

Recent trends in digital currencies in the field of e-commerce

التوجهات الحديثة للعملة الرقمية في مجال التجارة الإلكترونية

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Received:12/02/2025

Accepted:09/04/2025

.Published: 30/04/2025

Abstract :

The research paper aims to identify the modern trends of digital currencies of all types in the field of electronic commerce and how to apply them in completing digital transactions. A sample of Western and Arab countries was selected in order to analyze their vision. It has been concluded that digital currencies have entered electronic commerce and have reached more advanced stages in Western countries than in Arab countries, which are still relatively far from this type of trading, with the exception of some Gulf countries, while the rest of the countries did not record any activities and some of them reached the point of enacting laws prohibiting trading in digital currencies.

Keywords: Digital currencies, Electronic commerce, Western and arab countries, prohibiting trading in digital currencies.

Jel classification codes: E41, F16

1. Introduction:

With information and communication technology, a new model for activities has been introduced, resulting in a radical change in business methods and approaches. Furthermore, it has improved and developed traditional commercial transactions. This technology is credited with the emergence of e-commerce and its rise to international prominence. As a result of this technology, e-commerce has developed into a product that contributes to generating profits in one way or another.

Recently, digital currencies have gained significant attention, particularly after some major brands, markets, and payment processors announced their adoption as a payment method. They have become one of the key terms discussed by retailers around the world. While there are many skeptics concerning the readiness of these currencies for use, block-chain technology and encryption can have a significant impact on e-commerce.

Updating information in e-commerce is much cheaper than creating traditional brochures or catalogs. Accessibility is another strong feature of the internet, as anyone can access information, and consumers can obtain the necessary details or even purchase products at any time and on any day given.

1.1 Study Problem

Based on the above, the main research question posed in this research is: To what extent has the volume of digital currency transactions affected e-commerce in some Western and Arab countries?

1.1 Study Objectives

This research paper aims to achieve several goals, including:

- Highlighting the importance of digital currencies and e-commerce and the financial, economic, and commercial relationship as well between them.
- Highlighting the modern trends in some Western and Arab countries regarding the use of digital currencies and the extent to which these currencies can increase e-commerce.

1.3 Methodology of the Study

We adapted a descriptive analytical method to interpret statistical indicators, focusing on breaking down and analyzing research elements and describing the reality of digital currency transactions and their role in strengthening e-commerce. In addition, we described the state and trends of some Western and Arab countries in this regard.

To address the research and answer the main question, as well as achieve the research objectives, we divided this study as follows:

- **First Chapter:** Theoretical framework of the study
- **Second Chapter:** The role of digital currencies in enhancing e-commerce
- **Third Chapter:** Experiences of some countries in using digital currencies in e-commerce

2. Theoretical Framework of the Study

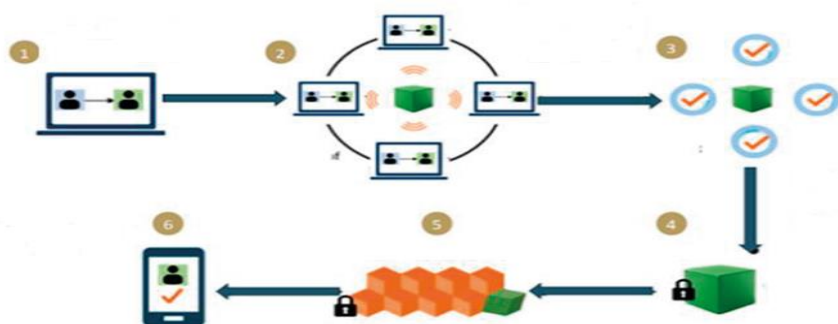
In this section, we will go through the main theoretical concepts of the study variables.

2.1 Concept of Digital Currencies

There are many definitions provided by those interested in digital currencies, including the following:

- A digital representation of monetary value not issued by a bank or public authority, not necessarily in the form of paper currency, yet accepted by natural or legal persons as a means of payment, transferable and tradable electronically. (Toby and Sharfi, 2021, p. 183)
- Digital currencies are the across-the-board category encompassing all forms of other currencies, whether electronic, virtual, or legally recognized digital currencies as well. Regardless of these names, their main characteristic remains that they are available in digital form without any tangible physical existence. (Bouthaljah, 2022)
- Computer programs produce currencies that have no tangible physical entity or existence,,they are not controlled by a central bank or any official international administration, they arealso used online for buying and selling or converted into other currencies and voluntarily accepted by users. (Ben Aouali and Belmechri, 2020, p. 165)
- Purely virtual money with no physical existence in the external world, are consisting only of a series of numbers, and encrypted data representing specific monetary values.Banks and financial institutions for their clients issue them as electromagnetic pulses stored electronically on a smart card or in the client's personal computer memory, in a place known as an electronic wallet, for customers to use in settling their e-commerce transactions via the internet or in-store payments. (Khaled and Samida, 2021, p. 208)As for the mechanism of digital currencies, it is as follows:

Fig 1. Mechanism of Digital Currencies



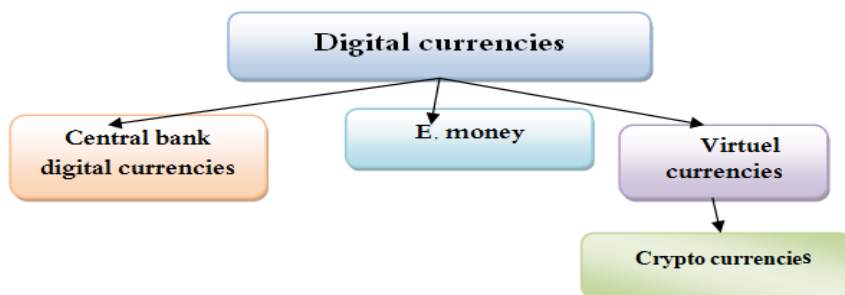
Source: (Al-Arabi, 2019, p. 9)

The diagram demonstrates that the process of digital currency involves multiple steps, beginning with the client sending a transaction request to the network for validation. A new block is then added to the block-chain and added to the shared ledger, completing the transaction unit. The transaction is then recorded as an encrypted block.

2.2 Forms of Digital Currencies and Their Characteristics

All other forms of currency, whether virtual, encrypted, or electronic, fall under the general heading of digital currencies. Notwithstanding the different names, these currencies' main feature is that they are only accessible digitally and don't actually exist in the real world. (Page 6 of Abdeli&Mowaffaq, 2021). The terms "cryptocurrency," "virtual currency," and "digital currency" all relate to the same idea of money that has just lately surfaced on the internet. It was created by programmers and is mostly used for online commerce. (Page 2, Jaballah, 2020). The sorts of digital currencies are depicted in the following figure:

Fig 2. Types of Digital Currencies



Source: (Al-Ordoni, 2020)

Official digital currencies, electronic money, and encrypted virtual currencies are the three main categories of digital currencies, according to the diagram. The strength of digital currency comes from the following characteristics:

- Global accessibility
- Privacy and confidentiality
- Encryption
- Low transaction fees
- Digital currency shares
- Security and decentralization
- Transparency
- Disease-free transactions

2.3 The Most Popular Digital Currencies (Al-Arabiya, 2023)

Studies estimated that there were about 4,000 virtual currencies by the end of 2020 (Bouthalga, 2022, p. 187). Bitcoin, Ethereum, Binance Coin, Cardano, and Solana are among of the most well-known digital currencies in the world (Forsa, 2023). A synopsis of each is provided below:

a. Bitcoin

Bitcoin continues to be the most popular and dominating cryptocurrency on the market. Like gold and real estate, it is used to store value and was the first and most well-known virtual currency that can be purchased, traded, or transferred online (Grabowski, 2019, p. 4). According to Al-Salam (2018), Bitcoin was the first use of the term "crypto-currency" (p. 44). With a 42.5% market share in the cryptocurrency space, Bitcoin has grown to be a necessary investment and has been embraced by significant hedge funds and investors. There is also Bitcoin Cash, an unmineable block-chain-based version that functions as an open-source payment method (Laamamra&Mahboub, 2022).

With 106 million owners and 400,000 daily users, the table demonstrates that digital currency indicators, particularly for Bitcoin, have shown a relative increase in comparison to prior years. With 200 million wallets and 53 million merchants, Bitcoin is becoming more and more popular in e-commerce.

b. Ethereum (ETH)

Ethereum, denoted by the sign Ether, is the most widely used block-chain network and the second-largest digital currency after Bitcoin (Brandon, Joe, & McMahon, 2024). Ethereum facilitates a commercialized metaverse, a top decentralized exchange, and the

largest NFT market by volume. Its network includes well-known coins like Dogecoin and Polygon.

c. Tether (USDT)

Tether has been offered on various blockchain platforms, among them Ethereum, Binance, Tron, and Bitcoin, and is issued by Tether Limited, which is operated by Bitfinex (Al-Arabiya, 2023).

d. Binance Coin (BUSD)

One of the major cryptocurrency exchanges in the world, Binance, adopts this native cryptocurrency. Despite recent market downturns, it has shown to be more profitable than many other cryptocurrencies since its launch in 2017 which makes trading on the platform easier (Mousawi&Rabah, 2022, p. 25).

e. USD Coin (USDC)

In addition to being volatile-resistant, USD coins are commonly accepted as payment on a number of exchanges.

f. Ripple (XRP)

Ripple is a business that has a digital payment processing system on top to serving as a digital currency. Known as XRP, it is quite different from Bitcoin in that it uses a unique consensus approach involving distributed servers rather than a blockchain (Al-Akhdar, 2021, p. 80).

g. Cardano (ADA)

Cardano has remained a credible blockchain project and one of the fastest-growing cryptocurrencies in spite of market oscillations. A consensus procedure known as "Proof of Stake" is used to operate, which uses less energy than "Proof of Work."

h. Solana

Among the more than 10,000 digital currencies that are now on the market, Solana is one of the most well-known.

i. Dogecoin

When Elon Musk acquired Twitter, Dogecoin suffered a brief bump in currency. The value of the cryptocurrency is greatly influenced by Musk's states, thus rendering it notably volatile. If Dogecoin is incorporated into Twitter's payment mechanism, it might reclaim its market leadership.

j. Avalanche

Prior to a decline, Avalanche attracted notice. In 2021, it grew by at least 4500%, outpacing many other significant crypto currencies. It has not seen significant devaluations, despite being impacted by the

overall decrease in the cryptocurrency market. Its position as a component of the overall market trend is expected.

. The market share of each cryptocurrency on the digital currency exchange is shown in the following table.

Table 1. Market Capitalization of the Digital Currency Exchange in July 2018

Cryptocurrency	Bitcoin	Ethereum	XRP	Bitcoin Cash	EOS	Litecoin	Cardano	Stellar	Iota	Tether
Market Capitalization (Billion USD)	113.8	48.1	19.8	13.9	8.2	5	4.2	4	3.3	2.7

Source: Prepared by the researchers based on: (Statista, 2020)

It is noticeable from the table that the cryptocurrencies with the biggest market shares in the digital currency exchange are almost identical to the top cryptocurrencies in the digital currency market. With a market share of \$113.8 billion, Bitcoin is at the top of the list. Ethereum comes in second with \$48.1 billion, or over 50% of Bitcoin's market share. As seen in the above table, various cryptocurrencies come next with differing market shares, occasionally near one another.

2.4 Methods of Settling E-Commerce Transactions via Digital Currencies

There are two main aspects to think about when processing digital currency payments for your online store: (Mibsoft, 2021).

- ❖ **Payment by Personal Wallet:** With this choice, you may take payments straight into your digital wallet. These payments may be kept on a hard drive, smartphone, or computer.
- ❖ **Third-Party Processor Payment:** Transactions are managed by a third party on behalf of the service requester. Well-known businesses that focus on this service include NOWPayments, Coinbase, and BitPay. A Shopify user can utilize a different payment method or a variety of payment alternatives from the "Payment Providers" tab. Upon that, you will be able to accept more than 300 digital currencies, such as Litecoin, Ethereum, and Bitcoin. PayPal-integrated retailers are also able to take digital currency from shoppers.

3. Role of Digital Currencies in Enhancing E-Commerce

The purposes of the latest digital currencies, which have proven their economic viability and effectiveness in boosting internet sales and e-commerce exchanges, will be discussed in this section.

3.1 Importance of Digital Currencies in E-Commerce

Through the development of electronic marketplaces where buyers, sellers, middlemen, and online businesses compete, e-commerce represents a new method of doing business between suppliers, partners, and customers. Since commercial transactions used to rely on in-person encounters for buying and selling—a practice that persists to this day—digital currencies have had a noticeable and significant influence on e-commerce. Nonetheless, there have been important and fundamental shifts that have made it possible to purchase and sell without in-person encounters. Online marketing and e-commerce are now connected, enabling the unmonitored transfer of substantial amounts of money between accounts. It is clear that e-commerce has benefits that make it far simpler for customers than traditional retail. To minimize corruption, track spending, identify users, and make sure that authorized individuals are spending money on specific expenses within allowed timeframes, virtual currencies could, yet, become more widely accepted, minimize fraud, and encourage accountability and transparency in public financial activities. (Zarqeen&Jabbari, 2012, p. 39)

3.2 Growth of Digital Currencies in E-Commerce (Mibsoit, 2021)

The utilization of digital currencies in e-commerce has grown over time. Digital currencies' contributions to transaction settlement have grown as more businesses accept them as a form of payment. One example of a digital currency user is PayPal, which introduced "Checkout with Crypto" in March 2021, a tool that makes it simple for American consumers to pay millions of online retailers using cryptocurrencies including Bitcoin, Litecoin, Ethereum, and Bitcoin Cash. There are no extra transaction fees when users exchange their digital money for fiat currencies like the dollar or the euro. In a similar vein, the service was extended to PayPal users in Europe and other regions, demonstrating the quick rise in the use of virtual currencies as an alternative method of payment.

In an attempt to increase worldwide e-commerce and make it more safe and accessible for customers, the eBay shopping site recently

declared that it will begin accepting digital currency purchases in 2021. A number of merchants, including Expedia, have partnered with Coinbase, a U.S. startup that runs a digital currency exchange network, to take Bitcoin. Other well-known companies that accept digital currency payments in their Shopify-powered sites are Gen-Z, a skincare line, and Lush, a cosmetics firm with headquarters in the UK. BitPay and gift cards are also accepted by major UK stores including Tesco, John Lewis, and Marks & Spencer.

4. Experiences of Some Countries in Using Digital Currencies for E-Commerce

Over fifty percent of central banks worldwide are either researching or have strategic plans to issue their own digital currencies, according to IMF data. Here are some instances of the adoption and use of digital currencies for e-commerce in specific Western and Arab nations.

4.1 Examples of Western and Arab Countries Using Digital Currencies

- a. **France's Experiment:** New regulations in France have made it possible for banks and FinTech firms to develop real-time trading systems for unlisted assets, doing away with intermediaries like custodian banks and brokers. While securities listed on exchanges still need to pass through regulators and clearinghouse coordinators, this will allow for the creation of new trading platforms and transactions for unlisted securities (hedge funds, tradable bonds, unlisted stocks, and bonds) that are simpler, cheaper, more transparent, and secure. (Al-Arabi, 2019, p. 14)
- b. **Sweden's Experiment:** With numerous businesses no longer accepting cash and several bank branches ceasing to issue or obtain money, the need for cash has decreased significantly during the last 10 years. In this regard, SverigesRiksbank, the central bank of Sweden, started a pilot study to see whether eKrona, a digital currency, could potentially be used for retail payments.(Al-Arabi, 2019, p. 14)
- c. **The Bahamas' Experiment:** A digital currency known as the "Sand Dollar" has been introduced by the Bahamas' central bank to assist in the island's recovery from damages brought on by natural

disasters, the most recent of which was Hurricane Dorian. In order to help people and businesses recover from crises, this project provides a number of advantages, including the ability to swiftly gain financial resources, secure funds, and purchase necessities following a natural disaster. (Abd al-Munim, 2020, p. 6)

d. **The United Kingdom's Experiment:** Bitcoin can be considered as personal property in the UK, which is a leading cryptocurrency adopter. Value Added Tax, or VAT, is applied on products and services that are paid for using Bitcoin. The price of these goods and services must be equal to the value of Bitcoin in GBP at the time of purchase. Cryptocurrency transactions and profits are exempt from VAT. (Al-Arabi, 2019, p. 15)

e. **Russia's Experiment:** Due to restrictions against banks following the Russian-Ukrainian war, many Russians resorted to digital currencies, which caused the Russian ruble to depreciate significantly—it plunged 40% versus the dollar. The number of Bitcoin purchases made with rubles rose by 204% in a matter of weeks. As Russians invested in real estate in the United Arab Emirates or converted their virtual assets into physical currency to conceal their wealth, the demand for cryptocurrency liquidation rose to billions of dollars. (Al-Jazeera, 2022, p. 1)

f. **Gulf Countries' Experience:** The Gulf nations lead the digital currency market in the Middle East and North Africa, to the point where measures are in place to test and create digital currencies in every Gulf nation (Nour El-Din, 2023). After carrying out the required study, Saudi Arabia and the United Arab Emirates—two countries regarded as having sophisticated financial systems—have experimented with digital currencies. When it comes to finishing the necessary financial model for trading digital currencies, the United Arab Emirates is the most sophisticated and fastest Arab nation. The UAE declared in March 2023 that it was prepared to begin the "Digital Dirham" project, which is anticipated to bring a virtual currency that can be used for all economic dealings both inside and outside the country. Similarly, in a project called "Aber" with the UAE, Saudi Arabia has been working on multiple initiatives since 2019 to study digital currency methods of payment, mainly those involving cross-border transactions. (Al-Arabi, 2019, p. 15).

g. The supervisory and oversight organization of the Qatar Central Bank cautioned banks in 2018 against handling Bitcoin,

trading it for other currencies, opening accounts to deal with it, or making or receiving any money transfers for the purpose of purchasing or disposing of this currency. (Ben Omar &BougazalaAmhamed, 2022, p. 46).

h. **Egypt's Experience:** Given its rising value, multiple dollar speculators started purchasing Bitcoin for speculation after the currency depreciation. The Central Bank stated that it only deals with official currencies and does not deal with virtual currencies, and it affirmed that it does not recognize the currency. The bank reaffirmed a prohibition on such currencies with the issue of the new Central Bank Law No. 194 of 2020, noting that anyone who violate it would be subject to a "prison sentence and a fine not less than one million pounds, and not exceeding ten million pounds, or one of these penalties. "In the case of recurrence, both penalties would apply." Despite law 206's prohibition on encrypted and electronic money transactions, the law left up the prospect of Egypt entering this market in the future by tying the conduct of such activities to a central bank permission. A mature interaction with the concept of issuing or dealing with cryptocurrencies may be possible in the future, as the central bank later declared its intention to permit banks to introduce the electronic pound, provided that the bank has cash deposits equal to or greater than the value of the units issued electronically (Walid Abdel Rahim, 2023, p. 11).

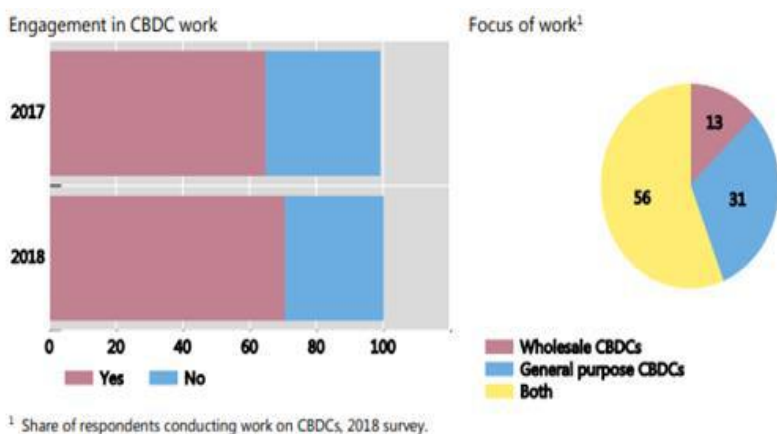
Notably, with more than 1.7 million users, Egypt leads the Arab world in the number of digital currency users. With 878.1 thousand subscribers, Morocco is the second-largest Arab country, followed by Saudi Arabia (452.7 thousand), Iraq (375.7 thousand), and Yemen (278.3 thousand) (CNN, 2022, p. 1).

❖ **Algeria's Experience and Stance:**

Despite possessing all the necessary criteria and standards to create digital currencies, Algeria is one of the four Arab nations whose central banks have not undertaken initiatives to do so or studied the feasibility of doing so. An analysis of the patterns of Arab central banks' issuance of digital currency by the Arab Monetary Fund supported this. Algeria's reluctance to cope with digital currencies was ascribed by the report to worries about cyber security threats, data loss or leakage, and dependence on outside sources. (Ben Omar &BougazalaAmhamed, 2022, p. 47).

The worldwide banks' tendencies in issuing digital currencies depicted in the following figure:

Fig 5. Global Banks' Trends on Issuing Digital currencies



Source: (Abd El-Monem, 2020, p. 5)

According to a 2018 Bank for International Settlements poll of 63 central banks, 70% of them were considering the potential of releasing a digital currency, however the majority were not yet prepared for practical deployment. According to the survey, 56% of central banks were contemplating issuing digital currency, and the majority of these institutions were investigating the possibility of doing so, either for wholesale payments (wholesale CBDCs) or general payment purposes (general purpose CBDCs).

It should be noted that the Philippines, South Africa, and South Korea are the top nations in the field of digital currencies, while the top nations in the field of e-commerce are China, the United States, Qatar, and Saudi Arabia. (Kanaan, 2023)

4.2 Evaluating E-commerce's Readiness to Adopt Cryptocurrencies

When measuring how prepared e-commerce is to embrace cryptocurrency, there are a number of things to take into account, including customer knowledge, acceptability, and comprehension of the technology. Since virtual currencies are still a relatively new

idea, businesses may find it challenging to persuade clients to accept them as a form of payment, particularly if they are unsure of how they operate or have doubts about the stability and security of these digital assets. Infrastructure and assistance are also necessary for companies to receive and process payments in cryptocurrency. Even while there are a lot of platforms and services that let businesses accept and handle cryptocurrency payments, they might not be as developed or as popular as traditional payment gateways. Businesses may find it more challenging to incorporate cryptocurrency payments into their current e-commerce platforms as a result, and setup and upkeep may need for more resources and specialized knowledge. (E-commerce in Arabic, 2023)

Farfetch is one business that is attempting to integrate bitcoins into e-commerce. By the end of this year, the leading luxury goods e-commerce company plans to start taking bitcoin payments on its platform and then at its partner retailers and brands. This choice is a significant move that will affect the state of e-commerce worldwide. Before extending to other parts of the world, cryptocurrency trading services are anticipated to initially be accessible to clients in the US and Europe. Seven cryptocurrencies, including Bitcoin (BTC), Ethereum (ETH), and Binance Coin (BNB), will be accepted by Farfetch.com. This program comes after a small-scale rollout of digital currency payments at a few of the platform-partnered stores. The company collaborates with the international cryptocurrency platform Lunu, which offers both an online payment tool and payment terminals for in-store purchases. (Al Arabiya Channel, 2023).

5. Conclusion

The development of virtual currencies still requires careful analysis given its precise technological components. It is also essential that the terms of these transactions be properly specified and controlled. Additionally, the significant level of risk associated with the bitcoin market sets it apart from traditional financial sectors.

It is difficult, if not impossible, to predict the prices and values of transactions in this market due to the high amount of risk involved. Unpredictably shifting and unstable factors, such as

consumer tastes, make the market incredibly volatile and prone to sudden swings.

The main subjects of the connection between cryptocurrencies and e-commerce are value exchange and the fulfillment of online transactions. In order to provide creative and adaptable payment options, cryptocurrencies rely on digital technology to protect transactions and identify the parties involved. E-commerce businesses may provide their clients more payment alternatives for a safe and effective shopping experience by utilizing cryptocurrency. Increased conversions and an improved online buying experience can result from streamlining and improving payment procedures. Cryptocurrencies, especially Bitcoin, are playing a significant role in the transformation of the e-commerce business. Thanks to encryption technology, digital currencies known as cryptocurrencies are produced and utilized under stringent laws. Their organization is decentralized.

Businesses can benefit from accepting Bitcoin payments in a variety of ways. Because transactions are quick and there are no costs for international transactions, businesses are able to retain a bigger percentage of their earnings. Despite the fact that large companies like AT&T, Microsoft, and a number of airlines were among the first to embrace cryptocurrency payments due to their high-value products and technological know-how, small firms may first view bitcoin adoption as a significant task. However, big-box retailers like Starbucks, Nordstrom, and Home Depot have already accepted digital currency using bitcoin wallets.

Given the growing popularity of online shopping and the desire of customers for more seamless digital experiences, the potential benefits of integrating cryptocurrencies into e-commerce activities may outweigh the effort required. As of August 2021, there were slightly over 70 million wallet holders and more than 6,000 types of cryptocurrencies, and the number is continually increasing. The number of Bitcoin holders alone increased by over 200% between 2018 and 2020.

It is now essential for e-commerce companies to find out how to integrate cryptocurrencies into the customer experience since there are no signs that this growth will stop. This article highlighted several benefits of accepting bitcoin payments for businesses and businesses-to-business (B2B) groups.

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