

## DIGITAL CURRENCY TECHNOLOGY AS A PREDICTOR OF INSURANCE PENETRATION IN NIGERIA

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### Abstract

Regardless of the reality that insurance services have been used for over a thousand years worldwide, in emerging nations like Nigeria, their penetration is still quite low. This study examined the effect of digital currency technology on insurance penetration in Nigeria. The study utilized both cross-sectional and survey research designs. The study's population consisted of 504 persons (56 insurance companies x 9 managerial staff). Using Krejcie and Morgan's (1970) sample size chart, the sample size of 226 was increased by 40% to 316. A self-administered questionnaire was used to solicit responses from the respondents employing a multistage sampling technique. The study used Pearson Product Moment Correlation and Simple Linear Regression Analyses to test the hypothesized relationship. The study found that digital currency technology has a positive and insignificant effect on insurance penetration in Nigeria. The study recommended that in order to benefit from this digital currency technology, insurance companies in Nigeria would also need to supply the necessary technological infrastructure, such as a lack of internet access

**Keywords:** Digital Currency Technology, Insurance Penetration, Innovation Diffusion Theory

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### INTRODUCTION

The expansion of digital technology has brought innovation to numerous sectors, including the financial one; the development of digital currencies is an obvious example of disruption in this context. The system of payments as a whole is changing as new forms of money emerge (Fabian, Emeka & Okeke, 2022). A digital currency is a form of money that only exists electronically, is issued and controlled by the central bank of the country, and is backed by the government (Fabian, Emeka & Okeke, 2022).

It is interesting to note that the global financial system is fully embracing the present shift away from real currency toward practically virtual currencies via technology (Bartoletti et al., 2020). The broad phrase "digital currency" can be used to refer to a variety of currencies that are used in the digital realm. Broadly, there are three different types of currencies; Crypto-currencies, Virtual currencies, and Central Bank Digital Currencies (CBDC) (Ahannaya et al., 2021).

The insurance industry is the sector of the economy that deals with the provision of financial security to the general public who purchase insurance. These assurances are necessary for a variety of exposures to insurable risks by people, businesses, nonprofit organizations, and governmental entities (Inyang & Okonkwo, 2021). The insurance coverage may be offered to protect against losses due to fire, agricultural risks, emerging risks, risks associated with using a motor vehicle, risks associated with marine and aviation, and risks related to the duration of human lives (as in the case of life insurances

and health insurances) (Inyang & Okonkwo, 2021).

According to Oba (2003), insurance continues to be one of the key indicators of how wealthy a country is and is crucial to the mobilization of an economy's investable resources. He noted that the social, economic, and political milieu in which the insurance sub-sector operates affects its success. A country's economy can be seen in the status of its insurance industry. Kjosevski (2012) further showed how considerably and favorably the rise of the entire insurance sector impacted economic expansion. However, the insurance penetration rate is the amount of insurance premium in a country expressed as a percentage of the Gross Domestic Product (GDP). The ratio of insurance premium volume to GDP is used to calculate the insurance penetration rate. The higher the penetration rate, the more developed the insurance market (Okonkwo & Eche, 2017). Just 5% of Africans have access to insurance services, except South Africa, which has a growing insurance industry (Asongu & Odhiambo, 2020). Nigeria has a low insurance penetration rate, which has been attributed to both a market that is not aware of the advantages of insurance and a large population that has misunderstandings about how it works. Despite having a demographic advantage of approximately 200 million people, Nigeria's insurance penetration rate is only 0.33 percent (Hafiz et al., 2021).

The use of disruptive technologies like digital currencies will give insurance companies a great chance to connect with every person in both rural and urban areas, thereby improving insurance penetration (Owuor, 2018). To the best of the researcher's knowledge, there has not yet been a study that explores how digital currency may affect the uptake of insurance in Nigeria. Thus, based on the above-mentioned, this study seeks to fill the research gap by examining the impact of digital currency technology on insurance penetration in Nigeria. This study will ask questions like "What is the relationship between digital currency technology and insurance penetration in Nigeria?" As a result, the regulatory authority may use the data from this study to create a framework and initiatives that would enable insurance penetration in Nigeria.

### **Research Hypothesis**

**H<sub>0</sub>:** There is no significant effect of digital currency technology on insurance penetration in Nigeria.

### **Literature Review**

This section reviews the literature on digital currency, insurance penetration, empirical review, and theoretical framework.

#### ***Digital Currency***

Digital currencies are a new type of money that is mostly uncontrolled and disconnected from existing currencies (Gilbert & Loi, 2018). A great illustration of how, generally speaking, the idea of digital currency in this context blends the traditional attributes of money with the convenience of electronic transactions is the bank debit card. The internet is used by digital currencies, a new and innovative form of payment, to speed up and enhance online transactions (Saif Almuraqab, 2020). Digital money shares many characteristics with traditional money even if there is no tangible counterpart for it in the real world. Digital currency can be received, transferred, or exchanged for other currencies. The difference between digital currencies and other types of electronic money, such as an online bank account with a retail bank, is crucial (Venter, 2016). The quantity of, let's say, Nigerian Naira kept in a certain account will be shown on a retail bank's online account. Or to put it another way, digital copies of money are linked to actual cash. On the other hand, a digital currency is a kind of payment

that only exists online and has no connection to real money (Lukina & Dolgachev, 2018).

Cryptocurrencies, for instance, are digital currencies that encrypt and validate network transactions. The development of such currencies is managed and regulated through the use of cryptography. It is a blockchain technology that has the features to be accounted for and may be used in exchange for other valuables (Siyanbola et al., 2021). Bitcoin and Ethereum are examples of cryptocurrencies (Fabian, Emeka & Okeke, 2022). The most well-known example of a digital currency is Bitcoin (Gilbert & Loi, 2018).

Since its introduction in Nigeria, the use of cryptocurrencies as a virtual currency for trading and investing has steadily increased, and they are legal because no governmental regulations have declared them unlawful. Due to the fact that cryptocurrencies offer a different alternative for people to invest and maintain their money or assets, domestic traders, retailers, and organizations now recognize cryptocurrencies alongside domestic currency or even in place of it in some situations (Alli, Ganiyu & Aina, 2020). With more people transacting, investing, and transferring money, Nigeria is now ranked sixth internationally by Arcade Research, with 11% of its internet customers holding or utilizing cryptocurrencies (Alli, Ganiyu & Aina, 2020). The monthly Bitcoin transfers under \$10,000 to and from Africa (mostly performed by individuals and small enterprises) increased by more than 55% in a year to reach \$316 million in June 2020, over half as many transfers were made each month, exceeding 600,700 (Akwagyiram & Wilson, 2020; Jeffery, 2020).

### ***Insurance Penetration***

Insurance penetration, which is calculated as the gross premium income (GPI) as a proportion of gross domestic product (GDP), is a metric for assessing the growth of an insurance sector. According to Mahul & Stutley (2010), the ratio of insurance premium volume to GDP is used to represent the insurance penetration rate. The penetration rate reveals a country's level of insurance industry development. The penetration rate is calculated as the premium underwritten in a given year divided by the GDP. Insurance penetration measures a product's sales volume in comparison to that of its competitors (Ehiogu, Eze & Nwite, 2018). Comparing a product group's insurance sales volume to those of competitor goods is called insurance penetration. Nigeria's low insurance penetration rate is frequently used as a gauge of the country's potential for development. The insurance sector is constrained by a lack of knowledge (Ehiogu, Eze & Nwite, 2018).

### ***Linking Insurance Penetration with Digital Currency: Empirical Evidence***

Fabian, Emeka & Okeke (2022) investigated the connection between the e-naira digital currency and the financial success of Nigeria's listed deposit money institutions. The Kendall's Coefficient of Concordance was employed in the statistical analysis for this investigation. The study relied on primary data, and the results generally showed that the e-naira digital currency has a favorable and significant relationship with financial success in the banking sector.

Arogundade & Ogunwole (2021) examined the effect of cryptocurrencies on the Nigerian economy. The advantages of cryptocurrency in Nigeria were also examined. Quantitative data were sourced from the respondents through the administration of a structured questionnaire. The regression findings showed that the use of cryptocurrencies like Bitcoin and Ethereum for conducting online transactions has increased and is almost universally accepted.

Chiu and Koeppel (2017) conducted a study in the United States where they used a quantitative research approach to evaluate Bitcoin's capacity to enable bilateral trade. They emphasized that when scaling limitations are addressed, cryptocurrencies can perform better than the conventional approach of retail payment.

Similarly, Salawu and Moloi (2018) carried out a survey in Nigeria to determine how professional accountants felt about the regulation of cryptocurrencies. A sample of 250 chartered accountants from a variety of areas was conveniently chosen from a population of 1,300 chartered accountants for the survey approach. According to their analysis, chartered accountants are willing to trade cryptocurrencies as long as the government adequately regulates their use.

Knezevic (2018) carried out a similar study in Serbia to evaluate the impact of blockchain technology on the financial sector. The study employed a qualitative research method by reviewing relevant extant literature. Blockchain technology has been noted to have a large impact on the financial industry and the ability to influence other sectors of the economy.

### ***Theoretical Underpinning***

This study was anchored on the innovation diffusion theory propounded by Rogers in 1962 which argued that a novel concept or product (digital currency) diffuses through a particular social system (the internet), through which people perceive it and adopt it (Salawu & Moloi, 2021).

According to Richter, Kraus & Bouncken (2015) and Kshetri (2018), such innovation may be effective in improving organizational supply chains, shifting the key chain of operations, and improving transparency and accountability. Only when there is a significant amount of confidence or protection against loss will the early majority adopt the concept. The conservative and skeptical population would rarely embrace an innovation unless there was a high likelihood that it would succeed.

### **Research Methodology**

The study is quantitative in design because numerical data is collected and used to establish study components and assess theories and hypotheses (Hair, Page, & Brunsveld, 2020; Ojeleye, Ojeleye, Abdullahi, & Salaudeen, 2021). The survey and cross-sectional research designs were specifically used in the study. Data is collected from a population of randomly selected respondents in survey research by giving standardized questionnaires (Odoh & Ihedigbo, 2014; Ojeleye, Bakare, Umar, & Ojeleye, 2021). Cross-sectional research, often called one-shot, in which researchers evaluate the study's respondents' exposures and results at the same time (Setia, 2018; Ojeleye & Jada, 2022). According to the National Insurance Commission (NAICOM) website, there were 56 listed insurance businesses in Nigeria as of the end of January 2022. The population in this study is made up of managerial personnel from Nigerian insurance companies. Managing director, executive director technical, head of technical underwriting, head of reinsurance, chief financial officer, head of audit, head of enterprise risk management, chief risk officer (CRO) (risk and compliance), and head of human resource/administration are among them. 504 respondents comprise the study's population (56 insurance companies x 9 managerial staff). The sample size of 226 was calculated using Krejcie and Morgan's sample size chart from 1970. To account for non-response, Israel (2013) recommended that the sample size be raised by 10% to 50% to make allowance for non-response. Hence, the simple size of 226 was increased by 40% in this study, resulting in 316 copies of the questionnaire distributed using random sampling processes. 247 of these were completely completed and used in this study, representing a response rate of 78.2%. The three basic methods of probability sampling are simple

random sampling, systematic sampling, and stratified sampling. The participants were drawn from each country's two national unions using the probability sampling method's fundamental random selection approach (Welman & Kruger, 2005). This ensured that everyone from both countries who belonged to the designated trade union affiliates had an equal opportunity to participate in the survey. Participants were chosen from Nigerian insurance businesses using the probability sampling method's simple random selection approach. This ensured that everyone affiliated with the selected insurance businesses in Nigeria had an equal opportunity to participate in the survey. Furthermore, the study used Statistical Software for Social Sciences (SPSS) to determine the hypothesized relationship using simple linear regression analysis as specified in the model below:

$$IN\_PEN = \beta_0 + \beta_1 DC\_TECH + \epsilon_i \text{-----} (-i)$$

Where: IN\_PEN = Insurance penetration,  $\beta_1 DC\_TECH$  = digital currency technology,  $\beta_0$  = the intercept expected value of y when x is equal to zero, and  $\mu$  = the error term to accommodate the effect of other variables that can influence insurance penetration, but which were not included in the model.

**Measurement**

All the items in the questionnaire were adapted from previous validated research instruments. Digital currency technology was adapted from a 3-item scale developed by Almuraqab (2020). A sample of items is: “The firm uses valuable digital currency technology as an alternative source of currency” measured on a Likert scale (1 strongly disagree to 5 strongly agree) with a reported Cronbach alpha of 0.729 indicating that the instrument is reliable and suitable for the study. insurance penetration was adapted from a scale developed by Njuguna and Kimani (2016). Sample of the item is: “More and more customers can now access our insurance product and services”. measured on a Likert scale (1 strongly disagree to 5 strongly agree) with reported Cronbach alpha of 0.745 indicating that the instrument is reliable and suitable for the study.

**Data Analysis and Reporting**

The study’s data was analyzed using Pearson Product Moment Correlation to ascertain the nature of the relationship between digital currency technology and Simple Linear Regression was utilized to test the hypothesized relationship

Table 1: *Pearson Product Moment Correlation*

Constructs	DCT	IP
Digital Currency Technology (DCT)	1	
Insurance Penetration (IP)	.481**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

The correlation between digital currency technology and insurance penetration is 0.481, and it is statistically significant (p0.05). The positive association indicates that an increase in digital currency technology usage would lead to an increase in insurance penetration in Nigeria. In other words, the greater the use of digital currency technology by these insurance companies, the greater the growth in insurance penetration.

Table 2: The *Test of Hypothesised Relationship using Simple Linear Regression Analysis*

Variables Regressed	Coefficient	Std. Error	T-Value	P-Value	Result
Constant	0.311	0.011	1.979	0.048	
DC_TECH	0.060	0.032	0.985	0.326	Accepted
R	0.476				
R-Square	0.418 <sup>a</sup>				
Adjusted R-Square	0.321				
F-Statistics	78.795				
P-Value	0.01				

a. Dependent Variable: IP

Analysis Table 2 demonstrated that cloud computing technology has a positive and insignificant influence on insurance penetration in Nigeria with  $\beta = 0.060$  at p value of 0.326 which is not significance at the 5% level. A positive beta value of 0.060 indicates that a 1% improvement in digital currency technology results in a 6% rise in insurance penetration in Nigeria which is not substantial. As a result, the hypothesis that digital currency technology has no substantial influence on insurance penetration in Nigeria is accepted. Simply put, digital currency technology does not significantly predict insurance penetration in Nigeria.

In addition, the coefficient of determination ( $R^2$ ) demonstrates that 32% of the variance in the dependent variable (insurance penetration) is explained by the independent variable (digital currency technology). This means that digital currency technology accounts for 32% of the variation in insurance penetration, while the remaining 68% is explained by other variables not included in the model.

### Discussion of Findings

The result of the simple linear regression analysis indicates that there is a significant and positive relationship between digital currency technology and insurance penetration in Nigeria. The findings of the study show that there is no significant relationship between digital currency technology and insurance penetration in Nigeria. This results that this type of disruptive technology may not be related to insurance penetration. Moreover, this result may be due to the lack of insurance companies in optimizing the effectiveness of the companies to use digital currency technology to cause high insurance penetration. This result is not supported by a previous study which showed that Fabian et al. (2022) who examined the relationship between e-naira digital currency and the financial performance of listed deposit money banks in Nigeria and found that e-naira digital currency has a positive and significant relationship with financial performance in the bank of industry.

### Conclusion and Recommendation

The study examined the effect of digital currency technology on insurance penetration in Nigeria. It was established from data analysis that digital currency technology did not significantly predict insurance penetration in Nigeria. Thus, based on the reported finding the study recommends that insurance companies will need to manage e-wallets for digital currency technology to succeed. For it to succeed, a network organization must be established to broaden and deepen the acceptance of digital currencies to boost their value. To benefit from this digital currency technology, insurance

companies in Nigeria would also need to supply the necessary technological infrastructure, such as a lack of internet access.

## References

- Ahannaya, C., Oshionowo, A., Sanni, A., Arogundade, J., & Ogunwale, O. (2021). The effect of cryptocurrencies on Nigerian economy. *IEEE-SEM*, 9(3), 8-14
- Akwagyiram, A., & Wilson, T. (2020). How bitcoin met the real world in Africa. *Reuters*. <http://www.Reuters.com/article/us-crypto-currencies-africa-insight-idUSKBN25Z0Q8> Accessed April 4, 2023,
- Alli, N. G., Ganiyu, K., & Aina, J. (2020). Place of Nigerian Insurance Industry in Cryptocurrency Insurance as an Emerging Market. *ESUT JOURNAL OF SOCIAL SCIENCES*, 5(3), 165-178.
- Arogundade, J. A., & Ogunwole, O. J. (2021). The effect of cryptocurrencies on Nigeria's economy. *International European Extended Enablement in Science, Engineering & Management*, 9(3), 8-14.
- Asongu, S. A., & Odhiambo, N. M. (2020). Insurance policy thresholds for economic growth in Africa. *The European Journal of Development Research*, 32(3), 672-689.
- Bartoletti, M., Carta, S., Cimoli, T., & Saia, R. (2020). Dissecting ponzi schemes on Ethereum: Identification, analysis, and impact. *Future Generation Computer Systems*, 102, 259-277.
- Chiu, J., & Koepl, T. V. (2017). The economics of cryptocurrencies—bitcoin and beyond. *Available at SSRN 3048124*. pp. 1-55. doi:10.2139/ssrn.3048124
- Ehiogu, C. P., Eze, O. R., & Nwite, S. C. (2008). Effect of inflation rate on insurance penetration of Nigerian insurance industry. *International Research Journal of Finance and Economics*, 170(1), 66-76.
- Fabian, O., Emeka, O., & Okeke, C. J. (2022). E-Naira digital currency and financial performance of listed deposit money banks in Nigeria. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 6(2), 222-229.
- Gilbert, S., & Loi, H. (2018). Digital currency risk. *International Journal of Economics and Finance*, 10(2), 108-123.
- Hafiz, U. A., Salleh, F., Garba, M., & Rashid, N. (2021). Projecting insurance penetration rate in Nigeria: An ARIMA approach. *Revista GEINTEC*, 11(3), 63–75
- Hair, J. F., Page, M., & Brunsveld, N. (2020). *Essentials of Business Research Methods* (4th ed.). New York: Routledge.
- Inyang, U. E., and Okonkwo, I. V. (2021). Information and communication technology in Nigeria insurance industry: Developments, challenges and prospects. *Journal of Economics, Finance and Management Studies*, 4(7), 1159-1171
- Israel, G. D. (2013). Determining sample size. *Journal of Business Research*, 1, 1–5. Retrieved from <https://www.psychosphere.com/Determining sample size by Glen Israel.pdf>
- Jeffery, G. (2020). Fiat Devaluation drives retail bitcoin transfers in Africa 56% in a year: Report. Retrieved April 4, 2023 <https://news.bitcoin.com/fiat-devaluation-drives-retail-bitcoin-transfers-in-africa-56-to-316-million-in-a-year-report/#:~:text=0-,Fiat%20Devaluation%20Drives%20Retail%20Bitcoin%20Transfers%20in%20Africa%2056%25%20in,U.S.%20crypto%20analytics%20firm%20Chainalysis.>
- Kjosevski, J. (2012). Impact of insurance on economic growth: The case of Republic of Macedonia. *European Journal of Business and Economics*, 4, 34–39.
- Knezevic, D. (2018). Impact of the blockchain technology platform in changing the financial sector and other industries. *Montenegrin Journal of Economics*, 14(1), 109-120.

- Kshetri, N. (2018). Blockchain's roles in meeting key supply chain management objectives. *International Journal of Information Management*, 39, 80-89.
- Lukina, E. E., & Dolgachev, M. V. (2018). Electronic payment systems and blockchain as a constituent part. *KnE Social Sciences*, 3(2), 174-181.
- Mahul, O., & Stutley, C. J. (2010). *Government support to agricultural insurance: challenges and options for developing countries*. World Bank Publications.
- Njuguna, G. W., & Kimani, E. M. (2016). Assessment of Financial Factors Affecting Insurance Penetration in Nakuru Town, Kenya. *International Journal of Economics, Commerce and Management*, 4(9), 548- 568
- Oba, J. (2003). *Principles and Practice of Insurance*. Enugu: Abic Books and Equipment.
- Odoh, M., & Ihedigbo, C. E. (2014). Research designs, survey, and case study. *IOSR Journal of VLSI and Signal Processing*, 4(6), 16–22. Retrieved from <http://www.iosrjournals.org/iosr-jvlsi/papers/vol4-issue6/Version-1/C04611622.pdf>
- Ojeleye, C. I., Ojeleye, Y. C., Abdullahi, M., & Salaudeen, J. (2021). Effect of entrepreneurial education, entrepreneurial guidance and counseling on entrepreneurial intentions among students of Federal College of Education (Technical) Gusau. *Gusau International Journal of Management and Social Sciences*, 4(3), 41–57.
- Ojeleye, Y. C., Bakare, M., Umar, S., & Ojeleye, C. I. (2021). Fear of COVID-19 and employees' turnover intentions among state-owned hospitals in Zamfara state : the role of job estrangement. *Lapai International Journal of Management and Social Sciences*, 13(2), 53–69.
- Ojeleye, Y. C., & Jada, R. (2022). Job autonomy and employee engagement in Nigeria: The role of job satisfaction. *Mkar Journal of Sociology*, 2(1), 61–71.
- Okonkwo, I. V., & Eche, A. U. (2017). Insurance penetration rate and economic growth in Nigeria: 1981-2017. *International Journal of Social Sciences and Management Review*, 2(1), 22-45
- Owuor, E. (2018). Impact of disruptive technology on the performance of insurance firms in Kenya. *Journal of Strategic Management*, 3(1), 72-82.
- Richter, C., Kraus, S., & Bouncken, R. B. (2015). Virtual currencies like Bitcoin as a paradigm shift in the field of transactions. *International Business & Economics Research Journal (IBER)*, 14(4), 575-586.
- Saif Almuraqab, N. A. (2020). Predicting determinants of the intention to use digital currency in the UAE: an empirical study. *The Electronic Journal of Information Systems in Developing Countries*, 86(3), e12125.
- Salawu, M. K., & Moloi, T. (2018). Benefits of legislating cryptocurrencies: Perception of Nigerian professional accountants. *Academy of Accounting and Financial Studies Journal*, 22(6), 1-17.
- Salawu, M. K., & Moloi, T. (2021). Disruptive Technologies and Finance Professionals Engagement: Post Covid-19 Survival Signal. *The Journal of Accounting and Management*, 11(2), 31-43
- Setia, M. S. (2018). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61, 261–264. <https://doi.org/10.4103/0019-5154.182410>
- Siyانبola, T. T., Audu, S. I., Adediran, A. R., & Agbaje, A. (2021). Cryptocurrency and the Nigerian economy. *African Journal of Accounting and Financial Research* 4(3), 180-193.
- Venter, H. (2016). Digital currency—A case for standard-setting activity. *A perspective by the Australian Accounting Standards Board (AASB)*.