

IMPACT OF ARTIFICIAL INTELLIGENCE IN THE PROFESSION OF ACCOUNTANCY AND AUDITING IN BANGLADESH

Prepared by
Mumtahina Ferdous
ID: 121011190

Supervised by
Dr. Pinki Shah
Professor
School Of Business

Submitted in Partial Fulfillment of the Requirements for the Degree
Bachelor of Business Administration



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Student Name: Mumtahina Ferdous ID No: 121011190
Major: Accounting Year: 2022
Mobile: 01818811007 E-mail: mumtahina.ferdous.bba@ulab.edu.bd

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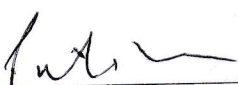
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Remarks (For Not Approved): _____

Signature:  Date: 22.12.22

Name: ~~Dr. Pinky Shah~~ DR. PINKI SHAH Designation: Professor

E-mail: pinki.shah@ulab.edu.bd

University of the Liberal Arts Bangladesh (ULAB)

School of Business

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Signature: Mumtahina Ferdous Date: 26/12/2022

Letter of Transmittal

26th December, 2022

Dr. Pinki Shah
Professor,
School of Business
University of Liberal Arts Bangladesh (ULAB)

Subject: Submission of the project report.

Dear Mam,

I am glad to inform you that I have finished my project report on “Impact of Artificial Intelligence on the profession of accountancy and auditing in Bangladesh”. Throughout this study, I have applied all my project report learning that I have learned in the last 4 years of my under-graduation study. Additionally, to prepare this report, I have collected both primary and secondary data from relevant sources and cited rightly the secondary information so that their sources can be easily found later.

I would also like to mention all the data used in this report are relevant to the topic and I have strictly followed the valuable guidelines that I have received from you so far.

I, therefore, pray and hope that you would be kind enough and accept my project report.

Finest Regards,

Mumtahina Ferdous

Mumtahina Ferdous
ID: 121011190
Bachelor of Business Administration (BBA)
School of Business
University of Liberal Arts Bangladesh (ULAB)

Abstract

Keeping up with the technological innovations happening at light speed in Bangladesh, it is high time for the accounting and auditing sector to enjoy the boons of Artificial Intelligence. It has become a necessity for these professions to undergo transformation and take a leap into the new era of Industry 4.0. AI fueled technology is expected to increase efficiency and productivity and drive improved practices of data science. Establishment of regulatory bodies, devise policies to align AI with business strategy and proper training of students is of paramount importance to address the paradigm shift and ready the future generation to face the challenges of a world bristling with technology like block data, artificial intelligence, big data, etc. Educational and professional institutions should incorporate this new age technology in their academic curriculum and redesign the training processes. However, AI is a double-edged sword, resulting in increased risk of data security and creating unemployment for accountants and auditors at root level, especially in a developing country like Bangladesh. On the contrary, new age professionals argue that AI could never wholly replace humans as decision making is a process that requires assumptions and deductions taking into account various ever changing factors like the industry, environmental elements, business ethics, etc. All in all, it is beyond doubt that accountancy and auditing is already changing drastically and will continue to do so in the future.

Key Words: Industry 4.0, Block data, Artificial Intelligence, Accounting, Auditing, Business ethics.

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Chapter One: Introduction

With the beginning of the Fourth Industrial Revolution (4IR) worldwide, IT sectors are incorporating advanced technologies like Blockchain, Artificial Intelligence, Cloud computing etc., in every sector to keep up with the increasing demands. Artificial Intelligence has already crept into various systems in our daily life. Devices like smartphones, smart watches, smart security systems, cleaning devices, medical sensors, fitness trackers etc., contain AI features up to some extent. Technological innovation has become a necessity from luxury and Artificial Intelligence is a giant leap towards digitization for a small but fast-growing economy like Bangladesh. With the advancement of the Information Technology sector in Bangladesh, we have seen many tech giants pouring millions of dollars in funding to develop the IT industry in Bangladesh. This includes projects like Digital Bangle which will bring digital transactions to over 500 million women in the country using blockchain technology. This would not be possible without the use of AI. The use of AI in many industries has already been implemented successfully. Machine learning is successfully applied in the fields of healthcare and agriculture. It is also used in areas like finance, defense, and manufacturing to produce more accurate and efficient results. The progress in AI has transitioned in such a speed that, it can change the core responsibilities of any profession. As a result, it is mandatory to understand AI technology and keep updated about its developments.

This study seeks to present the implications of using AI technology in the accounts and audit departments across various firms. The report summarizes the limitations and challenges faced by the employees while using these AI features, risks to data confidentiality, etc.

1.1 Background of the Industry

‘Artificial Intelligence’, these two words always stir up a huge interest among both amateurs and experts working in this field. The idea of man-made machines thinking and acting like humans is so popular that it has been a part of the cinemas for a long time like I-robot, Avengers, The Matrix, etc. Buchanan (2005) states that the history of AI is woven with phantasm, potentials, and promises of the unimaginable. He cites Homer, where the mechanical tripod was assumed to be the ‘mechanical assistant’ who helped the gods. Tfried Wilhelm Leibniz, a German prodigy

outlined a hypothesis in his thesis “On the Combinatorial Art” in 1966, that human thoughts are combinations of basic concepts and if converted into symbols and integrated logically, it had the ability to resolve any intellectual disputes (Schwartz, 2021). The character of Tin Woodman, in the epic book “The Wonderful Wizard of Oz” by L. Frank Baum, was a mechanical being made of tins but with his human emotions intact was an inspiration to pursue the idea of intelligence combined with automated mechanics (Buchanan, 2005). In his 1950 paper, “Computing Machinery and Intelligence”, Alan Turing, a British intellectual suggested that if humans can analyze and find solutions to various problems, a machine should be able to do the same (Artificial Intelligence, robots and the wizard of oz - the wizard of oz blog, 2021).

To this date, Artificial Intelligence inventions have continued to set life-changing footprints in different economic sectors from technology to communications, healthcare, finance, etc. A Japanese Insurance firm named Fukoku Life Insurance firm has been using IBM Watson Explorer AI to calculate insurance payouts, which claims to increase efficiency by 30% (The Digital Insurer, 2017). Although the accounting and auditing sector has fallen somewhat behind due to the plethora of rules and regulations that guide the accounting system, Big Data analytics has transitioned the scenario of this sector towards a new horizon. One of the recent research projects indicates that the use of Big data and AI systemize nearly 80% of physical work, 70% of data processing work, and 64% of data collection tasks (Brown, 2022). Functions of managerial accounting, budgeting processes, internal control systems and financial reporting practices had vastly improved as relevant data are collected and analyzed within a very short period.

1.2 Artificial Intelligence

John McCarthy conceived the term “Artificial Intelligence” at 1956, defining it as a “science and engineering of making intelligent machines” (Solutions, 2022). Grewal (2014) suggested AI be the mechanical simulation system of gathering knowledge and information that also processes the intelligence of the universe. Zhang et al. (2020) says that AI is the result of successful uses of big data and machine learning (ML) technology to comprehend the past and forecast the future using massive amounts of data.

Artificial Intelligence can be categorized based on two factors:

a) Based on Capabilities

- **Narrow or Weak AI**- Image and facial recognition systems are an example of weak AI which are limited to specific areas and just imitate human intelligence.
- **General AI**- Self-driving cars are a form of general AI that can learn, predict and do intellectual tasks like a human in unique situations but also require human intervention to deal with complex circumstances.
- **Super AI**-This form of machines is capable of surpassing human intelligence by exhibiting human emotions and taking decisions on their own.

b) Based on Functions

- **Reactive machines**– These types of AI are the most limited as they do not store any data and only respond to different triggers. Google's AlphaGo is a good example.
- **Limited memory** – These type of AI stores limited amount of data for a short time to learn and improve its response. E.g., Self-driving cars.
- **Theory of mind** – Only in theory now, these AI type understand the needs, emotions, beliefs and thinking processes of a human and interact like one.
- **Self-awareness** – These types of AI have their own consciousness and is super intelligent. It is hypothetical and is the future of AI.

1.3 Artificial Intelligence in Accounting

Areas of application of Artificial Intelligence in the field of accounting and audit are as follows:

- a) **Expert Systems (ES)**-Expert Systems are defined as computer programs that accumulate knowledge of an expert and imitate his thinking process to help solve problems on certain areas (Tomás, 1998). ES can be very handy in planning audits, gather evidence, assessing audit risk, preparing audit report etc. It can also be used for preparing financial statements, stock management, cost and variance analysis etc. However, due to biasness of its users, more research should be done on improving these systems to use it efficiently.

- b) Continuous Auditing-** It is the systemic collection of electronic audit information in a paperless system based on which an auditor will provide his opinion on fair presentation of financial statements (Rezaee et al., 2002). It allows auditors to provide assurance reports on demand using real time data.
- c) Decision Support Systems (DSS)-** DSS is a versatile system that uses raw data, personal data, business models etc. to help in the decision-making process. It provides managers with alternative solutions thus resulting in smart decisions being taken.
- d) Neural Networks (NN)-** It is a machine learning system based on the human brain, imitating the way biological neurons send signals. It can change its structure and functions to achieve its goals. Layers of the system indicate levels of complexity within the system. Tasks involving risk analysis are conducted by these kinds of systems.
- e) Deep Learning or Machine Learning-** It is a system structured in a way to detect patterns in data and learn from these data and refine their algorithm to take better decisions (Deloitte, 2018). It requires minimal human intervention. Kensho, TensorFlow are some examples. Other more popular examples include Amazon Prime, Netflix which uses the data regarding contents liked and watched by audiences to recommend them alternative shows of the similar genre.
- f) Natural Language Processing (NLP)-** In short, NLP is the ability of the computer to understand human speech (Deloitte, 2018). It imitates the manners of human communication and their language (Chukwudi et al., 2018). These kinds of systems are used to identify risks associated with variances from set goals. Examples include Nuance, Alexa, Cortana etc.
- g) Genetic Algorithm-** Based on Charles Darwin's theory, it is used to find out the best solutions to a problem. The main components of a genetic algorithms include biological factors like mutation, crossover and selection to produce the fittest answers to optimization

and search problems. Usually, genetic algorithms are used to set best permutations of parameters to identify market patterns and trade based on the parameters.

h) Robotic Process Automation (RPA)- It is a technology where software or bots are created in such a way that they copy how humans interact with software. These bots can open applications, log in, put in data, consolidate data, analyze and interpret etc. just like a human. It is also said to be an intelligent process automation (IPA) that represents robots who follow pre-programmed rules and makes it easier to save time by doing repetitive tasks efficiently (PwC, 2017). Zemánková (2019) suggests that by using this technology certain tasks like organizing data, integrating data from various sources, manual annotations etc. are automated and companies can save time and resources while improving productivity. Examples of software that can do this include Microsoft's BOT framework and IBM's Blueworks Live.

1.4 Objectives of the Study

This paper aims to analyze the present scenario of Artificial Intelligence application in a specific sector i.e., accounting and auditing. The objective of this study is divided into two categories-

- a) **Primary Objective:** The primary objective of the study is to complete the partial requirement of the awarding of the BBA degree from the School of Business, University of Liberal Arts Bangladesh (ULAB).
- b) **Secondary Objective:** The secondary objectives are listed as follows-
 - To know about the general job responsibilities of accountants and auditors.
 - To delve into the perception of professional accountants and auditors about AI.
 - To gain insight about the types of software used by accountants and auditors and the AI features of these systems.
 - To understand the challenges of implementing accounting systems with AI features across various organizations.
 - To explore the grounds of belief that AI might replace accountants/auditors at the root level.

Chapter Two: Literature review

The auditing and accounting industry has long transitioned from theory to practical applications and use of Artificial Intelligence tools cannot be fended off anymore (Chukwuani & Egiyi, 2020). Accounting firms and other organizations who will adopt and incorporate AI technology will maximize their professional output and add value to their profession. The researchers recommend that accountants and auditors should embrace this technology and learn more about it to help grow their career rather than stressing over whether AI will replace them. Davenport & Ronanki (2018) proposes that business capabilities of AI tools should be more prioritized than the technical features. Their Harvard Review story also mentions three key goals which can be achieved with help from AI- i) automation of business processes ii) gaining knowledge through research and analysis of data iii) interacting with stakeholders like customers, employees etc. In the 1990s, studies conducted on use of AI in Accounting, Finance and Management were relatively 29.63%, 28.40% and 20.99% (O’Leary, 1995). The topics on which these studies were conducted concentrated on neural networks, knowledge-based system applications, machine learning, programming with certain parameters etc. Some early researches conducted on Expert Systems in Brigham Young University has been featured in Meservy et al. (1992) which includes EDP-XPert for supporting computer audit specialists (CASs), ARISC for mimicking analysis of internal controls by an auditor, etc. Allen Newell won the Turing Award in 1975, for his ground breaking work on the AI programs “The Logic Theory Machine” and the “General Problem Solver” along with Herbert s. Simon (Solutions, 2022). Using basic surveys as primary data from accounting firms in South East Nigeria, Chukwudi et al. (2018) provides conclusive proof that AI had a positive influence on the various functions of accounting. Using data mining, auditors can easily detect fraud as this process claims to have advanced classifications and predictive abilities (Ata & Seyrek, 2009). Researchers also indicate that robotization will oust 85 million incompetent representatives throughout the planet while creating 97 million new job roles (World Economic Forum, 2020). Zeni, an automated book-keeping start-up company raised \$13.5 million and aim to serve other business models with lean resources using their AI powered solutions (Mruthyunjaya & Liao, 2022).

Chapter Three: Methodology

3.1 Type of Data

This study falls mainly in the qualitative category, although some numerical data are included to support the problem statement. To fulfill the objectives of this study, two types of data are collected:

- a) **Primary Data:** Primary data, also known as pure raw data, are data which has no statistical operations performed on them. These data are collected by the researcher himself/herself through specially designed interviews, surveys, experiments etc. to address the problem statement of the study. For this study, primary data has been collected via online interviews and a structured questionnaire, the transcript of which has been attached in the appendix for reference. The questionnaire consisted of short questions and statements with a five-point Likert scale ranging from 1 to 5 with 1 indicating strongly agree and 5 indicating strongly disagree.
- b) **Secondary Data:** Secondary data are data that has been collected by different bodies other than the researcher himself for various purposes. Researchers leverage the analysis of secondary data in an attempt to answer a new research question, or to observe an alternative viewpoint on the original question of a previous study. Secondary data in this report is supported by information from several research articles, blogs, online newspapers and websites which are referenced in the bibliography section as per APA7 citing guidelines.

3.2 Data Sample Size

The main objective of this study is to gain insight on how AI has made a difference in the professional world of accountants and auditors. Therefore, for collecting primary data, 20 professionals including accountants and auditors from entry, mid and senior levels were chosen randomly and interviewed. No specific industry was kept in mind while choosing the sample.

3.3 Sampling Techniques

One of the most popular social media websites of this era, LinkedIn has been utilized to decide which professionals are to be included in this study. The pros of using this website for sampling overwhelms the cons by a huge breadth. Most of the users of this platform use it for connecting with other professionals in similar industries or for searching new job prospects. Information about their academic accredits and work experiences are exemplified on their profiles. In addition, users demonstrate their skill and knowledge on their particular profession which are endorsed by other experts on that particular field. And last but not the least, this sampling and data collection technique is more cost efficient and time saving and respondents proved to be eager to participate rather than face to face interviews.

3.4 Limitations of data collection

As already mentioned, there are cons to this sampling and data collection process. Many of the respondents denied to participate in this survey due to confidentiality issues and others believed this to be a waste of their time. Moreover, they couldn't be convinced in the similar fashion they could've been, compared to person-to-person interviews. Some of the interviewees proved to be vague about their knowledge regarding the topic of this study and thus their responses were futile. In addition, the impact of AI could have been more clearly understood if a before and after picture of implementation of AI could be obtained. But as this required inside technical and financial information, respondents didn't agree with it.

Chapter Four: Findings and Discussion

4.1 Demographic Information

20 accountants/auditors were interviewed for the collection of the required information on the relation of AI and their respective professions. All the respondents are Bangladeshi citizens and therefore provides the current picture of AI in Bangladesh. Their basic demography is described below:

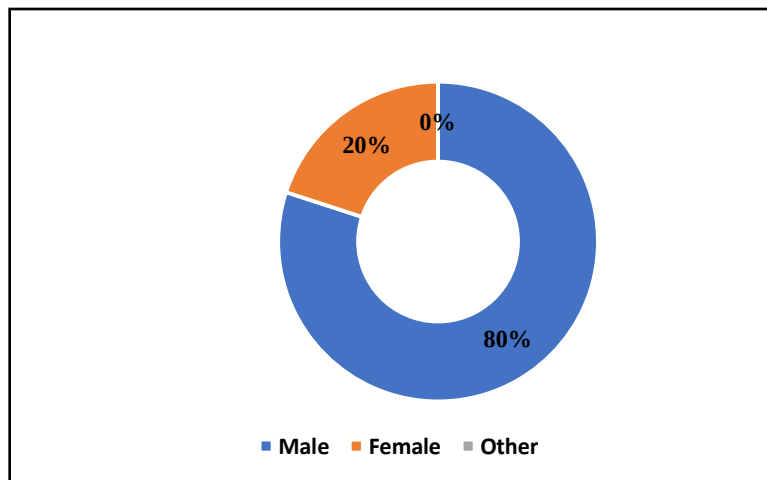


Fig 1: Gender of Respondents

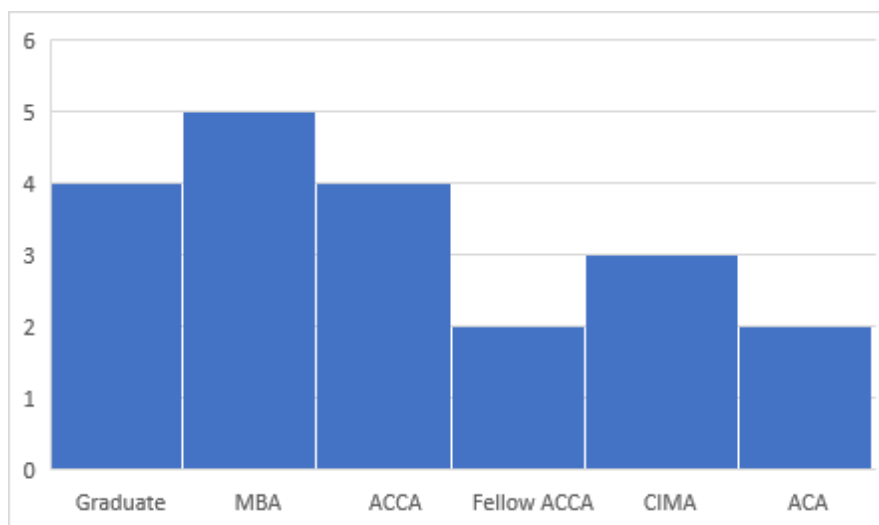


Fig 2: Academic Accredits of Respondents

The respondents range from fresh graduates to professional degree holders like ACCA, CMA, FCA etc. as shown in the figure 2. Bangladesh offers various professional degrees for accountants and auditors. Most of the entry level accountants have graduate degrees with Accounting or Finance as their concentration. Then they pursue professional degrees like Chartered Accountant certification which requires a three to four yearlong training as an Articled student and qualifying three exam levels. To obtain Fellowship, Associated Chartered Accountants (ACA) has to gain 5 years of post-qualification experience. This course encompasses courses like auditing, financial accounting, taxation, management accounting, business law etc. Some accountants earn Association of Chartered Certified Accountants (ACCA) degree which requires students to progress through three elements including ACCA exams, an Ethics and Professional Skills Module and a Practical Experience Requirement and a minimum of three years to earn the membership. The Chartered Global Management Accounting (CGMA) program is the world's top management accounting certification is awarded by the Chartered Institute of Management Accountants (CIMA). To achieve this certificate, candidates need to pass four levels of examination along with three years of practical experience.

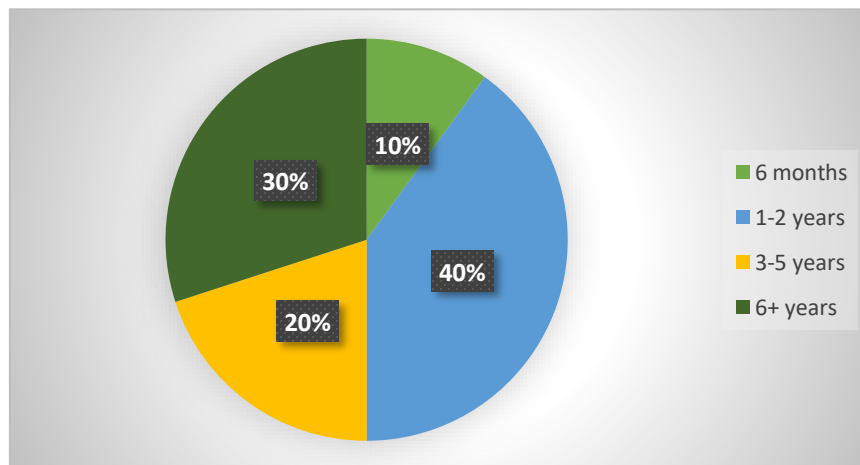


Fig 3: Work Experience of Respondents

As shown above, most of the respondents have work experience for 1-2 years followed by respondents with 6+ years' experience.

4.2 Job Responsibilities

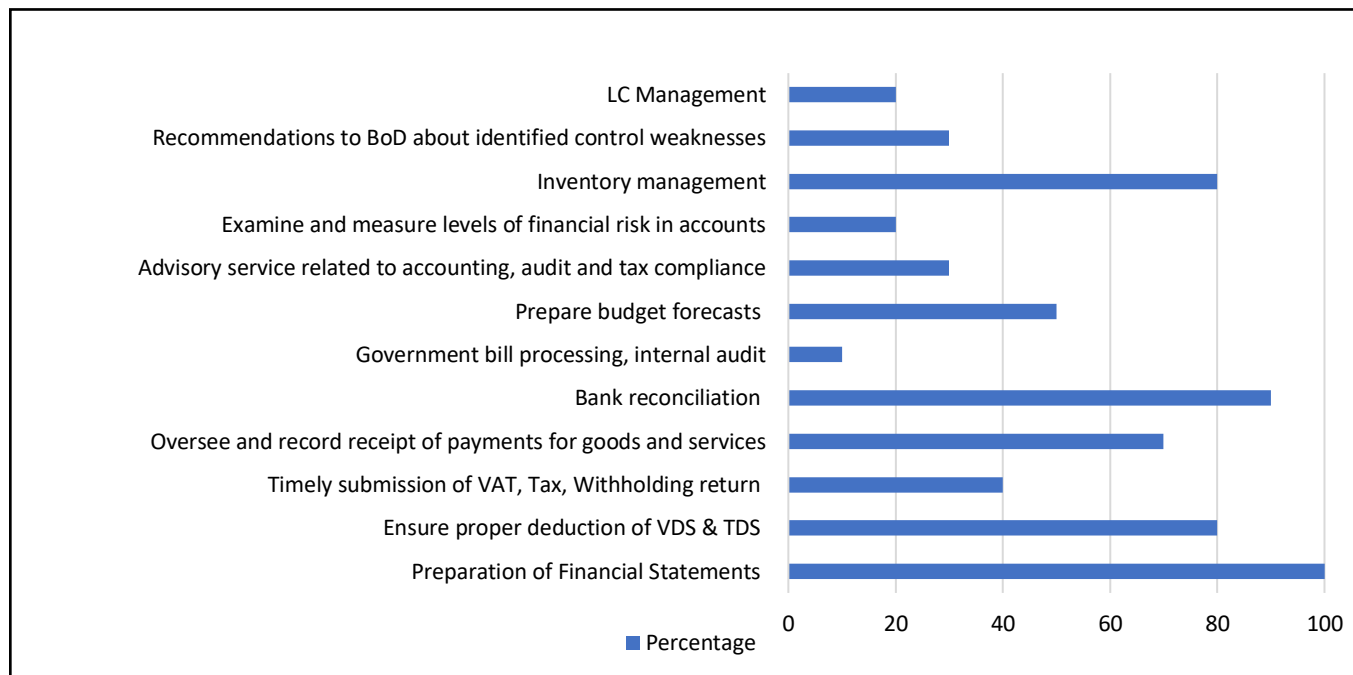


Fig 4: Job Responsibilities of Respondents

Respondents were asked to mention the job responsibilities they have to fulfil in their respective professions. The following functions were mentioned:

- The interviewees are tasked with the preparation of financial statements on monthly/quarterly/annual basis as per respective rules/guidelines (e.g., IFRS, Central Bank guidelines etc.) and review of accounting policies and notes to the financial statements. They also monitor provision, bad debts and provide adjusting entries at the end of the year.
- Bank reconciliations and timely payment to bank, inventory management and overseeing Accounts receivable and Accounts payable also fall into the daily tasks of 70-90% of the participants.
- Ensuring proper deduction of VDS & TDS before making payments to vendors and deducted amounts are deposited with the bank on stipulated deadline. 80% of the interviewees have this role in their respective profession as they fall in the entry and mid-level category.

- d) 40% of the participants have to ensure timely submission of various regulatory return like VAT return, tax return, withholding tax return etc. with proper documents.
- e) 50% of the participants are involved with preparing budget forecasts and establishing budgetary control and also conducting variance analysis to find out the risk factors.
- f) 20% of the total number of respondents are responsible for managing required documents and processes for issuing Letter of Credit (LC) and monitoring the corresponding import/export transactions.
- g) One of the candidates is an auditor working in the Ministry of defense and is responsible for both administrative work and local audits and bill processing of the department.
- h) 30% of the candidates are currently in senior level with work experience exceeding 6 years. They have earned professional degrees from respective regulatory bodies in Bangladesh and has gained in-depth knowledge of business processes, technical expertise and strong analytical ability. They are contributing their expertise in decision making processes and provide various advisory service related to accounting, audit and tax compliance.

4.3 Software used by the respondents with AI features

- a) **SAP (System Applications & Products in data processing):** Developed in 1971, SAP was launched as a full financial accounting software named SAP/R1 for Real-time data processing. The latest version, SAP S/4 HANA is a next level business suite using the power of in-memory computing to process huge amounts of data. It connects all the stakeholders i.e., entire workforce of an organization, its customers, suppliers and assets to the digital core. SAP has become more convenient as it embraces newer technologies and delivers tailored data with recommendations to its user. The various modules of SAP like: FI CO Financial accounting and Controlling: MM Material Management (purchasing, inventory and master data), WM Warehouse Management, PP Production Planning, SD Sales and Distribution, HR Human resources (Brainstation 23, 2019) and several others help centralize all the functions of a business, reducing risk factors like incompliance with applicable regulations, fraud or misinformation. In Bangladesh, currently SAP is used by various companies including Nestle Bangladesh, Orion Group. British American Tobacco, Unilever, Berger Paints, Incepta Pharmaceuticals, Square Group etc.

The specific AI features promised by SAP are as follows (SAP, 2022):

- Identify potential customers by comparing customer's interest with the company's net revenue and track accounts receivable with intelligent payment and invoice matching. SAP cash application speed up reconciliation of payments.
- Gather real time data off the market regarding customer demands and thus reducing time in manual forecasting of the market. Regular updates of product demands increase efficiency of production process.
- The supply chain of the company is more transparent and thus makes the whole process of procurement planning, cash disbursement, contracting, supplier payment etc. easier, cost-efficient and free of any counterfeit.

b) Sage 300: Sage 300 is a line of applications developed by Sage, Inc. It includes software for accounting and financial analysis, desktop publishing, data management, email marketing, and software development tools. Connected to the Sage digital network, they provide an integrated system that connects the workforce, customers, bank and related government bodies in one platform. The products work together to help businesses grow by automating back-office processes with accounting & business management tools such as invoice management, inventory management, sales reporting, payroll processing and more (Clarity, 2020). Nassa Group, CA Firms like A. Qasem & CO. etc. in Bangladesh has implemented SAGE 300. Its AI features are as follows:

- Scanning and automated vendor payments with paperless approval. Intelligent digital associates help customers scan vendor bills and match them to the right vendor. Erroneous bills are identified and highlighted so that users are notified to take action on this matter.
- Automated bank reconciliations are conducted daily and matched with bank statements.
- Any irregular transactions that don't match with past transactions in the general ledger are flagged automatically enabling accountants to rectify the errors before it has an impact on financial reports.

c) **Oracle Fusion:** Oracle fusion consists of different modules tailored to the various requirements of a business including financial reporting, procurement, risk and compliance, governance, customer relationship management etc. From a user's perspective, the most important feature of these applications is the seamless integration between different modules - all processes are brought together on one platform. This makes data more accessible and provides business users with a real-time view of business processes and reports. This single platform consolidates all the various data sources and eliminates the need for separate applications to be deployed for each solution. Organizations like BRAC Bank, bKash, DBL Group, Grameenphone, National Board of Revenue etc. are AI services delivered by Oracle Fusion are (AI Services and Tools for Your Business, n.d.)

- Pre-built intelligent chatbots help users via natural language conversation for specific tasks. These chatbots analyze requests on specific tasks like tracking inventory, checking forecasts etc. of users and help accordingly or reroute them to other bots as needed.
- The OCI Anomaly detection allows businesses to detect any fraud or critical situations in very short time. It detects any incompliance in data, predicts any equipment breakdown, and uses data to foresee future failures.
- The OCI Forecasting feature provides timely forecasts through statistical models and machine learning, without the help of data scientists. It delivers real time data about product demands, customer requirements, potential revenue sources to support in taking informed business decisions.

d) **Temenos 24:** The software provides a central location for banks to store and manage customer data, transactions, and applications. In Bangladesh, Janata Bank Limited and Mercantile Bank Limited are currently using Temenos 24. The AI features of this software are:

- Identification via Biometrics and multi-factor authentication that enables organization to control both internal and external risk. This creates a unique financial 'DNA' for each customer.

- Repurchase agreements and securities lending components are equipped with Straight-Through Processing (STP) so that customers can go through all the proceeding by just a few clicks.
- Complex structures of international trade and commerce are made easy.
- Availability of T24 Biometrics identification and multi-factor authentication component for meeting regulatory norms and controlling risks internally/externally.

Some of the participants also mentioned software like Tally Prime, iBAS++, but these systems don't have any significant AI features. Therefore, details of these systems are not included in the report.

4.4 Responses of participants to the Questions in Likert Scale

A simple survey was conducted by using a questionnaire via google forms as the primary data source for this report. The summary of the responses of the participants sheds some light on the current bearings of AI on accounting and auditing sector.

Most of the respondents agree that AI has and will reduce mundane repetitive activities like making ledger entries, balancing accounts, reconciling errors etc. Tedious book keeping jobs like maintaining Payroll, bank reconciliations, matching vendor details to invoices etc., are automated to save time and can be done by just a few clicks. In addition, 70% of the respondents agree to the fact that automating accounting and audit procedures has increased reliability of data by ten folds. However, 10% disagrees with this statement, reasoning that sometimes-incorrect data fed in manually generate erroneous reports, which cannot always be detected by the system. Accounting systems often contains built in rules that help users get tailored reports which also complies with applicable regulations. However, 30% of the professionals disagree that all rules and regulations that are required to be followed is not wholly built in as this gives rise to complex circumstances involving governance and ethical compliance issues.

There are a number of risks associated with digitization of data including breach of confidential data, technical failure, potential attack by hackers etc. 50% of the participants agree with this statement whereas 10% has chosen to be neutral and 40% disagree which might be due to the reason that implementing ERP system with AI enforces security of the whole system. Using a

system with AI features is pretty expensive and can be afforded only by large companies and corporations. In addition, all the employees of the respective company need to be trained by skilled trainers to use these systems which adds on more expenses.

90% of the employees agree to the fact that with encompassing AI in the system, need for doing repetitive tasks by accountants and auditors in entry level will cease, putting an end to their careers. The main objective of using a system with artificial intelligence is to save time on these tasks so that professionals can focus on more complex work goals. In contrary to this statement, 60% of the candidates does agree that potential employees will up their game to survive in the job market and the only way to do that is to upgrade their technical skills like computer literacy, learning data science, improving analysis skills, etc.

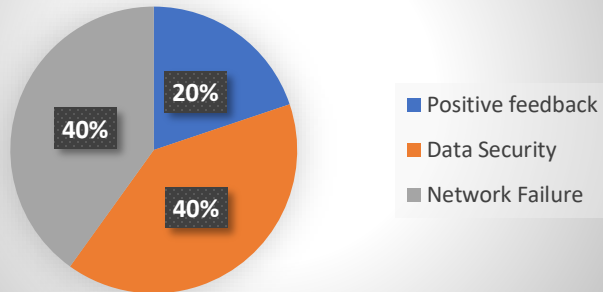
Almost all the participants share the view that any AI system including those used by accountants and auditors can never be a totally independent system. There is a growing debate within the accounting and auditing communities on whether or not artificial intelligence (AI) can ever replace the role of an accountant or auditor in financial analysis, accounting, or reporting. This is based on the surge of use of advanced algorithms and machine learning capabilities by accounting firms and audit firms in their analytical and reporting processes. The use of AI technologies has many advantages including increased efficiency, cost savings, better control over risk exposure, and improved quality of audit reports. However, there is a risk that the use of these technologies may lead to unintended consequences such as biased results due to inadequate data or incorrect assumptions made by the algorithm. AI systems cannot achieve complete independence, as they cannot perform tasks which are considered “subjective”. For example, an AI system cannot assess whether the financial statements presented in an annual report are reliable and accurate without analyzing factors such as the company’s business strategy and industry environment. Often there are some occurrences where several factors like business ethics, moral issues, past incidents need to be factored in to reach a fair decision. An AI system will fail to provide distinctive solution without the expertise of human professionals. This clearly shows that AI could not possibly replace accountants and auditors in the near future.

40% of the respondents confirm that their respective firms are successful in proper utilization of the AI features in the accounting system. 20% are neutral about this statement and 40%

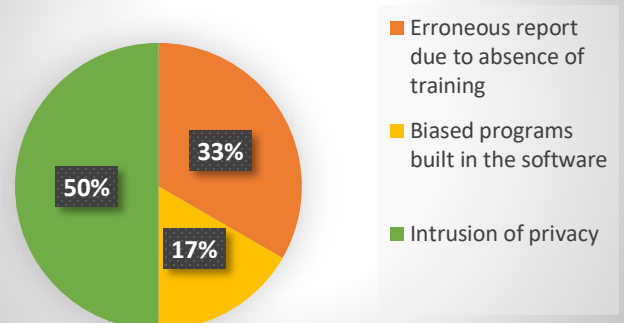
respondents believe that more effort should be given by their companies to encompass the AI features, focusing on the risk factor of data confidentiality.

4.5 Additional insights and beliefs of the respondents

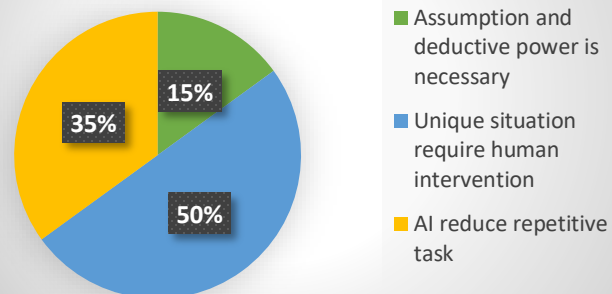
Challenges faced by respondents while using AI applications!



Risks associated with use of AI



AI cannot replace accountants and auditors



- a) Participants were asked about challenges they faced while fulfilling their job responsibilities using AI system. 1/3rd of the respondents had positive feedback to this question while the remaining hinted at data security and validation issues, network failure concerns, which is rather common in Bangladesh.
- b) When asked about the risks associated with the incorporation of AI in their organizations, some of the participants commented that absence of proper training resulted in employees providing inaccurate commands or input data in inaccurate options causing the system to produce erroneous reports. It took a lot of time and proved to be costly to rectify these mistakes. It is also indicated that biased programs may have been set in the system which culminated reports that the management wants to show rather than the actual position. Furthermore, AI system may intrude on personal information like facial recognition, biometric data, preferences of customers, in pursuing their goals of providing data to the management.
- c) Candidates deduced that AI cannot possibly replace accountants because there are lots of judgmental issues in accounting and auditing profession where human intervention may always be required. Accountants/auditor's role might change its shape but their presence will be inevitable. Moreover, regular updates of regularly environment are introduced frequently where a human is more fit to deal with these unique changes. AI may reduce the need for accountants to do process-driven or repetitive bookkeeping tasks, but not higher-value accounting tasks.

Chapter Five: Conclusion

Being compelled by globalization, Bangladesh is taking its steps toward wholly adopting the 4.0 Industrial Revolution technologies. Artificial intelligence has started to deliver what it has promised. bKash, a mobile financial service has gained 76% productivity by serving in 525000 outlets by using Biponon, a retail AI product. IDLC Finance has used Dharapat, a Fintech IT product to process CIB reports within 30 minutes which previously took around three days (Intelligent Machines, n.d.). However, setting up an AI system and utilizing it to its best might prove really difficult for smaller firms in Bangladesh. It is a real hurdle for a developing country like Bangladesh to source the man power and expertise required to maintain these kinds of systems. Moreover, loadshedding and unavailability of uninterrupted network connection proves to be a huge problem too. Proper training of employees is required before incorporating AI features to avoid radical fiascos in workplace, which also adds up to the cost. While AI might provide deeper security for data, risks of data breaches also increase. Additionally, most of the professionals agree that AI is not here to replace accountants and auditors. In 2019, the World Bank predicted that automating various tasks would threaten around 57 per cent of jobs in OECD countries, 77 per cent of jobs in China, and 47 per cent of jobs in the United States (World Bank, 2019). However, a recent report by Deloitte suggested that AI creates more jobs rather than replacing employees. AI is just another technology that if used properly to streamline business processes, it will be revolutionary for all sectors. When it comes to exercising human assumptions and judgements, AI could not possibly replace accountants and auditors. With constant deviations in technological, regulatory and economic state of affairs, it becomes a whole new challenge for professional accountants and auditors to respond to these changes by adapting their thought process and decision making. It is highly unlikely that AI will ever be able to do all the things that human accountants and auditors can do, rather it will help centralize and standardize the accounting system and audit procedures. Therefore, it is necessary that the public and private sector should focus on developing the ICT sector by incorporating AI applications in corporate sectors. Regulatory bodies must be established to govern these systems. In future researches should be conducted to address issues like bias factors in AI, industry based successful/ AI implementation stories etc.

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Appendix

Transcription of Questionnaire:

- 1) Name: _____
- 2) Gender: ☐ Male ☐ Female ☐ Other
- 3) Academic Accredits: _____
- 4) Designation: _____
- 5) How long have you been working in your current organization?
☐ 6 months ☐ 1-2 years ☐ 3-5 years ☐ 6+ years
- 6) What are some of the major responsibilities of your designation?

- 7) Which accounting software/enterprise system is used in your organization?

- 8) What are the Artificial Intelligence (AI) features in the ERP system used in your organization?

- 9) Please tick your responses on the following statements:

Statements	Responses				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI has reduced redundant activities for accountants from lower level to higher level.	30%	60%	-	10%	-
Using AI has increased precision and reliability of financial data.	50%	20%	20%	10%	-

Incorporating AI in the system ensures that relevant standards and laws are regulated for financial reporting.	-	40%	30%	30%	-
Digitization of data leads to a huge risk in security of confidential data.	-	50%	10%	40%	-
Incorporating AI in an organization's accounting and audit department is very expensive including training of amateur employees.	30%	60%	10%	-	-
Accountants/auditors at the root level are at a risk as a result of integrating AI with the accounting software/ERP used in the organization.	-	30%	10%	50%	10%
Introducing AI results in accountants and auditors to develop their skills and keep up to date with the process.	60%	20%	20%	-	-
Potential employees will decrease due to absence of required skills (computer literacy, data analysis etc.) to implement the processes involved in the system.	-	20%	-	50%	-

10) Risks & challenges you faced while using AI features in the system used by your organization.

11) Do you think AI might replace accountants and auditors? State your opinion with reasons.

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