



Cryptocurrency Acceptance Across Divergent Economies: A Comparative Study of Bitcoin Adoption Determinants in Saudi Arabia and Nigeria

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DOI: [10.5281/zenodo.22877946](https://doi.org/10.5281/zenodo.22877946)

Submission Date: 26 July 2026 | Published Date: 21 Sept. 2026

Abstract

Cryptocurrency adoption is accelerating across the globe, yet the forces driving it differ sharply depending on a country's income level, regulatory posture, and macroeconomic condition. Saudi Arabia and Nigeria represent two of the most instructive, and most divergent, cases in this respect. Saudi Arabia is a high-income, oil-based Gulf economy in which cryptocurrency ownership has grown alongside a state-led digital-transformation agenda under Vision 2030, while regulators remain cautious. Nigeria, by contrast, is Africa's most populous, lower-middle-income economy, where cryptocurrency, particularly stablecoins, has been adopted from the bottom up as a practical hedge against a rapidly depreciating naira, chronic inflation, and limited access to foreign exchange, despite a regulatory history that swung from an outright banking ban in 2021 to formal recognition of digital assets as securities in 2025. Nigeria ranked second globally in on-chain crypto transaction value in 2024, while Saudi ownership levels, though substantial, remain driven by a very different set of institutional and psychological factors. This paper proposes an integrated, cross-national model that extends the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) with trust, perceived risk, technology awareness, and government support to explain, and compare, Bitcoin adoption intention in the two countries. Drawing on more than fifty studies published between 2016 and 2026, the paper develops eight core hypotheses linking these constructs to behavioural intention, together with a moderation hypothesis proposing that national context, operationalised as Saudi Arabia versus Nigeria, systematically alters the strength of these relationships. A quantitative, cross-national survey design using multi-group Partial Least Squares Structural Equation Modelling (PLS-SEM) is outlined to test the model among matched samples of cryptocurrency users and non-users in both countries. The resulting framework is expected to extend technology-acceptance theory beyond single-country designs and to offer policymakers and fintech providers in both a wealthy, state-directed Gulf economy and a large, necessity-driven Sub-Saharan African economy an evidence-based, comparative account of what actually drives cryptocurrency adoption.

Keywords: Cryptocurrency; Bitcoin; Comparative Study; Technology Acceptance Model; UTAUT; Saudi Arabia; Nigeria; Trust; Perceived Risk.

1. INTRODUCTION

Cryptocurrency has moved from a niche technical curiosity to a mainstream financial instrument used for payments, remittances, savings, and speculative investment across both advanced and emerging economies. Bitcoin, the first and still most widely held cryptocurrency, sits at the centre of this shift, built on a decentralised, cryptographically secured ledger that dispenses with the need for a central financial intermediary (Carrick, 2016; Hayes, 2016). Yet the reasons people in different countries choose to adopt, or avoid, cryptocurrency vary enormously, shaped by income levels, currency stability, financial-system maturity, and the posture that national regulators adopt toward digital assets (Bhimani et al., 2022; Fabian et al., 2018). Comparing countries that sit at opposite ends of these dimensions offers a particularly powerful lens for testing whether technology-acceptance theory, developed largely in Western and East Asian contexts, generalises to structurally different emerging economies, and if not, which contextual factors explain the difference.

Saudi Arabia and Nigeria constitute an unusually instructive comparison. Saudi Arabia is a high-income, oil-based Gulf economy of roughly 36 million people in which cryptocurrency ownership, at an estimated 14 to 15 percent of the population, is now broadly comparable to several advanced economies (Triple-A, 2024; Hashed Abdullah, 2026). This growth is unfolding within a state-led digital-transformation programme, Vision 2030, that has encouraged fintech innovation, regulatory sandboxes, and central-bank digital-currency pilots such as Project Aber and Saudi Arabia's participation in the Bank for International Settlements' mBridge initiative, even as the Saudi Central Bank (SAMA) maintains a cautious, still-evolving regulatory posture toward privately issued cryptocurrencies (Benhamlaoui, 2025; Carnegie Endowment for International Peace, 2025). Nigeria, by contrast, is Africa's most populous country, with roughly 223 million people and a considerably lower income level, yet it ranked second globally, behind only India, in on-chain cryptocurrency transaction value in the twelve months to mid-2024, processing an estimated USD 59 billion, with 85 percent of that flow occurring in transfers under USD 1 million, a signature of grassroots, retail-driven rather than institutional adoption (Cornell University Emerging Markets Institute, 2025). Nigerian adoption has been propelled less by state policy than by necessity: chronic inflation, a naira that has lost more than three-quarters of its value against the US dollar since 2016, and persistent gaps in access to foreign exchange and formal banking have pushed millions of Nigerians toward stablecoins and peer-to-peer (P2P) cryptocurrency trading as a practical store of value and remittance channel (Breet, 2026; Cornell University Emerging Markets Institute, 2025). Nigeria's regulatory history has also been markedly more volatile than Saudi Arabia's, moving from a 2017 central-bank warning, to an outright 2021 ban on banks facilitating cryptocurrency transactions, to a reversal of that ban in December 2023, and finally to the formal recognition of digital assets as securities under the 2025 Investment and Securities Act (Cornell University Emerging Markets Institute, 2025; Monica, 2026).

These two trajectories, a wealthy, centrally governed Gulf state cultivating cryptocurrency adoption from the top down as part of a diversification strategy, and a large, lower-income Sub-Saharan economy in which adoption has surged from the bottom up despite regulatory hostility, represent two structurally distinct pathways to the same outcome. Existing empirical research, however, has almost never compared them directly. Saudi-focused studies have extended UTAUT with constructs such as technology awareness and government support (Alomari & Abdullah, 2023; Hashed Abdullah, 2026), while a growing body of Nigerian research has emphasised emotional and financial perceived value, trust, and the practical, necessity-driven character of adoption (Abdurrahman et al., 2024; Ebizie et al., 2022). A small number of cross-national UTAUT studies exist, most notably a recent comparison of Ghana, Nigeria, and Vietnam, which found that the relative importance of performance expectancy, effort expectancy, and financial literacy differed significantly across the three countries even though all three are broadly classified as emerging economies (Nwachukwu, 2026). No identified study, however, has directly compared a high-income Gulf oil economy with a large, currency-crisis-driven Sub-Saharan African economy within a single, theoretically integrated model, despite the pair representing two of the most consequential and contrasting cryptocurrency markets in the Global South.

This paper addresses that gap by (i) synthesising the technology-acceptance and cryptocurrency-adoption literature relevant to both Saudi Arabia and Nigeria, (ii) proposing an integrated conceptual model that extends TAM and UTAUT with trust, perceived risk, technology awareness, and government support, (iii) developing eight core hypotheses together with a national-context moderation hypothesis, and (iv) outlining a rigorous, comparative quantitative methodology, based on multi-group PLS-SEM, for testing the model among matched samples of Saudi and Nigerian respondents. In doing so, the paper contributes to technology-acceptance theory by testing its portability across two structurally different emerging-market archetypes, and offers policymakers, regulators, and fintech providers in both countries an evidence-based, comparative account of what actually drives cryptocurrency adoption in their respective markets. The remainder of the paper proceeds as follows. Section 2 reviews the literature on technology acceptance and cryptocurrency adoption in Saudi Arabia and Nigeria and develops the comparative research gap. Section 3 presents the conceptual model and hypotheses. Section 4 details the proposed comparative methodology. Section 5 discusses expected theoretical and practical contributions. Section 6 outlines limitations and future research, and Section 7 concludes.

2. LITERATURE REVIEW

2.1 Cryptocurrency and Blockchain: Conceptual Background

A cryptocurrency is a digital medium of exchange secured through cryptographic techniques and recorded on a distributed ledger, or blockchain, maintained collectively by a network of participants rather than a single central authority. This architecture removes the need for intermediaries such as banks or clearing houses, reduces transaction costs, and enables near-instantaneous cross-border transfers, while introducing new categories of risk related to price volatility, cybersecurity, and regulatory uncertainty (Carrick, 2016; Hayes, 2016). Bitcoin remains the most widely held cryptocurrency, although thousands of alternative coins and tokens, together with the broader decentralised-finance (DeFi) ecosystem, have since emerged (Oxford Business Group, 2024). Because cryptocurrency functions simultaneously as a payment technology, an investment asset, and an inflation hedge, and because its meaning to users differs sharply by economic context, as the contrast between Saudi Arabia and Nigeria illustrates, its adoption cannot be

explained by any single theoretical lens; the literature instead draws on several complementary streams of technology-acceptance and risk theory, reviewed below.

2.2 Technology Acceptance Theories

The dominant theoretical foundation for cryptocurrency-adoption research is the family of technology-acceptance models developed in information systems research. The Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use jointly determine an individual's attitude toward, and intention to use, a new technology (Davis, 1989). The Theory of Planned Behaviour (TPB) adds subjective norms and perceived behavioural control as further antecedents (Ajzen, 1991). The Unified Theory of Acceptance and Use of Technology (UTAUT) synthesised these and six other prior models into four core determinants of behavioural intention: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003), later extended by UTAUT2 with hedonic motivation, price value, and habit for consumer contexts (Venkatesh et al., 2012). Because cryptocurrency is a voluntary, high-uncertainty innovation, researchers have further drawn on risk theory, which frames perceived risk as a multidimensional barrier to adoption (Bauer, 1960; Featherman & Pavlou, 2003), Diffusion of Innovation Theory, which identifies awareness as the necessary first stage preceding adoption (Rogers, 2003), and Institutional Theory, which explains how regulatory and normative structures confer legitimacy on emerging technologies (DiMaggio & Powell, 1983). These theoretical traditions, applied and cross-nationally compared in this paper, provide the building blocks for the integrated model developed in Section 3.

2.3 Cryptocurrency Adoption in Saudi Arabia

Research specifically situated in Saudi Arabia has grown markedly since 2022. Almarashdeh et al. (2018) provided one of the earliest empirical accounts, concluding that non-adoption of Bitcoin among Saudi users stemmed primarily from limited awareness and unresolved concerns about legitimacy and security. Alomari and Abdullah (2023) applied a dual structural-equation-modelling and artificial-neural-network approach to 344 Saudi university students, extending UTAUT with awareness and technology-readiness constructs. Most recently, Hashed Abdullah (2026) surveyed 412 Saudi respondents and extended UTAUT with perceived risk, technology awareness, and government support, reporting that performance expectancy, effort expectancy, technology awareness, and government support each positively predict cryptocurrency acceptance, while perceived risk did not exert the strong deterrent effect that earlier technology-acceptance research had assumed, and deliberately excluded social influence and facilitating conditions on the grounds that adoption in Saudi Arabia is a largely voluntary, individually driven decision. Across this literature, government support and institutional legitimacy consistently emerge as salient, reflecting Saudi Arabia's centrally governed, state-directed approach to digital-asset policy under Vision 2030 (Benhamlaoui, 2025).

2.4 Cryptocurrency Adoption in Nigeria

Nigerian cryptocurrency-adoption research has expanded rapidly alongside the country's real-world adoption boom, and its findings differ from the Saudi literature in instructive ways. Ebizie et al. (2022) applied UTAUT to Nigerian university fintech entrepreneurs and found that emotional satisfaction, combined with performance and effort expectancy, significantly predicted adoption intention, while other Nigerian UTAUT-based studies report mixed or non-significant effects for social influence and facilitating conditions, underscoring an inconsistency in the local literature that parallels debates in the Saudi context (Bashir & Muhammad, 2023; Chike & Ogba, 2023). Using structural equation modelling on a sample of 417 participants drawn from Nigeria's six geopolitical zones, Abdurrahman et al. (2024) found that emotional perceived value and trust positively predicted adoption intention, while, notably, financial perceived value exerted a negative effect, a counter-intuitive finding the authors attribute to Nigerians increasingly viewing cryptocurrency as a necessity-driven hedge against currency instability rather than a purely speculative financial opportunity. Onyekwere et al. (2023) similarly examined the sustainability of Bitcoin and blockchain adoption in Nigeria and highlighted the centrality of trust and perceived usefulness in a context of limited formal regulation. Complementing these individual-level studies, industry data confirm the scale of Nigeria's bottom-up adoption: Nigeria processed an estimated USD 59 billion in on-chain cryptocurrency value between July 2023 and June 2024, ranking second globally behind India, with stablecoins accounting for 43 percent of sub-USD-1-million retail transactions as Nigerians sought to hedge against naira depreciation (Breet, 2026). This necessity-driven adoption pattern occurred despite, rather than because of, government policy for much of the period studied, in sharp contrast to the state-encouraged adoption trajectory observed in Saudi Arabia.

2.5 Comparative and Cross-National Evidence

Direct cross-national tests of cryptocurrency-adoption theory remain rare, but the limited evidence available reinforces the case for comparative analysis. In one of the few multi-country UTAUT-based studies, Nwachukwu (2026) compared Ghana, Nigeria, and Vietnam and found that performance expectancy was the strongest, and only universally significant, predictor of adoption intention across all three countries, but that effort expectancy was significant only in Nigeria, financial literacy was significant only in Ghana, and perceived risk and social influence were not significant predictors in any of the three countries, a pattern the authors attribute to differing levels of financial-market maturity and regulatory

clarity across even superficially similar emerging economies. This finding is instructive for the present comparison: if adoption determinants vary meaningfully even among three emerging economies of broadly comparable income levels, the contrast between a high-income Gulf oil economy and a lower-income, currency-crisis-driven Sub-Saharan African economy is likely to be considerably starker. Table 1 summarises the key structural differences between Saudi Arabia and Nigeria that motivate the comparative hypotheses developed in Section 3.

Table 1. Comparative national context: Saudi Arabia vs. Nigeria

Indicator	Saudi Arabia	Nigeria
Population (approx.)	36 million	223 million
Income classification	High income (oil-based)	Lower-middle income
Estimated crypto ownership	~14-15% of population	~10-12% penetration; ~22-26 million users
2024 global adoption rank	Leading MENA market	2nd globally (on-chain value)
Primary adoption driver	State-led digital transformation (Vision 2030)	Currency depreciation, inflation, remittances
Dominant use case	Investment / store of value	P2P trading, stablecoin savings, remittances
Regulatory trajectory	Cautious, gradually formalising (SAMA-led)	Ban (2021) to reversal (2023) to securities law (2025)
Key regulator(s)	Saudi Central Bank (SAMA), CMA	Central Bank of Nigeria (CBN), SEC

Sources: Triple-A (2024); Hashed Abdullah (2026); Cornell University Emerging Markets Institute (2025); Breet (2026); Benhamlaoui (2025); Monica (2026).

2.6 Research Gap

Three gaps emerge from this review. First, although cryptocurrency-adoption research has grown substantially in both Saudi Arabia and Nigeria since 2022, the two literatures have developed largely in parallel, with no identified study directly comparing them despite the countries representing two of the most consequential and structurally distinct cryptocurrency markets in the Global South. Second, existing single-country studies cannot establish whether observed inconsistencies, for example, around the role of perceived risk, social influence, and facilitating conditions, reflect genuine cross-national differences in adoption psychology or simply methodological variation between studies; only a matched, multi-group comparative design can disentangle the two. Third, no identified study has tested whether national context itself, encompassing income level, currency stability, and regulatory trajectory, systematically moderates the strength of TAM/UTAUT relationships, despite the Nwachukwu (2026) three-country comparison suggesting that such moderation is likely even among more similar emerging economies. The present study addresses these gaps by proposing and operationalising a comparative model, detailed in the next section.

3. Theoretical Framework and Hypotheses Development

Building on the theoretical traditions reviewed above, this study proposes an integrated model in which the four core UTAUT determinants, performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003), are extended with trust, perceived risk, technology awareness, and government support, and in which national context, Saudi Arabia versus Nigeria, is modelled as a moderator of the relationships between these constructs and behavioural intention to adopt Bitcoin. Awareness is grounded in Diffusion of Innovation Theory (Rogers, 2003); perceived risk in classical risk theory (Bauer, 1960; Featherman & Pavlou, 2003); and government support in Institutional Theory (DiMaggio & Powell, 1983). Figure 1 presents the resulting comparative conceptual model, and the following subsections develop the corresponding hypotheses.

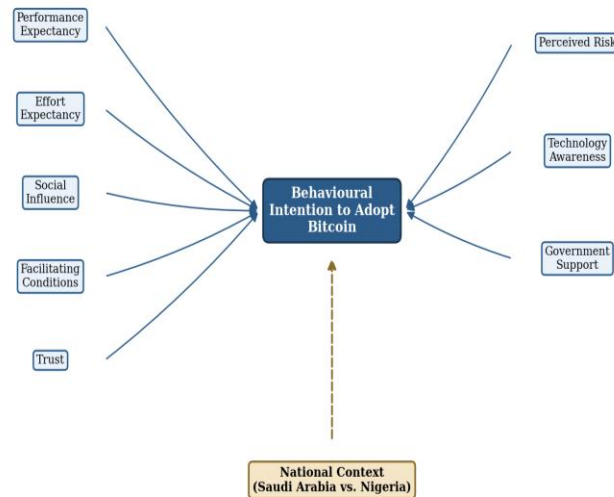


Figure 1. Proposed comparative conceptual model of cryptocurrency (Bitcoin) acceptance

3.1 Performance Expectancy

Performance expectancy refers to the degree to which an individual believes that using cryptocurrency will help them achieve gains such as faster transfers, lower fees, or investment and hedging returns (Venkatesh et al., 2003). This construct has been the single most consistently significant predictor of cryptocurrency-adoption intention across the cross-national literature, including the three-country Ghana-Nigeria-Vietnam comparison, in which it was the strongest predictor overall and notably stronger in Nigeria than elsewhere (Nwachukwu, 2026). Given the weight of this evidence:

H1: Performance expectancy is positively related to behavioural intention to adopt Bitcoin.

3.2 Effort Expectancy

Effort expectancy captures the perceived ease of learning to use and operating a cryptocurrency wallet or exchange platform (Venkatesh et al., 2012). Its effect appears to be context-dependent: Nwachukwu (2026) found effort expectancy significant only in Nigeria among the three countries studied, plausibly reflecting the practical, transaction-oriented use of P2P platforms by Nigerian users, whereas its role in Saudi Arabia is less consistently established. Nonetheless, in line with the balance of prior evidence:

H2: Effort expectancy is positively related to behavioural intention to adopt Bitcoin.

3.3 Social Influence

Social influence reflects the degree to which an individual perceives that people who are important to them believe they should use cryptocurrency (Venkatesh et al., 2003). Evidence is decidedly mixed in both country contexts: some Nigerian UTAUT studies report weak or non-significant effects (Bashir & Muhammad, 2023; Chike & Ogba, 2023), the Ghana-Nigeria-Vietnam comparison found social influence non-significant across all three countries (Nwachukwu, 2026), and recent Saudi research has excluded the construct altogether, arguing that cryptocurrency decisions there are individually rather than socially driven (Hashed Abdullah, 2026). Because this inconsistency may itself be an artefact of comparing single-country studies with different measurement approaches, this study retains social influence as a testable construct in both samples:

H3: Social influence is positively related to behavioural intention to adopt Bitcoin.

3.4 Facilitating Conditions

Facilitating conditions refer to an individual's perception of the resources and support available to use a technology, including internet access, compatible devices, and technical assistance (Venkatesh et al., 2003). Although both Saudi Arabia and Nigeria have high mobile-internet penetration among their crypto-using populations, infrastructural access is considerably less uniform in Nigeria, where electricity reliability and formal banking access vary widely by region, than in Saudi Arabia, making this construct plausibly more salient in the Nigerian sample. This study proposes:

H4: Facilitating conditions are positively related to behavioural intention to adopt Bitcoin.

3.5 Trust

Trust reflects a user's confidence in the reliability, security, and integrity of cryptocurrency platforms and the underlying blockchain technology (Mendoza-Tello et al., 2018). Trust emerges as a strong, positive predictor in both literatures: Abdurrahman et al. (2024) found perceived trust to be one of the strongest predictors of adoption intention in Nigeria, while trust similarly moderates the awareness-to-adoption pathway in broader cryptocurrency research (Shahzad et al., 2024). Given this convergent evidence:

H5: Trust is positively related to behavioural intention to adopt Bitcoin.

3.6 Perceived Risk

Perceived risk captures users' evaluation of the uncertainty and potential adverse consequences of cryptocurrency use, including price volatility, cybersecurity threats, and irreversibility (Bauer, 1960; Featherman & Pavlou, 2003). This construct illustrates the value of cross-national comparison particularly well: it was not a significant predictor in the Ghana-Nigeria-Vietnam study (Nwachukwu, 2026), and Hashed Abdullah (2026) similarly found no significant deterrent effect in Saudi Arabia, in both cases plausibly because users in currency-unstable or high-growth crypto markets have come to view cryptocurrency risk as comparable to, or lower than, the risk of holding depreciating local currency or facing limited formal financial access. Consistent with the dominant theoretical position while acknowledging this emerging counter-evidence, this study proposes:

H6: Perceived risk is negatively related to behavioural intention to adopt Bitcoin.

3.7 Technology Awareness

Technology awareness refers to an individual's cognitive recognition and understanding of the existence, functioning, and potential benefits of cryptocurrency, positioned theoretically as the knowledge stage preceding attitude formation (Rogers, 2003). Awareness has been shown to strengthen adoption intention directly and to amplify the effects of usefulness and ease of use in both the Saudi context (Alomari & Abdullah, 2023; Hashed Abdullah, 2026) and in broader emerging-market cryptocurrency research (Kumari et al., 2023; Sagheer et al., 2022). Accordingly:

H7: Technology awareness is positively related to behavioural intention to adopt Bitcoin.

3.8 Government Support

Government support reflects the extent to which formal institutions establish regulatory clarity, legal protections, and policy incentives for cryptocurrency use, grounded in Institutional Theory's premise that regulatory structures confer legitimacy and reduce uncertainty (DiMaggio & Powell, 1983). This construct is expected to behave very differently across the two countries: in Saudi Arabia, government endorsement flows from a coherent, state-led digital-transformation strategy (Benhamlaoui, 2025; Hashed Abdullah, 2026), whereas in Nigeria, government involvement has oscillated between outright prohibition and belated legalisation, potentially producing a more ambivalent relationship between perceived government support and adoption intention (Cornell University Emerging Markets Institute, 2025). Notwithstanding this expected difference in strength or even valence, which is addressed directly in the moderation hypothesis below, this study proposes the general relationship:

H8: Government support is positively related to behavioural intention to adopt Bitcoin.

3.9 National Context as a Moderator

Beyond the eight direct-effect hypotheses, this study's central theoretical contribution lies in testing whether national context systematically moderates these relationships. Given that Saudi Arabia and Nigeria differ sharply in income level, currency stability, regulatory trajectory, and the balance between state-led and necessity-driven adoption, and given cross-national evidence that even more similar emerging economies exhibit significantly different path coefficients for the same UTAUT constructs (Nwachukwu, 2026), this study proposes:

H9: National context (Saudi Arabia vs. Nigeria) significantly moderates the strength of the relationships between performance expectancy, effort expectancy, social influence, facilitating conditions, trust, perceived risk, technology awareness, government support, and behavioural intention to adopt Bitcoin.

Two directional sub-hypotheses follow from the review above and are proposed as exploratory refinements of H9, to be tested rather than assumed. First, given that Nigerian adoption is predominantly transaction- and necessity-driven, performance expectancy and effort expectancy are expected to exert a stronger effect on intention in Nigeria than in Saudi Arabia (H9a). Second, given Saudi Arabia's more coherent, state-directed regulatory strategy compared with Nigeria's regulatory whiplash, government support is expected to exert a stronger effect on intention in Saudi Arabia than in Nigeria (H9b).

4. RESEARCH METHODOLOGY

4.1 Research Design

This study adopts a positivist paradigm and a quantitative, cross-sectional, comparative, correlational field-survey design. Identical structured questionnaires, adapted only for language and currency-specific examples, will be administered to independent samples of respondents in Saudi Arabia and Nigeria, enabling both the eight direct-effect hypotheses (H1-H8) and the national-context moderation hypothesis (H9) to be tested within a single multi-group structural model.

4.2 Population and Sampling

The target population in each country comprises adult residents, including both current cryptocurrency users and non-users with at least a basic awareness of digital currencies. Because complete sampling frames of cryptocurrency users are unavailable in either country, a purposive, non-probability sampling strategy will be employed in both, consistent with prior single-country studies in this domain (Abdurrahman et al., 2024; Hashed Abdullah, 2026). Following Cohen's (1988) guidelines for adequate statistical power in multivariate analysis, and in line with comparable prior samples of 344 to 417 respondents per country (Abdurrahman et al., 2024; Alomari & Abdullah, 2023; Hashed Abdullah, 2026), this study targets a minimum of 400 valid responses per country, yielding a combined comparative sample of at least 800 respondents, sufficient for multi-group PLS-SEM analysis with up to eight latent constructs.

4.3 Instrument Development and Measures

All constructs will be measured using multi-item scales adapted from previously validated instruments to ensure content validity and comparability across countries. Performance expectancy, effort expectancy, social influence, and facilitating conditions will be adapted from Venkatesh et al. (2003, 2012); trust and perceived risk items from cryptocurrency-specific validated scales (Abdurrahman et al., 2024; Gil-Cordero et al., 2020; Mendoza-Tello et al., 2018); technology awareness items from Diffusion of Innovation-based measures (Rogers, 2003; Sagheer et al., 2022); and government support items from institutional-theory-grounded fintech studies (Hashed Abdullah, 2026). All items will be measured on a five-point Likert scale. The questionnaire will be developed in English and translated, with back-translation, into Arabic for the Saudi sample; the Nigerian instrument will be administered in English, Nigeria's official language, with plain-language review to ensure accessibility across educational backgrounds. Prior to full deployment, both language versions will undergo measurement-invariance testing (configural, metric, and scalar invariance via MICOM) to confirm that constructs are interpreted equivalently across the two national samples before any cross-group comparison of path coefficients is undertaken.

4.4 Data Collection Procedure

Data will be collected through parallel online, self-administered questionnaires distributed in each country via channels appropriate to local usage patterns: email, X, and messaging platforms such as Telegram and WhatsApp in Saudi Arabia, and social media, university networks, and P2P trading community channels in Nigeria, reflecting the more grassroots, community-driven character of Nigerian crypto adoption. A pilot test with 30 to 40 respondents per country will be conducted prior to full-scale data collection to assess item clarity, internal consistency, and completion time in each context.

4.5 Data Analysis Technique

Data will be analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS software (Hair et al., 2021). The measurement model will first be assessed separately for each country for internal consistency reliability, convergent validity (average variance extracted), and discriminant validity using the Fornell-Larcker criterion (Fornell & Larcker, 1981) and the Heterotrait-Monotrait ratio (Henseler et al., 2015), with common method bias assessed via Harman's single-factor test (Podsakoff et al., 2003). After confirming measurement invariance across the two samples, the structural model will be tested using pooled-sample bootstrapping for hypotheses H1-H8, followed by multi-group analysis (PLS-MGA) and permutation testing to formally compare path coefficients between the Saudi and Nigerian sub-samples for hypothesis H9, following established procedures for cross-national PLS-SEM comparison (Nwachukwu, 2026).

5. EXPECTED CONTRIBUTIONS AND IMPLICATIONS

5.1 Theoretical Implications

This study is expected to make three theoretical contributions. First, it extends TAM and UTAUT to a decentralised financial innovation compared directly across two structurally divergent emerging-market archetypes, a high-income, state-directed Gulf economy and a lower-income, necessity-driven Sub-Saharan African economy, rather than testing the model within a single national setting. Second, by formally modelling national context as a moderator (H9) rather than treating cross-country differences as unexplained residual variation between separate studies, the paper offers a more rigorous account of why technology-acceptance relationships vary across emerging markets. Third, the study extends the

small but growing cross-national cryptocurrency-adoption literature, previously exemplified by comparisons among culturally and economically similar emerging economies (Nwachukwu, 2026), to a pairing of markets that differ far more sharply in income, currency stability, and regulatory trajectory, thereby offering a more demanding test of technology-acceptance theory's cross-context portability.

5.2 Practical and Policy Implications

For Saudi policymakers, anticipated findings on the strength of government support and technology awareness can inform the continued design of regulatory clarity and public-education initiatives aligned with Vision 2030, led by the Saudi Central Bank and the Ministry of Communications and Information Technology. For Nigerian policymakers, findings on the roles of trust, performance expectancy, and effort expectancy can inform how the Central Bank of Nigeria and the Securities and Exchange Commission design consumer-protection and financial-literacy interventions appropriate to a market where adoption has outpaced, rather than followed, regulation. For fintech providers and exchanges operating across both markets, a comparative understanding of which determinants matter most in each country can guide differentiated product design: emphasising security and regulatory-compliance messaging in the Saudi market, where trust and government legitimacy are salient, versus emphasising low transaction costs, ease of use, and remittance functionality in the Nigerian market, where performance and effort expectancy dominate.

6. Limitations and Future Research

Several limitations should be acknowledged. The cross-sectional design captures adoption intention at a single point in time in each country and cannot establish causal ordering or capture how intentions evolve as Nigeria's newly formalised securities framework and Saudi Arabia's gradually developing regulatory environment mature further. Self-reported survey data introduce the possibility of social-desirability and common-method bias in both samples, only partly mitigated by the procedural and statistical remedies described in Section 4.5. Purposive sampling, while necessary given the absence of complete sampling frames of cryptocurrency users in either country, may limit generalisability, and differences in internet infrastructure, language, and survey-distribution channels between the two countries could introduce sampling differences that are difficult to fully disentangle from genuine national-context effects. Future research should consider longitudinal designs tracking how adoption intention evolves as both regulatory environments mature, and should extend the comparative design to additional country pairs, for example, contrasting other high-income Gulf states with other currency-crisis-affected African or Latin American economies, to test whether the moderating role of national context observed here generalises beyond the Saudi-Nigeria pairing. Mixed-methods designs combining the proposed quantitative model with qualitative interviews in each country could further illuminate the lived experience of trust-building, risk perception, and necessity-driven adoption that purely quantitative measures may only partially capture.

7. Conclusion

Saudi Arabia and Nigeria illustrate two starkly different pathways to cryptocurrency adoption: one shaped by a wealthy, centrally governed state's digital-transformation strategy, the other by ordinary citizens' necessity-driven response to currency instability and financial exclusion, achieved largely despite, rather than because of, government policy for much of the period examined. Existing research has documented each of these trajectories separately, but has not yet compared them directly within a single, theoretically integrated model. This paper has synthesised more than fifty studies published between 2016 and 2026 to propose an integrated, comparative conceptual model, grounded in TAM, UTAUT, Diffusion of Innovation Theory, and Institutional Theory, along with eight direct-effect hypotheses, a national-context moderation hypothesis, and a detailed multi-group PLS-SEM methodology for empirical testing. By doing so, the study lays the theoretical and methodological groundwork for a more complete, cross-nationally valid understanding of Bitcoin acceptance, one that can inform both future comparative research and the design of regulatory and educational interventions appropriate to two very different, but equally consequential, cryptocurrency markets in the Global South.

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CITATION

Baba, N. M. (2026). Cryptocurrency Acceptance Across Divergent Economies: A Comparative Study of Bitcoin Adoption Determinants in Saudi Arabia and Nigeria. *Global Journal of Research in Business Management*, 6(5), 32–41. <https://doi.org/10.5281/zenodo.22877946>