AN ASSESSMENT OF THE LEVEL OF ADOPTION OF CRYPTOCURRENCIES AMONG STUDENTS OF TERTIARY INSTITUTIONS OF SABON GARI AND ZARIA LOCAL GOVERNMENT AREAS OF KADUNA STATE, NIGERIA

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ABSTRACT

Cryptocurrencies have been debated to be the likely currencies of transactions in the future. Evidence abounds on the rate of daily trading in these currencies, especially in developing countries such as Nigeria. Reports have indicated that Nigeria is among the top countries where cryptocurrencies are traded especially among the youth. However, little evidence exists on the level of awareness and adoption of cryptocurrencies among students of tertiary institutions in Nigeria. This study attempts to investigate the levels of awareness and adoption of cryptocurrencies among students of tertiary institutions in Sabon Gari and Zaria Local Government Areas of Kaduna State. Primary data were collected using an online structured questionnaire from 242 students, randomly selected in the two local government areas and analyzed using descriptive statistics. The findings indicate a considerable level of awareness of cryptocurrencies amongst students of Universities, Polytechnics and Colleges of Education as 98 per cent expressed that they are aware of bitcoins, as the most popular form of cryptocurrency in the study area. However, low levels of adoption in the overall sample were found. The study thus concludes that although a lot of youths especially in Kaduna State are aware of the existence of

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cryptocurrencies, only a few have adopted or are engaged in trading in such digital currencies. The study then recommends further studies into uncovering the factors that hinder the adoption of cryptocurrencies and also advocates for the organization of awareness seminars to further enlighten students on the various forms of cryptocurrencies and also their relative importance in the 21st century.

Keywords: Awareness, Adoption, Blockchain, Cryptocurrencies, and Altcoins

INTRODUCTION

Attempts at producing digital currencies can be historically traced to the technology boom era of the 1990s (Bech and Garratt 2017). Such efforts were however largely unsuccessful until Bitcoin was invented in 2008. This invention of the cryptocurrency and its *modus operandi* operates as a decentralized industry, has shaken the entire financial world, transactions, and data storage and also transfer systems. The industry is now considered an innovation in the digital currency as well as a financial industry which is aimed at substituting the existing printed currency to provide a peer-to-peer medium of exchange (Saeed and Tugrul, 2019). Currently, the universal financial system is gradually embracing the current evolution from physical currency to virtual currencies through the medium of technology (Bartoletti, Carta, Cimoli and Saia, 2017).

The word "crypto" refers to the encryption or cryptography that the instrument is built on and then added to a blockchain (database maintained by the nodes or computers in the network). The "currency" here refers to the recognition as a medium of exchange amongst its users (Mufti, 2017). The concept of cryptocurrency was introduced 46 days after the bankruptcy of the Lehman Brothers, the event marking the beginning of the second-biggest financial crisis in human history (Friedman and Friedman, 2009; Knight, 2009; Partnoy, 2013 and Katarzyna, 2019). Cryptocurrency is described as a digital recordkeeping device that uses balances to keep track of trading obligations, which is publicly known to all traders (Ahannaya,

Oshinowo, Sanni, Arogundade and Ogunwole, 2021). The concept has thousands of new constructs which have been created and it is still a highly nascent and undiscovered area. The popularity of cryptocurrencies soared especially during 2015-2017 (Higgins, 2017).

Bitcoin gets all the headlines whenever the word cryptocurrency is mentioned, but there are literally thousands of other options in the digital currency market. All cryptos that are not Bitcoins are usually considered as "altcoins" which means alternative currencies to Bitcoins (Royal, 2021). Cryptocurrencies are measured by the total dollar value of their coins in existence which is referred to as market capitalization and not market exchange prices in dollars. The global crypto market capitalization is $2.67 trillion, with Bitcoin's dominance of about 47% (Coinmarketcap, 2021).

In Nigeria, there is a rise in cryptocurrency usage due to the need for a fast, reliable, accessible and serviceable means of money transfer, in addition to a large number of unbanked adults, unemployment and high inflation of fiat currency. On the other hand, android phones are made cheap to a point that nearly everyone, including students, can afford them. This made it easy to access cryptocurrency and to make transactions online. According to Sharma (2018), high inflation rates in countries make their citizen give in to cryptocurrency. However, the Central Bank of Nigeria is not in support of cryptocurrency because according to the authority, it cannot be regulated or controlled and has urged financial institutions not to get involved. Despite all this Nigeria has the third largest bitcoin holding as a share of the total value of goods and services produced (Agu, 2020).

One of the major defining features of cryptocurrencies is that they are generally not issued by any central authority, rendering such currencies theoretically immune to government interference or manipulation (Frankenfield, 2021). This has made them well-suited to finance and fund illegal activities. According to Kazeem, (2020), the 2020 End SARS protest, a campaign against police brutality in Nigeria, sponsored by Feminist Coalition accepted donations through Bitcoins, and other cryptocurrencies instead and received support from bitcoin advocate, and co-founder of Twitter.

Diffusion of Innovation Theory has developed itself as a well-known innovation-decision process (Kripanont, 2007). Adoption usually begins with recognizing the need to change from the old way of doing things to proffer solutions to a particular problem (Mendel, Meredith, Schoenbaum, Sherbourne and Wells, 2008). This process then proceeds to the intention to adopt such solutions to finally decide whether the solution will be implemented or not (Mark, 2019). Thus, before any innovation is adopted by the potential users, they must be aware of the existence of the new technology. Thus, both individuals and organisations in terms of adoption can be categorised as low, medium, and high adopters (Rogers, 2003).

Consequently, this study attempted to assess the level of awareness and adoption of cryptocurrencies among students of tertiary institutions in Sabon Gari and Zaria Local Government Areas, Kaduna State, Nigeria. Specifically, the study describes the socio-economic characteristics of respondents, describes the level of awareness of and examines the level of adoption of cryptocurrencies. In what follows, we present the materials, methods and results of over assessment.

MATERIALS AND METHODS

Area of Study

The study is based on a descriptive survey to determine the levels of awareness and adoption of crypto currency among students of tertiary institutions in Sabon Gari and Zaria Local Government Areas of Kaduna State, Nigeria. Sabon Gari is located at Latitude 11^0 07′00″ N and Longitude 07^0 44′00″ E. It occupies an area of 263 km^2 with a projected population of 393,300 people in 2020 (World Atlas, 2020). Sabon Gari host several tertiary institutions including Ahmadu Bello University's main Campus, the Federal College of Aviation Technology and the Nigeria Leather Research Institute. Zaria on the other hand is located at $11^0$04′00″ N and Longitude $07^0$42′00″ E and occupies about 563km^2 landmass with a projected population of 736,000 people in 2020 (World Atlas, 2020). Zaria also hosts several tertiary institutions like Ahmadu Bello University Annex campus, Federal College of Education (FCE) Zaria, and Nuhu Bamalli Polytechnic amongst others.

DATA COLLECTION AND ANALYSIS

The study used an online structured questionnaire of two parts. The first part described the demographic characteristics of the respondents such as gender, age, educational level (undergraduate and postgraduate) and employment status. The part also provided an item that allowed the respondent to identify the most familiar cryptocurrency. The second part, on the other hand, consists of 10 items, 6 of which measure the level of awareness of the respondents on cryptocurrency while the remaining 4 cover their level of adoption, using a 3-point Likert Scale-Agree, Undecided, Disagree. A total of 242 randomly sampled respondents were used for this study. Descriptive statistics such as frequency and percentage were used to profile the demographic characteristics of the respondents and a 3-point Likert Scale was used to determine the level of awareness as well as the level of adoption of cryptocurrency in the study area as adopted by Mark (2019).

RESULT PRESENTATION

Table 1 shows the demographic characteristics of the respondents which include gender, age, educational level and employment status. It reveals that (80%) of the respondents are male while (20%) are female, this might have a positive significant effect on the rate of awareness and adoption. According to Cohen and Wronski (2021), females are lagging behind males in their rates of cryptocurrency investment just as they have historically struggled to keep pace with men in more traditional investment verticals. About (40%) of the respondents were between the ages of 26-30 years signifying the most represented of all the age range in the study area. With regards to the level of education of the respondents, the result below shows that the majority are B.Sc/HND students (62%), followed by M.Sc./Ph.D. (23%) and about 15% are NCE/ND students. The employment status of the respondents revealed that the majority 71% were unemployed while only about (29%) are employed. Most of the employed respondents were found to be the postgraduate students interviewed.

Table 1: Demographic Characteristics of the Respondents

Demographic		Frequency	Percentage (%)
Gender	Male	193	79.8
	Female	49	20.2
Total		242	100
Age	16-20	12	5.0
	21-25	34	14.0
	26-30	96	39.7
	31-35	62	25.6
	36-40	32	13.2
	41-Above	6	2.5
Total		242	100
Educational Level	NCE/ND	36	14.9
	B.Sc/HND	150	62.0
	M.Sc/Ph.D.	56	23.1
Total		242	100
Employment Status	Unemployed	172	71.1
	Employed	70	28.9
Total		242	100

Figure 1 presents the most familiar cryptocurrencies in the study area. The study revealed that Bitcoin is the most familiar cryptocurrency to the respondents with about (98%), followed by Ethereum at about (61%), True USD with about (53%), Dash with about (32%) and Ripple with about (19%) which is the least familiar cryptocurrency in the study area. This implies that despite Bitcoin is the most familiar cryptocurrency in the study area, other cryptocurrencies are gaining recognition which might increase the level of awareness as well as the chances of adopting them. The more insight people have on the crypto world, the more they get familiar with and will be willing to know more about other cryptocurrencies (altcoins). Homeland Security Studies and Analysis Institute (2014) and Mark (2019) support this finding as their

results revealed that Bitcoin is the most popular and familiar cryptocurrency among others.

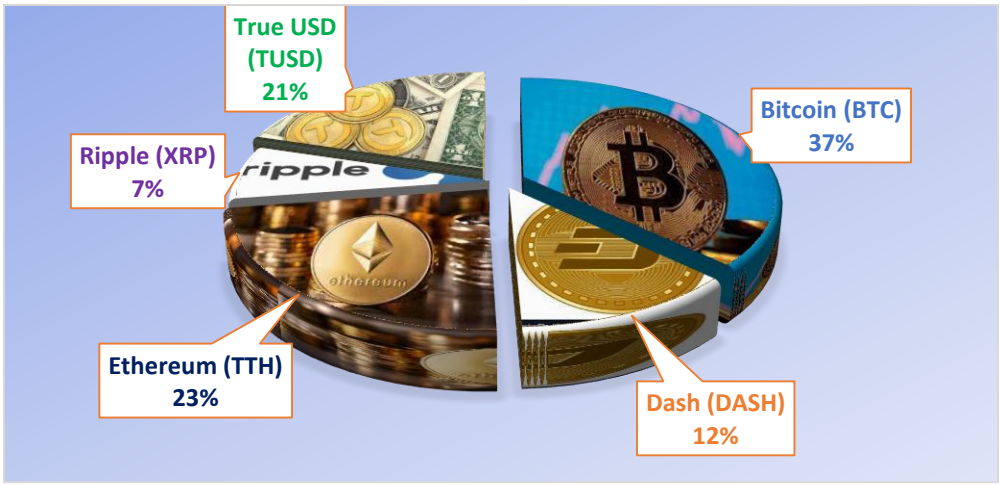


Figure 1: Most familiar cryptocurrencies to the respondents
Multiple Response allowed *

Table 3 presents the result of the Likert scale which shows the perception of the respondents on the level and means of awareness of cryptocurrency. The result indicates that the majority of the respondents "Agreed" with statements 1, 2, 3 and 4 as; "I have heard of crypto currencies such as Bitcoin, Dash, etc.", "I am aware of the existence of crypto currencies such as bitcoin, Dash, Ethereum etc.", "I know crypto currency as a form of investment", and "I understand how crypto currency works". This implies that the respondents are aware of the existence of cryptocurrency. The Likert scale computation also revealed that majority of the respondents "Disagreed" with the options in statements 5 and 6 as; "I have attended seminars where investment in crypto currencies such as Bitcoin, Dash, Ethereum etc. was encouraged," and "I have read books/articles on blockchain technology". The responses seem to indicate that seminars and books on cryptocurrencies do not explain much of the means or channels of awareness. This finding is contrary to that of Oserere (2018) who found that there is a low level of awareness of digital currency in Nigeria,

using Bitcoin as a case study. The study also contradicts the findings of Mark (2019) who also found that only about 14% of college students in a private tertiary institution in Cagayan De Oro City, Philippines are aware of cryptocurrency.

Table 3: Level and Means of Awareness of Cryptocurrency among Tertiary Institutions Students in Sabon Gari and Zaria Local Governments Areas, Kaduna State.

SN	Statements	A	UD	DA	WS	MS	Decision Rule
1.	I have heard of crypto currencies such as Bitcoin, Dash, etc.	216 648	1632	1010	685	2.85	Agreed
2.	I am aware of the existence of crypto currencies such as Bitcoin, Dash, Ethereum etc.	206 618	2244	1414	676	2.79	Agreed
3.	I know crypto currency as a form of investment	192 576	3264	3838	678	2.80	Agreed
4.	I understand how crypto currency works	124 372	52104	6666	542	2.24	Agreed
5.	I have attended seminars where investment in crypto currencies such as Bitcoin, Dash, Ethereum etc. were encouraged	5616 8	52104	134 134	406	1.67	Disagreed

6.	I have read books/articles on blockchain technology.	86 25 8	46 92	11 0 11 0	46 0	1.9 0	Disagre ed

Table 4 presents the Likert Scale analysis which shows the perception of the respondents on the level of adoption of cryptocurrency. The study revealed that the majority of the respondents "Disagreed" with all the statements 1, 2, 3 and 4 as; I operate my own crypto currency account, I operate another person's crypto currency account, I carry out a transaction using crypto currency account, and I buy or sell crypto currency. This result implies that there is a low adoption of cryptocurrency by the respondents in the study area, which was evident in the higher proportion of those who disagreed on statements 1, 2, 3 and 4. These findings affirm the observation of Helms (2017) that the adoption of Bitcoin (the most familiar cryptocurrency) in Nigeria is low when compared to some other countries, and that of a similarly study by Oserere (2018) who found a very low level of adoption of Cryptocurrency in Ibadan, Nigeria, using Bitcoin as a case study. The study also supports the findings of Mark (2019) who also found that there is a low level of adoption among college students in a private tertiary institution in Cagayan De Oro City, Philippines.

Table 4: Level of Cryptocurrency Adoption among Tertiary Institutions Students in Sabon Gari and Zaria Local Governments Areas, Kaduna State

SN	Statement	A	UD	DA	WS	MS	Decision Rule
1.	I operate my own crypto currency account	76 228	66 132	100 100	460	1.90	Disagreed
2.	I operate another person's crypto	18 54	56 112	168 168	242	1.38	Disagreed

currency account						
3. I carry out transactions	64	48	130	418	1.73	Disagreed
using a crypto currency account	192	96	130			
4. I buy or sell crypto currency	64	36	142	406	1.68	Disagreed
	192	72	142			

CONCLUSION AND RECOMMENDATIONS

This study is an assessment of the level of awareness and adoption of cryptocurrencies among students of tertiary institutions in Kaduna State, Nigeria. Drawing from the Diffusion of Innovation theory, we designed and administered and online structured questionnaire among students in Sabon Gari and Zaria Local Government Areas of Kaduna State. Our findings reveal that Bitcoin is the most common cryptocurrency in the study area, although other cryptocurrencies such as Ethereum, Dash, and True USD have started gaining recognition. The study also revealed that respondents' have achieved some levels on awareness of cryptocurrency although lacking in-depth knowledge of blockchains. This can be attributed to the low level of adoption of cryptocurrency which the study found among students of tertiary institutions in Sabon Gari and Zaria local government areas of Kaduna State, Nigeria. The study therefore recommends the following:

1. The need for organizing seminars where investment in crypto currencies such as Bitcoin, Dash, Ethereum etc should be encouraged. This will create more awareness and subsequent adoption among students of tertiary institutions.
2. Articles and books related to blockchain technology should be made available to students to minimize the possible resistance to and fear of the adoption of cryptocurrency technologies.

3. The study further suggests that more studies on the benefits of cryptocurrency as well as those factors affecting its adoption in Nigeria should be undertaken, to add to the scanty literature on cryptocurrencies, particularly in Northern Nigeria.

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