Chapter 18
The Assessment of Artificial Intelligence for Business Performance in Bangladesh

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ABSTRACT

In Bangladesh, improving small and medium enterprise (SME) performance is still an uphill task. The study aims to explore the effects of AI on the performance of small and medium business organizations. With advanced statistical analysis, the study highlighted the significant effects of artificial intelligence on the performance of small and medium enterprises by accepting all the proposed hypotheses. Additionally, effective business management (EBM) showed the role of a partial mediator, since artificial intelligence directly and indirectly held an association with small and medium enterprise performance. Moreover, the authenticity of the study was supported by confirmatory factor analysis (CFA) and structural equation model (SEM) which were represented based on model fit exponents, composite reliability, convergent validity, and discriminant validity. The study ended by providing theoretical and managerial implications that will assist business owners, managers, stakeholders, and policymakers in improving their business performance.

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INTRODUCTION

Artificial intelligence emerges not as a novelty but as the magnetic force guiding today's business environment at the dynamic junction of time-tested economic concepts and cutting-edge technology (Enholm et al., 2022). The phrase "artificial intelligence" has an interesting paradox. Its fundamental definition, according to the Oxford Language Dictionary, implies that it was manufactured by humans rather than occurring naturally, whereas a secondary meaning suggests dishonesty, a quality with a long history in human conduct. This comparison captures the intricate nature of our connection with AI, which is both a product of human invention and a mirror of human complexity (Trolice et al., 2021). The term artificial intelligence describes the creation of computer systems that can simulate human cognitive processes, including learning, problem-solving, and decision-making, as it goes beyond simple calculation and aims to provide machines with intelligence-like abilities so they can adjust, learn, and develop on their own (Kok, 2009).

Artificial intelligence is the catalyst in the sweeping tide of technological advancement, altering not just how businesses run and economies function but also how individuals and communities interact with each other in the age of technology (Loureiro et al., 2021). Artificial intelligence helps management delegate decisions by seamlessly integrating with management skills, improving resource allocation, and encouraging better-informed, strategic judgments (Feuerriegel et al., 2022). The race to develop artificial intelligence technology is picking up speed throughout the world since potential applications include industry, energy, healthcare, education, and finance, and for all the sectors the entire amount invested in AI for the first half of 2018 was $43.5 billion (Mou, 2019).

A diverse model that illustrates the benefits of AI-enabled organizational culture, leadership, and employee training on how they think of AI-assisted workload reduction, which in turn improves employee engagement and, in the modern, dynamic work environment, improves company performance (Rožman et al., 2023). Diminished cognitive workload resulted from applying the algorithm's guidelines, but quality issues with situational awareness emerged, indicating the potential of AI integration to improve human performance in intricate systems, broadly applicable to domains requiring real-time contextual filtering of spatial-temporal information. (Zak et al., 2022). The study shows that neural correlates have the potential to serve as a gauge of explanatory efficacy in tasks involving perception, with 62.4% accuracy in identifying significant hemispheric neural signal differences in the user study. This finding has broad implications for comprehending the relationship between humans and artificial intelligence (Kim et al., 2020). Diminished cognitive workload resulted from applying the algorithm's guidelines, but quality issues with situational awareness emerged, indicating the potential of AI integration to improve human performance in intricate systems, broadly applicable to domains requiring real-time contextual filtering of spatial-temporal information (Buettner, 2013). Ultimately, achieving dependability, safety, and trustworthiness in applications is crucial to promoting self-efficacy, mastery, creativity, and responsibility within the Human-Centered Artificial Intelligence (HCAI) framework. In order to improve human performance, it encourages the design of technologies with high degrees of computer automation and human control (Shneiderman, 2020).

Artificial intelligence has the potential to transform a wide range of businesses and activities, much like the revolutionary influence of technical progress during the industrial revolution and a number of fields, including industry, government, the public sector, and science and technology, experts have emphasized the potential, difficulties, and research agenda presented by AI's explosive rise (Dwivedi et al., 2021). Human factors play a major role in the safe and effective integration of artificial intelligence in business