

An Approach of Multi-product Scheduling with Perishable Characteristic

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ABSTRACT

Because it is full of various competitions and changes in nowadays market, most manufacturers produce various kinds of products to satisfy the demand of customers. When all of customers have various kinds of products to choose, it may be happened that every product is in different demand, and if the uncertainty of the product demand increases, it is hard to make a decision for correct production quantity. We can know that the inventory and overproduction costs are incurred if the cumulative production quantity exceeds the cumulative demand of customers. On the other hand, if the cumulative demand of customers is more than the cumulative production quantity, a penalty will have to be paid for the lost sales. The classical, single-period newsboy problem is to find a product order quantity or a cumulative production quantity that either maximizes the expected profit or minimizes the expected costs of overestimating and underestimating probabilistic demand. But it is always only for single-product to discuss the classical, single-period newsboy problem. It can't satisfy the application of business in classical. So in this research, an amplified mathematical mode of the dynamic newsboy problem is suggested to solve and arrange the multi-product scheduling with perishable characteristic. It enables us to make a right decision at each point of time during the planning horizon and minimizes the expected costs.

Keywords : make a decision ; single-period ; newsboy problem ; perishable characteristic ; multi-product

Table of Contents

目錄 封面內頁 簽名頁 授權書	iii	中文摘要.....	iv
ABSTRACT.....	v	誌謝	vi
目錄	x	表目錄	xi
第一章 緒論	1	1.1 研究背景與動機	1
1.2 研究目的	4	1.3 研究方法	4
1.4 研究架構	6	第二章 相關文獻探討	7
2.1 具易腐特性的產品	7	2.1.1 具易腐特性的產品之定義	7
2.1.2 具易腐特性的產品之特性	8	2.1.3 具易腐特性的產品之分類	8
2.2 報童問題	10	2.2.1 傳統的單期單次訂購存貨決策下報童問題之相關文獻	10
2.2.2 單期多次訂購存貨決策下報童問題之相關文獻	11	2.3 傳統的單一期間之報童模式	14
2.4 動態的單一期間報童規劃模式	16	第三章 數學模式建構	18
3.1 Kogan K.所提出之動態的報童規劃模式	18	3.1.1 問題描述	19
3.1.2 模式的基本假設	19	3.1.3 模式的參數定義	20
3.1.4 數學模式之建構與推導	21	3.1.5 數學模式之最佳化的推導與驗證	26
3.2 擴充型的動態報童規劃模式	35	3.2.1 問題描述	35
3.2.2 模式的基本假設	36	3.2.3 模式的參數定義	37
3.2.4 數學模式之建構與推導	38	3.2.5 數學模式之最佳化的推導與驗證	41
3.3 演算法	45	3.4 多產品之生產排程的決策機制	49
3.5 特例—單一易腐性產品之生產排程的決策	50	第四章 結果與參數分析	51
4.1 範例說明	51	4.2 範例分析	63
5.1 結論	65	第五章 結論與建議	65
5.2 建議	66	參考文獻	67
附錄	70	圖目錄	70
圖1.1 易腐性多產品在非等效平行機台加工	3	圖1.2 研究流程圖	5
圖1.2 總生產管理成本	22	圖3.1 N個非等效平行機台之生產製造系統	22
圖3.2 擴充的總生產管理成本	40	圖3.2 總生產管理成本	24
圖3.3 擴充的總生產管理成本	40	圖3.4 演算求解流程圖	47
圖4.1 製程甘特圖 (0 t 35)	62	圖4.1 製程甘特圖 (0 t 35)	62
圖A.1 最速降線問題	80	圖A.2 泛函極值問題	86
表目錄	8	表2.1 具易腐特性的產品之區分方式	8
表2.2 單期兩次訂購存貨策略比較表	13	表4.1 非等效平行機台與易腐性產品的參數設定.....	51
表4.2 非等效平行機台啟動之次序與時間點	57		

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