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Assessing Accountants' Intentions to Adopt Blockchain Technology for Enhanced Financial Transparency in Bauchi State Ministry of Finance: A Theory of Planned Behavior Approach

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ABSTRACT
This study investigates the behavioral intentions of accountants within the Bauchi State Ministry of Finance to adopt blockchain technology for enhanced financial transparency, utilizing the Theory of Planned Behavior (TPB) as its guiding framework. A quantitative, cross-sectional survey design was employed, targeting 205 professionals using a structured questionnaire. Statistical analyses, including reliability tests, correlation analysis, and multiple regression, reveal that attitude, subjective norms, and perceived behavioral control significantly and positively influence the intention to adopt blockchain. The TPB model explained 52% of the variance in intention, affirming its robustness. The findings contribute to both theoretical and practical knowledge on blockchain adoption, offering actionable recommendations for policymakers, accounting bodies, and educators. The study also highlights key barriers and motivators affecting the adoption decision in a public sector context and calls for further research that integrates other behavioral theories and explores long-term adoption behaviors.

1. INTRODUCTION

The accounting and finance landscape is undergoing a profound transformation driven by digital innovation. Traditional accounting systems, long reliant on centralized databases and manual reconciliation, are increasingly being challenged by emerging technologies that promise greater efficiency, transparency, and security [1]. Among these, blockchain technology has emerged as a disruptive force capable of reshaping core accounting functions. Blockchain is a decentralized ledger system that records transactions in an immutable and transparent manner. Its key features immutability, distributed consensus, and automation via smart contracts offer significant advantages over conventional accounting systems [2]. For instance, smart contracts can automate payment releases upon verification of conditions, reducing manual errors and enhancing compliance [3]. Moreover, blockchain's tamper-proof natureensures the integrity of financial records, which is critical for auditability and fraud prevention.

Globally, the market size of blockchain in accounting is projected to reach $868 million by 2025, reflecting a compound annual growth rate (CAGR) of over 40% [3]. In Nigeria, blockchain is increasingly being explored as a tool for financial transparency, particularly in public sector institutions such as state ministries of finance [4]. Bauchi State, like many others, faces challenges in maintaining accurate and timely financial records, and blockchain presents a potential solution to these systemic issues.

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Despite its transformative potential, the adoption of blockchain technology in accounting remains limited, especially within public sector institutions in developing economies. While theoretical benefits such as enhanced transparency, reduced fraud, and real-time reporting are well-documented, practical implementation lags behind due to infrastructural, regulatory, and behavioral barriers [5, 6].

In Bauchi State Ministry of Finance, the integration of blockchain into accounting practices is still at a conceptual stage. Accounting professionals often lack the technical expertise or institutional support required to transition from legacy systems to blockchain-based platforms [7]. Moreover, concerns about cost, scalability, and regulatory clarity further hinder adoption. This study seeks to explore the intentions of accountants in Bauchi State to adopt blockchain technology using the Theory of Planned Behavior (TPB) as a guiding framework. TPB posits that behavioral intention is influenced by attitude, subjective norms, and perceived behavioral control [8]. By applying this model, the research aims to answer critical questions:

Research Questions

1. What are accountants' attitudes towards adopting blockchain technology for financial transparency?
2. What are the subjective norms influencing accountants' intentions to adopt blockchain technology?
3. What are the perceived behavioral controls affecting accountants' intentions to adopt blockchain technology?
4. To what extent do attitude, subjective norms, and perceived behavioral control predict accountants' intentions to adopt blockchain technology for enhanced financial transparency?

Objectives of the Study

1. To examine accountants' attitudes towards adopting blockchain technology.
2. To investigate the subjective norms influencing accountants' intentions to adopt blockchain technology.
3. To assess the perceived behavioral controls impacting accountants' intentions to adopt blockchain technology.
4. To determine the predictive power of attitude, subjective norms, and perceived behavioral control on accountants' intentions to adopt blockchain technology.

2. LITERATURE REVIEW

2.1. Theoretical framework: Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB), as conceptualized by Ajzen [8], remains one of the most influential frameworks in understanding and predicting human behavior, particularly in technology adoption contexts. According to TPB, behavioral intention is the closest antecedent to action, is shaped by three components: attitude, subjective norms, and perceived behavioral control (PBC). Attitude refers to the individual's positive or negative evaluation of performing a behavior; subjective norms are the perceived social expectations or pressures; and PBC reflects the perceived ease or difficulty of performing the behavior, often associated with knowledge, resources, and self-efficacy. Over the years, TPB has been extensively applied across multiple disciplines, including health behavior, environmental sustainability, and most pertinently information systems adoption. For example, Schaupp et al. [9] applied TPB to examine individual adoption of cryptocurrency and found the model could explain up to 63.5% of behavioral variance. Similarly, Stefanus et al. [10] used TPB to evaluate AI adoption among educators in Namibia and observed that perceived behavioral control strongly predicted adoption intentions. Given the complexity and novelty of blockchain technology, the TPB is especially relevant, providing a robust lens to assess how personal beliefs, social pressures, and perceived capability influence adoption decisions among accountants in Bauchi State Ministry of Finance.

2.2. Blockchain technology in accounting and finance

Blockchain has emerged from its roots in cryptocurrency to become a foundational technology with far-reaching implications for accounting and finance. Its evolution has transitioned from a niche innovation to a recognized enabler of transparency, security, and operational efficiency. At its core, blockchain operates as a distributed ledger that records transactions across multiple nodes, ensuring immutability, transparency, and decentralization. Features such as smart contracts allow for automatic execution of pre-defined financial actions, which reduces manual input and human error [2]. Moreover, the inherent transparency of

blockchain enables real-time visibility of financial transactions, while the immutability ensures that data cannot be tampered with retroactively.

Globally, the blockchain accounting market is forecasted to reach $868 million by 2025, reflecting a compound annual growth rate exceeding 40% [3]. In Nigeria, the application of blockchain in public financial management is gaining traction, particularly in improving accountability and financial reporting. EFInA [4] highlighted the strategic potential of blockchain for financial inclusion and transparency in governmental processes. Julius [6] reviewed blockchain's integration in financial auditing, emphasizing a reduction in audit time by 25–30% and audit costs by approximately 20%. Moreover, Thanasas et al. [11] found that blockchain enhances traceability and fraud detection, leading to improved trust among stakeholders. These findings affirm blockchain's transformative role in financial operations and justify its evaluation in contexts such as Bauchi State's Ministry of Finance.

2.3. Financial transparency and auditing

The demand for financial transparency has increased globally, driven by the need for regulatory compliance, investor confidence, and effective governance. Transparency ensures that financial information is accessible, accurate, and timely, enabling stakeholders to make informed decisions. However, traditional accounting systems often suffer from limitations such as data silos, lack of real-time reporting, and vulnerability to manipulation. These challenges compromise the reliability of financial disclosures and audits. Blockchain presents a compelling solution by offering real-time transaction recording, immutable data storage, and automated reconciliation processes. A recent study by Envensis [2] reported that blockchain can substantially reduce audit fraud and manipulation risks due to its tamper-proof nature. Spydra [3] also found that blockchain-based financial systems enabled auditors to conduct real-time compliance checks, enhancing both speed and accuracy. Additionally, Invensis [2] noted a 30% decrease in manual verification time and a marked increase in audit reliability when blockchain was integrated into accounting practices. These technological advancements present blockchain as not just a tool but a catalyst for systemic improvement in financial transparency and auditing procedures.

2.4. Previous studies on technology adoption in accounting

Technology adoption in accounting has followed a progressive trajectory, marked by the integration of ERP systems, cloud computing, and artificial intelligence (AI). Each innovation brought unique benefits and challenges, shaping the evolution of accounting practices. ERP systems enhanced data integration and streamlined operations, though they were often criticized for high implementation costs and complexity. Cloud computing introduced scalability and remote accessibility, but concerns over data security lingered. AI, on the other hand, enabled predictive analytics and automation in auditing, though ethical concerns and skill gaps remain prevalent.

Studies such as Ayinla et al. [12] underscore the operational efficiencies gained through cloud computing, while Afolabi and Erasmus[13]; Patel and Shrimali [14] spotlight the role of AI in transforming audit processes. These studies consistently identify key drivers like perceived usefulness and organizational support, along with barriers such as cost, resistance to change, and lack of expertise. However, despite the growing body of literature on technology adoption, blockchain remains underrepresented, especially from a behavioral perspective using models like TPB. This underrepresentation highlights a critical research opportunity to explore blockchain adoption from the viewpoint of individual accountants.

2.5. Gaps in literature

While existing literature elaborates on the technical aspects and organizational implications of blockchain, there is a significant gap in understanding the behavioral intentions of accountants regarding its adoption, particularly in public sector settings. Previous studies have largely focused on feasibility, infrastructure, and policy considerations, overlooking the cognitive and social drivers of adoption. Few empirical investigations have used behavioral theories like TPB to evaluate how individual-level factors such as attitude, perceived norms, and control beliefs shape the intention to adopt blockchain technology. Moreover, studies in Nigeria and other developing economies rarely address the human dimension of blockchain adoption in government financial institutions. As such, there is a pressing need for research that encapsulates both the technical promise and the behavioral realities facing professionals on the ground. This study seeks to fill that void by applying the TPB framework to analyze how accountants in Bauchi State perceive, are influenced by, and feel capable of adopting blockchain technologies for enhanced financial transparency.

2.6. Conceptual framework

To guide the empirical investigation, the study adopts an extended TPB conceptual model that connects Attitude, Subjective Norms, and Perceived Behavioral Control to Behavioral Intention. This framework facilitates a structured examination of how each psychological construct contributes to the likelihood of blockchain adoption among accountants.

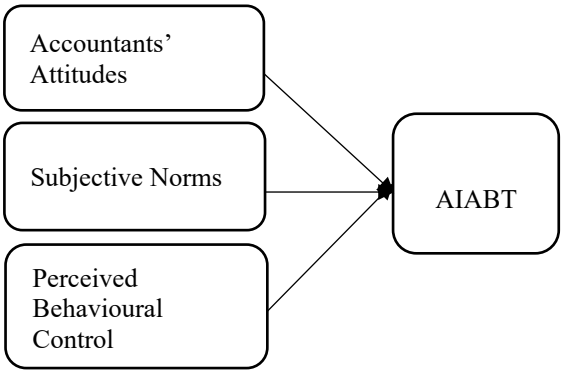

Figure 1. Proposed conceptual framework source: adopted from ajzen [8]

2.7. Hypotheses development

The hypotheses derived from this framework are as follows:

H_1: Accountants' attitudes toward blockchain technology significantly and positively influence their intention to adopt it.

H_2: Subjective norms such as expectations from management or professional bodies, significantly affect accountants' intention to adopt blockchain technology.

H_3: Perceived behavioral control, which includes confidence in using blockchain tools and availability of resources, positively influences accountants' intention to adopt.

H_4: Collectively, Attitude, Subjective Norms, and Perceived Behavioral Control are significant predictors of accountants' intention to adopt blockchain technology for financial transparency.

This conceptualization not only aligns with the established tenets of TPB but also contextualizes them within the specific behavioral and technological environment of public sector accounting in Nigeria.

3. MATERIALS AND METHODS

3.1 Research design

This study adopts a quantitative, cross-sectional survey design**,** which is well-suited for examining behavioral intentions at a single point in time. The rationale for this design lies in its efficiency in collecting data from a relatively large population and its appropriateness for testing relationships between variables using statistical techniques. Cross-sectional surveys are particularly effective for behavioral studies grounded in theoretical models like the Theory of Planned Behavior (TPB)**,** as they allow for the simultaneous measurement of attitudes, norms, perceived control, and intentions without requiring longitudinal tracking [15, 16].

3.2 Population

The target population for this study comprises professional accountants, auditors, and financial managers working within the Bauchi State Ministry of Finance, with a total population size of N = 446. This population was selected due to its direct involvement in public sector financial reporting and audit processes, making it highly relevant for assessing blockchain adoption intentions. The sampling frame consists of the ministry's official employee registry, which provides access to eligible participants across departments.

3.3 Sample Size

Based on the Krejcie and Morgan [17] sample size determination table, a population of 446 requires a minimum sample size of 205 respondents to achieve a 95% confidence level and a 5% margin of error.

3.4 Sampling Technique

A convenience sampling method was employed, justified by logistical constraints and the need for rapid data collection within a limited timeframe. While this method may introduce selection bias and limit generalizability, it remains acceptable for exploratory studies focused on behavioral intention [18].

3.5 Data Collection Instrument

A self-administered questionnaire was developed and distributed both face-to-face and online to accommodate varying levels of digital access among respondents. The instrument was structured into five key sections:

1. **Demographic Information**: Capturing age, gender, years of experience, current role, and department.
2. **Attitude towards Adoption**: Items adapted from the Technology Acceptance Model (TAM) and TPB, measuring perceived usefulness and ease of use of blockchain in accounting tasks
3. **Subjective Norms**: Assessing perceived expectations from colleagues, supervisors, and professional bodies regarding blockchain adoption.
4. **Perceived Behavioral Control**: Measuring respondents' perceived access to resources, technical skills, time, and organizational support for implementing blockchain.
5. **Intention to Adopt Blockchain Technology**: Evaluating the likelihood of using blockchain in future accounting practices.

All constructs were measured using 5-point Likert scales ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), ensuring consistency and ease of interpretation. The questionnaire was pre-tested with 15 accounting professionals from a neighboring ministry to assess clarity, reliability, and construct validity. Feedback from the pilot study led to minor revisions in item wording and scale formatting, enhancing the instrument's robustness [8, 19].

3.6 Data collection procedure

Data collection was conducted over a four-week period, using a hybrid approach. Online surveys were distributed via email invitations and professional WhatsApp groups, while printed copies were administered during departmental meetings. Participation was entirely voluntary, and respondents were assured of anonymity and confidentiality. Each questionnaire was accompanied by a cover letter detailing the study's purpose, ethical safeguards, and contact information for inquiries. Completed responses were securely stored in password-protected databases and locked cabinets, depending on format.

3.7 Methods of data analysis

Data analysis was performed using SPSS (version 25) and SmartPLS 4, enabling both traditional statistical and structural equation modeling approaches. The analysis followed a multi-step procedure:

1. **Descriptive Statistics**: Frequencies, percentages, means, and standard deviations were computed to summarize demographic data and construct scores.
2. **Reliability Analysis**: Cronbach's Alpha was used to assess internal consistency, with $\alpha \geq 0.70$ considered acceptable.
3. **Validity Analysis**: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to establish construct validity and factor loadings.
4. **Inferential Statistics**: Pearson correlation analysis examined relationships among TPB constructs. Multiple regression analysis tested the predictive power of attitude, subjective norms, and perceived behavioral control on intention to adopt blockchain. Where appropriate, Structural Equation Modeling (SEM) via SmartPLS was used to validate the TPB model and assess path coefficients, R^2 values, and model fit indices [20].

4. RESULTS

The response rate data in Table 1, indicates a strong level of participation in the study, which is critical for ensuring the reliability and validity of the research findings. Out of the total distributed questionnaires, 194 were returned, representing a high overall return rate of 95%. This suggests effective engagement with the respondents and successful data collection efforts. However, not all returned questionnaires were usable. Seven questionnaires (3%) were either damaged or incomplete, which is a common occurrence in survey research and highlights the importance of careful data screening. After excluding these unusable responses, 182 questionnaires were deemed valid for analysis, accounting for 89% of the total distributed sample. This valid response rate is well above the generally acceptable threshold for survey research, indicating that the data set is sufficiently robust for meaningful analysis. The small proportion of non-returned questionnaires (2%) further supports the effectiveness of the data collection process and minimizes concerns about non-response bias. The high valid response rate enhances the representativeness of the sample, increasing confidence that the findings accurately reflect the views and experiences of the target population. Overall, the response rate achieved in this study demonstrates a strong foundation for subsequent analysis and supports the credibility of the conclusions drawn regarding the effect of human resource management practices on employee performance in colleges of education.

Table 1. Response rate

Description	Actual Responses Received	Response Rate (%)
Returned	194	95
Not Returned	5	2
Damaged or Incomplete	7	3
Valid for Analysis	182	89

4.1. Demographic characteristics

A total of 182 valid responses were analyzed from professional accountants, auditors, and financial managers. The demographic breakdown is as follows in Table 2. The demographic profile of the respondents provides valuable context for interpreting the study's findings and understanding the composition of the workforce within the Bauchi State Ministry of Finance.

Gender Distribution

The sample consists of 107 males (59%) and 75 females (42%), indicating a moderate gender imbalance with a higher proportion of male respondents. This distribution suggests that while both genders are represented, males constitute a slight majority in the ministry's workforce.

Age Distribution*:*

The age breakdown reveals that the largest group of respondents falls within the 35–44 years range (41%), followed by those aged 25–34 years (33%), and those 45 years and above (26%). This indicates a relatively young to middle-aged workforce, with a significant portion of employees in their prime working years. The presence of a substantial number of respondents in the 45 years and above category also suggests a blend of experience and institutional knowledge within the ministry.

Years of Experience*:*

In terms of professional experience, the majority of respondents (47%) have between 5 and 10 years of service, while 35% have more than 10 years of experience, and 19% have less than 5 years. This distribution points to a workforce that is both experienced and relatively stable, with a strong representation of mid-career professionals who are likely to possess a deep understanding of organizational processes and practices.

Job Roles:

The distribution of job roles shows that accountants make up the largest group (52%), followed by auditors (28%) and financial managers (20%). This reflects the core functional areas within the ministry, with a predominant focus on accounting and auditing activities, supported by a significant number of financial managers responsible for oversight and strategic financial planning.

Sector Representation*:*

All respondents (100%) are drawn from the Bauchi State Ministry of Finance, ensuring that the findings are specifically relevant to this sector and providing a focused perspective on the human resource dynamics within the ministry. Overall, the demographic characteristics indicate a workforce that is moderately gender-diverse, predominantly composed of mid-career professionals, and heavily oriented towards accounting and auditing functions. This composition is likely to influence the perspectives and responses related to human resource management practices and the integration of information technology within the ministry.

Table 2. Demographic information of the respondents

Demographic	Characteristic	Frequency	Percent (%)
Gender	Male	107	59
	Female	75	42
Age	25 – 34 years	60	33
	35 – 44 years	75	41
	45 years and above	47	26
Years of Experience	Less than 5 years	35	19
	5 – 10 years	86	47
	More than 10 years	64	35
Job Roles	Accountants	95	52
	Auditors	51	28
	Financial Managers	36	20
Sector	Bauchi State Ministry of Finance	182	100%

4.2. Descriptive statistics for key variables

The descriptive statistics for the four TPB constructs are summarized in Table 3 below. Respondents generally expressed positive attitudes toward blockchain adoption, with a mean score above 4.0. Subjective norms and perceived behavioral control also scored moderately high, indicating that social influence and perceived capability are relevant factors. The overall intention to adopt blockchain technology was strong, suggesting readiness for digital transformation in financial transparency.

Table 3. Mean and Standard Deviation

Construct	Mean	Standard Deviation
Attitude towards Adoption	4.12	0.63
Subjective Norms	3.89	0.71
Perceived Behavioral Control	3.76	0.68
Intention to Adopt Blockchain	4.05	0.66

4.3. Reliability and validity analysis

To assess the internal consistency of the measurement scales, Cronbach's Alpha was computed for each construct in Table 4 below.

Table 4. Internal Consistency

Construct	Chronbach's Alpha
Attitude Towards Adoption	0.87
Subjective Norms	0.82
Perceived Behavioral Control	0.85
Intention to Adopt Blockchain	0.88

All values exceed the recommended threshold of 0.70, indicating high reliability. Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis with Varimax rotation. All items loaded strongly (> 0.60) on their respective factors, confirming construct validity**.** Kaiser-Meyer-Olkin (KMO) measure was 0.81, and Bartlett's Test of Sphericity was significant ($p < 0.001$), supporting the suitability of the data for factor analysis.

4.4. Correlation analysis

Pearson correlation coefficients were computed to examine relationships among the TPB constructs in Table 5.

Table 5. Correlation Coefficients

Variables	1	2	3	4
1. Accountants' Attitude	1			
2. Subjective Norms	0.54	1		
3. Perceived Behavioral Control	0.47	0.51	1	
4. Intention to Adopt Blockchain	0.62	0.58	0.55	1

All correlations were positive and statistically significant, indicating that higher levels of attitude, norms, and control are associated with stronger intentions to adopt blockchain technology.

4.5. Hypothesis testing

A multiple regression analysis was conducted to test the predictive power of Attitude, Subjective Norms, and Perceived Behavioral Control on Intention to Adopt Blockchain Technology.

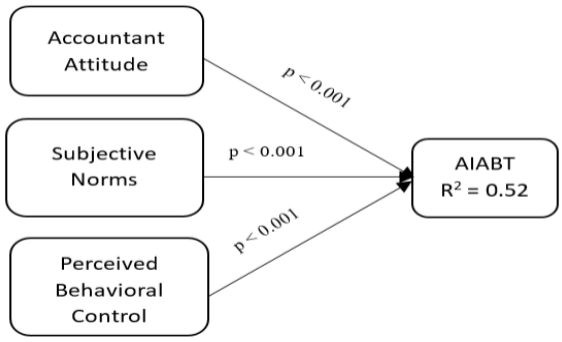

Figure 2. Structural Model

Model Summary: $R^2 = 0.52$, Adjusted $R^2 = 0.51$, F-statistic = 72.34, p-value < 0.001. The model explains 52% of the variance in behavioral intention, indicating a strong predictive capability.
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Table 6. Hypothesis testing

Predictor	Beta (β)	Std. Error	t-value	p-value	Hypothesis Status
Attitude Towards Adoption	0.38	0.06	6.33	< 0.001	Supported
Subjective Norms	0.31	0.07	4.43	< 0.001	Supported
Perceived Behavioral Control	0.29	0.06	4.83	< 0.001	Supported

5. DISCUSSION

The results of this study provide compelling evidence in support of the Theory of Planned Behavior (TPB) as a robust framework for understanding accountants' intentions to adopt blockchain technology for financial transparency. All three predictors—attitude**,** subjective norms, and perceived behavioral control were statistically significant, with attitude emerging as the strongest predictor ($\beta = 0.38$, $p < 0.001$), followed closely by subjective norms ($\beta = 0.31$, $p < 0.001$) and perceived behavioral control ($\beta = 0.29$, $p < 0.001$). These findings directly address the research questions and objectives, confirming that each TPB construct plays a meaningful role in shaping behavioral intention.

The model explained 52% of the variance in intention ($R^2 = 0.52$), which is consistent with prior studies applying TPB in technology adoption contexts, such as Schaupp et al. [9] and Stefanus et al. [10], who reported similar explanatory power. The positive correlations among all constructs further reinforce the interconnected nature of behavioral intention. These results align with existing literature on blockchain adoption in accounting [6,21], suggesting that behavioral factors are just as critical as technical feasibility in driving adoption. No non-significant relationships were observed, indicating a strong and coherent model fit.

The findings reveal that accountants in Bauchi State Ministry of Finance hold generally positive attitudes toward blockchain technology. This optimism is driven by perceived benefits such as enhanced auditability, fraud prevention, and real-time reporting. Respondents rated blockchain's usefulness highly ($M = 4.12$), suggesting that its potential to improve financial transparency resonates strongly with their professional values. However, some concerns such as implementation complexity and regulatory uncertainty may temper enthusiasm, as reflected in moderate standard deviations.

Subjective norms also exerted a significant influence, indicating that social and institutional pressures play a key role in shaping adoption intentions. Referent groups such as supervisors, colleagues, and professional bodies (e.g., ICAN, ANAN) were perceived as influential, with many respondents acknowledging expectations to modernize accounting practices. This aligns with findings from Kamble et al. [22] and Çalışkan & Turan [23], who emphasized the role of normative pressure in blockchain adoption.

Perceived behavioral control was moderately strong, suggesting that while accountants feel somewhat capable of adopting blockchain, barriers remain. Facilitating factors include organizational support, availability of training, and access to digital infrastructure. Conversely, cost concerns, lack of technical expertise, and perceived complexity were cited as obstacles. These findings echo those of Ornelas Herrera et al. [24] and Jimoh et al. [25], who found that digital maturity and resource availability significantly affect blockchain adoption in other sectors.

Overall, the TPB model demonstrated high predictive validity, with all constructs contributing meaningfully to intention. The results affirm TPB's applicability in public sector accounting and highlight the importance of addressing both psychological and contextual factors in technology adoption.

6. Conclusion

This study investigated the behavioral intentions of accountants in Bauchi State Ministry of Finance to adopt blockchain technology for enhanced financial transparency, using the Theory of Planned Behavior (TPB) as the guiding framework. The results revealed that all three TPB constructs such as attitude, subjective norms, and perceived behavioral control significantly and positively influenced the intention to adopt blockchain. Among these, attitude emerged as the strongest predictor, indicating that accountants' favorable perceptions of blockchain's usefulness and relevance play a pivotal role in shaping their adoption behavior. The model explained 52% of the variance in intention, demonstrating strong predictive validity and reinforcing TPB's applicability in public sector accounting contexts.

Theoretically, this research extends the application of TPB to the domain of blockchain adoption in public sector accounting, a relatively underexplored area. It contributes to behavioral accounting literature by emphasizing the importance of individual-level psychological factors in technology adoption decisions. Practically, the study offers insights for stakeholders seeking to implement blockchain solutions in government financial systems. By identifying key behavioral drivers and barriers, it provides a roadmap for designing interventions that align with accountants' perceptions and capabilities.

It is essential for policy makers and professional bodies to take proactive steps in fostering blockchain adoption within the public sector accounting profession. One of the first priorities should be to promote blockchain literacy among public sector accountants. This can be achieved through targeted awareness campaigns,

specialized workshops, and the development of certification programs that are tailored to the unique needs and responsibilities of public sector financial professionals. By increasing awareness and technical understanding, accountants will be better equipped to leverage blockchain's potential in their daily operations. In addition, there is a pressing need to develop clear and robust regulatory frameworks that address the legal and ethical dimensions of blockchain use in financial reporting and auditing. Such frameworks should provide guidance on data privacy, security, and the integrity of blockchain records, ensuring that the adoption of this technology aligns with both national and international standards. Regulatory clarity will not only protect stakeholders but also encourage innovation by reducing uncertainty and risk for early adopters. Collaboration with academic institutions is also recommended to ensure that blockchain education is embedded within accounting curricula and continuing professional development programs. By integrating blockchain modules into university courses and professional training, future and current accountants will gain the foundational knowledge and practical skills necessary to navigate the evolving landscape of digital finance.

Accounting firms and government agencies should invest in comprehensive internal training programs aimed at building both the technical competence and confidence of their accounting staff. Such training initiatives should cover the practical aspects of blockchain implementation, including system integration, data management, and security protocols. By equipping staff with these skills, organizations can ensure a smoother transition to blockchain-enabled processes. Furthermore, it is advisable for these organizations to allocate resources for pilot blockchain projects. These pilot initiatives can serve as proof-of-concept demonstrations, showcasing the feasibility and value of blockchain in real-world accounting tasks such as transaction verification, audit trails, and compliance monitoring. Successful pilot projects can build momentum for broader adoption and provide valuable lessons for scaling up. To sustain innovation, accounting firms and government agencies should foster a culture that encourages experimentation and cross functional collaboration. Recognizing and rewarding tech-forward initiatives will motivate employees to engage with new technologies and contribute to the organization's digital transformation. By breaking down silos and promoting knowledge sharing, organizations can accelerate the integration of blockchain and other emerging technologies.

Future research in this area should adopt a longitudinal approach to track changes in behavioral intention and actual adoption of blockchain technology over time. Such studies will provide insights into the dynamics of technology acceptance and the factors that influence sustained use. In addition, qualitative research methods, such as interviews and focus groups, should be employed to explore deeper perceptions, motivations, and resistance factors among accountants and other stakeholders. These methods can uncover nuanced barriers and enablers that quantitative surveys might overlook. Comparative studies across different regions, industries, and organizational types are also recommended to assess how contextual factors influence blockchain adoption. By understanding these variations, researchers and practitioners can develop more tailored strategies for implementation. Integrating established behavioral theories such as the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI), or the Unified Theory of Acceptance and Use of Technology (UTAUT)—will further enrich the explanatory power of future studies and provide a more comprehensive understanding of adoption behaviors. Finally, it is important to examine the gap between intention and actual adoption behavior. Identifying the factors that facilitate or hinder the transition from planning to implementation will help bridge this gap and inform more effective change management strategies. By addressing these research priorities, the academic and professional community can support the successful integration of blockchain technology in public sector accounting and beyond.

Conflict of Interest

No conflict of interest is declared by the authors. In addition, no financial support was received.

Ethics Committee

The study protocol was approved by the Ethics Committee of the Institute of Health Sciences of Bandırma Onyedi Eylul University (Ethics Committee Approval: 2022/170).

Author Contributions

Study Design, SG, AJA, FB; Data Collection, SG, AAA, MSM, FB; Statistical Analysis AAA, AJA, AM, SG; Data Interpretation, SG, MSM, FB; Manuscript Preparation, AJA, AAA, AM; Literature Search, SG, AAA, MSM, FB. All authors have read and agreed to the published version of the manuscript.

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