

RESEARCH ARTICLE

Determinants of intention to adopt the Nigerian digital currency, the eNaira, for financial transactions in Abuja, Nigeria

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ABSTRACT - Nigeria became the first African country to introduce a national digital currency, the eNaira, on October 25, 2021. The primary objectives were to decrease the number of unbanked Nigerians and enhance online transaction efficiency from commercial banks. However, the Central Bank of Nigeria has noted a very low adoption rate, with only 700,000 downloads of the eNaira wallet out of a population exceeding 250 million. This research seeks to identify the key variables influencing eNaira adoption in Nigeria and to develop a model that is both valid and reliable based on these factors. A quantitative research method was utilized, involving an online survey of 120 undergraduate and postgraduate students in Abuja, Nigeria. The data were analyzed using SPSS and Smart PLS tools. The findings revealed that performance expectancy, effort expectancy, social influence, trust and government regulatory positively affect the intention to adopt the eNaira digital currency. However, facilitating condition was not found to positively relate to intention to adopt the eNaira digital currency among the citizens. This study adds to the existing body of knowledge by pinpointing the factors that influence the adoption of the eNaira in Nigeria. It also extends the Unified Theory of Acceptance and Use of Technology (UTAUT) model by incorporating new variables such as trust, government regulatory, and technology awareness. The findings offer practical recommendations for policymakers and industry stakeholders in Nigeria and other developing nations considering similar digital currency initiatives.

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1. INTRODUCTION

Cryptocurrencies, due to their cryptographic nature, promote illegal activities such as money laundering, purchasing weapons, and tax evasion (He & Fund, 2024). Consequently, the adoption of cryptocurrencies has sparked debates among nations. Several countries, including Nigeria, have prohibited their use, citing concerns about security and untraceable illicit transactions on cryptocurrency platforms (Ozili, 2023b). The Central Bank of Nigeria highlighted that a significant portion of Nigerians lack bank accounts. Out of the country's over 200 million population, only 55 million have active accounts, with about 24% of these being inactive (CBN, 2021). This high rate of unbanked individuals is attributed to factors like insufficient bank branches, inadequate online transaction capabilities, infrastructure challenges, and limited financial literacy in rural areas (Chidi, 2023). To tackle these issues, the Nigerian government launched a national digital currency on October 25, 2021, known as the eNaira (Georgieva, 2023). Designed to be equivalent to the physical Naira, Nigeria's official currency, the eNaira enables financial transactions even for those without bank accounts. Users can set up an eNaira wallet using their phone numbers at no cost and conduct transactions free of charge (Ozili & Alonso, 2024).

Digital currencies, unlike cryptocurrencies, are typically issued, managed, controlled, and regulated by governments or financial institutions (Ozili, 2023c). They are created by central banks to facilitate faster and more efficient transactions, provide access to financial services for the unbanked or underbanked populations, and enable central banks to exert better control over the money supply and implement monetary policy more effectively (Ozili & Alonso, 2024). According to a market estimate from early 2023, "Global digital currency platform transactions increased from \$6.09 billion in 2022 to \$6.9 billion in 2023, with a compound annual growth rate (CAGR) of 13.2%, and digital banking platform market is projected to grow to \$11.34 billion by 2027, also at a CAGR of 13.2%" (Omotubora, 2024). Transactions processed through central bank digital currencies are expected to elevate by 260,000 per cent between 2023 and 2030 (Milosavljević et al., 2023). The advent of digital currencies has significantly influenced the global financial sector, including Nigeria. The introduction of the naira is poised to enable numerous individuals without bank accounts to conduct online transactions using their mobile phone numbers (Obiora et al., 2023). This initiative is anticipated to decrease the number of unbanked citizens and enhance transaction processing speed by commercial banks. Implementation of the naira is expected to reduce corruption by eliminating physical cash transactions and address the issue of financial inclusion in rural areas where bank branches are scarce (Ozili & Alonso, 2024).

Few studies on the eNaira have focused specifically on certain regions or states within Nigeria, such as Kano State and Lagos State. For instance, Balarabe and Polytechnic (2024) conducted "The Assessment of People's Perception of

eNaira in Kano Municipal" and Akindipe et al. (2023) explored "Awareness and Understanding of eNaira in Nigeria." Additionally, Ozili and Alonso (2024) researched selected organizations in western Nigeria. Consequently, there is a gap in scope, indicating the need for studies beyond these regions and from different perspectives. According to Pandey et al. (2022), Abuja, Nigeria, is technologically advanced with a high rate of internet penetration, suggesting it as an ideal research setting for the present study. Reviewing further literature on eNaira adoption in Nigeria reveals a scarcity of studies on this topic in Africa compared to western countries, where technology adoption is relatively high (Irimia-Diéguez et al., 2023; Ozili, 2023a; Salgado & Sousa, 2022). This lack of research makes it difficult for policymakers and academics to understand the current state of digital currency in Africa, especially in Nigeria. This study aims to fill this gap by contributing literature that policymakers and academics can use for further research to improve technology adoption. There is also a need to understand the reasons behind the low adoption of eNaira, as noted by the Central Bank of Nigeria. This research will investigate the key factors influencing the adoption of the eNaira digital currency among Nigerian citizens. Most of the existing literature, including studies by Onumoh et al. (2023), and Ozil and Alonso (2024), predominantly focuses on the organizational and governmental perspectives, even when considering the individual context. There is a need for research that examines the adoption of the eNaira from the individual's perspective to better understand its adoption among the country's citizens. This study aims to address this gap by proposing a solution to the ongoing issue of eNaira adoption, ultimately developing a framework that can be utilized in the future.

Researchers globally have suggested that behavioral intention plays a crucial role in the adoption of new technologies (Almajali et al., 2022; Gupta et al., 2023; Mostafa & Beshir, 2023). Moreover, literature from various contexts has identified factors that may contribute to poor technology adoption. These factors include a lack of awareness about the technology among citizens (Aydin et al., 2022), which leads users to prefer traditional or older systems. Scholars have also proposed that government policies (Alomari & Abdullah, 2023a) and lack of trust in the technology can hinder adoption (Rahman & Rahman, 2023). Additionally, research indicates that users are influenced by the opinions of individuals such as parents, teachers, colleagues, or neighbors to whom they are closely connected, affecting their adoption intentions (Chao, 2019). Factors like effort expectancy (Farhana & Muthaiyah, 2022) and infrastructure readiness have also been identified as critical in technology adoption (Mohammadi & Yadegari, 2023). These factors will serve as a basis for developing hypotheses on the determinants of eNaira digital currency adoption, which will be empirically tested. The research will address two primary questions: 1. What are the key factors influencing the adoption of the eNaira digital currency among citizens in Nigeria, and how can these factors enhance adoption? 2. What relationships exist between these determinants and the intention to adopt the eNaira digital currency in Nigeria? The research is structured into six sections: Section one introduces the background of the study. Section two reviews existing literature and conceptual framework. Section three discusses the research methodology, and section four presents the analysis of results, followed by discussions in section five. The research concludes with section six, which outlines conclusions and directions for future studies.

2. RELATED WORK

The adoption of digital currencies poses challenges, particularly in the necessity to educate and raise public awareness about the reasons for adopting them (Adam & Ahmad, 2024). Previous studies across various contexts have identified key factors influencing technology adoption, including performance expectancy (Chen et al., 2021), effort expectancy (Bouramdane, 2023), trust (Rahman & Rahman, 2023), social influence, facilitative conditions, and government regulatory (Dabbous et al., 2022). These findings can assist policymakers and stakeholders in understanding the factors that drive digital currency adoption and in formulating strategies to encourage adoption among citizens. Typically, these variables are incorporated into theoretical frameworks to evaluate their impact on the intention to adopt specific technologies in diverse settings (Lean et al., 2009). The following subsections will review the variables used in the conceptual framework of this research.

Performance Expectancy: This refers to the belief that using the eNaira will positively impact the daily transactions conducted by individuals. This variable has been examined in various contexts, as evidenced by studies conducted by Chao (2019) in China, Alomari (2023) in Saudi Arabia, and Ramaya (2018) in Malaysia. These studies consistently demonstrated a positive relationship between performance expectancy and the intention to adopt technology among citizens. Therefore, the hypothesis is formulated as follows: **H1:** Performance expectancy positively relates to the behavioral intention to adopt the eNaira digital currency.

Effort Expectancy: This refers to the belief that the eNaira digital currency platform is easy to use and understand for conducting daily transactions among Nigerian citizens. Existing literature has reported a positive correlation between effort expectancy and the intention to adopt technology across various backgrounds. Examples include studies by Marzuk (2024) in Nigeria, (Memon et al., 2019) in Malaysia, and (Alomari & Abdullah, 2023a). The variable will be hypothesized as follows: **H2:** effort expectancy positively relates to the behavioral intention to adopt the eNaira digital currency.

Social Influence: This refers to the belief that citizens are influenced by the actions, adoptions, and endorsements of their close associates, such as parents, teachers, friends, and mentors. Previous studies, such as those conducted by (Baba-Nalikant et al., 2023) and (Lee et al., 2023), have consistently shown a positive relationship in this regard. Therefore, the following hypothesis will be tested: **H3:** social influence positively relates to the behavioral intention to adopt the eNaira digital currency among citizens in Nigeria.

Facilitating Condition: This variable examines the technological infrastructure supporting the adoption of the eNaira digital currency among citizens, including factors like internet availability, the user-friendliness of the eNaira wallet for transactions, and user support. Existing literature consistently shows a positive relationship between facilitating conditions and the intention to adopt technology across diverse contexts. As evidenced by (Jain & Chowdhary, 2021; Jena, 2022) Therefore, the hypothesis for this variable is formulated as follows: **H4:** Facilitating condition positively relates to the behavioral intention to adopt the eNaira digital currency among citizens in Nigeria.

Trust: This refers to the extent to which citizens believe that the eNaira digital currency is free from risks and are confident that their personal data and transactions conducted are secure. Existing literature has consistently highlighted the influence of trust on intention to adopt in numerous studies (Chao, 2019; Fadli et al., 2023; Wei et al., 2010). Therefore, the hypothesis is formulated as follows: **H5:** Trust positively relates to the behavioral intention to adopt the eNaira digital currency among citizens in Nigeria.

Government Regulatory: This variable is concerned with the influence of government policies and regulatory in impacting the citizens to adopt the eNaira digital currency. The variables have been reported to have a positive relationship with the intention to adopt technologies from various perspectives (Abdullahi et al., 2022; Alomari & Abdullah, 2023b). This hypothesis is hereby formulated: **H6:** Government regulatory positively relates to the behavioral intention to adopt the eNaira digital currency among citizens in Nigeria.

Based on the literature review, the proposed conceptual framework extends these identified variables as recommended by Baron and Kenny (1986) for theory testing. The framework adopts the Unified Theory of Adoption and Use of Technology (UTAUT) model due to its focus on individual perspectives and integration of variables from various information system models (Venkatesh, 2022). Moreover, the UTAUT model has been validated and proven reliable across different contexts of technology adoption. Irrelevant variables such as age, gender, and voluntariness of use will be excluded from the model, as they do not significantly influence adoption among students who share similar academic pursuits. Therefore, the proposed conceptual framework is presented in Figure 1 below:

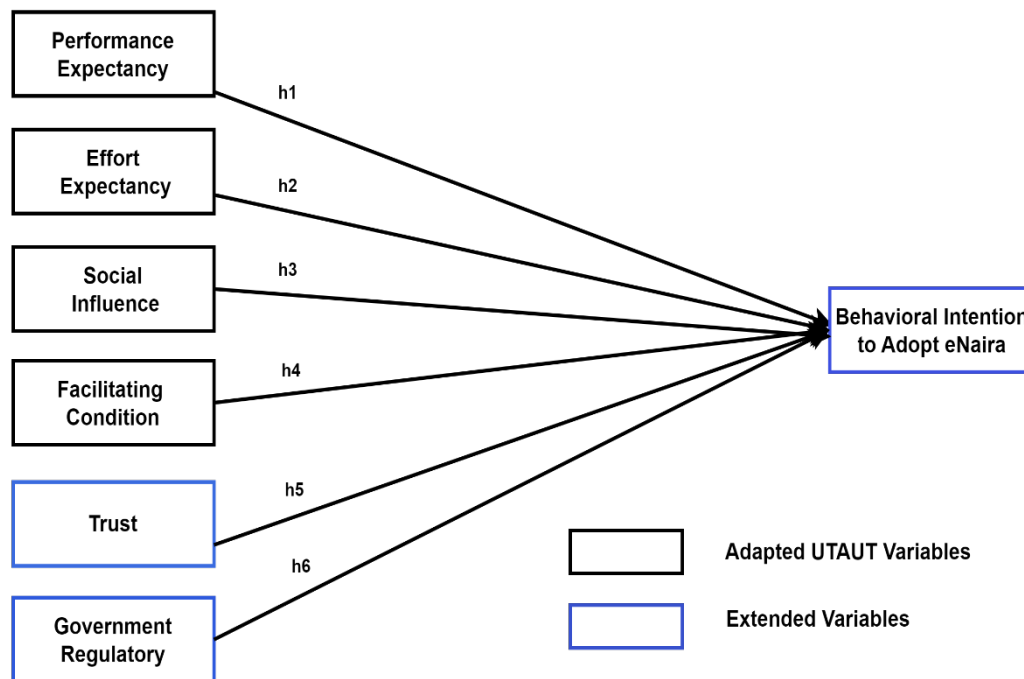


Figure 1. Conceptual framework of the research

3. METHODOLOGY

The research method adopted is quantitative, aiming to quantify the relationships among variables and extract insights from the findings. The research setting is Abuja, Nigeria. Abuja was selected due to its advanced technological infrastructure, such as internet access, and a high rate of online transactions (Garba et al., 2022). The adoption rate of mobile applications is notably higher in Abuja compared to other regions in Nigeria (Omotubora, 2024). This makes Abuja an ideal location for researching the adoption of the eNaira digital currency, as residents have a high level of technological experience, enabling them to respond accurately to the proposed questionnaire.

It is reported that the majority of internet users in Nigeria are students (Georgieva, 2023). This group is the appropriate population for the research respondents. Thus, the study focuses on undergraduate and postgraduate students in Abuja, Nigeria. Five accredited universities were selected: Nile University, Baze University, University of Abuja, National Open University of Nigeria, and African University of Science and Technology. These universities were chosen based on their accreditation status and level of technological advancement. The G*Power tool was used to determine the minimum

sample size required for data collection, which was 74 (Memon et al., 2020). However, to ensure robust analysis, 120 cleaned datasets were used. The purposive non-probability sampling technique was employed for respondent selection due to the absence of a definitive list of respondents. The questionnaire was administered online via WhatsApp and email addresses because of the dispersed nature of the respondents. SPSS and PLS-SEM tools were used for data analysis.

4. RESULTS AND DISCUSSIONS

The results of the analysis will be presented in two parts: an assessment of measurement models and an assessment of structural models, as detailed in the subsections below.

4.1 Assessment of Measurement Model

This section aims to assess the reliability and validity of the measurement instrument. The evaluation will cover internal consistency, indicator reliability, convergent validity, and discriminant validity. Internal consistency will be measured using composite reliability (CR), while outer loadings will evaluate indicator reliability. Convergent validity will be assessed through average variance extracted (AVE), and discriminant validity will be determined using the HTMT criteria (Hair et al., 2019). Table 1 below shows the results of the measurement model.

Table 1. Assessment of the measurement model

Constructs	Items	Loadings	AVE	CR
Effort Expectancy	EE3	0.712	0.507	0.953
	EE4	0.797		
	EE5	0.616		
Facilitating Condition	FC1	0.833	0.524	0.844
	FC2	0.814		
	FC3	0.703		
	FC4	0.625		
	FC5	0.616		
Government Regulatory	GR1	0.688	0.616	0.889
	GR2	0.856		
	GR3	0.828		
	GR4	0.785		
	GR5	0.757		
Performance Expectancy	PE3	0.759	0.654	0.849
	PE4	0.871		
	PE5	0.791		
Social Influence	SI1	0.783	0.605	0.884
	SI2	0.827		
	SI3	0.768		
	SI4	0.792		
	SI5	0.717		
Behavioural Intention	BI1	0.817	0.514	0.839
	BI2	0.787		
	BI3	0.719		
	BI4	0.624		
	BI5	0.615		
Trust	TR1	0.715	0.604	0.884
	TR2	0.761		
	TR3	0.807		
	TR4	0.828		
	TR5	0.770		

Note: EE_1, EE_2, PE_1 and PE_2 was deleted because loadings were <0.5

Table 1 summarizes the measurement model. Acceptable loadings are those above 0.5, while average variance extracted (AVE) values of 0.5 or higher are generally considered good (Hair et al., 2011; Memon et al., 2019). These values suggest that a significant proportion of the variance in the construct is accounted for by its indicators. Low AVE

values might indicate that the construct is poorly defined by its indicators, which could signal a lack of convergent validity (Memon et al., 2019). Composite reliability (CR) values greater than 0.7 or 0.8 are deemed acceptable, reflecting strong internal consistency. High CR values suggest that the latent construct is measured reliably by its indicators, whereas lower CR values may reveal inconsistencies in measurement, highlighting potential reliability issues (Ramaya, 2018). The results demonstrate that the variables are reliable and valid, as all loadings and AVEs are above the recommended 0.5 threshold, and CR values exceed 0.8. Table 2 will present the assessment of discriminant validity using the HTMT criterion.

Table 2. Discriminant validity

	BI	EE	FC	GR	PE	SI	TR
BI	0.718						
EE	0.491	0.711					
FC	0.257	0.331	0.725				
GR	0.214	0.451	0.599	0.784			
PE	0.423	0.544	0.176	0.315	0.808		
SI	0.251	0.452	0.349	0.312	0.346	0.778	
TR	0.265	0.241	0.189	0.240	0.305	0.694	0.777

Note: BI = Behavioral Intention, EE = Effort Expectancy, FC = Facilitating Condition, GR = Government Regulatory, PE = Performance Expectancy, SI = Social Influence, TR = Trust and diagonal values are the square root of AVE highlighted in bold and off-diagonal are correlations between the constructs.

If the square root of the AVE for each construct exceeds the correlation between that construct and any other construct, it indicates that the constructs have discriminant validity. This means the measures are effectively capturing distinct constructs. Table 2 confirms this, suggesting that the measurement instruments are robust. In summary, this section has provided a thorough assessment of the measurement items. According to the criteria set by Hair et al. (2014), the AVEs, CR, and discriminant validity all meet the required thresholds, affirming the model's validity and reliability. The next section will address the evaluation of the structural model in Table 3.

4.2 Assessment of Structural Model

In accordance with the guidelines provided by Henseler et al. (2014), this report will present the path coefficients, standard errors, t-values, and p-values for the structural model, utilizing a 10,000-sample bootstrapping procedure as recommended by Ramayah et al. (2018). Table 3 below presents the structural model assessment.

Table 3. Assessment of structural model

Hypothesis	Relationship	Standard Beta	Standard Error	T-Value	P-Value	Effect Size F2	Supported	R ²	Q ²
H1	EE → BI	0.302	0.060	5.033	0.000	0.08	Yes	0.390	0.426
H2	SI → BI	0.049	0.012	4.083	0.041	0.31	Yes		
H3	TR → BI	0.303	0.063	4.809	0.013	0.23	Yes		
H4	FC → BI	0.162	0.122	1.327	0.321	0.23	No		
H5	GR → BI	0.119	0.067	1.776	0.031	0.36	Yes		
H6	PE → BI	0.235	0.095	2.475	0.005	0.38	Yes		

According to Cohan (1989), R² values of 0.02, 0.13, and 0.26 signify weak, moderate, and substantial effects, respectively. In this study, the R² value of 0.390 indicates a substantial effect. The significance of the hypothesized directional relationships was evaluated using bootstrapping with a one-tailed t-test, employing 10,000 resamples as recommended by Henseler et al. (2016). A p-value threshold of <0.05 is used to determine hypothesis significance. As shown in Table 3, hypotheses H1, H2, H3, H5 and H6 are supported, with p-values below 0.05. Conversely, hypothesis H4 facilitating condition positively relates to intention to adopt eNaira was not supported because their p-values are above 0.05, in line with the standards set by Hair et al. (2019), Dijkstra & Henseler (2015), and Memon et al. (2019).

5. DISCUSSIONS

The analysis results show a positive relationship between the determinants and the intention to adopt the eNaira digital currency, as hypothesised, except for the relationship between facilitating conditions and the intention to adopt. This unsupported hypothesis could be due to poor technological infrastructure, such as the internet, electricity, and sufficient user support. This result is consistent with findings by Mostafa and Beshir (2023) on the behavioral intention to use Bitcoin and Malarvizhi et al. (2022) conducted in India. Performance expectancy is positively related to the behavioral intention to adopt the eNaira digital currency. This indicates that citizens are more likely to adopt the eNaira when they perceive positive outcomes from using it. This result aligns with research by Chen et al. (2021) on the determinants of

customer support intention to adopt and Ali et al. (2023) on understanding the key determinants of intention to adopt. Effort expectancy also shows a positive relationship with the intention to adopt the eNaira among citizens. This suggests that citizens are more inclined to use eNaira due to its simplicity and user-friendliness in conducting transactions online, compared to the challenges faced with online transactions through commercial banks. The results are consistent with those of Alomari and Abdullah (2023) on the intention to adopt cryptocurrencies in Jordan and Abdullahi et al. (2022) on the determinants of Facebook adoption in Nigeria.

Social influence also indicates a positive relationship with the intention to adopt eNaira among citizens in Nigeria. This reveals that citizens' intention to adopt the eNaira is influenced by the endorsements of their close associates. Therefore, publishing positive reviews by early users of the naira will improve the intention to adopt it among citizens. This result aligns with the findings of Hammouri et al. (2021) on the determinants of continuous intention to use mobile applications and Akanferi et al. (2022) on the adoption of mobile payments. Trust was found to relate positively to the behavioral intention to adopt the eNaira digital currency. Citizens are more likely to adopt the eNaira when they are confident that their data and transactions are safe. These results are consistent with those of Fadli et al. (2023) on the investigation of factors influencing the adoption of mobile payments and Alsmadi et al. (2022) on the intention to use fintech applications in Jordan.

Government regulation was found to positively relate to the intention to adopt the eNaira digital currency among citizens in Nigeria. The better the policies set for the eNaira digital currency, the higher the chances of its adoption by citizens. This result is in agreement with the findings by Mohtaramzadeh et al. (2018) and Rahmani et al. (2023). The results of this analysis have theoretically impacted the strengthening of the Unified Theory of Adoption and Use of Technology by developing a novel conceptual framework that incorporates the conceptual variables of eNaira adoption in Nigeria, extending variables such as trust and government regulatory. This developed model can be used for future research in any developing country. Practically, the insights on the reasons for the supported and unsupported hypotheses could be used by policymakers to enhance the adoption of the eNaira among citizens. For example, the results regarding facilitating conditions highlight the need to improve internet services, electrical power supply, and customer support to increase eNaira adoption among citizens.

6. CONCLUSION

The research identifies a notable gap in the literature regarding digital currency adoption in Nigeria and other non-Western countries compared to Western nations. It introduces a new conceptual framework to understand the adoption of Nigeria's eNaira digital currency, addressing this gap. Based on the findings, the key factors influencing the intention to adopt the eNaira include performance expectancy, effort expectancy, social influence, trust, government regulatory, and behavioral intention. This framework can be applied to future research on technology adoption in other developing countries like Nigeria. Recommendations include empirically testing the framework using other tools such as CB-SEM, expanding the geographical scope of studies beyond Abuja and student populations, and promoting global collaboration among researchers. The study suggests government initiatives to mandate eNaira usage to encourage adoption among citizens. It examines variables within a specific context, which may limit the broader applicability of the findings. Future research should explore different models and contexts to assess the predictive power of the developed framework. The research also highlights infrastructural challenges, such as inadequate access to electricity and internet connectivity in rural areas, along with low levels of financial literacy, as significant barriers to digital currency adoption in Africa. Policymakers and the government can use these findings to address the low adoption rate of the eNaira digital currency in Nigeria.

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AUTHOR(S) CONTRIBUTION

A Marzuk (Conceptualization; Formal analysis; Visualisation; Supervision)
N L Abdullah (Methodology; Data curation; Writing - original draft; Resources)

AVAILABILITY OF DATA AND MATERIALS

The data supporting this study's findings are available on request from the corresponding author.

ETHICS STATEMENT

Not applicable.

CONFLICT OF INTEREST

The authors declare no conflicts of interest to report regarding the present study.

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