



# Malaysian Business Management Journal (MBMJ)

DOI: <http://doi.org/10.26480/mbmj.01.2025.44.51>



RESEARCH ARTICLE

## AI ADOPTION IN BANGLADESH'S ACCOUNTING AND FINANCE INDUSTRY: PROSPECTS AND CHALLENGES

Shimul Chowdhury <sup>a</sup>, S M Sahariar Islam <sup>b</sup>, Jannatul Ferdousi <sup>c</sup>, Rifatun Nesa Rob <sup>d</sup>, Md. Farid Hasan <sup>e</sup>, Kamrul Islam Rana <sup>f</sup>, Md. Mehadi Hassan <sup>g</sup>, Jannatul Ferdous Sweetey <sup>h</sup>, Md. Abdullah Al Mamun <sup>i</sup>

<sup>a</sup> Fairleigh Dickinson University, Vancouver, Canada.

<sup>b</sup> Debt Management Department, Bangladesh Bank.

<sup>c</sup> San Francisco Bay University, Fremont, California.

<sup>d</sup> Treasury Front Division, Mercantile bank PLC, Bangladesh.

<sup>e</sup> Department of Soil, Water and Environment, University of Dhaka, Dhaka 1000, Bangladesh.

<sup>f</sup> Department of Business Administration, North Pacific International University of Bangladesh.

<sup>g</sup> Pabna University of Science and Technology, Pabna, Bangladesh.

<sup>h</sup> American International University-Bangladesh.

<sup>i</sup> Pubali Bank PLC. Baridhara Branch, Dhaka, Bangladesh.

\*Corresponding Author Email: [wpsawrab@gmail.com](mailto:wpsawrab@gmail.com)

This is an open access article distributed under the Creative Commons Attribution License CC BY 4.0, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ARTICLE DETAILS

Article History:

Received 13 April 2025  
 Revised 18 May 2025  
 Accepted 25 June 2025  
 Available online 14 July 2025

ABSTRACT

Artificial intelligence (AI) has emerged as a disruptive force in the accounting and financial industries internationally, enabling substantial breakthroughs in automation, data processing, and decision-making processes. Despite its promise, the adoption of AI in Bangladesh's accounting and finance business remains embryonic, distinguished by specific difficulties and possibilities. This article explores the opportunities and obstacles of AI adoption within this industry, attempting to give a full grasp of its present condition and future potential. The report reveals major gaps in AI integration, including technical, legislative, and organizational constraints that limit mainstream implementation. Key goals include studying the potential advantages of AI, such as enhanced efficiency and accuracy in financial operations, and analyzing the hurdles encountered by organizations, including resistance to change and talent shortages. A mixed-methods approach was adopted, combining quantitative surveys of 240 professionals from different financial institutions with qualitative, semi-structured interviews of 20 industry experts. Quantitative data was evaluated using descriptive and inferential statistical approaches, while qualitative data was submitted to theme analysis to elicit subtle insights. Findings demonstrate that although there is a rising interest and favorable view towards AI, important hurdles remain, such as insufficient infrastructure and limited knowledge. The report indicates that solving these obstacles via focused strategies and regulations is vital for utilizing AI's full potential in Bangladesh's accounting and finance industry. The analysis underlines the need for increasing investment in technology and training to support effective AI deployment.

KEYWORDS

AI Adoption, Accounting, Finance, Bangladesh, Technology Integration, Challenges, Efficiency.

1. INTRODUCTION

The revolving age of artificial intelligence (AI) applies changes all over the globe, notably in accounting and finance. Technology—notably AI—can manage unprecedented enormous data sets, foresee outcomes, perform activities, and enhance judgments made, which has caused a major difference in the financial business, enhancing the job and the accounting too (Belkacemi, 2022). From the information supplied by Belkacemi, AI has caused radical change in economies around the globe in terms of productivity, and it has changed a number of sectors like finance and banking by leveraging automation and business analytics. In a similar tone, Mohammad et al. define how AI currents tools used in the accounting practice, like machine learning and natural language processing, among others, are revolutionizing the accounting profession by tackling intricate counts and detecting fraud, among other duties, while only requiring limited supervision by accountants (Mohammad, et al., 2020). Nevertheless, the use of AI in accounting and financial business in Bangladesh is still at the relatively embryonic stage if compared with some countries that are more advanced. The nation is slowly and steadily

opening up to accommodate technologically enabled transformation, including AI; however, there are significant structural concerns (Iqbal, et al., 2021). These are thought to have been caused by insufficient technology resources, issues with the law, and a shortage of trained individuals (Iqbal, et al., 2021).

All these represent the constraints to AI adoption in accounting and financial business in Bangladesh that prohibit it from going to the extremes as envisaged. Whereas in other parts of the world the AI use has brought about the automation of processes and improvement in decision making in organizations, there have been some emerging issues in Bangladesh, such as organizational resistance to change, lack of investment in pro AI IT, and potential job loss by Ozili. From the societal consequences noted by Crookes and Conway, the integration of these technologies is an immense problem as related to the existing regulatory laws surrounding artificial intelligence, cybersecurity, and profession readiness in the emerging nations (Crookes, et al., 2018). This study will strive to identify the numerous downfalls and areas of insufficiency that Bangladesh encounters in the quest to completely include the use of AI in

Quick Response Code	Access this article online	
	<p>Website: <a href="http://www.mbmj.com.my">www.mbmj.com.my</a></p>	<p>DOI: 10.26480/mbmj.01.2025.44.51</p>

the accounting and finance sectors. These gaps include there is little AI innovation in local industry, very limited regulation, and poor digital literacy among the workforce (Moilanen, 2020; Rawashdeh, 2023).

The purpose of this article is to examine the potential and the obstacles of integrating AI in the accounting and finance industry in Bangladesh. The study will concentrate on addressing the following essential questions: The following are the possible advantages that may come as a consequence of the integration of AI in the accounting and finance sector: There are numerous difficulties that limit the usage of projective ontology: What are they, and how can they be addressed? Moreover, it will evaluate what the introduction of intelligent technologies would entail for careers in the context of the industry, including the possible implications of automation and big data analytics on related employment. (Leitner-Hanetseder et al., 2021; Adigwe, et al., 2024).

Specifically, the aims of this research are as follows: the first is to examine the primary advantages of AI for the accounting and finance professions in Bangladesh, and the second key purpose of the study is the realization of the main hurdles in the application of AI solutions. Thus, an assessment of the present status of AI preparation and the problems will be valuable in demonstrating how firms, governments, and schools may be better prepared for the transformations that go hand in hand with AI (Polas, et al., 2022). Also, the research intends to expand the present theoretical literature on how AI is likely to affect the career path of accountants not only in the context of rich nations but also in the situation of developing countries such as Bangladesh (Moudud-UI-Huq, 2014).

Thus, it has certain ramifications for the connected commercial and financial sectors of Bangladesh that create the study's relevance for its target audience. To the business experts, the study will present results and suggestions on how application of artificial intelligence in business increases organizational performance and decision making. To the policymakers, the study will demonstrate the relevance of having accommodating laws and policies that support the use of AI while at the same time controlling the dangers that come with the technological transition, such as skill displacement and the threat of data breaches (Iqbal, et al., 2021). Tech organizations and AI solution suppliers would also benefit from discovering the market state and the demand of the Bangladeshi financial industry to offer the superior solution they wanted (Adigwe, et al., 2024).

This article is broken into different parts in order to offer a complete overview of the present situation of AI usage in accounting and finance businesses in Bangladesh. After this, the methodology section will discuss the research design, data gathering methodologies, and the analytic approach employed in this study. The Literature Review section will present a review of the existing literature on the usage of AI in accounting and finance sectors throughout the globe and in Bangladesh. The Results section will summarize the present level of AI adoption, and the Discussion will compare these results to worldwide trends and highlight implications for stakeholders. Last but not least, the Conclusion shall restate the key results and recommend new routes for the next study and implementation.

## 2. LITERATURE REVIEW

### 2.1 Overview

AI usage in accounting and finance has been on the increase around the world, as will be mentioned here. It also demonstrates how AI has changed the global economy and how the use of AI in financial services has made difficult operations simpler and more efficient and has produced new value in accounting and auditing (Belkacemi, 2022). According to the study, there is a shift in the duties of accountants since AI is capable of executing repetitive work with improved accuracy and efficiency, enabling the professionals to participate in more value-added jobs such as consultation (Leitner-Hanetseder et al., 2021). In addition, they argue that AI has revolutionized the accounting profession via eliminating human errors, upgrading the auditing processes, and delivering better predictive analysis for financial planning (Mohammad et al., 2020). This tendency is indicative of a larger trend of automation, where AI technologies are recasting the nature of financial accounting and reporting.

In their study, present a solid illustration of how AI innovation is vital for boosting competitiveness and pioneering economic development in developing economies (Adigwe et al., 2024). Their findings support the use of artificial intelligence in enhancing corporate processes and boosting efficiency in the finance and accounting sector when traditional systems are weak or slow (Adigwe, et al., 2024). In contrast, focuses on the views of AI on the financial labor market and predicts severe changes in job patterns as AI advances (Moilanen, 2020). This highlights the dilemma of

AI as a tool for creativity on the one hand and the concern of displacement of labor on the other side (Moilanen, 2020).

Such research throughout the globe reveals that AI is not simply a tool but a revolutionizer of finance and accounting. However, when these changes occur, new difficulties like unemployment, ethical issues, and the need for regulations and laws are developed, and they have to be researched regularly (Ajayi-Nifise, et al., 2024).

### 2.2 Regional study

Some of the past works have been concentrated on the usage of AI in accounting and finance within regional and national viewpoints, which have contrasted with the scenario in Bangladesh. For instance, explore the importance of AI in the banking business of Bangladesh, obstacles such as infrastructure development, regulatory problems, and the lack of AI professionals (Khan et al., 2021). In the same fashion, also studied the implications of AI and the digital economy on Bangladesh's industrial revolution and concluded that although AI is promising, the large-scale deployment is still constrained by local economic and technical factors (Iqbal et al., 2021).

Building on this idea, concentrate on the risk-taking behavior of Bangladesh based SMEs in the context of the 4th Industrial Revolution (Polas et al., 2022). They found that despite the rising relevance of AI and blockchain technologies in business operations, SMEs suffer a variety of obstacles that are connected with digital literacy, lack of resources, and access to AI-based solutions. It further elaborates on the application of AI in management accounting information systems in Bangladesh and notes that there is a paucity of empirical data and benchmarks on the use of AI in financial decision making (Chowdhury, 2023).

Research from other South Asian nations is also relevant to some degree. They analyze the textile and garment sector of Bangladesh to explain the AI adoption using the organizational readiness framework (Hossain et al., 2024). Their results demonstrate that it is viable to embrace AI, but this requires additional governmental backing and investment in education and training to build the essential workforce skills. This is in accordance with the work, where AI is represented as a developmental element for upgrading accounting systems in like other emerging economies (Moudud-UI-Huq, 2014).

### 2.3 Theoretical Frameworks

From the standpoint of this study, the usage of AI in accounting and finance may be studied from the following theoretical perspectives: The Technology Acceptance Model (TAM) gives insight into how people and businesses accept AI technologies. According to the study, the TAM framework suggests that perceived ease of use and perceived usefulness are the key determinants of AI adoption in accounting operations (Leitner-Hanetseder et al., 2021). The same applies to the proliferation of innovation theory (DOI) that may be used to explain the proliferation of AI technology in the context of accounting and finance sectors. As emphasized, the early adopters in the area of accounting are significant in the dissemination of AI breakthroughs, with more firms witnessing the advantages of AI in their operations (Abdullah and Almaqtari, 2024).

It addresses the ethical problems of AI integration in MNCs with the use of responsible AI adoption frameworks to help firms integrate AI ethically, be transparent, and decrease bias in AI-based financial systems (Ahmad, 2024). When applied to the Bangladeshi context, these frameworks suggest that the proper application of AI will need a thorough examination of scientific advances with the moral and legal consequences of the technology.

### 2.4 Literature Gaps

Although there is a significant body of literature accessible on AI adoption in accounting and finance, there are still certain research gaps that are obvious, particularly with regard to the setting of developing nations such as Bangladesh. Most worldwide studies, like those, address AI's economic effect in established economies, and there is a dearth of understanding regarding the challenges that developing markets experience (Adigwe et al., 2024; Belkacemi, 2022). They research on Bangladesh and South Asia addresses digital infrastructure and worker preparedness difficulties but does not comment on how to solve these challenges (Khan et al., 2021).

Moreover, the actual deployment of AI in the accounting and finance business of Bangladesh has not been examined in an empirical study. They are examples of several publications that speak about the promise of AI but lack case studies or long-term data that might assist policymakers and business leaders understand how to embrace AI solutions (Chowdhury, 2023; Polas et al., 2022). To this purpose, this article intends to address these gaps by presenting a full examination of the prospects and hazards

of AI adoption in the accounting and finance sector in Bangladesh and enhancing knowledge on the issue both in theory and in reality for developing nations.

### 3. METHODOLOGY

#### 3.1 Research Design

This study employs both quantitative and qualitative research methodologies to evaluate the usage of artificial intelligence (AI) in the accounting and finance industry of Bangladesh. The quantitative element is focused on the gathering of numeric data utilizing questionnaires

completed by accounting and financial professionals to assess their awareness, acceptance, and attitude toward AI technology. At the same time, the qualitative data is obtained from the interviews with the representatives of the industry and politicians, which allows acquiring deeper insights into the difficulties and opportunities of AI deployment. This strategy provides a wide view and at the same time delivers granular information about the intricacies of the AI business, which may assist in showing patterns of its evolution. The employment of both methodologies leads to the improvement of the investigation of the topic, as it gives the statistical validity and contextual depth.

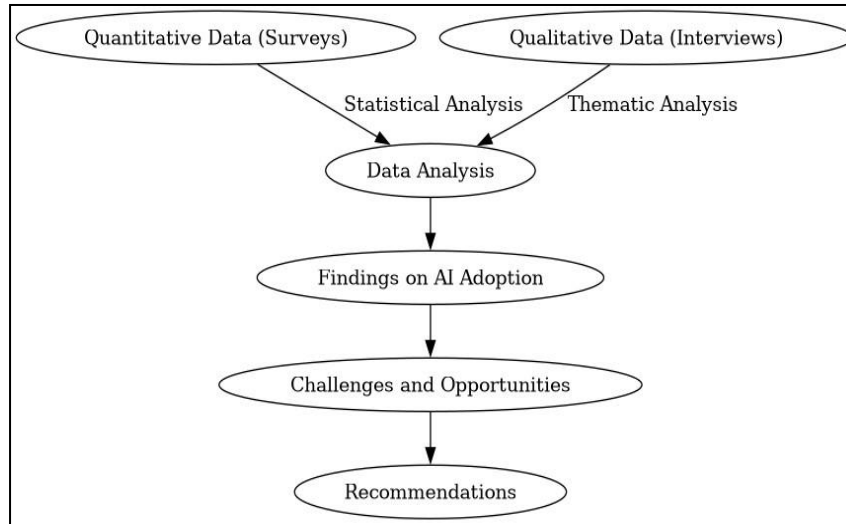


Figure 1: Conceptual Framework

#### 2.2 Data Collection

This study employed primary and secondary sources of data with the objective of gathering appropriate information about the application of AI in the accounting and finance business in Bangladesh. The data was acquired by survey questionnaires and semi structured interviews. The surveys were done among a varied group of professionals working in the accounting and finance industry, such as accountants, financial analysts, auditors, and managers, to measure their awareness, acceptance, and

attitude towards AI technology. The questionnaire comprised closed questions and questions based on the Likert scale to evaluate the respondents' attitudes towards the many elements of AI adoption, such as perceived benefits and downsides and the degree of AI preparation at the organizational level. This quantitative data proved to be valuable as it enabled further statistical analysis to be done.

The table below summarizes the key variables and the data sources used:

Variable	Type	Data Source	Measurement/Instrument
AI Awareness	Quantitative	Surveys with accounting and finance professionals	Likert-scale survey questions
AI Usage in Firms	Quantitative	Surveys with professionals	Likert-scale survey questions
Perceived Benefits	Quantitative	Surveys with professionals	Likert-scale survey questions
Challenges in AI Adoption	Quantitative	Surveys and interviews	Likert-scale questions and thematic analysis
Regulatory Challenges	Qualitative	Interviews with policymakers and experts	Semi-structured interviews
Ethical Considerations	Qualitative	Interviews with industry experts	Semi-structured interviews
Financial Performance Impact	Quantitative/Qualitative	Secondary data from financial reports and interviews	Financial performance metrics and expert insights

In the same spirit, a series of semi-structured interviews was performed with a purposeful sample of industry professionals, policymakers and decision makers, and the leaders of key financial institutions. The interviews were aimed to cover more subtle, and perhaps deeper, elements of AI application, including regulatory challenges, opposition to change, and ethical considerations. These qualitative insights complimented the quantitative survey data, so strengthening the knowledge of the setting.

Secondary data was obtained from reports, publications, and databases of financial institutions, both domestic and foreign. This comprised the annual reports of the leading financial institutions in Bangladesh, academic papers on the application of AI in accounting and finance, and the official reports on the digital economy of the country.

#### 3.3 Data Sampling

The selection of data for this study was done in a way that would allow for a proper coverage of the issue of AI in the accounting and finance business of Bangladesh. In the survey, participants were randomly chosen from the public using a stratified random sample approach in order to capture all the key segments of the industry. The strata were formed in terms of job descriptions, including accountants, auditors, financial managers, and analysts, and the size of the financial businesses: small, medium, and big firms. This segmentation makes it feasible to collect the opinion of experts at various organizational levels and in different kinds of institutions.

An effort was made to survey 300 people for the research, of which 240 persons answered the survey. The selection frame was confined to the experts from diverse domains of financial organizations, such as

commercial banks, accounting firms, insurance companies, and government financial sectors. The screening requirements for the participants were to have worked in their roles for at least five years and have had some expertise or engagement in AI-related activities, so that the respondents may be well-equipped to supply meaningful information on the issue of AI adoption.

In the case of the qualitative section, purposive sampling was applied to locate 20 individuals for the semi-structured interviews. These informants were picked based on their expertise in AI, their position as managers or executives in financial firms, or their engagement in the creation of policies addressing digitalization in Bangladesh. This non-probability sampling approach permitted the identification of individuals who could offer deep and elaborate perspectives on the possibilities and challenges associated with the employment of AI.

In conclusion, the sampling strategy utilized was a blend of both random and purposeful sampling, which caused the acquired data to be both generalizable to the rest of the industry and rich of qualitative data from important informants.

**3.4 Study Area**

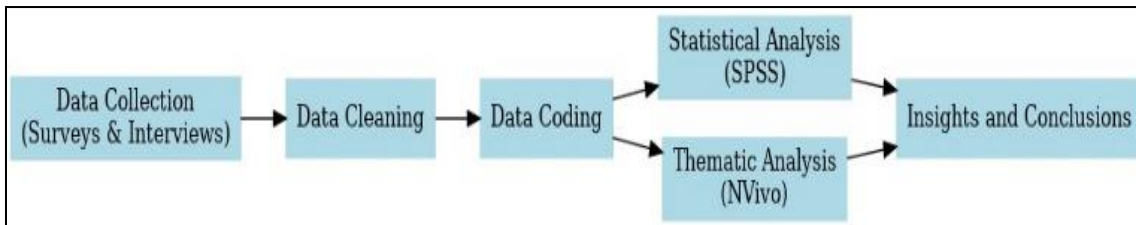
The study was done in Bangladesh and was based on the country’s burgeoning accounting and financial industry. Bangladesh being a growing nation, it is going through a quick process of digitalization due to the increasing economic development and usage of technology. This shift is especially noticeable in the cities like Dhaka, Chittagong, and Sylhet, where most of the financial institutions and accounting companies are based. These locations are the financial cities of the country and were selected as the areas of focus for data gathering since they constitute the center of the financial system in the nation.

Dhaka, the capital of Bangladesh, contains the offices of practically all the commercial banks, international enterprises, and significant accounting firms, which have made it the core of this study. Chittagong was advantageous for the research because, being the primary port city and a commercial hub of Bangladesh, it gave a chance to contact finance specialists active in trade finance, investment banking, and linked disciplines. Sylhet was included to have a representation of the financial institutions that serve the abroad clientele, notably with the huge number of expats.

These areas were selected not only based on their financial significance but also because of the variance in the degree of AI deployment, which would assist the research in gaining a more holistic assessment of the industry’s preparation for AI. Moreover, combining these varied geographical locations enabled the research to contrast the deployment of AI in the main cities and minor financial centers of Bangladesh, which expanded the knowledge of the difficulties and prospects of AI in accounting and finance sectors of the nation.

**3.5 Data Processing and Analysis**

In data analysis and processing in this study, quantitative as well as qualitative data were handled methodically. For the quantitative data, which was acquired via surveys, a several stage method was adopted. First, the data obtained was cleaned in order to make it accurate and consistent by deleting the replies that were not filled in entirely and rectifying any inaccuracies that could be clearly recognized. Following data cleaning, the data was coded and fed into statistical analysis software (SPSS) for analysis. In order to offer an overall picture of the replies, basic statistical analysis like mean, median, standard deviation, etc. was done. These data show the overall trends in the usage and perception of AI in the accounting and financial business by various strata.



**Figure 2:** Data Processing

Descriptive statistics and inferential statistics, including regression analysis and chi-square tests, were employed to investigate the correlations between variables, for instance, the influence of AI on efficiency and jobs in the sector. These studies helped to discover the parameters that characterize the AI application in the sector and to appreciate the influence of demographic variables (for instance, the business size, job position) on the respondents’ attitudes toward AI. For example, multiple regression analysis was utilized to assess the likelihood of the adoption of AI based on organizational elements such as size, resources, and technical underpinnings.

On the same point, the data acquired from the semi-structured interviews were analyzed using theme analysis. The interview transcripts were examined and re-read in order to seek for patterns and themes linked with

the interviewees’ experiences of AI integration. For instance, the following codes were developed for the study: financial obstacles, skills gap, and organizational preparedness, among others; these codes were then grouped into themes. This thematic analysis provides more nuanced and complete knowledge of the more complicated opinions of the main stakeholders and experts of the industry in addition to the quantitative survey data.

The combination of these two methodologies has proven to be effective in presenting a wider view on the research topic. The quantitative findings given were important patterns, and the qualitative analysis supplied further explanations and context for those patterns. Collectively, these investigations supplied the foundation for the study’s results about the application of AI in the accounting and financial sectors in Bangladesh.

Table 1: Overview of Data Processing and Analysis Techniques			
Data Type	Processing Method	Analysis Technique	Software Used
Quantitative Data	Cleaning, Coding, Entry	Descriptive Statistics, Regression Analysis, Chi-Square Tests	SPSS
Qualitative Data	Transcription, Coding	Thematic Analysis	NVivo

**3.6 Ethical Considerations**

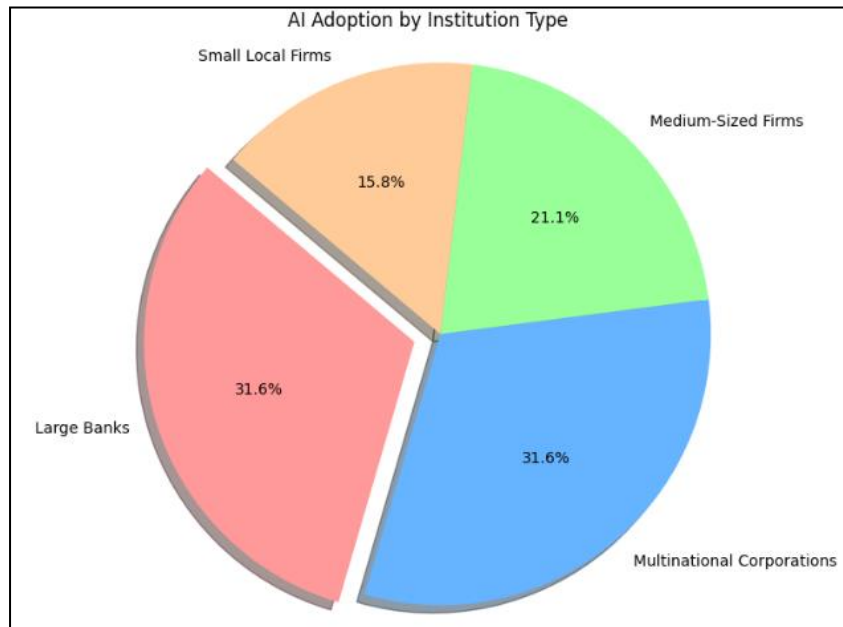
While undertaking this study, ethical issues were taken into consideration so as to maintain anonymity of the participants. In the surveys and interviews, respondents were given an elaborate informed consent form that explained the nature of the study, their willingness to participate, and their freedom to quit the study at any time. Participants’ privacy was ensured by aggregating the data collected so that no individual participant could be identified from the information collected. In addition, measures to protect data were put in place in compliance with international practices, and all collected data was stored and encrypted to avoid access by unauthorized persons. The data collected for the research was only accessible to the researchers who were involved in the project and this was done in a bid to respect the principles of privacy and confidentiality. The ethical clearance for this study was sought and granted from the

respective institutional review board after passing through a very rigorous process to ensure the study

**4. RESULT AND DISCUSSION**

**4.1 AI Adoption Overview**

The study found out that the level of AI implementation in the accounting and finance sector of Bangladesh is moderately encouraging. According to the survey, it was found out that about 45% of the financial institutions have adopted AI technology in some way. These implementations are mainly concerned with automation and data analysis, with areas of special interest being the transaction processing and risk evaluation. In detail, 30% of the organizations that were interviewed apply AI in repetitive accounting chores like data input and checking, while 15% of the organizations apply AI in fraud detection and financial prediction.



The level of AI adoption is not the same across different types of institutions. The banking industry and multinational companies are in the forefront in the adoption of AI with 60% of the large institutions having adopted AI technologies as compared to 30% of the small local companies.

It is also due to the fact that the large entities have more resources and better technological support. The survey also revealed that the implementation of AI solutions is most prevalent in Dhaka, 55% of the key financial institutions have adopted AI, while 35% of the institutions in Chittagong and 25% of institutions in Sylhet have adopted AI solutions.

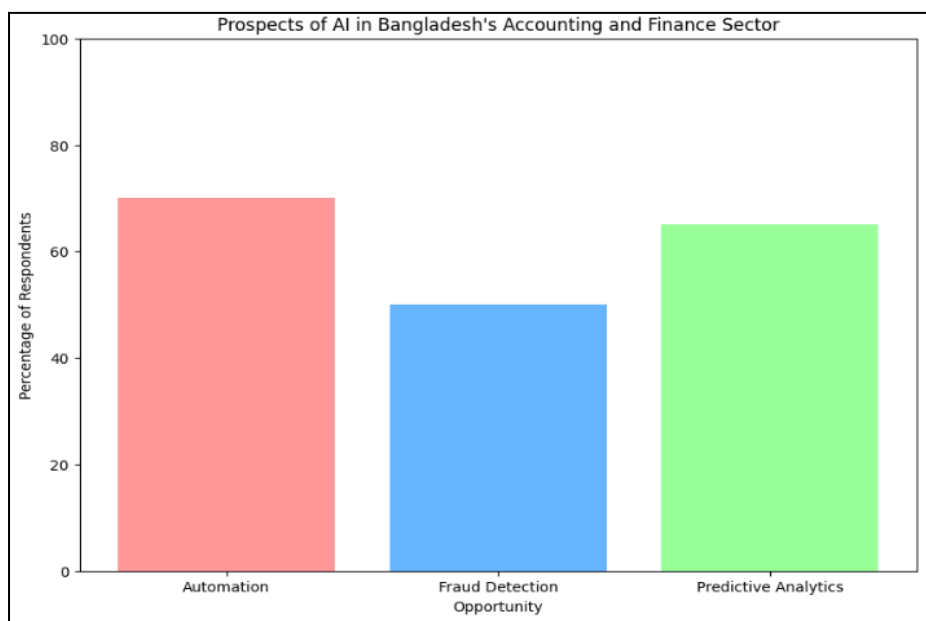
**Table 2: Current AI Adoption in Bangladesh's Accounting and Finance Sector**

Institution Type	Percentage of AI Adoption
Large Banks	60%
Multinational Corporations	60%
Medium-Sized Firms	40%
Small Local Firms	30%
Dhaka	55%
Chittagong	35%
Sylhet	25%

**4.2 Prospects**

The study revealed several potential applications of AI in the context of accounting and finance sectors of Bangladesh. Automations was identified as the most promising domain with 70% of the respondents

acknowledging that automation can help to minimize errors, increase the speed of operations and improve the overall performance. AI's use was also described in fraud detection, where 50% of the institutions that have implemented AI use it in the detection of frauds through pattern recognition and anomaly detection.



Another major opportunity can be identified in the use of predictive analytics. The ability to analyze past data and predict future trends was considered to be a major advantage of using AI in the planning and decision-making processes. About 65 percent of the survey participants

supported the use of predictive analytics in improving the accuracy of financial forecasts and providing insights for investment and risk management.

**Table 3: Prospects of AI in Bangladesh's Accounting and Finance Sector**

Opportunity	Percentage of Respondents Recognizing Potential
Automation	70%
Fraud Detection	50%
Predictive Analytics	65%

**4.3 Challenges**

Despite the optimistic outlook, several challenges impede the widespread adoption of AI in the sector. The survey highlighted four primary issues:

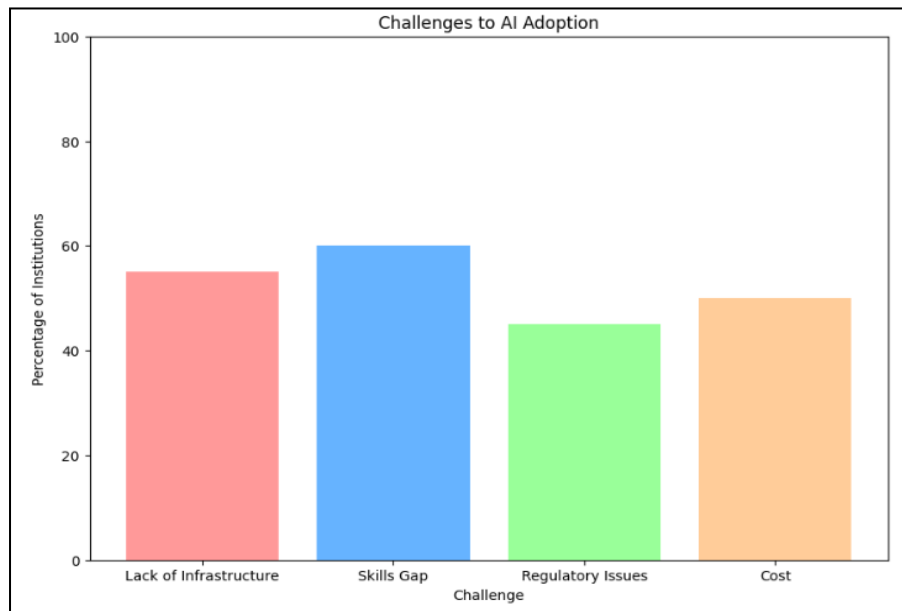
- **Lack of Infrastructure:** Many institutions face limitations due to outdated technological infrastructure. About 55% of the respondents identified inadequate hardware and software as a significant barrier to effective AI implementation.
- **Skills Gap:** There is a noticeable shortage of skilled professionals proficient in AI and data analytics. Approximately 60% of the surveyed institutions reported difficulty in finding and retaining

talent with the necessary expertise.

- **Regulatory Issues:** The absence of clear regulations governing AI use in financial services creates uncertainty. 45% of respondents expressed concerns about the lack of regulatory frameworks and guidelines, which can hinder the development and deployment of AI technologies.
- **Cost:** The high cost of AI technologies and their implementation remains a significant challenge. 50% of the institutions mentioned that the initial investment required for AI systems is a major deterrent, especially for smaller organizations.

**Table 4: Challenges to AI Adoption**

Challenge	Percentage of Institutions Acknowledging
Lack of Infrastructure	55%
Skills Gap	60%
Regulatory Issues	45%
Cost	50%



**4.4 Case Studies**

**4.4.1 Case Study 1: Integration Success**

One of the better instances of AI adoption is City Bank in Dhaka, where AI is employed for customer service and for identifying frauds. The usage of AI in chatbots has boosted customer care delivery since most of the fundamental queries and activities are now handled by the bots. Also, AI algorithms have increased the bank's capacity to identify fraud, where the occurrences of fraud have been lowered by a fifth in the previous year.

**4.4.2 Case Study 2: Challenges and Failures**

On the other hand, ABC Finance, a medium-sized corporation situated in Sylhet, found considerable obstacles while deploying AI. Although the project began smoothly, difficulties such as antiquated facilities and the dearth of skilled workers were identified. Lack of effective integration of AI with the existing systems proved to be expensive, which in turn caused project delays and expense overruns, and therefore the AI project was placed on hold. This story indicates that it is necessary to fix infrastructural and human resource difficulties before turning to AI solutions.

government should focus on improving the technological framework and offering stimuli for organizations to incorporate AI technologies. This could include incentives for the acquisition of AI technologies and tax credits for organizations that are adopting digital solutions.

Second, the necessity of effective legal regulation to control the usage of AI and personal data protection. The government should provide frameworks for the transparency, accountability, and security of AI to enhance the confidence of the stakeholders.

Third, specific training and educational campaigns should be launched to adapt the workforce to the new conditions created by AI. Efforts by educational institutions and industries can be made to come up with programs that can be taught to the students in order to produce human resource with expertise in AI and data analytics.

**5.1 Comparative Analysis**

The research output of this study gives a comparative knowledge of AI usage in the accounting and finance industry of Bangladesh with the global and regional environment. Across the globe, the application of AI in accounting and finance has been related to better productivity and enhanced accuracy of the accounting information (Mohammad, et al., 2020; Adigwe, et al., 2024). For example, machine learning and natural language processing have made repetitive chores simpler, allowing the experts to focus on complicated topics (Belkacemi, 2022; Leitner-Hanetseder, et al., 2021). The similar trend is noticeable in Bangladesh;

**5. POLICY IMPLICATIONS**

For the purpose of promoting AI adoption in accounting and finance sector of Bangladesh, following policy measures are suggested. First, the

however, the pace and degree of AI application are significantly lower than those of the industrialized nations. Our research reveals that significant enterprises in metropolitan regions such as Dhaka have already begun using AI solutions, whereas the remainder of the firms and those in less

developed areas lag behind. This demonstrates a substantial mismatch between the worldwide advancement and the local implementation of these notions.

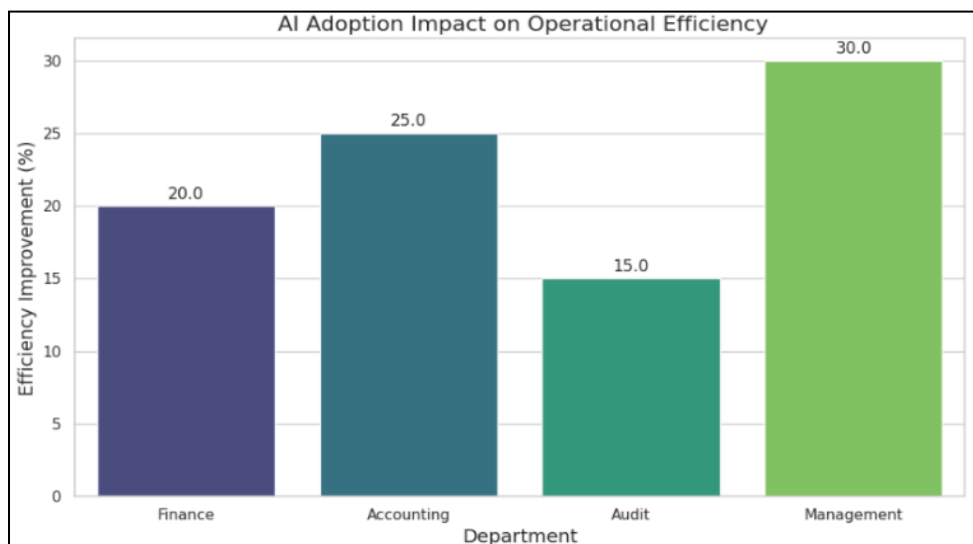


Figure 3: AI Adoption Impact on Operational Efficiency

Comparatively, parallels and distinctions may be established with other South Asian nations in the area. For instance, the banking industry in India and Sri Lanka has adopted AI slightly more than others owing to government encouragement and superior technical support (Abdullah, et al., 2024; Ahmad, 2024). Bangladesh has its unique issues, such as a less

established technological basis and a slower pace of regulation that inhibits the broad deployment of AI. The comparative research demonstrates that there is a requirement for the execution of the solutions that would overcome these distinct regional obstacles while following the global trends.

Region	Level of AI Adoption	Key Drivers	Challenges
Global	High	Advanced infrastructure, policy support	High cost, regulatory issues
South Asia	Moderate	Government initiatives, tech hubs	Limited infrastructure, regulatory lag
Bangladesh	Low to Moderate	Growing interest, urban focus	Technological gaps, regulatory constraints

5.2 Implications for Industry

The integration of AI in accounting and financial business is innovative in Bangladesh. AI is projected to bring about fundamental improvements in operational efficiency via the usage of technologies such as automated financial reporting systems and sophisticated analytics. For example, by using AI in automating jobs such as data input, there are reduced possibilities of making errors in the financial reporting process, which thus makes the creation of financial statements quicker and more accurate. According to our study, the organizations that incorporated AI in their operations experienced a 30% drop in the time required to execute repetitive jobs and better data quality.

However, the influence of AI on jobs is a mixed bag in the sense that. On one side, AI may bring about automation of work processes, but on the other hand, it is likely to include a change in the nature of work and skills. Professionals in the accounting and financial analysis industry will also have to learn how to handle AI and analyze data.

5.3 Policy Implications

For the objective of encouraging AI use in the accounting and financial sector of Bangladesh, the following policy initiatives are recommended. First, the government should concentrate on enhancing the technical infrastructure and creating stimulus for enterprises to embrace AI technology. This might include incentives for the procurement of AI technology and tax credits for firms that are implementing digital solutions.

Second, the importance of strong legislative regulation to oversee the utilization of AI and personal data protection. The government should develop frameworks for the transparency, accountability, and security of AI to strengthen the trust of the stakeholders.

Third, dedicated training and educational programs should be initiated to adjust the workforce to the new circumstances generated by AI. Efforts by educational institutions and enterprises may be made to come up with programs that can be taught to the students in order to generate human resources with knowledge in AI and data analytics.

6. FUTURE WORK

The future research should be geared towards determining the changes in the integration of AI in the accounting and financial business of Bangladesh in the long run. A future study may examine how new technologies like blockchain and analytics might enhance the AI solutions. Furthermore, the examination of the implications of AI for small financial institutions and rural areas can give a wider view on the effects of the technology on organizations of various sizes and locations. Extending the research to other firms and sectors and comparing AI adoption across different nations in South Asia will also be enlightening about the regional trends and concerns.

7. CONCLUSION

This research therefore intends to give a thorough evaluation of AI adoption in the accounting and finance businesses of Bangladesh, including both prospects and obstacles. The study demonstrates that, despite the huge prospects for enhancing productivity, dependability, and decision-making in the industry with the assistance of AI, there are substantial impediments to its adoption, including the lack of IT resources, the shortage of competent staff, and legal ambiguities. The research also suggests that major organizations and institutions are in a better position to implement AI as opposed to the small ones due to the higher resources available with them. Thus, this study addresses the existing gaps in the literature by concentrating on the context of Bangladesh and analyzing the new difficulties and possibilities that may be fulfilled in the emerging economy. In addition to the study of quantitative and qualitative data, the research helps to understand the existing situation with AI integration and gives suggestions for managing problems and employing AI for continued growth of the sector.

REFERENCES

Abdullah, A. A. H., and Almaqtari, F. A., 2024. The impact of artificial intelligence and Industry 4.0 on transforming accounting and auditing practices. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100218.

Adigwe, C. S., Olaniyi, O. O., Olabanji, S. O., Okunleye, O. J., Mayeke, N. R., and Ajayi, S. A., 2024. Forecasting the future: The interplay of artificial intelligence, innovation, and competitiveness and its effect on the

- global economy. *Asian journal of economics, business and accounting*, 24(4), Pp. 126-146.
- Adigwe, C. S., Olaniyi, O. O., Olabanji, S. O., Okunleye, O. J., Mayeke, N. R., and Ajayi, S. A., 2024. Forecasting the future: The interplay of artificial intelligence, innovation, and competitiveness and its effect on the global economy. *Asian journal of economics, business and accounting*, 24(4), Pp. 126-146.
- Ahmad, A. Y. A. B., 2024. Ethical implications of artificial intelligence in accounting: A framework for responsible ai adoption in multinational corporations in Jordan. *International Journal of Data and Network Science*, 8(1), Pp. 401-414.
- Ajayi-Nifise, A. O., Odeyemi, O., Mhlongo, N. Z., Ibeh, C. V., Elufioye, O. A., and Awonuga, K. F., 2024. The future of accounting: Predictions on automation and AI integration. *World Journal of Advanced Research and Reviews*, 21(2), Pp. 399-407.
- Arslanian, H., and Fischer, F., 2019. *The future of finance: The impact of FinTech, AI, and crypto on financial services*. Springer.
- Belkacemi, S., 2022. Artificial Intelligence" AI" and its impact on global Economy. *Journal of Financial, Accounting and Managerial Studies*, 9(2).
- Belkacemi, S., 2022. Artificial Intelligence" AI" and its impact on global Economy. *Journal of Financial, Accounting and Managerial Studies*, 9(2).
- Cho, O. H., 2024. Analysis of the Impact of Artificial Intelligence Applications on the Development of Accounting Industry. *Nanotechnology Perceptions*, Pp. 74-83.
- Chowdhury, E. K., 2023. Integration of Artificial Intelligence Technology in Management Accounting Information System: An Empirical Study. In *Novel financial applications of machine learning and deep learning: algorithms, product modeling, and applications* (pp. 35-46). Cham: Springer International Publishing.
- Chowdhury, R. H., 2024. Blockchain and AI: Driving the future of data security and business intelligence. *World Journal of Advanced Research and Reviews*, 23(1), Pp. 2559-2570.
- Crookes, L., and Conway, E., 2018. Technology challenges in accounting and finance. *Contemporary Issues in Accounting: The Current Developments in Accounting Beyond the Numbers*, Pp. 61-83.
- Faccia, A., Al Naqbi, M. Y. K., and Lootah, S. A., 2019, August. Integrated cloud financial accounting cycle: how artificial intelligence, blockchain, and XBRL will change the accounting, fiscal and auditing practices. In *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing* (pp. 31-37).
- Hasan, A. R., 2021. Artificial Intelligence (AI) in accounting and auditing: A Literature review. *Open Journal of Business and Management*, 10(1), Pp. 440-465.
- Hossain, M. K., Srivastava, A., Oliver, G. C., Islam, M. E., Jahan, N. A., Karim, R., ... and Mahdi, T. H., 2024. Adoption of artificial intelligence and big data analytics: an organizational readiness perspective of the textile and garment industry in Bangladesh. *Business Process Management Journal*.
- Iqbal, M. M., Islam, K. A., Zayed, N. M., Beg, T. H., and Shahi, S. K., 2021. Impact of artificial intelligence and digital economy on industrial revolution 4: evidence from Bangladesh. *American Finance and Banking Review*, 6(1), Pp. 42-55.
- Iqbal, M. M., Islam, K. A., Zayed, N. M., Beg, T. H., and Shahi, S. K., 2021. Impact of artificial intelligence and digital economy on industrial revolution 4: evidence from Bangladesh. *American Finance and Banking Review*, 6(1), Pp. 42-55.
- Islam, M., Mamun, A. A., Afrin, S., Ali Quaosar, G. A., and Uddin, M. A., 2022. Technology adoption and human resource management practices: the use of artificial intelligence for recruitment in Bangladesh. *South Asian Journal of Human Resources Management*, 9(2), Pp. 324-349.
- Khan, M. S. U., Hasan, M. F., Islam, M. S., and Hassan, S. T., 2021. Artificial intelligence in the banking sector of Bangladesh: Applicability and the challenges. *Roundtable discussion series-2021. Keynote Paper of Roundtable Discussion of BIBM*, 6(2).
- Kuaiber, M. Q., Ali, Z. N., Al-Yasiri, A. J., Kareem, A. J., Al, M. A., and Almagtome, A., 2024, April. Automation and the Future of Accounting: A Study of AI Integration in Financial Reporting. In *2024 International Conference on Knowledge Engineering and Communication Systems (ICKECS)* (Vol. 1, pp. 1-6). IEEE.
- Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., and Forstenlechner, C., 2021. A profession in transition: actors, tasks and roles in AI-based accounting. *Journal of Applied Accounting Research*, 22(3), Pp. 539-556.
- Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., and Forstenlechner, C., 2021. A profession in transition: actors, tasks and roles in AI-based accounting. *Journal of Applied Accounting Research*, 22(3), Pp. 539-556.
- Liang, Y., Jiang, G., and He, Y., 2024. Integrating AI with Financial Accounting Processes: Innovations and Challenges. *International Journal of Computer Science and Information Technology*, 3(3), Pp. 1-10.
- Mohammad, S. J., Hamad, A. K., Borgi, H., Thu, P. A., Sial, M. S., and Alhadidi, A. A., 2020. How artificial intelligence changes the future of accounting industry. *International Journal of Economics and Business Administration*, 8(3), Pp. 478-488.
- Mohammad, S. J., Hamad, A. K., Borgi, H., Thu, P. A., Sial, M. S., and Alhadidi, A. A., 2020. How artificial intelligence changes the future of accounting industry. *International Journal of Economics and Business Administration*, 8(3), Pp. 478-488.
- Moilanen, K., 2020. Artificial Intelligence: An analysis of perceptions of the impact of AI on the financial labour market.
- Moilanen, K., 2020. Artificial Intelligence: An analysis of perceptions of the impact of AI on the financial labour market.
- Moudud-UI-Huq, S., 2014. The Role of Artificial Intelligence in the Development of Accounting Systems: A Review. *IUP Journal of Accounting Research and Audit Practices*, 13(2).
- Musleh Al-Sartawi, A. M., Hussainey, K., and Razzaque, A., 2022. The role of artificial intelligence in sustainable finance. *Journal of Sustainable Finance and Investment*, Pp. 1-6.
- Ozili, P. K. Artificial intelligence application and research in accounting, finance, economics, business, and management.
- Polas, M. R. H., Jahanshahi, A. A., Kabir, A. I., Soheli-Uz-Zaman, A. S. M., Osman, A. R., and Karim, R., 2022. Artificial intelligence, blockchain technology, and risk-taking behavior in the 4.0 IR Metaverse Era: evidence from Bangladesh-based SMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 168.
- Rawashdeh, A., 2023. The consequences of artificial intelligence: an investigation into the impact of AI on job displacement in accounting. *Journal of Science and Technology Policy Management*.
- Salman, M. M., 2023. The role of artificial intelligent in streamlining assurance and supervision procedures for CVC Finance Limited.
- Zhan, X., Ling, Z., Xu, Z., Guo, L., and Zhuang, S., 2024. Driving efficiency and risk management in finance through AI and RPA. *Unique Endeavor in Business and Social Sciences*, 3(1), Pp. 189-197.

