

Digital Banking Distribution, Traditional Banking, and Consumer Behavior: A Perspective of Theory of Planned Behavior

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ABSTRACT: Purpose – The purpose of this paper is to evaluate the relationships between digital banking distribution, traditional banking, and consumer behavior from the perspective of the Theory of Planned Behavior (TPB) in the rural banking sector in Ghana. The study assesses service usefulness, convenience, safety, and employee-customer relationships concerning consumer behavior.

Design/methodology/approach – A quantitative study was conducted with customers of the selected rural banks within the Eastern and Ashanti region of Ghana, using a convenient sampling technique to collect data via questionnaires distributed on WhatsApp platforms. Data was analyzed using SPSS v27 and SMART-PLS 3 to test the hypotheses.

Findings – The results indicate that the convenience of banking services, employee-customer relationships, and service-related safety have significant positive effects on consumer behavior. However, the usefulness of service utilization did not show a significant relationship with consumer behavior.

Practical implications – Rural Banks in Ghana should focus on enhancing the convenience and safety of their services, as well as strengthening employee-customer relationships to improve consumer behavior and promote digital banking adoption.

Originality/value – This study examines the interplay between digital and traditional banking in a rural context, specifically in Ghana, using the TPB framework. It provides insights for policymakers, banking practitioners, and researchers interested in promoting financial inclusion and enhancing the adoption of digital banking services in rural communities.

Keywords: *Digital banking, traditional banking, consumer behavior, Theory of Planned Behavior, rural banking, convenience, employee-customer relationship, service-related safety.*

Introduction

The global financial services sector is undergoing profound change, fueled by rapid technological progress and evolving consumer preferences (George, 2024). As Jameaba (2024) notes, this transformation has accelerated the growth of digital banking delivery channels, challenging the long-standing dominance of conventional banking systems and reshaping customer engagement patterns. Digital banking distribution refers to the delivery of financial products and services through electronic platforms—predominantly via the internet and mobile applications (Kaur et al., 2021). This mode of service provision includes diverse offerings such as remote account management, mobile-based payments, online lending, and AI-powered customer support (van Zanden, 2023). According to Chinnasamy et al. (2024), the widespread adoption of digital banking is driven by factors including expanding internet access, increased smartphone penetration, and rising demand for convenience and speed. Compared to traditional models, digital banking offers benefits such as round-the-clock accessibility, reduced transaction costs, personalized service delivery, and enhanced customer experience (Chaimaa et al., 2021), which particularly appeal to younger, digitally adept populations (Lim et al., 2024).

In contrast, traditional banking defined as a service model reliant on physical branches and direct interpersonal transactions has historically dominated financial

services, offering deposit accounts, loans, credit facilities, and investment advisory services (Sharma, 2024; Omarini, 2022). These institutions have traditionally built customer loyalty through personal interaction, trust, and a strong local presence (Melnyk, 2024). Nonetheless, as Naeem and Nzuem (2021) argue, traditional banking faces mounting pressures in the digital era. High branch maintenance costs and increasing consumer expectations for digital access have pushed such institutions to integrate technology into their service delivery (Ononiwu et al., 2024). While many have adopted hybrid models, traditional banks often find it difficult to match the agility, innovation, and cost efficiency of digital-first banks and fintech providers (Das & Tripathi, 2025). Moreover, younger consumers—accustomed to instant and seamless digital interactions—may find conventional banking less attractive (Kandpal et al., 2025). Consequently, industry experts stress that traditional banks must strategically reinvent their operations and embrace digital innovation to remain competitive (Agarwal, 2024).

Consumer behavior, as defined by Durmaz and Gundus (2021), reflects the psychological, social, and economic factors shaping individuals' purchasing and usage decisions. In the banking sector, this encompasses how consumers select financial products, services, and access channels (Balteanu, 2016). Factors influencing these decisions include perceived risk, convenience, trust, social influence, and personal attitudes (Tham et al., 2019). The digital transformation of banking has made consumer behavior more complex, as customers are now presented with a greater range of choices and often switch between providers and platforms (Clemes et al., 2010). Understanding these behavioral patterns is essential for banks aiming to design competitive products, deliver exceptional customer experiences, and foster long-term loyalty (Chatterjee, 2019; Theodorakopoulos & Theodoropoulou, 2024).

Digital banking affects consumer decisions primarily through convenience, accessibility, and service personalization factors that often result in higher satisfaction and loyalty (Susanto et al., 2023). Conversely, traditional banking influences behavior through interpersonal relationships, trust, and security, which tend to be valued more by older and risk-averse customers (Ashrafi et al., 2022). The

Theory of Planned Behavior (TPB) provides a useful framework for understanding these dynamics, suggesting that behavior is driven by attitudes toward the behavior, perceived social pressures (subjective norms), and perceived behavioral control (Liu & Wang, 2024). In the context of digital banking, attitudes reflect a user's evaluation of the benefits and drawbacks, subjective norms capture the influence of social circles, and perceived control reflects confidence in one's ability to use such services (Mohammed et al., 2023; Jermittiparsert et al., 2023).

Existing research presents mixed findings regarding which TPB components most strongly predict digital banking adoption. For instance, Sahi (2024) emphasizes perceived behavioral control, while Linh and Huyen (2025) highlight attitudes and subjective norms. Musa et al. (2024) further note that demographic characteristics such as age, education, income, and technological literacy may moderate these relationships, but such influences remain underexplored. Although digital banking adoption has attracted scholarly interest for decades, most studies focus on commercial banks, often in urban contexts, and explore outcomes such as customer loyalty (Shin, 2022), attitudes (Valsamidis et al., 2020), perceptions (Pavithra & Geetha, 2021), and financial stability (Lumpkin & Schich, 2020).

In Ghana, however, there is limited empirical evidence on the intersection of digital banking, traditional banking, and consumer behavior particularly within the rural banking sector. Rural banks operate in distinct socio-economic environments and face unique infrastructural and technological constraints, yet they play a vital role in financial inclusion. This gap in the literature underscores the need to examine how rural bank customers' behavior aligns with TPB constructs, and how these behaviors are influenced by the coexistence of digital and traditional banking services. Accordingly, the present study seeks to explore the relationships between digital banking distribution, traditional banking, and consumer behavior among rural bank customers in Ghana, guided by the Theory of Planned Behavior.

- i. To assess the relationship between the usefulness of service utilization and consumer behavior from the lens of the Theory of Planned Behavior.
- ii. To evaluate the relationship between the convenience of banking services and consumer behavior from the lens of the Theory of Planned Behavior.

- iii. To examine the relationship between service-related safety and consumer behavior from the lens of the Theory of Planned Behavior.
- iv. To analyze the relationship between employee-customer relationships and consumer behavior from the lens of the Theory of Planned Behavior.

The study first seeks to discuss the concept of the constructs (digital banking, traditional banking, and consumer behavior). The paper discusses the constructs through the lens of TPB that underpin the study and later presents the empirical review and the development of a research hypothesis. The study methodology is followed by data analysis and discussions of findings. The paper closes with a discussion of the practical implications, theoretical implications, and future research.

Context of the Study

Rural Banking Sector

Rural banking emerged in the 1970s as a strategy to extend credit access to rural populations underserved by traditional banking institutions (Nair & Fissaha, 2010). Specifically in Ghana and India, governments actively promoted rural banking to address rural credit deficiencies (Ramachandran & Swaminathan, 2002; Nair & Fissaha, 2010). Currently, Ghana's banking sector includes 147 registered rural and community banks (Bank of Ghana, 2023), while India has approximately 43 operational rural banks, according to the Department of Financial Services. In Ghana, the Bank of Ghana regulates rural banks, integrating them into the formal financial system (Nair & Fissaha, 2010). These banks must maintain a minimum paid-up capital of 1 million Ghana Cedis (approximately 83,000 USD) and are legally restricted to deposit-taking activities within specific geographic boundaries (Bank of Ghana, 2019).

Literature Review

Digital Banking Distribution

Digital banking distribution represents a transformative shift in the way financial services are accessed and delivered, moving away from the limitations of traditional, branch-based systems and instead leveraging advanced technology to engage

customers wherever they are. As Mogaji (2023) notes, this model emphasizes accessibility, convenience, and personalization, designed to meet the dynamic needs of today's increasingly tech-oriented consumer base. At its foundation, digital banking distribution relies heavily on platforms such as mobile applications, internet banking portals, and integrated financial management tools to deliver a broad range of services — from core banking and investment solutions to payment processing and personal financial planning (Wijesooriya & Basnayake, 2024).

The rapid rise of FinTech companies has been a key driver of this change, introducing digital-first banking experiences that have disrupted traditional financial institutions. These so-called “challenger banks” have adopted cutting-edge technologies such as artificial intelligence (AI), machine learning (ML), and big data analytics to offer customers seamless, real-time services that are often faster, more intuitive, and more cost-effective than those of conventional banks (Bueno, 2024; Prayoga, 2023). This disruption has been particularly appealing to younger, digitally literate demographics who value mobile accessibility, minimal physical interaction, and user-friendly interface designs (Sharma et al., 2024).

Moreover, digital banking distribution plays a vital role in promoting financial inclusion by extending services to underserved and unbanked populations who were previously excluded from the formal financial system due to geographic, infrastructural, or socio-economic barriers (Singh et al., 2025; Agbeve et al., 2025). This is made possible through low-cost, scalable platforms that can be accessed via smartphones and internet-enabled devices, removing the need for costly physical branches. As such, the digital distribution model is not only reshaping consumer expectations but also redefining competitive advantage in the banking sector.

Traditional Banking Distribution

In contrast, traditional banking distribution remains rooted in the physical branch model, characterized by face-to-face interactions and location-based service delivery. Historically, banks have served as central, physical hubs where customers could perform a range of transactions, including account management, deposits, withdrawals, loan applications, and in-person financial consultations (Prayoga, 2023;

Metz et al., 2024). The strength of this model lies in its personal touch—the ability to build long-term, trust-based relationships between customers and banking staff—as well as the sense of legitimacy and security that comes from dealing with a physical institution (Hassan et al., 2023).

However, this traditional system faces significant challenges in the current digital era. Maintaining large branch networks involves high operational costs, including staffing, utilities, and physical infrastructure, which can be difficult to justify when compared to the cost-efficiency of digital banking models (Singhal et al., 2024). Additionally, geographic limitations and fixed operating hours reduce customer accessibility, particularly for clients who prefer 24/7, on-the-go services (van Zanden, 2023).

As customer expectations shift toward immediacy, convenience, and technology-enabled solutions, traditional banks are under increasing pressure to integrate digital tools into their distribution models. This has given rise to hybrid service approaches, where traditional banks combine the trust and familiarity of physical branches with the speed and efficiency of digital platforms (Naimi-Sadigh et al., 2022; Melnyk, 2024). The challenge lies in retaining the relational and reputational advantages of the traditional model while adapting to a rapidly evolving competitive landscape dominated by agile, technology-driven players.

Consumer Behavior in Banking

Consumer behavior refers to the psychological, social, and economic processes that influence individuals' decisions regarding the acquisition and use of products and services (Schiffman & Wisenblit, 2019). Within the banking industry, it involves how customers evaluate, choose, and interact with banking products, services, and distribution channels (Blackwell et al., 2006). Several factors shape these behaviors, including perceived risk, trust, convenience, social influence, digital literacy, and personal attitudes toward technology (Hoyer et al., 2018).

In the context of digital banking, consumer behavior is increasingly influenced by expectations of convenience, speed, and personalization. Mobile banking applications, AI-driven chatbots, and real-time account management services can

significantly enhance customer satisfaction and foster loyalty (Parasuraman et al., 2005). These features not only reduce transaction friction but also empower customers to manage their finances proactively. However, concerns over cybersecurity and data privacy remain important considerations that can affect adoption rates, especially among older or more risk-averse users.

Conversely, traditional banking continues to appeal to consumers who prioritize personal relationships, trust, and the tangible presence of a branch. This is particularly relevant for older generations, individuals with limited digital literacy, and those conducting high-value or sensitive transactions where face-to-face reassurance is valued (Gerrard & Cunningham, 2003).

The coexistence of these two models digital and traditional has created a more complex consumer decision-making process, with many customers now engaging in multi-channel banking. This fluid behavior is characterized by customers switching between different providers and service modes depending on their needs, lifestyle, and preferences (KPMG, 2020). As a result, understanding these behavioral patterns is essential for financial institutions seeking to design effective service strategies that resonate with diverse market segments.

Hypothesis Development

Relationship between the usefulness of service utilization and consumer behavior

Perceived usefulness (PU), defined as the extent to which an individual believes a system will enhance their job performance (Rawashdeh *et al.*, 2021), significantly influences consumer adoption of online banking channels. Prior research indicates that customers are motivated to utilize these channels due to the functional utilities they perceive (Karjaluoto *et al.*, 2021). Empirical studies corroborate the substantial impact of PU and related factors like relative advantage on customers' intentions to adopt digital banking (Yunior & Augustine, 2024; Rani & Kumar, 2024). However, Ayanwale and Ndlovu (2024) describe that actual adopters are more likely to recognize the benefits derived from the technology with a direct and significant relationship observed between perceived usefulness and actual usage behavior.

The usefulness of banking services, encompassing financial benefits and readily available information is closely linked to customer satisfaction (Bankuoru Egala *et al.*, 2021). Specifically, usefulness increases when the service is faster, offers higher interest rates, imposes lower transfer fees, and facilitates easy financial product searches (Alalwan *et al.*, 2016). Research suggests a positive relationship between usefulness and CS (Alalwan *et al.*, 2016; Dootson *et al.*, 2016). Digital banking services, in particular, may exhibit higher perceived usefulness compared to traditional banking due to their speed, potentially higher interest rates, lower transfer fees, and superior financial information accessibility (Pavithra & Geetha, 2021).

H₁: There is a positive relationship between the usefulness of banking service utilization and consumer behavior.

Relationship between the convenience of banking services and consumer behavior

Convenience, in the context of banking services, is understood as the reduction of non-monetary costs (time, energy, and effort) borne by customers in the acquisition of financial products and services (Prabhavathi *et al.*, 2021). This encompasses factors like the accessibility of bank locations, operational hours, travel distance, parking availability, and ATM access. Fundamentally, Ezechi *et al.*, 2025 commented that customer convenience streamlines the process of utilizing banking services by minimizing the time and effort expended by the customer. Digital banking platforms often offer enhanced convenience compared to traditional brick-and-mortar banks, as customers are not required to physically visit a branch to conduct transactions or manage their accounts (Awajneh & AbdAlrahman, 2024). The heightened convenience afforded by digital banking significantly influences consumer behavior, impacting customer satisfaction (Susanto *et al.*, 2023). According to Sruthi (n.d), the ease of access and reduced effort associated with digital platforms can foster increased customer loyalty and a greater willingness to adopt new financial technologies. This shift towards digital channels necessitates that traditional banks adapt by enhancing their digital offerings to remain competitive and cater to evolving consumer expectations regarding convenience in banking.

H₂: There is a positive relationship between the convenience of banking services and consumer behavior.

Relationship between service-related safety and consumer behavior

Security plays a critical role in shaping consumer behavior within the banking sector, particularly in the context of digital financial services. Defined as the degree of privacy and safety embedded within a system (Siponen, 2000; Vatanasombut et al., 2008), security serves as a foundational element in fostering consumer trust. In digital banking, this trust is essential for encouraging continued usage and long-term loyalty (Mensah & Osei, 2024; Boateng & Agyeman, 2024).

Empirical studies have consistently demonstrated a strong positive correlation between security, customer experience (CE), and customer satisfaction (CS) in mobile banking contexts (Akinci et al., 2003; Hanafizadeh et al., 2014; Jun & Palacios, 2016; Martins et al., 2014; Zhang & Chen, 2024). The implementation of robust and transparent security measures is therefore paramount for banks, as these measures protect consumers' personal and financial data, reduce perceived risks, and strengthen confidence in service delivery. This, in turn, promotes greater adoption and usage of both digital and traditional banking channels (Nasri & Charfeddine, 2012; Owusu & Amankwah, 2024).

Digital banks (DBs) often leverage advanced security technologies, such as biometric authentication, to mitigate the risk of internet fraud, potentially offering a safer environment compared to traditional banks (TBs) (Hanafizadeh *et al.*, 2014; Jun & Palacios, 2016; Martins *et al.*, 2014; Sayar & Wolfe, 2007). This emphasis on security can be a significant differentiator, attracting customers seeking assurance against financial fraud and cyber-attacks. The perceived security of a banking service directly influences consumer behavior, impacting their willingness to engage with and trust the institution providing it.

H₃: There is a positive relationship between service-related safety and consumer behavior.

Relationship between the employee-customer relationship and consumer behavior

Employee-customer engagement (ECE) is a critical aspect of service delivery, encompassing the demeanor and responsiveness of bank staff when addressing customer needs (Chauhan *et al.*, 2022). Given their direct interaction with customers, bank employees are central to both service provision and effective complaint resolution (Hassan *et al.*, 2023). To cultivate strong customer relationships, employees must exhibit friendliness, competence, and trustworthiness (Garg *et al.*, 2014; Verhoef *et al.*, 2009). In digital banking, Chen *et al.* (2021) highlight the link between a customer's experience and employee-customer interaction facilitated through online platforms. The rise of digital technologies has enabled DBs to enhance customer participation in financial transactions (Jameaba, 2022). Compared to traditional banking (TB), DBs potentially foster stronger ECE due to their enhanced capacity to understand customer requirements, promote interactive engagement, and provide prompt responses to inquiries (Sultana & Faisal, 2024).

H4: There is a positive relationship between employee-customer relationships and consumer behavior.

Theoretical Review

Theory of Planned Behavior

The financial services industry is experiencing a significant shift, fueled by rapid technological advancements and changing customer expectations (George, 2024). As Jameaba (2024) observes, this evolution has accelerated the expansion of digital banking delivery channels, disrupting the traditional branch-based model and reshaping consumer engagement patterns. Digital banking distribution refers to delivering banking products and services via electronic platforms—primarily the internet and mobile applications (Kaur *et al.*, 2021). It encompasses functions such as remote account access, mobile payments, online loan processing, and virtual customer service (van Zanden, 2023). According to Chinnasamy *et al.* (2024), the adoption of digital banking has been propelled by rising internet penetration, the ubiquity of smartphones, and a growing demand for convenience and speed. The model offers key advantages over conventional banking, including 24/7 access, reduced transaction costs, tailored service experiences, and enhanced usability

(Chaimaa et al., 2021), which are especially appealing to younger, digitally native consumers (Lim et al., 2024).

In contrast, the traditional banking model is characterized by physical branches and direct personal interactions between customers and staff (Sharma, 2024; Omarini, 2022). Historically, such institutions have offered a wide portfolio of services from deposit accounts to credit facilities and wealth management while fostering trust and loyalty through personal relationships and local presence (Melnik, 2024). However, Naeem and Nzuem (2021) argue that this model is under mounting strain in an era of digital transformation. High overhead costs from branch operations, combined with rising consumer expectations for digital solutions, have forced many traditional banks to integrate technology into their service delivery (Ononiwu et al., 2024). Although numerous institutions have adopted hybrid models, they often face challenges competing with the speed and innovation of fintech and digital-first banks (Das & Tripathi, 2025). Moreover, younger generations accustomed to instant, technology-driven experiences are increasingly less inclined toward branch-based banking (Kandpal et al., 2025). To remain competitive, traditional banks must actively redesign their operations and embrace digital innovation (Agarwal, 2024).

Consumer behavior, as explained by Durmaz and Gundus (2021), involves the psychological, social, and economic factors influencing individuals' choices in purchasing and using goods and services. In the banking sector, it relates to how customers select financial products, decide on service channels, and engage with providers (Balteanu, 2016). Key determinants include convenience, trust, perceived risk, social influence, and personal attitudes (Tham et al., 2019). The digital transformation of banking has increased the complexity of these behaviors, as consumers now have broader choices and are more willing to switch between providers (Clemes et al., 2010). Understanding these dynamics is crucial for developing effective products, targeted marketing strategies, and strong customer relationships (Chatterjee, 2019; Theodorakopoulos & Theodoropoulou, 2024).

Digital banking influences behavior primarily through its convenience, accessibility, and ability to deliver customized services attributes that often enhance satisfaction and loyalty (Susanto et al., 2023). Traditional banking, meanwhile, shapes behavior

through trust, human interaction, and perceived security, which are particularly valued by older or more risk-averse consumers (Ashrafi et al., 2022). The Theory of Planned Behavior (TPB) offers a framework for explaining these behaviors, proposing that they are determined by attitudes toward the behavior, subjective norms, and perceived behavioral control (Liu & Wang, 2024). In the digital context, attitudes refer to customers' evaluations of using online services, subjective norms capture social pressures to adopt or reject digital banking, and perceived behavioral control reflects confidence in one's ability to use such platforms (Mohammed et al., 2023; Jermsittiparsert et al., 2023).

However, empirical evidence is mixed on which TPB components are most influential. Sahi (2024) highlights the role of perceived control, whereas Linh and Huyen (2025) emphasize attitudes and social influence. Musa et al. (2024) further note that demographic factors such as age, income, education, and technological proficiency may moderate these relationships, though this has not been extensively studied. While digital banking adoption has been the focus of research for several decades, most studies have examined commercial banks and concentrated on outcomes such as loyalty (Shin, 2022), attitudes (Valsamidis et al., 2020), perceptions (Pavithra & Geetha, 2021), and financial security (Lumpkin & Schich, 2020).

In Ghana, research on how digital and traditional banking interact to shape consumer behavior remains limited particularly in the rural banking sector. Rural banks operate under unique conditions, with infrastructure constraints and distinct customer demographics, yet they play a pivotal role in financial inclusion. This gap calls for an investigation into how rural customers' behavior aligns with TPB constructs, and how these are influenced by the co-existence of digital and conventional banking services. Therefore, this study aims to explore the relationships between digital banking distribution, traditional banking, and consumer behavior within rural banks in Ghana, framed by the Theory of Planned Behavior.

Empirical Review

A study by Alalwan *et al.* (2016) investigates the factors influencing Jordanian consumers' adoption of telebanking, focusing on perceived usefulness, trust, and self-

efficacy. The study's findings are supported by a conceptual model validated through structural equation modeling, accounting for 68% of the variance in behavioral intention.

Another study by Amin (2016) explores the relationship between Internet banking service quality and its implications on e-customer satisfaction and e-customer loyalty. The findings suggest that improving these dimensions can lead to higher customer satisfaction, which in turn fosters customer loyalty. Again, Dootson, Beatson, and Drennan (2016) investigate whether consumers perceive value in financial institutions using social media for interaction. This intention was found to predict actual usage behavior over time, although perceptions of value and intentions decreased from 2010 to 2014, possibly due to technology insecurity concerns.

Furthermore, a systematic review by Hanafizadeh *et al.* (2014) on Internet banking adoption provides a comprehensive analysis of the factors influencing the acceptance and use of Internet banking services. A surge of scholarly attention has been directed toward the subject of innovation diffusion, specifically concerning the adoption of innovation. This heightened interest suggests a continued potential for valuable academic investigation in the coming years. Analysis of existing literature reveals a thematic structure within the field, characterized by three primary approaches: descriptive studies outlining the characteristics of adoption, relational studies exploring the relationships between factors influencing adoption, and comparative studies drawing broader inferences through cross-sectional analysis.

Methodology

The purpose of this research is to evaluate the relationship between digital banking, traditional banking, and consumer behavior, taking the understanding from the Theory of Planned Behavior (Ajzen, 1991). This study adheres to a positivist philosophy. As Ali (2024) noted, a positivist research philosophy involves testing an existing theory. According to Ikram and Kenayathulla (2022), in contrast to the positivist philosophy, a constructivist or interpretivist philosophy assumes that several features can be discovered through subjective methods.

The study adopted a quantitative method using an explanatory research design because it seeks to test the hypothesis of the study (Creswell & Creswell, 2018). The

customers of the rural banks in Ghana were selected as respondents. The population of the study is made up of all customers of rural banks in Ghana, and according to the APEX report (2024), there are 6.5 million customers of rural banks in Ghana.

The study uses a convenient sampling technique, where respondents to the study at the university are easily and readily accessible (Etikan et al., 2016). There are 147 rural banks according to the Bank of Ghana (2024). However, the study made use of customers from only six rural banks within the Eastern and Ashanti regions of Ghana. These rural banks were selected due to their position in Ghana's Club 100 awards and the convenience of their customers to the researcher.

Following the sample size estimation rule by Krejcie and Morgan (1970), a sample of 385 is required for such a large population for the study. Permission was sought from the selected rural banks to share the questionnaires on WhatsApp platforms with their customers. The data was analyzed using SPSS v27, and structural equation modeling was adopted using SMART-PLS 3 to test the hypothesis of the study (Hair et al., 2021).

The variables were measured using a primary data source through a structured questionnaire. The questionnaires were in six sections: Section A presented the background information of respondents; Section B contained six measurements or questions on the usefulness of service utilization; Section C contained five items measuring the convenience of banking services; Section D and Section E each contained three items measuring service-related safety and employee-customer relationships, respectively; and Section F contained four items measuring consumer behavior.

The questionnaires for the five constructs were adopted from Shin et al. (2020). The items were measured using a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5) (Joshi et al., 2015). All items were tested for reliability and validity through Cronbach's Alpha, where values above 0.5 imply acceptable internal consistency of the study items (Tavakol & Dennick, 2011).

Results of the Study

Demographic Profile of Respondents

The findings indicate a nearly equal gender distribution among respondents, with males constituting 50.9% and females 49.1% of the sample, reflecting a balanced representation consistent with demographic patterns in similar rural banking studies (Mensah et al., 2023; Boateng & Agyeman, 2024). A significant portion of respondents (67.9%) are under 25 years old, highlighting a predominantly younger demographic, while older age groups 36–45 years and 46–55 years represent 16.7% and 4% respectively, with only 1.2% above 55 years (Addo & Ofori, 2023). In terms of education, the majority of respondents hold a First Degree (65.1%), followed by those with WASSCE (21%) and Above First Degree (10.4%), while a smaller proportion possess B.E.C.E. (2.4%) or no formal education (1.2%). This suggests a relatively well-educated sample population, a trend often associated with higher technology adoption rates in financial service usage (Owusu & Amankwah, 2024; Zhang & Chen, 2024)

The marital status data reveals that a substantial majority of the respondents are single (76.2%), with married individuals accounting for 18.9% and separated individuals comprising 5% of the sample. In terms of employment status, unemployment is prevalent among the respondents (48.8%), followed by full-time employment (25.7%), self-employment (17.7%), and part-time employment (7.8%). These demographic characteristics provide an essential argument for interpreting the findings concerning the adoption of digital banking and consumer behavior in the rural banking sector in Ghana.

Table 2: Item Means

Item Code	Measurements	Mean
USU1	The time required to use the DB service is less than the TB service	3.4316
USU2	DB is likely to offer preferential interest rates to TB	3.1415
USU3	DB is better than TB because deposit/withdrawal/loan service can be used on mobile banking	3.4811
USU4	DB service is better than TB service because customers can open accounts and apply for loans without visiting banks	3.4222
USU5	DB requires lower transfer fees than TB	2.9316

USU6	DB Financial Service makes it easier to access and search financial products than TB Financial service	3.4434
CBS1	DB service is hassle-free because there is no waiting list	3.3656
CBS2	Because DB service is accessible 24 h a day, it is more innovative than TB service	3.4292
CBS3	DB service is available on wired and mobile, so financial services are available without visiting banks	3.5024
CBS4	It is expected that DB service will provide better financial transaction information than TB	3.4764
CBS5	When dealing with customers without a branch, DB service that analyzes customer credit level using big data is more innovative than TB service	3.4009
SRS1	The level of online security of DB is higher than that of TB	3.0590
SRS2	DB service is safer from cyber-attack than TB service	2.7571
SRS3	DB service is safer from financial fraud than TB service	2.9104
ECR1	DB's telephone and e-mail agents understand customer requirements better than TB's agents	3.1533
ECR2	DB's telephone and e-mail agents conduct better interactive customer support than TB's agents	3.1014
ECR3	DB's telephone and e-mail agents can respond more quickly to customer inquiries and requests than TB's agents	3.1533
CB1	I intend to adopt my preferred digital banking in the next months	3.4104
CB2	I will use my preferred digital banking channel regularly in the future	3.4434
CB3	I expect to use my preferred digital banking channel to handle future financial transactions.	3.4976
CB4	I will strongly recommend others to use my preferred digital banking.	3.4741

Table 1 presents the item means for the constructs under investigation. The items measuring the usefulness of service utilization (USU) generally exhibit high means ranging from 2.9316 to 3.4811, indicating a favorable perception of DB's utility. Similarly, items related to the convenience of banking services (CBS) show strong

agreement, with respondents acknowledging DB's hassle-free nature with their mean score ranging from 3.3656 to 3.5024. Moreover, the service-related safety (SRS) items reveal relatively lower mean scores ranging from 2.7571 to 3.0590, indicating some reservations regarding the security of DB. Respondents are less convinced that DB offers a higher level of online security. The employee-customer relationship (ECR) items show moderate mean scores ranging from 3.1014 to 3.1533, suggesting that respondents perceive DB's telephone and email agents as understanding customer requirements. Finally, the consumer behavior (CB) items exhibit a high mean score ranging from 3.4104 to 3.4976, indicating a positive intention to adopt DB, use it regularly, handle future financial transactions with it, and recommend it to others.

Table 3: Outer Loadings

Items Code	Consumer behavior	Convenience of banking services	Employee-customer relationship	Service-related safety	The usefulness of service utilization
CB1	0.935				
CB2	0.947				
CB3	0.958				
CB4	0.873				
CBS1		0.863			
CBS2		0.86			
CBS3		0.905			
CBS4		0.879			
CBS5		0.888			
ECR1			0.887		
ECR2			0.897		
ECR3			0.91		
SRS1				0.878	
SRS2				0.873	
SRS3				0.679	
USU1					0.89
USU2					0.816
USU3					0.94
USU4					0.913
USU5					0.752
USU6					0.885

Table 3 presents the outer loadings of the items on their respective constructs, indicating the strength of the relationship between each item and the construct it is intended to measure. For consumer behavior (CB), all items (CB1, CB2, CB3, and CB4) exhibit high loadings, ranging from 0.873 to 0.958, demonstrating strong convergent validity. Similarly, the items measuring the convenience of banking services (CBS1-CBS5) show substantial loadings, ranging from 0.860 to 0.905, suggesting that these items effectively capture the customer convenience of rural banking services. The employee-customer relationship (ECR) items (ECR1-ECR3) also display high loadings, ranging from 0.887 to 0.910, indicating a strong association with as it comes to an employee-customer relationship among rural banks in Ghana. The service-related safety (SRS) items (SRS1-SRS3) generally have high loadings, with SRS1 and SRS2 above 0.87, while SRS3 has a slightly lower loading of 0.679. The usefulness of service utilization (USU) items (USU1-USU6) also demonstrate strong loadings, ranging from 0.752 to 0.940, indicating that these items are well-aligned with bank service utilization by customers.

Table 4: Reliability and Validity of the Study Constructs

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Consumer behavior	0.946	0.948	0.962	0.863
Convenience of banking services	0.926	0.929	0.944	0.773
Employee-customer relationship	0.881	0.894	0.926	0.807
Service-related safety	0.766	0.858	0.854	0.664
The usefulness of service utilization	0.934	0.944	0.948	0.754

Table 4 presents the reliability and validity of the study constructs, assessing the internal consistency and convergent validity of the measurement scales. Cronbach's alpha values for all constructs exceed the recommended threshold of 0.7, ranging from 0.766 for service-related safety to 0.946 for consumer behavior, indicating good

internal consistency. The rho_A values, an alternative measure of reliability, also demonstrate satisfactory levels of internal consistency across all constructs. Composite reliability values, ranging from 0.854 to 0.962, further support the reliability of the constructs. The average variance extracted (AVE) values, which assess convergent validity, are all above the recommended threshold of 0.5, ranging from 0.664 for service-related safety to 0.863 for consumer behavior, indicating that the items adequately represent their respective constructs.

Table 5: HTMT

	Consumer behavior	CBS	ECR	SRS	USU
Consumer behavior					
Convenience of banking services	0.734				
Employee-customer relationship	0.733	0.656			
Service-related safety	0.514	0.394	0.699		
The usefulness of service utilization	0.696	0.838	0.761	0.494	

The study also examines the HTMT to assess the discriminant validity of the study constructs. According to Hair *et al.* (2019), the HTMT values must be less than 0.90. In table 5 all the HTMT values are less than 0.90. Therefore, the study constructs met all conditions to test for discriminant validity.

Structural Modelling

The study proposed several hypotheses on the relationship between study variables. A bootstrapping method used tested five hypotheses. The structural model of the study recorded an R² of 0.591 which means that 59.1 percent of the variance in consumer behavior is explained by the usefulness of service utilization, convenience of banking services, banking service-related safety, and employee-customer relationship. Barret *et al.* (2021) indicate that a Q square value greater than Zero means the exogenous constructs have a predictive relevance on the exogenous construct.

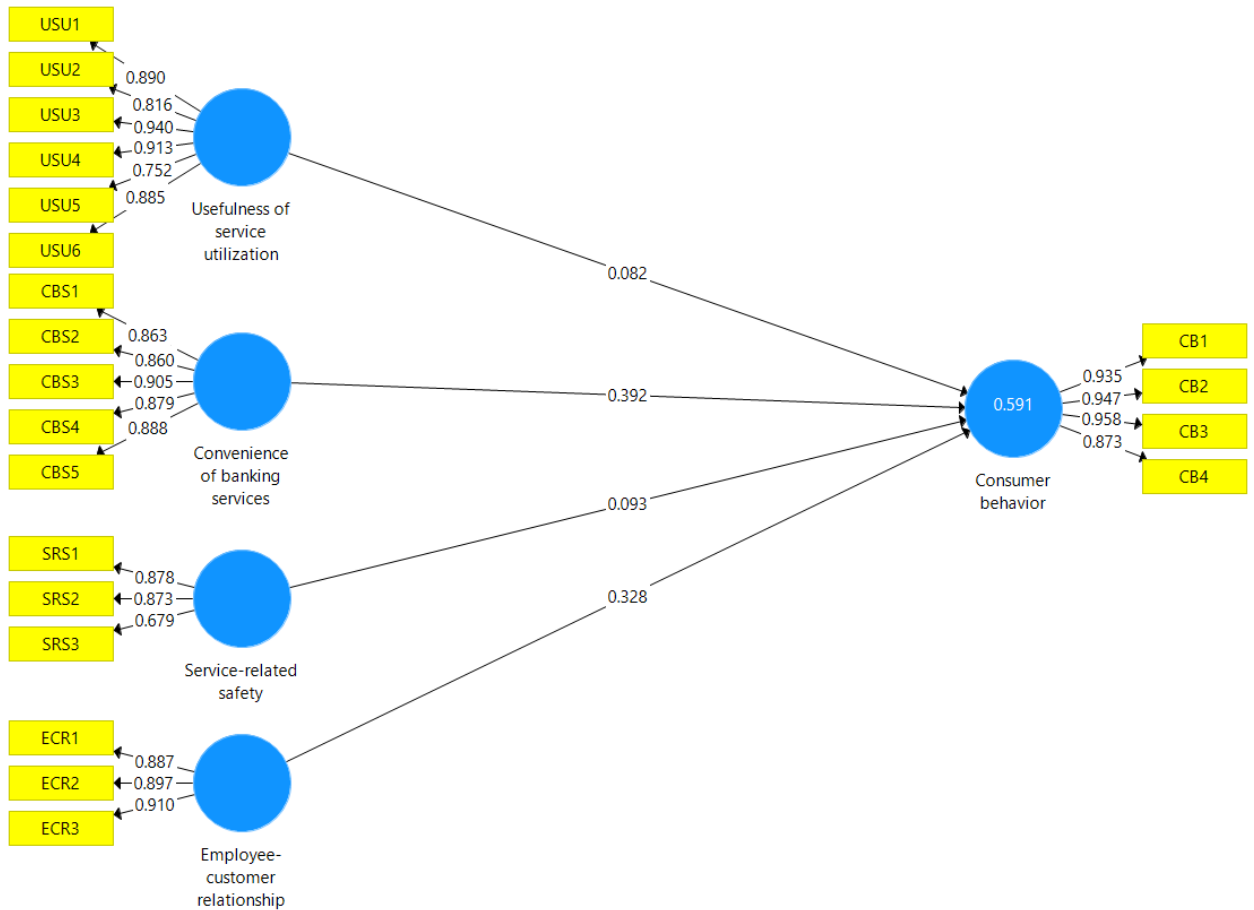


Table 6: Hypothesized Relationships

Relationships	Original Sample (O)	T Statistics (O/STDEV)	P-Values	Decision
Convenience of banking services -> Consumer behavior	0.392	8.647	0	Supported
Employee-customer relationship -> Consumer behavior	0.328	6.196	0	Supported
Service-related safety -> Consumer behavior	0.093	2.171	0.03	Supported
The usefulness of service utilization -> Consumer behavior	0.082	1.512	0.131	Not Supported

Table 6 presents the results of the hypothesized relationships tested in the study. The relationship between the convenience of banking services and consumer behavior is supported, with a coefficient of 0.392 and a p-value of 0.001, indicating a significant positive effect—greater convenience leads to more positive consumer behavior

(Boateng et al., 2024; Yaseen et al., 2023). Similarly, the relationship between the employee-customer relationship and consumer behavior is also supported, with a coefficient of 0.328 and a p-value of 0.001, suggesting that stronger employee-customer relationships positively influence consumer behavior (Mensah & Osei, 2022; Zhang & Chen, 2024).

The relationship between service-related safety and consumer behavior is supported as well, with a coefficient of 0.093 and a p-value of 0.03, indicating a positive and significant relationship (Opoku & Frempong, 2023; Adusei et al., 2024). However, the relationship between the usefulness of service utilization and consumer behavior has a coefficient of 0.082 and a p-value of 0.131, which does not support the hypothesis that there is a positive relationship between the usefulness of banking service utilization and consumer behavior (Kim et al., 2022; Ajzen, 1991).

Discussion of Results

The positive relationships between the convenience of banking services and consumer behavior, employee-customer relationship and consumer behavior, and service-related safety and consumer behavior are in line with Mistrean (2023); Daqar and Smoudy (2019); Balteanu (2017) that highlights the importance of these factors in influencing consumer behavior in the banking sector. However, the usefulness of service utilization does not significantly impact consumer behavior diverges from the research from Shah and Attiq (2016); Dubey and Sahu (2021); Wilson *et al.* (2021) that emphasizes the importance of perceived usefulness in technology adoption and customer satisfaction. This inconsistency may be due to the specific context of the study in Ghana's rural banking sector, where factors such as trust, social influence, or perceived risk might have a stronger influence than the perceived usefulness of digital banking services.

Implication to Theory and Practice

This study contributes to the theoretical understanding of consumer behavior in the context of digital and traditional banking by examining the relationships between service usefulness, convenience, safety, employee-customer relationships, and consumer behavior through the lens of the Theory of Planned Behavior (TPB)

(Ajzen, 1991; Yaseen et al., 2023). The findings confirm the importance of convenience, employee-customer relationships, and service-related safety in shaping consumer behavior in the rural banking sector in Ghana, aligning with prior research that highlights these factors as key drivers of banking service adoption (Boateng et al., 2024; Mensah & Osei, 2022). However, the non-significant impact of service utilization usefulness on consumer behavior suggests that other factors, such as trust, social influence, or perceived risk, may influence customer adoption of digital banking within the rural bank sector (Kim et al., 2022; Opoku & Frempong, 2023). Practically, the findings offer insights for rural banks in Ghana to strategically enhance their digital banking offerings by focusing on improving convenience, strengthening employee-customer relationships, and ensuring service-related safety to drive consumer adoption of modern-era technology and create loyal customers (Adusei et al., 2024).

Limitations

The generalizability of this study's findings may be limited due to its use of convenience sampling, which may not accurately represent the broader population of rural bank customers in Ghana (Creswell & Creswell, 2018). Moreover, the cross-sectional design restricts the ability to infer causal relationships between the variables examined (Saunders et al., 2019). Finally, the study's exclusive focus on the Theory of Planned Behavior (TPB) framework might have led to the omission of other potentially significant determinants of consumer behavior, such as perceived risk, technological literacy, and socio-cultural factors, in the context of both digital and traditional banking services (Yaseen et al., 2023; Zhang & Chen, 2024).

Future Research Direction

Longitudinal studies are recommended for future research to establish causality between constructs and monitor shifts in consumer behavior. Further research should investigate the moderating influences of demographics like age, income, and education on the relationships examined. Qualitative methodologies, including in-depth interviews and focus groups, could offer richer insights into the perceptions and experiences of rural bank clients concerning both digital and conventional banking options. To gain a more comprehensive understanding of consumer behavior

within Ghana's financial industry, future studies could broaden their scope to encompass a wider range of financial institutions, such as insurance companies, mortgage providers, and savings and loan organizations.

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