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THE CRYPTOCURRENCY MARKET IN KENYA: A REVIEW OF AWARENESS AND PARTICIPATION BY THE YOUTH

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ABSTRACT

This study examines Kenyan youths' level of knowledge and involvement in the cryptocurrency industry. Digital currencies, known as cryptocurrencies, use a peer-to-peer technology to speed up internet transactions. The idea of cryptocurrencies started in the 1980s but has since developed significantly. The study collected secondary data and conducted online surveys. In this study, panel data from four different cryptocurrencies' values, transaction fees, and volumes over a six-year period were studied. The findings indicate a connection between the number of cryptocurrency transactions, their prices, and their transaction costs. The research also demonstrates how much the youth in Kenya are aware of and use cryptocurrencies. This paper also highlights some factors that may be considered when engaging in crypto business. It also highlights some of the principal properties of cryptos. The study concludes that there is a need for both local and international regulation of the cryptocurrency market to boost investor confidence and improve security.

Contribution/Originality: This study contributes to existing literature by examining the level of awareness and participation in the cryptocurrency market by youths in Kenya. As one of the few studies on Kenya's crypto industry focusing on the youth, this study examines how the value of cryptocurrencies, and their transaction costs affect the volume of transactions

1. BACKGROUND OF CRYPTOCURRENCIES

Cryptocurrency is said to have emerged in the early 1980s in an attempt to create a decentralized currency to trade online. The online currency in the 1980s was popularly known as "cyber currency". The idea of online currencies was further improved in the 1990s. However, the biggest concerns then were security and double spending. Double spending refers to a situation where the currency is copied and reused for further transactions. This cryptocurrency business was fueled by the events of the economic recession of 2007 to 2009, giving rise to the global financial crisis. During this time, a number of people lost some degree of confidence in physical currency. The first cryptocurrency, known as Bitcoin, came into existence in 2008. It is a digital currency that uses a peer-to-peer protocol to facilitate transactions and was developed based on Satoshi Nakamoto's concept of blockchain. When cryptocurrencies first appeared in 1998, Bitcoin served as a working example of the concept, and the number of people using Bitcoin has significantly increased since then. After a group of anonymous coders announced Bitcoin in 2008, other digital currencies, known as altcoins, were later developed (Agu, 2020). The cryptocurrency industry has grown day by day, with new currencies being created and old ones gaining value.

1.1. Cryptocurrency Performance in Kenya

The Central Bank of Kenya (CBK) issued public alerts regarding the dangers of cryptocurrency in 2015. The CBK specifically stressed that there is no special regulation for cryptocurrencies and that they are volatile. These factors led the CBK to caution the general population against trading cryptocurrencies such as Bitcoin. The CBK did not, however, forbid trading in cryptocurrencies. Kenyans can so legally purchase and sell cryptocurrency (Jason, 2020).

In comparison with South Africa and Nigeria, Kenya is the leading financial heavyweight in Africa. It has cutting-edge technological advancements such as the renowned M-Pesa money transfer system. Contrary to many developing nations, Kenya has seen a considerable increase in the usage of cryptocurrencies. Kenya ranks sixth globally in terms of the adoption of cryptocurrencies, according to the Chainalysis 2021 Global Crypto Adoption Index. Kenya had the largest volume in Africa in 2020, coming second only to Nigeria, with Bitcoin trades totaling approximately 6.48 billion Kenya shillings (Insight, 2021).

A study by Wahome (2020) examines how blockchain might be utilized to provide traceability, visibility, and transparency in the Kenyan informal dispersed manufacturing business. The amount of research and development on distributed ledger technology (DLT) has increased dramatically during the past decade. The rise of cryptocurrencies, such as Bitcoin and Ethereum, has completely changed the financial services sector. These cryptocurrencies' underlying principles have been adopted by researchers who are now using them to create new DLTs across different industries. The Sarafu Network was founded in 2010 by Grassroots Economics (GE), a Kenyan non-governmental organization whose goal is to enable neglected communities to create their own prosperous economies. The Kiswahili word for currency, "sarafu", is used to refer to the blockchain-based Community Inclusion Currencies (CIC) token that is traded on the network. Over 40,000 people use the Sarafu Network today in both urban and rural areas of Kenya. The majority of trade is on food and water, cooperative table-banking organizations (known as chamas in local parlance), labor and agriculture, and retail establishments (Mqamelo, 2022). The final tactic is to begin thinking about cryptocurrency. Professionals might easily wish away recent advancements such as blockchain technologies and cryptocurrency. They might develop to the point where they have a big impact on the financial markets. The accounting industry in Kenya needs to plan ahead in order to keep up with both local and worldwide technological advancements (Kamau & Ilamoya, 2021).

There aren't many trustworthy, cost-effective applications for cryptocurrencies, and their adoption is minimal. Instantaneous international money transfers, speculative business, time serving, and online shopping platforms are some of these functions. Despite the security flaws, hazards, and difficulties, some citizens trade, market, and use cryptocurrencies. In light of this, the Kenyan government should consider creating a blockchain technology curriculum, especially one that emphasizes Bitcoin instruction. This might be considered a specialization in the same way as any other specialization (Kidunda, 2021). The use of digital credit has helped to significantly increase the penetration of cryptocurrencies. To minimize any dangers brought about by the increased availability of credit, a number of problems must first be evaluated. Age and loan considerations for digital credit users had no statistically significant impact on loan uptake (Kidunda, 2021). When evaluating the adoption of cryptocurrencies, the age of potential investors is a key element. An analysis of correlations revealed a strong and positive relationship between the use of blockchain technology and governmental policies. The adoption of blockchain technology was significantly and favorably correlated with the state of the internet, and its usage was significantly and favorably correlated with risk analysis (Aketch, Mwambia, & Baimwera, 2021).

1.2. Cryptocurrency Regulation

Kenyans embraced cryptocurrencies swiftly and enthusiastically, but the government did not provide a sufficient regulatory framework to protect their interests. This has generated a sizable risk that needs to be addressed since it could have a significant, detrimental impact on the Kenyan economy. Blockchain technology,

which underpins cryptocurrencies, is a relatively recent phenomenon that has seen significant development and is currently regarded as a disruptive technology (Waihenya, 2020). The National Payment Systems Act (NPSA), the Capital Markets Act (CMA), and the Kenya Information and Communications Act (KICA) are the main laws in Kenya that regulate cryptocurrencies. The Central Bank of Kenya is responsible for overseeing the NPSA, the Capital Markets Authority is in charge of managing the CMA, and the Communications Authority is in charge of running the KICA. This article's focus is on the CBK's ability to control cryptocurrencies through the NPSA and Kenya's money transfer laws (Jason, 2020). The conditions and makeup of Bitcoin transactions have an impact on how the income from those transactions is taxed. As a result, there is a need for cryptocurrency regulation in terms of accounting standards, taxation policies, and the legitimacy of cryptocurrency-related operations (Miriti & Nekesa, 2021). To stop unauthorized money transfers and improve Kenya's financial markets, policy reviews on risk analysis-related topics are needed. To contribute to bringing peace and stability to the world, it is crucial for the government to conduct a thorough investigation and ensure that such matters are carefully examined. An advantage of having a high level of internet connectivity is that it makes it possible for many users to access a variety of services, which leads to the creation of jobs and the availability of accurate information (Aketch et al., 2021).

1.3. Crypto as a Mode of Payment

According to a study by Mutiso and Maguru (2020), small and medium enterprises (SMEs) are open to using cryptocurrencies as a form of payment. The majority of them would not only choose it over cash-based payment systems, but they would also do it as soon as possible. If given the chance, they would even ask the government for it. A central bank digital currency that uses blockchain technology can be created, opening the door to game-changing developments. They can be used by businesses and people to add new transactions to the current flow of events. Additionally, because blockchain promotes direct network sharing, which enables users to communicate and confirm payments without involving an intermediary, it may increase financial inclusion in Kenya (Kagwaini, 2021). According to the research by Miriti and Nekesa (2021), there is a technical knowledge gap regarding the use, accounting, and taxes of cryptocurrencies. It is also clear that cryptocurrencies can be categorized as digital currency, inventories, or intangible assets instead of money or cash.

In Kenya, M-Pesa, a popular digital payment mechanism, is frequently used. M-Pesa is an electronic money transfer service that enables users to deposit money in the subscriber identity module (SIM) cards of their mobile phones, creating a mobile account, which can then be used to make transfers to other users, pay for products and services, and convert money to and from other currencies. Financial transactions can be carried out easily and effectively in real time thanks to M-Pesa. On this technological foundation, further items have been endogenously created and released. The platform offers a virtual network for saving money as well as a virtual system for applying for and getting short-term credit. This technical platform has grown naturally in four stages (Ndung'u, 2018). Just like M-Pesa, cryptocurrency may also develop into a different type of payment system if it is successfully marketed and accepted by the government. When cryptocurrency assets are used as a commodity in the regular course of business, they must be classified as inventory. Cryptocurrencies cannot be categorized as money because they do not conform to the concept of fiat currency, according to research (Miriti & Nekesa, 2021).

The obstacles preventing cryptocurrencies from being used as legal money in East African countries like Kenya and Tanzania include security flaws, risks, and difficulties such as changing technology, online identity issues, limited liquidity and high volatility. Control issues are also raised by the decentralized and anonymous nature of cryptocurrencies such as Bitcoin. These factors make it more challenging for governments and central banks to approve this technology. Due to a shortage of reputable, accessible, and inexpensive education, this circumstance results in low penetration (Kidunda, 2021). Kenya is an ideal environment for new payment technologies, particularly for male-owned SMEs in the service industry. As a result, the government may consider adopting these

new technology-based payment methods and providing information about them so that the informal sector is aware of how they operate and the advantages of adopting them as a way to address the problems with cash-based payment methods (Mutiso & Maguru, 2020).

2. METHODOLOGY

Many Kenyans hold Bitcoin as the base currency when buying other cryptocurrencies since Bitcoin is the most famous and valuable digital currency in Kenya. Cryptocurrency employs cryptography to make it almost impossible for counterfeiters and dual spenders. Cryptocurrencies have no central authority, which suggests they can be sent from person to person without relying on banks or governments for support and security against inflationary forces. The other forms of cryptocurrency in Kenya include Ethereum, Litecoin, Cardano (ADA), Ripple (XRP), Dogecoin (DOGE) and Solana (SOL), among others. This study was guided by two main objectives: to establish the level of awareness and participation in cryptocurrencies among the youth in Kenya and to evaluate the effect of crypto prices and transaction costs on transaction volume. This study analyzed panel data on cryptocurrency prices, transaction costs, and transaction volumes over the last six years. An online questionnaire was also administered to the Kenyan youth via Facebook to establish their level of awareness and participation. This study focused on four main cryptocurrencies – Bitcoin, Ethereum, Litecoin and Dogecoin. The data was analyzed using MS Excel and EViews software and the results are presented in the form of pie charts, bar graphs, and tables. Both descriptive and inferential statistics were used.

3. RESEARCH FINDINGS

3.1. Level of Awareness and Participation in the Cryptocurrency Trade

The respondents were required to indicate the cryptocurrencies that they were aware of and whether they engaged with them in any way. The results are displayed in Table 1.

Table 1. Level of awareness and participation.

Cryptocurrency	Awareness	Participation
Bitcoin	50.98%	13.73%
Ethereum	17.65%	1.96%
Litecoin	13.73%	1.96%
Dogecoin	13.73%	5.88%
None	1.96%	76.47%
Other	1.96%	0.00%

The results show that more than half (50.98%) of the respondents were aware of Bitcoin, whereas just 17.65% and 13.73% and 13.73% of the respondents were aware of Ethereum, Litecoin, or Dogecoin, respectively. Only a tiny minority (1.96%) said they had no knowledge of any cryptocurrency. However, of the 97.04% who knew about cryptocurrencies, only 23.53% actually used them for transactions or investments. The results therefore plainly demonstrate that while Kenyans are aware of cryptocurrency, very few are brave enough and prepared to take the risk. The descriptive statistics of the above responses and their results are shown in Table 2.

Table 2. Descriptive statistics.

Metric	Awareness	Participation
Mean	1.786	0.429
Standard Error	0.253	0.158
Standard Deviation	1.343	0.836
Sample Variance	1.804	0.698
Count	28	28

The results indicate that the majority of respondents were only aware of one or two cryptocurrencies, with an awareness mean of 1.786, which was lower than the predicted mark of 2.0. When compared to the mean, the standard deviation was fairly large, indicating that a lot of the response scores were significantly different from the mean. The mean and standard deviation for participation statistics, on the other hand, are 0.4286 and 0.8357, respectively. The fact that the standard deviation is greater than the mean indicates that the data might not have a normal distribution. This confirms the earlier finding that while the majority of respondents are aware of cryptocurrencies, very few use them for business purposes.

The data was subjected to further scrutiny by calculating the paired t-test for two small samples. The results are presented in Table 3.

Table 3. Paired t-test results.

Metric	Awareness	Participation
Mean	1.704	0.444
Variance	1.678	0.718
Observations	27	27
Pearson Correlation	0.650	
Hypothesized Mean Difference	0.000	
t-Stat	6.648	
P(T <= t) one-tail	0.000	
t Critical one-tail	1.706	
P(T <= t) two-tail	0.000	
t Critical two-tail	2.056	

The data in Table 3 show that the null hypothesis is rejected since the t-stat (6.648) is greater than the crucial t for both one tail (1.706) and two tails (2.056). This suggests that the degree of participation and degree of awareness are significantly different. To be precise, there are far fewer people using cryptocurrencies than there are people who are aware of them.

3.2. Considerations for Engaging in Cryptocurrencies

The respondents were required to indicate the factors that they would take into account before engaging in cryptocurrency trading. The list of factors included the cryptocurrency price, government regulation, transaction costs, and advice from friends. The results are indicated in Figure 1.

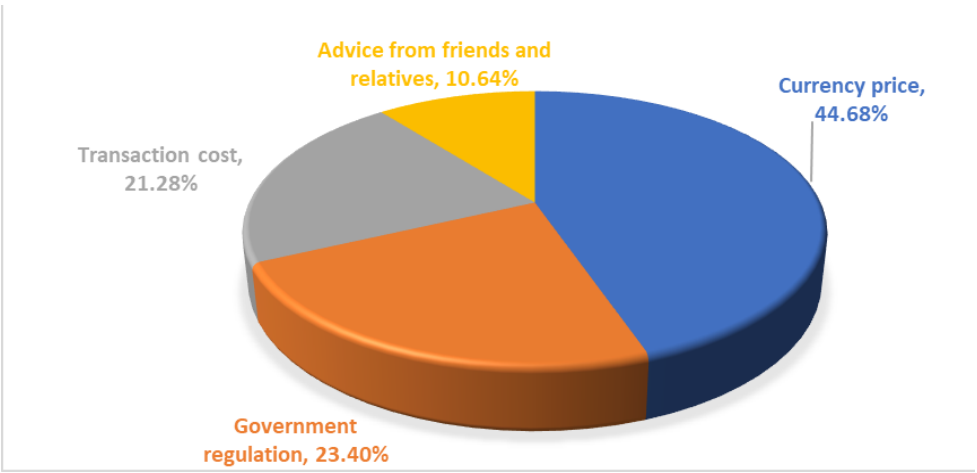

Figure 1. Factors to consider before transacting in cryptocurrencies.

According to the results, the main driver was the price of cryptocurrencies, which accounted for 44.68% of the total. Government regulation came in second with 23.4%. Transaction costs and advice from friends and family

were not mentioned by respondents as important considerations. Since none of the four categories above scored lower than 10%, the results imply that all four are worthwhile considerations. This suggests even more strongly that investors in cryptocurrencies most frequently take currency price into account. Investors who may want to start a cryptocurrency firm may benefit from government regulation of digital currencies.

3.3. Reasons for Engaging in Cryptocurrencies

The respondents were required to indicate the main reasons why they engage, or what would make them contemplate engaging, in cryptocurrency trading. The list of reasons includes online payment, investment, and assets or inventories. The results are indicated in Figure 2.

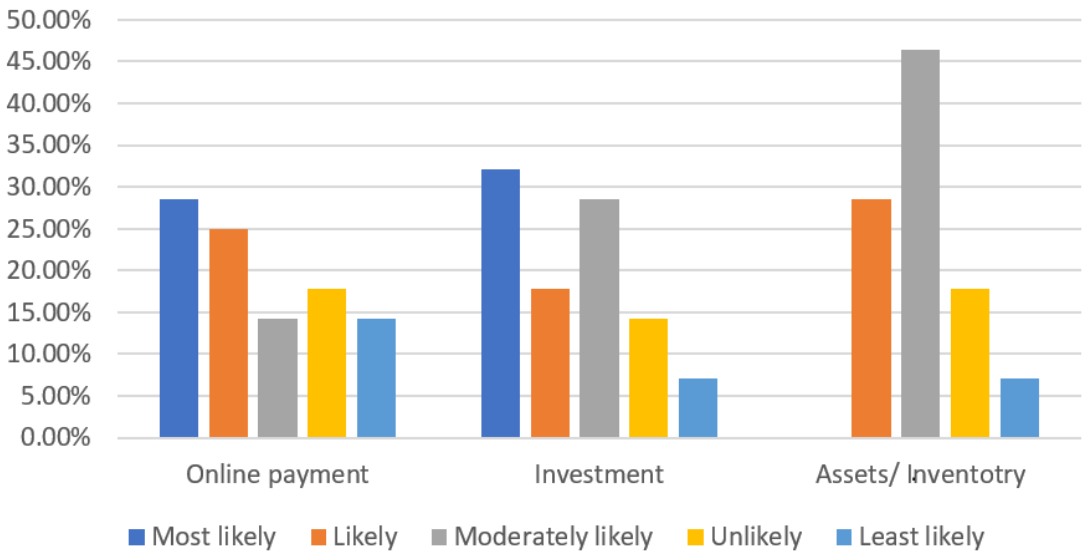

Figure 2. Reasons for engaging in crypto business.

The findings indicate that the majority of respondents (53.57%) are inclined to utilize cryptocurrencies as a form of online payment, and 32.15% are less likely to do so. While 21.43% of respondents said they would not invest in cryptocurrencies, 50% said they were inclined to do so, and 28.57% of respondents had an unfavorable opinion of investing in cryptocurrencies. The remaining respondents (28.57%) indicated that they would not be inclined to store cryptocurrencies as assets or inventory. As a result, a growing proportion of investors and potential investors in cryptocurrencies are expected to use them for both investments and as a means of online exchange and payment.

3.4. Analysis of Transaction Volume, Currency Price and Transaction Cost

Using secondary data obtained online from 2016 to 2021, a panel data analysis was performed on transaction volume, currency price, and transaction cost. The regression model that was tested is as follows:

$$ATV = C1 + C2(Pr) + C3(TC)$$

Where:

ATV = average transaction volume.

PR = price of cryptocurrency.

TC = transaction cost.

The pooled panel data was analyzed using EViews software and the results are shown in Table 4. They indicate an adjusted R-squared of 0.669, meaning that 66.9% of the cryptocurrency transaction volume can be accounted for by the model's independent variables, which are cryptocurrency price and transaction cost. This is also confirmed

by the fact that the model's F-statistic has a p-value of 0.000, which is less than 0.05; therefore, the regression model was significantly suitable for analysis.

Table 4. Panel data analysis.

Dependent Variable: AN				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
PR	-9.109	6.878	-1.324	0.202
TC	14745.970	3820.718	3.859	0.001
C (Y-Intercept)	191836.800	44471.230	4.314	0.000
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.742	Mean dependent var		235544.200
Adjusted R-squared	0.670	S.D. dependent var		326332.000
S.E. of regression	187542.900	Akaike info criterion		27.334
Sum squared resid.	6.33E+11	Schwarz criterion		27.628
Log-likelihood	-322.005	Hannan–Quinn alter.		27.412
F-statistic	10.328	Durbin–Watson stat		1.464
Prob(F-statistic)	0.000			

The results in Table 4 show a regression constant of 191836.8, which is significant since its corresponding p-value is less than 0.05. The cryptocurrency price is not a significant influencer of transaction volume since its corresponding p-value is greater than 0.05. However, given that the coefficient is 14745.97 and the p-value is less than 0.05, the transaction cost is a significant estimator of the volume of transactions. This suggests that there is a positive association between transaction volume and cost for digital currencies. The higher the transaction cost, the larger the transaction volume, and vice versa. These results are consistent with those of Aketch et al. (2021), who noted a favorable correlation between the use of blockchain technology and transaction costs.

4. DISCUSSION AND CONCLUSIONS

Trading in and with cryptocurrencies directly and indirectly utilizes local and international legal currencies. Global statistics further indicate that cryptocurrency trading has been on the rise since 2008. This means that cryptocurrency matters cannot be easily wished away. One of the key findings of this study is that the level of participation in cryptocurrencies among the Kenyan youth is significantly lower than the level of awareness. This means that, although many are aware of the existence of cryptocurrencies in Kenya, only a few have started engaging in the business. For various reasons, we can compare this finding with Insight (2021), citing Kenya as a leading country in the adoption of Fintech, and we can conclude that there is a slow uptake of cryptocurrencies. This could be due to the lack of central bank regulation as well as several cautions given by the government concerning the same. Another reason could be a lack of clear knowledge about how to deal with cryptocurrencies and, more importantly, their actual benefits. The cost of transactions and the price of cryptocurrencies are important variables affecting the adoption of cryptocurrencies. Government regulation is essential for fostering some degree of investor confidence. As suggested by Waihenya (2020), the government must consider developing explicit regulations for cryptocurrencies. The government may potentially make money by levying fees on digital and online transactions, but this benefit can only be realized if the crypto business is governed by a proper legal framework. Despite being around for more than 20 years, several nations throughout the world are hesitant to legalize cryptocurrencies. Most nations are still unsure as to whether cryptocurrencies are merely a fantasy or a reality. Cryptocurrencies have three distinct properties: a medium of exchange, an investment, and a commodity. This survey found that the majority of crypto users adhere to the first two principles, using the technology as both an investment and a medium of exchange for online commerce operations. Cryptocurrencies are widely utilized as a medium of exchange despite not being recognized as legal cash and having no official backing from the government. The concept of a volatile currency price is a result of the fact that cryptocurrencies are also traded online in the

same way that equities and bonds are. This study established a direct and significant relationship between transaction volume and transaction cost. According to a survey of the four most widely used cryptocurrencies, Ethereum has the highest average transaction cost, followed by Bitcoin, Litecoin, and Dogecoin, in that order. Trading that has predictable and well-communicated transaction fees is stable, but the cost of transactions in the cryptocurrency sector is highly erratic. This might have an impact on how much trade there is.

In conclusion, it's still uncertain what the future holds for cryptocurrencies. However, a number of indicators can be seen, such as the growth of the cryptocurrency market over time, the fact that few countries have accepted Bitcoin as a form of payment, and greater globalization. On the other hand, money laundering cartels and criminals have recently turned to cryptocurrency as safe havens. This is why local and international levels of control are important. To boost investor confidence, the industry's experts should provide clarification regarding areas of uncertainty in relation to cryptocurrencies.

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