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Research Article

Maximizing Profits in Commercial Banking: A Holistic Examination of Non-interest Income, Risk Management, and Digital Technologies

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ABSTRACT

This research aims to comprehensively examine the intricate relationships among non-interest income, risk management, digital technologies, profit maximization, and commercial banking revenue streams. By analyzing empirical data from various financial institutions, the study aims to elucidate how diversification into non-interest income streams influences risk profiles and overall financial stability. Furthermore, it explores the role of digital technologies in enhancing risk management strategies and driving profitability. This research explores how non-interest income, risk management, and digital technologies collectively impact profit maximization and revenue generation in commercial banks, addressing gaps in understanding these relationships. The findings provide insights for enhancing adaptive strategies and theoretical frameworks within commercial banking literature. Employing a mixed-methods approach, the study begins with a thematic literature review to establish a theoretical foundation. Thematic analysis of the literature informs the development of interview questions for in-depth semi-structured interviews with 14 industry experts, providing rich qualitative data. The research adopts a thematic frequency analysis methodology to categorize and interpret both the literature and interview findings, ensuring a holistic exploration of the research objectives. Findings reveal a complex interdependence between digital technologies, non-interest income, risk management, profit maximization, and commercial banking revenue streams, with digital transformations emerging as pivotal drivers. The study underscores the importance of adaptive risk management amid cybersecurity threats and strategic corporate social responsibility integration for long-term financial success. Methodological limitations include the small sample size of experts and potential biases in qualitative interpretations. Implications extend to banking practitioners navigating the evolving landscape and policymakers shaping regulatory frameworks to foster resilience and innovation.

Keywords: Commercial Banking, Non-interest Income, Risk Management, Digital Technologies, Profit Maximization.

INTRODUCTION

Commercial banking is always evolving, so knowing the various aspects that affect profitability, risk reduction, and technology innovation is essential. This study examines commercial banking's non-interest income, risk management, digital technology, profit maximization, and revenue sources. By studying these key factors, the study illuminates the link between traditional banking procedures and the disruptive forces transforming the industry. Commercial banking facilitates money distribution, economic growth, and wealth management in the financial business (Nguyen, Parsons, & Argyle, 2021). Recent technological advances, regulatory changes, and shifting client preferences have significantly altered the industry. In response to increased competition and lower interest rates, fee-based services and wealth management have emerged as crucial income diversifiers for banks. To react to a rapidly changing risk landscape, financial institutions have developed increasingly complicated risk management approaches (Yuan, Zhong, & Lu, 2022). Digital technology has revolutionized banking operations, enhancing customer experiences, operational efficiency, and creating new revenue streams. These technological advancements, along with economic cycles and Corporate Social Responsibility (CSR) initiatives, shape profit maximization strategies in commercial banking (Hussain, Lee, & Chen, 2022). Banking executives aim to satisfy stakeholders while navigating strategic challenges posed by technological changes and regulatory scrutiny, striving to maintain profitability through a balance of interest and non-interest income.

Previous studies have shed light on the primary elements being studied in this research. Non-interest income studies have emphasized fee-based services, digital banking, and wealth management as revenue-growth strategies (Wang, Buchongo, & Chen, 2022). Credit, operational, and cybersecurity risk management have also been studied extensively in academia. This study emphasizes flexible risk mitigation measures (Pasha, Rao, MallaReddy, & Bande, 2023). At the same time, academic research on digital banking technologies has highlighted fintech cooperation, machine learning, and AI's potential. According to Shang and Niu (2023), digital transformation, economic cycles, and corporate social responsibility are complicated components of banking profitability. Moreover, scholarly analyses of commercial bank revenue streams have underscored the challenges of balancing interest and non-interest income and the importance of revenue diversification. The interaction between digital technology and risk management is particularly significant, as financial institutions must adopt modern technologies and risk reduction strategies to combat escalating cybersecurity threats (Villalba, Venus, & Sauer, 2023). A complicated connection between the following elements affects the commercial banking business (Königstorfer & Thalmann, 2020). Digital technology has changed many financial activities, a major issue. Studies link digital transformation to non-interest revenue. New technologies are helping banks enhance wealth management and offer fee-based services (Yu, Oguti, Ochora, & Li, 2022).

Profit optimization is examined in detail, including its dependence on economic cycles and digital technologies. Banks maximize profits due to economic volatility that affects lending and investment decisions (Calmès & Théoret, 2020). The research suggests that the purposeful use of digital technology enhances operational efficiency, decreases expenses, and maximizes revenue, which favors profit-maximizing methods (Kuroki, 2021). The aforementioned aspects benefit from commercial banking income streams, a vital part of the financial ecosystem. Paltrinieri, Dreassi, Rossi, and Khan (2021) found that diversifying revenue using digital and non-interest income methods is essential for a solid and balanced revenue structure. The industry believes that banks' over-dependence on interest income makes them more vulnerable during economic downturns.

Previous studies give a wealth of knowledge for future research on these elements' interactions. Scholars should first study how digital technologies and non-interest income interact. Mi Alnaser, Rahi, Alghizzawi, and Ngah (2023) recommend analyzing how technological integration affects fee-based services, asset management, and income diversification. Further research is needed to understand the complicated interaction between risk management and technology advances, particularly in cybersecurity. Jin, Li, Liu, and Khalid Nainar (2023) found that new cyber threats demand proactive technology integration into risk management frameworks. Additional research is needed to determine how digital enhancements affect numerous banking activities, affecting profitability (H. H. Khan, S. Khan, & Ghafoor, 2023). The ideas focus on how technological advances and non-interest income strategies help commercial banks build healthy revenue structures. Diversity affects economic volatility and financial stability, hence researchers are interested in its strategic effects (Uyar, Wasiuzzaman, Kuzey, & Karaman, 2022). The objectives of the study are as follows:

1. Analyze the impact of digital technology on commercial banks non-interest income strategies.
2. Examine the relationship between risk management and technology, focusing on cybersecurity.
3. Analyze the impact of digital advances on profit maximization and banking activities.
4. To examine how revenue diversification affects economic volatility and financial stability strategically.

This study examines key factors in commercial banking, focusing on digital technology's role in profit maximization and risk management. According to J. Singh, G. Singh, Gahlawat, and Prabha (2022), digital technology is being incorporated into banking operations, causing major changes. The research analyzes how digital technologies and other factors are connected since the industry requires technology to improve operational efficiency, engage customers, and diversify income streams. This research is crucial considering the current risk management focus. A. R. D. Rodrigues, Ferreira, Teixeira, and Zopounidis (2022) show cybersecurity literature adapts to new threats. Risk management and digital technology must coexist to protect banking operations and stakeholder trust against cyberattacks. The study's theoretical approach matches commercial banking research, demonstrating industry adaptability. Ahmed, Bangassa, and Akbar (2020) say implementing digital technology involves understanding its many consequences on banking operations.

The research maximizes earnings and finds revenue streams using a Resource-based View (RBV). Based on Wernerfelt's (1984) study, the Resource-based View (RBV) posits that an organization's competitive advantage is its unique skills and resources. This study found that digital technology, multiple revenue sources, and risk management increase financial institutions' profitability and competitiveness. Stakeholder Theory explores how CSR boosts profits. Companies should consider customers, workers, and society's interests, according to (Ullah, Zahid, All-e-Raza Rizvi, Qureshi, & Ali, 2022). The RBV highlights the strategic importance of leveraging unique resources like digital technology for competitive advantage, while Stakeholder Theory underscores the value of ethical practices in achieving sustained profitability. These insights contribute to the enhancement of commercial banking literature, offering practical implications for financial institutions.

LITERATURE REVIEW

The financial industry relies on commercial banking. The economy benefits from corporate support, currency transfers, and financial risk reduction. In recent years, the approach to profit maximization in commercial banking has significantly evolved. This evolution has prompted researchers and industry professionals to delve into the complex relationships among non-interest revenues, risk management practices, and the adoption of digital technologies. Non-interest income diversifies revenue streams, according to Huynh (2024). Loan and other interest-bearing asset interest revenue has traditionally supported commercial banks. However the changing financial landscape and rising market competition have made diversification increasingly crucial. Financial institutions profit from commissions, fees, and other non-interest profits and lessen their interest rate dependency (Guo & Xu, 2021). Focusing on non-interest earnings can increase stability and resilience during economic turmoil, say experts. Commercial banking profit maximization requires risk control. Banking has credit, market, operational, and regulatory compliance risks. Scholars emphasize strong risk management frameworks to detect, analyze, and reduce threats. Proactive risk management safeguards the institution's finances, reputation, and regulatory compliance, increasing long-term profits (Gulati, 2022). Risk management is essential for commercial banking performance, according to the literature. Commercial banking profitability discussions have focused on digital technologies. Financial services digitization and fintech provide problems and possibilities for traditional institutions. Research reveals that digital technology enhances user experience, saves money, and increases efficiency (L. F. Rodrigues, Oliveira, & H. Rodrigues, 2023). Blockchain, AI, and other advanced technologies strengthen internal operations and the economy. Academics argue commercial banks must be proactive about digital transformation to stay profitable and competitive in today's fast-changing financial environment. Balance non-interest revenue, risk management, and digital technologies in commercial banking (Dang, 2022). Digital technologies significantly impact non-interest income by enabling banks to offer fee-based services and enhance wealth management solutions. They also improve risk management by providing advanced tools for monitoring and mitigating credit, operational, and cybersecurity risks, thereby enhancing overall financial stability and profitability.

Non-interest Income

Commercial banks need to measure non-interest income, which includes a variety of revenue streams other than interest. This variable includes commissions, fees, and non-lending income. Diversifying revenue streams with non-interest income reduces banks' sensitivity to interest rate fluctuations and economic risks (Boussemart, Leleu, Shen, Vardanyan, & Zhu, 2019). Previous studies have shown that non-interest revenue in commercial banking improves financial stability and profitability. Banks have depended heavily on lending and investment interest. However, as financial markets improved, observers recognized the need for income equality (Xiang & Jiang, 2023). Banks intentionally employed non-interest revenue to boost profitability and reduce interest rate risk. Strategically prioritizing non-interest earnings may help banks weather economic downturns, according to a study. Fee-based revenue is more consistent than interest income (Yildirim, Kasman, & Gulamhussen, 2023). Non-interest profits are debated for their long-term viability, regulatory impact, and customer relationships. Killins and Mollick (2020) say banks that rely too heavily on fees and commissions may be more exposed to swings, especially amid economic instability. Consumer protection and regulatory monitoring may be compromised by excessive fee-based service use. However, proponents believe that financial institutions need non-interest revenue to stay profitable, especially amid low interest rates. Financial institutions say they can survive tough economic times provided they have a diverse income mix, including non-conventional funds. Commercial banks' non-interest revenue and effects have been studied recently (Shi, Wang, & Emrouznejad., 2023). Research has examined how fee income from electronic banking, consulting services, and wealth management affects bank performance. Effective fee-based operations management boosts profitability and budgetary stability (Chai, Sun, Lai, & Xiao, 2023). Academic research has examined how regulatory changes affect non-interest revenue. Regulations can change banks' charge kinds and amounts, influencing their earning framework. Consumer perspectives dominate non-interest income research nowadays. As financial institutions change their business strategies and services, fee structures' impact on consumer happiness and loyalty is debated. According to Duan (2023), transparent and client-centric fee structures may improve the banking experience and build long-term relationships. However, overly high costs or complicated agreements may dissatisfy consumers and push them to seek alternative financial services.

Risk Management

Commercial banking risk management involves identifying, assessing, and reducing financial institutions' operational risks. Credit, market, operational, liquidity, and compliance risks exist. Effective risk management protects the bank's finances and stability in accordance with regulations (Yunita, Sasmoko, Bandur, & Alamsjah, 2023). Commercial banking risk management studies have explored several risk factors and how financial institutions handle them. Credit risk is often stressed in banking literature. Credit risk assessment, loan portfolio management, and economic cycles' effects on credit quality were discussed. The market risk literature investigated asset price, interest rate, and currency exchange rate volatility risk management (Wu et al., 2023). Technology infrastructure, internal controls, and organizational culture are essential to controlling internal operations risks, according to operational risk studies. Current commercial banking risk management discussions are defined by the ever-changing financial industry and new dangers (He, Ho, & Xu, 2020). The global financial crisis reevaluated risk management, emphasizing stress testing, scenario analysis, and risk interconnectivity. Academics debate whether traditional risk management frameworks can address cyber risks, geopolitical instability, and technology's impact on the financial sector (Alshwayat et al., 2023). The Current study also studies how risk management strengthens bank resilience amid economic turmoil. The topic is on risk models and institutions' abilities to recognize and quantify dangers. The trade-offs between return and risk are also discussed, since overly conservative risk management should not hurt profitability. Current research emphasizes the need for a cohesive risk management strategy (Yuan et al., 2022). Scholars advocate integrating risk management principles into strategic choices and examining risks at every level of the bank's governance structure. Advanced analytics, machine learning, and AI may improve risk modeling and identify hazards. Academic research reveals that a proactive and future-oriented risk management culture is needed to identify new risks and adapt to changing market situations (Q. Gong, Liu, Peng, & Wang, 2020). The study explores how regulatory reforms and risk management monitoring impact banks' risk appetite and economic activity. The ongoing discussion emphasizes the need to reconcile regulatory commitments with banks' ability to innovate and compete.

Digital Technologies

Digital technologies in commercial banking use current IT tools, platforms, and solutions to improve banking operations, client interactions, and services. These include AI, ML, blockchain, cloud computing, and digital channels like mobile and online banking. Previous studies have revealed that digital technologies greatly impact commercial banking (Esfahbodi, Pang, & Peng, 2022). Digital technology has revolutionized banking by replacing arduous processes and paper transactions. Researchers have researched the deployment and absorption of core digital technologies over the past decade, focusing on their capacity to simplify procedures, save money, and boost efficiency. The history stresses the shift from brick-and-mortar to Internet banking. The initial questions focused on Internet banking and ATMs (Harvey, Kallestrup, & Czaja, 2023). Advanced technology like mobile banking applications and digital payment systems was researched next. Academic publications have studied fintech and digital-native bank growth to see how it affects traditional financial institutions. Modern literature on digital technologies shows how the financial industry is adapting to technology (Lee, Chen, & Chu, 2023). Academics examine the pros and cons of digital technology. Digital technology may boost operational efficiency, cut costs, and boost customer happiness, according to proponents. AI automates monotonous processes, blockchain technology improves security and transparency, and data analytics provides strategic decision-making insights. However, some worry about the risks of rapid digitalization. The digital gap, security and privacy issues, and financial profession replacement are issues (J. Singh et al., 2022). Research also examines the effects of greater technological use for client contacts, expressing worries about the banking industry's human connection. Recent research shows that digital technology impacts commercial banking. Digitally efficient banks have improved customer happiness and retention, according to (Norveel, Gonzalez, & Presthus, 2022). Cutting-edge technology makes financial infrastructure more flexible and adaptable. Academic research also underlines the importance of digital transformation in hiring and retaining technologically proficient clientele, especially younger ones. Academics also examine how digital technology might improve financial inclusion. Evidence shows that mobile banking and digital payment solutions help provide financial services to persons without restricted access to traditional banking services (Frączek & Urbanek, 2021). This aspect of digital technology supports global initiatives to empower consumers and increase financial accessibility.

Profit Maximization

Profit maximization in commercial banking involves strategically and intentionally pursuing decisions and activities to maximize profit while adhering to ethical and legal standards. Strategy planning, cost control, revenue development, and risk reduction are included. Previous studies on commercial banking profit maximization examined the history of profit-oriented practices and their impact (Cornett, Minnick, Schorno, & Tehranian, 2021). Initial queries centred on typical revenue streams like investment and loan interest. Academics examined loan pricing models, interest rate spreads, and central bank policies' effects on profitability. Profit maximization literature has grown with the financial industry (Pallathadka et al., 2023). Researchers began studying revenue diversification beyond interest profits. Fees, commissions, and other financial services revenue are vital to maximizing profitability. Investment banking, fee-based services, and wealth management boost bank profitability, according to Zedda, Modina, and Gallucci (2024). Modern research on profit maximization shows commercial banks' complicated challenges and possible benefits in a changing global economy. Scholars examine the trade-offs between short-term profits and long-term sustainability. The scholarly literature examines the conflict between increasing shareholder wealth and satisfying public goals like financial inclusion and economic progress. Modern study examines how technology advances, legal changes, and economic conditions affect profit-maximizing approaches (P. Jiang, Liu, Zhang, & Wang, 2023). After the global financial crisis, risk management strategies were refocused on conservatism to ensure stability and discourage short-term risk-taking. This study emphasizes the necessity for a diverse and harmonious strategy to maximize profits. Studies show that successful banks blend income and non-interest earnings, manage risk well, and adapt to technology (Cairó & Sim, 2023). Digital technologies, strategic alliances, and customer focus are essential for long-term success.

Commercial Banking Revenue Streams

Commercial banks generate many revenue streams from their activities and services. Since they affect operating efficiency and profitability, these income streams are crucial to commercial banks' financial health and long-term existence. To manage the complicated banking industry, students and professionals must comprehend the structure and dynamics of numerous income sources (D. Gong, S. Liu, J. Liu, & Ren, 2020). Xiang and Jiang, (2023) study on commercial bank revenue streams has focused on interest and non-interest income. Banks traditionally relied on interest income from investments and loans. The original studies focused on interest rate spreads, loan portfolio management, and monetary policy-interest revenue correlations. In recent years, researchers have been more interested in researching non-interest income, such as fees, commissions, and earnings from other financial services (Huynh, 2024). Research also examined how diversifying income streams reduces interest rate risk and boosts profitability. Electronic banking, investment banking, and wealth management fees have been studied as non-interest revenue. Current literature on commercial banking income sources illuminates financial sector trends. Academics and business leaders investigate how technology, law, and consumer tastes alter traditional revenue sources. The banking revenue model has been reassessed due to fintech, alternative financial service providers, and digital banking (Sharma, 2023). The academic study compares interest and non-interest income, taking into consideration their limits and opportunities. Scholars study how low-interest rates affect interest income, forcing financial institutions to find other revenue streams. Services that demand payment also raise questions regarding consumer enjoyment, governmental supervision, and funding source dependability (Fasano, Rocca, Cariola, & Passarelli, 2023). Modern research emphasizes the need for a diverse and harmonized commercial banking income strategy. Successful financial institutions manage interest and non-interest earnings and adapt to changing financial conditions. Technology helps fintech companies create new financial products, digital platforms, and collaborations, according to Santos, Liguori, and Garvey (2023). Additionally, a new study evaluates how regulatory changes affect commercial bank income. Consumer protection laws, interest rate policies, and open banking activities affect income production as regulatory frameworks emerge. Scholars examine how financial corporations use regulatory frameworks to gain revenue while following to laws.

Economic Fluctuations

GDP, employment, inflation, and investment measure economic swings, that are caused by domestic economic activity. These oscillations are part of economic cycles and are either expansionary or contractionary (Gallo & Serra, 2024). Policymakers, businesses, and scholars must understand economic variations since they can affect employment, income distribution, and well-being. Keynesian economics, developed during the Great Crisis, proposed that fiscal and monetary policies may mitigate economic downturns (Oyvat & Onaran, 2022). In contrast, Hayek's Austrian business cycle theory emphasizes credit expansion and malinvestment as key economic instability drivers (de Groot, Segers, & Prins, 2022). In the 20th century, academics studied numerous theories to explain economic volatility. True business cycle theory arose in the 1980s, emphasizing technological shocks and productivity shifts as economic cycle drivers. New Keynesian models attribute employment and output shifts to wage and price inflexibility. Academic research is examining how financial innovations such as complicated derivatives and securitization may affect economic downturns and recovery throughout economic expansion (Brayshay, 2020). Another debate is how structural developments like the contract economy, automation, and digitalization affect economic instability. Scholars study how these shifts affect employment, income distribution, and economic recovery (Matringe & Power, 2023). The debate also considers how non-traditional monetary methods like quantitative easing may reduce economic oscillations and ensure its long-term viability. Modern study shows the complexity and diversity of 21st-century economic cycles (Salazar, Merello, & Zorio-Grima, 2023). Academic studies stress the importance of a holistic approach that considers both traditional and emerging macroeconomic indicators. The current study highlights the necessity for flexible and adaptable economic strategies to respond to interconnected and ever-changing global economic realities. Academic research confirms the use of predictive indicators in forecasting and controlling economic oscillations. Machine learning and big data have provided new insights for predicting economic downturns and developing preemptive policy solutions.

METHODOLOGY

This study used a rigorous and diversified research method, including thematic analysis, semi-structured expert interviews, and a literature review. This technique was adopted to thoroughly understand Non-interest Income, Risk Management, Digital Technologies, Profit Maximization, and Commercial Banking Revenue Streams. The investigation began with a thorough literature review. The researchers methodically used reliable industry reports, scholarly articles, and conference proceedings. The main goal was to find and evaluate scholarly articles on the variables. The systematic search method linked keywords and phrases to each variable to thoroughly investigate the relevant literature. The study team structured and merged data based on the variables' themes throughout the thematic literature review (**Table 1**). This method revealed literary patterns, trends, and arguments. It provided an overview of the components, laying the groundwork for the next step of the inquiry. Integration of current research was vital in creating interview methodologies and establishing an expert interview focus.

Table 1. Thematic Analysis

Variable	Author	Key Themes/Concepts Explored	Major Findings/Contributions
Non-interest Income	A. Zhang, Wang, Liu, and Fu (2020)	Fee-based income, Wealth management, Cross-selling	Identified trends in the diversification of revenue sources, emphasizing fees.
	Dang and Nguyen (2022)	Transaction fees, Advisory services, Digital banking	Explored the impact of digital banking on fee-based income and customer loyalty.
	Ghosh (2020)	Insurance services, Investment banking, Innovative products	Investigated the role of innovative financial products in enhancing non-interest income.
	He et al. (2020)	Relationship banking, Risk management, Regulatory influence	Explored the influence of risk management practices on fee-based income.
Risk Management	Zhu, Wang, Wei, and Cai (2023)	Credit risk, Market risk, Operational risk	Investigated the integration of various risk management strategies in banks.

Variable	Author	Key Themes/Concepts Explored	Major Findings/Contributions
	Fraisse and Laporte (2022)	Basel III, Stress testing, Regulatory compliance	Examined the impact of Basel III on risk management practices and capital adequacy.
	d'Ambrosio, Perrone, and Romano (2023)	Cybersecurity, Geopolitical risks, Systemic risks	Explored emerging risks and the role of cybersecurity in modern risk management.
	Fang, Q. Wang, F. Wang, and Zhao (2023)	Liquidity risk, Risk modeling, Enterprise risk management	Investigated the evolution of liquidity risk management practices in commercial banks.
Digital Technologies	Esfahbodi et al. (2022)	Artificial intelligence, Blockchain, Customer experience	Explored the transformative impact of artificial intelligence and blockchain in banking.
	Gallego-Losada, Montero-Navarro, García-Abajo, and Gallego-Losada (2023)	Fintech partnerships, Mobile banking, Data analytics	Investigated the strategies for successful fintech partnerships and mobile banking adoption.
	Cheng, Qu, Jiang, and Zhao (2022)	Cloud computing, Open banking, Regulatory challenges	Explored the adoption challenges and benefits of cloud computing in commercial banking.
	Polyzos, Samitas, and Kampouris (2021)	Machine learning, Robotic process automation, Customer trust	Investigated the role of machine learning in enhancing operational efficiency and trust.
Profit Maximization	M. Yang (2023)	Return on assets, Cost efficiency, Market share	Explored the determinants of profitability and efficiency in commercial banks.
	Kitamura (2022)	Corporate social responsibility, Ethical banking	Investigated the impact of CSR practices on bank reputation and long-term profitability.
	Z. Liu, Schindler, and W. Liu (2020)	Economic cycles, Dividend policies, Merger and acquisition	Explored the impact of economic fluctuations on dividend policies and M&A activities.
	Hussain et al. (2022)	Digital transformation, Innovation, Customer satisfaction	Examined the role of digital transformation in enhancing profitability and customer satisfaction.
Commercial Banking Revenue Streams	Nguyen et al. (2021)	Interest income, Non-interest income, Fee-based services	Investigated the trends in interest and non-interest income and the role of fee-based services.
	Huynh (2024)	Investment banking, Wealth management, Cross-selling	Explored the strategies for enhancing revenue through investment and wealth management services.
	Hernández-Nieves, Hernández, Gil-González, Rodríguez-González, and Corchado (2020)	Fintech partnerships, Customer-centric services, Regulatory compliance	Investigated the impact of fintech partnerships on revenue streams and customer services.
	Abrar, Hasan, and Kabir (2023)	Digital channels, Open banking, Customer loyalty	Explored the relationship between digital channels, open banking, and customer loyalty.

Semi-structured interviews with 14 field specialists were the second study phase. Participants were chosen for their commercial banking, risk management, digital technology, and related capabilities (**Table 2**). Academics, industry practitioners, and regulatory authorities were interviewed to provide a balanced assessment of the factors. Throughout the interview process, the researchers maintained a reflexive stance, acknowledging their own perspectives and potential biases. This reflexivity was crucial for ensuring an unbiased interpretation of the collected data. The semi-structured nature of the interviews allowed for the exploration of emergent themes, enabling the researchers to capture unanticipated insights that enriched the overall findings.

Table 2. Profile of Selected Participants

Respondent ID	Position	Expertise	Years of Experience	Banking Sector	Interview Duration (minutes)
001	Chief Financial Officer	Finance, Risk Management	20	Commercial Banking	45
002	Senior Technology Officer	Digital Technologies, Innovation	15	Fintech	40
003	Senior Risk Analyst	Credit Risk, Compliance	10	Investment Banking	50
004	Chief Executive Officer	Strategic Management, Profit Maximization	25	Retail Banking	55
005	Head of Non-interest Income	Financial Products, Wealth Management	18	Corporate Banking	35
006	Regulatory Compliance Officer	Regulatory Policies, Basel III	12	Regulatory Authority	60
007	Senior Data Scientist	Data Analytics, Machine Learning	8	Technology Solutions	45
008	Senior Marketing Manager	Customer Engagement, Product Development	22	Retail Banking	40
009	Head of Commercial Lending	Loan Portfolio Management	17	Commercial Banking	50
010	Chief Information Officer	IT Infrastructure, Cybersecurity	19	Technology Solutions	55
011	Senior Wealth Advisor	Investment Planning, Asset Management	14	Wealth Management	35
012	Chief Operations Officer	Process Optimization, Efficiency	23	Retail Banking	60
013	Head of Customer Service	Customer Satisfaction, Digital Channels	16	Retail Banking	40
014	Senior Legal Counsel	Regulatory Compliance, Legal Affairs	21	Legal Services	50

A precise interview process was devised to assist the interviews. Open-ended questions examined various facets of each characteristic. Semi-structured discussions allowed participants to elaborate and communicate subtleties. The interview questions (**Table 3**) included a wide variety of topics, including challenges and possibilities, trends, and external influences affecting variables. The researchers sat contemplatively during the session, showing awareness of their biases. Reflexivity ensured data analysis was impartial. A semi-structured framework throughout the interviews allowed researchers to identify trends and surprising insights that improved the outcomes.

Table 3. Interview Guidelines

Variable	Interview Guideline Questions
Non-interest Income	1. Can you discuss the key sources of non-interest income in your banking operations?
	2. How has the diversification of revenue streams, beyond interest income, evolved?
	3. What role do fee-based services play in enhancing non-interest income for your bank?
	4. Can you share insights on the impact of digital banking on fee-based income?
Risk Management	1. How does your bank approach credit risk management, and what strategies are in place?

Variable	Interview Guideline Questions
	2. What role do regulatory requirements, such as Basel III, play in risk management?
	3. How has the landscape of operational risk changed, and how do you mitigate these risks?
	4. In your opinion, what are the emerging risks, and how does your bank address them?
Digital Technologies	1. How has your bank embraced digital technologies to improve customer experiences?
	2. Can you discuss the impact of fintech partnerships on your digital transformation?
	3. What role does artificial intelligence play in enhancing operational efficiency?
	4. How do you address challenges related to customer trust in adopting new technologies?
Profit Maximization	1. What strategies does your bank employ to maximize profits while ensuring sustainability?
	2. How does corporate social responsibility contribute to long-term profitability?
	3. Can you discuss the influence of economic cycles on profit maximization strategies?
	4. In what ways has digital transformation positively impacted your bank's profitability?
Commercial Banking Revenue Streams	1. How do you balance interest and non-interest income in revenue generation?
	2. Can you discuss trends in investment banking and wealth management services?
	3. How do fintech partnerships contribute to diversifying revenue streams?
	4. What role do digital channels play in enhancing commercial banking revenue?

Participants' responses were transcribed after the interviews to guarantee accuracy. Next, interview transcripts were rigorously analyzed for themes. The iterative analytic method coded and categorized data into themes, then enhanced them by comparing. To validate the findings, the researchers collaborated and had talks. The theme analysis for the literature study and expert interviews sought recurring themes, novel perspectives, and consistent patterns across variables. Triangulation of opinions using data from both sources strengthened the research results. To fully grasp the determinants, this study used a dual-source method, integrating industry insiders' observations with theoretical information from the literature. The results showed complicated variable connections and interdependence. To develop a theoretical framework, the literature review highlighted risk management trends and digital technology advances. In contrast, expert interviews indicated commercial banks' limitations with these methods and technology. Data synthesis revealed the complex relationships between commercial banking revenue streams, risk management, non-interest income, digital technology, and profit maximization. The framework depicted commercial banking's intricate interactions.

RESULTS

When asked about non-interest income, respondent 005 underlined the growing relevance of digital banking fee-based services (**Figure 1**). According to Paltrinieri et al. (2021), revenue streams diversify beyond interest income. Kör, Wakkee, and van der Sijde (2021) emphasize the revolutionary role of digital technology in income production, and digital banking influences fee revenue. Asset management services are crucial to non-interest revenue (Huynh, 2024). Respondent 005's emphasis on asset management to increase income matches the scholarly debate. Consider this intriguing topic. The convergence underlines that fee-based services, notably digital banking and wealth management, affect commercial banking's non-interest income environment.

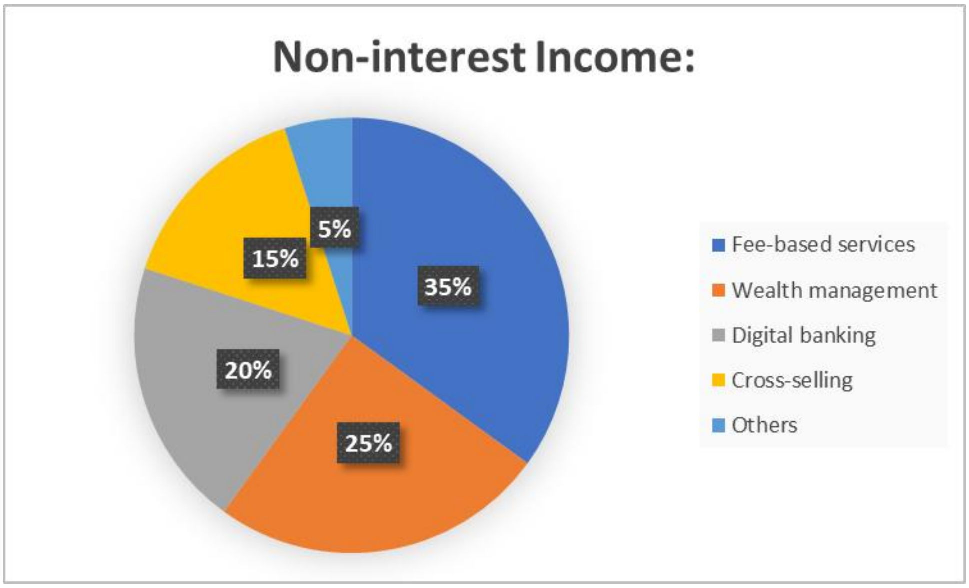

Figure 1. Non-interest Income

Senior Risk Analyst Respondent 003 stressed the complexity of risk management, concentrating on credit, operational, and cybersecurity risks (**Figure 2**). W. H. Jiang, Xu, Chen, Govindan, and Chin (2022) agree that contemporary risk management requires a comprehensive strategy. Research study shows that technology vulnerabilities in banking are developing (X. Yang, J. Yang, Hou, Li, & Sun, 2023). Respondent 003 also noted Basel III's significant influence on risk management. This finding supports recent research on regulatory frameworks and bank risk management (Hummel, Laun, & Krauss, 2021). The findings show that research participants know about known and emerging threats. This fits with the current discussion on adapting risk management techniques to changing conditions.

Figure 2. Risk Management

Respondent 002, a Senior Technology Officer, says machine learning and AI are commonly employed. This is congruent with Mi Alnaser et al. (2023), who studied how new technology alters banking operations. The emphasis on fintech ties aligns with Tiberius, Gojowy, and Dabić (2022), who emphasize the strategic relevance of partnerships in digital success. Response 002's statement that customer confidence is crucial to new technology acceptance agrees with Shaikh, Glavee-Geo, Karjaluoto, and Hinson (2023), who underlined faith in technical advancement. According to the research, digital technologies greatly influence commercial banks and strategic relationships are crucial to adapting to this fundamental change (**Figure 3**).

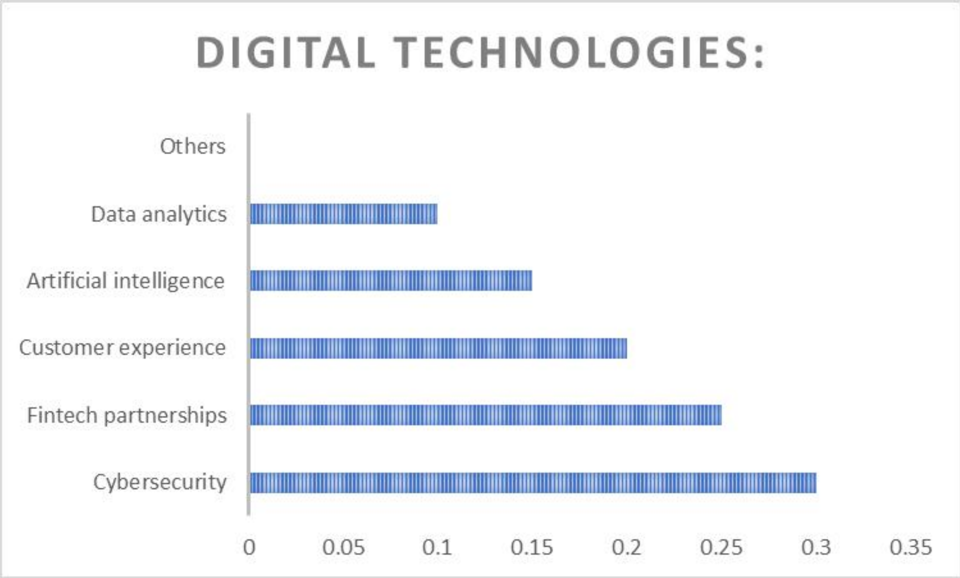

Figure 3. Digital Technology

Senior Technology Officer Respondent 002 claims that machine learning and AI are prevalent. Djelassi and Boukhatem (2020) identified similar technology-driven financial transformations. Fintech connections are crucial to strategic digital ecosystem navigation, according to Sharma (2023). Response 002 agrees with Chen, Liu, Ma, & Huang (2022) that customer confidence is crucial to new technology acceptance. As said in the comments, digital technologies influence commercial banks according to the literature. Strategic alliances are also important for this huge transition (**Figure 4**).

Figure 4. Profit Maximization

Senior Marketing Manager Respondent 008 recommended collecting revenue from interest and non-interest (**Figure 5**). J. Zhang and Malikov (2022) observed that fintech collaborations change revenue structures, complementing respondent 008's income diversification goals. Moreover, the acknowledgment of the importance of digital channels in enhancing commercial banking revenue (respondent 008) is consistent with the literature on the impact of digitalization on revenue enhancement (Q. Gong, Liu, Peng, & Wang, 2020). These findings collectively support the argument that commercial banks are navigating a complex landscape where the balance between traditional and emerging revenue streams is crucial for sustained profitability.

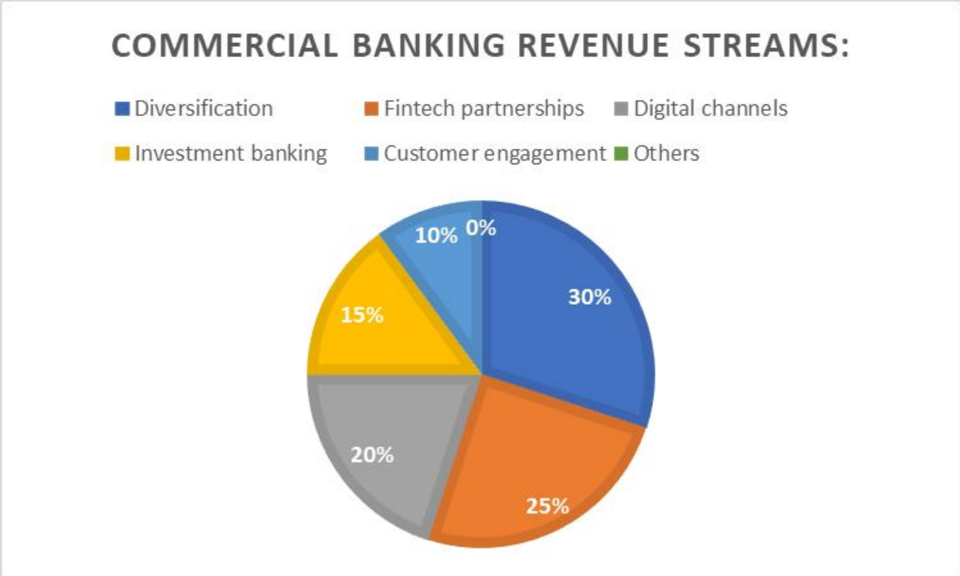

Figure 5. Commercial Banking Revenue Streams

Participants' viewpoints and current scientific studies confirm the study's conclusions. Numerous criteria suggest survey participants are aware of commercial banking industry advances and difficulties. Academic literature's complexity is reflected in the replies' deep grasp of profit maximization, risk management, digital technologies, and income sources. This consistency emphasizes the study's practicality and demonstrates that participants' suggestions greatly benefit commercial banking research. The study is legitimate because the literature is methodically integrated to give evidence and theoretical foundations for hypothetical solutions. This study gives a more complete view of commercial banking than previous studies.

DISCUSSION

The discussion chapter serves as the heart of this research, unraveling the intricate tapestry woven through the exploration of non-interest income, risk management, digital technologies, profit maximization, and commercial banking revenue streams. A key finding is the transformative role of digital technology in banking. The study suggests that banks must actively implement innovative solutions, such as strategic collaborations with fintech companies and the utilization of AI and machine learning, to navigate the evolving digital landscape. For practical application, banks should adopt technologies like AI-driven customer service and blockchain for secure transactions, while also preparing for integration challenges and the need for specialized skills. The emphasis on digital technology highlights the necessity for banks to stay competitive by enhancing operational efficiency, improving customer experiences, and diversifying income streams. Respondent 005 agrees with Singh et al. (2022) that digital banking disrupts fee-based services. Experts have also witnessed the industry-wide shift toward non-interest revenue streams. Yunita et al. (2023) examined financial management trends, hence the theme analysis focuses on financial management services. This comment shows that industry experts are realizing the viability of offering complicated financial services in addition to standard banking products. The fundamental issue is how digital banking affects fee income. Recent studies, such as Shyu (2023), underline the revolutionary impact of digital technology on banking operations restructuring. The research shows that respondents are actively using digital channels to increase income. According to senior risk analyst respondent 003, respondents understood risk management well. The focus on credit risk, operational risk, and cybersecurity by qualified people suggests a sophisticated strategy that matches with Saby et al. (2023) risk management research. The acknowledgement of Basel III norms follows scholarly discussion that highlights legal compliance as a key component of modern risk management. According to Polishchuk, Mlavets, Rozora, and Tymoshenko (2023), cybersecurity was assigned a significant priority, demonstrating that the sector is becoming more aware of technical threats in risk management. The report emphasizes a complete risk management plan that addresses credit, operational, and cybersecurity threats. These findings can help banks implement sophisticated threat detection systems and comply with regulations to mitigate risk. Maintaining resilience in a changing environment requires adaptive risk management. Regular risk assessment procedure upgrades and cybersecurity infrastructure investment are practical approaches. Respondent 002, a Senior Technology Officer, shed light on the growing application of machine learning and AI. Almansour (2023) found that artificial intelligence significantly impacts banking operations. X. Yang et al. (2023) agree with the remarks' repeated emphasis on fintech links. This links the study's findings to earlier academic studies on partnerships' role in digital navigation. The fact that Raza, Woxenius, Vural, and Lind (2023) found consumer trust to be a key element in technology adoption suggests that industry experts understand the intricate interplay between human trust and technology.

The examination emphasized digital transformation and innovation for profit maximization. These components follow the current academic discussions, notably Malik, Wei, Appel, and Luo (2023), which highlight the relevance of digital technology in improving banking profitability and efficiency. By studying how economic oscillations affect banking practices, de Groot et al. (2022) confirm the link between profit maximization and economic cycles. Technology and the economy affect strategic decision-making, according to research participants. Including corporate social responsibility (CSR) in long-term profitability complicates the subject. Hunjra, Jebabli, Thrikawala, Alawi, and Mehmood (2024) found that CSR efforts improve bank reputation and financial performance. The respondents' growing knowledge of the link between ethical issues and financial performance suggests a desire for socially responsible banking operations, as shown by the emphasis on CSR.

Theme analysis of commercial banking revenue questions indicated the challenge of reconciling interest and non-interest income. According to D. Gong et al. (2020), the sector's focus on diversification shows that it recognizes the need to diversify income sources. A recent study by Hernández-Nieves et al. (2020) supports fintech's focus on cooperation. This research shows that the industry realizes these collaborations' impact on revenue. The relevance of digital channels in improving commercial banking income fits with Li, He, Tian, Sun, and Ning's (2022) results on digitalization and revenue growth. This shows that survey participants recognize digital channels' importance and are actively using them to restructure their revenue sources. This study shows various recurrent trends and surprising findings when compared to others. The focus on fee-based revenue, digital technologies, and fintech partnerships shows the industry's consensus on technology's transformative impact on commercial banking. This finding supports earlier research on banking process modernization due to technology. The deep research on consumer trust's influence on technology adoption, the recognition of corporate social responsibility (CSR) as a driver of profitability, and the findings on consumer trust add fresh angles to the conversation. The above findings indicate that the sector is aware of current developments and intensely concerned with modern commercial banking's ethical and technical issues. The research results' congruence with current literature strengthens their credibility. The innovative findings contribute to the current conversation regarding commercial banking's ever-changing industry, emphasizing the need for flexible methods that incorporate technology, risk management, and ethics for long-term success.

Thus, on the basis of the above we developed the following proposed framework which is shown in **Figure 6**.

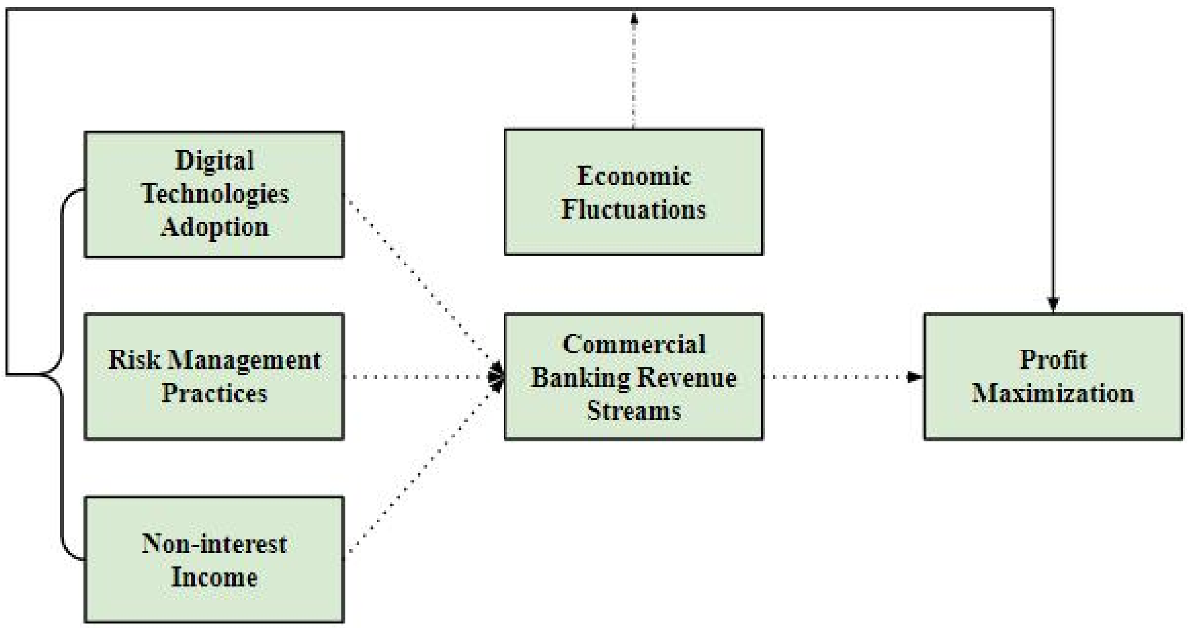

Figure 6. Proposed Framework

CONCLUSION

This study examines commercial banking's complex dynamics, including non-interest income, risk management, digital technologies, profit optimization, and revenue sources. It provides valuable insights for banking practitioners and academic theory through in-depth conversations with industry professionals. A fundamental finding is that digital technology transforms banking. As the digital world changes, banks must adopt creative solutions including strategic partnerships with fintech startups and AI and machine intelligence, according to the report. For operational efficiency, customer satisfaction, and revenue diversification, banks should invest in technology. For practical use, banks should adopt AI-driven customer service and blockchain for secure transactions, while planning for integration problems and specialized expertise. The analysis emphasizes the need to manage credit, operational, and cybersecurity risks. These findings can help banks implement sophisticated threat detection systems and comply with regulations to mitigate risk. Maintaining resilience in a fast changing environment requires adaptive risk management. This could require regular risk assessment process modifications and cybersecurity infrastructure investment. The study also emphasizes CSR's impact on long-term profitability. It suggests that CSR actions can boost financial success by improving reputation and customer loyalty. Thus, banks are encouraged to balance ethics and profit with CSR. Investing in community development and sustainability programs benefits society and boosts brand value and customer trust. The study presents these findings and emphasizes the need for more research. Limitations include a short sample size and response bias. Future studies should use larger and more diverse samples, multiple research methods to triangulate findings, and longitudinal designs to track industry trends. Stakeholder and global perspectives can also illuminate the commercial banking environment. In conclusion, this study emphasizes the relevance of digital technology, comprehensive risk management, and CSR in modern banking. It requires strategic technology and ethical investments to boost operational efficiency and long-term profitability. Financial organizations can better navigate the current financial landscape and contribute to scholarly discourse with nuanced, evidence-based perspectives by integrating these insights into banking practices.

IMPLICATIONS

Practical Implications

This study affects commercial bankers and academics. Digital technology drives revenue growth, thus financial institutions should invest in creative solutions. Businesses could improve customer service with chatbots or risk assessment with AI and ML. Partnerships with fintech firms could extend services and boost competitiveness in the fast-changing digital market. These strategies must be tailored to each organization's structure, strategy, and technology. The research emphasizes a comprehensive risk management approach with regular evaluations and improvements to risk mitigation. Due to the dynamic nature of cybersecurity, credit, and operational risks, financial institutions should use advanced hazard identification and regulatory compliance technology. AI-driven cybersecurity solutions can detect and respond to threats in real time. However, large implementation costs, specific expertise, and integration issues must be considered. Banking ethics are underscored by the link between CSR and long-term profitability. CSR may improve brand reputation, earnings, and society. Banks might support community development or use sustainable lending. However, connecting CSR with company goals, securing stakeholder buy-in, and assessing social affect are obstacles. According to this study, including social responsibility in corporate models is ethical and realistic for long-term financial success. A more holistic understanding can be achieved by including customer, regulator, and shareholder viewpoints. Customers may prefer ethical banks, regulators may support evolving norms, and shareholders may favor long-term viability. The study adds to the literature by examining how digital technologies, risk management, and CSR affect commercial banking. The theoretical foundation is extended by showing how these elements boost profitability and competitiveness in a fast-changing environment. To improve these findings' practical application and theoretical validity, further study could examine specific case studies and overcome constraints.

Theoretical Implications

This work's theoretical ramifications refine and introduce new ideas to commercial banking research. The study supports and complements current scholarly studies on digital technology's revolutionary impact. This highlights the necessity for theoretical models to explain the dynamic link between technology uptake, income diversification, and banking practice changes. The survey also stresses the need for risk management, which includes credit, operational, and cybersecurity assessments. This helps establish theoretical frameworks that simplify banking risk management. The rising amount of risk management knowledge emphasizes the need for flexible and diversified strategies to mitigate the vast variety of risks commercial banks confront today. Current theories on profit maximization are enhanced by including CSR as a key component in long-term success. This study recommends integrating ethics into profit maximization models, challenging the idea that only financial measurements should be considered. By adding CSR into theoretical frameworks, one may assess financial performance and socially responsible commercial banking activities.

LIMITATIONS

Although this research has illuminated the intricacies of commercial banking, several limitations must be acknowledged. While the perspectives provided by these individuals were diverse and valuable, they may not fully capture the wide-ranging experiences within the commercial banking industry. A larger and more diverse sample could enhance the relevance of the findings. The study also relied on self-reported data from industry experts, which introduces potential response bias due to personal or organizational prejudices. Future studies could mitigate this bias by triangulating findings with observational data or broader survey-based research. Furthermore, while the study focused on key variables such as non-interest income, risk management, digital technology, profit maximization, and revenue streams, it may have overlooked other crucial elements. To gain a more comprehensive understanding of the evolving commercial banking industry, future research could examine additional factors or employ a more holistic approach. The cross-sectional design of the study limits causal inference, providing only a snapshot of the sector. Longitudinal or experimental designs could offer deeper insights into how these elements change over time, particularly in rapidly evolving technological and economic contexts. Moreover, the emphasis on industry experts' opinions neglected the perspectives of other stakeholders, such as customers, regulators, and employees. Incorporating these viewpoints could provide a more nuanced understanding of the complex interrelationships and impacts within the commercial banking ecosystem. Methodologically, the research faced challenges related to validity and comprehensiveness, which were not fully addressed. Reflecting on these challenges could offer valuable insights into the reliability and validity of the findings, guiding improvements in future research designs.

FUTURE DIRECTIONS

This analysis suggests many exciting research options. Studying how regulatory changes like new financial technologies or geopolitical events affect commercial bank operations is promising. Research topics could examine how fintech regulations affect non-interest income and risk management. Methodologically, a comparative case study could analyze regulatory impacts in different jurisdictions utilizing qualitative regulator and banking professional interviews and quantitative financial performance data analysis. Globalizing the study to examine commercial banking activities in different cultural, legal, and economic contexts can improve its generalizability. Cross-sectional surveys, comparative analyses with stratified sampling and econometric modeling could shed light on how cultural and legal variations affect digital banking technology adoption. The industry's response to technical advances, economic volatility, and regulatory changes may be revealed via longitudinal studies. Long-term effects of digital transformation on bank profitability and risk management may be research topics. This method uses time-series analysis to uncover trends and patterns in surveys and financial performance measurements across several years. Incorporating stakeholder viewpoints like internal organizational cultures, regulatory agencies, and consumer preferences should improve our knowledge of commercial banking dynamics. Mixed-methods study involving qualitative interviews and quantitative survey analysis could examine how organizational cultures and regulatory environments affect risk management and non-interest income strategies. Further research could examine the challenges and ethical issues of using AI and machine learning in commercial banking. This may involve experimental designs evaluating AI applications in simulated financial environments and surveying and interviewing industry professionals. Commercial banking's sustainability practices may be revealed by studying ESG criteria. A mixed-methods approach employing qualitative case studies and quantitative research of financial performance and ESG KPIs could examine how ESG initiatives affect profit maximization and corporate social responsibility. Methodological consideration is needed for each study avenue. Surveys, interviews, case studies, and secondary data analysis should be used to acquire representative data using stratified or purposive sampling. Analytical methods include qualitative topic analysis and complex statistical modeling. This research affects banking procedures greatly. Understanding regulatory consequences helps banks comply and perform. Global practices can educate international banking strategy, and longitudinal studies can help manage risk and plan long-term. Stakeholder viewpoints improve customer connections and organizational culture, while AI and ESG considerations boost banking innovation and sustainability. These study directions address gaps and deepen our understanding of essential commercial banking challenges, harmonizing with and expanding prior studies.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this article.

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