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Tema:A bibliometric review of cryptocurrencies: how have they grown?

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| 1 - 2 | In the last decade, secondary payment methods other than legal tender have been developed to boost the market (Corrons 2017). Lietaer and Hallsmith (2006) defned one of these payment mechanisms as an agreement to use more than just legal tender as a means of exchange to link unused sources to unmet needs. In particular, a series of complementary currencies incorporated into the economic world are mentioned |  |
| 2 | A broad spectrum of terminology are coined to diferentiate between these cryptocurrencies, ranging from virtual complementary currency to electronic currency and its derivative, cryptocurrency (Dai 1998). Te frst currency to become popular was Bitcoin, which was founded in 2008 by Satoshi Nakamoto. Although previous attempts at virtual currencies, such as E-gold in 1996 or Liberty Reverse in 2006, have been made, Bitcoin was the frst to exist in the global socio-economic sphere (Garcia et al. 2014).  During these cryptocurrencies’ short period of existence, they have been and are studied by a wide variety of disciplines, as they incorporate a number of innovative technologies, such as blockchain, cryptography, and smart contracts (Xu et al. 2019). Several studies have characterized cryptocurrencies as having a volatile future (Urquhart 2016; Katsiampa 2017; Chu et al. 2017; Conrad et al. 2018; Bouri et al. 2019) and initially presented them as non-perishable albeit secure. However, these promising technologies have kept them (Zheng et al. 2018; Zulfqar and Gulzar 2021). Te globalization process to which they are subjected, together with the lack of legal regulation, indicate that they have been used in multiple forms as the primary component (Gomá-Garcés 2014; Zimmer 2017). Tey are also the subject of much discussion and debate by entities, such as the European Central Bank (2012) seeking to better defne them as a means of exchange and a unit of value accepted by a virtual Community |  |
| 3 | Cryptocurrencies are a form of digital exchange that ensures that transactions are made through a robust encryption process, which, in turn, controls the number of stocks (Luu et al. 2016). Tis is a recent phenomenon gaining momentum in a volatile and fuctuating economic world (Ciaian et al. 2016) and has experienced signifcant growth, despite not being considered an ofcial form of debt cancellation (Dwyer 2015). Due to the decentralized nature of cryptocurrencies, they cannot be used as a substitute for legal currency (Nakamoto 2008) even if they were created to be used as such, thus making them an unconventional currency. Te creation and management of currencies are controlled by non-governmental entities (Kim 2015); hence, although they are considered a promising alternative for the future, they have various detractors who prefer to use them as a form of speculation (Baur et al. 2018; Krugman 2018; Zhang et al. 2021). Te decentralized structure without regulated activity makes them a novel option to the traditional fnancial system (Franco 2014). Tus, although they start from a totally negative confguration, they have a series of advantages: cheaper transaction costs due to the absence of intermediaries; reduction of transaction times as these are carried out via the Internet; the suppression of intermediaries as unnecessary fnancial agents in this series of transactions; or their globality (Kostakis and Giotitsas 2014; Koblitz and Menezes 2016). In addition, individuals have freedom to develop this type of currency; consequently, multiple currencies have been created for specifc purposes (Kondor et  al. 2014) and have become standard payment mechanisms (Fabian 2016). Tey are used globally in a society that views its transactions between direct parties and perceives them as being more straightforward and negotiable because monetary conversion is not needed (Kristoufek 2013). |  |
| 4 | Originally, virtual currencies emerged as a means of digital exchange that guaranteed their security, integrity, and balance due to a higher level of protection created by users. In exchange for compensation, these individuals help with security work by processing algorithms (Van Alstyne 2014; Urquhart 2018). Tat is, the security mechanisms of this payment method arise from the users themselves who maintain and protect the base fabric by providing computing power (Böhme et al. 2015). Mathematically speaking, the security of an electronic currency or the blockchain can be compromised, but the cost required to achieve this would be high, depending on the algorithm and its creation protocol (Xu 2016; Khan and Salah 2018; Zhang et al. 2019). Transactions carried out with these currencies are direct between users and generally anonymous (Miers et al. 2013), compared with those carried out with legal currency in which payments are made through banking networks. Terefore, anonymity has been a key factor since their very inception (Ober et al. 2013). Although the development of cryptocurrency has not always been equal and not all types of cryptocurrencies operate the same, the complexity of violating anonymity is equal to the breach of their security (Wang et al. 2018). Privacy and protection are mechanisms that, although considered strong, need to be improved to add new functionality as they progress in their use because their standardization makes them attractive to hackers (Conti et al. 2018; Feng et al. 2019). |  |
| 5 | Electronic currencies are created through mining, an incentive process in which transactions are verifed and new units are created and added to the core of existing ones (Eyal and Sirer 2013). Te miners are responsible for collecting the latest transactions into blocks and fnding a solution to the algorithm of each currency. As a reward, a fxed amount of that currency is acquired by these miners (Böhme et al. 2015; Bonneah et al. 2015). Te solution to the algorithm changes continually and depends on previous results to perform the next calculation in the sequence. Tis means that, as time goes by, the difculty in fnding a solution will become greater, and its cost increases (Eyal and Sirer 2013; Giungato et al. 2017). Tus, the process has been afected because the investment cost does not exceed the profts ofered (Kristoufek 2015; Cocco and Marchesi 2016). All the information related to the cryptocurrency is recorded on the blockchain, a digital book shared on the network and responsible for collecting all the transactions carried out with the cryptocurrency in two parts (i.e., input and output) (Franco 2014). Tese exchanges or transactions are called blocks and are encoded and linked with others (Böhme et al. 2015). Blockchain information is stored on participating devices and is open access (Zyskind et al. 2015), making the exchange process transparent and immune to modifcations (unalterable) (Brandvold et al. 2015). Once the data are verifed, they can no longer be edited without the community’s consent. Tis recent technology in cryptocurrencies can be used for multiple purposes (Sikorski et al. 2017; Kuo et al. 2017; Lee 2017) and is one of the most dynamic elements of the economy (Yin et al. 2017).  Due to the simplicity of use (Selgin 2013) and the lack of regulation, particularly concerning taxation (Follador 2017), virtual currencies have been linked to numerous unregulated activities, including criminal acts, and may contribute to further price distortion (Barratt et al. 2013; Hardy and Norgaard 2016; Foley et al. 2019; Grifn and Shams 2020). Another problem with these currencies is their high level of volatility, losses, and a lack of widespread acceptance among the general public, which could indicate their inefciency (Nadarajah and Chu 2017; Klein et al. 2018). Although volatility can mean both a risk and an opportunity (Brière et al. 2013), it is an intrinsic part of the currency (Bariviera 2017) and virtually impossible to predict (Balcilar et al. 2017). Recent studies have found that short-term bubbles limit the ability to proft from these tools; however, investments in these currencies are not limited, leaving only conjectures about obtaining economic benefts (Li et al. 2018). Te continuous variations and collapse in the exchange of distributed volume generate large fuctuations in prices (NavasNavarro 2015; Polaski et al. 2015) that denote the inefciency of this market (Urquhart 2016; Zhang et al. 2018; Neslihanoglu 2021). It is an exchange mechanism whose real value starts from zero (Van Alstyne 2014; Cheah and Fry 2015). Although their permanence is currently being discussed as a matter of general interest, research has posited that the life cycle of cryptocurrencies increases, as they stabilize (Bariviera et al. 2017). |  |
| 6 | we fnd that Bitcoin uses version 1.0 of the blockchain, whereas other alternatives, such as Ethereum, use version 2.0. Te latest version, called version 3.0, is part of an extension of the applications used. Bitcoin and Ethereum have been chosen as the most relevant currencies based on their original protocols, which share several characteristics, such as mining or their structure; however, diferences also exist between them.  Bitcoin is the pioneering platform of the blockchain concept based on a peer-topeer exchange that does not rely on traditional transaction schemes in which central authorities or banks carry out transactions. Bitcoin can be defned as a form of cryptocurrency or payment system based on cryptographic evidence whose unit is bitcoin (Nakamoto 2008) and has unique characteristics that have defned the properties of these currencies (Phillip et al. 2018).  Meanwhile, Ethereum is an open-source, decentralized platforms whose purpose is to create the most signifcant smart contract agreements (Luu et al. 2016). It is a framework for the execution of contracts and useful automated computer applications (Bhargavan et al. 2016), without the need to trust third parties. It is currently considered one of the most complex networks under review |  |