

A Study of Industry 4.0 and Digital Transformation

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Abstract : The ongoing shift towards Industry 4.0 represents a critical growth factor in the industrial enterprise, where the digital transformation of industries is increasingly seen as a crucial element for competitiveness. This transformation holds substantial potential, yet its full benefits have yet to be realized due to the fragmented approach to introducing Industry 4.0 technologies. Therefore, this pilot study aims to explore the individual and collective impact of Industry 4.0 technologies and digital transformation on organizational performance. Data were collected through a questionnaire-based survey across 51 companies in the manufacturing industry in the United Kingdom. The correlations and multiple linear regression analyses were conducted to assess the relationship and impact between the variables in the study. The results show that Industry 4.0 and digital transformation positively influence organizational performance and that Industry 4.0 technologies positively influence digital transformation. The results of this pilot study indicate that the implementation of Industry 4.0 technology is vital for increasing organizational performance; however, their roles differ largely. The differences are manifest in how the types of Industry 4.0 technologies correlate with how organizations integrate digital technologies into their operations. Hence, there is a clear indication of a strong correlation between Industry 4.0 technology, digital transformation, and organizational performance. Consequently, our study presents numerous pertinent implications that propel the theory of I4.0, digital business transformation (DBT), and organizational performance forward, as well as guide managers in the manufacturing sector.

Keywords : industry 4.0 technologies, digital transformation, digital integration, organizational performance

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