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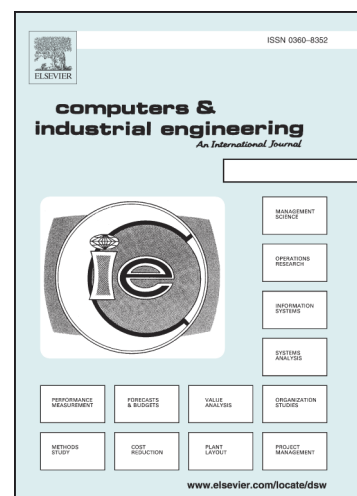
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## The impact of information sharing and inventory control coordination on supply chain performances

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### Abstract

The lack of coordination in supply chains can cause various inefficiencies like bullwhip effect and inventory instability. Extensive researches quantified the value of sharing and forecasting of customer demand, considering that all the supply chain partners can have access to the same information. However, only few studies devoted to identify the value of limited collaboration or information visibility, considering their impact on the overall supply chain performances for local and global service level. This paper attempts to fill this gap by investigating the interaction of collaboration and coordination in a four-echelon supply chain under different scenarios of information sharing level. The results of the simulation study show to what extent the bullwhip effect and the inventory variance increase and amplify when a periodic review order-up-to level policy applies, noting that more benefits generate when coordination starts at downstream echelons. A factorial design confirmed the importance of information sharing and quantified its interactions with inventory control parameters, proving that a poor forecasting and definition of safety stock levels have a significant contribution to the instability across the chain. These results provide useful implications for supply chain managers on how to control and drive supply chain performances.

**Keywords:** Supply chain; information sharing; bullwhip effect; inventory variance; service level; simulation

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