

「校際傑出學術論文授權暨發表會」

論文摘要表

研究生(中文姓名)	徐啟斌
研究生(英文姓名)	Chi-Pin Hsu
論文名稱	考量採購者訂購數量、供應商製程平均數與產品壽命保證期限之最佳化利潤模式
英文論文名稱	<b>Optimum Profit Model for Determining the Purchaser's Order Quantity, the Supplier's Process Mean and the Warranty Period of Product Lifetime</b>
指導教授	陳忠和
指導教授(英文姓名)	Chung-Ho Chen
學位類別	碩士
校院名稱	南台科技大學
系所名稱	工業管理研究所
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中文關鍵詞	訂購數量、製程平均數、量測誤差、二次品質損失函數、產品壽命保證期限
外文關鍵詞	<b>Order Quantity, Process Mean, Measurement Error, Quadratic Quality Loss Function, Warranty Period of Product Lifetime.</b>

## 中文摘要

供應鏈體系中，考量買賣雙方的利潤是否都可兼顧，實為一重大問題，Chen 與 Liu 於 2007 年提出使買賣雙方達成最大利潤的純採購系統模式，然而其模式並未考量到顧客需求數量與產品品質特性相關，以及產品存在品質損失的問題。本研究在常態品質特性下採 Taguchi 的二次品質損失函數來衡量產品品質，將分別提出：(1) 考量無量測誤差的 Chen 與 Liu 修正模式，(2) 考量量測誤差的 Chen 與 Liu 修正模式，(3) 考量量測誤差與產品壽命保證期限的 Chen 與 Liu 修正模式等三項修正模式。在達成買賣雙方最大期望總利潤的情況下，來求解採購者最佳訂購數量、供應商的最佳製程平均數與產品壽命保證期限。

## 英文摘要

The consideration of profit between the buyer and supplier is an important problem for the supply chain system. Chen and Liu (2007) considered the pure procurement system model with maximum expected profit between the supplier and buyer. However, their model did not consider that the demand quantity of customer is related with the quality characteristic of product. They also neglected the quality loss of product. In this study, the work proposes three modified Chen and Liu's (2007) model with normal quality characteristic and adopted Taguchi's quadratic quality loss function for measuring the product quality. The modified models are as follows: (1) the one without measurement error; (2) the one with measurement error; (3) the one with measurement error and warranty period. The optimum order quantity of buyer, process mean of supplier, and warranty period of product lifetime are simultaneously determined by maximizing the expected total profit of them.

### **Keywords:**

**Order Quantity, Process Mean, Measurement Error, Quadratic Quality Loss Function, Warranty Period of Product Lifetime.**