

Marketing Information Technology, Deployment Challenges, and Competitive Performance in the Nigerian Banking Sector: Evidence from First Bank Nigeria Plc, Uyo Branch

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Article History	Abstract
Original Research Article	<i>This study examined marketing information technology, deployment challenges, and competitive performance in the Nigerian banking sector, using First Bank Nigeria Plc, Uyo Branch, as a case study. Three objectives guided the study: to examine the effect of marketing information technology on market intelligence and competitive performance; to determine whether infrastructural and technical challenges are significantly perceived as constraining the deployment of marketing information technology; and to determine whether human capacity and trust-related challenges are significantly perceived as constraining its deployment. A descriptive survey design was adopted, with a sample of 78 staff drawn from a population of 96 using the Taro Yamane formula and simple random sampling. Data were collected using a structured, validated questionnaire (Cronbach's alpha = 0.81) and analysed using descriptive statistics, simple linear regression, and one-sample t-tests. Findings showed that marketing information technology had a significant positive effect on market intelligence and competitive performance, accounting for approximately 46% of its variance ($R^2 = .464$, $\beta = .543$, $p < .001$); infrastructural and technical challenges (inadequate infrastructure and network downtime) were perceived as significantly above the neutral midpoint of the response scale ($M = 3.77$, $SD = 1.07$, $t(73) = 6.20$, $p < .001$); and human capacity and trust-related challenges (staff training, cost, cybersecurity, and legacy systems integration) were similarly perceived as significantly constraining ($M = 3.66$, $SD = 1.00$, $t(73) = 5.64$, $p < .001$). The study concludes that while marketing information technology significantly enhances competitive performance, its full strategic potential remains constrained by identifiable, addressable infrastructural and human-capacity barriers. Recommendations include phased infrastructure modernisation, structured staff training, and strengthened cybersecurity investment.</i> Keywords: Marketing Information Technology, Market Intelligence, Competitive Performance, Technology Deployment Challenges, Banking, Nigeria.
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1. Introduction

Contemporary service organisations, and particularly banks, increasingly depend on marketing information technology not merely to support routine customer transactions but to sense and respond to their competitive environment. Market intelligence and competitive performance, understood as an organisation's capacity to anticipate market requirements ahead of competitors and to

respond swiftly to competitive threats, has become substantially technology-dependent in the contemporary service industry (Day, 2011). Marketing information technology, comprising marketing information systems, information technology infrastructure, and electronic marketing channels, enables organisations to gather, synthesise, and act upon customer and market data at a

speed and scale unattainable through manual, intuition-based methods (Kotler & Keller, 2016).

Yet the realisation of these strategic benefits is not automatic. A substantial body of scholarship indicates that the performance returns to marketing information technology investment are frequently constrained by organisational and infrastructural barriers, including inadequate technical infrastructure, insufficient staff training, high deployment costs, cybersecurity concerns, and poor integration between legacy and modern systems (Ibrahim & Daniel, 2019; Eze & Chinedu, 2020). The Technology Acceptance Model (Davis, 1989) suggests that even technologically capable systems will fail to deliver their potential performance benefit where users do not perceive them as easy to use or adequately supported, while the Resource-Based View (Barney, 1991) suggests that technology yields sustained competitive advantage only where it is embedded within complementary organisational capability, including trained personnel and reliable supporting infrastructure.

Within the Nigerian banking sector, this tension between the strategic promise of marketing information technology and the practical, infrastructural, and human-capacity constraints on its deployment is particularly salient. Nigerian banks operate within an environment characterised by inconsistent power supply, variable internet connectivity, and, in some institutions, ageing legacy systems, even as they face intensifying competitive pressure from agile, digitally native fintech entrants (Central Bank of Nigeria, 2021). First Bank of Nigeria Limited, established in 1894 and the oldest surviving bank in the country, exemplifies this tension: as a long-established institution, it must continuously modernise its marketing information technology to compete with newer-generation banks, while simultaneously managing the legacy infrastructure and organisational routines built up over more than a century of operation (First Bank Nigeria, 2023).

Despite the practical significance of this tension, comparatively few empirical studies have examined, at branch level, both the performance contribution of marketing information technology to market intelligence and competitive performance and the specific, identifiable barriers that constrain its fuller exploitation, within a single, integrated empirical framework. Most existing Nigerian studies address either the performance benefits of technology adoption or its deployment challenges, but rarely both together in a manner that allows the relative salience of specific categories of challenge to be statistically assessed. It is this gap that the present study addresses, focusing on First Bank Nigeria Plc, Uyo Branch, Akwa Ibom State.

Specifically, the study sought to: (i) examine the effect of marketing information technology on market intelligence and competitive performance; (ii) determine whether infrastructural and technical challenges are significantly perceived as constraining the deployment of marketing information technology; and (iii) determine whether human capacity and trust-related challenges are significantly perceived as constraining its deployment. Correspondingly, the study addressed three research questions and tested three hypotheses:

RQ1: To what extent does marketing information technology affect market intelligence and competitive performance?

RQ2: To what extent are infrastructural and technical challenges perceived as constraining the deployment of marketing information technology?

RQ3: To what extent are human capacity and trust-related challenges perceived as constraining the deployment of marketing information technology?

H01: Marketing information technology has no statistically significant effect on market intelligence and competitive performance.

H02: Infrastructural and technical challenges are not perceived as significantly constraining the deployment of marketing information technology (i.e., the mean perceived-constraint score does not significantly exceed the neutral midpoint of the response scale).

H03: Human capacity and trust-related challenges are not perceived as significantly constraining the deployment of marketing information technology (i.e., the mean perceived-constraint score does not significantly exceed the neutral midpoint of the response scale).

The findings of this study are expected to provide bank management with an evidence base for prioritising specific categories of deployment constraint, to offer policymakers and regulators insight into the sector-wide barriers to marketing technology-enabled competitiveness, and to contribute to the limited body of branch-level literature that jointly examines both the performance benefits and the deployment barriers of marketing information technology in Nigerian banking.

2.0 review of Related literature.

The intersection of marketing strategy and information technology has evolved considerably since the earliest conceptualisations of computer-based marketing decision support in the 1960s and 1970s. Cox and Good (1967), among the first scholars to systematically describe

marketing information systems, characterised them as organised procedures for generating, analysing, and disseminating information for use in marketing decisions. Subsequent decades of advancement in computing power, database management, telecommunications, and internet-based technologies have transformed marketing information systems from static, retrospective reporting tools into dynamic, real-time decision-support platforms capable of integrating internal transaction data with external market intelligence (Kotler & Keller, 2016). This evolution has been especially consequential for the strategic, competitive-facing dimensions of marketing performance examined in this study, since the capacity to sense and respond to a rapidly changing competitive environment depends substantially on the speed and sophistication with which relevant data can be gathered, analysed, and acted upon.

Information technology, in its broadest organisational sense, encompasses the hardware, software, networks, and data management systems used to create, store, process, secure, and exchange electronic data (Laudon & Laudon, 2020). Within the marketing function specifically, the relevant subset of information technology comprises customer relationship management software, marketing automation platforms, business intelligence and analytics tools, and the underlying telecommunications and data storage infrastructure that supports these applications.

In Nigerian banking, the deployment of marketing-relevant information technology has accelerated substantially over the past two decades, driven by both competitive pressure and regulatory initiatives, including the adoption of internet banking, mobile banking, automated teller machines, point-of-sale infrastructure, and increasingly, artificial intelligence-driven customer service tools (Asikhia & Binuyo, 2017).

2.1 Marketing Information Technology and Market Intelligence/Competitive Performance

Market intelligence and competitive performance represent a strategic dimension of organisational performance, concerned with an organisation's capacity to sense and respond to developments in its competitive environment. Day (2011) argues that organisations possessing superior market-sensing capability, the ability to anticipate market requirements ahead of competitors, and customer-linking capability, the ability to create and maintain close relationships with customers, consistently achieve superior performance outcomes. Both capabilities are substantially technology-dependent in contemporary service industries. Onyekwelu and Eke (2021), in a study of marketing information systems and competitive advantage among Nigerian commercial banks, found that banks with well-integrated marketing intelligence and customer data

analytics capability demonstrated significantly stronger capacity to anticipate market trends and respond to competitive pressure than banks with less developed information systems.

Wedel and Kannan (2016) note that the proliferation of digital touchpoints has dramatically expanded both the volume and granularity of customer and market data available to service organisations, creating substantial opportunity for competitive advantage through superior market sensing, while also presenting significant analytical and infrastructural demands. Mithas, Tafti, Bardhan, and Goh (2012) similarly found a robust positive relationship between firm-level information technology investment and customer satisfaction outcomes across multiple industries including financial services, a relationship they attribute in part to technology's role in enabling more responsive, market-informed service delivery.

2.1.2 Deployment Challenges: Infrastructural, Technical, Human Capacity, and Trust-Related Barriers

A substantial literature documents the barriers that constrain organisations from fully realising the performance potential of marketing information technology. Bharadwaj (2000) emphasises that information technology infrastructure should be understood not merely as a collection of hardware assets but as an organisational capability, encompassing the technical skills, managerial knowledge, and organisational routines that enable a firm to effectively deploy and exploit its technology assets; where these complementary capabilities are absent, the performance returns to technology investment are correspondingly diminished. Ibrahim and Daniel (2019), in a study of Nigerian commercial banks, found that the marketing performance benefits of information technology adoption were significantly moderated by the extent of staff technical competence, while Eze and Chinedu (2020) found that service disruptions attributable to infrastructural challenges, including network downtime, were significantly associated with customer attrition in Nigerian banks.

The Technology Acceptance Model (Davis, 1989) provides a useful conceptual distinction relevant to classifying deployment challenges: perceived usefulness-related barriers, such as poor systems integration that limits a technology's practical value to users, and perceived ease-of-use-related barriers, such as insufficient training that leaves users unable to operate a system confidently. Applied to the banking context, infrastructural and technical challenges, including inadequate technical infrastructure and network downtime, primarily constrain the reliable functioning and practical usefulness of marketing information technology, while human capacity and trust-related challenges, including insufficient staff

training, cost, cybersecurity concerns, and poor legacy systems integration, constrain both the ease with which technology can be used and the confidence, whether of staff or of customers, in engaging with it. Asikhia and Binuyo (2017) found that the magnitude of the relationship between electronic banking adoption and bank performance varied considerably across Nigerian institutions, attributable in part to differences in the quality of underlying technology infrastructure and the extent of staff capacity to support electronic banking platforms, a finding that lends empirical support to treating infrastructural and human-capacity barriers as analytically distinct categories of deployment constraint.

This conceptual distinction between infrastructural/technical and human capacity/trust-related barriers also has precedent in the broader information systems literature on technology implementation success, which has long distinguished between technical implementation failure, where a system does not function as intended due to hardware, network, or software deficiencies, and organisational or user-acceptance failure, where a technically functional system nonetheless fails to deliver intended benefits because of inadequate training, resistance to change, or insufficient trust among users and customers. Applying this established distinction to the Nigerian banking context examined in this study allows the two categories of deployment barrier identified here to be interpreted not as an ad hoc post-hoc grouping of survey items, but as an instantiation of a recognised, theoretically grounded typology of technology deployment challenge with wide applicability across service industries beyond banking.

2.2 Theoretical Framework

This study draws on the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) of the firm, applied jointly to explain both the performance contribution and the deployment constraints of marketing information technology. Davis (1989) proposed that an individual's acceptance and use of a technology is determined principally by perceived usefulness and perceived ease of use; extended to an organisational deployment context, TAM suggests that marketing information technology will fail to translate into competitive performance benefit wherever staff perceive the technology as unreliable (undermining usefulness) or difficult to operate (undermining ease of use) due to inadequate infrastructure or insufficient training.

The Resource-Based View, associated with Barney (1991) and extended to marketing capability by Day (1994), holds that sustained competitive advantage derives from resources and capabilities that are valuable, rare, imperfectly imitable, and non-substitutable. Within this

framing, marketing information technology constitutes a potentially valuable strategic resource, but one whose competitive value is only fully realised when embedded within complementary organisational capabilities, technically proficient staff, reliable infrastructure, and trusted, well-integrated systems. Coltman (2007) found that variation in the financial returns organisations obtain from customer relationship management technology investment is substantially explained by differences in organisational capability to integrate the technology with strategy and process, rather than by differences in the technology itself, directly supporting the joint theoretical framing adopted in this study: marketing information technology's contribution to competitive performance (examined through hypothesis one) and the deployment barriers that constrain the fuller realisation of that contribution (examined through hypotheses two and three) are conceptually and empirically inseparable.

2.3 Empirical Review

Day (2011) argues theoretically and demonstrates empirically that organisations possessing superior market-sensing and customer-linking capabilities, both substantially technology-enabled, consistently outperform competitors lacking such capabilities. Onyekwelu and Eke (2021) found, among Nigerian commercial banks, that well-integrated marketing information systems were significantly associated with superior capacity to anticipate market trends and respond to competitive pressure, recommending sustained investment in marketing information technology infrastructure as a strategic imperative. Adeoti (2019) similarly found a statistically significant positive relationship between marketing information system sophistication and customer-facing performance outcomes among Lagos-based deposit money banks.

Regarding deployment barriers specifically, Ibrahim and Daniel (2019) found that information technology adoption significantly predicted marketing performance among Nigerian commercial banks, though the relationship was significantly moderated by staff technical competence. Eze and Chinedu (2020) found that infrastructural challenges, particularly network downtime, were significantly associated with customer attrition in Nigerian banks, while Asikhia and Binuyo (2017), using panel data across multiple Nigerian deposit money banks, found that the magnitude of the relationship between electronic banking adoption and bank performance varied considerably across institutions, a variation attributable in part to differences in infrastructure quality and staff capacity. Internationally, Wedel and Kannan (2016) cautioned that analytical and technological capability alone is insufficient without corresponding organisational capacity to translate data into

actionable strategy, while Coltman (2007), in a study of Australian financial services firms, found that variation in returns to CRM technology investment was substantially explained by organisational integration capability rather than by the technology itself.

Taken together, this body of literature suggests that the barriers to marketing information technology's fuller exploitation are neither uniformly distributed nor randomly occurring, but instead cluster into recognisable categories linked to distinct organisational functions: infrastructure provisioning and maintenance on the one hand, and human resource development and systems governance on the other. This clustering has practical significance for resource allocation decisions within banking institutions, since it suggests that addressing deployment barriers effectively requires coordinated action across what are, in many banking institutions, organisationally separate functions, information technology departments responsible for infrastructure, and human resources or training departments responsible for staff capability development, a coordination challenge that may itself constitute an additional, higher-order barrier to fully realising marketing information technology's competitive performance potential.

2.4 Summary and Gap in the Literature

The literature reviewed establishes a broad consensus that marketing information technology significantly enhances market intelligence and competitive performance (Day, 2011; Onyekwelu & Eke, 2021), while simultaneously documenting a range of infrastructural, technical, and human-capacity barriers that constrain the fuller realisation of this performance potential (Ibrahim & Daniel, 2019; Eze & Chinedu, 2020; Asikhia & Binuyo, 2017). However, few Nigerian studies have statistically tested, within a single branch-level framework, both the performance contribution of marketing information technology and the relative salience of distinct categories of deployment barrier, infrastructural/technical versus human capacity/trust-related. This study addresses that gap by jointly examining these dimensions at First Bank Nigeria Plc, Uyo Branch.

3.0 Methodology

This study adopted a descriptive survey research design, appropriate for systematically collecting data on respondents' perceptions of marketing information technology, competitive performance, and deployment challenges without manipulation of any variable (Nworgu, 2015). The study was conducted at First Bank Nigeria Plc, Uyo Branch, in Uyo, the capital of Akwa Ibom State, Nigeria.

The population comprised 96 members of staff directly or indirectly involved in marketing, customer service, and customer relationship management functions. A sample of

78 was determined using the Taro Yamane (1967) formula, $n = N / [1 + N(e)^2]$, at a 5% margin of error: $n = 96 / [1 + 96(0.05)^2] = 77.4$, rounded to 78. The simple random sampling technique was used to select respondents proportionate to each department's share of the population. Of the 78 questionnaires administered, 75 were returned and 74 were found usable (94.9% response rate).

Data were collected using a structured questionnaire comprising a demographic section and substantive items addressing marketing information technology, market intelligence/competitive performance, and deployment challenges, structured on a five-point Likert scale (Strongly Agree = 5 to Strongly Disagree = 1). Face and content validity were established through expert review, and reliability was assessed via Cronbach's Alpha following a pilot administration to 20 respondents outside the study sample, yielding an overall coefficient of 0.81 (sub-scale range 0.74–0.86).

For hypothesis one, simple linear regression was used to assess the effect of marketing information technology on market intelligence and competitive performance. For hypotheses two and three, the six deployment-challenge items were grouped, on conceptual grounds consistent with the Technology Acceptance Model distinction outlined in Section 2.2, into two composite categories: infrastructural/technical challenges (inadequate technical infrastructure; frequent network downtime) and human capacity/trust-related challenges (high cost of technology deployment; insufficient staff training; cybersecurity concerns; poor legacy systems integration). Composite scores for each category were derived from the reported item-level response distributions, and one-sample t-tests were conducted to determine whether the mean perceived-constraint score for each category differed significantly from the neutral midpoint of the five-point scale (test value = 3.0). All hypotheses were tested at the 0.05 level of significance.

The questionnaire was developed through a multi-stage process informed by existing validated instruments employed in comparable studies of marketing information technology and its deployment barriers (Ibrahim & Daniel, 2019; Onyekwelu & Eke, 2021; Eze & Chinedu, 2020). Draft items were generated to ensure that each construct in the study's conceptual framework, marketing information technology, market intelligence/competitive performance, and the two categories of deployment challenge, was represented by multiple items, and the draft instrument was reviewed for clarity and appropriateness of language prior to formal validation by the project supervisor. The questionnaire was administered directly by the researcher to sampled respondents at the branch, following receipt of formal institutional permission, with respondents briefed on the study's purpose and assured of response confidentiality throughout the three-week data collection period.

4. Results

4.1 Demographic Profile of Respondents

Table 1: Demographic Profile of Respondents (N = 74)

Variable	Category	Frequency	Percentage (%)
Gender	Male	42	56.8
	Female	32	43.2
Age	20–29 years	14	18.9
	30–39 years	33	44.6
	40–49 years	19	25.7
	50 years and above	8	10.8
Qualification	OND/NCE	5	6.8
	HND/B.Sc/B.A	41	55.4
	Postgraduate	24	32.4
	Professional (ICAN/CIBN)	4	5.4
Years of Service	Less than 2 years	8	10.8
	2–5 years	19	25.7
	6–10 years	27	36.5
	11–15 years	13	17.6
	Above 15 years	7	9.5

The demographic profile shows a moderately male-skewed (56.8%), predominantly graduate (87.8% first degree or higher) workforce concentrated in the 30–39 age bracket (44.6%), with the plurality (36.5%) having served between 6 and 10 years, indicating a respondent population well placed to offer informed perceptions of the constructs examined.

4.2 Marketing Information Technology and Market Intelligence/Competitive Performance

Respondents generally agreed that marketing information technology supports market intelligence and competitive performance (grand mean = 3.44). The highest-rated item

concerned anticipating changes in customer demand (mean = 3.54), while items concerning competitor monitoring and product development informed by real-time market intelligence attracted comparatively lower means (3.39 and 3.34 respectively), suggesting that branch-level strategic intelligence functions, which are often centralised at the institutional level in large Nigerian banks, may be less fully developed than customer-facing applications.

4.3 Perceived Deployment Challenges

Table 2 presents the descriptive statistics for the two composite challenge categories derived from the six deployment-challenge items.

Table 2: Descriptive Statistics for Deployment Challenge Categories

Challenge Category	Constituent Items	Mean	SD	N
Infrastructural/Technical	Inadequate infrastructure; network downtime	3.77	1.07	74
Human Capacity/Trust-Related	Cost; staff training; cybersecurity; legacy integration	3.66	1.00	74

Both composite categories recorded mean scores above the criterion mean of 3.0, with infrastructural and technical challenges ($M = 3.77$) rated marginally higher than human capacity and trust-related challenges ($M = 3.66$), though both categories were clearly perceived by respondents as

substantial constraints on effective marketing information technology deployment.

4.4 Test of Hypotheses

Table 3: Summary of Hypothesis Tests

Hypothesis	Statistic	Value	df	p	Decision
H01: MIT → Market Intelligence/Competitive Performance	R^2 (β)	0.464 (0.543)	1, 72	<.001	Rejected
H02: Infrastructural/Technical Challenges (vs. midpoint 3.0)	One-sample t	6.20	73	<.001	Rejected
H03: Human Capacity/Trust Challenges (vs. midpoint 3.0)	One-sample t	5.64	73	<.001	Rejected

Hypothesis one was tested using simple linear regression, which showed that marketing information technology had a significant positive effect on market intelligence and competitive performance ($R^2 = .464$, $\beta = .543$, $t = 7.892$, $p < .001$), accounting for approximately 46.4% of the variance in this performance dimension. The null hypothesis (H01) was therefore rejected.

Hypotheses two and three were tested using one-sample t-tests against the neutral midpoint of the five-point scale (test value = 3.0). Infrastructural and technical challenges were rated significantly above the midpoint ($M = 3.77$, $SD = 1.07$, $t(73) = 6.20$, $p < .001$), indicating that respondents perceive these challenges as a genuine, statistically significant constraint on marketing information technology deployment; the null hypothesis (H02) was rejected. Similarly, human capacity and trust-related challenges were rated significantly above the midpoint ($M = 3.66$, $SD = 1.00$, $t(73) = 5.64$, $p < .001$); the null hypothesis (H03) was also rejected. Both categories of challenge were therefore statistically confirmed as significant, rather than merely nominal, barriers to effective deployment.

5. Discussion

This section discusses the study's three findings, the significant performance contribution of marketing information technology, and the significant constraint posed by both infrastructural/technical and human capacity/trust-related deployment barriers, in relation to the theoretical framework and empirical literature reviewed in Section 2. The discussion is organised to reflect the study's central proposition that these two sets of findings are not independent, but jointly characterise a single underlying phenomenon: marketing information technology as a genuinely valuable, yet currently incompletely exploited, strategic resource.

The finding that marketing information technology has a significant positive effect on market intelligence and competitive performance is consistent with Day's (2011) theoretical proposition that superior market-sensing capability, substantially technology-enabled, is a consistent source of competitive advantage, and with Onyekwelu and Eke's (2021) empirical finding that Nigerian banks with more sophisticated marketing information systems demonstrated superior capacity to anticipate market trends. The comparatively lower R^2 value for this model (0.464) relative to models of more operational, customer-facing performance dimensions reported elsewhere in the wider study programme is conceptually informative: it suggests that while marketing information technology makes a significant and substantial contribution to market intelligence capability, other organisational factors, including senior management's strategic orientation and the branch's degree of strategic autonomy relative to institutional headquarters, account for a meaningful share of competitive performance variance not captured by technology alone, a pattern consistent with the Resource-Based View's emphasis on technology as a necessary but insufficient condition for sustained advantage (Barney, 1991; Day, 1994).

The finding that infrastructural and technical challenges are perceived as significantly constraining marketing information technology deployment corroborates Eze and Chinedu (2020), who found that network downtime and related infrastructural disruptions were significantly associated with adverse customer outcomes in Nigerian banks, and is consistent with the broader pattern of infrastructural constraint documented across the Nigerian banking technology literature (Asikhia & Binuyo, 2017). Within the Technology Acceptance Model framework, this finding maps onto the perceived usefulness dimension:

unreliable infrastructure directly undermines the practical value that staff and customers derive from marketing information technology, regardless of the sophistication of the underlying software or analytical capability.

The finding that human capacity and trust-related challenges are similarly perceived as significant constraints, encompassing cost, staff training, cybersecurity, and legacy systems integration, corroborates Ibrahim and Daniel (2019), who found that staff technical competence significantly moderated the marketing performance benefits of information technology adoption among Nigerian commercial banks. Within the Technology Acceptance Model framework, this finding maps onto the perceived ease-of-use dimension: insufficient training leaves staff less confident and less capable of exploiting available technology, while cybersecurity concerns may additionally undermine customer-side trust and willingness to engage with electronic channels, a concern with direct implications for the customer-facing performance dimensions examined elsewhere in this research programme. Coltman's (2007) finding that variation in returns to CRM technology investment is substantially explained by organisational integration capability, rather than by the technology itself, offers a unifying interpretation of both challenge categories: the branch's marketing information technology appears technically capable of generating significant competitive performance benefit, as confirmed by the results for hypothesis one, but the magnitude of that benefit is currently constrained by infrastructural and human-capacity conditions that fall short of fully supporting the technology's exploitation.

Considered jointly, the near-equivalent statistical significance of both challenge categories ($t = 6.20$ and $t = 5.64$ respectively) suggests that neither infrastructural nor human-capacity barriers alone account for the shortfall between the technology's demonstrated potential and its currently realised performance contribution; rather, both categories of barrier appear to operate concurrently and, plausibly, interactively, such that addressing one category in isolation, for example upgrading network infrastructure without corresponding investment in staff training, may yield only partial performance gains.

5.1 Managerial Implications, Conclusion and Recommendations

5.2 Managerial and Policy Implications

The findings carry direct implications for bank management, technology vendors, and financial sector regulators. For bank management, the near-equal statistical salience of infrastructural and human-capacity barriers implies that technology investment strategy should proceed on parallel tracks rather than sequentially, since

infrastructure upgrades alone are unlikely to yield their full performance potential without concurrent investment in staff capability. For technology vendors serving the Nigerian banking sector, the findings suggest a market opportunity for solutions that explicitly bundle infrastructure deployment with structured, ongoing training and change-management support, rather than treating these as separable, optional add-ons. For financial sector regulators and policymakers, the findings underscore the continued relevance of broader digital infrastructure policy, including reliable power supply and telecommunications connectivity, as a precondition for banks to fully realise the competitive and market intelligence benefits of their marketing information technology investment.

For institutions engaged in professional development and business education, the findings reinforce the case for embedding practical, applied training in marketing analytics, digital marketing channel management, and cybersecurity awareness within both academic curricula and in-service professional development programmes for banking sector personnel, given the demonstrated statistical significance of staff training gaps as a constraint on technology-enabled competitive performance.

The findings also have implications for how business schools and management science departments approach the teaching of technology adoption and diffusion frameworks. The demonstrated utility of jointly applying the Technology Acceptance Model and the Resource-Based View, one explaining individual-level barriers to technology exploitation, the other explaining organisational-level conditions for competitive advantage, illustrates for students and researchers alike the value of theoretical triangulation in applied management research, rather than reliance on a single theoretical lens. Curriculum designers in postgraduate management and information systems programmes may find this dual-theory approach a useful pedagogical model for demonstrating how distinct levels of analysis, individual perception and organisational capability, can be integrated within a single empirical study.

5.3 Conclusion

This study examined marketing information technology, deployment challenges, and competitive performance at First Bank Nigeria Plc, Uyo Branch. All three hypotheses were supported: marketing information technology exerted a significant positive effect on market intelligence and competitive performance; infrastructural and technical challenges were perceived as significantly constraining its deployment; and human capacity and trust-related challenges were similarly perceived as significantly constraining. The study concludes that marketing information technology possesses genuine, statistically

demonstrable potential to enhance competitive performance in the Nigerian banking sector, but that this potential remains only partially realised at branch level, constrained by infrastructural and human-capacity barriers that are identifiable, measurable, and, in principle, addressable through deliberate managerial and policy intervention.

More broadly, the study contributes a methodological approach, jointly modelling technology's performance contribution alongside a statistically disaggregated assessment of its deployment barriers, that offers a template for future branch-level and institution-level research on technology-enabled competitive performance in emerging-market banking contexts. Rather than treating deployment challenges as a purely descriptive afterthought to performance analysis, this study demonstrates that such challenges can be meaningfully tested for statistical significance and organised into theoretically coherent categories, infrastructural/technical versus human capacity/trust-related, that map onto established technology acceptance constructs. This approach yields more actionable managerial insight than either a purely performance-focused or a purely descriptive-challenges analysis would offer in isolation, since it identifies not only that marketing information technology matters for competitive performance, but also which specific categories of barrier are most statistically salient in preventing its fuller exploitation.

5.4 Recommendations

Based on the findings, it is recommended that:

- (i) bank management pursue a phased infrastructure modernisation strategy prioritising network reliability and uptime, given the significant perceived constraint associated with infrastructural and technical barriers;
- (ii) a structured, continuously updated staff training programme in marketing information technology use be instituted, given the significant perceived constraint associated with human capacity barriers;
- (iii) investment in cybersecurity systems be strengthened and made visible to customers, to address trust-related barriers to electronic channel engagement;
- (iv) legacy systems integration be addressed through a phased, technically informed modernisation roadmap; and
- (v) branch-level strategic intelligence functions be more deliberately resourced and, where feasible, granted greater operational autonomy, to

strengthen the branch's independent capacity for competitor monitoring and market opportunity identification.

Given the finding that infrastructural/technical and human capacity/trust-related barriers were of near-equivalent statistical significance, it is further recommended that any phased investment plan avoid sequencing these two categories of intervention entirely separately; rather, infrastructure and capacity-building initiatives should be planned and budgeted concurrently, even where full-scale implementation must proceed in stages, so that partial infrastructure gains are not left unexploited for want of correspondingly trained staff, and vice versa. Bank management should also consider establishing a small, dedicated cross-functional team, drawing on both information technology and marketing personnel, tasked specifically with monitoring the branch's progress in overcoming the specific barriers identified in this study and reporting periodically to senior management on implementation progress.

5.5 Limitations and Suggestions for Further Research

This study was limited to a single bank branch, and the composite challenge scores used to test hypotheses two and three were derived from aggregated item-level response distributions rather than from raw, respondent-level data, a methodological simplification that should be revisited with access to the underlying dataset in future replications. The cross-sectional, self-report design does not permit causal inference regarding the direction of the technology-performance relationship, and the moderate sample size ($N = 74$), while adequate for the statistical tests employed, limits the precision with which smaller effect sizes could be detected. Future research should test the interactive, rather than purely additive, relationship between infrastructural and human-capacity barriers using respondent-level data, extend the analysis across multiple branches or banks, and incorporate objective measures of competitive performance, such as market share trends or new-to-bank customer acquisition data, to complement the perceptual measures used in this study.

A further avenue for future research concerns the potential moderating role of branch-level managerial leadership style and organisational climate in shaping the extent to which identified infrastructural and human-capacity barriers translate into actual performance shortfalls, a dimension not directly examined in the present study but plausibly relevant given the Resource-Based View's emphasis on organisational routines and managerial capability as complements to technological resources. Comparative research examining whether branches with similar technology infrastructure but differing managerial approaches to staff development and change management

exhibit differing levels of realised competitive performance would meaningfully extend the theoretical and practical contribution of the present study.

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