

Artificial Intelligence in Insurance: Enhancing Efficiency and Market Penetration in the Fourth Industrial Revolution Era

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ABSTRACT

The Fourth Industrial Revolution (4IR) has ushered in significant changes in the financial services industry, particularly in the insurance sector. Artificial intelligence (AI) is increasingly being applied across the insurance value chain, from underwriting to claims processing, with the potential to enhance operational efficiency and improve customer engagement significantly. This study aims to examine global trends in insurance market development and assess the extent to which AI has been integrated into various insurance processes. The insurance industry constitutes a fundamental component of numerous economies, playing a pivotal role in intermediation, investment, employment generation, and risk management functions. Due to its critical importance in facilitating economic growth and promoting overall economic well-being, extensive scholarly inquiry has been directed towards identifying the determinants that drive insurance market development (see, for example, Kiwanuka & Sibindi, 2023; Segodi & Sibindi, 2022; Flores, de Carvalho & Sampaio, 2021; Pradhan, Arvin, Hall & Norman, 2017; Chang & Berdiev, 2013; Hussels, Ward & Zurbruegg, 2005). The key determinants established in the literature are interest rates, inflation rates, government expenditure on social services, national income, levels of insurance literacy, the political environment, religious factors, and regulatory/legal frameworks. The concept of insurance market development is evaluative, capturing the status of the insurance market through its quantity, quality, and efficiency.

JEL Codes: G22, O33, L86

Keywords: *Artificial Intelligence, Insurance Market Development, Insurance Penetration.*