

Using Technological Acceptance Model to Measure the intention of Micro Enterprises to accept eNaira in Jigawa State, Nigeria

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ABSTRACT

The Central Bank of Nigeria (CBN) formally launched the eNaira on October 25, 2021. This move elevated Nigeria to the status of a median country with a legally backed Central Bank Digital Currency (CBDC) and complete sovereignty. The eNaira wallet is a legal tender that must be accepted by citizens as a means of financial transactions in the country. Despite the launch of eNaira, as of August 2022 the acceptance of eNaira has remained significantly low, the average number of eNaira transactions since its commencement amounts to about 14,000 per week—only 1.5 percent of the number of wallets out there. This show that, less than 0.5% of Nigerians were using it a year after it was launched. Hence, the main objectives of this research is to measure the intention of micro enterprises to accept eNaira in Jigawa State, Nigeria. The research employed survey research techniques, and the population of the study included 834,200 microenterprises owners in the Jigawa State of Northwestern Nigeria. Data was collected from a sample of 382 owners of enterprises through questionnaire instruments. The researcher used Smart-PLS 4.0 to analyze the data. The findings reveal that Perceived ease of use, perceived usefulness, and perceived information have insignificant effects on owners of micro enterprises' interest in using eNaira in the Jigawa State Nigeria. The research recommended that the regulatory bodies should establish cyber security rules and regulations, which will protect the user of eNaira. In addition, the CBN should increase level of awareness of eNaira among the business owners.

Keyword: *eNaira, perceived ease of use, perceived usefulness, perceived information*

1. Introduction

A turning point in the history of money has been reached with the introduction of digital currency. Currency such as commodity money, metallic money, paper money, credit money, and plastic money have all been replaced by digital or virtual (crypto) currencies like bitcoin, Ethereum, and ripple as a means of exchange (Bordo, 2021). With crypto currencies becoming more and more popular, a CBDCs serve as the national currency appears to be necessary in order to stop the wave of volatility and uncertainty surrounding the former (Koziuk, 2021). For example a data published by crypto currency exchange Kucoin, show that over 33.4 million Nigerians, or 35% of the country's adult population aged between 18 and 60, owned or traded crypto currencies to hedge against the perpetually depreciating Naira (Zimwara, 2022).

As a result, it becomes imperative to accept CBDCs and preserves the role of central bank as a stabilizing force at the heart of the payments system and to safeguard monetary sovereignty (Penetta, 2022).

The Central Bank of Nigeria (CBN) formally launched the eNaira on October 25, 2021. This move elevated Nigeria to the status of a median country with a legally backed CBDC and complete sovereignty. The eNaira functions similarly to cash and is the Naira's digital counterpart. Muller & Kerenyi (2022) stated that CBN introduced digital currencies in order to support stability and sustainable growth. Nigeria joins the Bahamas, China, Sweden, and South Korea, among a few other nations in the trial program, which launched and distributed the world's first CBDCs, or Sand Dollars, in October 2020. The eNaira can be used for money transfers and in-store contactless payments. It is kept in a digital wallet. It was developed as a component of CBN's cashless policy to operate as a

store of value and a medium of exchange. It offers a rapid, safe, and simple way for peer-to-peer payments as well as the almost free settlement of retail transactions. Lower-income people, micro and small enterprises who primarily rely on the usage of cash and paper money for daily transactions will benefit from the free use of eNaira as a medium of exchange in the Nigerian economy.

On a macroeconomic level, it accelerates the flow of money through higher payments, which raise GDP. The monetary authority also expects the high cost of printing physical currency—which amount to ₦307 billion in 2014 and 2019—to be narrowed by the use of digital currency. The eNaira is a liability of the CBN that utilizes the same block chain technology as a crypto currency (Bitcoin or Ethereum), in addition to cash and reserve balances. In contrast to other crypto currencies, the eNaira is built with strict access control mechanisms to increase its security. Its stability is further guaranteed by being fixed at parity with the real Naira (Ree, 2021). The value of the eNaira is the same as that of the real Naira, and it will fluctuate in value relative to the dollar just like fiat money does. However, the Central Bank of Nigeria (CBN) hopes that the introduction of the eNaira will facilitate easier tax collection, boost financial inclusion, facilitate faster and more affordable remittances from the diaspora, improve direct social and welfare payments as well as promote cross-border trade. Additionally, capital flow data can be thoroughly and expeditiously examined, supporting efforts to combat corruption, money laundering, terrorist financing, and tax evasion (Tronnier, 2021). Further, eNaira can raise economic growth and upsurge GDP by \$29 billion over the next 10 years (CBN, 2021).

In addition to the anticipated benefits of eNaira, some researchers have noted that the innovation encountered certain problems. Many Nigerians, contemplate that the government intentionally introduced eNaira in order to track a person's financial activity (Ebere 2021). Therefore, the success of the eNaira will be impacted by a lack of trust. Furthermore, micro enterprises might not be included if they don't have access to the internet, electricity, or broad awareness at the local level. Moreover, eNaira can be done on a smart phone, and then individual without access to such devices will be left out (Ozili, 2021). Also, cyber-attacks and cyber theft might increase the challenges of eNaira's acceptance in society (Wale, 2021).

Hence, there is a substantial gap among micro enterprises regarding the acceptance, awareness, and implications of the eNaira, despite the fact that it signifies a hopeful step toward financial inclusion, efficiency, and innovation. Hence, lack of awareness could prevent its wider acceptance. For example, the International Monetary Fund (IMF), (2023) reported that the acceptance of eNaira has remained significantly low, the average number of eNaira transactions since its commencement amounts to about 14,000 per week—only 1.5 percent of the number of wallets out there. This means that 98.5 percent of wallets, for any given week, have not been used even once. This show that, less than 0.5% of Nigerians were using it a year after it was launched. Likewise, Akindipe, Achieve & Olonade (2023), concluded that the eNaira has not yet progressed past the initial wave of early acceptance regarding market receptivity, and the number of micro clients on board is less than 1 percent of active bank accounts. The question raised was why people are not accepting eNaira as their medium of exchange.

Consequently, awareness, perceived usefulness, and ease of use of eNaira can be the essential tools for the acceptance of eNaira among individuals in Nigeria. Based on this statement, the study used field survey to examine the role of technological acceptance model in eNaira acceptance among Micro enterprises in Jigawa State.

2. Literature Review

2.1 Empirical Review

A study by Bordo and Levin (2017) found that CBDCs can serve as a nearly costless means of financial transaction, a safe store of value, and a reliable unit of account, leading to numerous advantages. However, the authors highlight that CBDCs must be designed as account-based and interest-bearing systems to improve price stability efficiently. The author research on how a central bank digital currency (CBDC) can transform the financial system significantly and progress monetary policy transparency. Ozili, (2021b) study the features, opportunities, and risks of the eNaira in Nigeria. The author found that the eNaira can improve the conduct of monetary policy, lead to effective payments, and enhance the financial inclusion, but it also comes with risks such as data theft, cyber-attacks, and digital illiteracy. On the other hand Chukwuere, (2021) reported that eNaira helps clients to access their cash quickly, and the central bank can monitor and control financial transactions. He further stated that the eNaira faces trust challenges, which negatively affect its acceptability by the Nigerian.

Ahannaya, et al., (2021) used a regression model analysis to study the economic impact of crypto currencies in Nigeria, the author found that the use of crypto currencies such as Bitcoin and Ethereum for online transactions has witnessed a significant increase in popularity and acceptance. The results of the survey indicate that a sizable percentage of people firmly believe that Bitcoin is a legitimate, secure, and valuable form of money. Bijlsma et al., (2021) examine the factors that influence Dutch consumers' acceptance digital currency. They revealed that the use

of e-currency for payments and savings is one of the main drivers of the success of digital currency. They also reported that the acceptance is positively related to individuals' knowledge of digital currency and trust in the central bank. Similarly, Kasemrat & Kraiwanit, (2022) study on the variables that influence Thailand's acceptance of a central bank digital currency. They found that the media and prior e-money usage are two variables that promote the acceptance of Thailand digital currency. Ozili (2023) reported that, the introduction of digital currency by a central bank will enhance financial stability or, at the very least, the CBDC won't significantly jeopardize the stability of the financial system of the country. Furthermore, Akindipe, Akhimie & Olonade (2023) undertake their research on the awareness and understanding of eNaira in Nigeria, they concluded that the innovation has not yet advanced past the first wave of early adopters regarding market accessibility, and the number of retail customers on board is less than 1 percent of active bank accounts.

Most of the above review focused on the development of digital currency and its influence on the country financial stability. A few of them try to research on the determinants of digital currency acceptance among individual. However, there is limited research in the area of the acceptance of central bank digital currency among microenterprises especially in developing country like Nigeria. Hence, the current research is going to fill the existing gap.

3. Theoretical Framework

3.1. Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT was first proposed by Davis (1989), the theory was developed mainly to assist researchers in the field of IT/IS in the process of adoption and diffusion. The theory has four major variables: "Effort expectancy, performance expectancy, facilitating conditions and social influence." The four constructs have positive effect on behavioral intention of individual to adopt and use new technology (Davis, 1989). UTAUT offers the managers with decision-making techniques that they can adopt to comprehend the innovation of new technology for prediction and elaboration of the behaviour of users in accepting new technology.

3.2. Social Construction of Technology Theory

Social Construction of Technology Theory: SCOT claims that there should be a critical look at the social world for those that look for the comprehension of the bases of a technology acceptance or rejection (Matira & Awolusi, 2020). Hence, technical advantage is not the only reason for a technology adoption but also the social factors. Under this theory, the primary proponents contend that innovation is not the determinant of the actions of individuals, but rather, that the behavior exhibited and displayed by individuals are actually what put technology in shape. They also contend that without understanding how technology is entrenched in its social viewpoint, the usage of innovation can also not be understood. In general, SCOT is a theory about how a diversity of social influences and forces regulate technological innovation, technological transformation, and the implications related to technology.

3.3. Technology Acceptance Model (TAM)

TAM was first proposed by Davis et al. (1989) to examine the theoretical model of the intention of user to adopt the new technology. TAM has two variables perceived usefulness and ease of use of the new technology. Perceived usefulness of new technology suggests the individual belief to improve the degree of work performed by a specific new technology. Perceived ease of use of new technology suggests how easy an individual can learn the way to use a new technology. The TAM has stressed on the way perceived ease of use of new technology directly effects perceived usefulness of the technology.

TAM is applied vastly on the researches involving new technology. Liu et al. (2010) examined the significant variables to come up with a successful website which has its basis on TAM. Technology Acceptance Model is a main theory that underpins the current study

4. Conceptual Framework and Hypotheses Development

TAM explain the acceptance and use of new technology and other related information and social networking in the context of individual level and organizational level. TAMs try to explain how individual's behavior are influence to use or adopt a specific technology or system. Davis (1989) developed TAM to describe individual adoption of technology in an organization. TAM proposes that PU and PEOU are the two most important determinants of intention to accept new technology. TAM has been used in various study, for example, innovation adoption (Pérez et al., 2004), social network (Martins and Soares, 2011), online banking (Pikkarainen, 2004), teaching assistant robots (Park and Kwon, 2016), e-commerce (Okorie et al., 2019), e-library (Shoaei and Oloumi, 2010) and Online Islamic

Crowdfunding (Kazaure et.al. 2020) respectively. Similarly, Mathieson (1991) found that TAM's ability to explain attitude towards using new technology is better than other models (TRA, UTAUT, SCOT and TPB). The finding exposes that TAM consistently describes a significant amount of the variance (typically around 40%) in usage intentions and behavior. Therefore, this study adopted the TAM and extend the model by adding one variable awareness. TAM is opened for the integration of additional variables that can predict individual behavior directly or indirectly (Trivedi et al., 2005). Though researchers such as Akindipe, Akhimie & Olonade (2023) evaluate how the eNaira awareness will improve financial inclusion in Nigeria. The weakness of their research is that it focused only on 36 banks in Nigeria and used bank customers as their unit of analysis while this study will consider the owner of microenterprises in Jigawa State Nigeria. The framework is contained in Figure 1.

4.1. Perceived usefulness

TAM proposes that PU is a key variable influencing the acceptance of social networking (Davis, 1989). The authors defined PU as the level to which a person believes that using a specific technology might increase his or her job performance. By applying these into the eNaira framework, the researcher hypothesizes:

H1 Perceived usefulness (PU) positively influence the owner of micro enterprise intention to adopt to the concept

4.2. Perceived ease of use

PEOU is a belief by an individual that using a specific technology would be free of effort (Davis, 1989). Therefore, an innovation seeing to be free of effort to use is likely to be accepted by an individual. By applying these into the eNaira framework, the researcher hypothesizes:

H2 Perceived ease of use (PEOU) positively influence owner of micro enterprise intention to adopt the concept

4.3. Information of eNaira

The information on eNaira in this study will represent the awareness of the eNaira among the owners of micro enterprises in Kano State. Awareness in this context implied the knowledge of eNaira and its associated merits and demerits. The justification of using the information on eNaira is that previous literature acknowledged that information on the new concept is a key variable in influencing an individual's behavioral intention to adopt the concept. For example, research by Akindipe, Achieve & Olonade (2023), Kazaure et al., (2020), Kazaure (2019) and Bader et al. (2018) has revealed that awareness of new concepts positively influences individual intention to use the concept. However, Laforet and Li (2005) reported that lack of information and the merit of online transaction is the key obstacles that hinder its adoption. Hence, the hypotheses are:

H3: Information on eNaira positively influence the owner of micro enterprise intention to adopt the concept

5. Methods and Materials

The methodology used in conducting the researched is explained in this section, which contained of the population and sample, instrumentation and data analysis.

5.1 Population and Sample

The study had covered Jigawa State in the northwestern Nigeria. The subjects of the study are owners of microenterprises. Microenterprises in Nigeria are defined by the small and medium enterprises development agency (SMEDAN, 2017) as enterprises employed less than ten people and has capital outlay not more than 10 million Naira excluding cost of land. There is a total of 834,200 microenterprises in Jigawa State (SMEDAN, 2017). For the sample, the study used purposive sampling method. In line with Krejcie and Morgan (1970), any population above 75,000 the sample will be of 382 subjects. Thus, with about 834,200 populations, the sample was estimated as 382.

5.2 Instrumentation

Data were collected using a research questionnaire with questions adopted from Mansur et al., (2020). Research assistants were employed to assists in the collection of the data, which enabled the conclusion of the data collection within one month.

5.3 Data analysis

The researchers distributed 384 questionnaires, 368, representing 96 percent, were retrieved, while 16 questionnaires, representing 4 percent, were not returned due to the logistics constraints. The 384 questionnaires cover the scope sufficiently to offer the data required to arrive at a logical conclusion. Then, the data was key in into SPSS 25 for the analysis.

6. Result and Discussions

A total of 382 copies of questionnaire were distributed and 368 completed copies were returned indicating that non-response bias is not an issue in the research. The data then keyed in into SPSS version 25 for demographic analysis and imported the data to SmartPLS 4 for the model measurement analysis and structural analysis.

6.1 Demographic

The demographic variable of the current research comprise gender, age, marital status, and education qualification. The finding indicates that, males are the majority of the respondents with 76.1 % and female with 23.9%, and most of them are within the age group of 30-39 years (i.e. 42.9%). Similarly, 65.8% of the respondents are married. Concerning the respondent’s educational qualification, majority has a bachelors’ degree/Higher-National Diploma (i.e., 60.9). The finding is in line with Kazaure *et al.*, (2020) finding. Table 1 display the demographic analysis results.

Table Demographic Variables

S/N	Demographic item	Categories	Frequency	Percentage
DMO1	Gender	1. Male	280	76.1
		2. Female	88	23.9
		Total	368	100
DMO2	Age	1. 20-29	23	6.3
		2. 30-39	158	42.9
		3. 40-49	133	36.1
		4. 50-59	50	13.6
		5. 60 above	4	1.1
	Total	368	100	
DMO3	Marital status	1. Single	112	30.4
		2. Marriage	242	65.8
		3. Divorce	9	2.4
		4. Others	5	1.4
	Total	368	100	
DMO4	Highest qualification	1. Secondary school	10	2.7
		2. NCE/ND	90	24.5
		3. BSc/HND	224	60.9
		4. Master’s Degree	38	10.3
		5. PhD	2	.5
		6. Others	4	1.1
	Total	368	100	

Source: field survey 2024

4.2 Measurement model

The results indicate that, all the four reflective construct achieved the satisfactory loading value of >0.5., all the construct has the loading ranged from 0.774 to 0.879. All AVE values in this study are higher than 0.5 (ranging from 0.677 to 0.733), which indicates convergent validity. Similarly, the results demonstrates that the scores for eNaira interest (0.897), perceived ease of use (0.893), and perceived usefulness (0.897) are all above the advised threshold of 0.707, indicating credible information (Hair *et al.*, 2017). See table 4.2 for the results. Moreover, Figure 4.1 is the graphic display of the measurement model.

Table 4.2 Indicator Reliability, Internal Consistency Reliability and Convergent Validity

Construct	Items	Loading	AVE	CR
Perceived Information of eNaira	INF1	0.871		
	INF2	0.879	0.733	0.917

	INF3	0.824		
	INF4	0.851		
Interest to use eNaira	INT1	0.855		
	INT2	0.844	0.686	0.897
	INT3	0.824		
	INT4	0.789		
Perceived Ease of Use	PEO1	0.832		
	PEO2	0.856		
	PEO3	0.828	0.677	0.893
	PEO5	0.774		
Perceived Usefulness	PEU1	0.818		
	PEU2	0.823		
	PEU3	0.836	0.685	0.897
	PEU4	0.834		

4.3 Discriminant Validity

It evaluate the change between one construct to the other constructs in terms of its linking and the representation of the indicators in a construct (Hair et al., 2019). It measure by means of connecting the square root of AVE with dependent variable relationship. The square root of AVE must exceed all the relationships in order to attain the satisfactory discriminant validity in the constructs (Chin, 2010). The acceptable criteria are the Fornell-Larcker criteria using HTMT. (Hair et al., 2017). HTMT referred to the ratio of correlations within the construct to the relationships among the constructs. HTMT values above 0.90 suggest a lack of discriminant validity (Ramayah et al., 2017). The finding indicates that, the values of the construct are lower than the required threshold value of HTMT.90 (Gold et al, 2001). See table below 4.2

Table 4.2 Fornell-Larcker Criterion

	INF	INT	PEO	PEU
INF	0.856			
INT	0.579	0.828		
PEO	0.745	0.645	0.823	
PEU	0.576	0.748	0.725	0.828

Source: field survey 2024

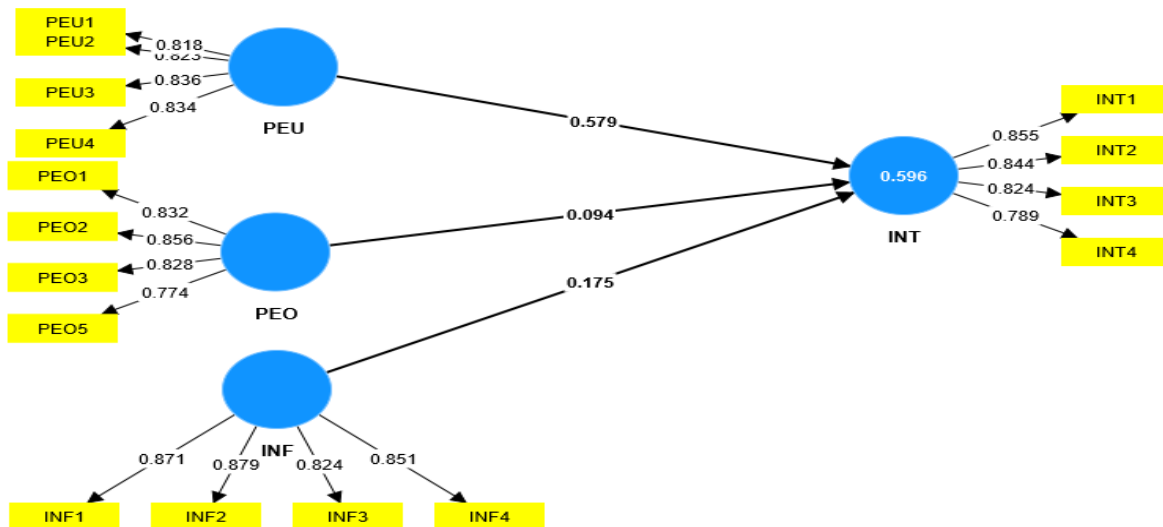


Figure 4.1. Measurement Model

4.4 Assessment of Structural Model

Before assessing the structural model, it is important to confirm that, there is no lateral collinearity issue in the structural model (Kock & Lynn 2012). Table 4.2 show the test of lateral collinearity, all the Inner VIF values for the latent variables (PU, PEO, and IFN) that need to be verified for lateral multicollinearity the value are less than 5, confirming that lateral multicollinearity is not an issued in the research (Hair et al., 2018; Ramayah et al., 2017).

Table 4.2 Tested for lateral Multicollinearity

	VIF
INF -> INT	2.264
PEO -> INT	3.191
PEU -> INT	2.123

Sources: survey data 2024

However, in this research, three direct hypotheses were developed between the constructs, to test the significance level; t-statistics for all paths are generated via Smart PLS 4.0 bootstrapping function. All three relationships have t-values greater than 1.645 at a significance level of 0.05. PEU ($\beta = 0.061$, $p < 0.000$), PEO ($\beta = 0.067$, $p < 0.161$) and INF ($\beta = 0.052$, $p < 0.001$) were found to be significantly correlated to the intention. Therefore, all hypotheses found to be supported. Table 3 summarizes the results of the hypotheses.

Table 4.5 Present the Hypothesis Testing

Hypotheses	Relationship	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision
H ₁	PEU -> INT	0.575	0.061	9.430	0.000 ^{xxx}	Supported
H ₂	PEO -> INT	0.097	0.067	1.402	0.161 ^x	Supported
H ₃	INF -> INT	0.176	0.052	3.352	0.001 ^{xxx}	Supported

Note: * $p < 0.1$, *** $P < 0.01$ one-tailed test

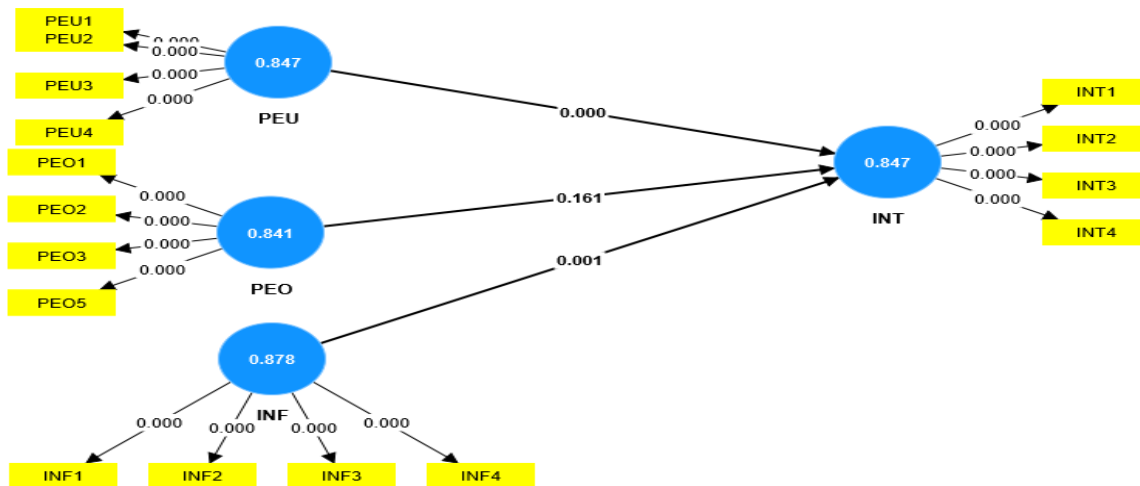


Figure 4.2: Structural Model Output

Note: PEU=Perceived Usefulness, PEO=Perceived Ease of Use, INF=Information, INT= Interest

Further, the researcher evaluates the model's predictive relevance through the coefficient of determination score (R^2). R^2 is the assessment of the model's predictive accuracy (Ramayah et al., 2017). Higher values representing a higher level of predictive accuracy (Hair et al., 2017). In this research, the R^2 value was 0.592, which suggests that INF, PEO, and PEU may explain 59.2 percent of the variance in the user's interest.

5. Discussions

The objectives of the paper are to measure if the TAM variables has a significant influence over the intention of micro enterprises in Jigawa State to accept the eNaira as the medium of exchange. Further the paper assess if awareness has influence over the intention of micro enterprises to accept the eNaira as their means of daily transaction.

Generally, the outcome of the study reveals that the proposed model has the power to influence the intention of the owners of micro enterprises in Jigawa State to adopt eNaira as their means of daily transaction. The results of this research revealed that PEU ($\beta = 0.061$, $p < 0.000$), PEO ($\beta = 0.067$, $p < 0.161$) and INF ($\beta = 0.052$, $p < 0.001$) are directly influencing Micro enterprises owner behavioral intention to accept eNaira as their means of financial transaction. Hence, the objective of the research was achieved. The results are in line with Akindipe, Achieve & Olonade 2023; kazaure at el., 2020; Kazaure 2017; findings, which stated that Perceived usefulness, perceived ease of use and awareness influence the use of a new technological model.

6. Research implications and limitation

6.1 Theoretical implication

The research added to the TAM model by incorporating Awareness in the model. Also, the finding reveals that TAM variables have a substantial influence on the individual behavioral intention to accept eNaira concept. Likewise, awareness of eNaira have significant roles in influencing the intention of Micro enterprise's owners to accept the new technological innovation. The results finding added to the literature by highlighting the roles of awareness on micro enterprise's behavioral intention especially in the area of technological innovation.

6.2 Practical implication

On the other hand, in terms of the contribution to the practitioners, the study highlighted the determinant factors of business owners' intention to accept eNaira as an alternative means of business transaction. It is important for the CBN to understand the role of awareness in influencing individual to accept eNaira. Because the awareness on eNaira has positive role in business owner behavioral intention, thus, the CBN should embark on media program to increase the eNaira awareness among business owners.

6.3 Managerial implication

The findings indicate that owners of micro enterprises in Jigawa State has the intention to adopt eNaira as their means of financial transaction. The main regulatory implications are linked with the security challenges relating to the online activities in Nigeria as revealed by many authors (kazaure at el., 2020; Olaleye, 2014; Apululatham and Moreton, 2013). The Nigerian government should establish cyber security rules and regulations, which will protect the user of eNaira. In addition, the CBN should increase awareness of eNaira among the business owners through media programs; the message should focus on the advantage the business owners will get when using eNaira as medium of exchange.

7. Limitation and Future Research

The paper has some limitations. It is noted that the study was conducted in the one states of Nigeria. Therefore, the results of the research may not represent business owners from other Nigerian state. Thus, there is a need to replicate the research in other state to validate the finding. It is recommended that future study should extend into other state. Further, the research adopts the cross-sectional technique in which the data collected at a limited time. Therefore, it is recommended for future study to use a longitudinal approach. Moreover, the future research should add a moderator or variables such social media, size of the business and internet connectivity in the present study model.

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