

# Navigating Data Privacy, Security and Algorithmic Bias in Artificial Intelligence in E-Business for SMEs

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## Abstract

The primary objective of this study is to investigate the influence of artificial intelligence (AI) on electronic business (e-business), specifically in relation to the domains of data privacy and security. The objective of this study is to provide a comprehensive analysis of the evolution of artificial intelligence (AI) in the context of electronic commerce (e-business). This analysis will involve identifying the risks and problems that are connected with the integration of AI in e-business operations. Furthermore, this study will provide solutions that can effectively increase data protection measures and foster customer trust in e-business environments. This study utilizes a mixed-methods approach, integrating qualitative analyses with a comprehensive evaluation of relevant literature from domestic and foreign sources. The methodology employed in this study is a comparative approach to analyze various technical solutions and assess their alignment with stated benefits and constraints. This approach aims to facilitate a full understanding of the implications of artificial intelligence (AI) in the context of electronic commerce (e-business). The study's findings indicate that the integration of AI has a substantial impact on both customer experiences and operational efficiency. However, it also highlights the existence of certain hazards, including data breaches, cyberattacks, non-compliance with regulations, and insider threats. Mitigation strategies encompass a range of measures, such as data encryption, access controls, periodic security audits, personnel training, incident response planning, and adherence to privacy by design principles. Ensuring ethical considerations and promoting transparency are of utmost importance in establishing and maintaining customer trust. It is imperative to aggressively address issues related to algorithmic bias and discrimination. The significance of this study lies in its emphasis on the importance of resolving algorithmic bias and encouraging fairness in order to establish confidence and credibility in AI applications within the realm of e-business. The promotion of diverse development teams, ethical data management, regular bias audits, openness, constant monitoring, and rigorous regulatory frameworks are advocated in order to prevent discrimination and bias.

**Keywords:** artificial intelligence; e-business; data privacy; algorithmic bias; cybersecurity

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