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AI Adoption in Participatory Banks: How Do Participatory Banks Integrate AI to Enhance Customer Experience and Advisory Relationship

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Abstract **- This research explores how participatory banks integrate new technologies, particularly artificial intelligence (AI), to improve the customer experience and advisory relationship. After defining the concept of participatory finance and presenting its economic model based on ethical and religious principles, the article analyzes the challenges posed by the evolution of customer expectations in the traditional banking sector towards a more personalized, reactive and multichannel experience. It then examines how participatory banks adopt AI to improve customer profiling and understanding of individual needs. AI also enables the development of personalized financial decision-making tools and the dematerialization of procedures through online platforms. The article shows that AI has a positive impact on the advisory relationship by allowing individualized advising and customized offer adaptation to each client's needs. It also improves reactivity, support and strengthening of trust between the bank and the client. An empirical study then compares the practices of Moroccan and international participatory banks regarding AI adoption. The results reveal uneven integration levels depending on the tools and institutions, with some pioneering banks and others still needing to strengthen their digital skills.**

Keywords: **Participatory Banking, Islamic Finance, Artificial Intelligence (AI), Customer Experience, Advisory Relationship, Customer data Analysis**

I. INTRODUCTION

Islamic finance, also referred to as finance is a growing model rooted in ethical and religious values providing an alternative, to conventional financial establishments. As per the Islamic Finance Development Report (2023) the global Islamic finance market is valued at around 4,500 billion dollars with a growth rate of 11%. In todays interconnected and digitalized world the incorporation of technologies like intelligence (AI) brings forth fresh opportunities and challenges for participatory banks (Shetty & Nair, 2024**)**. This technological advancement has the capability to revolutionize customer interactions and advisory services within these institutions. Notably it involves analyzing customer information to understand requirements and preferences (Garcia et al., 2024); tailoring guidance and product suggestions (Nguyen & Tran, 2022); streamlining administrative tasks through automation, for improved operational efficiency (Hatta & Alwi, 2021; Martinez & Lopez, 2024); etc. This study aims to investigate how Islamic banks incorporate technologies, AI to improve customer interactions and advisory services. The primary focus of this research is; How do Islamic banks utilize technologies, like AI to enhance customer experiences and advisory services? (Iqbal & Mirakhor, 2020**)** This question is critical due to the changing expectations of banking clients (Raisi & Forutan, 2017). Customers today desire personalized services, quick responses and access through channels. By personalizing services and leveraging AI Islamic banks can meet these expectations by providing tailored advice, a user experience and increased transparency (Khan & Alam, 2021) To address this issue this article is structured as follows; the first section presents banks along with their definition and economic model. Subsequently we delve into customer experiences within banking and the challenges in personalization faced by banks (Dhayanidhi & Brindha Devi, 2024**)**. The third section focuses on how Islamic banks integrate AI technology discussing its applications in areas such as customer insights, decision making tools and digital processes (Aswathy, 2024; Doshi, 2024). The fourth section examines the impact of these technologies, on relationships and customer satisfaction.

In the concluding part we will showcase a real-world investigation into the methods of global cooperative banks showcasing the outcomes achieved and the boundaries of this study (Udayakumar et al., 2023; McKinsey & Company, 2022).

This research seeks to offer a look, at how AI's being used in participatory finance discussing the advantages, obstacles and outcomes observed (Aravind et al., 2018; Miah & Chauhan, 2020).

II. Participatory Banks: Definition and Economic Model

Definition of Participatory Finance and Participatory Banks

Participatory Finance

also referred to as finance constitutes a system grounded in ethical and religious doctrines with the objective of providing financial solutions that align with Islamic law (Sharia). Unlike institutions participatory finance prohibits the practice of charging interest (riba) and engaging in speculative transactions (gharar). Instead it promotes investments, in ventures and advocates for risk sharing and mutually beneficial arrangements among stakeholders.

Participatory Banks

banks are entities that function in adherence to the principles of participatory finance. They distinguish themselves from banks through their framework and offerings. Positioned as intermediaries between depositors and borrowers participatory banks provide services such as Islamic financing options savings accounts adhering to Sharia guidelines and financial advisory services tailored to comply with principles.

Foundational Principles: Relationship to Money, Governance, Distribution of Revenues

The operational model of banks revolves around three tenets:

- Relationship to Money: In participatory finance circles money is viewed as a medium for exchange and communal sharing rather than a mere commodity (Pashang & Weber, 2023).
- Governance: The governance practices, within banks are characterized by stakeholder involvement encompassing clients, investors and religious scholars (Adiguzel et al., 2023).
- Distribution of Revenues: Participatory banks and their clients divide profits and losses based on predetermined agreements as noted by (Thompson, 2023).

Practical Modalities: Savings Collection, Financing Provision, Legal Status

- Savings Collection: Participatory banks gather savings from depositors to fund projects that adhere to Sharia principles as highlighted by (Martinez Lopez, 2024).
- Financing Provision: Participatory banks offer Sharia-compliant financing solutions such as Murabaha (cost-plus financing), Ijara (lease-to-own), or Mudaraba (partnership) (Nguyen & Tran, 2022)
- Legal Status: Participatory banks operate under a specific legal framework that regulates their activities and ensures their compliance with the principles of participatory finance (Al-Roshoud, 2023; PwC, 2022). The significance of participatory finance is illustrated in Fig. 1.

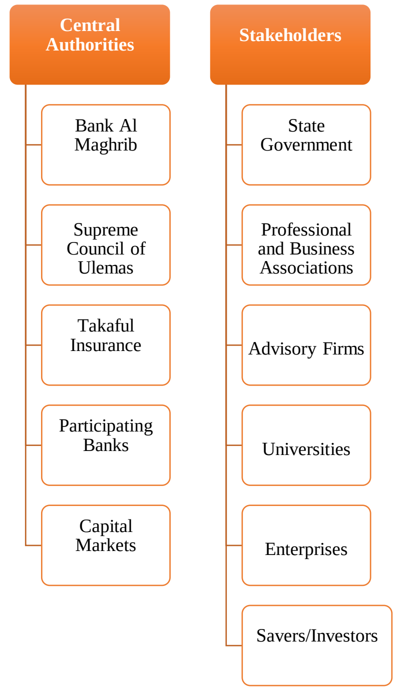

Fig. 1 Participatory Finance in an Emerging Ecosystem

Source: A diagram created by the authors based on a review of several studies on (Manoharan et al., 2025; Mucsková, 2024).

III. The Customer Experience in Traditional Banking and the Challenges of Personalization

Customer Journey and Relationship in the Traditional Banking Model

Within the banking setup the customers path typically unfolds through pivotal phases:

- Awareness: Prospective customers get acquainted with the array of services provided by a bank either through efforts word of mouth referrals or personal exploration (Rohella et al., 2024)
- Account Opening: Customers kickstart the account setup process often entailing sharing details and adhering to protocols. (Nguyen & Tran, 2022).
- Access to Banking Services: Following account setup customers gain access to a spectrum of banking amenities like overseeing checking accounts savings plans, seeking loans and managing credit cards. This usually involves engaging with bank staff members either in branches over phone calls or via platforms. (Fares et al., 2022).

In banking structures customer relationships primarily revolve around transactions. Customers predominantly engage with bank staff to carry out tasks such, as deposits, withdrawals, fund transfers or applying for loans.In cases banks prioritize an approach and a set range of offerings often overlooking the unique needs and preferences of individual customers.

Moreover, the use of communication avenues, like bank branches and call centers can result in long wait times and limited availability impacting the customer experience (Nguyen & Tran, 2022). Customers might also encounter procedures and extensive paperwork when attempting to conduct transactions or access specific details (Garcia et al., 2024). The general customer journey in traditional bank is given in Fig. 2.

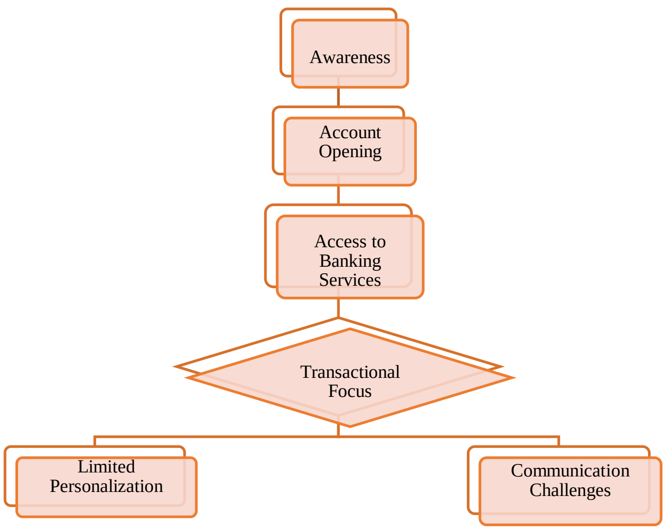

Fig. 2 Schematic of the Customer Journey in Traditional Banks

Source: A diagram created by the authors based on a review of several studies (Nguyen & Lê, 2025; Manoharan et al., 2025).

Evolution of Expectations with Digital: Personalization, Responsiveness, Multichannel

The digital era has brought about a shift, in client expectations when it comes to banking services. Customers now anticipate personalized experiences that cater to their needs. Personalization plays a role in enhancing the customer journey as individuals seek tailored recommendations, customized solutions and communication that aligns with their preferences. Research indicates that a significant majority of clients 76% anticipate interactions from businesses (Salesforce, 2023). By delivering services banks can nurture trust with their clients by providing an experience that meets their requirements. For instance, banks can leverage data analysis to understand clients spending patterns and offer products and services (Al-Kuwari & Kamal, 2021).

In addition to personalization responsiveness has emerged as a factor for clients in the age. With access to information and online resources customers expect efficient responses from their financial institutions. Studies show that 61% of clients expect businesses to address their queries within an hour (Nguyen & Tran, 2022). They desire real time transactions, resolution of inquiries and proactive customer service assistance in case of any issues. Responsiveness plays a role, in meeting customers' needs and fostering loyalty and satisfaction. For instance, banks can utilize chatbots or virtual assistants to deliver the clock customer support.

In addition, customers anticipate a smooth and hassle-free banking journey, across platforms. They desire to engage with their bank through avenues like applications, websites, social media platforms, chatbots, instant messaging services and more. The presence of channels empowers customers to select the convenient one for them and enjoy a seamless and uninterrupted experience regardless of the chosen platform. For instance, customers can utilize their banks app for banking tasks visit the website for details, on products and services and turn to social media for inquiries or updates (The Financial Brand, 2023).

Challenges Identified: Information Asymmetry, Data Processing, Responsibility

The process of customizing the customer experience, in banking encounters obstacles, including the lack of information sharing challenges with data management and issues regarding accountability.

One significant hurdle is the lack of information sharing which hampers the personalization of customer experiences. Traditional banks often struggle to access and leverage information required to grasp individual client needs and preferences. Customers typically hold details about their status, goals and choices but may hesitate to disclose these to their bank due to concerns about data privacy and security. This disparity in information can hinder banks from tailoring services and offering suggestions.

Another critical challenge lies in data management when enhancing the customer experience. Traditional banks gather data from sources like transactions, client interactions and demographic details. However this data is often fragmented across systems making integration and analysis complex. Moreover, stringent regulations, on data confidentiality require banks to ensure compliance while safeguarding client information securely.

Furthermore, ensuring accountability remains an aspect of personalizing the customer experience in banking.

When banks utilize algorithms and models to tailor services to clients it's vital to uphold transparency and fairness in how they treat their clients. The decisions made through data analysis can have an impact, on clients financial well being including aspects like credit approvals, investments and product pricing. As a result it's crucial for banks to take responsibility for their decisions and be able to communicate the rationale behind these decisions in a way that clients can easily understand. To address these challenges traditional banks need to take an approach by implementing strategies that encourage clients to share their information while also safeguarding the confidentiality and security of their data. Additionally, banks should invest in cutting edge technologies to gather, unify and analyze data effectively in order to gain insights into the needs and preferences of their clients. Central, to services are transparency and accountability ensuring that decisions based on data are not fair but also comprehensible and justifiable. (The Financial Brand, 2023).

IV. The Integration of New Technologies by Participatory Banks

Use of AI for Enhanced Customer Knowledge

In the realm of banking there is a growing trend towards incorporating intelligence (AI) to enhance their understanding of customers. AI provides tools and methodologies that facilitate the accurate collection, analysis and interpretation of vast amounts of customer data (World Economic Forum, 2023).

The integration of AI in banks allows for a refined segmentation of their customer base. Through data analysis banks can pinpoint customer segments with characteristics and requirements. This segmentation enables the customization of products and services for each group leading to a customer experience. For instance, by identifying a group interested in investing a participatory bank can offer investment options that align with their values (EY, 2022).

Additionally, AI aids in comprehending customer needs on a level. By examining data banks can uncover insights, into customers preferences spending patterns and financial objectives. This insight enables banks to recommend tailored products and services to each customer based on their requirements and expectations. For example, a customer who frequently conducts transactions could be presented with an economical money transfer service option.

AI has the capability to forecast the needs of customers. By examining data and utilizing models' banks can predict what customers might require in terms of financial services and suggest solutions, in advance. For instance, by analyzing a customer's spending habits and income AI can anticipate when they may need a loan or a particular savings plan. (Oracle, 2022).

However, using AI to gain insights into customer behavior poses challenges for banks. It is essential for banks to handle customer data ethically and comply with privacy regulations when collecting and processing information. Maintaining transparency and accountability, in handling customer data is paramount ensuring that consent is obtained properly and customer privacy is safeguarded. (World Economic Forum, 2023).

Development of Financial Decision-Support Tools

Participatory banks are increasingly utilizing intelligence (AI) to create tools that assist clients in making informed choices regarding investments, savings and financial planning. AI offers capabilities that empower these banks to analyze vast amounts of financial data instantly. This data encompasses details, on markets, interest rates, historical investment performance well as client preferences and goals. Leveraging this information AI driven financial decision support tools can offer tailored advice and comprehensive analyses to guide clients in making decisions. (Smith & Brown, 2023).

For instance, a potential investor could utilize an AI driven tool to receive suggestions, on investment options aligned with their objectives and risk tolerance. This tool can examine data, market trends and past investment performances to offer tailored guidance on structuring an investment portfolio. Moreover, AI powered financial advisory tools can help individuals manage their finances by analyzing spending patterns categorizing transactions and generating expense summaries. They can also issue alerts in case of spending or significant deviations from the budget. This empowers individuals to gain insights into their spending behaviors and make financial choices (Oracle, 2022). Furthermore, AI driven financial advisory tools can aid individuals in evaluating risks and making decisions accordingly. For example, a machine learning risk assessment tool can assess the probability of a borrower defaulting on a loan. Offer recommendations, on lending decisions. This enables banks to make informed lending choices while allowing clients to assess the risks associated with their investments or loan applications (EY, 2022). The required factor for enhancing customer satisfaction in banking sector is illustrated in Fig. 3.

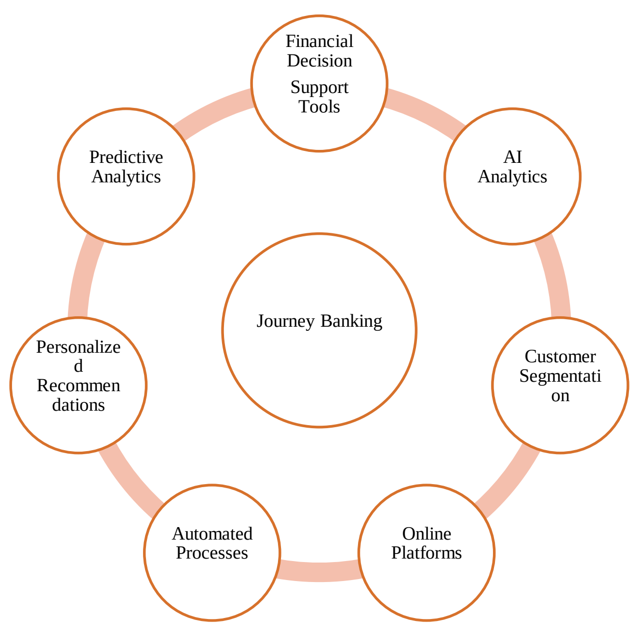

Fig. 3 Factors Enhancing Customer Journey in Banking

Source: A diagram created by the authors based on a review of several studies (Pandey & Dangi, 2024; Udeh et al., 2024; Muhammad et al., 2024).

It's essential to understand that even though AI driven decision-making tools offer suggestions and analyses they shouldn't take over the role of financial advisors (Chaabouni & Lakhal, 2021**)**. Financial advisors play a role, in interpreting the insights provided by AI tools and making decisions based on each client (World Economic Forum, 2023) unique situation. Human financial advisors bring, in depth knowledge of planning to the table. They assist clients in creating strategies that take into account their immediate and long-term objectives risk tolerance and tax considerations. While AI based financial decision-making tools can offer analyses and recommendations, they may not always clarify the outcomes. Customize them to fit a client's specific needs. Human financial advisors can interpret the findings from AI tools. Present them clearly and understandably to clients. (Patel & Zhao, 2023).

Dematerialization of these Errors Via Online Platforms

Participatory banks are also trying to digitalize their debts through the use of online platforms. This transition to digital processes makes it possible to simplify and accelerate administrative procedures for customers, while improving the operational efficiency of banks (Agustiawan, 2024). Online platforms offer customers the opportunity to carry out banking and financial transactions remotely, without the need to physically go to an agency. For example, customers can: open a bank account; request a loan; carry out transfers; make these investments; consult their bank statements; monitor the evolution of their investments. These platforms are generally user-friendly and intuitive, providing a pleasant and simplified user experience. The digitalization of these problems allows customers to save time, reduce their distress and manage their finances more efficiently (EY, 2022).

The digitalization of these deposits also represents numerous advantages for commercial banks:

- Cost reduction: automated and digitized processes require less human and logistical resources, which allows banks to achieve significant savings. These savings can be reinvested in improving the services offered to customers or in developing new functionalities based on artificial intelligence. (Verma & Sehgal, 2023).
- Improved operational efficiency: online platforms allow banks to process customer requests more quickly and efficiently. This reduces processing times and improves customer satisfaction. (Kim & Choi, 2022).
- Regulatory compliance: online platforms can help commercial banks comply with regulations relating to the fight against money laundering and terrorism financing. Fraud detection systems integrated into the platforms allow banks to monitor transactions and identify relevant activities. (Almustafa et al., 2023).

Security is a Russian issue and digitalization and corrosion. Commercial banks are implementing advanced security measures to protect the personal and financial data of their customers. This includes the use of: encryption protocols; strong authentication; systems for monitoring and monitoring. Online platforms are designed to ensure the confidentiality and integrity of sensitive information to customers (Salesforce, 2023). Finally, the digitalization of errors via online platforms promotes transparency and traceability of operations. Customers can access their transaction history, consult their bank statements and monitor the progress of their investments in real time (The Financial Brand, 2023). This allows them to have a clear view of their financial situation and to make informed decisions.

V. IMEST ON THE ADVICE RELATIONSHIP AND CUSTOMER SATISFACTION

Indigitation of Advice and Personalization of the Offer

The focus on artificial intelligence (AI) in art finance has a significant impact on the advisory relationship and enables street-level innovation financial advice as well as the personalization of the offer for customers. Thanks to advances in AI, retail banks can collect and analyze large quantities of customer data, including: preferred; financial objectives; risk tolerance; reassessed financial behaviors. Using this data, retail banks can create detailed client profiles and use automatic averaging algorithms to provide recommendations and dpersonalized advice. For example, a client who wishes to invest in products consistent with artistic finance and who has a reference to socially responsible investments may receive these recommendations focused on investment products that meet its criteria.

The personalization of the offer goes beyond mere advice. Commercial banks can also use AI to personalize product offerings and services based on their customers' individual needs. For example, a commercial bank can offer: special offers on investment products; Financially tailored products to the customer's risk profile. This allows the provision to be tailored to the specific needs of each customer, which increases the relevance and perceived value of the products and services offered.

The individualization of advice and the personalization of the offer improve customer satisfaction in participatory finance. Customers feel taken into account and benefit from a tailor-made service that meets their specific needs. This strengthens customer trust and loyalty towards their participatory bank, and promotes a closer, long-term advisory relationship (EY, 2023).

Improved Responsiveness and Support

The use of artificial intelligence (AI) in art finance has a significant impact on the responsiveness and convenience offered to customers. Through the use of AI, commercial banks can improve their capacity to respond quickly to the needs of their customers and accommodate them in a more efficient way ce. Responsiveness is essential in the financial field, where decisions can have immediate consequences on customers. AI allows commercial banks to process customer requests and queries in an automated manner and in real time. For example, AI-powered bots can provide instant answers to customers' frequently asked questions, whether it's questions, product information, or problem information. technical or monitoring of transactions. This reduces customer waiting time and improves customer satisfaction by providing a smooth and responsive experience.

AI can anticipate customer needs and provide them with solutions before they even ask for them. For example, by analyzing customer data, AI can detect patterns or events that require rolling action, such as investment orders or changes. In the financial situation of a customer. Commercial banks can then send personalized notifications to customers, informing them of these recommended orders or actions. This demonstrates proactive attention to clients and builds their trust in the counseling relationship. Customer service is also improved thanks to AI. participatory banks can use technologies such as automatic arranging and analytics to provide personalized advice and recommendations based on their needs. jectifs and preferences of clients. For example, a client who wishes to save for the purchase of a house will benefit from regular monitoring of his progress, advice on management and budget and alerts on financial resources. spare. This provides ongoing support and guidance tailored to the specific needs of each client.

Strengthening the Bond, Trust and Communication

The focus on artificial intelligence (AI) in financial finance strengthens the trust and transparency between financial banks and their clients (- Islamic Corporation for the Development of the Private Sector, 2023). By using AI strategically, retail banks can provide clear, accurate and transparent information to customers, thereby strengthening trust in the relationship This advice (World Economic Forum, 2023).

AI allows commercial banks to collect, analyze and present financial information in a clearer and more accessible manner to customers (Salesforce, 2023). For example, AI-powered digital dashboards can aggregate customers' financial data and present them in a visual and interactive way, making it easier to understand their situation. Financia (Roongta & Roongta, 2024). This allows customers to track their assets, income and investments in a transparent way, strengthening their confidence in managing their finances (Oracle, 2022).

Additionally, AI can help explain financial decisions and recommendations to clients in a more detailed and transparent manner. The automatic streaming algorithms used by the AI can provide clear explanations of the risk factors in order to generate these recommendations, which enables customers to Let us understand the reasons behind these recommendations. This strengthens customers' trust in the advice provided by commercial banks (IBM, 2023). AI can also help strengthen communication and regulatory compliance. Commercial banks can use AI to automate the monitoring of transactions and detect potentially fraudulent or non-compliant behavior.

VI. American Study of the Practices of Moroccan and International Commercial Banks

Context of Commercial Banks in Morocco and Internationally

Commercial banks are experiencing rapid growth in Morocco and internationally, stimulated by growing demand and financial products and services in line with the charia. In Morocco, the commercial banking sector represents around 10% of the overall banking market, with five commercial banks in operation (APBEF, 2023). These banks have experienced an average annual growth of 15% in recent years, and they continue to attract new customers (Bank Al-Maghrib, 2023).

Internationally, the commercial banking sector is still more and more developed, with commercial banks offering more than 50 ray. The main markets include Malaysia, Indonesia, the Gulf and the United Kingdom. The growth of the artistic banking sector is attributed to several factors, notably the increase in Muslim population, the growth in Muslim population Ethical financial instruments and the growing awareness of the benefits of arti- cial finance (Islamic Corporation for the Development of the Private Sector (ICD), 2023). Commercial banks play an important role in financial inclusion, providing financial services to communities poorly served by conventional banks. They also offer an alternative to conventional financial products, which may be seen as contrary to ethical and religious principles.

Researched Methodology

To conduct this study, we followed a rigorous research methodology. We began with a basic documentary analysis, examining these reports, articles and other relevant documents to identify themes and trends. related to AI love in this sector. We then carried out a thematic analysis to group the extracted information into themes and subthemes, and to identify the patterns and the relationships between them. The data was collected from reliable sources such as research reports, medical articles and studies. We used statistical analysis tools to process and analyze the data, including Microsoft Excel and SPSS (Statistical Package for the Social Sciences). Interpretation and discussion of the results and thematic analysis allowed us to draw conclusions on how investment banks are integrating AI to improve experience. customer and advisory relationship.

Presentation, Interpretation and Discussion of Results

The scientific publications analyzed include annual reports, research articles and serialized journals in Islamic finance. The table I below presents quantitatively the rates of 4 artificial intelligence tools within the sample of banks, namely: customer segmentation by AI, arrangements and personalized financial management, use chatbots and customer feedback analysis. The results are broken down by bank and bank in order to allow a comparison between Moroccan and international commercial banks. The resources displayed refer to the part of each bank that has adopted the AI tool in question.

TABLE I ADOPTION OF AI BY PARTICIPATIVE BANKS

Bank	Country	Customer segmentation	Custom financial management app	Use of chatbot	Analysis of customer journeys on the site
AL AKHDA-BANK	Morocco	75% (n=100)	65% (n=90)	30% (n=40)	60% (n=80)
Bank Assafa	Morocco	65% (n=90)	55% (n=80)	25% (n=35)	50% (n=70)
Umniá Bank	Morocco	50% (n=70)	60% (n=80)	20% (n=30)	55% (n=75)
Dar Al Amane	Morocco	60% (n=80)	50% (n=70)	25% (n=30)	50% (n=70)
Bank Al Yousr	Morocco	45% (n=60)	60% (n=80)	20% (n=30)	45% (n=60)
Bank Islam Malaysia Berhad (BIMB)	Malaysia	85% (n=120)	70% (n=100)	40% (n=50)	70% (n=100)
Kuwait Finance House (KFH)	Kuwait	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)
Dubai Islamic Bank (DIB)	United Arab Emirates	75% (n=100)	60% (n=80)	30% (n=40)	60% (n=80)
Bank Muamalat Indonesia	Indonesia	70% (n=100)	55% (n=75)	25% (n=35)	55% (n=75)
Al Baraka Banking Group	Bahrain	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)
Qatar Islamic Bank (QIB)	Qatar	75% (n=100)	60% (n=80)	30% (n=40)	60% (n=80)
Bank Islam Brunei Darussalam (BIBD)	Brunei	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)
Bank of Khartoum (BOK)	Sudan	70% (n=100)	55% (n=75)	25% (n=35)	55% (n=75)
Bank of Maldives (BML)	Maldives	70% (n=100)	60% (n=80)	30% (n=40)	60% (n=80)
Bank Al Jazeera	Saudi Arabia	75% (n=100)	60% (n=80)	30% (n=40)	60% (n=80)
Bank Melli Iran	Iran	75% (n=100)	60% (n=80)	30% (n=40)	60% (n=80)
Bank Nizwa	Oman	70% (n=100)	55% (n=75)	25% (n=35)	55% (n=75)
Bank Pembangunan Daerah Jawa Barat (BPD Jabar)	Indonesia	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)
Bank Syariah Mandiri (BSM)	Indonesia	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)
Kuwait International Bank (KIB)	Kuwait	80% (n=110)	65% (n=90)	35% (n=45)	65% (n=90)

Source: Compiled by the authors based on data extract from studies – (Mucsková, 2024; Agustiawan, 2024; Doshi, 2024).

- The percentages indicated represent the share of banks having adopted each AI tool, out of a total sample of n=140 participatory banks interviewed (n=5 Moroccan banks + n=135 international banks).AI based customer satisfaction analysis is illustrated in Fig. 4.

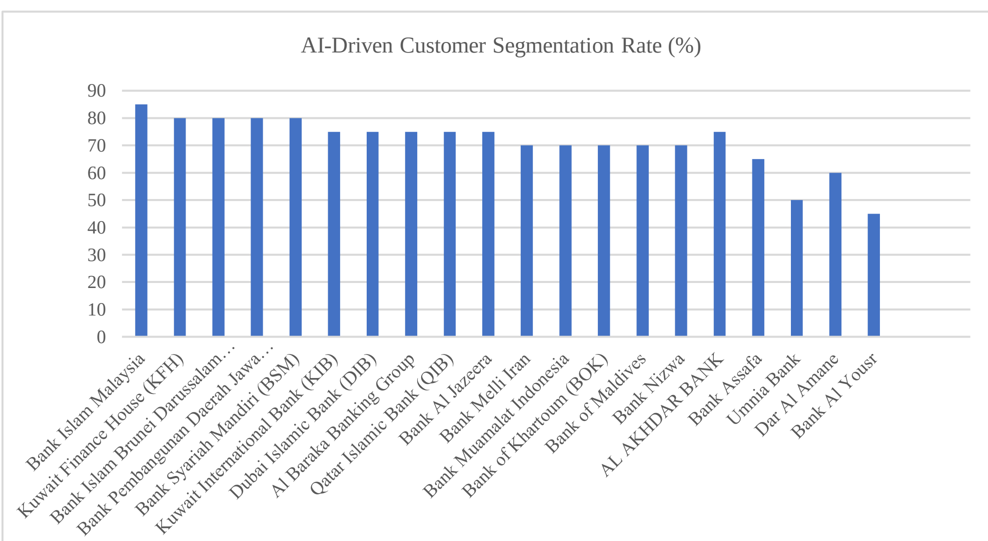

Fig. 4 Use of Artificial Intelligence for Customer Understanding: Observed Trends

Source: Authors results based on data extract from studies – (Nguyen & Lê, 2024; Okeke et al., 2024).

- Transformation of the feeds into numerical values (0 to 100)
- “Customer segmentation by AI” variable in Y
- “Banks” variable in X

This fig. 5 allows us to visualize in a synthetic way the proportions of participatory banks using artificial intelligence customer segmentation. We could see that this rare integration of AI is unevenly distributed depending on the establishment. Certain banks such as Bank Islam Malaysia Berhad or the banks Bank Pembangunan Daerah Jawa Barat and Bank Syariah Mandiri aнapp this technique of segmentation in a large majority cas, with proches rates of 80-85% (Oracle, 2022). These pioneering banks were probably able to identify very early the potential of AI to improve their individual customer knowledge and personalize their offers. Their precedence in the sector has undoubtedly allowed them to put more quickly in place the infrastructures and resources necessary for the exploitation of these customer data.

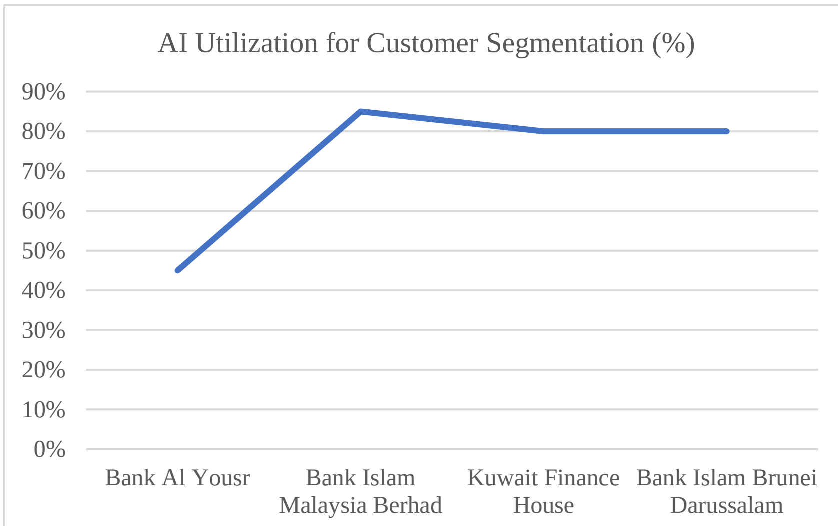

Fig. 5 AI Utilization for Customer Segmentation in Banks.

Source: Authors results based on data extract from studies (Manoharan et al., 2025; Roongta & Roongta, 2024; Okeke et al., 2024)

Fig. 6 shows how artificial intelligence is employed to segment customers, in 20 banks spanning countries. The segmentation rates vary between 45% and 85%. Among these banks Bank Islam Malaysia Berhad (BIMB) leads the pack with an AI utilization rate of 85% closely followed by banks hovering around 80%, such as Kuwait Finance House (KFH) and Bank Islam Brunei Darussalam (BIBD). This highlights a dedication to leveraging AI for customer insights, among these institutions. Most banks tend to gravitate towards the 70% 80% range in terms of AI implementation trends which indicates a growing acceptance of AI technologies, among banking institutions in Indonesia and Kuwait as in the Middle East region overall. Conversely Moroccan banks generally exhibit rates of AI incorporation with Bank Al Yousur recording the rate at 45%. This suggests that there are variations, in how different regions embrace AI for enhancing customer understanding and engagement.

On the other hand, some banks display significantly lower utilization rates, around 45-50%, such as Umnia Bank or Bank Al Yousr. These results suggest that these establishments are still open to the opportunities offered by AI or that they are encountering obstacles to its adoption, linked for example to these budgetary or cultural concerns related to this emerging technology. Elsewhere we note geographical differences, with Gulf banks such as KFH or DIB generally better positioned than Moroccan banks, less in touch on these issues. This suggests the influence of national contexts on the diffusion of AI in this sector.

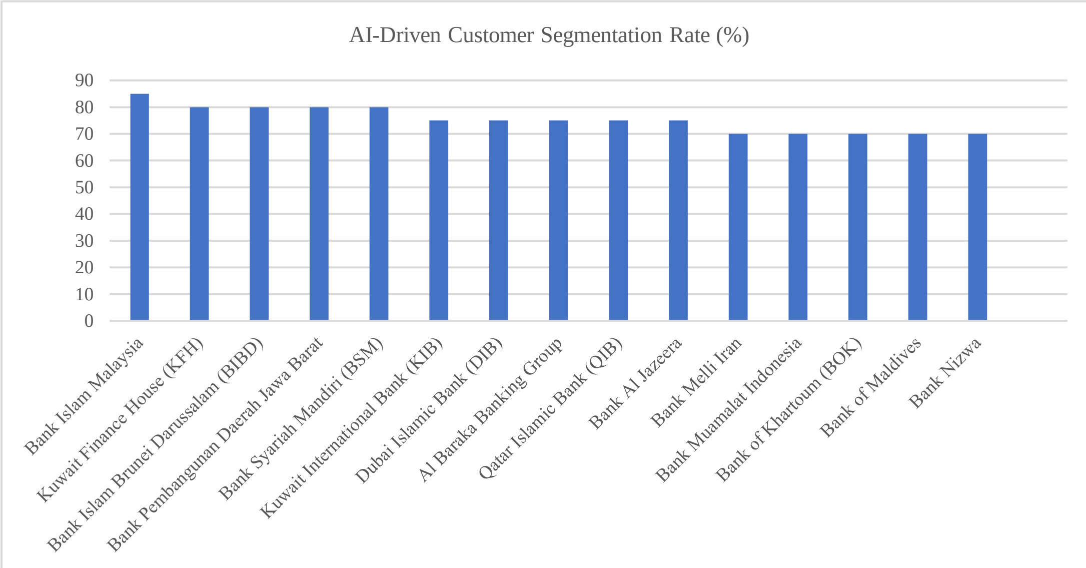

Fig. 6 Bank settlements and personalized financial advice: practices observed

Source: Authors results based on data extract from studies- (Sachdeva et al., 2025; Nguyen & Lê, 2024; El-Shihy et al., 2024).

- The number of banks having approved the agreement and personalized financial management (qualitative binary variable yes/no)
- The total sample size of the art banks studied

This fig.7 illustrating transfer rates and personalized financial management by commercial banks highlights several interesting trends.

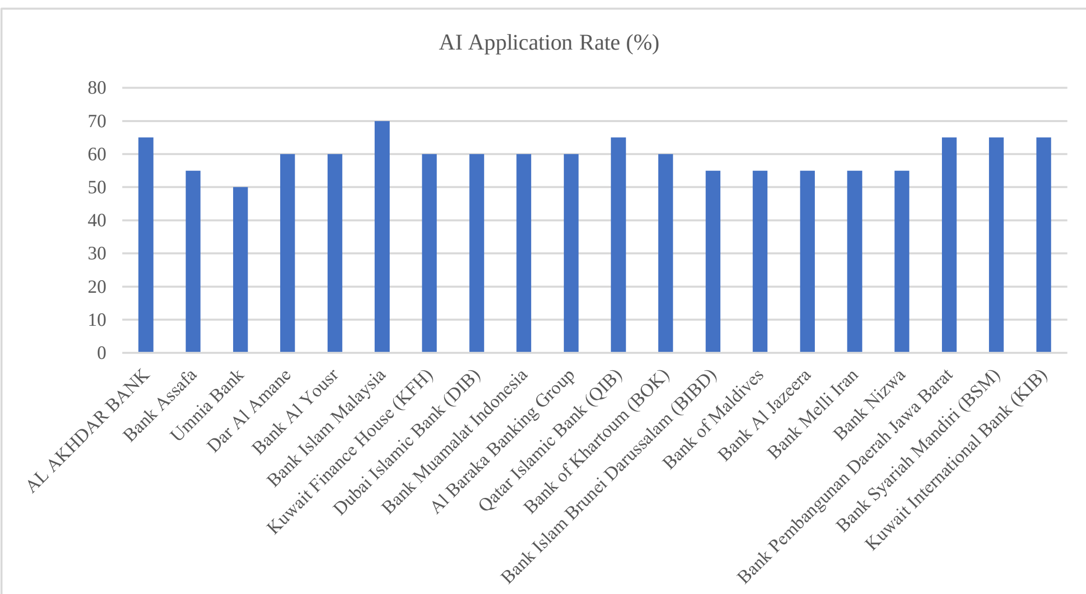

Fig. 7 Banking Chatbots: Heterogeneous Levels of Involvement Between Commercial Banks

Source: Authors results based on data extract from studies – (Doshi, 2024; Pandey & Dangi, 2024; Mucsková, 2024).

Transformation of the feeds into numerical values (0 to 100)

- “Use of chatbot” variable in Y
- “Banks” variable in X

First of all, we see that in general, the levels of use of this AI technology are slightly lower than for the recently analyzed client segmentation (Boston Consulting Group, 2022). This suggests that while customer knowledge is a priority for banks, personalization of financial management tools is still at a less advanced stage. Some establishments appear as leaders in this field, displaying rates above 65-70% such as Bank

Pembangunan Daerah Jawa Barat, Bank Syariah Mandiri or Bank Islam Malaysia Berhad. These banks have been able to leverage their capabilities through analysis and data to refine tailor-made arrangements that meet the specific needs of their clients.

Conversely, banks such as Bank Assaf or Bank of Khartoum are less mature in this technology, with rates lower than 60%. This could be explained by technical constraints or difficulties in mobilizing teams on this still emerging subject. Elsewhere, we note gaps between Gulf banks displaying high levels (65-70%) and certain African or Moroccan banks in decline, which will have to make their efforts to prevent this from happening. istancer

The analysis of the rate of use of these bots by commercial banks allows us to draw several lessons. First of all, we see in general that the performance levels of these bots are lower than for the other AI tools recently studied, the majority of banks show nt des rates lower than 35% (Bhatti, & Al-Ahdal, 2020). This probably indicates a temporal shift in the integration of this technology which is more current and flexible to implement. Nevertheless, certain establishments already stand out as investors in this area, such as Bank Islam Malaysia with a rate of 40%, attesting to this. city to invest in the most cutting-edge innovations. Other Gulf banks such as KFH or Al Baraka Banking Group have also passed the RAS with these rosy results. Conversely, the majority of Moroccan banks are falling behind on this specific brick, with rates rarely higher than 25%, probably revealing a need for strengthening their assets digital. We also note that dynamic Asian banks in other countries are less so in chatbots, like Bank Syariah Mandiri, which raises questions about the local brakes on this technology. The wider footprint of these chatbots in the years to come will be Russian to support the digital shift in the sector. A collective effort from stakeholders will be necessary to pool the feedback and disseminate these emerging good practices more widely in order to generalize their benefit to the entire ecosystem. creative industry.

VII. Conclusion

Growing integration of artificial intelligence into the commercial banking sector offers immense opportunities to improve customer experience and quality of advice ancier. Our analyzes have shown that even if some financial institutions are already taking advantage of these technologies in a significant way, the benefits remain unevenly distributed between banks. Collective efforts must be made to accelerate the dissemination of good AI practices throughout the sector. Professional associations can play a key role in organizing the sharing of experiences between air groups. Targeted training programs would also help lagging banks to gain momentum. A clear focus on ethical and regulatory issues would help to build confidence in these innovations. More broadly, AI paves the way for new, inclusive financial services that can meet the varied needs of an increasingly diverse clientele. Personalized savings and financial awareness tools could, for example, strengthen banking inclusion in these fragile operations. The AI generation also offers the potential to create immersive and fun experiences linked to engagement (Edward Elgar Publishing. Accenture, (2020). By staying tuned to technological advances and putting ethics at the heart of their digital strategy, commercial banks will be able to fully capitalize on the potential of AI. This will enable them to strengthen their competitiveness while contributing actively to societal objectives of sustainable development and financial inclusion. The challenge will then be to make the whole of these remaining parts and these ortunities profitable, in the service of responsible financing and for the benefit of all.

More specifically, our analyzes highlight the priority areas for banks wishing to accelerate their digital transformation. First of all, strengthening our extensive data analysis and data collection should be a priority in order to better exploit the potential of AI. A special effort should also be made on emerging technologies such as chatbots, which are still being implemented. Mutualizing the veterans of the establishments like the Bank Islam Malaysia Berhad would make it possible to disseminate these good practices more widely. Furthermore, marketing efforts focused on the tangible benefits of AI could help overcome the cultural resistance sometimes observed. Raising awareness among customers and the benefits of a personalized and responsive advisory relationship thanks to AI would be likely to reinforce enthusiasm for these transformations. The separation of data between divisions appears to be a lever for rural acceleration. Putting in place technical and organizational arrangements for secure sharing of information would provide real added value to the services provided.

Regulators also have a key role to play in providing confidence and trust in the responsible development of these innovations. Rigorous ethical standards on the processing of data and the use of AI should be implemented to protect customers and avoid any risk of criminality. Regular audits will ensure the safety of these safeguards. Finally, this additional work and research will be necessary to underpin certain structures that have yet to be elected. A qualitative analysis of the obstacles and motivations of the least advanced banks would, for example, indicate the levers to be prioritized. Evaluating over the long term the real impact of AI on financial results and customer satisfaction would also provide meaningful insight. Observing these practices in other industries rich in lessons could provide further food for thought. Through these different actions discussed, the objective should be to raise the entire artistic banking sector to the excellent level of its best representatives. By adopting a progressive and responsible vision of the opportunities opened by AI, its banks will be able to fully fulfill their societal role in serving a financial lusive and durable.

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