

# 不確定性對經濟生產批量之影響研究 = A study of the impacts of uncertainty on EPQ model

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## 摘要

傳統供應鏈管理忽視了現實環境中不明確的因素，假設供應鏈是穩定的。由於近年來波動管理問題逐漸衝擊到整個供應鏈，不論需求端波動抑或供給端波動這對於全球所有的企業都是嚴峻的挑戰，相對地必須針對波動問題逐一解決。本研究主要探討不確定性對經濟生產批量之影響。現實生產系統中，隨著機器運作時間越長，機器損壞程度逐漸提高。過去大都假設生產過程是平穩的且機器設備是穩定的。換言之，在製造過程中機器設備是不會損壞的，但實際運作上機器當機是無法避免的。本研究是依據經濟生產批量的架構來做探討，假設生產過程為一不確定性的瓶頸生產存貨系統。本研究針對經濟生產批量之生產期間與非生產期間之機器損壞模式進行分析探討。本研究探討EPQ模型包含：(1)生產期間機器損壞之模型；(2)非生產期間機器損壞之模型。依其基本假設並利用近似值概算法進而推導出簡易可行之數學式，以決定最佳訂購批量，使總生產成本會是最符合經濟效益。研究中並進行相關性敏感度分析期望能作為實際應用上與決策制訂上之參考依據。

關鍵詞：經濟生產批量模式；不確定性；供應波動；機器損壞

## 目錄

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