The Future of HR: Leveraging Cognitive Computing for Strategic Human Capital Management in Bangladesh

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Abstract

Moving forward firms' strategic incorporation of data-driven tactics, cognitive computing may alter human capital management. Whilst cognitive computing has displayed disruptive capabilities in areas including healthcare and finance, its usage in HR, specifically for strategic human capital management continues to remain ambiguous for developing economies like Bangladesh in particular. A great deal of research emphasizes operational automation despite not generating explicit models for incorporating cognitive tools with long-range HR planning. To convert conventional HR responsibilities to data-driven, customized and dynamic systems whilst addressing ethical, operational and organizational hindrances affecting adoption in various settings, this study plays a crucial role in investigation. The research applies a mixed-methods framework using qualitative data, blending primary data via FGDs alongside secondary data analysis of literature reviews and available datasets. Ten senior HR specialists joined in the FGD for the research. Moreover, Atlas.ti was applied for theme analysis in secondary research and this carefully analyzed perceptions, routines and relevant issues in the surveyed information. The present research revealed respondents' unison upon AI and eliminating routine and data-driven tasks. Although the

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respondents acknowledged that AI technologies are failing to work in Bangladesh, which was uncovered in secondary data. The FGD respondents' acknowledgement of AIs' limits in managing multifaceted, sentimental and ethical aspects aligns with the perception that human insights continue to remain vital. Crafting a hybrid approach blending technical acuity alongside sensitivity and ethical standards is imperative for traversing the era of jobs and developing robust, employee-oriented firms.

Keywords: Cognitive computing; HRM strategies; mixed methodology; thematic analysis; hybrid framework; developing economy

1. Introduction

1.1 Background of the Study

Considering the explosive rise of AI and cognitive computing, firms require modifying their approaches. Among the sectors that are evolving the quickest is HR management. Cognitive computing, an improved aspect of AI, utilizes tools including data analytics, machine learning and natural language processing (NLP) to reason like an actual individual. It offers HR specialists access to robust instruments to develop informed decisions, tailor worker interactions and oversee talent efficiently. Since cognitive technologies continually learn from both organized and disorganized information, they vary from conventional automatic methods.

Moving forward firms' strategic incorporation of data-driven tactics, cognitive computing may alter human capital management. It would make it less complicated to pick suitable workers, foresee staff attrition and personalized career pathways. Yet, there remain major concerns regarding such alternatives. Whenever workers fret with topics such as algorithmic biasness, data security and human sensitivity loss in judgement, major shifts emerge in firms. Insufficient facilities, societal opposition, insufficient comprehension of AI may render slower to adopt such tools specifically in emerging economies including Bangladesh.

The research uncovers the possible advantages of cognitive computing usage for bettering HR approaches. Alongside remedies to the ethical and technical difficulties, the reasoning of usage prevention is also explored. This research intends to offer an impartial and feasible process for using cognitive technologies

to boost tactical aims while upholding basic human principles at work. This could be reached by merging notions from global literature with findings of HR pros.

1.2 Scope of Research

The operation of staff has evolved tremendously as cognitive computing and associated tools have been applied combinedly. This caused things to be obtainable, faster and tailored whilst additionally making human contact tougher.

Chats can be personalized through the assistance of natural language processing (NLP) and prediction analytics in cognitive structures to assure uniqueness and instantaneous interactivity. Chaturvedi (2023) states that artificial HR aides rely on NLP to react rapidly to queries minimizing the level of manual effort involved. Through offering participants customized career choices according to their passion and abilities, chatbots stimulate their curiosity in professions. Cognitive technologies explore blog writings upon fresh recruits to find tendencies and evaluate their sentiments. This assists HR to foresee problems prior to occurring and generate tactics to sustain workers.

Furthermore, cognitive computing examines structured as well as unstructured data involving emails and performance reviews, to determine valuable insights for data-oriented workforce (Steele, 2016). HR could benefit by delivering tailored targeting or reward schemes as predictive analytics may advise scholars concerning the possibility of an employee attrition. IBM's cognitive devices apply previous information to propose work options that correlate the workers' aims with the firms' priorities.

Hiring managers can zero in on critical responsibilities involving fostering leadership and evolving the firm ethos via automated routine duties like onboarding, payroll and compliance reporting. This subsequently will guarantee effectiveness in the HR procedures. Machine learning algorithms are moreover being utilized by cognitive frameworks through sorting files, arranging interviews and deciding an applicant's alignment with the position (Widge, 2021), ultimately expediting the recruitment procedure.

In addition, cognitive devices expedite jobs faster whilst making HR involvement less personal therefore hindering people-centric interaction. Workers regularly experience isolation by only getting support or advice from chatbots. This displays the value for frameworks that merge technical aspects alongside comprehension

(Widge, 2021). As cognitive bias in recruiting or performance evaluations raises ethical concern, it is crucial to ensure the system remains fair.

If firms aspire to achieve harmony among innovativeness and people-oriented design obstacles, they need to emphasize honest and accountable management. In these ways, evidence can be the foundation for reasoning (Harbinger Group, 2024). Enabling HR team force to comprehend critical thinking while preserving good rapport is parallelly essential. Benton (2024) states that cognitive computing boosts staff efficiency through facilitating increased tailoring, and faster job completion, along with data-oriented choices. Yet for this to flourish, upholding faith and minimal risks need to be achieved via an equilibrium amongst modern technology and human-oriented structure.

1.3 Problem Statement

The study addresses the way cognitive computing devices involving AI, machine learning and NLP may be strategically incorporated into HRM to traverse conventional HR roles into data-oriented, tailored and lean structures whilst confronting the ethical, operational and organizational obstacles hindering successful adoption in various settings.

1.4 Research Gap

Whilst cognitive computing has displayed disruptive capabilities in areas including healthcare and finance, its usage in HR, specifically for strategic human capital management continues to remain comprehended for developing economies like Bangladesh in particular. A great deal of research emphasizes operational automation (e.g., resume filtering, chatbot aides) despite not generating explicit models for incorporating cognitive tools with long-range HR planning. Moreover, nearly all studies emphasize corporate giants in industrialized areas, neglecting the specific difficulties experienced by SMEs. Ethical concerns involving algorithmic bias, accountability and data security are generally addressed but not completely resolved via pragmatic governing frameworks. Further, there remains scarcity of real-world studies reporting the opinions of HR specialists on cognitive computing implementation. Through blending primary data from HR specialists in Bangladesh with international secondary sources, the study acknowledges these gaps and offers theoretical along with practical perspectives for accountable, robust adoption of cognitive HR structures.

1.5 Research Questions

The article addresses three research questions comprising computing devices in HR procedures, acknowledging difficulties of biasness and novel technologies. They are:

1. In what way can cognitive computing tools be adopted in HR structures to boost strategic human capital management?
2. In what way would cognitive computing devices acknowledge difficulties of biasness and enable diversity and inclusivity in HR structures and choice - making systems?
3. In what way might firms plan themselves for the upcoming devices that have the probability of reshaping the era of HR?

1.6 Research Objective

Aligned with the research questions, the study offers three objectives. They are as follows:

1. To explore the way cognitive computing devices might be adopted into HR systems to boost strategic human capital management involving recruiting talent, performance reviews and staff planning.
2. To ascertain the fundamental ethical, technical and organizational difficulties linked with adopting cognitive computing in HR, with emphasis on emerging economies like Bangladesh.
3. To establish pragmatic standards and protocols enabling firms to dutifully adopt cognitive devices whilst balancing human-oriented principles involving sympathy, impartiality and inclusion in HR decisions.

1.7 Purpose of the Study

Cognitive computing can be referred to as structures that imitate human cognition utilizing machine learning, NLP and adaptive algorithms offering unprecedented possibilities to boost strategic choice-making, accelerate HR procedures and encourage inclusivity in workplaces. Yet, its integration is limited by technical, ethical and organizational difficulties, all of which the study aspires to assess and alleviate. The article's intentions are twofold: to aid academicians converse in clarity concerning the ways cognitive computing might alter HR and to offer firms ingenious and realistic ways for applying this.

The article seeks to uncover the groundbreaking possibilities of cognitive computing in present-day HRM whilst shedding light on the major adoption gaps. Firstly, the study addresses the strategic gaps in HR practices by offering useful ways to use cognitive systems in efforts to improve diversity, manage talent and make organizations flexible. Yuvaraj et al. (2020) states that cognitive computing will allow HR to shift from being reactive and routine to being proactive and strategic. The study on predictive analytics on this subject has not explored frameworks combining cognitive tools with strategic HR workflows. The ways to make culture ready for technological change or match AI-driven insights with leadership goals have remained uncovered in existing research.

Secondly, this study supports hybrid models that advance academic and industry knowledge through keeping human judgment in tough decisions such as hiring or settling conflicts. The study of Alsehaimi et al. (2024) takes data from retail, healthcare and banks and uses it to learn lessons that can be used in HR. Kanerika's use of cognitive computing in healthcare to make treatment plans more specific is a lot like HR's job of making sure employees have the best time possible.

Lastly, this study addresses ethical governance models that help lower ethical and operational risks. Jobs like hiring and evaluating employees can be done automatically with cognitive computing, but it could also keep biases in training data living (E-SPIN Group, 2024). Computers could leave out skilled but under-represented participants from groups, going against the goals of diversity and creating disengagement. Therefore, the article bridges the loopholes in strategic incorporation, ethical governance and functional sustainability.

2. Literature Review

2.1 Cognitive Computing in HR: Current Applications

2.1.1 Talent Acquisition and Recruitment

Automated Candidate Screening- Use of NLP to parse resumes and social media profiles: Natural language processing (NLP) is used to scan job description, resume and social media profiles to determine whether the candidate has the necessary skills to meet the requirements of the company. The cognitive systems categorize the applications by reading the unstructured information in the form of the terms, certifications and behavioral features. This is time saving and prevents bias. IBM Watson Talent is an application that uses NLP to find matches between

those who seek to work with employees who should work. The instruments such as HireVue are used to seek cultural fit by considering the attitudes of participants towards job posting on social media (Ojha et al. 2019). It however comes at the cost of missing contextual skills or obtaining qualifications in errors. Hence, semi-technological systems that involve the use of technology and human scrutiny are needed.

Predictive Hiring Models- Machine learning algorithms to forecast candidate success based on historical data: Masurkar, (2024) explains that predictive hiring models rely on machine learning algorithms to make predictions on how successful a candidate will be based on factors such as retention rates, performance indicators and behavioral characteristics of hired participants. They seek trends in employees who perform well and match them with employment opportunities with similar characteristics. This reduces bias and enhances more accurate hiring. Tests that are powered by AI consider cognitive abilities, culture fit and skills. Predictive analytics, in contrast, rely on live feedback to improve their ability to make guesses with time. Nevertheless, basing on historical data poses a risk of propagating biases unless it is accompanied by ethical audits.

Bias Mitigation in Screening- Tools to detect and reduce unconscious bias in recruitment workflows: AI-based solutions address unconscious bias in recruiting by using automated screening, blind recruiting and algorithm audits. Such services as Arya by Leoforce and CloudApper (Bennett, 2026) AI Recruiter hide the name, photographs and demographic information of candidates, so the first screening is conducted on the basis of skills. The features like the ability to hide names and photos on LinkedIn and Blendoor also minimize bias by eliminating identifiable data when sourcing. Resume screening is conducted through NLP to assess the candidate on a set of standardized criteria, reducing the subjective interpretation. CloudApper and LangTest are bias-detecting algorithms that sound warnings when AI models contain discriminatory patterns and Textio detects bias in job advertisements (Test Partnership, 2024). Hybrid methods, such as removing resumes or skill tests, even the playing field, as they focus on performance rather than personal information. These tools improve fairness, compliance and diversity but ethical audits are also important to tackle emerging risks.

2.1.2 Performance Management and Feedback Systems

AI-Driven Feedback Mechanisms- Continuous, data-backed evaluations replacing annual reviews: Performance management is transformed by AI-driven feedback systems that will take place of the traditional annual reviews with ongoing and data-supported assessments (Pizo AI, 2025). The productivity tools, project outcomes and peer interactions can be analyzed by the cognitive systems to provide actionable insights in real-time, which allows employees to close the gaps in time. The 15Five and Lattice platforms use machine learning to customize growth plans based on managerial, peer and self-feedback. Predictive analytics can be used to identify skill gaps and propose tailored training courses by examining the tone of the messages exchanged by employees. It is also able to identify indicators of burnout or decreased engagement. The reason why AI tools are not similar to manual reviews is the recency bias is not applied to them, and it will help maintain things fairer and more transparent over time. To compensate this, hybrid models combine AI and human reasoning, so feedback is always valuable and helpful. Control models which are grounded in ethics are also required to ensure that there is no bias in the algorithms and to safeguard privacy when gathering data. Through automation and human control, AI-based feedback systems ensure the employees are more accountable, flexible and productive to ensure the business attains its objectives.

Skill Gap Analysis- Cognitive systems for identifying training needs and career development paths: Cognitive systems use machine learning and predictive analytics to figure out what training is needed and how to move up in a company, assisting in skill gap research better. These tools consider the trends within a company, job titles and historical performance reviews to identify the skills gaps between employees and business needs in the future. NLP is used by IBM Watson Talent and other platforms to read resumes, performance reviews and comments and offer training programs or ways for employees to move up in the company (Verlinden, 2025). Predictive models can indicate how likely it is that participants will quit their jobs and where the skill gaps are. This information lets firms act, including starting programs to learn new skills or improve old ones. MuchSkills, (2025) demonstrates that cognitive systems also think about what workers want from their jobs, ensuring that everyone's goals are in line with business needs. An example is the Eightfold AI which pairs workers with jobs in the firm based on latent skills uncovered in data about their behaviors. Although

such tools facilitate the identification of gaps, ethical audits play a crucial role in reducing bias in algorithmic suggestions. Through the combined use of automation and human control, cognitive systems turn the skill gap analysis into a dynamic process that is employee-centric that leads to growth and competitiveness (Athuraliya & Creately, 2026).

2.1.3 Employee Experience and Engagement

Virtual HR Assistants: Chatbots for real-time query resolution and personalized support: Cognitive computing-based virtual HR assistants revolutionize the way employees interact with each other by providing real-time chatbots capable of answering questions and providing them with personalized support (Workfall, 2025). These AI-based solutions interpret and reply to queries posed by employees via NLP, e.g., benefits eligibility, payroll-related questions, or policy clarifications, minimizing the use of manual HR teams. For example, IBM Watson Assistant and ServiceNow HRSD can offer instant answers through chat interfaces, whereas HR portals like Workday can add chatbots to their systems and allow easy access (Workable, 2024). Cognitive systems are also used to analyze employee sentiment and behavior to provide contextualized support, which could involve recommending wellness programs or career resources according to individual needs. Too much use of chatbots, however, could hurt human-centered participation, especially when it comes to sensitive topics like mental health or settling conflicts. Hybrid models are therefore preferable because they forward hard questions to actual HR personnel to deal with them in a careful and delicate manner. By automating and making it easier to reach workers, virtual HR assistants make things run smoothly and put employees first.

Predictive Analytics for Retention: Identifying at-risk employees through sentiment analysis and behavioral data: Predictive analytics leverages sentiment analysis and behavioral data to identify employees at risk of attrition, enabling proactive retention strategies. By analyzing employee sentiment via surveys, emails, or social media, cognitive systems detect emotional cues (e.g., frustration, disengagement) that correlate with turnover risks (Basnet, 2024). IBM Watson Talent Insights uses NLP to parse feedback and flag declining satisfaction, while Culture Amp tracks sentiment shifts to predict early departures. Behavioral data including reduced productivity, absenteeism, or disengagement from team activities, further signals attrition risks (Mishra, 2024). Tools such as Workable and Deloitte's analytics models integrate these insights to forecast turnover, allowing

HR to intervene with tailored solutions encompassing career development programs, flexible work arrangements, or recognition initiatives. Studies show organizations using predictive analytics reduce attrition by 15–30%, saving millions in recruitment costs (Deloitte, 2025). Nevertheless, ethical concerns persist, spanning privacy risks in data collection, necessitating transparent governance frameworks. By blending sentiment and behavioral insights, predictive analytics transforms retention from reactive to proactive, fostering a resilient, engaged workforce.

2.2 Gaps in Existing Research

2.2.1 Strategic Integration Challenges

Lack of Frameworks for Long-Term Alignment- Limited studies on aligning cognitive tools with organizational HR strategies: According to Prost, (2025) the bulk of the studies on cognitive computing in HR are concerned with how to make things more efficient in the short term, like by automating tasks, including hiring employees or providing feedback. It fails to detail how such gains can assist in long-term strategic alignment of the company. Models like Four-Quadrant Alignment Model emphasize the significance of alignment between HR and business strategy on all three levels but does not explain how cognitive tools can be implemented in them and explicit guidelines on how to relate the findings of the AI-based skill gap analysis or predictive retention analytics to wider HR strategies like talent mobility or cultural differences (Arimanithaya, 2024). The two concepts are also significant components of skills frameworks, as well as HR strategy models. Nevertheless, they do not provide details on how these frameworks can be altered through cognitive systems to accommodate new business requirements. This deficiency in research implies that companies do not have clear strategies of how to utilize cognitive tools during their strategy HR. Because of this, these tools might not be used right or to their fullest (Van Vulpen, 2025). Long-term acceptance is more difficult because of the ethical and productivity issues. Most of the time, research does not take into account prejudices in AI models or the threat to data privacy that influence alignment over the long term. Stoop, (2025) stresses the need for models that make it clear how cognitive computing fits in with HR's job of encouraging innovation and flexibility in the workplace.

Data Quality and Accessibility- Limited research on adoption in developing countries: Bad data in cognitive systems reduces accuracy and information not specific to the business (Sharma et al. 2020). To make decisions, Indian state manufacturing industries, such as the one, struggle to use AI due to decentralization of data and its inaccessibility. Indian state manufacturing sectors, for instance, have trouble using AI to make choices because data is spread out and hard to get to.

High Implementation Costs- Difficult to incorporate with limited financing: Initial investments in cognitive tools are prohibitively expensive for many organizations, particularly SMEs. 47% of businesses share difficulty combing cognitive projects with the existing systems and processes. Although cloud-based trials are inexpensive, a full-scale implementation will require substantial R&D investment and developing economies, such as India, cannot afford it.

Resistance to Technological Adoption- Underexplored cultural and operational barriers in HR teams: It is hard for HR teams to use because of operational and cultural issues not always considered in deployment plans. When HR teams choose paper-based methods over digital ones because of comfort with them or distrust technology to do human-centered jobs (Griggs, 2023), this can be seen as cultural pushback. 52% of workers are reluctant to use HR tech because of worries about privacy and 46% are afraid of losing their jobs, reflecting larger cultural worries about trust and openness (PossibleWorks, 2023). One type of practical barrier is trouble integrating older systems. These issues keep participants from working and need expensive technology know-how to fix. Other reason why employees avoid using HRIS systems is difficulty in understanding, which makes workers see the tools as a load rather than a help (Muktamar & Nurnaningsih, 2024). Resistance is worse when participants lack training and 36% of workers say they fail to do their job as they lack enough help. Certain ethical governance gaps, such as artificial bias in AI-based HR tools that need initiatives, also result in loss of trust (Madanchian & Taherdoost, 2025). To solve such problems, managers should seek a new manager who is concerned about their employees. This involves effective communication, individualized training and examples that reveal how technology can align with the primary role of HR, promoting flexibility and inclusiveness.

2.2.2 Ethical and Diversity Concerns

Algorithmic Bias in Decision-Making- Minimal emphasis on auditing AI tools for fairness in hiring and promotions: Since AI tools are trained using bad or missing data, unfair practices, like failing to hire participants of underrepresented groups or raise employees of a particular group can take place (Chen, 2023). Despite these dangers, checking AI tools to be fair is not among the top priorities and many businesses rely on the algorithms that are difficult to comprehend without any moral system. In a study by Leicht-Deobald et al. (2022), discrimination is aggravated by biased datasets (such as past hiring trends including differences in racial or gender) and feature selection by the designer. Technical solutions include unfair dataset structures and transparency policies, which are rarely utilized due to either being costly, difficult to interpret, or unnecessary by law. Unfair algorithms may be exacerbated by systems with poor moral leadership, which contradicts anti-discrimination regulations and diversity objectives (Martin, 2024). This should be corrected by ensuring that audits are required, the design process involves many players and that the rules are fair and efficient.

Data Privacy Risks- Unaddressed vulnerabilities in handling sensitive employee data: There are unresolved weaknesses in the HR cognitive systems to deal with sensitive employee data, which puts organizations at risk of breaches, reputational loss and legal fines (Schachter, 2024). Additional third-party integrations (such as payroll software, AI recruiting tools) also add risks of data leakage, as was the case with the Accellion breach, which jeopardized payroll data in industries. The risks are also increased by insider threats, which include ex-employees gaining access to sensitive records (Mistry, 2023). Although encryption and audits can reduce risks, algorithmic bias in AI applications (e.g., biased hiring algorithms) reinforces systemic inequalities and is inconsistent with privacy and compliance regulations. Surveillance of employees through cognitive surveillance like monitoring productivity measures creates ethical issues of intrusion and loss of trust. Minimization of data and clear consent models are essential yet not always taken into account, endangering sensitive data (e.g., health records, biometrics) (Ogletree, 2023). In the absence of strong governance, cognitive systems increase the risks of breaches, fines (e.g., GDPR penalties) and disengagement of the employees.

2.2.3 Regional and Organizational Variability

Industry-Specific Case Studies- Limited research on adoption in sectors like healthcare or manufacturing: Although healthcare and manufacturing industries have their own HR issues, there is little research on their usage of cognitive computing tools. In health care, case studies point to a disjointed development: Manipal Hospitals implemented MiPAL, a virtual HR assistant, to automatically answer questions and simplify the process of onboarding, enhancing the satisfaction of employees and HR performance (Zincwork, 2023). The guide by Zinc highlights the importance of integrating HRIS to comply and consolidate data management in healthcare, but there are gaps in expanding such solutions to other facilities (Black, 2025). MedHealth Systems and HealthBridge Solutions used AI-powered EHRs and predictive analytics to decrease readmissions and wait times, but these are aimed at clinical processes, rather than HR-specific cognitive tools. Likewise, manufacturing does not have strong case studies, and most studies focus on the healthcare industry or technology. As an example, the construction 4.0 literature mentions difficulties in the integration of cognitive systems with the old infrastructure, yet similar knowledge about manufacturing is limited (Owolabi et al. 2024). This shortage highlights the necessity of industry-specific systems to overcome the industry barriers, like the regulatory complexity of the healthcare sector or the use of manual processes in manufacturing.

SME vs. Enterprise Adoption- Most studies focus on large corporations, neglecting SMEs: Although the adoption of cognitive computing has been well reported in large enterprises, small and medium enterprises (SMEs) are yet to be properly studied despite their importance to the global economies. AI-driven HR solutions (Sarin et al. 2023) and predictive analytics are helping the industrial and healthcare industries grow. These cognitive tools help them make hard choices and grow. Large companies may not accept as they must pay a lot to set it up, lack technical know-how, or are worried about data security (Research Dive, 2020). Cloud-based cognitive platforms can save SMEs money. However, these platforms may not always have built-in ways to use AI in HR chores. Furthermore, finding the right balance between employee's skills and cognitive technologies or lowering cyber threats in data ecosystems with lots of different sources (Roots Analysis, 2024) that still need more study. By 2027, the market for intelligent cloud computing used by SMEs is likely to have grown a lot. Studies, however, mostly look at how to help big businesses grow and neglect sector-specific strategies for

small businesses. SMEs need to be able to get quick, moral cognitive solutions. To fix this imbalance, consulting models and cooperation between sectors are needed.

3. Methodology

This study employs a qualitative approach, combining primary data collection (focus group discussion) with secondary data analysis (literature reviews and existing datasets).

3.1 Primary Data Collection

Since primary data is collected in real time through methods such as surveys, interviews, experiments, observations and focus groups and tailored to the research objective, it is considered more accurate, relevant and specific than secondary data.

3.1.1 Population and Sample Size

As the study explores a very recent trend in the field of HR, the population includes learned and informed HR professionals and personnels. A total of 10 participants selected through convenience sampling and judgement sampling working as HR professionals in renowned national and multinational organizations of Bangladesh have carried out intricate discussions on various questions asked on the topic. The respondents were chosen according to their knowledge and experience in the industry and the data were gathered using the questionnaire that was in tandem with the main objectives of the study. The demographic profiles of some of the prominent participants are shown in table 1 below. It is to be noted that that remaining five participants have answered the same question in the somewhat the same manner.

Table 1: Demographic profile of respondents

Name	Designation & Organization	Reason for selection
Respondent 1	Executive-HR, British American Tobacco Bangladesh	She garners experience from a thriving multinational that is well acquainted with digital and data-driven HR practices. They have already adopted AI and cognitive technologies to facilitate strategic workforce planning and talent management in Bangladesh. Her insights add practical value to the FGD discussion.

Respondent 2	HR Systems and Operations Specialist, Berger Paints Bangladesh	As he works at the intersection of technology and people processes overseeing how HR data, systems and workflows shape decisions, his contribution is exceptionally valuable for this FGD. His insights in optimizing HRIS, automation and analytics allows them to critically assess how cognitive computing can transform operational efficiency within organizations.
Respondent 3	Senior Executive-Corporate HR, DBL Group	She adds the local insights of this topic by representing one the diversified conglomerates of Bangladesh. For instance, her experience tells us that unlike the multinational organizations of our country, national organizations lag in the adoption of AI and cognitive technologies.
Respondent 4	Manager-Corporate HR, DBL Group	She also offers a strategic lens on cognitive computing in Bangladesh as she is well versed in practical knowledge on the lacking and ways of leveraging large-scale talent data to enhance workforce planning, predictive analytics and AI-assisted development in the context of national conglomerates of Bangladesh.
Respondent 5	Senior Executive-Talent Acquisition, IPDC Finance PLC	He offers frontline experience in data-driven hiring including developing job descriptions and assessing responsibilities within Bangladesh's fast evolving financial sector. He has highlighted the use of AI.

3.1.2 Data Collection Procedure for Primary Data

A Focus Group Discussion (FGD) with HR executives of different companies in Bangladesh was used to gather primary data on this study. This qualitative approach made possible the investigation of the varied views of cognitive computing in the practices of HR. Because the FGD format promoted open and honest conversation, respondents were able to talk about their experiences, argue and give more nuanced views on the positives and negatives of using AI in HR tasks.

It was important that the participants who were chosen came from a variety of business sizes and fields so that the group could hear a lot of different points of view. At the FGD, respondents mostly talked about AI-based decision-making,

ethical problems, data security and readiness of businesses for cognitive technologies. There were barriers in this case that might have remained unexplored with just quantitative surveys, such as staff resistance and integration issues.

FGD also gave participants a chance to explain and build on difficult ideas in real time, which made the information gathered more complete. The information from the event was very useful for coming up with good ideas for HR leaders and confirming themes that showed up in other data sources. Overall, the FGD provided a rich, contextually grounded understanding of the evolving role of cognitive computing in strategic human capital management in Bangladesh.

3.2 Secondary Data Analysis

Secondary data has been sourced from peer-reviewed journals, government reports and industry publications (e.g., case studies on SMEs vs. enterprises). Literature reviews synthesize findings to contextualize primary data, while content analysis of secondary sources (e.g., sentiment in HR tech articles) identify broader trends.

3.2.1 Data Collection Procedure for Secondary Data

The process of collecting secondary data involves gathering information from existing sources such as peer-reviewed journals, government reports, industry publications and company records. This type of data is easy to find because it has already been collected and studied by other experts, indicating a faster and cheaper way to study than getting first-hand information. Researchers can trust sources like Google Scholar, academic journals and government reports to give us secondary statistics for this study. It will examine the case studies comparing small and big businesses to identify the largest issues and the most promising opportunities of applying HR technology.

Literature review may also be used to provide a synthesis of previous studies that may enable the analysis to be organized and put the raw data findings into perspective. In addition, content analysis of HR technology articles and papers in the industry needs to be performed to identify larger trends and new topics. They are analyzed using atlas.ti as it is a program that enables qualitative data to be examined. This will enable one to take a closer look at feelings, patterns and significant discussions that arise in books.

3.3 Systematic Approach to Qualitative Data Using ATLAS.ti

Table 2 displays systematic approach to qualitative data. Here the information has been analyzed using ATLAS.ti software. Table 2 therefore incorporates information regarding title of the article, author of the article and a brief summarization of abstract. The table has immense significance in generating themes in regard to qualitative research.

Table 2: Themes Analysis using ATLAS.ti

SL.	Title	Author	Abstract
1	**AI and the Future of Cognitive Decision-Making in HR**	Yanamala, K. K. R. (2023).	This study explores how AI is improving HRM by supporting recruitment, workforce planning and employee management through data-driven insights. It highlights the need to balance AI with human decisions in areas like leadership and cultural fitness. The study conceives that incorporating ethics and accountability in AI ensures impartial and responsible HR decisions.
2	**Cognitive Computing and Business Intelligence Applications in Accounting, Finance and Management**	Ao et al. (2025).	Cognitive computing uses AI tools like neural networks, NLP and big data to mimic human reasoning and solve problems. It strengthens business intelligence through data-driven insights and collaboration. Since the launch of ChatGPT's in 2022, Large Language Models have greatly nourished not only management but also accounting and finance. The study points out such practical applications besides noting limitations and future directions.
3	**Artificial Intelligence in Human Resource Management**	Islam, M. T., & Tamzid, M. (2023).	The study explores how AI is applied in different aspects of HRM in the era of the fourth industrial revolution boosting efficiency and data-driven decision-making. Recruitment tools such as resume scanners, chatbots and digital interviews are streamlined to hire in general, which offers personalized employee experience. Nonetheless, certain obstacles such as-

			skills gaps, resistance, privacy and cost remains. The research finds that AI does not displace but alters.
4	**Role of Cognitive Technology for Improving Human Resource Management Experience: A Multi-Dimensional Perspective**	Chaturvedi, V. (2023).	The paper diagnoses the way in which cognitive technologies such as machine learning, NLP and deep learning recreate human cognition in HR using such tools as image analysis and psychological testing. Besides enhancing employee experience, it also reshapes organizational systems and processes.
5	**Transforming Data into Actionable Insights with Cognitive Computing and AI**	Al Mesmari, S. (2023).	AI and cognitive computing are radically changing the decision-making in businesses through advanced algorithms to process vast amounts of data and extract insights. These technologies turn unstructured data into insightful patterns and trends, allowing managers to make more precise choices. They furthermore streamline operations by automating repetitive tasks and reducing errors.
6	**Managing Human Capital with AI: Synergy of Talent and Technology**	Bashynska et al. (2023).	The focal point of this study is how AI is transforming human capital management. AI not only improves hiring, training and employee retention but also ensures efficient workforce planning, real-time performance management and data-driven decisions. Along with personalized learning and quicker market responses. The combination of AI and human skills can be excellent to make businesses thrive in a competitive business setting.
7	**Ebusiness or out of Business: Oracle's Roadmap for Profiting in the New Economy**	Barrenechea, M. (2000).	This paper talks about how through analyzing large data sets and detecting patterns, AI improves enterprise decision making. Platforms like OpenText Magellan automate tasks, provide self-service insights and support predictive analytics. Key

			applications include customer satisfaction, marketing, service quality and compliance to boost overall efficiency.
8	**Integration of Industry 4.0 and HR: Evolving Human Capital Management and Employee Experience through Digital Innovations**	Nyathani, R. (2022).	This article examines how Industry 4.0 transforms HR and Human Capital Management (HCM) by integrating technology and strategy. Innovations like robotics, IoT and big data analytics are reshaping HR tasks such as hiring, performance management, engagement and learning. The paper provides a framework for digitizing HCM and highlights the impact of technology on HR policies and procedures.
9	**Cognitive Computing: What's in for Business Process Management? An Exploration of Use Case Ideas**	Röglinger et al. (2017, September).	Cognitive computing transforms how businesses handle data and solve problems by combining computer science, cognitive science and data science. It enables learning, context-aware decision-making and natural human-machine interaction. The research constructs a framework that connects cognitive computing issues to Business Process Management (BPM) activities. It aids in continuous process enhancement and automation and decision-making with the help of cognitive technologies to increase efficiency and effectiveness of BPM as stated in the findings.

4. Analysis of the Data

4.1 Findings from Primary Data

The former data were based on focus groups (FGD) of HR employees of various companies in Bangladesh. A number of concepts continued to be raised during the discussion. The participants examined the opportunities of cognitive computing and AI in changing the business processes in HR and its weakness in eliminating human judgement. The session ended with the participants coming to an agreement

of rolling out AI in local institutions over time, with a focus on the necessity of building AI literacy in executives.

Cognitive Computing in HR Landscape

The meeting was aimed at discussing cognitive computing in HR, its potential applications and challenges in the HR environment. Participants discussed the feasibility of implementing cognitive computing in Bangladesh, acknowledging it as a future opportunity despite current limitations.

AI in HR: Challenges and Implementation

The group discussed the role of AI and cognitive computing in HR processes. While the potential of AI in HR is multifarious, it comes with its share of complications and challenges. As expressed by Ms. Sabrina,

> *"Although AI can provide valuable insights, it cannot fully replace human judgment and understanding in employee performance evaluation. It may be able to ease a lot of work for us but human intervention for its safe and worthwhile usage will always be necessary."*

Mr. Ajmain shared,

> *"Our company, Berger paints Ltd, began implementing HRIS in 2020 during the COVID-19 pandemic, using tools like ChatGPT for efficiency in daily tasks but that core AI tools for HR are still in the preliminary testing phase. We are still trying to figure out how to embed AI in decision making".*

AI's Role in HR Transformation

The group discussed the role of AI in HR. In this regard Mr. Taiseer said,

> *"While AI excels at data analysis and administrative tasks like recruitment, developing job descriptions and assessing responsibilities, it cannot replace human judgment, empathy and ethics crucial for HR professionals."*

Ms. Sadia shared,

> *"BAT Global has introduced an AI avatar to assist with HR policies, as its a multinational, more sophisticated technologies*

> *are being used compared to locals. The avatar not only assists with policies,it also provides a stronger connection with the knowledge domain of the company which is helpful in so many aspects."*

Ms. Lubaba and Ms. Sabrina emphasized a crucial issue faced by local companies. They said,

> *"Budget constraints and resistance to change are significant challenges in implementing AI solutions in Bangladesh. Even if we want to, it is not always possible to incorporate AI for many things. The budgets are mainly allocated to carry on routine work. Allocating budgets for improvement of technological infrastructure and incorporation of AI is rare."*

AI's Role in Reducing Recruitment Bias

The discussion focused on how AI can help reduce bias and improve diversity in recruitment processes.

Mr. Taiseer noted,

> *"AI can help remove quantitative biases; it cannot assess cultural fit or personality alignment with company values. There are many aspects of judging a human that are mostly subjective rather than objective. The AI we have is still not advanced enpugh to carry out such sensitive tasks."*

Ms. Sadia agreed with that saying,

> *"AI's limitations also extend to understanding cultural nuances in different locations, particularly regarding gender-friendly environments. It is often programmed to judge humans objectively; cultural differences might often be misjudged by AI. This hinders proper judgement in hiring. This can be mitigated through human interpretation of AI-generated reports in the recruitment process."*

AI Adoption Challenges in Bangladesh

The discussion focused on the feasibility and challenges of implementing cognitive computing and AI in Bangladeshi companies, particularly local organizations. Participants agreed that while AI adoption is inevitable, it will take 5-10 years for significant implementation due to cost barriers, resistance to change and the need for AI literacy among leaders.

Ms. Lubaba noted,

> *"AI will initially be used for transactional tasks (5-10%) rather than strategic roles at least in the current scenario of Bangladesh. Incorporating AI in decision making is still a far-fetched idea at least in the local scenario of our country."*

Mr. Taiseer stated,

> *"HR's role in driving organizational change and demonstrating AI's value across departments is very important for sustainability in the upcoming tech-driven world. However, concerns on data privacy and security when using AI platforms like ChatGPT should not be overlooked."*

The findings can be summarized in the following section:

a) All participants agreed that AI and cognitive computers could make HR work easier, especially when it comes to hiring, analyzing data and doing paperwork. However, they also unanimously agreed that AI cannot make choices without human empathy, judgment, or moral reasoning. This is especially true when it comes to judging performance and culture fit.

b) It was said that tools like ChatGPT, Microsoft Power Automate and Microsoft Copilot were being tried out or used to speed up tasks like making reports, papers and data analysis. These changes are yet to take place due to factors such as unwillingness of workers, lack of finance, doubt about AI and fear of data safety.

c) The discussion also concluded that Bangladesh has not been around long and is largely employed in business activities at this time. Participants also asserted that AI application in HR ought to be undertaken cautiously yet optimistically and there is still a great deal of power needed in decision-making.

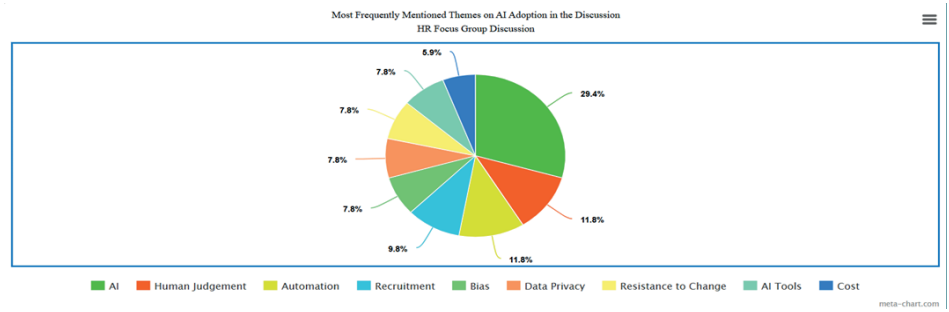

Figure 1: Findings from the FGD Session (Made via Meta Chart)

Figure 1 indicates repetitive ideas as the focus group was discussing how AI can be used in HR. The term AI was mentioned 15 times, which demonstrates how significant it is to transform the HR working mode. Then each of Human judgment and Efficiency/Automation were discussed six times and they should combine technology and human knowledge. The term Recruitment was used five times, highlighting the use of AI in recruitment. The terms Bias, Data privacy, Resistance to change and AI tools (e.g., ChatGPT, Copilot) were mentioned four times each. This means that they are common issues and instruments that can influence AI usage. The themes demonstrate that the respondents are excited and cautious about the application of AI in HR employment that deals with manpower.

4.2 Findings from Secondary Data

Following the in-depth examination of all the chosen articles within the secondary data, certain themes have been created based on the codes. There are a number of different codes attached to each paper. The codes have been selectively categorized in terms of significance and frequency of occurrence in the articles to come up with a list of themes which are tabulated as follows –

1. AI and Automation
2. AI and Human Interaction
3. AI in Decision-Making
4. Data and Analytics
5. Business Strategy and Efficiency
6. HR and Workforce Management
7. Ethics and Risk
8. Emerging Technologies
9. Cultural and Social Intelligence

5. Discussion of the Results

According to the FGD, HR professionals are thrilled and cautious about the application of cognitive computers in the workplace. Respondents concurred that AI can be used to automate repetitive tasks that require significant amounts of data, such as generating reports and filtering resumes. Nevertheless, they also remarked that AI did not do well in activities that involve empathy, cultural awareness and moral reasoning. To make HR more productive, technologies (e.g. ChatGPT, Microsoft Copilot and Power Automate) that are already out there are being tried.

The use of AI in Bangladesh is primarily in their daily activities and never related to making any major decisions, which shows their current stage of AI adoption in the business. Technology is regarded as a means that can assist and not a decision-making tool. It was clear to the participants of the FGD that AI should not replace the jobs that humans perform, particularly in challenging fields such as performance management and reduction of bias during hiring. Many of the respondents were concerned about the AI lack of cultural and social cognition, as well as the excessive cost of complete application of AI. Despite these concerns, the discourse was generally positive as the majority of the respondents believed that AI would come in handy in the future and that it should be integrated gradually. The next steps include groups altering their way of thinking, training the staff, establishing data protection rules and collaborating across spheres. Based on the information, AI will be able to transform HR. However, to make that occur, it must be utilized in a manner that places employees at the forefront, plans to everyone and has apparent leadership. When morals, judgment and attitude importance is in question, it is crucial to keep employees close.

5.1 Comparison of Findings with Existing Literature Review

The findings from the primary data collected through the FGD align closely with several themes observed in the existing literature on cognitive computing in HR. Participants emphasized the supportive role of AI in enhancing efficiency and automating repetitive tasks, which mirrors insights from authors such as Islam and Tamzid, (2023), who highlighted AI's usefulness in streamlining recruitment and administrative functions. Respondents in the FGD furthermore talked about problems with execution, including how some participants are reluctant to change or lack knowledge to use AI and keep data safe. A study by Sharma et al. (2020) and Chaturvedi, (2023) address these issues. They also expressed their

apprehension that AI would be unable to replace humanity, intuition and making moral choices. Supporting this, Yanamala, (2023) stressed the importance of combining ideas from AI with human thought.

The FGD indicated one crucial fact that AI tools are not made to work in Bangladesh and has remained unexplored in the existing literature. This means there should be more case studies and changes that are made to fit each place. The source data, in combination with the already known information, provided valuable, practical information regarding the changing HR in Bangladesh.

The secondary data, based on academic articles and case studies, provided a general and strategic perspective of how cognitive computing is transforming HRM in various industries that confirm various important findings of the primary data. As an example, Chaturvedi, (2023) and Bashynska et al. (2023) literature highlighted the transformative potential of AI in recruitment, performance management and employee experience, similar to findings in FGD where AI tools were mentioned to facilitate the generation of documents, screening of resumes and routine tasks. The constraints of AI in addressing complex, ethical and emotive HR issues were also well recognized in the literature, which conforms to the opinions of FGD participants that the human judgment could not be replaced. Algorithms bias, transparency and data security issues as noted in Martin, (2024) and Leicht-Deobald et al. (2022) were also mentioned in the FGD, which supported the argument of the significance of ethical AI governance frameworks. However, the secondary data presented a more international and theoretical outlook, which in most instances did not focus within a region or sector dilemma within the developing economies such as Bangladesh. Enterprise case studies indicated AI was increasingly being applied in HR in areas such as healthcare, technology and finance. However, an FGD revealed that the Bangladeshi businesses are at the trial or test phase of AI application and the majority of the work is done manually. To bridge the gap of knowledge, this discrepancy evidently indicates that there is a necessity to conduct additional research in practical business and environment. Also, predictive analytics and learning paths made possible by AI were emphasized a lot in literature but not in detail in the FGD. This disparity indicates an opportunity of skill-building initiatives and AI tools that are tailored to the requirements and competencies of HR employees in Bangladesh and other developing nations.

5.2 Theoretical & Managerial Implications

It provides us with a general vision of the way cognitive computing can be applied to HR. It shows how AI solutions such as IBM Watson or Eightfold AI can be applied to transform the process of staff recruitment, job evaluation and the level of occupational stress experienced by busy workers. Previous studies have discussed topics like algorithmic bias, risk of data protection and ethical control. The research highlights various theories and identifies them to develop an effective framework that could help in the incorporation of AI thinking capabilities to the efficiency of organizations. Such as:

a) Firstly, actionable governance models can address widely recognized ethical concerns like biased algorithms, accountability and data confidentiality.
b) Secondly, machine learning algorithms are used by predictive hiring models (Masurkar, 2024) to anticipate the efficacy of prospective employees and Deloitte's analytics models include these findings for forecasting attrition.
c) Thirdly, the study supports the hybrid models that retain human discretion in making challenging decisions such as hiring or resolving conflicts.
d) Lastly, the paper highlights the importance of industry-specific approaches to SMEs, partnership with major companies and consulting model. These concepts make the FGD data have a formal foundation which supports them and assist us to comprehend them.

The key results gained during the FGD are the ways in which cognitive computing is being applied in the HR environment in Bangladesh in a real-life situation. The participants also concurred that human oversight is quite crucial in making moral decisions and evaluating success. The FGD allowed participants to bring up problems that are unique to the sector, such as resistance from employees, a lack of knowledge about AI and limited budgets.

The data in this set can help researchers and managers to create new and responsible HR systems that combine automation with empathy. With the integration of cognitive computing tools such as AI driven analytics, machine learning based prediction and NLP, it is possible to make recruitment, performance management, employee engagement and learning and development programs of organizations much more successful. Although the findings suggest that the use of data-driven decision can enhance productivity, in order to get the most out of it, organizations are to invest in digital infrastructure, data management in employees

and capacity building to provide HR professionals with the right technology skills. It can be achieved by taking things step by step and beginning with high-return areas such as automating the hiring process can help demonstrate value and minimize pushbacks. This will assist in closing the skills gaps and developing confidence in cognitive systems. One should also collaborate with credible providers of AI and provide employees with training. With examples from the real world, these results back up and add to theoretical models. The findings are highly useful to policy makers and HR strategists seeking ethical step-by-step models of AI integration that are effective in their respective nations.

6. Conclusion

The paper demonstrates the potential of cognitive computing in revolutionizing strategic HRM through increased efficiency, personalization and evidence-driven insights. The study based on primary data of HR professionals in Bangladesh and extensive secondary sources demonstrates that the interest in the integration of AI is increasing, especially in the areas of administration and recruitment. Nevertheless, it also reveals such critical issues as algorithmic bias, data privacy concerns, skill gaps and resistance to change. These obstacles highlight the need to approach the implementation of cognitive technologies through ethical governance, human management and strategies that are localized. In order to realize the potential of AI in HR, organizations should invest in gradual adoption, training of employees and open structures that promote fairness and inclusiveness. Finally, cognitive computing ought not to substitute human judgment, but become an addition to it, creating a hybrid model of technological accuracy and human sympathy and ethical judgment. This equilibrium will play a key role in how the future of work is navigated and how to create resilient and people-centered organizations.

6.1 Limitations and Future Research Directions

Although it is vital and modern regarding the FGD method, it has certain obstacles to overcome. First, the study may not be relevant for bigger situations or companies outside of Bangladesh as the sample size was small and it was only done in one place. The information might not be objective as the respondents participating might have been biased by the company culture or their personal preferences. Secondly, not much was gleaned about the use of AI in learning and development or the use of prediction analytics to know why respondents leave their jobs.

Therefore, FGD is beneficial, but it should be supplemented with more substantial surveys to obtain a more comprehensive view. Thirdly, although extensive, secondary data lacks the specifics of the context. Much of the literature is centered on developed economies and large corporations and little has been done on SMEs or third world countries such as Bangladesh. Such a gap makes some case studies less practical because some infrastructural, cultural and regulatory differences can make them difficult to apply directly. Fourthly, articles focus on theoretical frameworks and theoretical ideal conditions without considering the on-ground issues like the readiness of the workforce to digital or integration into the legacy systems. Some of the high impact such as AI localization and region-specific algorithmic fairness are unexplored. Therefore, secondary data should be carefully sieved and modified in order to guide localized HR strategies. Finally, emotional regulation measures such as the Cognitive Emotion Regulation Questionnaire (CERQ) indicate cross-cultural adaptation difficulties that include the absence of standardized validation that can be used to assess cross-cultural adaptation, which exposes the risk of cultural bias in the interpretation of emotion coping strategies. Cognitive tools that are cross-culturally adaptive must be subjected to a high level of validation in order to guarantee its application in various contexts. The Cross-Cultural Adaptability Inventory (CCAI) is an example that evaluates the willingness to immerse in culture based on self-review and feedback responses provided by observers, focusing on how people can develop their abilities related to communication and adaptability in behavior (Madanchian & Taherdoost, 2025).

Since ethical governance frameworks are highlighted by future research direction authors as important to guarantee responsible AI implementation in HR, there should be a balance between innovation and fairness, transparency and accountability. Current models such as the Trustworthy AI Principles of the OECD and the multidisciplinary strategy of IBM focus on collaboration with stakeholders, reduction of bias and human control. In the case of HR, AI decision-making should be transparent and audits of fairness to identify biases with regard to screening of candidates must be conducted. Continuous monitoring via tools like IBM's watsonx. governance and documentation of data sources and model outputs further uphold accountability (Techrseries, 2023). Nevertheless, there are gaps in industry-related guidelines in sectors such as healthcare or manufacturing, and alignment of regulations is still disjointed. Active structures should incorporate employee feedback, ethical charters and cross functions governance councils to

counter emerging risks and create trust. Also, the proposed cultural adaptation model focuses on systematic translation, expert reviews and psychometric testing to make sure that tools are relevant to local norms (Gupta, 2025). These gaps need to be bridged through ethical governance structures and participatory design with various stakeholders to make sure that the tools are relevant to the contexts and fair.

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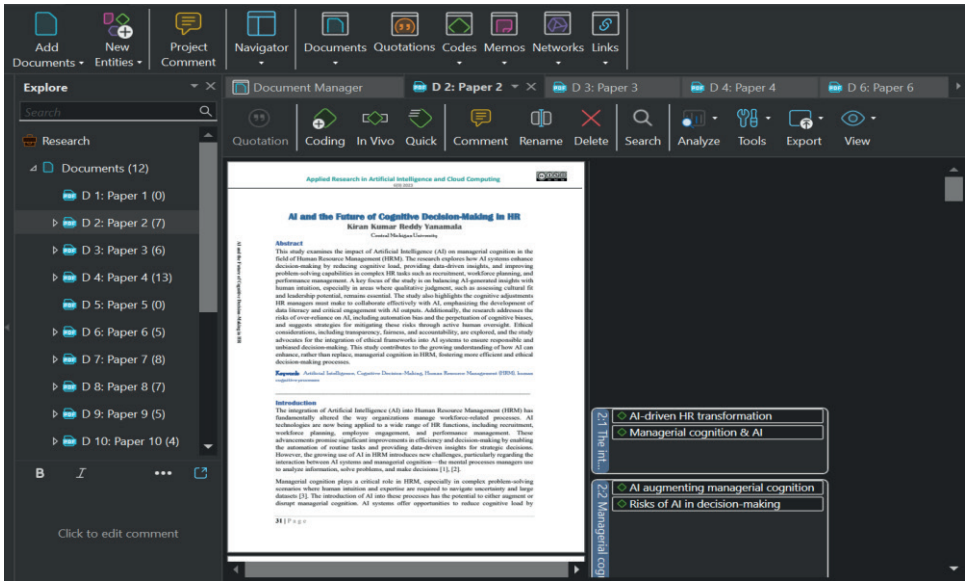
Appendix

The key points of discussion in the FGD were:

1. What is your perception of cognitive computing?
2. Do you feel it is feasible for Bangladeshi companies to effectively incorporate cognitive computing in the field of HR?
3. How can implementing cognitive computing in HR enhance HR performance like recruitment, performance management, training etc.?
4. How can cognitive computing tools address issues of bias and promote diversity and inclusion in HR practices and decision-making processes?
5. What challenges might your organization face regarding implementation of cognitive computing in HR?
6. What opportunities does your company hold regarding implementation of cognitive computing in HR?
7. AI is inevitable in the future. How can your company prepare for this?

Pie-Chart of Recurring Themes During FGD



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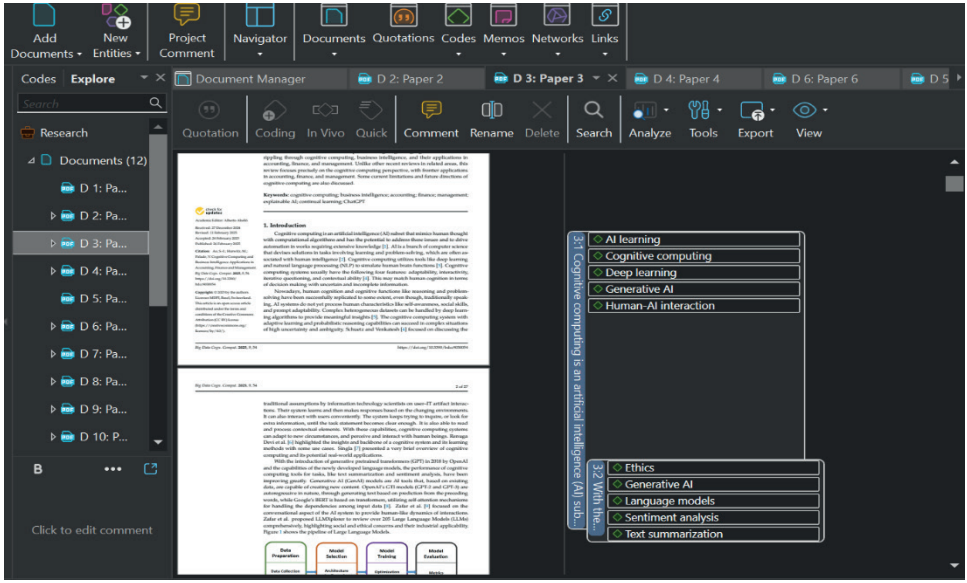

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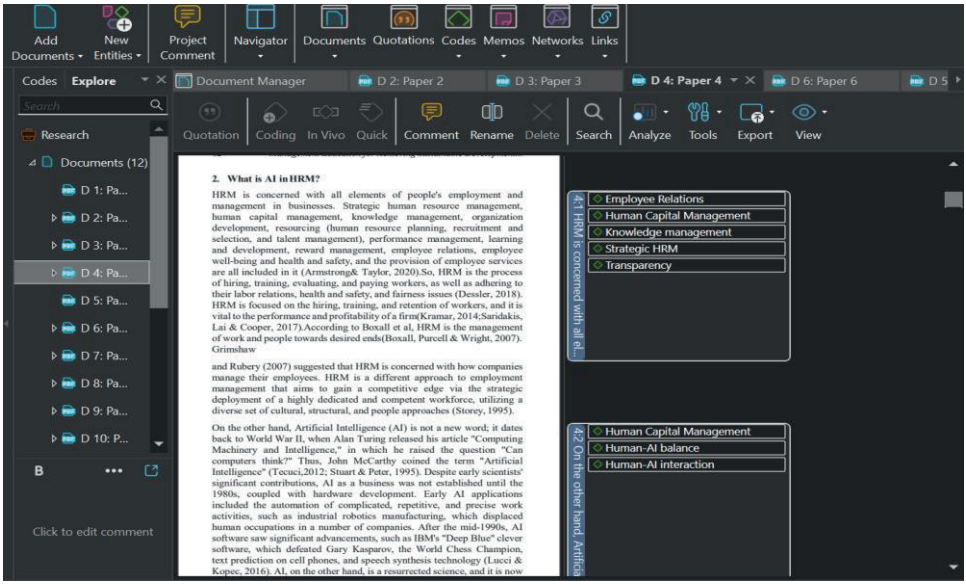

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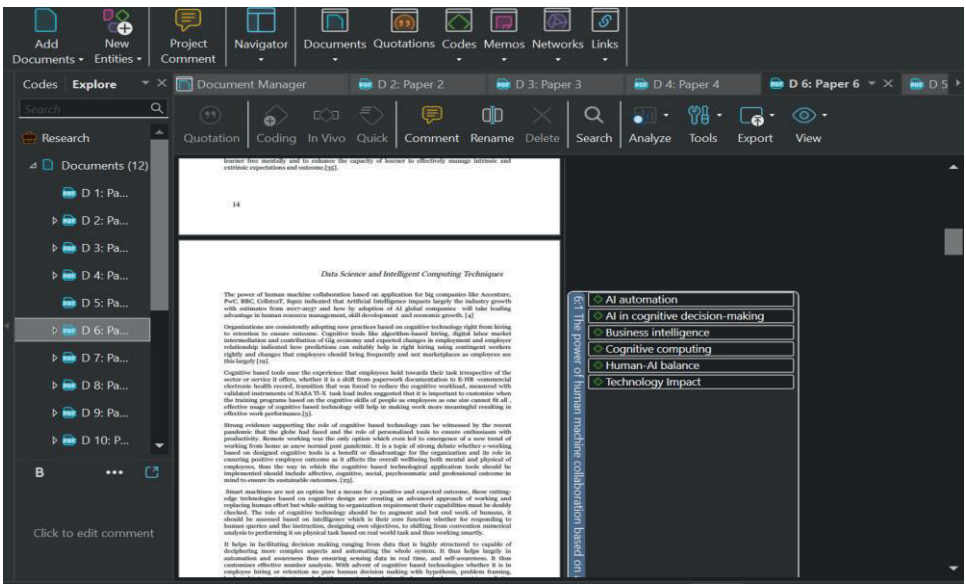

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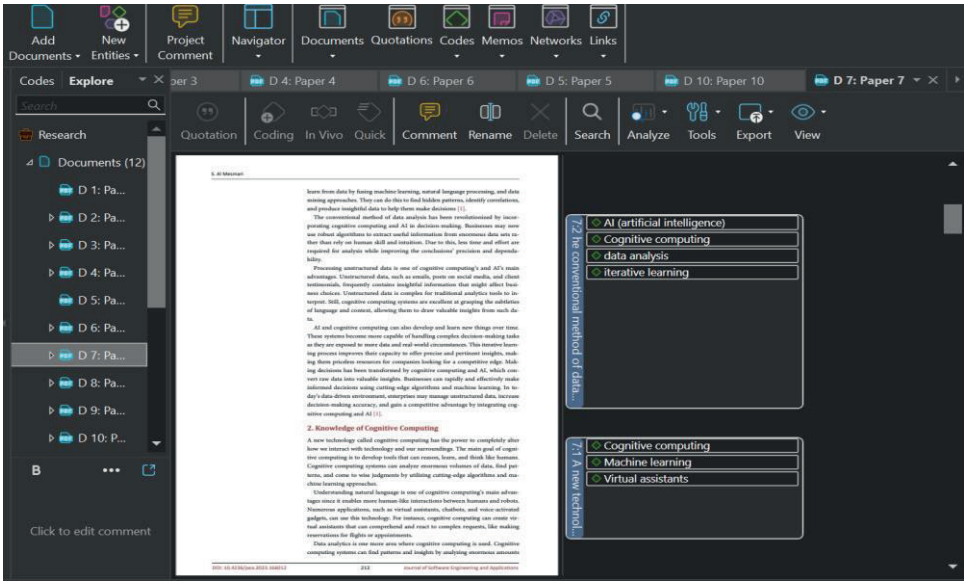
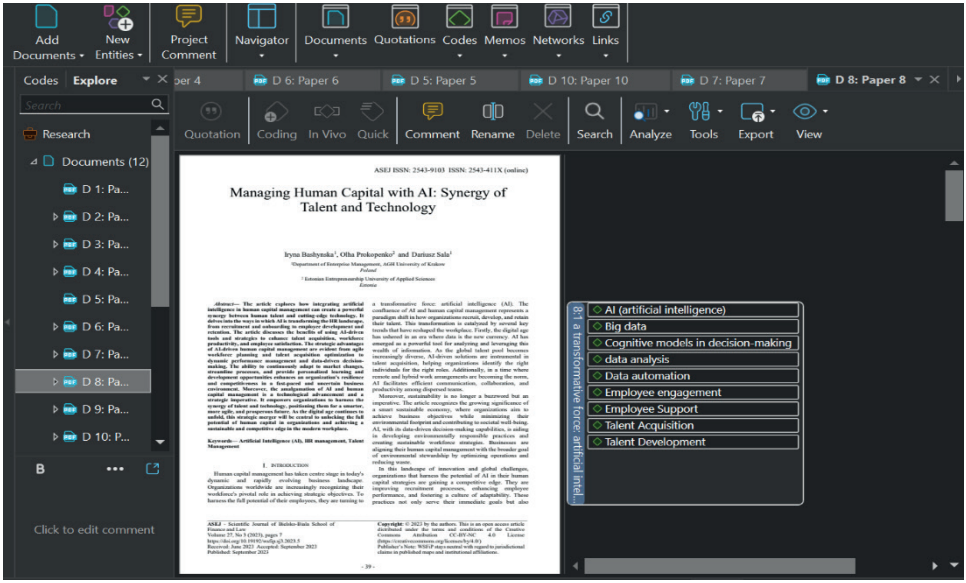
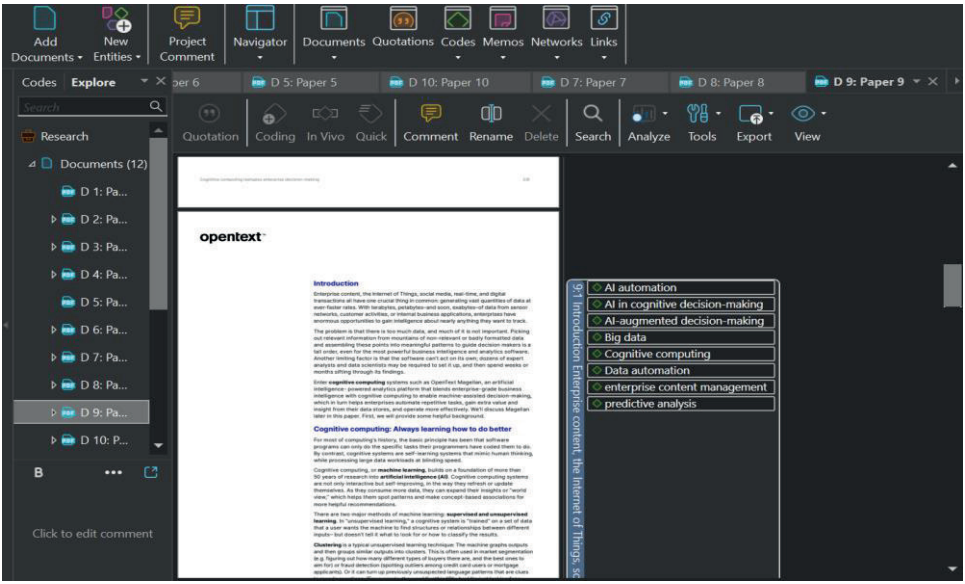


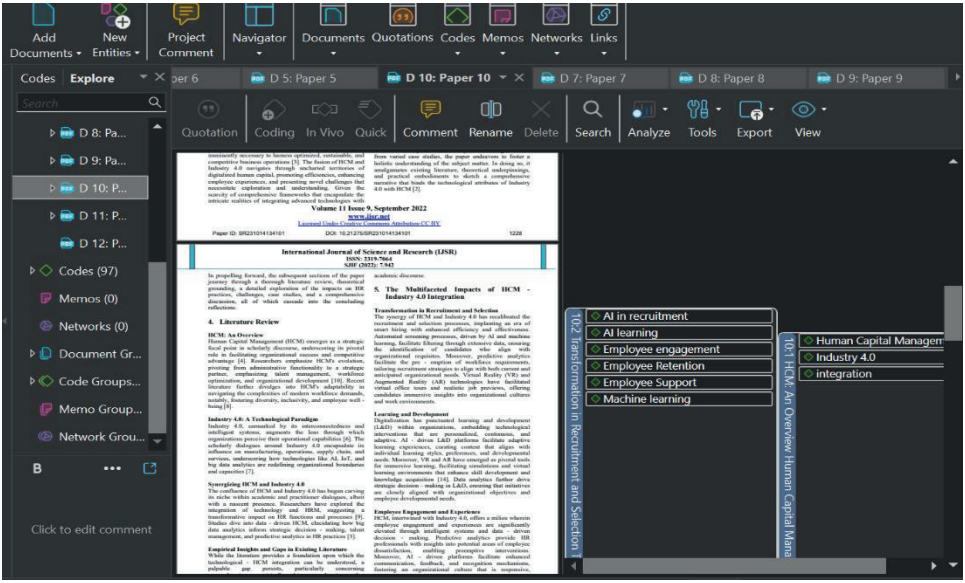
Analysis of Paper - 5 using ATLAS.ti



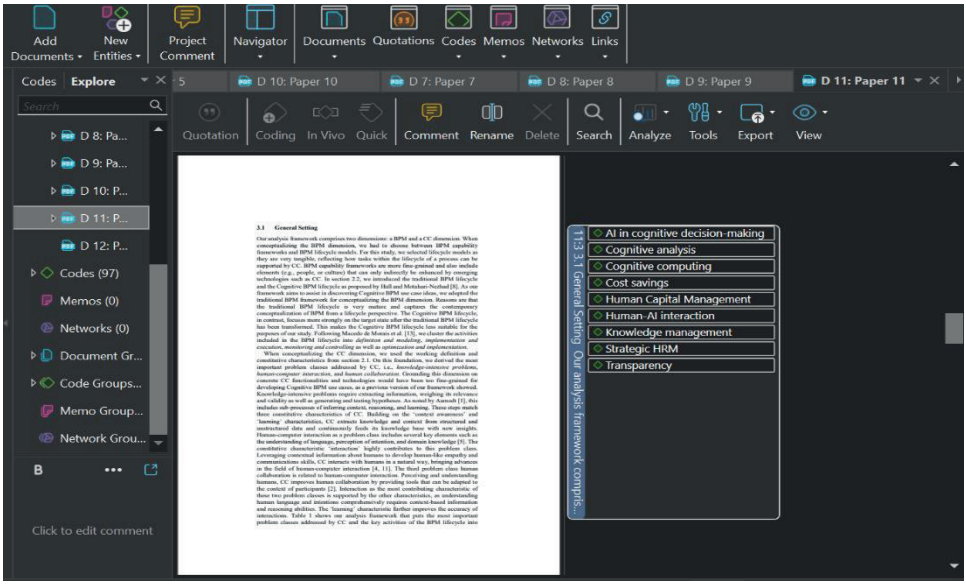
Analysis of Paper - 6 using ATLAS.ti



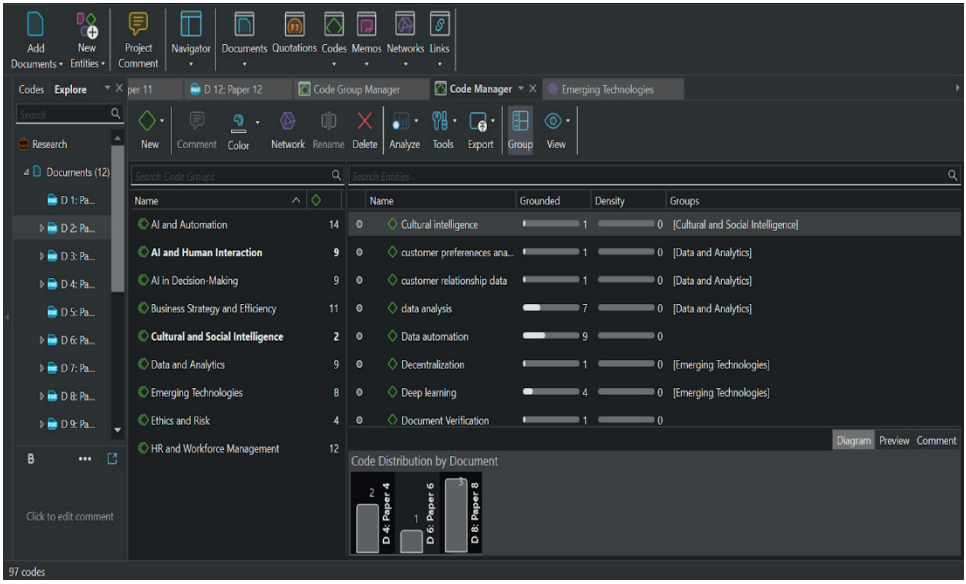
Analysis of Paper - 7 using ATLAS.ti



Analysis of Paper - 8 using ATLAS.ti



Analysis of Paper - 9 using ATLAS.ti



Themes Analysis using ATLAS.ti