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The impact of information and communication technologies (ICT) on agility, operating, and economical performance of supply chain

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ABSTRACT

Information and communication technologies (ICT) are widely used in supply chain (SC) due to their effects on both economic performance and operational agility. This paper proposes a structural equation model integrating 17 items into four latent variables: ICT, SC agility, operating performance, and economic performance. Data analysed in the model were gathered through a questionnaire administered to 306 managers of Mexican maquiladoras. Likewise, we used statistical software WarpPLS 5®, which is based on partial least squares algorithms, to assess the six hypotheses established in the model. Such hypotheses were validated with a 95 % confidence level, and values were standardized to avoid problems regarding the measurement scale. Findings demonstrate that ICT have a positive direct impact on the other three analysed latent variables, which together account for 63 % of the variability of SC economic performance. Similarly, we found that ICT can explain up to 40 % of the variability of SC agility.

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