

Technology Factors Affecting Australian Manufacturing SMEs Adoption of Collaborative Robot Technology: A Qualitative Interview Study*

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Abstract

Within the context of rapidly evolving technologies, collaborative robots (cobots) are revolutionizing the manufacturing processes of small and medium-sized enterprises (SMEs) and transforming the entire work structure. Several studies have highlighted cobots from an individual level; however, little attention has been given to empirical research that focuses on adopting cobots from an organisational perspective in SMEs. This paper aims to focus extensively on understanding technology factors that may potentially affect Cobot's adoption process within the firm. Based on the Diffusion of Innovation theory (DOI), the paper utilised the five technology factors and followed a semi-structured interview method with decision-makers in Australian manufacturing SMEs. Results discovered the relative advantage revealed is the most significant factor. The other three factors, compatibility, trialability and complexity, were noted to have a lower impact, and the final factor, observability, had an unclear influence. This paper also discussed the mechanisms underlying these impacts and the potential implications.

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