

The Role of Fintech and Digital Banking Systems in Commercial Banks in Oman

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ABSTRACT

This research examines the transformative impact of Financial Technology (FinTech) and digital banking systems on commercial banks in Oman. It explores how technologies like digital payments, mobile banking, blockchain, and artificial intelligence enhance efficiency, accessibility, and competitiveness. The study highlights the benefits of these innovations, including improved operations, customer experience, and financial inclusion, while addressing challenges such as cyber security risks and regulatory compliance. Combining qualitative and quantitative data, the paper underscores the role of FinTech in reducing costs and driving economic growth in Oman. It concludes with recommendations for regulators and banks to support sustainable digital transformation.

Keywords: FinTech, Digital Banking, Commercial Banks, Oman, Financial Inclusion, Technology Adoption, Artificial Intelligence in banking, Banking Transformation

INTRODUCTION

The banking sector has undergone significant changes globally, driven by financial crises like the 2007–2008 crisis and rapid advancements in financial technology (FinTech). Innovations such as online payments, peer-to-peer lending, and virtual currencies have enhanced efficiency, customer satisfaction, and financial inclusion. In Oman, commercial banks are leveraging FinTech to adapt to digital transformation, offering services like mobile banking, blockchain, and AI-driven solutions.

This study focuses on the role of FinTech and digital banking in Oman's commercial banking sector, analysing their impact on operational efficiency, customer engagement, and financial inclusion. The research aligns with Oman's Vision 2040, which emphasizes digital transformation for economic growth. While FinTech offers numerous benefits, challenges such as cyber security, regulatory compliance, and adoption costs remain significant.

Key research questions include:

1. How does FinTech enhance the operational efficiency of Omani commercial banks?
2. How does it improve customer satisfaction and financial inclusion?
3. What challenges do Omani banks face in adopting FinTech solutions?

By addressing these questions, the study aims to provide insights into how Oman's commercial banks can navigate the digital transformation to remain competitive in the evolving financial landscape.

THE DEFINITION OF TERMS

FinTech: Financial Technology, or FinTech, refers to the use of innovative technologies and software to offer financial services more efficiently, securely, and conveniently. It includes mobile payments, blockchain, peer-to-peer lending, and online banking platforms.

Digital Banking: Digital banking involves delivering traditional banking services through digital platforms, such as mobile apps and websites, enabling customers to access accounts, transfer funds, apply for loans, and perform other transactions online without visiting a physical branch.

Commercial Banks: Commercial banks are financial institutions that offer a range of banking services to individuals, businesses, and organizations. These services include accepting deposits, providing loans, facilitating payments, and offering financial advisory services.

Oman: Oman is a country located in the Arabian Peninsula. Known for its strategic position and growing economy, Oman has a financial sector that includes commercial banks, development banks, and a burgeoning FinTech ecosystem, aiming to diversify its economy and promote financial inclusion.

Financial Inclusion: Financial inclusion refers to ensuring individuals and businesses have access to affordable and effective financial products and services, such as banking, credit, insurance, and savings. It is a key driver of economic growth and social development.

Technology Adoption: Technology adoption is the process by which individuals, organizations, or industries accept and integrate new technologies into their operations to improve efficiency, productivity, or service delivery. In banking, it includes the adoption of AI, mobile banking, and blockchain systems.

Artificial Intelligence in Banking: Artificial Intelligence (AI) in banking involves using advanced algorithms, machine learning, and data analytics to improve decision-making, customer service, fraud detection, and risk management. Examples include chatbots for customer support and AI-driven credit scoring.

Banking Transformation: Banking transformation refers to the comprehensive changes and modernization efforts within banks to improve operations, customer experience, and competitiveness. This often involves leveraging digital technologies, FinTech partnerships, and operational restructuring to adapt to market demands and regulatory changes.

Return on Equity (ROE): ROE measures the profitability of a company in relation to shareholders' equity. It indicates how effectively a company is using the investments of its shareholders to generate profits. The formula for ROE is:

Return on Assets (ROA): ROA measures how efficiently a company uses its total assets to generate net income. It shows the profitability relative to the company's total assets.

LITERATURE REVIEW

The adoption of **FinTech** and **digital banking systems** is transforming Oman's financial sector, reshaping commercial banks' operations and customer engagement. This literature review aims to explore the role of FinTech and digital banking systems within commercial banks in Oman by synthesizing key research articles on the topic.

1. (Alharthy et al., 2020) Oman's banking sector plays a crucial role in the national economy, with increasing digitalization promoted by the **Central Bank of Oman** (CBO). However, barriers like infrastructure limitations and regulatory challenges have slowed FinTech adoption
2. (Khan et al., 2021) FinTech innovations, including mobile payments, blockchain, and Artificial Intelligent (AI), enhance operational efficiency and customer satisfaction. Personalized services such as mobile banking apps and digital wealth management improve financial inclusion, especially for underserved populations in rural areas
3. (Al-Khuraishy et al., 2022) Digital banking—offered through mobile apps, internet platforms, and kiosks—has streamlined operations for commercial banks, reducing costs and enhancing customer experience. Major banks like **Bank Muscat** have invested heavily in these systems, boosting accessibility and security
4. (Al-Saadi, 2021) The integration of FinTech and digital banking has improved profitability, operational efficiency, and customer-centric services through AI and data analytics. Digital banking has also enabled broader market reach while lowering operational costs
5. (Al-Mashaqba & Al-Debei, 2020) Key challenges include regulatory hurdles, cybersecurity concerns, and uneven consumer adoption, particularly in rural areas with limited internet access. However, tech-savvy younger populations are driving the transition toward digital banking
6. (Khan et al., 2021) Emerging technologies like **blockchain** and **AI** are expected to revolutionize banking further, fostering innovation and financial inclusion. Supportive regulatory frameworks will be critical in accelerating this transformation

CONCLUSION

FinTech and digital banking in Oman are enhancing efficiency, financial inclusion, and customer experience despite regulatory and adoption challenges. Ongoing advancements and supportive policies are set to shape the sector's future, offering exciting growth potential.

Significance of Study

The significance of the study lies in its potential to not only provide empirical evidence on the impact of FinTech and digital banking on Oman's commercial banks but also offer practical recommendations for policy makers, bank managers, and regulators. It would contribute to the broader understanding of how technology is transforming banking in the Middle East and beyond, creating a more efficient, inclusive, and customer-cantered financial environment.

Objectives

1. To identify the key fin-tech and digital banking innovations adopted by commercial banks in Oman.
2. To assess the impact of these technologies on customer experience and operational efficiency.
3. To evaluate the challenges faced by Omani banks in implementing fin-tech solutions.
4. To explore the future prospects of digital banking in Oman.

RESEARCH METHODOLOGY

The research methodology of this research is explained in details. The mixed-methods approach, combining qualitative and quantitative analyses. Primary data is collected through surveys targeting bank employees and customers, while secondary data is obtained from bank reports, government publications, and academic journals. This methodology ensures a robust framework to explore the role of FinTech and digital banking in

shaping the commercial banking sector in Oman.

Research Design

This study will adopt a mixed-methods approach, integrating qualitative and quantitative methodologies. This design will ensure a comprehensive understanding of the role FinTech and digital banking systems play in Oman's commercial banking sector.

Data collection is secondary data that has already been collected through primary sources and is readily available for researchers to use in their own research. It is a type of data that has already been collected in the past. Primary sources could be banks' financial statements.

The idea behind secondary data is that it is readily available, and that the researcher uses it in accordance with the needs. The study paper's primary source of secondary data is a bank's annual reports. Researchers must also make every effort to obtain comprehensive and sufficient information.

Data Collection Methods

Data collection is the methodical process of collecting and analysing information from various sources to gain a clear picture or understanding of a particular topic. This process helps individuals and companies get the answers they need, evaluate their performance, and predict trends and opportunities.

This study analyses and work on discussing the information and data obtained from the financial statements of the five banks in the Sultanate of Oman, which are the Bank Muscat, Dhofar Bank, Sohar Bank, Bank Nizwa and Oman Arab Bank. The financial statements for the banks list that was chosen for the year 2019 to 2023. In order to get the required ratios for those years' data from multiple sources

DATA ANALYSIS AND INTERPRETATION

To assess the impact of Fintech, it's crucial to consider the bank's investments in technology. This study analyses and work on discussing the information and data obtained from the financial statements of the five banks in the Sultanate of Oman, which are Bank of Muscat, Dhofar Bank, Sohar Bank, Bank Nizwa and Oman Arab Bank. Return on Assets and Return on Equity formula were used, as this study is used as a link to the relationship between the study goals and the results that have been analysed to ensure the impact of financial technology on the productivity of banks.

The financial performance of five leading Omani banks—Bank Muscat, Dhofar Bank, Sohar Bank, Bank Nizwa, and Oman Arab Bank; analysing their Return on Assets ($ROA = \text{Net Income} \div \text{Total Assets} \times 100$) and Return on Equity ($ROE = \text{Net Income} \div \text{Shareholders' Equity} \times 100$) from 2019 to 2023. The analysis links FinTech adoption with improvements in financial performance.

Key Observations:

Bank Sohar

- **ROA:** Declined sharply from 0.00981 (2019) to 0.00554 (2023) due to COVID-19 but rebounded to 0.00844 by 2022 as the bank embraced financial technology.
- **ROE:** Increased from 0.03763 (2020) to 0.05240 (2023), indicating improved customer satisfaction and operational efficiency enabled by FinTech.

Bank Dhofar

- **ROA:** Dropped from 0.01193 (2018) to 0.00718 (2020), recovering to 0.00790 in 2022 due to FinTech-driven operational enhancements.
- **ROE:** Rose from 0.03596 (2021) to 0.04761 (2023), signifying better profitability post-pandemic with increased technological adoption.

Bank Muscat

- **ROA:** Improved steadily from 0.01311 (2020) to 0.01571 (2023), showcasing effective asset utilization supported by FinTech.
- **ROE:** Climbed from 0.07993 (2020) to 0.08993 (2023), reflecting heightened profitability for shareholders.

Oman Arab Bank

- **ROA:** Displayed volatility, dropping to 0.00117 in 2021 but recovering to 0.00377 by 2022, aided by FinTech-based automation.
- **ROE:** Increased from 0.00584 (2021) to 0.02098 (2023), driven by digital banking innovations attracting more customers.

Bank Nizwa

- **ROA:** Decreased from 0.09839 (2019) to 0.01013 (2023), but the overall trend highlighted significant FinTech contributions to asset efficiency.
- **ROE:** Improved from 0.05222 (2021) to 0.06118 (2023), showcasing better equity utilization through customer-focused services.

FINDINGS AND CONCLUSIONS

Impact of FinTech on Operational Efficiency:

- FinTech integration has significantly enhanced the operational efficiency of Omani commercial banks.
- The adoption of automation, streamlined workflows, and advanced analytics has optimized banking processes and reduced costs.

Customer-Centric Services:

- The use of digital platforms, mobile banking, and personalized financial solutions has improved customer satisfaction and engagement.
- FinTech innovations have enabled banks to offer more tailored and accessible services.

Regulatory Framework:

- Oman's regulatory authorities have created a conducive environment for FinTech innovation while ensuring compliance.
- Proactive policies have supported the seamless integration of technology within the banking sector.

Collaboration Between Banks and FinTech Entities:

- Partnerships between traditional banks and FinTech firms have played a crucial role in adapting to

technological advancements and evolving market demands.

Future Prospects:

- Continued advancements in FinTech present opportunities for further improvements in financial efficiency and productivity.
- Key strategies include embracing emerging technologies, fostering innovation, and investing in digital capability development.

Strategic Implications:

- The influence of FinTech signifies a transformative shift in the banking industry, redefining traditional practices.
- To maintain competitiveness and resilience, Omani banks must actively adopt and innovate with FinTech solutions.

FinTech has redefined the operational and strategic landscape of Omani commercial banks, enabling them to achieve higher efficiency, enhance customer experiences, and stay competitive in a dynamic global market. The study underscores the importance of technology, collaboration, and regulatory support in driving the future growth and sustainability of the banking sector in Oman.

KEY RECOMMENDATIONS

The integration of financial technology (FinTech) has had a transformative impact on the productivity and financial of Omani commercial banks. These recommendations aim to further capitalize on FinTech advancements to enhance banking operations, customer satisfaction, and security:

Enhancing Customer Experience

- Develop user-friendly digital interfaces for banking apps and websites to facilitate quick and seamless financial transactions.
- Provide 24/7 access to accounts, enabling customers to perform transfers, payments, and inquiries at their convenience.

Optimizing Internal Operations

- Implement AI, machine learning, big data analytics, and blockchain technology to improve operational efficiency and reduce errors.
- Automate routine tasks such as data processing and fraud detection to free up resources for strategic initiatives.

Innovative Financial Services

- Invest in developing innovative FinTech solutions to expand service offerings, such as digital wallets, robo-advisors, and peer-to-peer payment platforms.
- Encourage partnerships with FinTech startups to stay ahead in providing cutting-edge services.

Enhancing Security Protocols

- Adopt advanced security measures, including biometric authentication (e.g., fingerprint and facial recognition) for mobile banking applications.

- Use encryption technologies to safeguard sensitive customer data during online transactions and prevent cyber threats.

Expanding Self-Service Options

- Install more deposit and transfer machines to reduce reliance on physical branches and human intervention.
- Promote FinTech applications that allow customers to apply for loans or credit cards directly, ensuring faster approval processes.

Revolutionizing Banking Accessibility

- Leverage FinTech to improve the accessibility and convenience of banking for customers across urban and rural areas.
- Educate customers on the benefits and usage of digital banking services through workshops and awareness campaigns.

By prioritizing these recommendations, Omani commercial banks can further strengthen their operational framework, deliver superior customer experiences, and position themselves as leaders in the digital banking revolution.

IMPLICATIONS OF THE STUDY

The extensive and transformative for various stakeholders in the banking and financial ecosystem. Below are key implications:

Commercial Banks

- **Enhanced Competitiveness:** Insights from the study can help banks understand how to leverage FinTech and digital systems to stay competitive in a rapidly evolving financial landscape.
- **Operational Efficiency:** Highlighting the benefits of automation, data analytics, and digital channels can drive cost reduction and efficiency in operations.
- **Customer Experience:** Banks can adopt strategies for personalizing services and enhancing user engagement, thereby boosting customer satisfaction and loyalty.
- **Risk Management:** The study may emphasize digital tools that improve fraud detection, compliance, and data security.

Policymakers and Regulators

- **Policy Development:** The findings can assist in creating policies that encourage innovation while ensuring financial stability and protecting consumers.
- **Regulatory Frameworks:** Recommendations may address how to regulate emerging technologies, such as blockchain or AI, to balance growth with oversight.
- **Economic Growth:** By fostering FinTech innovations, Oman can position itself as a regional financial hub, boosting the economy and employment.

FinTech Companies

- **Collaboration Opportunities:** The study can identify areas where FinTech firms can partner with banks to provide innovative solutions.

- **Market Insights:** Understanding the needs of banks and consumers in Oman helps FinTech companies tailor their products and services.
- **Scalability:** Highlighting successful case studies or models could help FinTech firms scale their operations effectively within Oman.

Customers

- **Improved Access:** Digital banking can provide unbanked or underbanked populations with greater access to financial services.
- **Convenience:** The adoption of mobile and online banking can simplify financial transactions for customers.
- **Cost Savings:** Reduced fees and improved transparency are potential benefits for consumers.

Academia and Research

- **Knowledge Expansion:** This study contributes to the growing body of knowledge about the intersection of FinTech and banking.
- **Future Research Opportunities:** Identified gaps or challenges in FinTech adoption can guide further academic exploration.
- **Practical Applications:** Universities can use these findings to design relevant curricula and training programs for future banking professionals.

Oman Economy

- **Innovation-Driven Growth:** Encouraging FinTech and digital banking adoption can spur technological innovation and entrepreneurship in Oman.
- **Financial Inclusion:** Enhanced digital tools can reduce the financial access gap, promoting inclusivity in economic activities.
- **Foreign Investment:** A robust FinTech ecosystem may attract global investors, contributing to economic diversification.

SCOPE FOR FUTURE RESEARCH

These areas offer significant potential for expanding knowledge and addressing real-world challenges in the evolving landscape of FinTech and digital banking in Oman.

Emerging FinTech Trends in Oman

- Investigate the adoption of emerging FinTech trends like blockchain, artificial intelligence, and machine learning in Oman's banking sector.
- Analyse how these technologies influence operational efficiency, customer engagement, and risk management.

Impact on Financial Inclusion

- Study how FinTech and digital banking systems improve access to financial services in rural and underserved areas of Oman.
- Assess the role of mobile banking and digital wallets in fostering financial inclusion.

Regulatory and Legal Challenges

- Examine the regulatory landscape for FinTech in Oman and its alignment with international standards.
- Explore the challenges and opportunities posed by data privacy, cybersecurity, and compliance requirements.

Customer Behaviour and Satisfaction

- Evaluate customer adoption rates and satisfaction levels with digital banking services.
- Conduct comparative studies on user experience across different commercial banks in Oman.

Economic Impact

- Analyze the contribution of FinTech innovations to Oman's economic growth and diversification efforts under Vision 2040.
- Assess the cost-effectiveness of digital banking systems in reducing operational expenses for banks.

Competitive Landscape

- Study the impact of FinTech on the competitive dynamics among Omani commercial banks.
- Examine how collaboration with FinTech startups influences banks' innovation strategies.

Digital Transformation Strategies

- Investigate the digital transformation strategies adopted by major Omani banks like Bank Muscat, Bank Dhofar, and others.
- Analyze the role of organizational culture and change management in implementing FinTech solutions.

Cross-Border Banking and FinTech

- Explore the role of FinTech in enabling cross-border banking and remittance services for Oman's expatriate population.
- Assess the potential of partnerships with regional and global FinTech companies.

Sustainability and Green Finance

- Study the integration of FinTech with green finance initiatives in Oman.
- Evaluate how digital banking systems support sustainable banking practices.

Future-Proofing Against Disruptions

- Investigate strategies for Omani banks to future-proof their operations against disruptions like pandemics or cyberattacks using FinTech solutions.

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