A Proposed Conceptual Framework for Understanding Gender Disparities in Artificial Intelligence Adoption

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DOI: https://dx.doi.org/10.47772/IJRISS.2024.814MG0017

Received: 05 November 2024; Accepted: 09 November 2024; Published: 10 December 2024

ABSTRACT

This conceptual paper investigates the issue of gender disparities in artificial intelligence adoption within organizational settings. It highlights the importance of addressing these differences for workplace inclusivity and performance. The problem lies in the unequal of artificial intelligence adoption between male and female employees' perspectives. The proposed framework is developed through a review of existing literature highlights differences between male and female employees in their artificial intelligence adoption. The methodology is based on conceptual analysis, derive on previous studies to build a comprehensive understanding of gender disparities in artificial intelligence adoption. An Independent T-Test will be used to analyze the disparities between male and female Malaysian sports graduates in testing the hypothesis development. By addressing these disparities, the paper provides insights into creating inclusive strategies that promote gender equity in the workforce. Overall, the findings aim to guide both researchers and practitioners in designing gender equality policies that address challenges to equal adoption of artificial intelligence.

Keywords: Artificial Intelligence Adoption, Gender Differences, Sports Graduates, Technology, Conceptual Framework

INTRODUCTION

In this revolutionary era, technological advancements have the potential to profoundly change people's lives. The adoption of technology significantly influences various aspects of life, especially within both public and private organizations. Every organization plays a pivotal role in harnessing technology to remain competitive in the organizational landscape. By leveraging technology in the workplace, it can ensure the tasks are completed effectively. According to Ahmad (2018), technology is recognized as a capacity to facilitate the completion of tasks or product output, including electronic devices or robots. In the meantime, Lamsah et al. (2021) emphasize that technology can also refer to information and multimedia systems such as computers, the internet, networks, and social media. The rapid advancement of technology in the Fourth Industrial Revolution (IR 4.0) has brought artificial intelligence as an increasingly significant element of organizational operations. The broad implementation of artificial intelligence enables organizations to attain advanced levels of innovation, thereby boosting operational efficiency.

The use of artificial intelligence across various industries has enabled processes that previously required considerable time and effort to be performed faster and more accurately. Based on Decoding Global Talent 2024 indicate 60% population in Malaysia utilizes artificial intelligence in diverse activities, including marketing, media, digitalization, transportation, and hospitality industry. Notably, 44% of Malaysians use artificial intelligence on a monthly basis, exceeding the global and Southeast Asian average of 39% (Alias, 2024). Wijayati et al. (2022) stated artificial intelligence refers to the implementation of advanced

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume VIII Issue XIV November 2024 | Special Issue on Management

technological mechanisms crafted to stimulate human cognitive functions and navigating potential constraints. It comprises those are machine learning, robotics, natural language processing, and planning. These tools are applied to most daily human activities including guidance, data acquisition, and sorting. Sofia et al. (2023) indicates proficiency in artificial intelligence technology is crucial for employees to effectively handle tasks of varying complexities. Acquiring these technological skills provides individuals a substantial edge in the workplace by facilitating rapid and efficient task execution. As artificial intelligence systems advance, their capacity to analyze large datasets and offer predictive insights grows increasingly invaluable (Paigude et al., 2023). This emphasized the capability not only enhances decision-making but also reveals latent trends and patterns. The flexibility of artificial intelligence allows for continuous learning and enhancement, which is crucial for stimulating work environment. Consequently, the adoption artificial intelligence drives both individual and organizational growth to unprecedented levels.

Additionally, the swift progress of artificial intelligence has generated a pressing demand for graduates to possess specialized skills that align with the evolution of the technology. Research by Ahn et al. (2022) indicates men exhibit a stronger self-assessment of their proficiency in artificial intelligence compared to women. This difference in self-evaluation may influence the degree of confidence in pursuing the duties related to artificial intelligence. Besides, Schwab and Zahidi (2020) in the Future of Jobs report by the World Economic Forum noted that there will be a displacement of 85 million jobs due to changes in the distribution of work between humans and machines. Graduates who do not acquire necessary technical skills or fail to adapt to artificial intelligence often discover themselves at a disadvantage in the job market (Marr, 2022). The skills gap between recent graduates and the demands of artificial intelligence is growing, which is contributing to a higher rate of employee turnover. This scenario not only impacts their employability but also hampers their job performance when they fail to match the industry's requirements. Consequently, this poses challenges in sustaining a good performance of an organization.

In conclusion, understanding the gender differences in artificial intelligence adoption among sports graduates is crucial for addressing the evolving demands of the job market. As technology continues to reshape organizational setting, it is vital for the graduates to equip with the necessary skills in thriving the organizational challenges. By examining these disparities, this study contributes valuable insights into how male and female graduates engage and utilize with these technologies in their organization. This will guide future strategies for workforce development and educational reform in the era of industrial revolution (IR) 4.0. Thus, this study aims to examine the gender differences in artificial intelligence adoption among Malaysian sports graduates.

LITERATURE REVIEW

Artificial Intelligence Adoption

Artificial Intelligence is a revolutionary technology with wide-ranging implications in fields such as business, health, education, and others. According to Alkatheiri (2022) artificial intelligence refers to the creation of a computer system with the ability to carry out tasks often performed by humans, such as learning, problem-solving, and decision-making. As stated by Rayhan (2023), artificial intelligence encompasses several domains such as machine learning, natural language processing, computer vision, and robotics. This is aligned with Shetty et al. (2023) that also indicates artificial intelligence encompasses a variety of elements, such as natural language processing (NLP), deep learning, and machine learning. This field plays a role in achieving the objective of surpassing human cognitive capabilities. The rapid advancement of artificial intelligence technology has resulted in a surge in academic interest in comprehending not only the concepts and definitions, but also its practical applications in real-world scenarios.

Apart from, artificial intelligence in today’s world cannot be underestimated. This is due to artificial intelligence has the capacity to transform the industry through enhanced efficiency, productivity, and

creativity (Solanki et al., 2022). The significance of artificial intelligence in the contemporary world is immeasurable. For instance, using artificial intelligence to analyse vast quantities of data can result in more informed decisions (Haleem et al., 2022). It also been increasingly adopted to enhance the performance and decision-making in the sports context. It is aligned with Esteva et al. (2021) that mentioned artificial intelligence has the potential to assist in the diagnosis of athlete injuries and the analysis of sport performance. The potential of artificial intelligence adoption in an organization can positively shape the knowledge and attitude of employees, leading to improve their well-being.

In a recent study by Rane et al. (2023), artificial intelligence can be used by employers to deliver flexible learning experience that suited to employees' responsibilities. This enables employees to perceive the learning methods more relevant and effective. In turn, it leads to the improvements of efficiency and performance within the organization. As stated by Gligorea et al. (2023), artificial intelligence plays a role not just in educating employees but also demonstrate the changing learning needs over time. This signifies that employees can learn faster and perform better in their work through the adoption of artificial intelligence technology. Sharma et al. (2022) supported that adopting technology in practical learning could empower employees align with a 21st century competitive standard. As a result, artificial intelligence not only enriches the learning process but also plays an important role in increasing the value and contribution of employees in the job market and organization.

Previous Studies on Gender Disparities in Artificial Intelligence Adoption

In a worldwide, artificial intelligence adoption has grown rapidly over the decades and has greatly changed many aspects of life and job today. It has become one of the factors that contribute to reshape the job positions. The effectiveness of using artificial intelligence in an organization depends on the acceptance and involvement of various parties, including male and female employees. The disparities of male and female employees in interacting with the technology has shown a major concern that could influence their performance in the organization. Some of the previous studies indicate a significant difference in the usage and acceptance of artificial intelligence among male and female employees (Brussevich et al., 2018; Jo & Park, 2023; Peter et al., 2021).

Based on a past study undertaken among male and female CEO by Jianqiang et al. (2024), the result indicates a significant difference in artificial intelligence adoption by gender. Male CEOs are inclined to implement a greater amount of artificial intelligence technology compared to female. This is attributed to male CEOs frequently show greater level of ability to manage technology than female CEO. This is supported by Novozhilova et al. (2024) that also demonstrates a significant difference between male and female's perspective in the usage of artificial intelligence. Male employees have a higher level of comfort with artificial intelligence relative to female employees. The gender differences exist due to the attitude of reluctant to change among male and female employees towards artificial intelligence technology. Apart from that, Jetha et al. (2024) signifies jobs involving machine learning are more common among female than male employees. Past research stated that artificial intelligence influences female employees to experience high social interaction than male employees (Chen et al., 2023). Nonetheless, a study among entrepreneurs in Small Medium Enterprises (SMEs) at Slovenian shows a non-significant gender difference in the usage of artificial intelligence (Rožman & Tominc, 2024). Employees feel that the clear understanding of the artificial intelligence's roles facilitate their similar perception in the organization. This is similar to a study undertaken by Hammad (2024) that shows an equal percentage between gender in the adoption of artificial intelligence. The researcher stated that males and females' employees have a similar capability in using artificial intelligence technology. This would reduce their feeling of incompetent with the task and responsibilities given by the employer. By implementing strategic planning, employees will leverage their expertise to ensure long-term retention within the organization. From the discussion, it provides overview that genders influence the understanding and abilities in the usage of artificial intelligence.

Ha1: There is a significant gender-based difference in artificial intelligence adoption.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume VIII Issue XIV November 2024 | Special Issue on Management

Proposed Research Framework

This study proposes the following conceptual framework to show the gender disparities in artificial intelligence adoption.

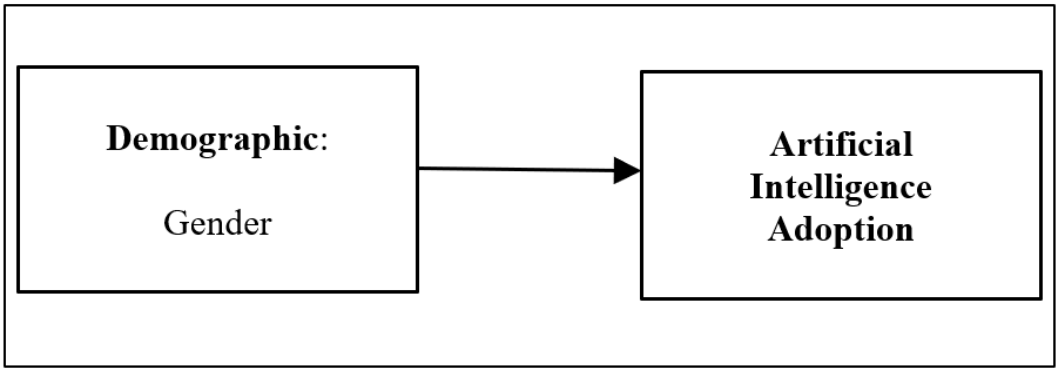

Figure 1: Conceptual Framework for Gender Disparities in Artificial Intelligence Adoption

Underpinning Theory

According to Adam (1965), equity theory is about fairness in the workplace. It explains how employees feel motivated when they believe they are treated fairly. Based on the theory, employees compare what they contribute to their job such as skills and time with what they get in return likes recognition and career opportunities. They also compare this balance to what others are getting. Employees assess their satisfaction based on how fairly they perceive they are being treated in comparison to others. Tanjung et al. (2022) stated employees who feel that their efforts are recognized fairly tend to be more satisfied. Conversely, employees may experience dissatisfied when they notice others who execute similar contributions received greater rewards. In this study context, artificial intelligence adoption between male and female employees can create a sense of inequity that impacts job satisfaction and performance. For instance, when female employees perceive they are receiving fewer opportunities for artificial intelligence adoption than male, this imbalance may lead to feelings of unfairness. As a result, it may reduce employees' motivation to engage with artificial intelligence technologies within organization. It fosters a more equitable working environment that promotes the active participation of both genders in artificial intelligence adoption in improving job performance. By addressing these gender disparities in artificial intelligence adoption, organizations can enhance perceptions of fairness among employees.

METHODOLOGY

In this study, quantitative research using a survey design will be used to examine the gender differences of artificial intelligence adoption among Malaysian sports graduates who are working in the public and private organizations. This study will utilize a stratified random sampling technique in determining the number of samples to avoid bias. The statistical analysis that will be used to confirm the hypothesis will be the Independent T-Test.

CONCLUSION

This conceptual paper has explored the gender disparities in artificial intelligence adoption, particularly focusing on Malaysian sports graduates working in various organizations. By reviewing existing literature, the study underscores significant differences between male and female perspectives regarding artificial intelligence adoption. The findings highlight the need to address these disparities to foster workplace productivity and enhance job performance. It is essential for graduates to be equipped with necessary skills to meet the industry demands as technology will always change with the passage of time. Understanding gender-specific challenges in AI adoption not only contributes to gender equity but also enhances overall

organizational efficiency and competitiveness. Organizations can use the insights from this research to implement policies that actively promote gender diversity in AI-related roles. These policies might include setting gender quotas for AI positions, offering mentorship programs, or providing resources for women to pursue higher-level positions in technology. By focusing on these areas, organizations can promote gender equity in AI adoption, ensuring that both men and women can contribute equally to the technological progress of the industry. The proposed framework and hypothesis testing (through an Independent T-Test) will provide deeper insights into how these disparities can be addressed, leading to more inclusive technological adoption in the workforce.

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