



Research Paper

## Prospects and Challenges of Artificial Intelligence in Financial Services in Oman

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### Abstract:

This research analytically examines the effect of using Artificial intelligence in Oman financial service institutions and analyzes the opportunities and challenges of using Artificial intelligence. The major aim of this report is to investigate the effect of implementing AI, to analyze the opportunities for using Artificial intelligence, examine the challenges of using AI, and mention probable solutions to improve the use of Artificial intelligence in the financial services in Oman. The research paper applied primary data built on mixed methods: quantitative and qualitative approach. The quantitative was used through a questionnaire to collect data from various respondents. The qualitative method has been detected using interviews to gather additional information from providers of financial services opinions and thoughts. The results show some benefits of Artificial intelligence that it reduced cost and increase profit and AI has a better ability in carrying out users' transactions and serving them. Findings discovered that the extremely important Artificial intelligence challenges are Lack of knowledge of artificial intelligence and that it is expensive when applied in financial institutions and needs many experts in this field and many users believe that it lacks confidentiality.

**Key Words:** Artificial Intelligence, Financial Services and Financial Institutions.

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### I. Introduction of the study

The Financial Services Sector has joined the Artificial Intelligence (AI) stage of the digital marathon, which began with the emergence of the internet and organizations going through digitalization. The advent of AI is upending the laws of physics in the sector, breaking the ties that have kept the elements of conventional financial institutions together, and creating opportunities for new innovations and operating models (R. Mardanghom, H. Sandal, 2019). Previously, banks and financial institutions have traditionally relied mostly on physical communication with consumers and customers, but recently, artificial intelligence is gradually changing the typical financial services we saw earlier. Businesses are now able to gain appropriate insights and enable customers to reach their financial goals based on historical data and comprehensively accurate projections thanks to the power of AI and data analytics. Applications including algorithmic trading, cyber security, robotic advisory services, and fraud detection have proliferated recently and laid the groundwork for utilizing AI in the future.

The implementation of AI is not without difficulties, despite all the enthusiasm. Unsurprisingly, openness, algorithms and preferences in data, gaps in technology, rules, and complication are hazards that financial services companies frequently list. Furthermore, the caliber of the data used to power AI is essential. Even if you have the most sophisticated technology, you will still fail miserably if your data stream is subpar.

Since most clients prefer to conduct their transactions via mobile applications and intelligent solutions. However, using artificial intelligence in the financial services industry is not a simple task. It necessitates thorough knowledge of artificial intelligence as well as professional training in its use and comprehension. The problem to be addressed through this study is the Impacts and challenges that are face FS to adopt AI in

Oman. Innovations like artificial intelligence are attempting to close the gap between what financial institutions provide and what customers want. According to certain signs, artificial intelligence will have an impact on some jobs, possibly even eliminating them.

This study aims to investigate the challenges and prospects in implementing artificial intelligence in financial services in Oman and research analyzes the impact and prospect of artificial intelligence challenges in financial services in Oman and cover the Muscat region. The study covers customers of financial services befitted by Artificial intelligence or facing problems. It also looks out the prospective of provider of financial services in Muscat region of country what kind of opportunities and challenges they are reaping/expecting from Artificial intelligence.

## **II. Related Literature:**

Nasrallah (2021) publication tries to throw a spotlight on a new wave of financial services which have greatly been profiting from the advancement of AI-powered mobile phones and internet applications. The paper examined the economic and social implications of artificial intelligence in few Arab nations.

Opportunities and Challenges of Artificial Intelligence in Banking: Systematic Literature Review, (Ahmad Ghandour), 2021. A huge digital disruption caused by AI technology in the twenty-first century has had an impact on the whole banking sector. The main reason for this is that AI solutions could help banking businesses innovate, make better decisions, and deal with challenging problems more effectively and efficiently. Predictive analytics, neural networks, machine learning, and other AI technologies can help banks make more accurate projections and respond to emerging issues in a timely and appropriate manner.

In study of the changing face of accounting: Prospects and issues in the application of artificial intelligence (Bikash Kumar Malviya), 2021. It is true that the use of artificial intelligence is bringing about some problems and anxieties, like unemployment, security breaches, and a lack of experience, but it also opens a number of potentials, including automation, lower costs, more efficiency, and accuracy, to mention a few.

According to artificial intelligence in financial acumen report (Ranjan.S, 2020). The financial sector's client-facing services and business practices are altering as a result of artificial intelligence. Additionally, it is used to check for administrative consistency, spot fraud, and assess an individual's financial soundness. With the help of AI, it may be possible to create more efficient business forms, provide personalized services, and support larger goals like financial incorporation. There is no doubt that the current drive toward digitalization is having a rapid impact on traditional financial structures. To be sure, it has also exposed organizations to rising cyber security risks.

Kruess, Wunderlich, Beck (2019) on a study of inspecting the obstacles and drivers of a successful implementation of the AI in the financial services industry, concluded with the findings that the pace of implementing the technologies of artificial intelligence into the financial service sector is slow due to the market regulation alongside the moral concern.

In a research Artificial intelligence in financial services, by (Fernández, 2019). Find out that when deciding whether to employ artificial intelligence tools in the performance of their own duties, authorities also encounter several difficulties and constraints.

According to Artificial Intelligence in Financial Services – Need to Blend Automation with Human Touch by Anupam Mehrotra, (2019). The dynamics of the banking and financial services business are being significantly changed by AI. New opportunities, problems, and threats are presented because of implementing AI. There is no turning back now that AI is a fact of life. Despite this, there are still some concepts that are universal, and interpersonal communication between people is one of them. Even if technology is readily available, it may not always represent the best course of action.

In a research Development of Artificial Intelligence and Effects on Financial System (Minzhen Xie 2019). Artificial intelligence is a new area that offers many challenges as well as potential. It is a normal byproduct of the advancement of science and technology, but using it poses similar difficulties. Therefore, the financial system should fully comprehend artificial intelligence and develop a more sophisticated application system.

In a research Artificial intelligence in finance by (Beth Wood, 2019). Many AI techniques have not yet been tested in scenarios including financial crises. There have been numerous instances where financial institutions' algorithms appeared to act in ways that their designers had not anticipated, leading to errors and flash crashes.

In research on Responding to disruptive business model innovation done by Anan. D in 2018 on the case of traditional banks facing fintech entrants, found that the landscape of banking and financial services is drastically shifting because of the financial services industry's quick changes brought on by disruptive innovations from Fintech. Since the start of the new millennium, traditional banks (Banks) seem to have gone from being the steadfast drivers of an economy to being in danger of going extinct.

**Conceptual Framework:**



**III. Research Methodology**

This study employed a mixed approach which includes quantitative as well as qualitative approach. The study applied Descriptive research design was used to explore and describe the objectives of the study. For data collection structured questionnaire and interview method used in order to obtain primary data from respondents to get hands on information about the awareness levels of Implementing artificial intelligence in financial services in Oman.

Figure no. 1 : Respondents' views on the difficulties that financial institutions in Oman

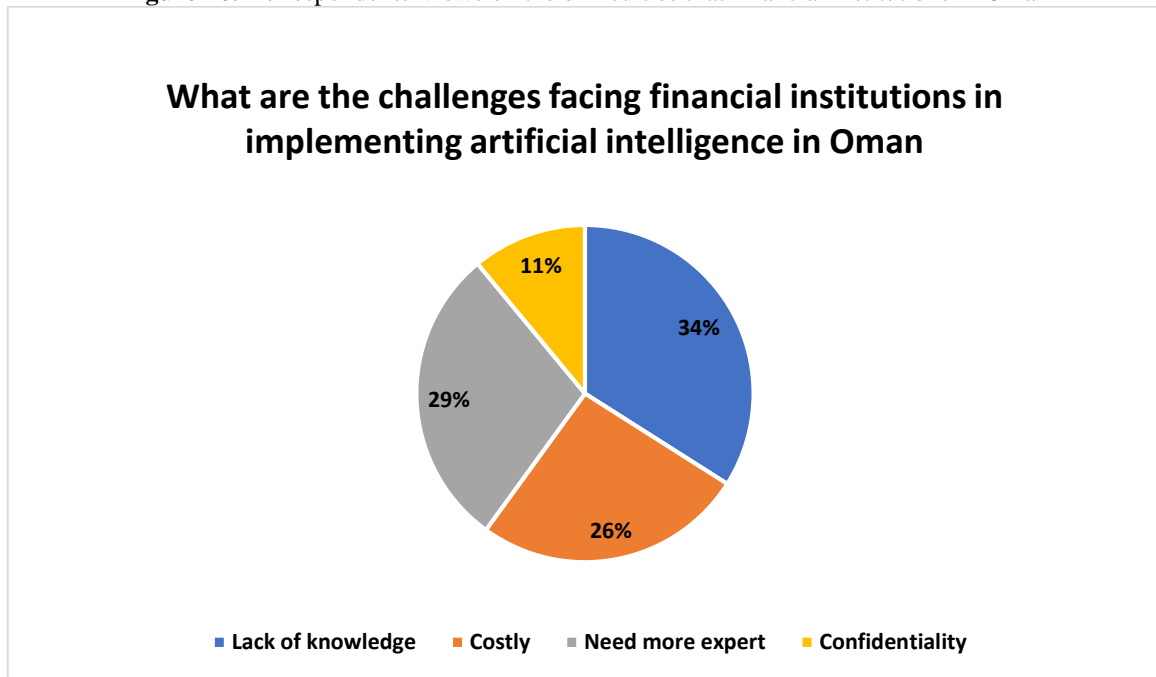
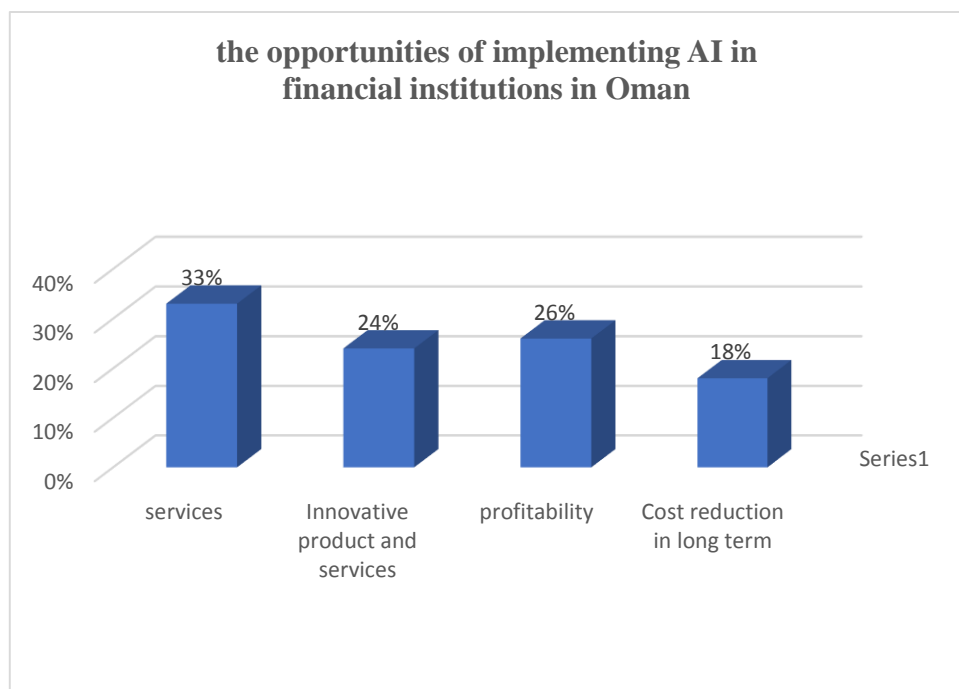
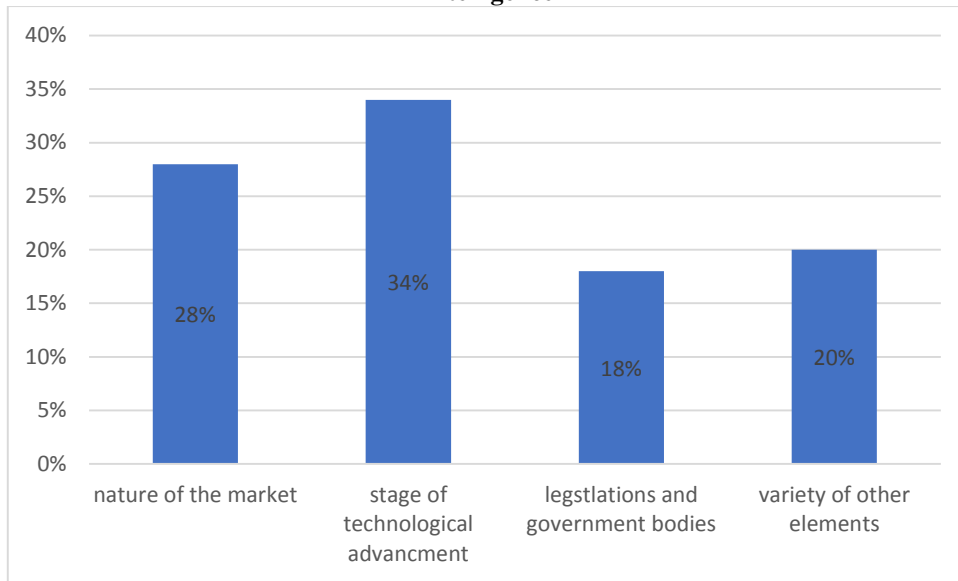


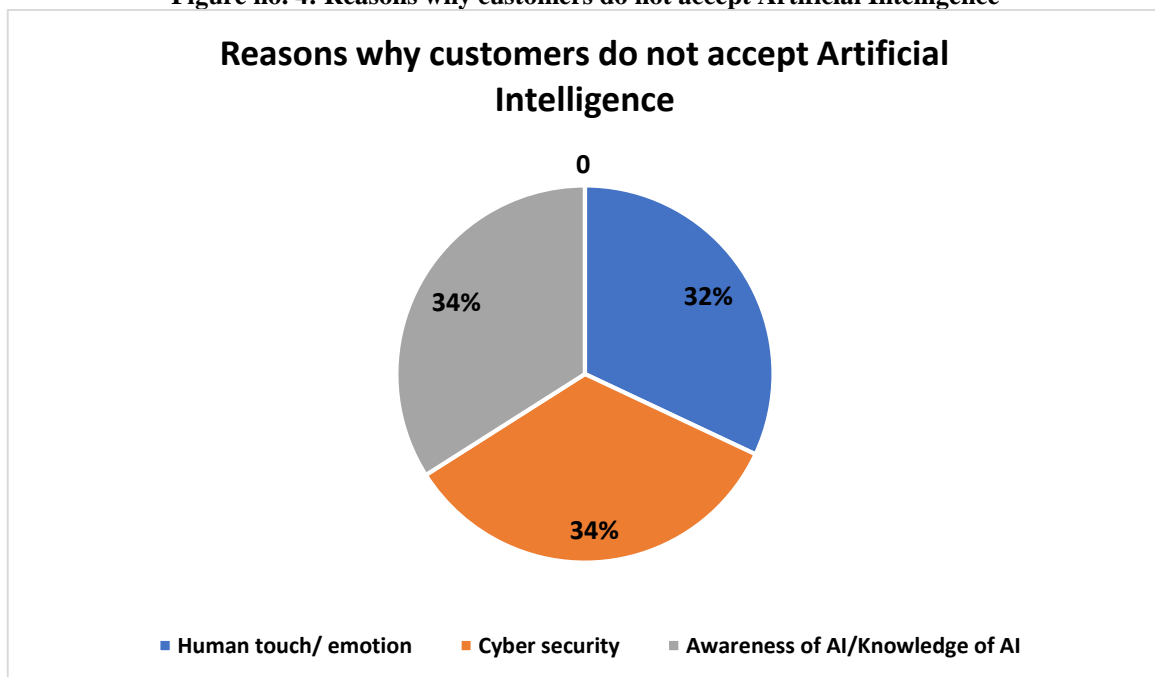
Figure no. 2 : opportunities of implementing AI in financial institutions in Oman



**Figure no. 3: Respondents chart on the reasons that make Oman finds it hard to apply artificial intelligence**



**Figure no. 4: Reasons why customers do not accept Artificial Intelligence**



#### IV. Finding and Discussion

Recognizing the opportunities and challenges the impact of cybersecurity has on the application of AI in the Sultanate of Oman from the view of customers and their providers. customers concur that the opportunities for the usage of AI by financial services companies reduce the need for cybersecurity. Additionally, it will aid in lowering fraud and errors. Many of the respondents concur that the challenges that way face, by switching to AI services, their personal information will not be secure. The respondents are concerned about the security of personal information. Providers said that Government regulations aid in security and protection, but also have restrictions on encouraging businesses and institutions to use recent technology.

Customers, who have a thorough understanding of the role that AI plays in Oman's financial services, concur that the country's financial sectors have room for expansion and that Oman's clients are happy with the services they receive. Additionally, they think that using software and technology to carry out financial transactions is preferable. The interviewees (providers) concur that utilizing AI in financial institutions to develop financial services.

studying the opportunities and challenges with cost in implementing AI in financial service companies from customers and their providers, respondents of the study agree on that statement that using AI in FS firms is going to reduce their overall costs and simultaneously give rise to their profits. The respondents have an optimistic view expressing that the opportunities AI brings to the industry of financial services outshines its challenges. According to the interviews conducted, initial costs of implementing AI are high but will be compensated for by the following rise in profits.

Understanding the opportunities and challenges associated with human touch/ emotion in implementing AI in financial service companies from a dual view, respondents agreed that AI is more capable of serving them and meeting their needs as opposed to human beings. Neutral is what they expressed about the idea of switching to financial services firms that implemented AI for the sake of keeping up with the market. As per the interview findings, AI will make more jobs instead of eliminating them

Hearing From the customers of financial service companies and the workers in them we found, the respondents agreed that they are familiar with AI since it is incorporated in their academics and professional life. Respondents have agreed that Oman has sufficient financial and no-financial ability to implementing AI in FS. Based on data collected from the interviews, the utilization of specialized educational institutions and online lectures can be a solution to raise awareness on AI in Oman.

The most challenges can face FS while applying AI according to the respondents of MCQ are, lack of knowledge, level of technology advance in Oman, cyber security and finally lack of experts. Respondents did not consider emotions/human touch and government regulations as a big problem in involving AI in Oman financial institutions. On the other hand, in recognizing the opportunities of AI based on MCQ, the opinions of the largest part of respondents were that implementing AI will lead to better services and profitability.

comprehend the open-ended questions the users of financial services are sensitive to face some challenges while dealing with AI in their financial transactions. for example, most repeated two challenges were on safety of their information's and level of awareness of AI, as they suggest private workshops and offline courses. Also, they have mentioned the role of government should be stricter about hacking and other nonprofessional actions.

## **V. Recommendations:**

Since one of the most dominant concerns found is the lack of security, governments and regulatory bodies should set clear restrictions and boundaries on the level of digitalization and dependency on artificial intelligence a financial service company can develop into. Moreover, fair compensation should be granted to customers in case a third party manages to access their personal data and manipulate their transactions. Also, the rules and regulations should be announced and informed to the public to build a layer of assurance and safety when dealing with these companies.

as a huge portion of respondents agreed that AI has a better ability in carrying out their transactions and serving them, capable business should seize this opportunity and investigate evolving their business model for the sake of attracting more customers since these are their demands. This will have a role in increasing the margin of profit and wealth for the institution. Capable businesses are a reference to the big established financial services companies, for the smaller firms do not possess the financial ability to implement such a dramatic switch. Plus, only the big established financial companies can bear the risk of new experimental models.

The findings indicates that customers of financial service companies are thrilled and open to the potential of the use of AI in Oman, which is why the newer generation of IT and computer science Students, potential students and graduates should invest in staying up to date and educated on artificial intelligence and machine learning should stay up to date and heavily educated on AI since they will be met with extensive demand from the work market in the near future.

basic education institutions should also play a part in rising awareness about artificial intelligence to the public, since the results of our investigation proved that the minority of people not accepting AI due to ignorance and lack of knowledge. Moreover, it is not too late for the older demographic, since lectures and various other educational activities can be carried out on various convenient platforms online or offline for each and every societal group

## **VI. Conclusion:**

To sum up what has been stated so far, this study employed a mixed approach which includes quantitative as well as qualitative approach. The researchers have used a structured questionnaire and conducted an interview to obtain primary data from respondents. We target 160 questionnaires have been distributed but only 151 respondents filled in the questionnaire. Descriptive research design was used to explore and describe the objectives of the study. The task has been completed by selecting different financial institutions in Oman specifically in Muscat and some users of those services. AI in financial service variables have been analyzed using statistical data from SPSS. Demographics data were analyzed using of frequency tables and charts, most

of the responses were from female between the ages of 19 and 29. The system used is numbering the answer options from 5-1 for close ended questions by Descriptive Statistics. The graphs have been used to analyzed Multiple choice questions. financial institutions and companies can face the challenges of artificial intelligence by increasing knowledge of providers and users and have many opportunities that increase corporate profit and benefit users

This research successfully answered all research questions, but the limitation of the research is that not all the targeted number of respondents responded the questionnaire researcher face difficulty in collecting and analyzing data due to the small size of the sample.

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