VENDOR MANAGED INVENTORY PERFORMANCE IN MALAYSIAN MANUFACTURING COMPANIES

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ABSTRACT

The implementation of the Vendor Managed Inventory (VMI) in the Malaysian manufacturing sector can be viewed as a solution to mitigate the increment of operational costs and low performance in customer services. Many factors contributed to the performance of the VMI programme, but only a few attempts were made to determine the contribution of the VMI elements and the organizational factors on VMI performance; and the influence of the types of products in this relationship. The objectives of this study were to determine the relationship and to examine the impact of the VMI elements, the organizational factors on VMI performance, and the moderating effect of the types of products on the relationship between the VMI elements, the organizational factors and VMI performance. The study used the survey method. Data were tested from 101 manufacturing companies listed in the Federation of Malaysian Manufacturers. The findings from the Pearson Correlation test showed that inventory location, managerial commitment, decentralized decision- making, information- system capability and trust have significant and positive relationships with cost performance. Meanwhile, inventory location, demand visibility, inventory-control limits, managerial commitment, information- system capability, and trust have significant and positive relationships with service performance. In addition, the multiple regression analysis showed that demand visibility, inventory- control limits, inventory location, trust, and managerial commitment contribute to VMI performance. The hierarchical regression analyses revealed that the types of products have a significant moderating effect to warrant desirable performance from demand visibility, inventory location, inventory control limits, and inventory- ownership. Therefore, the implementation of VMI in the Malaysian manufacturing sector needs to share demand information, apply minimum and maximum limits for inventory control, locate storage locations near customer premises, establish trust, and provide sufficient managerial commitment to benefit from the VMI programme. This study also suggests that the application of inventory- control limits on innovative products would decrease the cost performance of VMI. Also, inventory- ownership by the supplier on functional products would decrease the service performance of VMI.

Keywords: VMI elements, organizational factors, VMI performance

ABSTRAK

Perlaksanaan program *Vendor Managed Inventory* (VMI) dalam sektor pembuatan di Malaysia boleh dilihat sebagai satu penyelesaian untuk mengatasi masalah peningkatan kos operasi dan prestasi yang rendah dalam perkhidmatan pelanggan. Terdapat banyak faktor yang menyumbang kepada prestasi program VMI. Namun, hanya terdapat sedikit usaha yang dibuat untuk menentukan sumbangan elemen-elemen VMI dan faktor-faktor organisasi terhadap prestasi VMI. Begitu juga apabila diteliti pengaruh jenis-jenis produk terhadap perhubungan ini. Objektifnya adalah untuk menentukan hubungan dan menyelidik kesan elemen-elemen VMI, faktor-faktor organisasi dan prestasi VMI. Kajian ini menggunakan kaedah tinjauan. Data-data yang diuji adalah daripada 101 buah syarikat pembuatan yang disenaraikan dalam Persekutuan Pengilang-Pengilang Malaysia. Data dianalisis menggunakan korelasi Pearson dan analisis regresi berganda. Dapatan kajian daripada ujian korelasi Pearson menunjukkan bahawa lokasi inventori, komitmen pengurusan, pembuatan keputusan yang tidak berpusat, keupayaan sistem maklumat dan kepercayaan mempunyai hubungan yang signifikan serta positif dengan prestasi kos. Sementara itu, lokasi inventori, permintaan yang jelas, had kawalan inventori, komitmen pengurusan, keupayaan sistem maklumat dan kepercayaan mempunyai hubungan yang signifikan dan positif dengan prestasi perkhidmatan. Sebagai tambahan, analisis regresi berganda menunjukkan bahawa permintaan yang jelas, had kawalan inventori, lokasi inventori, kepercayaan dan komitmen pengurusan menyumbang kepada prestasi VMI. Seterusnya, analisis regresi hierarki mendedahkan bahawa jenis produk mempunyai kesan penyerderhanaan yang signifikan dalam menjamin prestasi yang baik daripada kenampakan permintaan, lokasi inventori, had kawalan inventori dan pemilikan inventori. Oleh itu, perlaksanaan VMI dalam sektor pembuatan di Malaysia perlu berkongsi maklumat permintaan, menggunakan had minimum dan maksimum untuk mengawal inventori, menempatkan lokasi penyimpanan berdekatan dengan premis pelanggan, membina kepercayaan dan menyediakan komitmen pengurusan yang secukupnya bagi memperolehi manafaat daripada program VMI. Bagaimanapun, kajian ini juga mencadangkan aplikasi had kawalan inventori terhadap produk inovatif akan menurunkan prestasi kos VMI. Begitu juga, pemilikan inventori oleh pembekal terhadap produk fungsi akan menurunkan prestasi perkhidmatan VMI.

Kata kunci: elemen-elemenVMI, faktor–faktor organisasi, prestasi VMI

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LIST OF ABBREVIATIONS

ARP	Automatic Replenishment Programs
ASN	Advanced Shipping Notice
CIM	Centralised Inventory Management
CPFR	Collaborative Planning, Forecasting and Replenishment
CRP	Continuous Replenishment Programs
ECR	Efficient Consumer Response
QR	Quick Response
RR	Rapid replenishment
RBV	Resource-Based View
SCA	Sustainable competitive advantage
SCR	Synchronized Consumer Response
VMI	Vendor Managed Inventory
VRIN	Valuable, Rare, Inimitable, and Non-Substitutable Resources

CHAPTER ONE

INTRODUCTION

This chapter comprises of eight sections, which covers the background of the study, problem statements, research objectives, research questions, significance of the research, terms definition, delimitations, limitations, and organization of the structure of the research.

1.1 Background of the Study

The main challenges of supply chain is the reduction of uncertainties in demand quantity. Reduction of demand uncertainty can result in enhancement of customer service quality and cost. Realizing the benefits of SCM, many manufacturing companies choose the appropriate supply chain strategy. One of the most prevailing collaboration model focuses in reducing demand uncertainty is Vendor Managed Inventory (VMI). VMI had gained more attention from practitioners and academics compared to other collaboration models due to its efficiency in improving service and cost reduction (Chiamsiri, 2008). Lee, Chu, and Hung (2005) also stressed that VMI is becoming an effective approach for implementing the channel coordination initiative, which is critical and imperative to improve the entire chain's cost performance.

VMI was first popularized by Wall-Mart and Procter Gamble in the late 1980s in the retail industry. Successful VMI initiatives have also been trumpeted by many companies such as Whitbread Beer Company, Barilla Company, Johnson and Johnson Company, Kodak Canada International Company, and Campbell Soup Company. Presently, VMI is being implemented in various

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