners, financial intermediaries and investors, it also mentions that the central bank is the one who has the obligation to regulate, additionally an important factor in this law is that it requires mandatory training for specialists who sell cryptocurrencies. This law is currently in the Chamber of Deputies for its respective discussion, and it is expected that the court rulings will be issued by the end of 2022. (Brokering Abogados, 2021)

There are some important bills in the Brazilian government which are underway in both the senate and the house. For 2022 Senator

Iraja Abreu decided to unify these bills with the purpose of synthesizing them in two key factors, consumer protection and compliance with the money laundering law.

This bill allows the federal government to give it full authority to define which agencies regulate cryptocurrency businesses by classifying their service providers and defining virtual assets. (PYMNTS, 2022)

According to the study conducted by Coinmap (2021), in Colombia, there are 502 commercial facilities with association and acceptance of cryptocurrencies in their establishments.

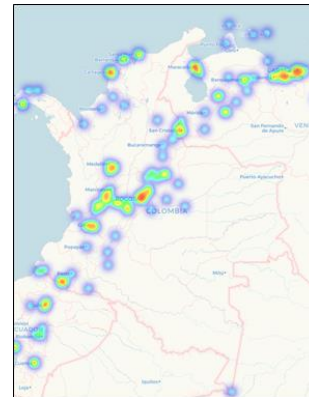


Figure 7. Commercial facilities in Colombia in association with cryptocurrencies. Source: Coinmap. (2021)

In Colombia, bill 028 of 2018 was the first to propose a regulation to cryptocurrencies. With the purpose of "regulating civil and commercial operations and transactions of cryptocurrencies between persons of public and private law, for the acquisition of goods and services". (Congress of the Republic of Colombia, 2019). Counting on the following pillars:

1. The entities that operate with cryptocurrencies must disclose to the acquirer, the number of virtual currencies owned and/or the corresponding amount of national currency (Article 4).
2. Natural or legal persons trading with cryptocurrencies (buying and selling), must have a prior authorization issued by the competent authority. In the case of natural persons, by the Ministry of Information and Communication Technologies (article 9).
- If an entity or natural person carries out operations with cryptocurrencies without having prior authorization for such activities, it will be sanctioned either by the cancellation of the commercial registration or by the payment of fines (article 12 and 13).
4. A tax of 5% of the final transactions made with them within the Colombian territory must be paid, which must be paid in quarterly periods (article 14).

In the end, this bill did not materialize, as it presented technical and legal obsolescence, considering those involved who could carry out activities with cryptocurrencies and its own decentralized nature (Posada & Marcucci).

The second bill 268 of 2019 was presented, which had the intention of "regulating the cryptoasset exchange services offered through cryptoasset exchange platforms" seeking to provide security to the user and prevent the use is these for the financing of illegal activities. (INCP, 2019)

Similarly, this project was sunk due to conceptual shortcomings, in addition to being intended to be monitored by the Superintendence of Companies and not by the Superintendence of Finance, which according to the former Minister of Finance Mauricio Cardenas the activities with cryptocurrencies are intrinsically related to the payment system directly affecting the good performance of the financial system, therefore this activity should oversee the Superintendence of Finance. (Posada & Marcucci)

The Ministry of Finance and Public Credit in 2020 together with the President of the Republic issued Decree 1234 of 2020, which created the regulatory Sandbox. This regulatory mechanism was born in the IT world and was implemented in 2014 for the first time by the Financial Conduct Authority of the United Kingdom. Its purpose is to implement innovative projects in a controlled environment (Ambito Jurídico, 2020).

The Regulatory Sandbox will last approximately two years, during which the impact of the activity, the reaction of the entities and the guidelines they will exercise will be analyzed to create a long-term regulatory framework. (Assis, 2021)

#### Stage 4: Results

Based on the literature review, important concepts that imply potential applications in B2B models in Latin America and Colombia are extracted.

Business-to-business trade, known as B2B, is a form of business transaction in which one company sells products or services to another company. This type of transaction is common in today's economy and has grown in popularity in recent years due to the increasing number of companies participating in the global economy. (Sanchez, n.d.)

B2B transactions are often conducted between companies that are in different parts of the world and operate in different industries. In these types of transactions, companies often buy products in bulk, with the aim of reducing costs and improving their profit margins. In addition, companies also often use B2B solutions to purchase services, such as consulting, digital marketing, or logistics services. (Torres, 2023)

Based on the literature, it is decided to propose three positions regarding the potential applications of cryptocurrency adaptations and regulations in Latin America and Colombia.

#### Costs and waiting times.

Cryptocurrencies allow international transactions without intermediaries, which can reduce processing and verification times. This can be especially useful in the context where companies have business relationships with suppliers and customers in different countries around the world. They would also allow a wider geographic reach for businesses, as they are not restricted by national borders and are not subject to exchange rates. This can facilitate the expansion of companies and encourage international trade (Garcia, 2022).

It is important to note that, in general, cryptocurrency transactions are faster than traditional banking transactions. The cryptocurrency transaction process generally does not require intermediaries, allowing transactions to be processed in a matter of seconds or minutes. In comparison, traditional bank transactions can take several business days to process. (LHH, 2022).

It is also important to consider the issue of associated costs, in this section cryptocurrency transactions usually have lower transaction fees than traditional bank transactions. In many cases, cryptocurrency transactions have no fees or very low fees compared to fees charged by traditional banks for wire transfers or international transactions. (Zafar, 2021)

Looking at international transactions, cryptocurrency transactions can be more profitable than traditional banking transactions because cryptocurrencies can be exchanged directly without the need to convert them into local currencies, which reduces the costs associated with currency exchange. (Vargas L., 2021).

In addition, the maintenance costs of a cryptocurrency account are significantly lower than the maintenance costs of a traditional bank account. Traditional banks typically charge monthly or annual fees for maintaining an account, while cryptocurrency accounts are often free or have very low maintenance costs. (Francisco, 2022)

#### Security.

Second, cryptocurrencies can improve security in B2B models. Traditional financial transactions can be vulnerable to fraud and cyber-attacks. However, cryptocurrencies use cryptographic technologies that ensure the integrity and privacy of transactions, which can protect businesses from potential risks and losses.

A cryptocurrency wallet provides the business sector with greater control over assets and allows them to be stored securely in their own wallet, and they also use several security measures to protect digital assets, such as encryption, two-factor authentication and strong passwords. This provides greater security compared to traditional online exchange accounts that can be vulnerable to cyber-attacks and theft. (Fornell, 2023).

There is also the physical wallet, a secure storage device designed specifically for storing cryptocurrencies. Also known as hardware wallet or cold vault, this technology offers a safe and convenient way to store and protect cryptocurrency assets (Semana, 2021).

Physical wallets for cryptocurrencies work by generating private keys, which are stored on the device rather than on an online platform. These private keys are used to sign cryptocurrency transactions, which means that without them, it is not possible to access the funds stored in the wallet, while they also usually have advanced security features, such as two-factor authentication and data encryption, to protect the private keys and ensure the integrity of the funds stored in them. In addition, these wallets are not connected to the Internet, which reduces the risk of hacks and security breaches. (Ricou, 2022).

#### Traceability and transparency.

Third, cryptocurrencies can increase transparency in B2B models. Traditional financial transactions can be difficult to track and trace. However, cryptocurrencies allow for greater traceability and visibility of transactions on the blockchain, which can facilitate auditing and regulatory compliance. (McGraw, 2020)

Blockchain technology is a distributed, decentralized registry that can be used to track and verify cryptocurrency transactions. By using blockchain technology to record cryptocurrency transactions, the transparency and security of transactions can be increased. (IBM, n.d.)

With the application of this technology, it would be possible to avoid in the business sector not only the makeup of financial statements such as balance sheet, income statement, cash flow, among others, but also the misappropriation of financial resources.

### **Government regulation.**

Governments and financial authorities may impose stricter regulations on cryptocurrency trading. These regulations may include measures such as mandatory transaction reporting, investment limits and oversight of cryptocurrency exchanges. While this could limit volatility, it could also increase innovation and adoption of cryptocurrencies.

By implementing this measure, it is possible that more people and businesses will adopt cryptocurrencies. This is because increased demand and use of cryptocurrencies can help stabilize prices. In addition, as more use cases for cryptocurrencies are developed, more demand and higher intrinsic value could result. (esic, 2019).

In our country, the cryptocurrency regulatory sandbox is an initiative of the Colombian government to encourage technological innovation in the cryptocurrency sector and at the same time protect consumers. A sandbox is a controlled space where tests and experiments can be conducted without the risk of damaging the external environment. In this context, the regulatory sandbox is a controlled space where cryptocurrency companies can test their products and services under government supervision and without incurring regulatory penalties. (Colombiafintech, 2021)

According to Perez, the initiative allows cryptocurrency companies to apply for a temporary six-month license to offer cryptocurrency-related products and services in Colombia, without being fully subject to all the regulations and requirements demanded by the government to operate in the traditional financial market.

During this period, cryptocurrency companies can test their products and services in a regulated environment and under supervision, while working on complying with all applicable regulations. (Perez, 2022)

Companies must submit a detailed testing plan to ensure that their products and services are safe and stable, and meet the compliance and security requirements established by the Financier Superintendency, considering that it is of utmost importance to consider that this initiative could open a door in the medium term, for the inclusion of cryptocurrencies in Colombian B2B models.

### **Price stabilization**

Some companies and projects have attempted to create stable cryptocurrencies, which are pegged to the value of a fiat currency such as the U.S. dollar or euro. These stable cryptocurrencies can help reduce volatility (Chamizo, 2022).

Stablecoins may be more accessible to most SMEs who do not have access to traditional banking services or who live in countries with unstable currencies. Additionally, stablecoins are designed to maintain their value relative to a fiat currency, which means they can offer greater price stability than more volatile cryptocurrencies such as Bitcoin.

### **Conclusions**

Based on the postulates of López & Gómez, regulating, and adapting cryptocurrencies in B2B models can be a challenge due to the lack of knowledge about a new technology that could change the

current panorama we know. However, it is an alternative that offers the business sector improvements in its transactional processes, reducing waiting times, costs, security, transparency, and traceability.

Starting from the contextualization of the topic and making use of the gray literature in specialized websites, the benefits of improvement that cryptocurrencies can offer in B2B models were identified, in addition to understanding how some countries have been adapting them progressively and understanding the regulatory framework that can be established according to each country.

Subsequently, we were able to identify keywords related to the research, allowing us to have a clear horizon with respect to the search.

With respect to the regulatory measures found, it could be stated that the dynamics of the use of cryptocurrencies has been increasing more and more in society, leading to an increase in transactions in many countries, which has resulted in many governments focusing their attention on them and executing regulatory processes.

If we look at Latin American countries, we can observe that in Venezuela and Argentina, economic reasons and capital restrictions are mentioned as reasons for the adoption of cryptocurrencies, while in Brazil, the main reason seems to be speculative investment. On the other hand, a solid case is El Salvador, which authorizes bitcoin as a legal digital currency that obeys free market criteria, thanks to its Monetary Integration Law.

Analyzing the case of Colombia, we find that two previous bills have fallen in the Congress of the Republic due to form inconveniences, these were Bill 028 of 2018 and Bill 268 of 2019. However, in Decree 1234 of 2020 it proposes a regulatory Sandbox in which it will be possible to establish in a controlled environment for two years, the economic viability to create a long-term regulatory framework for cryptocurrencies in Colombia.

B2B trade implies a high level of interdependence between companies and their suppliers, which fosters long-term relationships and collaboration to improve processes and reduce costs. Considering the above, processes could improve in waiting times, as there is no bank intermediary, waiting times in cryptocurrency transactions are in a matter of minutes to a few hours, a fundamental aspect in business relationships with suppliers or customers in other parts of the world.

As a second measure, we take into account the security factor that a wallet can offer to manage cryptocurrencies, these, by having blockchain technology, ensure the integrity and transparency of transactions, being less vulnerable to cyber-attacks or theft due to its cryptographic security. In addition to maintaining traceability of all transactions that are made without being able to be altered.

Finally, governments and authorities play a fundamental role in the regulation and adoption of cryptocurrencies for B2B models because they can impose measures to increase the demand for cryptocurrencies, either by creating their own cryptocurrencies such as stablecoins, which linked to a fiat currency offer greater price stability, or by imposing regulations such as investment limits, supervision in cryptocurrency exchanges and the obligation to report their transactions, which would help to increase transparency, security, limiting volatility and increasing the demand in the adoption of cryptocurrencies in companies.

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## Appendix

**Table A1.** Inclusion and exclusion criteria

INCLUSION	EXCLUSION
Scientific output from the Scopus database published from 2018 to 2022.	Exclusion of publications that are not related to the research topic.
Publications in English and Spanish	Publications that do not mention cryptocurrencies or their technological basis in blockchain in detail are excluded.
The publications in the Scopus database address topics related to the following subjects: Cryptocurrency. Blockchain. Bitcoin. Regulation. Adaptation. Business. Cases. Economics.	Excluded are publications that although they provide information on blockchain, their approach is in line with other technologies that are distanced from cryptocurrencies.
Publications by experts in the topic of study in Scopus, in addition to master's degree works in Google Scholar.	Excluded are publications related to blockchain with a focus on health and insurance, in addition to undergraduate degree papers.

Source: Authors

**Table A2.** Articles obtained in Scopus according to the search equation.

AUTHOR(S)	TITLE	YEAR	SOURCE
Morgan, J.	Systemic stablecoin and the defensive case for Central Bank Digital Currency: A critique of the Bank of England's framing	2022	Research in International Business and Finance
Alekseenko, A.P.	Ban of Cryptocurrencies in China and Judicial Practice of Chinese Courts	2022	China and WTO Review
Alshater, M.M., Saba, I., Supriani, I., Rabbani, M.R.	Fintech in islamic finance literature: A review	2022	Heliyon
Pocher, N., Veneris, A.	Privacy and Transparency in CBDCs: A Regulation-by-Design AML/CFT Scheme	2022	IEEE Transactions on Network and Service Management
Blahušíaková, M.	Accounting for Holdings of Cryptocurrencies in the Slovak Republic: Comparative Analysis	2022	Contemporary Economics
Caliskan, K.	The Elephant in the Dark: A New Framework for Cryptocurrency Taxation and Exchange Platform Regulation in the US	2022	Journal of Risk and Financial Management
Thewissen, J., Thewissen, J., Tor-sin, W., Arslan-Ayaydin, Ö.	Linguistic errors and investment decisions: the case of ICO white papers	2022	European Journal of Finance
Shahbazi, Z., Byun, Y.-C.	Machine Learning-Based Analysis of Cryptocurrency Market Financial Risk Management	2022	IEEE Access
Wu, C.-H., Tsang, Y.-P., Lee, C.K.-M., Ching, W.-K.	A blockchain-iot platform for the smart pallet pooling management	2021	Sensors
Fletcher, E., Larkin, C., Corbet, S.	Countering money laundering and terrorist financing: A case for bitcoin regulation	2021	Research in International Business and Finance
Dudukalov, E.V., Geroeva, Y.A., Shtepa, M.A., Ushakov, D.	The crypto currency as money of digital economy	2021	E3S Web of Conferences
Almeshal, T.A., Alhogail, A.A.	Blockchain for Businesses: A Scoping Review of Suitability Evaluations Frameworks	2021	IEEE Access
Huang, S.S.	Crypto assets regulation in the UK: an assessment of the regulatory effectiveness and consistency	2021	Journal of Financial Regulation and Compliance
Dobrovolska, O., Marhasova, V., Momot, O., (...), Kozii, N., Chyzyshyn, O.	Evolution and current state of money circulation in Ukraine and the world	2021	Estudios de Economía Aplicada
Baothman, F., Saeedi, K., Aljuhani, K., (...), Almeatani, M., Alothman, N.	Computational intelligence approach for municipal council elections using blockchain	2021	Intelligent Automation and Soft Computing

Suryono, R.R., Budi, I., Purwandari, B.	Challenges and trends of financial technology (Fintech): A systematic literature review	2020	Information (Switzerland)
Balgobin, P., Seeam, A.	Developing an effective regulatory framework for virtual currencies in mauritius	2020	ACM International Conference Proceeding Series
Tyc, A., Siuciński, R.	Cryptocurrencies: Some Remarks from the Perspective of Polish Employment and Tax Law	2020	TalTech Journal of European Studies
Yatsyk, T., Shvets, V.	Cryptoassets as an emerging class of digital assets in the financial accounting	2020	Economic Annals-XXI
Ovchinnikov, A.I., Kravchenko, A.G., Mamychev, A.Y., Fatkhi, V.I.	Virtual currency as an object of civil rights in Russia	2019	Humanities and Social Sciences Reviews
Nabilou, H.	How to regulate bitcoin? Decentralized regulation for a decentralized cryptocurrency	2019	International Journal of Law and Information Technology
Yu, Y., Ding, Y., Zhao, Y., (...), Du, X., Guizani, M.	LRCoin: Leakage-resilient cryptocurrency based on bitcoin for data trading in IoT	2019	IEEE Internet of Things Journal
Doerner, J., Kondi, Y., Lee, E., Shelat, A.	Threshold ECDSA from ECDSA Assumptions: The Multiparty Case	2019	Proceedings - IEEE Symposium on Security and Privacy
Darici, B., Ayhan, F.	Cryptocurrency in all aspects	2019	Cryptocurrency in all Aspects
Sarnakov, I.	Digital financial assets: Segments and prospects of legal regulation in the brics countries	2019	BRICS Law Journal
Karapetyan, M.E., Timoshenko, L.P., Stroganov, I.A., Pronina, I.V.	The development of blockchain technology in Russia: Outlook and trends	2019	International Journal of Economics and Business Administration
Vidan, G., Lehdonvirta, V.	Mine the gap: Bitcoin and the maintenance of trustlessness	2019	New Media and Society
Kamps, J., Kleinberg, B.	To the moon: defining and detecting cryptocurrency pump-and-dumps	2018	Crime Science
Ivashchenko, A., Polishchuk, Y., Britchenko, I.	Implementation of ICO European best practices by SMEs	2018	Economic Annals-XXI
Nikam, R.J.	Model draft regulation on cryptocurrency in India	2018	Hasanuddin Law Review
Ashimbayev, T., Tashenova, S.	Prospects for using cryptocurrency in the economy of Kazakhstan and the attitude of the national bank	2018	European Research Studies Journal
Stepanov, O., Pechegin, D.	Legal view on the introduction of new technologies	2018	Russian Law Journal

Source: Authors