

# Effect of the manufacturer quality inspection policy on the supply chain decision-making and profits

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## ABSTRACT

Due to competitive pressure and information asymmetry, manufacturers will produce quality inspection avoidance behaviour to gain short-term economic benefits, but this behaviour affects the ultimate quality and safety of the product. This paper studies the two-echelon supply chain consisting of a manufacturer and a retailer, and analyses whether the manufacturer's quality inspection avoidance behaviour model is considered or not. This paper discusses the impact of quality inspection level, quality loss cost, product repair cost, product return rate on the profit and optimal decision-making behaviour of both actors of the supply chain. It is found that when the manufacturer's quality inspection avoidance level is high, the increase of retailer' quality inspection effort level, manufacturer's internal failure cost, consumer product return rate and retailer' external quality loss cost will lead to the decrease of manufacturer's quality effort level instead of increasing. Finally, the numerical study is given to verify the above conclusion, and analysed the influence of different parameters on the optimal decision and supply chain actors profits.

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## ARTICLE INFO

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## Vpliv politike proizvajalca glede nadzora kakovosti na odločanje o dobavni verigi in dobičku

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### POVZETEK

Zaradi konkurenčnega pritiska in asimetrije informacij se bodo proizvajalci izogibali nadzoru kakovosti, da bi pridobili kratkoročne ekonomske koristi, kljub temu, da to vedenje vpliva na vrhunsko kakovost in varnost izdelkov. Ta prispevek preučuje dobavno verigo, ki jo sestavljata proizvajalec in prodajalec na drobno in analizira učinek ali se upošteva proizvajalčev model izogibanja nadzoru kakovosti ali ne. Ta članek obravnava vpliv stopnje nadzora kakovosti, stroškov zaradi zmanjšanja kakovosti, stroškov popravila izdelka, stopnje vračila izdelka na dobiček in optimalno vedenje odločanja obeh akterjev dobavne verige. Ugotovljeno je, da bo povečana stopnja izogibanja nadzoru kakovosti na strani proizvajalca povzročila povečanje stopnje nadzora kakovosti na strani prodajalca, povečanje stroškov povezanih z napakami pri proizvajalcu, povečanje stopnje vračanja potrošniških izdelkov in povečanje zunanjih stroškov zaradi zmanjšanja kakovosti pri prodajalcu, kar privede do zmanjšanja truda pri nadzoru kakovosti na strani proizvajalca namesto obratno. Na koncu je podana številčna študija, ki preveri postavljene podmene in analizira vpliv različnih parametrov na optimalno odločitev in dobiček članov dobavne verige.

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### PODATKI O ČLANKU

#### *Ključne besede:*

Dobavna veriga;  
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