Central Bank of Kenya

Banking Sector Innovation Survey 2023

TABLE OF CONTENTS

LIST OF FIGURES

1.0 FOREWORD

It gives me great pleasure to present the results of the Kenyan Banking Sector Innovation Survey 2023 conducted in February 2024. Kenya's banking sector has ramped up innovation efforts with an aim to enhance service delivery to customers, create new markets, and achieve operational efficiency.

Against this backdrop, the Central Bank of Kenya (CBK) conducts an annual innovation survey to understand the trend and impact of digitization in the banking sector to inform appropriate policy decisions. The aim of the survey, therefore, was to collect current and forward-looking information on Fintech developments to establish the state of innovation in the Kenyan banking sector as of December 31, 2023. The survey serves as a follow-up to the 2018, 2019, 2020, 2021, and 2022 Innovation Surveys.

The 2023 Innovation Survey findings underpinned three broad themes:

First, Kenyan banking institutions are harnessing insights from data for data-driven decisions. This aims to enhance customer experience, and timely delivery of more accessible digital banking services to customers. To this end, Application Programming Interfaces (APIs), Cloud Computing, Big Data, and Data Analytics are increasingly playing a key role in emerging innovative products. Notably, institutions identified digital innovation, consumer protection, cybersecurity and data privacy as the emerging policy focus areas. Accordingly, enhanced cybersecurity risk management with a focus on data privacy and security, is necessary as the banking sector continues to innovate.

Second, the survey highlighted the interest of the banking sector in innovating in the area of credit, deposit, and capital raising services, signalling general growth in innovative credit services. The Kenya Banking Sector Charter's focus on customer-centricity will steer the industry towards ensuring the evolving needs of customers are met.

Third, the banking sector is prioritising efforts towards Sustainable Development Goal (SDG 8) on Decent Work and Economic Growth, SDG 4 on Quality Education, and SDG 13 on Climate Action. CBK is working with the banking sector to ensure the greening of the financial system.

The information collected through the survey will enable CBK to better understand the impact of Fintech on current operating models, including the emergence of new business models and the evolving and emerging risks. The information will also provide CBK with an informed basis for evidence-based public policy decisions on Fintech going forward. Further, the survey findings will keep customers abreast of emerging technologies and enable them to make informed choices when selecting banking services. Finally, the survey findings will inform the banking sector, technology service providers, investors, and the Fintech ecosystem as they craft their innovation strategies and identify opportunities for growth and investment.

Dr. Kamau Thugge, CBS
Governor

2.0 BACKGROUND

2.1 Survey Methodology

- The survey collected data on the state of innovation as of December 31, 2023, from 37 commercial banks, 1 mortgage finance institution and 14 microfinance banks (MFBs
- The survey was issued in February 2024
- Questions in the 2023 survey were classified into 5 sections :
    - **Section A** – Institution Innovation Activities
    - **Section B** – Context for Innovation.
    - **Section C** – Public Support for Innovation.
    - **Section D** – Afro-Asia Fintech Festival Assessment.
    - **Section E** – Impact and Challenges.

2.2 Summary of Findings

i) Institutions' Business Strategies towards Financial Innovation

- 87 percent of the respondents indicated that they had a dedicated function that spearheaded innovation activities compared to 77 percent in the 2022 Innovation Survey, highlighting the increased importance of innovation.
- Most financial institutions noted that the main role of the innovation function is to develop new products and solutions in a bid to transform the customer experience, create new markets and generate new revenue streams.
- On average, innovation function teams constituted 57 percent male and 43 percent female staff.
- 41 percent of financial institutions surveyed indicated that they had set up innovation hubs to promote innovation activities.

ii) Innovation Priorities

- 87 percent of the commercial banks considered payments, clearing and settlement services as the most important operations and service areas to innovate in the short to medium term strategy compared to 50 percent of MFBs.
- Conversely, 79 percent of MFBs considered credit, deposit and capital-raising service as the most important operations and service areas to innovate in the short to medium term strategy compared to 74 percent of commercial banks.
- Credit, deposit, and capital-raising services was the functional area where most commercial banks and MFBs introduced an innovative product in the period January 1 to December 31, 2023, with 74 percent of banks and 64 percent of MFBs innovating in this area in 2023, compared with 44 percent of banks and 64 percent of MFBs in 2022, respectively.
- 96 percent of the institutions had adopted or developed a mobile banking solution to assist in its administration of banking and customer-relationship services, consistent with the 2022 survey.
- 37 percent of the institutions noted that credit business is the least digitized area of their institution's operations. The highlighted areas include loan application, credit appraisal, credit approval, disbursement, and repayment processes.

iii) Innovation Risks

- Cyber-risk turned out to be the key risk area for institutions in their innovation endeavours, similar to the findings of the 2018-2022 Innovation Surveys. 97 percent of banks and 71 percent of MFBs identified it as one of the top three innovation-related risks.

- Operational risk was identified as the second highest key risk area by 84 percent of banks and 86 percent of MFBs.
- 79 percent of MFBs and 82 percent of banks considered third-party and vendor management risk as one of the top three innovation-related risks. This correlates with most of the institutions that responded to using an outsourced or collaboration and partnership approach to the development of innovative products.

iv) Technological Developments

- APIs have been adopted by most institutions with an 84 percent and a 64 percent adoption rate by banks and MFBs respectively, which aggregate to 79 percent. This was followed by Cloud Computing, Biometrics Technology and Big Data and Data Analytics with an adoption rate of 50 percent, 46 percent, and 44 percent, respectively across all financial institutions.

v) Public Support, Policy and Regulation

- Institutions indicated that the top four forms of public support based on the 2023 survey were: direct funding support (69 percent), fiscal incentives (50 percent). demand-side support (50 percent), and provision of infrastructure and services (50 percent), direct funding support (58 percent) and demand-side support (55 percent).
- The institutions identified digital innovation, consumer protection, and cybersecurity and data privacy as the policy focus areas that which regulatory agencies need to address.

vi) Climate Action and Sustainability

- Of the institutions surveyed, 58 percent of commercial banks and 57 percent of microfinance banks indicated that they had innovated or were in the process of innovating a climate change related product. This was an increase from 51 percent and 43 percent, respectively, in 2022, indicating a steady focus on the emerging issue.
- Some of the climate change-related initiatives included incorporating climate risk financial analysis into loan facilities, establishing green financing frameworks to guide sustainable practices, and launching sustainability campaigns aimed at environmental conservation.

vii) Afro-Asia Fintech Festival

- Institutions surveyed recommended that the following solutions would transform the banking sector, and should be incorporated in the next Afro-Asia Fintech Festival:
    - Standardization of Digital Products.
    - Enhanced Security Measures.
    - Open Banking Initiatives.
    - Financial Inclusion and Literacy.
    - Cross-Border Payment Innovations.
    - AI and Machine Learning Applications.
    - Sustainability and Climate Financing.
    - Regulatory Reforms.
    - Digital Identity Solutions.
    - Collaboration and Innovation Hubs.

2.3 Changes from Innovation Survey 2022

- In the 2022 Innovation Survey that covered the period January 1, 2022 – December 31, 2022, 60 percent of the respondents considered themselves as “better banks”, 25 percent as “distributed banks” and 13 percent as “new banks”. However, in the 2023 Innovation Survey, 79 percent of the institutions considered themselves as "better banks", 9 percent as "distributed banks" and 8 percent as "new banks". [1]

- 87 percent of banks and 79 percent of MFBs introduced an innovative product during the period January 1 to December 31, 2023, an increase from 77 percent of banks and 64 percent of MFBs in 2022, respectively. This indicates the increased reliance on innovation for service delivery and business growth.
- Investment management and custodial services remained the functional area with the least innovation during the period, with 18 percent of the banks and 2 percent of the MFBs indicating they had introduced an innovative product in this area.
- 12 percent of the institutions indicated that they had spent more than Ksh.200 million in 2023, on secure software development and database related activities. This was an increase from 10 percent in 2022.
- Credit, deposit, and capital raising services were the functional areas where most banks introduced an innovative product in the period January 1 - December 31, 2023, with 74 percent of the banks innovating in this area compared to 44 percent in 2022. This was a shift from payments, clearing and settlement services as the area where commercial banks introduced most innovative products in 2022, with 64 percent of banks innovating in this area in 2022.
- Institutions considered Sustainable Development Goal (SDG) 8: Decent Work and Economic Growth as the top SDG with the most potential for innovation-related activities tied to digital finance (67 percent). This was closely followed by SDG 4 on Quality Education at 54 percent and SDG 13 on Climate Action at 52 percent.
- Comparatively, in 2022, the top 3 SDGs with the most potential for innovation-related activities tied to digitalization of finance were SDG 8 at 64 percent, SDG 13 at 53 percent, and SDG1: End Poverty in all its form everywhere, at 49 percent. SDG 1 was ranked fourth in 2023 at 50 percent.
- The analysis of the 2023 and 2022 surveys reveals shifting trends in the preferred forms of public support for innovation activities in the banking sector. Notably, direct funding emerged as the most favoured form of support in 2023, with 69 percent of respondents indicating its importance, marking a significant increase from the 58 percent reported in 2022. Access to guarantees also saw a notable rise in preference, increasing from 15 percent in 2022 to 25 percent in 2023.

[1]***Better Bank*** *– An institution seeks to become a 'better bank' by leveraging on enabling financial technologies (Fintech) to digitize and modernize its operations and business practices. Its market knowledge and Fintech investment will significantly improve its banking services and products offering.*

New Bank *– An institution seeks to become a 'new bank' by creating a 'built for digital' banking platform. The institution shall apply advanced Fintech to provide banking services, minimize operational costs, improve customer experience, and market their products through social media.*

Distributed Bank *– An institution seeks to become a 'distributed bank' through collaboration and partnership with Fintech start-ups. The institution seeks to compete for the ownership of the customer relationship by providing niche banking services. Such joint ventures will allow consumers to use multiple financial service providers, through a 'plug and play' digital interface.*

Relegated Bank *– An institution seeks to become a 'relegated bank' by allowing Fintech start-ups and third-parties to provide and manage direct customer relationships through 'frontend' digital platforms. The institution will be relegated to offering commoditized banking functions such as deposit-taking, lending and risk management, to the digital platforms that own and manage the customer relationships.*

3.0 SURVEY FINDINGS

3.1 Institutions' Innovation Activities

3.1.1 Institutions' Business Strategy towards Financial Innovation

- According to their business strategies, 79 percent of the institutions considered themselves as a "better bank", 9 percent as a "distributed bank" and 8 percent as a "new bank".
- The number of institutions that considered themselves a "better bank" increased to 79 percent in 2023, from 60 percent, 74 percent, 72 percent, and 71 percent in 2022, 2021, 2020, and 2019, respectively.
- In the 2022 Innovation Survey that covered the period January 1 – December 31, 2022, 25 percent of the respondents considered themselves as "distributed banks". This number decreased to 9 percent in the 2023 Innovation Survey.
- Institutions that considered themselves as a "new bank" decreased from 13 percent in the 2022 Innovation Survey to 8 percent in the 2023 Innovation Survey.
- 82 percent of the commercial banks considered themselves as a "better bank", 10 percent as a "distributed bank" and 3 percent as a "new bank".
- Comparatively, 71 percent of MFBs considered themselves as a "better bank", 21 percent as a "new bank" and 7 percent as a "distributed"

Figure 1: Institutions' Business Strategies on Financial Innovation

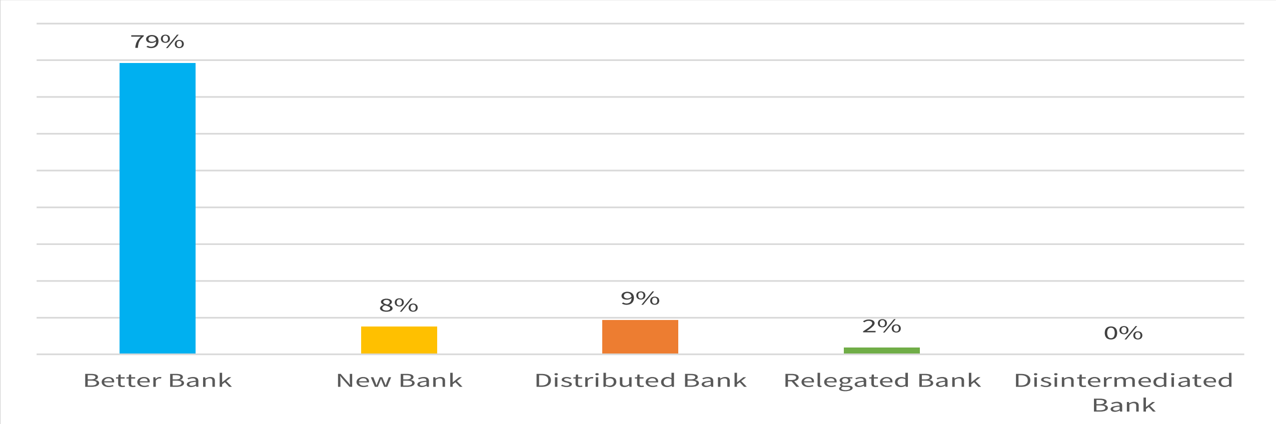


Figure 2: Business Strategies Comparison between 2022 and 2023 Innovation Surveys

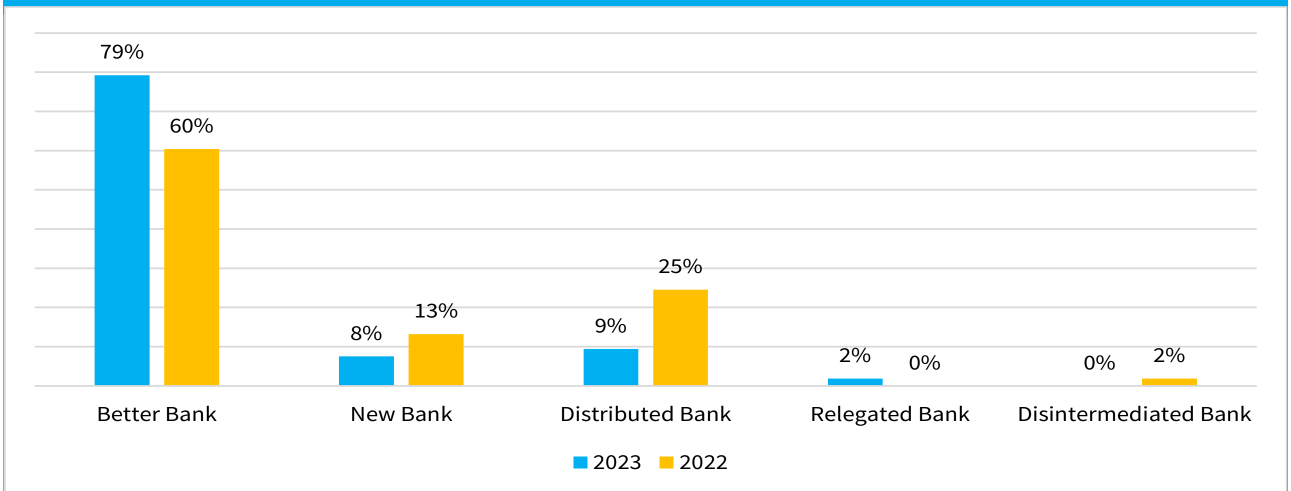


Figure 3: Banks' Business Strategies on Financial Innovation

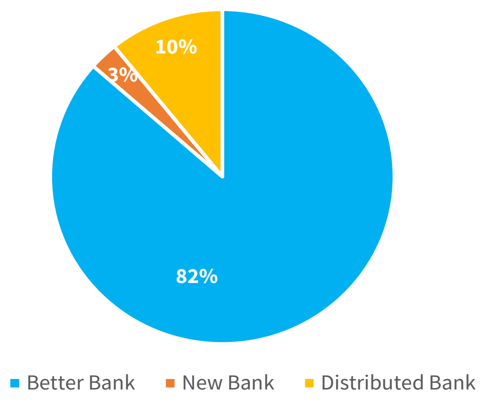
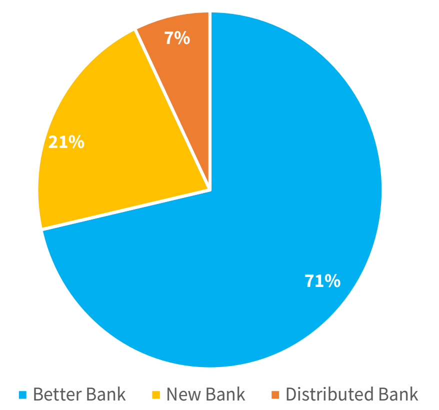
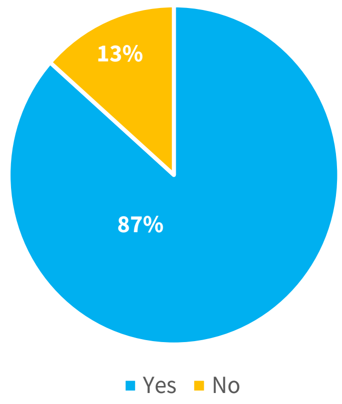


Figure 4: MFBs' Business Strategies on Financial Innovation



- 87 percent of the respondents indicated that they had a dedicated function that spearheaded innovation activities compared to 77 percent in the 2022 Innovation Survey, highlighting the increased importance of innovation. This constituted 82 percent of the commercial banks and 100 percent of the MFBs, who indicated that they had a dedicated function that spearheaded innovation activities.
- Majority of the institutions noted that the key role of the innovation function was to develop new products and solutions in a bid to transform customer experience, create new markets and generate new revenue streams.

Figure 5: Institutions with Dedicated Innovation Functions

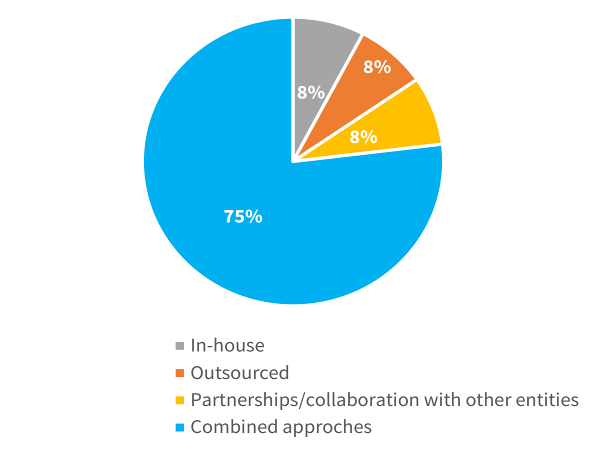


- On average, innovation function teams constituted 57 percent male and 43 percent female members, an improvement from 60 percent male and 40 percent female in 2022.
- Institutions that had not established a dedicated innovation function indicated that innovation is embedded in all business functions of the institution.
- The majority of the institutions noted that ideas for product innovation originated from customer needs emanating from customer feedback and engagement. This is aligned with the Kenya Banking Sector Charter (KBSC). The Charter, which focuses on customer centricity among other key pillars, has prompted institutions to innovate products that consider the customer first.
- Other key factors considered by most institutions before innovating a product are:
    - Cost and ease of implementation.
    - Availability of resources and technology.
    - Market demand and trends.
    - Competition.
    - Regulatory requirements.

- Strategic alignment.
- Risk assessment.
- Return on investment.

- Several institutions had established an innovation framework that guided the decision-making process of innovating a product and a committee that reviews innovative product proposals before seeking Board approval.
- 8 percent of the institutions developed their products in-house, 8 percent through partnerships and collaboration with other entities, 8 percent by outsourcing development, and 75 percent used two or more of those approaches.

Figure 6: Institutions' Approaches towards Development of Innovative Products



- All institutions noted a positive impact of the Kenya Banking Sector Charter (KBSC) on their business strategies' focus on innovation, similar to the 2022 and 2021 Innovation Surveys. The Charter supported the need to innovate customer-centric products and services to increase accessibility to affordable and appropriate banking services to the unbanked and under-served population in Kenya. It also ensured the Bank adopted an open and transparent business approach where customers can get full disclosure on product features.

- 79 percent of commercial banks combined two or more of the highlighted approaches when developing products. Only 5 percent responded to using an in-house development approach. This underscores the role of third parties and collaboration in Fintech innovations.
- Comparatively, 14 percent of MFBs responded to using an in-house development approach while 64 percent combined two of either in-house, outsourced or partnerships and collaboration approaches to develop innovative products

Figure 7: Banks' Approaches towards Development of Innovative Products

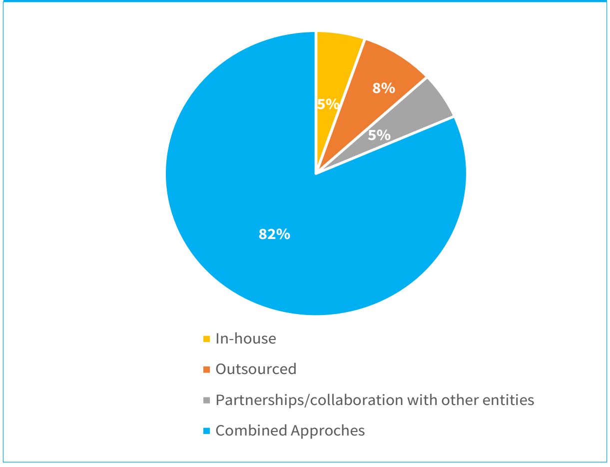
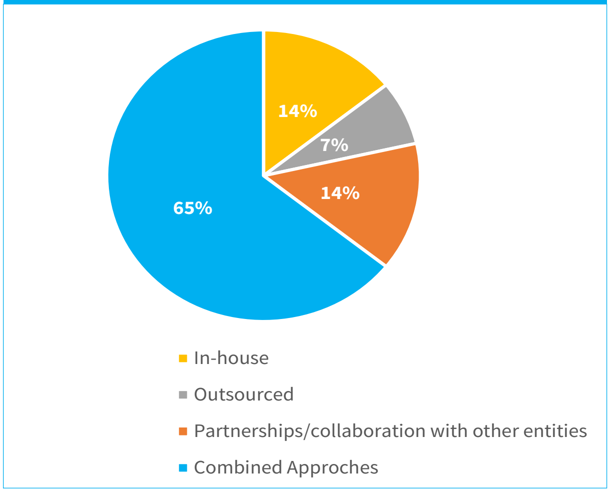


Figure 8: MFBs' Approaches towards Development of Innovative Products



3.1.2 Product Innovation

- 87 percent of banks and 79 percent of MFBs introduced an innovative product during the period January 1 to December 31, 2023. This was an increase from 77 percent of banks and 64 percent of MFBs in 2022, respectively. This indicates the increased reliance on innovation for service delivery and business growth.

Figure 9: Introduction of Fintech Products by Banks

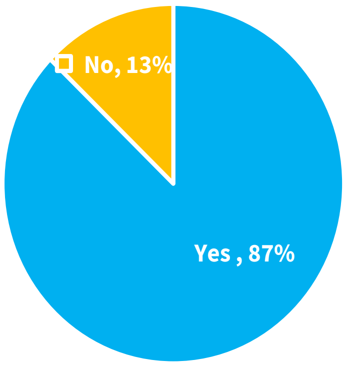
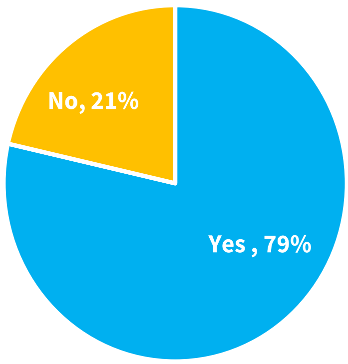


Figure 10: Introduction of Fintech Products by MFBs



- In this Survey, the functional scope of product classification was grouped into 5 areas:
  - Credit, deposit, and capital raising services.
  - Payments; clearing and settlement services.
  - Investment management and custodial services.
  - Incidental business activities; and
  - Market support services.
- Credit, deposit, and capital raising services were the functional areas where most banks introduced an innovative product in the period January 1 - December 31, 2023, with 74 percent of the banks innovating in this area compared to 44 percent in 2022. This was a shift from payments, clearing and settlement services as the area where commercial banks introduced most innovative products in 2022, with 64 percent of banks innovating in this area in 2022.
- Similarly, credit, deposit, and capital-raising services were the functional area where most MFBs introduced an innovative product in the period January 1 to December 31, 2023. 64 percent of MFBs innovated in this area.
- Investment management and custodial services remained the functional area with the least innovation during the period, with 18 percent of the banks and 2 percent of MFBs indicating to have introduced an innovative product in this area.

Figure 11: Classification of Fintech Products Introduced by Banks

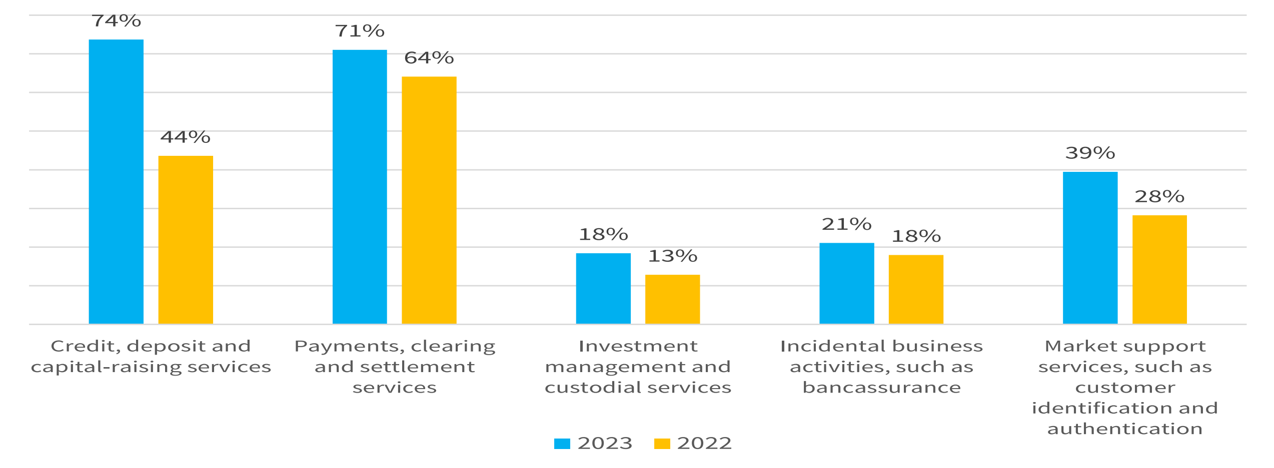
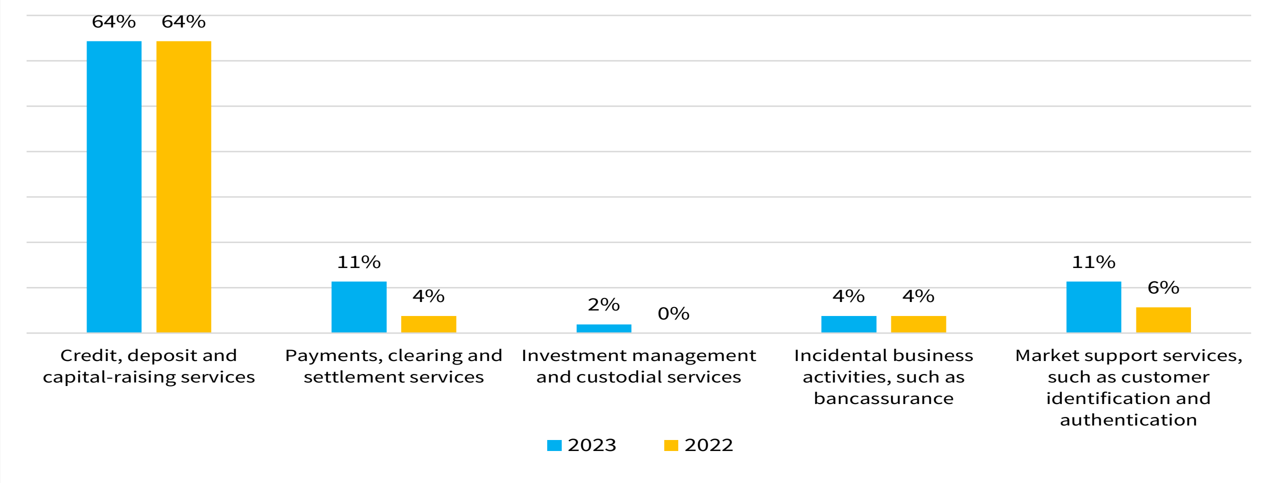
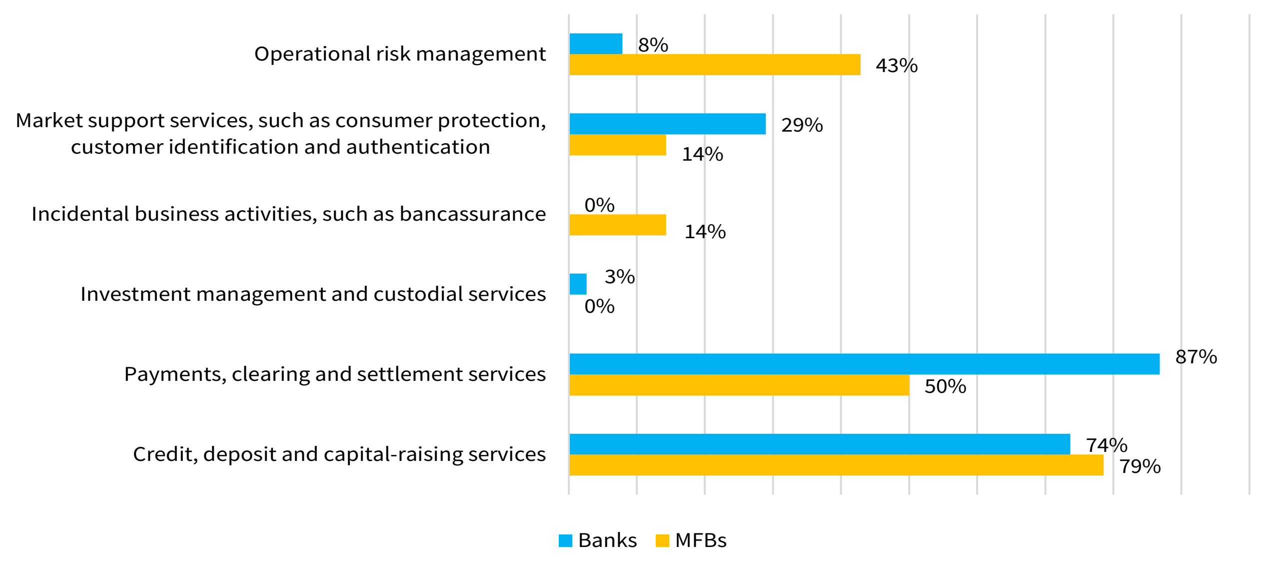


Figure 12: Classification of Fintech Products Introduced by MFBs



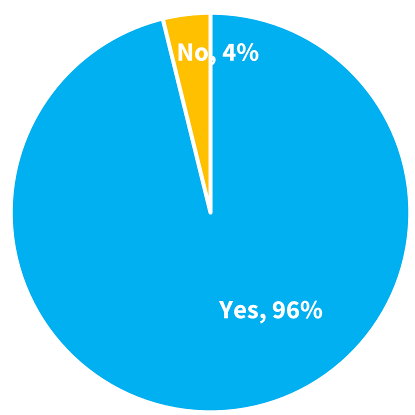
- 87 percent of the commercial banks considered payments, clearing and settlement services as the most important operations and service areas to innovate in the short to medium-term strategy compared to 50 percent of MFBs.
- Conversely, 79 percent of MFBs considered credit, deposit and capital-raising services as the most important operations and service areas to innovate in the short to medium-term strategy compared to 74 percent of commercial banks.
- 3 percent of the commercial banks considered investment management and custodial services as the most important operations and service areas to innovate. Comparatively, none of the MFBs considered investment management and custodial services as an important functional area to innovate.

Figure 13: Functional Areas Considered Most Important to Innovate in



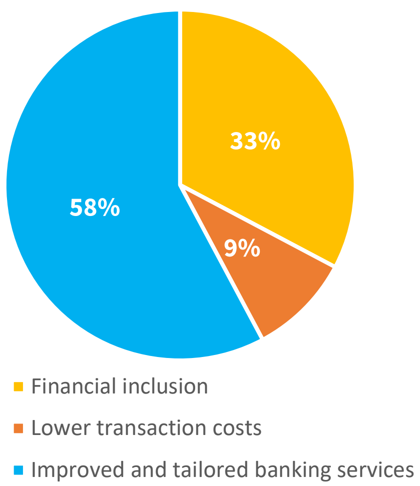
- 96 percent of the institutions had adopted or developed a mobile banking solution (app or USSD) to assist in its administration of banking and customer-relationship services, consistent with the 2022 survey.
- Only two (2) institutions (1 bank and 1 MFB) had not adopted or developed a mobile banking solution (app or USSD). However, they had other preferred channels available to customers.

Figure 14: Institutions Providing Mobile Banking Solutions to Customers



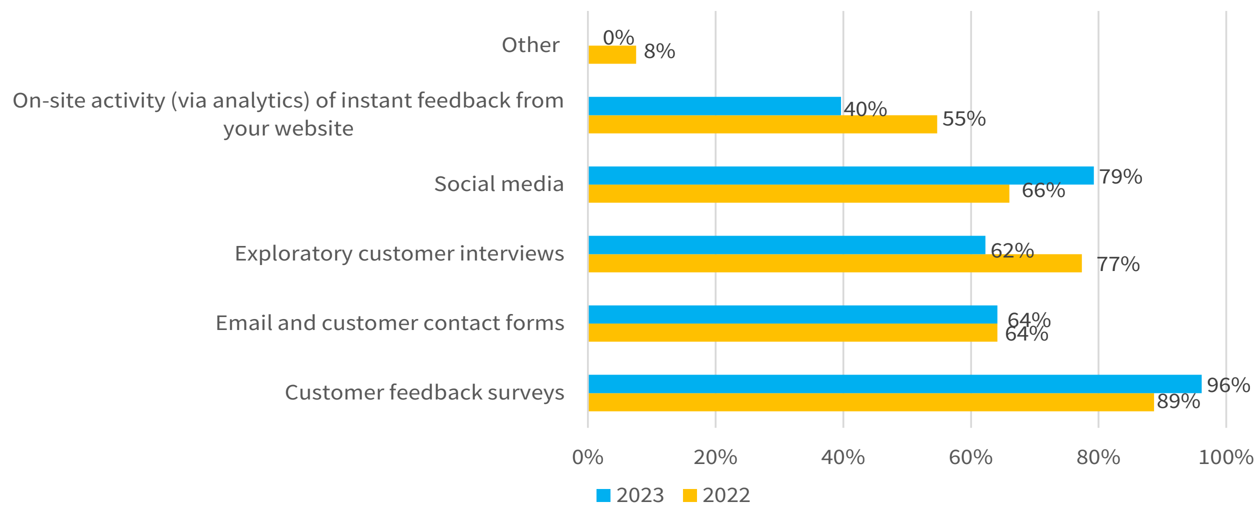
- Payment services were the most common functionality of the mobile banking solution with 77 percent of the institutions indicating that payment services were offered within their mobile solution.
- Other common services offered by most of the institutions' mobile banking solutions include:
    - Funds transfer.
    - Account opening.
    - Customer feedback.
    - Account management - balance inquiry, generating account mini-statements and stop cheques.
    - Card management.
    - Transfer from/to mobile wallet.
    - Mobile credit products.
- 37 percent of the institutions noted that credit business was the least digitized area of their institution's operations, compared with 32 percent in 2022. The highlighted areas include loan application, credit appraisal, credit approval, disbursement, and repayment processes.
- Other areas of the institutions that were least digitized include:
    - Customer onboarding and account opening.
    - Branch operations.
    - Back-office operations.
    - Card management.
    - Cheque processing.
    - Procurement.
    - Document management.
    - Collections.
    - Reconciliations.
    - Securities and collateral.
- Only three institutions indicated that all business functions were equally digitalized in line with the institutions' strategies.
- All the institutions considered financial inclusion, lowering transaction costs, and improved and tailored services as important opportunities to the institution when evaluating the benefits of product innovations to their consumers.
- 58 percent of the institutions ranked "improved and tailored banking services" as the most important opportunities when evaluating the benefits of product innovation to consumers in 2023, similar to 2022.
- 33 percent focused on financial inclusion, while 9 percent sought product innovations that could lower transaction costs for consumers.

Figure 15: Institutions' Ranking of Benefits of Product Innovations to Consumers



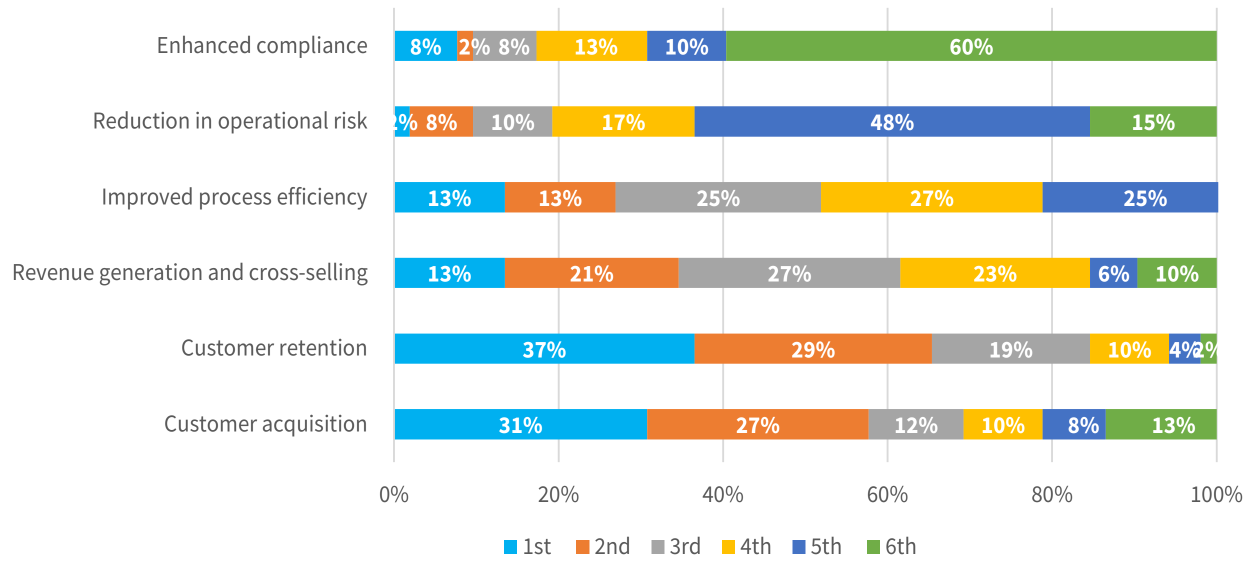
- 94 percent of institutions used multiple channels concurrently to collect information on relevant customer needs and feedback, as well as offer prompt responses and guidance to solving customer complaints concerning innovative products. 6 percent relied solely on customer feedback surveys.
- Customer feedback surveys were the most popular means of gathering customer product needs and feedback for a consecutive year with 96 percent of the institutions using this means in 2023, compared to 89 percent in 2022.
- The role of technology and analytics in gathering customer needs and feedback continued to gain pace. This was evidenced by the adoption of social media channels by 79 percent of the institutions.
- The use of instant feedback from the institution's website as a means of gathering customer needs and feedback reduced in popularity from 55 percent in 2022 to 40 percent in 2023.

Figure 16: Institutions' Means of Gathering and Addressing Customer Needs and Feedback



- 37 percent of the institutions highlighted customer retention as the most important benefit they considered when evaluating the benefits of product innovations to the institution. This was followed by customer acquisition at 31 percent.
- Conversely, 60 percent of the institutions noted enhanced compliance as the least important benefit of product innovation to the institution.
- Enhanced compliance innovation includes regulatory technology (RegTech) innovations that have improved the institutions' compliance processes by enabling automated regulatory reporting.

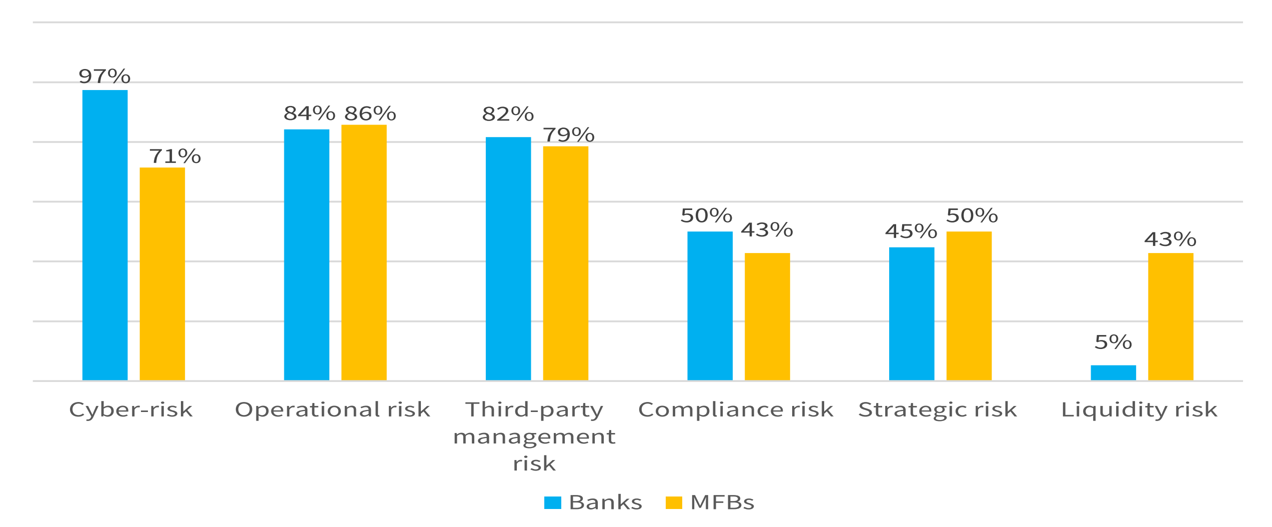
Figure 17: Institutions' Ranking of Benefits of Product Innovation to the Institution



3.1.3 Innovation-Related Risks

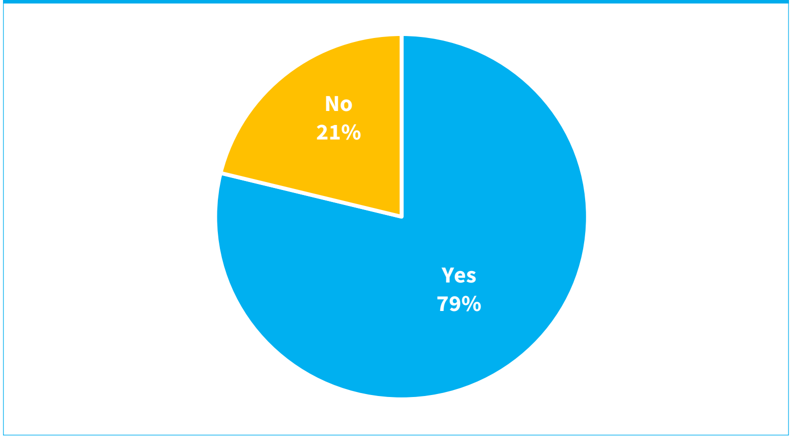
- Cyber-risk turned out to be the key risk area for institutions in their innovation endeavours, similar to the findings of the surveys for 2018-2022. 97 percent of banks and 71 percent of MFBs identified it as one of the top three innovation-related risks.
- Operational risk was identified as the second highest key risk area by 84 percent of banks and 86 percent of MFBs.
- 79 percent of MFBs and 82 percent of banks considered third-party and vendor management risk as one of the top three innovation-related risks. This correlates with most of the institutions that responded to using an outsourced or collaboration and partnership approach to the development of innovative products.
- Consistent with the 2022 Innovation Survey, liquidity risk remained the least considered innovation-related risk for both banks and MFBs similar to the 2021 and 2020 Innovation Surveys.

Figure 18: Innovation-Related Risks



- 79 percent of the respondents expressed that they dealt with negative externalities caused by their products to their consumers compared to 81 percent in the 2022 Innovation Survey. This was through the implementation of a clear complaints resolution mechanism, customer feedback and training to enable customers to navigate technological challenges, internal monitoring, and reporting.
- As part of their endeavour to provide a good customer experience, institutions highlighted the existence of clear customer support and conflict resolution mechanisms.
- Institutions that did not experience any negative externalities credited this to a well-structured customer discovery and validation process to build customer-centric products and services.

Figure 19: Institutions' Experiences of Negative Externalities Caused by their Innovative Product(s)

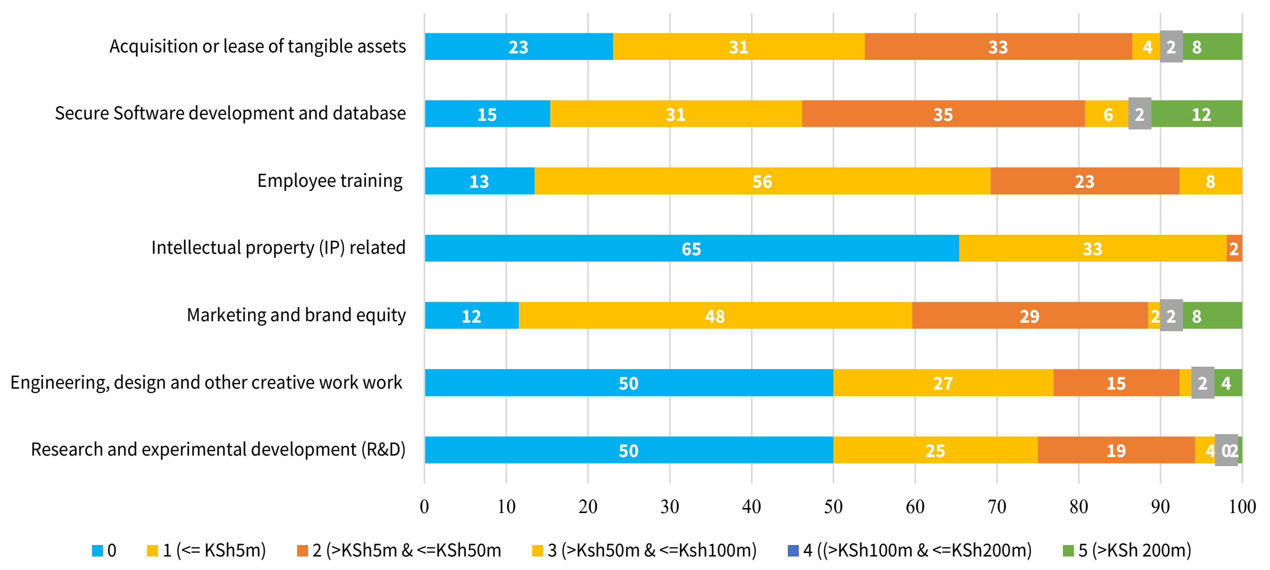


3.2 Context for Innovation

3.2.1 Innovation and Management Expenditure

- Efficiency in the use of emerging technologies to deliver services led to an increase in financial investments towards innovation.
- Of the financial institutions that responded to the survey, 12 percent indicated that they had spent more than Ksh.200 million in 2023, on secure software development and database-related activities. This was an increase from 10 percent in 2022.
- Institutions should conduct continuous training throughout the product development and innovation process. However, 13 percent of the financial institutions indicated that they did not incur any costs on employee training in 2023. Of the institutions who spent on training, 69 percent had well-defined programmes that covered design thinking, cybersecurity, and customer satisfaction, among others.
- Substantive efforts are required to be channelled towards research and development when it comes to product innovation. However, 75 percent of financial institutions indicated that they have spent less than Ksh.5 million in this area, with 50 percent not incurring any cost towards this at all.
- 65 percent of the institutions did not channel funds towards activities related to Intellectual Property (IP). This is a decrease from 66 percent in 2022.
- **Figure 20** below depicts the expenditure on innovation activities by financial institutions.

Figure 20: Innovation and Management Expenditure



- Before undertaking innovation activities, financial institutions need to consider both internal and external factors that may affect their efforts. 76 percent of banks and 86 percent of MFBs indicated that changing customer behaviour had the highest likelihood of affecting their ability and willingness to innovate going forward.
- A substantial number of banks also indicated that changes in the competitive environment and modern technologies (61 percent and 74 percent respectively) had a high likelihood of driving their willingness to innovate.

- Increasing regulatory and compliance requirements had the lowest likelihood of impacting innovation ability and willingness for banks (50 percent) while for MFBs it was the changing competitive environment (36 percent).

- **Figures 21** and **22** below depict the proportion of factors that influence institutions' ability to innovate and willingness to do so.

Figure 21: Factors Impacting the Ability and Willingness of Banks to Innovate

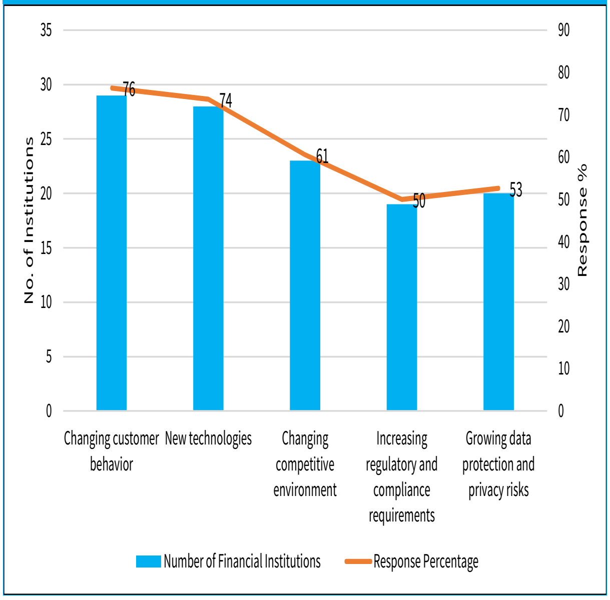
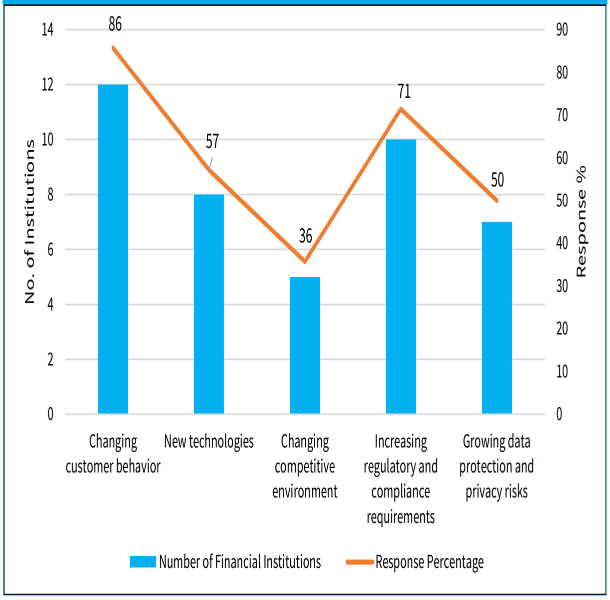


Figure 22: Factors Impacting the Ability and Willingness of MFBs to Innovate



3.2.2 Importance of Developments and Likelihood of Institution Undertaking Innovation Activities

- Technology has proven itself as an essential element in the financial sector. Financial institutions use technology to support their business processes, reduce costs, diversify income streams, and improve customer experience.

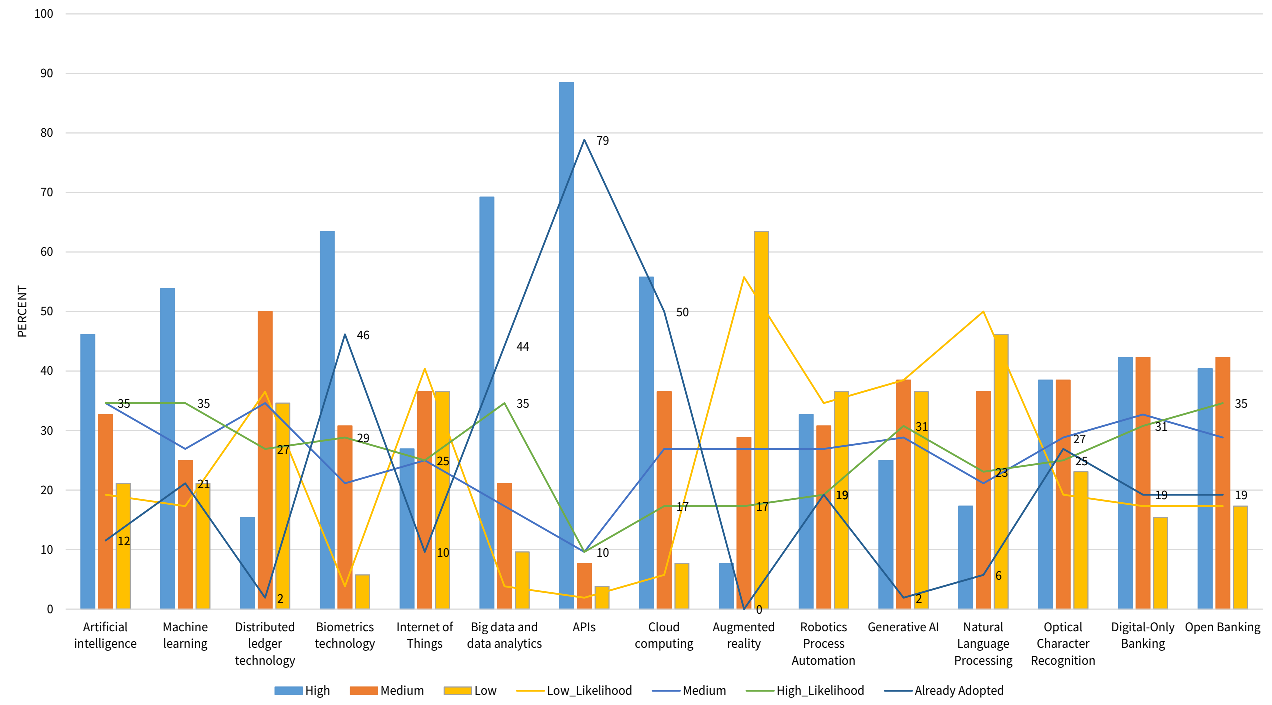
- Application Programming Interfaces (APIs), Big Data and Data Analytics, Biometrics Technology, Machine Learning, and Cloud Computing continue to be the major innovations whose developments are considered important by financial institutions.

- Financial institutions indicated a high likelihood of ramping up their innovation efforts towards developments in artificial intelligence, machine learning, big data and data analytics in the next four years.

- 79 percent of financial institutions indicated that they had already adopted API technology.

- **Figure 23** below depicts the trends in the importance and likelihood of undertaking innovation activities in the sector.

Figure 23: Importance of Developments against Likelihood of Undertaking Activities

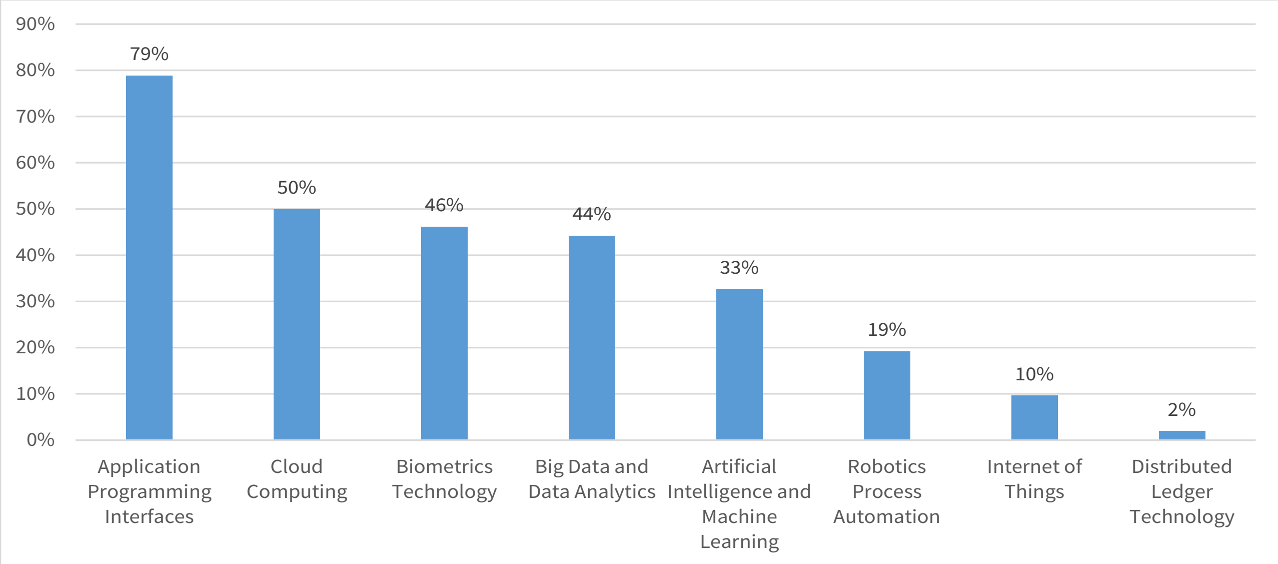


3.2.3 Technological developments that have been adopted by financial institutions in their operations and product offerings

- Financial institutions have been adopting a combination of technologies that bolster their business models and provide a competitive edge among peers. The technological developments and product offerings revolve around Artificial Intelligence and Machine Learning (AI/ML), Distributed Ledger Technology (DLT), Biometrics Technology, Internet of Things (IoT), Big Data and Data Analytics, Application Programming Interfaces (APIs), and Cloud Computing.

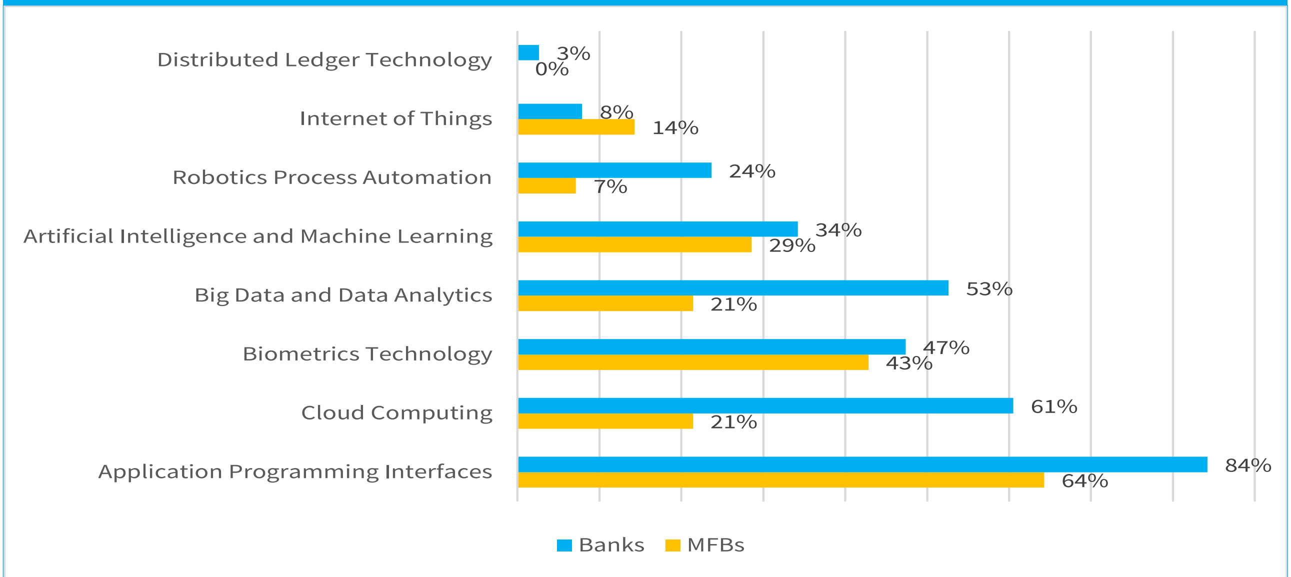
- Based on the 2023 Survey findings, APIs have been adopted by most institutions with an 84 percent and a 64 percent adoption rate by banks and MFBs respectively, which aggregate to 79 percent. This is followed by Cloud Computing, Biometrics Technology and Big Data and Data Analytics with an adoption rate of 50 percent, 46 percent, and 44 percent, respectively across all financial institutions, as illustrated in **Figure 24** below.

Figure 24: Adoption of Technological Developments in Product Offerings



- Commercial banks prioritised Cloud Computing services, with 61 percent implementing it, compared to 21 percent of MFBs who had implemented use of the technology by 2023. Cloud Computing has also increased in adoption from 47 percent in 2022 to 50 percent in 2023.
- **Figure 25** depicts technological developments that had been adopted by banks compared to MFBs.

Figure 25: Adoption of Technological Developments by Commercial Banks vs. MFBs

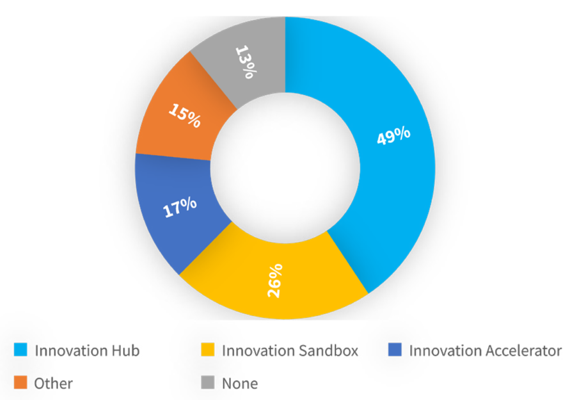


- Overall, the 2023 Innovation Survey highlighted that MFBs had stepped up their efforts to digitalize by leveraging application programming interfaces to provide customer-centric products.

3.2.4 Initiatives to Facilitate Innovation Activities

- Based on the 2023 Innovation Survey, 41 percent of financial institutions surveyed indicated that they had set up innovation hubs to promote innovation activities. This was a slight decrease in the number of financial institutions in innovation-related research and development activities, compared to 51 percent survey findings in 2022.
- 12 percent of the institutions reported that they had implemented alternative methods to facilitate innovation activities. These include the establishment of digital transformation and innovation committees, and research and innovations projects office.
- 11 percent of those who responded to the survey indicated that they had not taken up any initiatives to facilitate innovation. This is similar to 2022.
- The distribution of initiatives adopted by financial institutions is depicted in **Figure 26** below.

Figure 26: Initiatives to Facilitate Innovation Activities



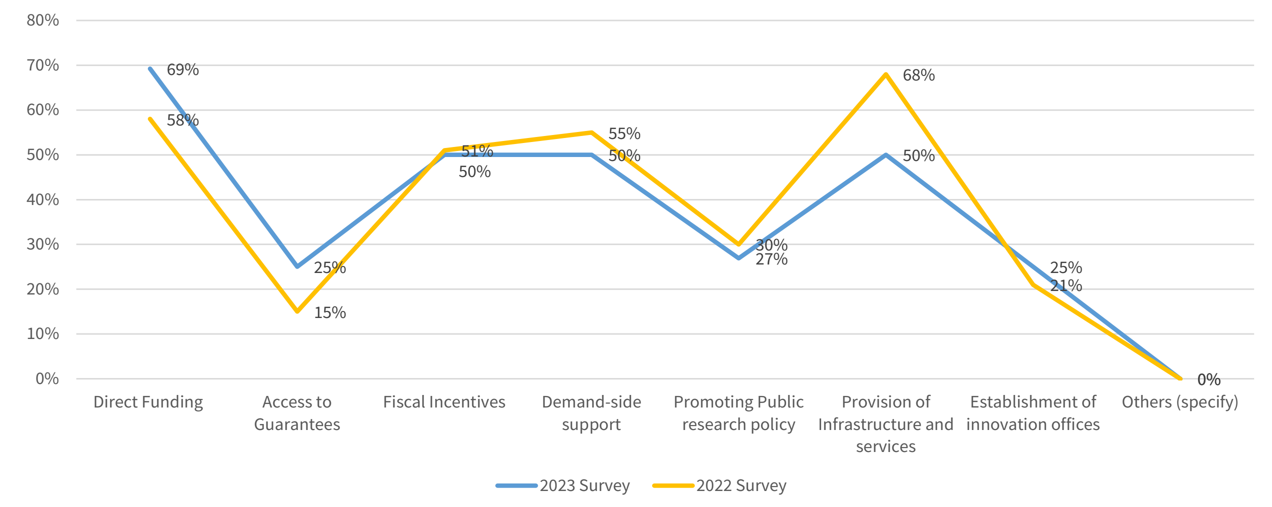
3.3 Public Support for Innovation

3.3.1 Efficacy of Forms of Public Support

- The analysis of the 2023 and 2022 surveys reveals shifting trends in the preferred forms of public support for innovation activities in the banking sector. Notably, direct funding emerged as the most favoured form of support in 2023, with 69 percent of respondents indicating its importance, marking a significant increase from the 58 percent reported in 2022.
- Access to guarantees also saw a notable rise in preference, increasing from 15 percent in 2022 to 25 percent in 2023.
- Fiscal incentives remained relatively stable, with 50 percent of respondents in 2023 and 51 percent in 2022 considering them important.
- However, there was a slight decline in the perceived importance of demand-side support, promoting public research policy, and the provision of infrastructure and services, with 50 percent, 27 percent, and 50 percent of respondents in 2023 respectively, compared to 55 percent, 30 percent, and 68 percent in 2022.
- Despite this, the establishment of innovation offices experienced a minor increase in preference, with 25 percent of respondents in 2023 considering it important, compared to 21 percent in 2022.
- These findings underscore the dynamic nature of public support preferences within the banking sector, reflecting evolving strategies and priorities in fostering innovation and economic growth.

- **Figure 27** represents the institutions' views on forms of public support that are considered most effective in promoting innovation activities within the institutions.

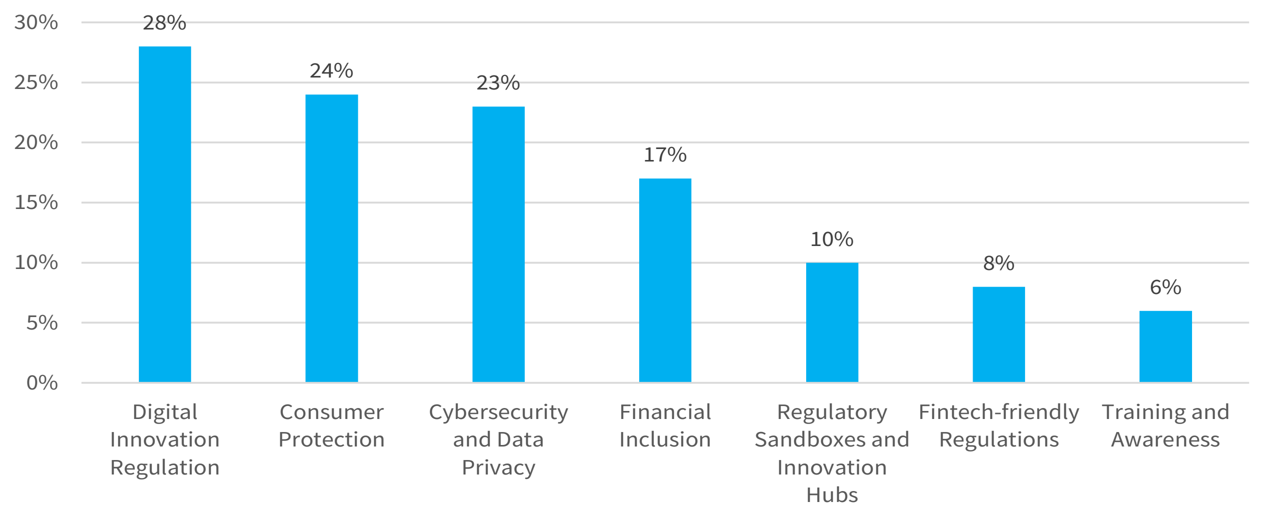
Figure 27: Effective Forms of Public Support



3.3.2 Public Policy Areas

- **Digital Innovation Regulation**: Most financial institutions (28 percent) emphasized the need for regulatory frameworks governing digital innovation. This includes areas such as digital lending, blockchain, virtual assets including crypto assets, and digital-only banking.
- **Consumer Protection**: A sizeable portion (24 percent) highlighted the importance of protecting consumer rights, particularly concerning digital payment providers, unique identifiers for bank customers, and fair treatment in financial services.
- **Cybersecurity and Data Privacy**: Nearly a quarter of respondents (23 percent) emphasized the critical need for robust regulations addressing cybersecurity threats and data privacy concerns. This includes standards for data encryption, authentication, and protocols for handling sensitive information.
- **Financial Inclusion**: Approximately 17 percent of institutions stressed the importance of regulatory support for initiatives promoting financial inclusion, including access to underserved populations and the development of innovative products tailored to their needs.
- **Regulatory Sandboxes and Innovation Hubs**: A smaller proportion (10 percent) advocated for regulatory sandboxes and innovation hubs to facilitate experimentation and faster approval processes for new products and services.
- **Fintech-friendly Regulations**: Some institutions (8 percent) called for regulations that foster a conducive environment for fintech innovation, including streamlined approval processes and regulatory sandboxes for testing innovative ideas.
- **Training and Awareness**: Lastly, 6 percent of institutions highlighted the importance of educating both consumers and industry stakeholders about innovative financial products and services, as well as the associated risks and opportunities. The highlight of the policy areas to be considered is shown in **Figure 28** below.

Figure 28: Public Policy Areas for Enhancing Innovation



3.3.3 Regulatory Bottlenecks to Innovation

- The responses from various financial institutions in Kenya highlighted several policy areas within the existing regulatory frameworks governed by CBK that are perceived as bottlenecks or inhibitors to innovation-related activities.
- Some shared challenges include lengthy approval processes for new products and partnerships, regulatory complexities surrounding cloud computing and third-party partnerships, and stringent requirements for customer identification and verification (KYC).
- These challenges can hinder the adoption of certain technologies and innovative solutions, delaying the rollout of new products and services and limiting the ability of financial institutions to meet the evolving needs of their customers.
- Furthermore, there is a lack of clear guidelines on emerging technologies such as open banking and limited scope of KYC identification requirements, which can create uncertainty and ambiguity for financial institutions looking to leverage digital innovations.
- Additionally, regulatory constraints such as outsourcing requirements and physical KYC requirements pose barriers to innovation activities, particularly in the digital realm where remote onboarding and fully digital services are becoming increasingly important.

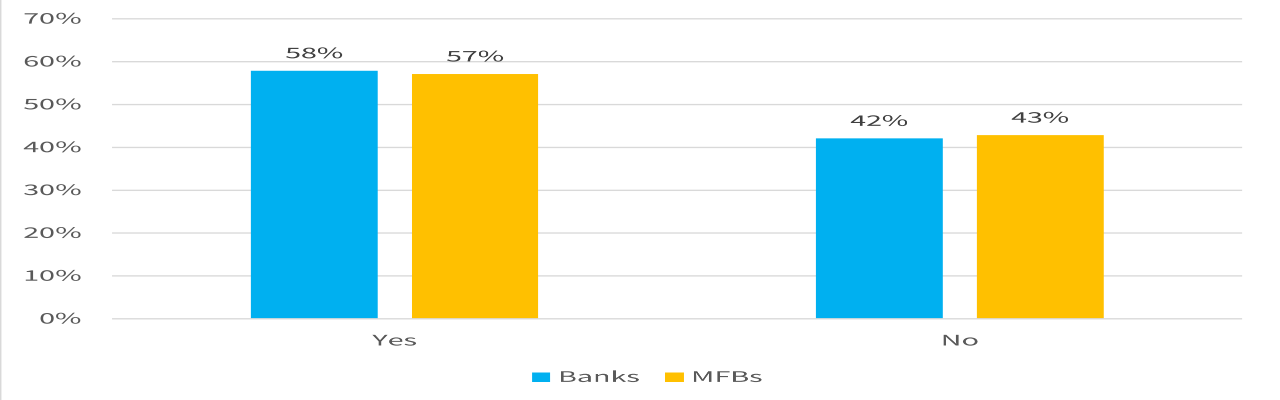
3.3.4 SDGs: Potential for Innovation-Related Activities Tied to Digitalization of Finance

- Institutions considered **Sustainable Development Goal (SDG) 8: Decent Work and Economic Growth** as the top SDG with the most potential for innovation-related activities tied to digital finance (67 percent). This was closely followed by **SDG 4 on Quality Education** at 54 percent and **SDG 13 on Climate Action** at 52 percent as illustrated in **Figure 29** below.

Figure 29: SDGs: Potential for Innovation-Related Activities tied to Digitalization of Finance

- SDG8 **(Decent Work and Economic Growth):** In 2022, SDG8 had the highest percentage of innovation activities at 64 percent, which slightly increased to 67.31 percent in 2023. This indicates a sustained focus on promoting economic growth and decent work opportunities through innovation.
- SDG4 **(Quality Education)**: Innovation activities related to SDG4 saw a notable increase from 38 percent in 2022 to 53.85 percent in 2023. This suggests a growing recognition of the importance of investing in inclusive and equitable quality education.
- SDG 1 **(End Poverty)** was noted as an important SDG in the context of innovation, ranking fourth in 2023 at 50 percent compared with its third position in 2022 at 49 percent.
- SDG5 **(Gender Equality)** experienced the highest increase in innovation activities across the two years, with an improvement of 18.08 percent. This suggests a significant increase in focus towards addressing gender-related issues through innovative approaches.
- SDG13 **(Climate Action)**: While still significant, the percentage of innovation activities related to SDG13 decreased slightly from 53 percent in 2022 to 52 percent in 2023. This indicates a stabilization of efforts towards mitigating climate-related risks.
- Between 2022 and 2023, there has been a noticeable uptick in engagement among both commercial banks and microfinance banks in climate change-related initiatives. In 2022, findings indicated that 51 percent of commercial banks and 43 percent of microfinance banks had either innovated or were in the process of innovating a climate change-related product.
- Comparatively, the 2023 data reveals a slight increase in these figures, with 58 percent of banks and 57 percent of microfinance banks reporting involvement in climate change-related activities as shown in **Figure 30** below.
- This upward trend suggests a growing awareness and commitment within the financial sector to address environmental challenges.

Figure 30: Innovation in line with SDG 13 (Climate Action)



- However, despite this progress, a considerable portion of institutions remain inactive in tackling climate-related issues, highlighting the ongoing need for further action and advocacy in this area.
- The surveyed financial institutions are actively responding to the challenges posed by climate change by innovating and developing climate change-related products. These initiatives included incorporating climate risk financial analysis into loan facilities, establishing green financing frameworks to guide sustainable practices, and launching sustainability campaigns aimed at environmental conservation.
- Several institutions are already offering green financing options such as green mortgages, financing for renewable energy solutions, and sustainable trade financing.
- Additionally, operational changes, such as the adoption of digital banking to reduce paper usage, demonstrate a commitment to sustainability beyond financial products. While some institutions are still in the process of developing or analysing their climate-related products, overall, these efforts signify a growing recognition of the importance of climate action within the financial sector.
- The digitalization of finance presents numerous opportunities for financial institutions to support the SDGs by leveraging technology to address various socio-economic and environmental challenges.
- For instance, digital platforms can enhance access to credit by streamlining processes and making credit facilities more affordable, thus supporting SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth).
- By offering digital financial services, such as mobile banking and digital wallets, institutions can promote financial inclusion (SDG 1 and SDG 10) and empower marginalized groups, including women and youth, to access banking services and entrepreneurial opportunities, aligning with SDG 5 (Gender Equality) and SDG 8.
- Digitization enables the development of climate-related products, such as green bonds and carbon offsetting programs, facilitating investments in renewable energy projects and climate-smart agriculture, thereby contributing to SDG 13 (Climate Action).
- Through partnerships with fintech companies and collaborations with NGOs, financial institutions can drive innovation and scale solutions to address societal challenges, fostering progress towards SDG 17 (Partnerships for the Goals).
- Overall, digital finance serves as a powerful tool for financial inclusion, economic empowerment, environmental

sustainability, and collaborative action, essential for achieving the SDGs and building a more inclusive and sustainable future.

3.4 Afro-Asia Fintech Festival Assessment

3.4.1 Afro-Asia Fintech Festival 2024 Assessment

- CBK holds the Afro-Asia Fintech Festival (AAFF) to bring Africa and Asia closer together to cooperate on FinTech innovation by providing a platform for connections, collaborations, and exchange of ideas.
- Survey respondents suggested several solutions that could push the industry forward, which could be presented at the Afro-Asia FinTech Festival 2024.
- These solutions encompass a wide range of technological innovations, regulatory reforms, and strategic initiatives aimed at enhancing financial services, promoting financial inclusion, and addressing emerging challenges. Some of the key solutions include:
    - **Standardization of Digital Products**: Establishing standards for digital products can streamline development processes, improve interoperability, and enhance user experience across different platforms.
    - **Enhanced Security Measures**: Implementing biometric databases for citizens and residents and connecting them to financial systems can strengthen security and reduce fraud. Additionally, solutions leveraging blockchain technology can enhance data security and transaction transparency.
    - **Open Banking Initiatives**: Open banking platforms promote data sharing and interoperability between financial institutions, fostering innovation and competition while empowering consumers with greater control over their financial data.
    - **Financial Inclusion and Literacy**: Initiatives focused on increasing financial access for underserved populations and promoting financial literacy can help bridge the gap between traditional and digital banking services.
    - **Cross-Border Payment Innovations**: Innovative payment systems that facilitate seamless and cost-effective cross-border transactions between Africa and Asia can promote international trade and economic growth.
    - **AI and Machine Learning Applications**: Leveraging artificial intelligence and machine learning technologies can enable personalized financial services, alternative credit scoring solutions, fraud detection, and data analytics.
    - **Sustainability and Climate Financing**: Developing green financing solutions, climate risk management tools, and carbon offsetting programs can promote sustainable development and address environmental challenges.
    - **Regulatory Reforms**: Advocating for regulatory reforms that foster fintech innovation while ensuring consumer protection and financial stability can create a conducive environment for experimentation and growth.
    - **Digital Identity Solutions**: Implementing robust and scalable digital identity verification methods can facilitate seamless customer onboarding and enhance security in financial transactions.
    - **Collaboration and Innovation Hubs**: Establishing innovation hubs, accelerators, and regulatory sandboxes where banks, fintech startups, and regulators can collaborate, test new ideas, and develop innovative solutions in a controlled environment.

3.4.2 Afro-Asia Fintech Festival Areas of Collaboration/Structure

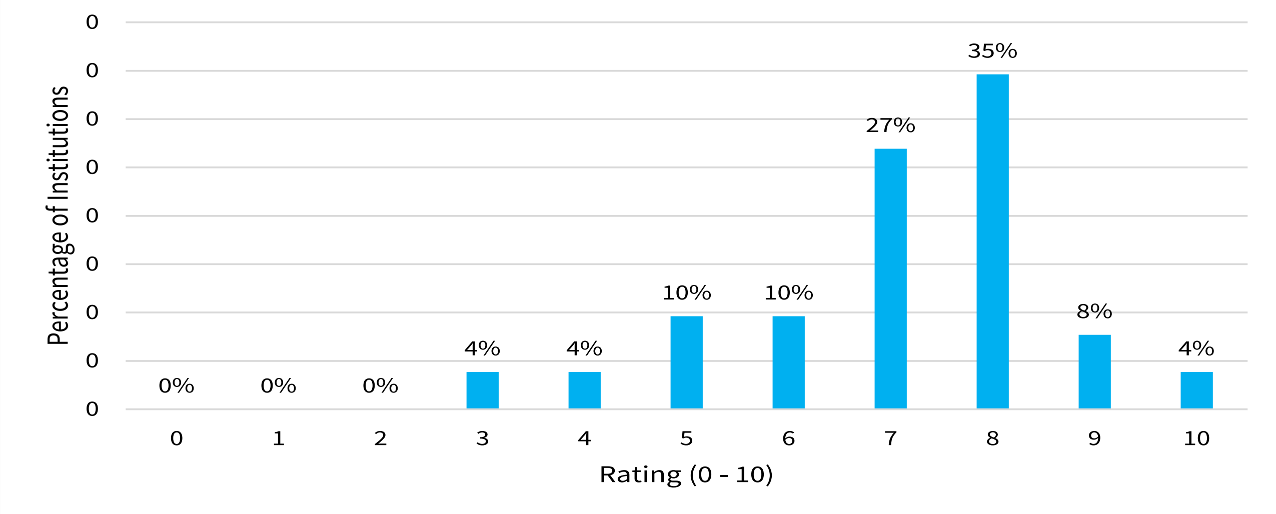
- The responses provided indicated several ways in which institutions envisioned partnering with the Afro-Asia FinTech Festival (AAFF) to achieve strategic mandates and foster innovation in the financial sector. These included:
  - **Research and Development Collaboration and Sandboxes**: Institutions are keen on collaborating with AAFF to develop sandboxes and engage in research and development initiatives. These collaborations provide a structured environment for testing innovative ideas and technologies.
  - **Capacity Building and Knowledge Sharing:** AAFF can serve as a platform for capacity-building initiatives, including training programs and knowledge-sharing sessions. These activities help stakeholders better understand regulatory requirements and best practices in innovation.
  - **Flexibility and Transparency:** Institutions emphasized the importance of AAFF offering a flexible and transparent framework that accommodates diverse stakeholder needs. Clear guidelines and processes are essential for fostering trust and confidence among participants.
  - **Exposure to New Technologies**: AAFF can facilitate exposure to emerging technologies such as blockchain, AI, and IoT. Funding, technical assistance, and partnership opportunities are suggested to support innovation in various sectors.
  - **Partnerships and Collaboration:** Collaboration with local and international institutions, participation in innovation displays, and hosting hackathons and innovation challenges are proposed to foster collaboration and drive innovation forward.
  - **Technical and Financial Assistance:** Institutions seek technical and financial assistance from AAFF to design and deploy digital solutions compliant with regulations.
- Access to strategic partnerships and support for real-time risk monitoring were also highlighted.

3.5 Impact and Challenges

3.5.1 Success Rate of Innovation Products Developed in 2023

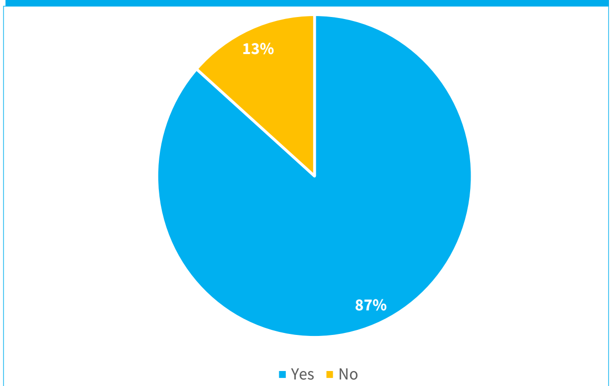
- 92 percent of the institutions that innovated a product in 2023 had a success rate of 5 and above, with a rating of 1 being least successful and 10 being most successful. This is illustrated in **Figure 31** below.

Figure 31: Rating of Success of Products Developed in 2023



- Of the innovation products developed in 2023 by the institutions, 87 percent attained their objectives, while 13 percent did not. This is depicted in the chart below **(Figure 32)**.

Figure 32: Product Success



- The following reasons were given by institutions for products that did not attain their objectives:
  - Low uptake by customers.
  - There was a need to improve the product after rolling out to match up with customer needs.
  - The product called for more staff training and system improvements.
  - The product was not launched, and therefore tangible metrics on its impact were not determined.
  - The product partially met the objectives for which it was innovated and released to the market.

3.5.2 Product Innovation Challenges

- Institutions noted several challenges that they faced concerning their endeavours to innovate products. These challenges included the following:
  - Prioritizing between products that meet existing customer needs and products that would aid in bringing new customers.
  - Budgetary constraints to support research, product development (capital), capacity building for staff, as well as the customers

in terms of product awareness.

- Inadequate internal technical expertise.
- Slow market uptake of the new products.
- Low level of customer education and knowledge of modern technologies.
- Competition by peers and other local industry players.
- Increased exposure to third-party vendor risks because of heavy reliance on their technology.
- Regulatory compliance, including navigating and meeting the stringent regulatory requirements, i.e., on KYC, Data Protection, etc.
- Constantly evolving market dynamics and accelerated technological advancements.
- Increased exposure to information technology and cybersecurity risks.
- Poor project management, which led to extended time between concept and rollout.
- Integrating modern technologies seamlessly into existing systems.
- Resistance to change within the organizational culture.

4.0 CONCLUSION

- Kenya's banking sector has ramped up innovation efforts with an aim to enhance service delivery to customers, create new markets, and achieve operational efficiency.
- Notably, commercial banks generated more innovative products in credit, deposit, and capital-raising services than in payments, clearing and settlement services in 2023, signalling increased interest in credit services to customers. Conversely, MFBs' focus on credit, deposit, and capital-raising services has remained steadfast.
- The banking sector is evolving towards better banking in order to offer a wide array of services through leveraging fintechs to digitize and modernise operations and business practices. The banking sector is leveraging Big Data and Data Analytics to harness data insights for enhanced service delivery. API technology and cloud computing offer support to banking sector services in their innovative use of data. Cloud computing is increasingly becoming important due to the efficiencies of scale and cost savings.
- Due to its far-reaching potential impact, cyber risk remains a top priority of financial institutions, particularly data security and governance in the wake of enhanced use of Big Data. To this end, institutions continue to put in place mechanisms to mitigate cyber risk, as guided by the Guidance Note on Cybersecurity for Commercial Banks.
- The banking sector is also cognizant of the importance of addressing climate action and has increased its efforts towards offering innovative climate-related financial products and services. In this regard, CBK's Guidance on Climate-related Risk Management, issued in 2021, was a timely policy action and will steer the banking sector towards greening efforts.
- The 2023 Innovation Survey Report informs the impact of Fintech on the current operating models, including the emergence of new business models and evolving and emerging risks. It also provides an informed basis for evidence-based public policy decisions on Fintech going forward.

ANNEX 1

Glossary of Terms

Application Programming Interface (API) – describes a system architecture that enables interactions between different software applications via a specified set of protocols. This allows software applications to communicate with each other to exchange data directly or to access another software application's functionality, through automated access.

Artificial Intelligence (AI) – describes the activity and outcome of developing computer systems that mimic human thought processes, reasoning and behaviour.

Augmented Reality (AR) – refers to the real-time digital overlay of information over physical elements. A user's real environment is the predominant element, with extra information intended to augment the actual environment, rather than fully replacing it.

Big Data – refers to datasets that are too large or complex to be handled by conventional data architectures, including processing tools and techniques. The key characteristics of Big Data are volume (size of the dataset), variety (data from multiple domains), velocity (rate of data flow) and variability (changes to data characteristics). These characteristics are colloquially known as the 'Vs' of Big Data.

Biometrics Technology – refers to a technology that allows a person to be identified and authenticated based on a set of recognizable and verifiable physical and behavioural characteristics, which are unique and specific to them.

Cloud Computing – refers to a computing system that supports business and delivery models that enable on-demand access to a shared pool of resources such as applications, servers, storage and network security. Cloud computing is typically delivered in three forms, namely, Software as a Service ("SaaS"), Platform as a Service ("PaaS") and Infrastructure as a Service ("IaaS").

Distributed Ledger Technology (DLT) – is a technology configuration that allows records to be updated and tracked in a 'distributed' manner, as opposed to a 'centralized' configuration. The key elements of DLT are a distributed ledger, a network of participants, a consensus mechanism and cryptography.

Internet of Things (IOT) – describes communication architecture that allows devices or sensors to connect, communicate or transmit information with or between each other via the internet, thereby enabling the recognition of events and changes so as to react autonomously in an appropriate manner.

Machine Learning (ML) – describes computer systems that adapt and learn from experience through data classification, pattern identification and regression.

Digital-only Banking – describes a banking system where banking facilities are provided exclusively through digital platforms.

ANNEX 2

List of Respondents

a) Commercial Banks and Mortgage Finance Institution

1. Absa Bank Kenya PLC.
2. Access Bank (Kenya) PLC.
3. African Banking Corporation Limited.
4. Bank of Africa Kenya Limited.
5. Bank of Baroda (Kenya) Limited.
6. Bank of India.
7. Citibank N.A Kenya.
8. Commercial International Bank (CIB) Kenya Ltd.
9. Consolidated Bank of Kenya Limited.
10. Co-operative Bank of Kenya Limited.
11. Credit Bank PLC.
12. Development Bank of Kenya Limited.
13. Diamond Trust Bank Kenya Limited.
14. DIB Bank Kenya Limited.
15. Ecobank Kenya Limited.
16. Equity Bank Kenya Limited.
17. Family Bank Limited.
18. Guaranty Trust Bank (Kenya) Limited.
19. Guardian Bank Limited.
20. Gulf African Bank Limited.
21. Habib Bank A.G Zurich.
22. HFC Limited.
23. I&M Bank Limited.
24. KCB Bank Kenya Limited.
25. Kingdom Bank Limited.
26. Middle East Bank Kenya Limited.
27. M-Oriental Bank Limited.
28. National Bank of Kenya Limited.
29. NCBA Bank Kenya PLC.
30. Paramount Bank Limited.
31. Premier Bank Kenya Limited.
32. Prime Bank Limited.
33. SBM Bank Kenya Limited.
34. Sidian Bank Limited.
35. Stanbic Bank Kenya Limited.
36. Standard Chartered Bank Kenya Limited.
37. UBA Kenya Bank Limited.
38. Victoria Commercial Bank PLC.

b) Microfinance Banks

1. Branch Microfinance Bank Limited.
2. Caritas Microfinance Bank Limited.
3. Choice Microfinance Bank Limited.
4. Faulu Microfinance Bank Limited.
5. Kenya Women Microfinance Bank PLC.
6. LOLC Microfinance Bank PLC.
7. Maisha Microfinance Bank Ltd.
8. Muungano Microfinance Bank PLC.
9. Rafiki Microfinance Bank Limited.
10. Salaam Microfinance Bank Limited.
11. SMEP Microfinance Bank Limited.
12. Sumac Microfinance Bank Limited.
13. U & I Microfinance Bank Limited.
14. Umba Microfinance Bank Limited.

Central Bank of Kenya

Haile Selassie Avenue P.O. Box 60000 - 00200 Nairobi |Tel: (+254) 20 - 286 0000 / 286 1000 / 286 3000