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The Role of Artificial Intelligence in Advancing Diversity, Equity, and Inclusion in the Workplace

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Abstract— *Artificial Intelligence (AI) has emerged as an advanced technology with numerous benefits that if appropriately implemented can tremendously benefit humanity in all sectors of life but currently and in the most ideal way, AI technologies should be built in a way that they are representative of the societies they seek to serve. The research investigates how AI-driven workforce analytics influences workplace diversity management strategies. The respondents, each with at least two years of experience, were surveyed using a five-point Likert scale to assess factors impacting their intention to remain with their organization. The study focuses on a sample of 274 employees working in Bangladesh from several departments (HRM, IT, and Production) to find out how the use of AI-enabled workforce metrics impacts the workplace diversity management approaches. Data was collected through a survey and secondary data, and was analyzed using SPSS 20, primarily through Principal Component Analysis (PCA) as well as Cronbach's Alpha for reliability tests. The results show a high positive correlation between the AI enabled workforce metrics and the diversity management strategies underscoring the role of inclusivity and equity in engagement retention among employees. Considering these she results, AI could prove to be instrumental in enhancing the diversity composition of the workforce in organizations, providing critical perspectives for individuals and firms is focused on increasing outreach.*

I. INTRODUCTION

The globe is beginning to experience the onset of a new industrial revolution, which is anticipated to greatly influence industries around the world (Aazam, Zeadally, and Harras, 2018; Soh and Connolly, 2020; Xu, David, and Kim, 2018). In an increasingly globalized world, workplace diversity is no longer an option but a need for company success. Beyond just hiring individuals from different origins, effective diversity management creates an atmosphere where everyone, regardless of identity, feels valued and encouraged to participate. In a constantly shifting environment, this strategy maintains businesses competitive and flexible while fostering innovation and teamwork.

Artificial intelligence is being utilized more frequently in workplaces to enhance task performance and execution (Lee, Davari, Singh, and Pandhare, 2018; Von Krogh, 2018). It is also linked with various computer-based systems and applications that include, among other technologies, machine learning (Chui, Manyika, and Miremadi, 2015), soft computing (Kumar and Thakur, 2012), fuzzy logic systems (Karatop, Kubat, and Uygun, 2015), and intelligent robotics (Liu, Shi, and Liu, 2017), and virtual and augmented reality (Abou-Zahra, Brewer, & Cooper, 2018). AI has emerged as a critical enabler of inclusive practices, from providing objective performance assessments to recommending personalized career development paths. AI provides novel solutions for eliminating bias, promoting equitable opportunities, and improving decision-making processes. AI has emerged as a critical enabler of inclusive practices, from providing objective performance assessments to recommending personalized career development paths. Linking individual development with broader diversity and inclusion objectives, these technologies assist organizations in fostering a fair and supportive workplace for all.

Creating an inclusive organizational culture necessitates effective leadership, and AI aids this process by providing leaders with data-driven insights. Inclusive leadership fosters trust within teams, actively seeks contributions from marginalized perspectives, and embraces a range of viewpoints. Leaders need to acknowledge and understand the impact that diversity in the workplace has on the well-being of employees. The well-being of staff members is an essential aspect of effectively managing diversity. Psychological safety and support systems tailored to the needs of a diverse workforce are top priorities in inclusive workplaces. AI assists by offering flexible work schedules, predicting burnout issues before they escalate, and personalizing mental health care. Prioritizing well-being helps organizations build a resilient workforce, lower attrition, and boost employee engagement.

Diverse groups offer distinct perspectives that enhance problem-solving, creativity, and innovation. But only through effective management techniques can this potential be fulfilled. AI fosters a culture of continuous development, enhances collaboration, and bridges communication and cultural divides. Tools like natural language processing can help multilingual teams communicate more effectively, and real-time analytics can offer insightful data about team dynamics.

This research explores just how businesses could do so with AI integration, which not only helps to remove biases in the workplace while enhancing equity and achieving sustainable growth within the business. It outlines inclusivity on how the personal learning development of each employee could lead to

a better workplace.

II. Literature Review

A. AI integration in the workplace

The term AI refers to artificial intelligence that mimics the cognitive functions of the human brain, such as learning, reasoning, and planning (Lu et al., 2018; Ludgen, 2009). This has made AI the steppingstone of Industry 4.0 (Hecklau et al., 2016). The incorporation of AI in the workplace has transformed how businesses operate now. It has made everyday tasks so easy, such as automating repetitive tasks and analyzing data with precision, which saves time and enhances productivity. These automated tools are particularly effective in team coordination and resource management.

The AI system also helps to simplify or even partake in employees' daily tasks. Especially for huge projects/ activities, AI is a big player in helping the employees. This is only possible if the employees are trained well enough to work with artificial intelligence. Studies also show that HRM can make use of AI to produce benefits for employees and organizations through its various functions (Sekhri & Cheema, 2019). This ensures that employees will be able to handle the demands of the evolving job roles and technological advancements.

With that said, however, the implementation of AI does propose some significant challenges. Many employees are concerned about the potential of AI, to replace human jobs. This leads to some managers and employees having a negative attitude and lack of trust in AI's use within the organization (Frey & Osborne, 2017; Raisch & Krakowski, 2021). Therefore, many people fear that AI will threaten their jobs (Makarius et al., 2020), and thus, the incorporation of AI can cause more stress among employees, lower organizational commitment, and reduce productivity (Brougham & Somayeh A., 2023). Improving clarity on AI's influence on people, organizations, and the industry is crucial for people who are willing to incorporate smart machinery and computerized systems at work.

In conclusion, the integration of AI has a huge potential in the growth of the organization driving more innovation and an optimized and enhanced workplace. However, a balance should be made considering the concerns of the employees regarding AI taking their job placement and instead training them to work alongside the AI to have a much more efficient workforce.

B. Workforce Analytics

Workforce analytics has been formerly dependent on traditional methods of descriptive and diagnostic approaches which used historical data to understand the past workforce trends and its outcomes. The introduction of Artificial Intelligence (AI) with workforce analytics enhances the HR process, improving workforce planning and streamlining decision-making.

While traditional workforce analytics makes use of data driven analysis, it limits the method to an extent. It cannot predict the future dynamics of the workforce; it also fails to capture the nuances of human behavior and complexity of decision making.

Workforce analytics driven by AI does not have these limitations. It incorporates predictive analysis while learning algorithm to forecast the trends that will come up in the future. AI can also predict and identify potential risks all while analyzing historical and real-time data. (G. Namperumal et al, 2022)

An overview of AI integration in workforce analysis is given below:

Staffing forecast can be analyzed by AI-driven analytics. These are analyzed by demand patterns, which helps the Human Resource department to consistently adjust their staffing requirements. AI can also help with task allocation by matching employee skill set with the skills required for the task, this can in turn boost the productivity of the workforce while also avoiding burnouts.

AI can predict and highlight the trends and factors that can/might contribute to turnover, these can include job satisfaction and/or workload (G. Namperumal et al, 2022). Identifying the 'at-risk' employees early on, organizations can then strategize to actively support those employees and lower the rate of turnover. AI driven tools can also highlight employee engagement and schedule feedback to individual needs which can help with employee retention.

Real-time performance tracking can be done with AI tools, which automates the process, providing managers with useful insights and facilities which enhances continuous feedback. This can in turn create a culture of consistent development. It can monitor performance metrics and specify the areas of improvement; this helps the organization by helping the individuals' growth and align them with the organization.

Repetitive tasks can be automated, providing relief to the personnel from the administrative loads. This enables focus on strategic roles. For an example, AI powered chatbots can manage customer queries and an automated function can manage the leave management and expense approval. This can significantly reduce the processing time and improve the personnel's efficiency in handling the functions of administration. (U. Gupta et al, 2023)

C. Personalized Learning and Development

Personalized learning and development have been transformed with the integration of Artificial Intelligence (AI), which offers adaptive and customized learning methods catered to individual needs and their own styles. Through the application of algorithms that evaluate the learning individual's data, artificial intelligence is able to customize both the material and the speed of instruction suited to the learner's needs. This is made possible by the use of machine learning which can assess and analyze the data of the learner; preferences and performance and it can tweak and adjust to enhance the retention of the learner and their comprehension ability.

AI enabled systems can take in vast amount of data and analyze the training data. These systems can the patterns on one's learning and help the employees acquire new skills and knowledge more efficiently and effectively. Let's have a closer look at how AI can enhance L&D. (U. Gupta et al, 2023)

The AI-integrated system can analyze employee performance, skills, learning patterns and then it can recommend and create an individualistic learning module (U.

Gupta et al. 2023). Employees in different positions and diversified levels of expertise can receive training which is catered to them and their needs. This can in turn improve the employee's knowledge retention and have them engaged. For large corporations, this integration is of great value as the organization will have a workforce with diverse skill set and requirements across its various departments.

AI-integrated systems can use data analytics to pinpoint the skills that employees currently possess; it can also compare them to the required skills for the future tasks. This can allow the HR personnel to make a specific and targeted development program, this can help the employees bridge skill gaps and, in the future, align them with the organization's needs.

An AI algorithm can assess the employee performance; this automated system can then provide instant feedbacks and can also customize each recommendation catered to each individual for their improvement. This can also help the employees track their own performance

e and progress and get individual guidance for their own development. (U. Gupta et al, 2023)

NLP algorithms can be used to make language modules for learning applicants that can provide real time feedback on grammar, vocabulary and pronunciations. This can help the employees practice their language skills and they can also get personalized guidance, which can help in improving their communication abilities.

D. Inclusive Leadership and Decision-making

Inspired by the term 'Inclusive,' the inclusive leadership style emphasizes the importance of recognizing the input from others. Inclusive leadership can be a very effective style of leadership in certain settings. However, there are similar definitions of inclusive leadership in the field, Bourke and Dillon (2018) define this style of leadership as a strategic approach that priorities the significance of diversity, equity, and inclusion within organizations. Inclusive leaders recognize their own biases and intentionally strive to include diverse perspectives in their decision-making processes.

Inclusive leadership, as noted by Shore et al. (2018), goes beyond simply recognizing diversity. It involves creating a cultural atmosphere that not only values diversity but also cultivates a feeling of belonging for every individual. This style of leadership is essential in today's interconnected and rapidly changing business environment. Companies that adopt inclusive leadership tend to see enhancements in worker involvement, innovation, and general effectiveness. This leadership strategy is centered on promoting and appreciating diversity in a leadership role.

Inclusive leaders recognize and value the unique contributions of each team member. This is crucial for creating an environment where everyone feels valued and is encouraged to share their viewpoints, leading to enhanced creativity and improved organizational results.

Organizations increasingly depend on technology and data-informed decision-making due to the digital industrial revolution. Hewlett, Marshall, and Sherbin (2013) describe this period as one marked by rapid developments in artificial intelligence, machine learning, big data, and a range of technologies that are transforming various sectors. Leaders must skillfully navigate complex changes while guaranteeing that all employees are valued and included.

Additionally, in the realm of digital technology, as highlighted by educators like Shore et al. (2018), inclusive leaders must be equipped with the expertise to effectively manage diverse teams and make the most of each member's unique talents. This involves recognizing and addressing unconscious biases, as well as actively seeking out varied viewpoints and ensuring that all voices are fairly included. By adopting this strategy, leaders can create organizations that are more innovative and versatile, better positioning them to navigate the complexities of the digital industrial revolution.

The importance of embracing inclusive leadership to boost creativity and productivity is paramount. Research by Hewlett et al. (2013) shows that teams composed of individuals with diverse backgrounds and viewpoints are more likely to question conventional wisdom and generate innovative solutions to intricate challenges. The expertise and capabilities of inclusive leaders allow them to foster an atmosphere that encourages every team member to share their distinct perspectives. Consequently, more imaginative and effective solutions emerge, aiding the organization in achieving its objectives.

According to inclusive leaders, it's essential to incorporate a variety of perspectives in decision-making procedures. Implementing strategies such as inclusive meetings and discussions enables decisions to be made based on comprehensive information and diverse ideas, ensuring every team member has an opportunity to express their views. This mindset not only improves how decisions are made but also fosters a feeling of belonging among staff.

Inclusive decision-making is more than mere inclusion of various opinions; it necessitates actively pursuing and appreciating these ideas. Inclusive leaders foster an atmosphere in which every team member feels at ease expressing their thoughts, and where these opinions are sincerely considered. This results in improved decision-making and cultivates a culture characterized by trust and collaboration.

Consequently, to enhance inclusive decision-making, organizations might adopt rules and practices that emphasize the participation of all individuals. This could mean creating diversity groups or committees that provide insights on key matters, or implementing anonymous feedback mechanisms that allow employees to share their thoughts without the fear of repercussions. Implementing these strategies can facilitate the development.

E. Promoting Fairness

Artificial intelligence (AI) is becoming a game-changing force in various sectors, enhancing decision-making and optimizing tasks to levels of accuracy and efficiency never seen before. To successfully leverage AI's potential while ensuring its implementation is fair and impartial, these issues need to be addressed.

A core principle of AI Ethics is Equity, this aims to ensure that AI systems treat everyone fairly and does not discriminate against any particular groups. This principle is crucial in contexts where AI systems influence opportunities or resources,

as biased decisions can stack up upon existing social inequalities (Dwork et al., 2012). Achieving fairness in AI systems is a complex objective that requires careful attention to the data used for training the models, the design of algorithms, and the criteria for decision-making (Ruggieri, 2014).

It cannot be stressed enough how crucial fairness is in AI, as biased AI systems can yield discriminatory outcomes and negatively impact marginalized groups (Baezconde-Garbanati et al., 2020). Maintaining fairness is essential to build confidence in AI systems, which is crucial for their broad adoption and acceptance. Therefore, it is necessary to address fairness issues to foster an atmosphere that enables the responsible application of AI across different industries and to enhance human welfare.

To recognize AI systems that are just and equitable for everyone, and do not reinforce discrimination or cause harm, it is essential to address bias within AI. By recognizing the various forms of bias that are present, developers and researchers can work towards creating AI systems that are fairer and more accountable, and then implement strategies to minimize those biases.

The rapid advancement and widespread adoption of Artificial Intelligence (AI) have led to many benefits. However, the swift emergence of concerns regarding the ethical dilemmas linked to biased AI is alarming in its own right. The extensive negative consequences that could arise from discriminatory AI systems encompass discrimination, stereotyping, social inequality, and a range of other significant issues. Understanding the impact of AI bias in important areas like healthcare, employment, criminal justice, and finance is essential to reduce potential risks and harms.

Dangers and Negative Effects of Biased AI Across Different Fields:

When developing AI systems focused on ethics and accountability, it is crucial to prioritize fairness. To avoid perpetuating bias and discrimination, it is important that AI models and algorithms ensure equitable and just treatment of all individuals. Examining and measuring the biases involved in decision-making processes is a significant challenge when assessing fairness in artificial intelligence. Numerous metrics and measures have been suggested to assess the fairness of AI models; however, accurately defining fairness and selecting suitable metrics can prove challenging, especially given the variety of application domains.

Various Metrics and Measures of Fairness:

Statistical Parity (Demographic Parity): This measure evaluates whether favorable outcomes (such as job placements or loan approvals) are distributed fairly among groups distinguished by potentially discriminatory characteristics (such as race or gender). The primary aim is to create a neutral environment for all demographic groups (Zafar et al., 2017).

Equalized Odds (Equal Opportunity): This method aims to reduce bias in both directions (Hardt et al., 2016) by decreasing the occurrence of both false positives and false negatives.

Individual Fairness: In the context of individual fairness, we focus on the similarities among people and aim to provide them with equal treatment. This requires that individuals who are otherwise similar receive the same treatment, irrespective of their social group (Dwork et al., 2012).

Conditional Independence: This metric assesses if the actual value of a specific characteristic (like credit score) can predict the target variable (like loan default) independently of the sensitive characteristic. It ensures that the model's selection is based on relevant factors in the context rather than the sensitive attribute itself (Kusner et al., 2017).

Sources of Bias in AI

The choices and forecasts generated by Artificial Intelligence (AI) systems are developed using large quantities of data. Inadvertently introducing biases into AI models due to this data-driven learning approach may result in unexpected negative consequences. To properly address and mitigate these challenges, it is crucial to first recognize the sources of bias in AI.

Addressing Bias in AI

Acknowledging and tackling bias in artificial intelligence is crucial for ensuring equitable and just outcomes for all users as AI technologies become increasingly integrated into various industries. If left unchecked, bias in AI can result in discriminatory practices, increased social inequality, and a lack of trust in AI systems. Various approaches and techniques, such as data preprocessing, adjustments to algorithms, and adversarial testing, have been suggested to reduce bias in AI systems. Furthermore, promoting diversity and inclusivity within development teams is essential for minimizing bias and encouraging responsible AI development.

Ethical principles need to be integrated into the creation and implementation of AI technologies to ensure they are utilized responsibly. AI creators need guidance for making ethical choices to avoid discrimination, bias, and other adverse societal impacts. By carefully considering the societal effects and possible consequences of AI applications, trust can be fostered with users while minimizing harmful outcomes.

F. Career Development

Numerous contemporary organizations recognize that fostering diversity entails more than just adopting fair hiring practices; it also requires creating inclusive pathways for career progression. A focused approach to professional growth allows individuals from varied backgrounds to excel and reach their fullest potential. By incorporating AI into career development, organizations can align employee advancement with their diversity and inclusion objectives, promoting a fair and successful workplace. AI is revolutionizing career development by empowering companies to adopt more inclusive and efficient methods for nurturing employee growth. AI algorithms can analyze extensive datasets, including performance indicators and feedback, to identify trends and offer insights into improving diversity and inclusion management. These technologies contribute to cultivating equitable workplace cultures by pinpointing areas needing improvement in inclusion efforts and suggesting tangible solutions Presbtero and Teng-Calleja (2022) highlight the impact of AI on employees' job attitudes and career behaviors from the perspective of career self-management. For example, platforms powered by AI can offer personalized training programs tailored to individual learning styles, enabling

employees to improve their skills and succeed in their positions. Workers who view AI as an asset that boosts their career opportunities are generally more open to embracing its use, highlighting the need to manage career expectations and perceptions in the era of AI. AI-enabled chatbots not only provide training on diversity, equity, and inclusion but also quickly address employee inquiries, fostering a more responsive and supportive environment. These systems help keep staff informed about their progress in professional development, which diminishes uncertainty during career transitions and boosts engagement. AI systems must undergo thorough regulation and evaluation to prevent biased outcomes and safeguard sensitive employee information. When utilized effectively, AI has the capability to seamlessly integrate diversity and inclusion within career development frameworks, enhancing both employee satisfaction and organizational strength.

G. Workplace Diversity Management

Workplace diversity usually refers to the differences between people, such as culturally and linguistically, within an organization. Diversity includes both how they perceive themselves and how people are perceived by others. Diversity management in the workplace is to create an environment in which people from various backgrounds may work together productively and contribute to common goals. This then could help employees reach their potential, which in return helps the organization reach its goals.

1) Employee Well-Being

Diversity and Employee well-being are two critical points that enhance employee engagement in the workplace. Employee well-being is mostly based on psychological safety. It can ensure that people feel comfortable in conversations, voice their opinions, and participate in discussions without fearing discrimination or harassment. Businesses that put their first promote a welcoming atmosphere where different viewpoints are respected and heard.

Tailored support, such as flexible work schedules, mental health services, and culturally sensitive policies, ensures all employees receive the necessary assistance. For example, accommodating religious practices, family duties, or neurodiverse needs shows an organization's dedication to inclusivity. Organizations that put an employee's well-being first, notice a decreased rate of burnout, higher levels of engagement, and improved productivity, all of which lead to a more vibrant and healthier workforce. The growth of experience and the growth of institutions globally is equally reliant on the well-being of employees (Zheng et al., 2015).

2) Team Performance

Diverse perspectives foster innovative solutions that would not surface in more homogeneous groups. A team made up of people from various professional and social backgrounds, for instance, is more likely to approach problems creatively. Teams with diverse members are better at collaborative thinking since different perspectives lead to a more thorough appraisal of ideas and hazards. According to studies, diverse teams can make more faster and accurate decisions by utilizing their member's shared intelligence.

If an organization can recognize the differences between its employees, it will then be able to promote work practices that do not exclude certain cultures. Also, if the company can develop desirable work practices that encourage employees to work together despite their differences, then no one will feel left out or unsure about their roles in the organization. This will then help to increase productivity among the employees (McLauren, 2012).

3) Conflict Management

Differing opinions are part of diversity, and if they are not maintained, they may result to conflict. Conflicts, if handled correctly, may lead to a learning experience that promotes greater comprehension and closer bonds between people. Providing employees with conflict resolution training gives them the ability to resolve conflict more effectively. Addressing workplace conflicts while preserving professional relationships involves skills such as active listening, empathy, and negotiation. By establishing clear and open lines of communication, issues can be resolved before escalating into more significant problems. Employees are motivated to voice their concerns and collaboratively identify solutions through routine discussions and feedback sessions. Training employees on differences in cultures plays a crucial role in reducing misconceptions and prejudices that can result in disputes. Awareness initiatives encourage empathy and respect, creating a space where diversity is embraced rather than viewed as an obstacle. Successful conflict resolution transforms disputes into opportunities for growth, team cohesion, and the reinforcement of inclusive values.

H. Research Gap

Addressing research gap is absolute, it ensures that the AI tools that are integrated are for progress and not for inequality. Identifying these research gaps and directing the aspects correctly for future exploration will maximize the tech's ability to foster inclusivity in the work place. These gaps might and not be limited to:

AI algorithms are most times trained on historical data that might come with bias, since these historical data might be specific towards one group of people. These biases can then project discrimination, identifying these gaps are critical in order to mitigate any form of unfair pattern, that too without pushing back performance.

Algorithms sometimes contain a "one-size-fits-all" model, these types of models can ignore things like cultural nuances and localization which differ from workplace to workplace around the globe. The research should focus on fostering an adaptable AI algorithm that can fit in different situations and align with the diversity of different localities.

Employee Perception: Since AI integration is completely new in this time and age, employees are often skeptical of it. Since AI do not face accountability due to its lacking. The lack of trust towards the system can effectively undermine the success of AI integration. More efforts should be given so that the AI system allows the stakeholders to understand and align with the decisions driven by AI.

Complex Diversity Scenes: AI driven models are straightforward, the diversity metrics can be established,

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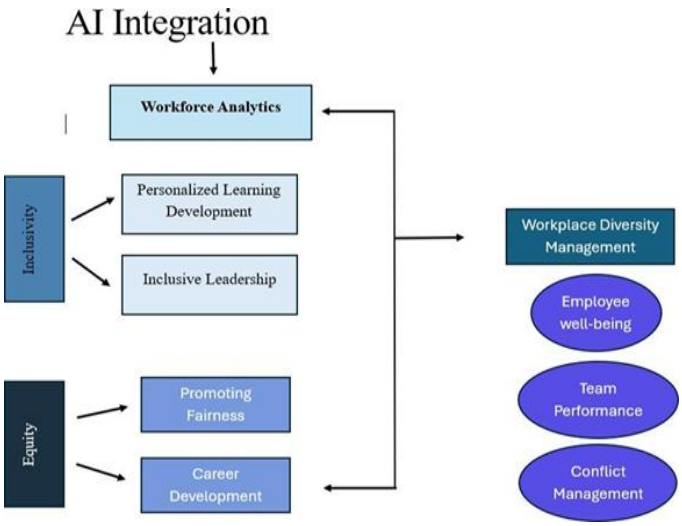
however, it cannot properly understand complex diversity issues, these issues can include implicit biases and intersectionality. Subtle and context driven factors are included, these make scenarios more challenging for AI to understand

III. Framework



Hypothesis Development:

H1: Integrating inclusivity AI has positive impact on workplace diversity management.

H2: Adding equity ensuring AI has positive impact on workplace diversity management.

Research Question:

1) Does integrating AI helps in diversity management?
2) What role can AI play in fostering more inclusive workplace culture?
3) How employees perceive the use of AI in promoting workplace diversity?
4) How integrating equity AI continues to the diversity management?

IV. Methods

The motive behind selecting these respondents as a sample is that they all had experience in the specific departments with at least 2 years of experience hence will provide information based on recent scenarios and based on their experiences. This guarantees that the information presented is based on contemporary, real-world situations and accurately represents the respondents' experiential knowledge. The sample was obtained from employees in Bangladesh, specifically focusing on individuals with experience in HRM, IT, and Production. The sample frame theoretically encompassed the entire population of expert professionals in Bangladesh.

The data was gathered through a standardized, non-comparative questionnaire employing a five- point Likert scale from "Strongly Disagree" (1) to "Strongly Agree" (5) to assess factors affecting employees' intention to remain with their organization. Three hundred and ten questionnaires were disseminated to individuals with business or financial expertise, resulting in 274 fully completed and usable responses, which corresponds to a response rate of 88.39%. The response rate is significantly elevated compared to standard surveys involving senior management, which generally exhibit lower response rates (Menon, Bharadwaj, and Howell, 1996).

A. Sample Selection Process:

Respondents were chosen based on their experience in designated departments, guaranteeing that all participants possessed a minimum of two years of pertinent experience. This selection criterion was formulated to elicit informed responses grounded in current, practical knowledge. The sample is anticipated to precisely reflect the population of employees in the business and IT sectors in Bangladesh.

B. Sample Size Consideration:

To ascertain that the sample size of 274 is sufficient and representative of the larger population, a theoretical formula must be employed to validate the sample's statistical integrity. In the absence of such validation, the reliability of the results may be called into question. Consequently, the demographic data of the employees show their accuracy of knowledge to ascertain the sample size, ensuring its adequacy for generalization.

C. Pre-testing of the Questionnaire:

Before distributing the final survey, the questionnaire underwent pre-testing with a small cohort of five respondents to assess clarity, relevance, and efficacy in obtaining the intended information. Pre- testing is a crucial phase for identifying ambiguities or issues in the questions that may impact the quality of the responses.

For the study, SPSS 20 has been used for statistical analysis. The demographic information is given below:

TABLE 1: Demographic information

Factor	Segmentation	No. of respondents
Gender	Male	155
	Female	119
Age	Under 30	35
	30-40	136
	41-50	88
	Above 50	15
Department	HRM	125
	IT	106
	Production	28
	Others	15
Work experience	2-4 years	104
	5-7 years	109
	8-10 years	61

Source: Author's construction based on the conducted survey

V. Findings and Analysis

The combined analysis of gender and age distribution in the sample (N=274) provides a complete picture of the demographic composition. The gender distribution shows a modest skew towards one group, most likely males, with a mean of 1.4343 and a standard deviation of 0.49657, indicating moderate variability. The skewness is corroborated by a positive skewness value of 0.267. Meanwhile, the age distribution reveals a concentration of younger people, with a mean age of 2.3029 and a positive skewness value of 0.184. The

standard deviation of 0.76042 indicates a wide age range, whereas the kurtosis of .265 supports a leptokurtic distribution. Understanding these demographic aspects is critical for determining how various groups, departments, and work experiences will interact with workplace diversity management.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Gender	274	1.00	2.00	1.4343	.49657	.267	.147	1.943	.293
Age	274	1.00	4.00	2.3029	.76042	.184	.147	.265	.293
Department	274	1.00	4.00	1.7555	.84865	1.034	.147	.497	.293
Work experience	274	1.00	3.00	1.8431	.76137	.272	.147	-1.229	.293
ValidN (listwise)	274								

To test the accuracy of data, Principal Component Analysis has been used and the following results are found.

Variable	Items	Factor loading	KMO Test of Adequacy	Bartlett's Test of Sphericity	Sig.	Cronbach Alpha
WA	Q1	.751	0.747	168.872	.000	0.696
	Q2	.723				
	Q3	.720				
	Q4	.698				
WAI	Q5	.749	0.816	396.255	.000	0.782
	Q6	.704				
	Q7	.569				
	Q8	.682				
	Q9	.726				
	Q10	.718				
WAE	Q11	.690	0.735	251.697	.000	.728
	Q12	.700				
	Q13	.675				
	Q14	.706				
	Q15	.687				
WDM	Q16	.645	0.761	322.503	.000	0.767
	Q17	.764				
	Q18	.736				
	Q19	.735				
	Q20	.716				

Extraction Method: Principal Component Analysis Source: Field survey, 2024
Source: Author's construction based on the SPSS data results

The Kaiser-Meyer-Olkin (KMO) test of adequacy for individual variance is 0.500 or higher in each case, indicating that there is sufficient correlation between the items of each variable and certifying the data set's suitability for further analysis. Bartlett's sphericity test confirms the correlation matrices' significance, with α close to zero. Reliability testing is critical in scientific research to determine the consistency of measurements. In this study, Cronbach alpha values for all constructs are above 0.6, indicating good internal consistency.

The result of the F-test (table 3) shows that all independent variables have a joint significant positive impact on Workplace diversity management. The level of significance is zero. The D test shows that there is no autocorrelation problem exists in this analysis. The standard deviations are also reasonable which means data is more concentrated. Hypotheses' testing has done by generating T-Statistics for significance testing. The significance level for the two-tailed t-test was 5% and the path coefficient will be significant if the T-Statistics is larger than 1.96. All the hypotheses have a significant individual impact on employees' intention to stay.

Independent Variable	Dependent Variable	R	F	Sig.	t-test	Sig.	D	Beta
Workforce Analytics	Workplace diversity Management	.938[a]	658.173	.000	10.356	.000	1.873	.560
Inclusivity					6.076	.000		.276
Equity					3.571	.000		.151

The regression model has been drawn by SPSS analysis. The significance level for the two-tailed t- test was 5% and the path coefficient will be significant if the T-Statistics is larger than 1.96. Here all the hypotheses have been accepted and have a significant positive relationship with the dependent variable.

VI. Conclusion

This study has provided much valuable insight into the relationship between AI-driven workforce analytics and workplace diversity management strategies, considering employees from diverse sectors in Bangladesh, including HRM, IT, and Production. This analysis presents the demographic data: the majority being male and relatively young within this sample. This therefore would insinuate that diversity management policies have to be done to fit such a demographic composition. These findings also note a positive relationship

between the metrics for AI-enabled workforce versus those of diversity management, with great potential to ensure inclusivity and equity within organizations.

The results show that the adoption of AI-driven analytics can play a pivotal role in improving diversity management practices, thus creating an inclusive and equitable workplace. By applying AI technologies, organizations can gain a better understanding of their workforce composition, enhance employee retention, and meet diversity goals more effectively. AI metrics also help an organization manage diversity in a more data-driven manner by helping to identify gaps and opportunities for improvement in workforce engagement.

The study shows that there should be a continuous development and integration of AI technologies with a focus on diversity, equity, and inclusion in the future. Further research could explore how these AI tools can be further optimized to represent and serve diverse workforce groups across different regions and industries. Moreover, with a constantly evolving workforce that is becoming more diverse, the role of AI in managing diversity will no doubt continue to evolve in complexity, requiring continuous adaptation and refinement of AI models and strategies.

Therefore, this study has brought to the fore the importance of AI in shaping the future of diversity management at the workplace. Powered by AI-driven analytics, organizations can improve employee engagement and retention while contributing toward creating an inclusive and diverse work environment.

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