


# Can Cryptocurrency Be a Payment Method in a Developing Economy?

## The Case of Bitcoin in South Africa

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### ABSTRACT

This study sought to understand the factors driving the consumer adoption of a cryptocurrency, in particular Bitcoin, as an electronic payment (e-payment) system for electronic commerce (e-commerce) transactions within a developing economy such as South Africa. The advent of e-commerce has led to increased online transactions facilitated by e-payment systems, which can fall prey to opportunistic hackers. Cryptocurrencies have been pegged as a solution to this security issue. However, little is currently known around consumer propensity to use a cryptocurrency as an e-payment option, particularly within a developing economy. The investigated factors that could influence user adoption were based on literature and tested on a South African representative sample of 814 respondents. Of the factors identified from literature, the study found that “perceived usefulness and perceived ease of use,” “self-efficacy,” “awareness,” “trust,” and “security” have the most significant influence on South African consumers adopting a cryptocurrency as an e-payment system.

### KEYWORDS

Bitcoin, Consumer Adoption, Cryptocurrency, Digital Divide, eCommerce, ePayment, ICT4D, Technology Economics

### INTRODUCTION

In an e-commerce environment, money exchanges for goods or services in electronic format are referred to as e-payments. Electronic payments have become fundamental in e-commerce and the absence of an efficient system to handle them could deter its overall successful adoption (Liébana-Cabanillas, Muñoz-Leiva, & Sánchez-Fernández, 2018; Özkan, Bindusara, & Hackney, 2010). Electronic payments are facilitated by e-payment systems, mechanisms used by individuals and organisations as a secure and convenient way of making payments over the internet (Slozko & Pelo, 2015). As with

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any transaction-based activity, the issues surrounding reliable and secure money exchange between individuals or groups still remains of the utmost importance (Abrazhevich, 2004; Conti, Kumar, & Lal, 2018). Blockchain technology has been identified as a key innovation instrumental to overcoming these issues by enabling the use of digital currencies, or cryptocurrency, of which Bitcoin was the first and remains one of the most popular (Dodd, 2018; Dourado & Brito, 2014; John, O'Hara, & Saleh, 2022). This is due to cryptocurrency being an information system that is a form of electronic cash supported by intangible mathematical and cryptographic constructs, unlike traditional currency which is supported by tangible precious metals, specifically gold and silver (Morris, 2015).

A key factor in determining the success or failure of any information system such as a cryptocurrency is user acceptance (Davis, 1989). Without this, no technology can successfully be present in the business environment it was intended to operate in, and e-payment systems are no exception (Abrazhevich, 2004). Current cryptocurrency studies have thus far mainly addressed the Bitcoin tax implications in South Africa (Berger & Van Der Berg, 2016; Wicht & Fritz, 2016), adoption from a venture capital investment perspective (Walton & Johnston, 2018) and the use of a Bitcoin framework as an alternative payment system on low-end cellular devices for individuals in rural areas (Dlamini, Scott, & Krishnan Nair, 2016). Public uptake of cryptocurrency generally in most developing economies including South Africa has also been highlighted as disappointingly slow (Gogo, 2019).

This study is focused on identifying those influencing factors that impact user intention to adopt a cryptocurrency, in this case Bitcoin, as an e-payment system. This is done by investigating the research question: What are the factors that influence a user's intention to adopt a cryptocurrency, such as Bitcoin, for e-payment? In order to address the research question, a conceptual model was developed based on a literature review conducted, and an online questionnaire was administered to gather data to analyse the relationships among the factors identified through the literature review as being relevant to user adoption of Bitcoin.

## **BACKGROUND**

In the last two decades e-payment systems have garnered substantial focus from both researchers and systems specialists owing to their crucial role played in facilitating e-commerce (Kabir, Saidin, & Ahmi, 2015). There are four main types of e-payment systems, namely electronic cash, online credit card payments, electronic checks and smaller payments. All of these offer different pros and cons impacting both merchants and consumers in different business environments (Yu, Hsi, & Kuo, 2002).

Electronic payment systems can be classified into distinct categories, namely electronic currency systems (token based) and credit/debit systems (account based) (Abrazhevich, 2001). Payments made in electronic currency systems mimic payments made using conventional cash in that users exchange tokens which represent specific values, just as people normally exchange bank notes. From an electronic payments perspective, credit card systems are where "money is represented by numbers in bank accounts and these numbers are transferred between parties in an electronic manner over computer networks" (Abrazhevich, 2001, p. 82). Due to increased efforts in shifting the global economy from a 'cash-based' to a 'cash-less' economy, there have been great strides taken in innovations regarding electronic currency systems (Wonglimpiyarat, 2016).

Cryptocurrency popularity has been on the rise in recent years due to its core characteristics of decentralization and anonymity within its peer-to-peer protocols (Morris, 2015). Despite the rise and fall of competitors, Bitcoin remains currently the most reputable, widely known and used cryptocurrency in the world (D'Alfonso, Langer, & Vandelis, 2016; Heid, 2009; John, O'Hara, & Saleh, 2022). It operates on an unparalleled level of transparency, in which all transactions are traceable, public and permanent (Nigam, 2016). However, to date, Bitcoin has been used predominantly as a speculative investment tool rather than a trading base, with the perspective that if it is adopted more widely it will cause a major upset to current markets and monetary policies (Baur, Hong, & Lee, 2018).

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