

Fostering Competitive Ability with the Aid of Effectual Inventory Management

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Abstract

Competitiveness is key to laurels in modern business curriculum and can be achieved by applying suitable and updated inventory management techniques. Effectual Inventory management results in enhancement of market share, improves service levels, reduces overall & storage costs, invites business & reputation etc. The present research analyses the competitive ability of 225 retailers with the assistance of effectual inventory management. The primary data were collected in district Udhampur, J&K State. Validity and reliability of the scales in the construct were assessed through BTS and Cronbach-alpha test. The results of regression model, chi square and ANOVA revealed that effectual inventory management influences competitive ability of retailers. Competitive ability of a business is positively associated with appropriate inventory management & control policies. Further, results divulged that retailers with different work experience differ significantly with regard to their competitive ability and retailers in different locations doesn't differ significantly with regard to effectual inventory management and handling.

Keywords: Competitive ability, Inventory Management, Retailers, Firms.

Introduction

Competitive ability often known as competitiveness pertains to the ability and performance of a firm, business, enterprise, company, institute to sell and supply goods and services in a given market, in relation to the ability and performance of other firms, sub-sectors or countries in the same market. Empirical observation confirms that resources (capital, labour, technology) and talent tend to concentrate geographically (Easterly and Levine, 2002). This result reflects the fact that firms are embedded in inter-firm relationships with networks of suppliers, buyers and even competitors that help them to gain competitive advantages in the sale of its products and services. While arms-length market relationships do provide these benefits,

at times there are externalities that arise from linkages among firms in a geographic area or in a specific industry (textiles, leather goods, silicon chips) that cannot be captured or fostered by markets alone.

Inventory management is primarily about specifying the shape and percentage of stocked goods. It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. The scope of inventory management concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods, and demand forecasting (Wong et al., 2005; Huang, 2006; Suri, 1998; Womack et al., 1990; Koufteros et al., 1998; Husun and Nanda, 1995 and Harland, 1996). Balancing these competing requirements leads to optimal inventory levels, which is an on-going process as the business needs shift and react to the wider environment.

Inventory management involves a retailer seeking to acquire and maintain a proper merchandise assortment while ordering, shipping, handling, and related costs are kept in check. It also involves systems and processes that identify inventory requirements, set targets, provide replenishment techniques, report actual and projected inventory status and handle all functions related to the tracking and management of material. This would include the monitoring of material moved into and out of stockroom locations and the reconciling of the inventory balances. It also may include ABC analysis, lot tracking, cycle counting support, etc. Management of the inventories, with the primary objective of determining/controlling stock levels within the physical distribution system, functions to balance the need for product availability against the need for minimizing stock holding and handling costs.

Review of Literature

Inventory has also been a subject in the debate on supply chain resilience, which has been of increasing interest in recent years, particularly as the "leaning-down" of companies and global sourcing have increased supply chain risks (Christopher and Peck (2004)). It is recognised that international supply chains may be particularly vulnerable owing to such factors as the geographic area covered, the transport modes used, political/ border

factors and environmental issues Prater et al.,(2001). Whilst risk mitigation strategies may contain many elements, the use of inventory is generally recognised as one possible tool. For example, Chopra and Sodhi (2004) list "increase inventory" as a risk mitigation approach, whilst Christopher and Peck (2004) state that "the strategic disposition of additional capacity and/or inventory at potential 'pinch points' can be extremely beneficial in the creation of resilience within the supply chain". Lee (2002) particularly emphasizes the role of inventory in situations of supply uncertainty. There are thus widely varying views about the role of inventory in the literature and some of these views appear to have conflicting goals. For example, the goal of traditional inventory control theory has been the optimisation of inventory levels, whereas the goal discussed in more recent thinking, such as that on lean and agile supply chains, has concentrated more on the minimisation of inventory levels. However, the latter has been counteracted to some extent by the understanding of the role of decoupling points and the part that inventory may play in some risk mitigation strategies. Whilst the minimisation of inventory is widely discussed, this needs to be defined and there is a recognition that resources can be reduced too much, leading to terms such as "corporate anorexia" Radnor and Boaden (2004). This suggests that there is in fact an optimum level of inventory. However, the identification of this level needs to involve wider concepts than those just associated with traditional inventory control theory. Inventory holding plays an important role in modern supply chains. A survey of logistics costs in Europe identified the cost of inventory as being 13 per cent of total logistics costs (European Logistics Association/ AT Kearney, 2004). A similar study in the USA, found inventory costs significantly higher at 24 per cent Establish Inc/Herbert W. Davis & Co.,(2006). The present research analyses the competitive ability of 225 retailers with the assistance of effectual inventory management in district Udhampur of J&K State.

Objective of the Study

To assess the competitive ability of retailers with the help of effectual inventory management

Testable Hypothesis

On the basis of in-depth analysis of existing review of literature and its meaningful conclusions, the following hypotheses had been emerged in

order to make the study more reliable and responsive. The main hypotheses are:-

H₁: Effectual inventory management influences competitive ability of retailers.

H₂: Competitive ability of a business is positively associated with appropriate inventory management policies.

H₃: Retailers with different work experience differ significantly with regard to competitive ability.

H₄: Retailers in different locations do not differ significantly with regard to effectual inventory management and handling.

H₅: Proper inventory management policies bring competitive ability.

Research Design and Methodology

Research design and methodology comprises area of research, nature of data/information (Primary or secondary), questionnaire/schedule, research tools applied etc. The research methodology adopted proceeds as follows:

Sampling and Data Collection

The primary data for the study were collected from 225 retailers selling the products of small manufacturing firms operating in district Udhampur of J&K State. An in-depth analysis of these retailers was the main purpose of the present study. The total number of respondents contacted for the study were 225 out of which 203 responded representing an effective response rate of 90.22%. Their response was the main basis for drawing meaningful inferences. Snowball/referral sampling was used for obtaining data from retailers. The number of retailers identified was cement (29), pesticide (4), steel (14), battery/lead/alloy (30), menthol (2), conduit pipes (9), gates/grills/varnish (15), maize/atta/dal mills (53) and miscellaneous (47).

Sampling technique applied: Snowball/referral sampling was used for obtaining data from Retailers. Only those Retailers were contacted who were using/selling/dealing with the products manufactured by the above stated units. Some of the major Retailers contacted were Nath ram & sons, Duni chand, Mahakaii traders, durga bhagwati traders, gupta hardware, Surbhierprises, Army general store, somnath and sons etc.

The Survey Instrument: Information was collected by administering self developed questionnaire prepared after consulting experts and review of literature which comprised of general information and 11 statements of inventory management. Statements in the questionnaire were in descriptive form, ranking, dichotomous, open ended and five -point Likert scale, where 1 stands for strongly disagree and 5 for strongly agree.

Collection of data: The primary data were collected by making three to four visits for getting response from respondents. Snowball/referral sampling method was applied for collecting data from the respective respondents. The secondary information was collected from various sources namely books, empirical papers from online & hard copies of journals. Various multivariate tools such as Mean, standard deviation, regression, ANOVA, chi-square etc. were used to test hypotheses and for drawing meaningful inferences.

Reliability and validity of the instrument

Reliability: The Cronbach's reliability coefficients for all 8 scale items after applying rotated component matrix represented alpha value 0.944 was higher than the criteria of 0.77 obtained by Gordon and Narayanan (1984) indicating high internal consistency. Adequacy and reliability of sample size to yield distinct and reliable factors is further demonstrated through Kaiser-Meyer-Olkin Measure of Sampling Adequacy that is 0.900 and all factor loadings between items being greater than equal to 0.55.

Validity: The factor obtained alpha reliability higher to 0.50 and satisfactory KMO value at 0.900, indicating significant construct validity of the construct (Hair et al., 1995).

Data Analysis and Interpretation

Data analysis is used for data reduction and purification. The elementary need for using factor analysis is to keep only those statements which are appropriate/ scientific and appealing in nature. Factor analysis fosters Eigen value, Cumulative variance explained, Factor loadings, Commonality and Alpha value whose values are the basis for interpreting the results. The 11 statements originally kept in the construct were reduced to 8 while applying factor analysis thereby improving the dependability and authenticity of the research.

The suitability of raw data for factor analysis obtained from retailers is examined through Anti-image, KMO value, Bartlett's Test of Sphericity and (p-value = 0.000), indicating sufficient common variance and correlation matrix (Dess et al., 1997 and Field, 2004). The process of R-Mode Principal Component Analysis (PCA) with Varimax Rotation reduced 8 statements out of 11 statements originally kept in the construct/ domain of inventory management. The KMO value (0.903) and Bartlett Test of Sphericity (2667.847) indicated high acceptable and significant values. Therefore, factor loadings emerged consistent with conservative criteria, thereby resulting into good factor solution using Kaiser Criteria (i.e. eigen value 1) with 31.92% of the total variance explained. The communality for 8 items ranges from 0.51 to 0.88, indicating high degree of linear association among the variables. The factor loadings range from 0.544 to 0.901 and the cumulative variance extracted is 31.92%. The factor and its statements emerged is displayed in the Table 1.1. A brief description of factor and its statements emerged areas under:

Table 1.1
Results Showing Factor Loadings and Variance Explained After Scale Purification (Rotated Component Method) for Inventory Management (Retailers' Perceptions)

FDimeMI ^o '''	Me1111	S.D	F.L	Eigen value	Variance Explained o/u	Cumul.ti.w Viorlantto/u	Comm-umility	ci
INVHNTORYMANAGHMENT	4.41	.561		D.109	31.921)	31.921)		9447
1.Invenlmy planning improves service level	4.40 4.42	.540 513	.901 .873				.887 .856	
2. Inventory control paves for competitive ability	4.35 4.35	.591 591	.867 .834				.814 .803	
3.Inventory planning "management redll<.llBstimg costs	4.44 4.32	.515 6.50	.799 .736				.771 .682	
4. High inventory turnover affects revenue COBhl	4.46 4.60	.533 556	.616 .544				.676 .510	
5. You keep inventory in acmrd''''''to your firm !lize								
6. Sufficient inventory is build to minimise price fluctuation								
7. Effective inventory control enhances market share								
8. Inventory control enhances product nu•Htv								

Footnotes: KMO Value =.900; Bartlett's Test of Sphericity = 2667.847, df = 190, Sig. =.000; Extraction Method Principal Component Analysis; Varimax with Kaiser Normalisation; Rotation converged in 5 iterations; 'FL' stands for Factor Loadings, 'SD' for Standard Deviation and 'a' for Alpha.

Factor (Competitive ability): Eight items underlying this factor are: "Inventory planning improves service level", "Inventory control paves for competitive ability", "Inventory planning & management reduces storage costs", "High inventory turnover affects revenue costs", "You keep inventory in accordance to your firm size", "Sufficient inventory is build to minimise price fluctuation", "Effective inventory control enhances market share" and "Inventory control enhances product quality". The mean score values gamut between 4.32 -4.60. The factor loadings fluctuated from .544 to .901 representing good amount of correlation between the variables/ statements and the factor. The factor loadings for each statement is: Inventory planning improves service level (.901), Inventory control paves for competitive ability (.873), Inventory planning & management reduces storage costs (.867), High inventory turnover affects revenue costs (.834), You keep inventory in accordance to your firm size (.799), Sufficient inventory is build to minimise price fluctuation (.736), Effective inventory control enhances market share (.696) and Inventory control enhances product quality (.544). The statement "Inventory planning improves service level" enriched with highest factor loading and the statement "Inventory control enhances product quality" with lowest factor loading. Communalities varied within .510 - .887 indicating significant values and high degree of linear association among the variables. The communalities for each statement is: Inventory planning improves service level (.887), Inventory control paves for competitive ability (.856), Inventory planning & management reduces storage costs (.84), High inventory turnover affects revenue costs (.803), You keep inventory in accordance to your firm size (.771), Sufficient inventory is build to minimise price fluctuation (.682), Effective inventory control enhances market share (.676) and Inventory control enhances product quality (.510). The statement "Inventory planning improves service level" enriched with highest communality and the statement "Inventory control enhances product quality" with lowest communality. In the nutshell, the retailers' perception indicates that inventory planning improves service level and enhances competitive ability.

Mean response of retailers regarding statements of inventory management: Table 12 displays mean response of retailers' with regard to inventory management and control. The retailers' perception regarding inventory management fluctuates between 4.32 - 4.60. The statement "Inventory control enhances product quality" emerges to be strongest with mean value 4.60 and the statement "Sufficient inventory is build to minimise price

fluctuation" as the weakest with mean value 4.32. The overall mean values for all 8 statements among retailers' are 4.41. Thus it can be concluded that retailers have high business turnover and focus more on optimal inventories to meet demand of ultimate customers.

Table 12
Mean Rating of Retailers' Regarding Inventory Management

Statement	Retailers Mean
Inventory Management and Control	4.60
1. Inventory control enhances product quality	4.42
2. Inventory control paves for competitive ability	4.40
3. Inventory planning improves service level	4.44
4. You keep inventory in accordance to your business size	4.35
5. Inventory planning and management reduces storage cost	4.35
6. High inventory turnover affects revenues cost	4.32
7. Sufficient inventory is build to minimise price fluctuation	4.46
8. Effective inventory control enhances market share	4.41
Total	4.41

Profile of Retailers: As far as Retailers profile regarding their work experience factor is concerned it is visualized that there were 48 retailers having work experience of 1-10 years constituting 23.6% and larger chunk of the total respondents. 39 respondents were experienced between 10-20 years representing 19.25% of the total respondents, 35 retailers were having experience of 20-30 years (17.2%), 31 having 30-40 years of experience reflecting 15.2% of the composition. The retailers having 40-50 years of experience were 44 in number having vast & rich experience contributing to 21.6% of the total respondents. Those having work experience of above 50 years were just 6 in number with 2.95% of representation among total respondents. So, it's seen that number of retailers was having affluent experience of retailing (Table 13).

Table 13
A Brief Profile of Respondents (Retailers)

S.No.	Variables	Classification	Frequency	Percentage
1.	Work experience	1-10 years	48	23.6
		10-20years	39	19.2
		20-30years	35	17.2
		30-40years	31	15.2
		40 -50years	44	21.6
		Above 50years	6	2.95
2	Location	Udhampur	163	80.2
		Ramnagar	33	16.2
		Others	7	3.44
	Total		203	100

As far as location of respondents was concerned it was found that 80.2% (163) of retailers hail from Udhampur district only. Further it was noticed that 33 representing 16.2% of the total respondents were from Ramnagar town and the remaining respondents were contacted in other neighboring areas such as Chennani, Batote, and other parts of district Udhampur representing 3.44% of total respondents contacted.

Regression Analysis

Table 14 shows output from multiple regression analysis using 8 items of effectual inventory management i.e. "Inventory planning improves service level", "Inventory control paves for competitive ability", "Inventory planning & management reduces storage costs", "High inventory turnover affects revenue costs", "You keep inventory in accordance to your firm size", "Sufficient inventory is build to minimise price fluctuation", "Effective inventory control enhances market share" and "Inventory control enhances product quality". The result of step-wise linear regression analysis enticed five independent variables as significant in predicting the dependent variable (Effectual inventory management). These are: "Inventory control paves for competitive ability", "Inventory planning improves service level", "Inventory planning & management reduces storage costs", "Effective inventory control enhances market share" and "Sufficient inventory is build to minimise price fluctuation". The correlation between predictor and outcome is positive with values of R as .770, .828, .875, .913 and .929 which signifies high correlation between predictor and the outcome. In model 1, R is .770 which indicates 77% association between dependent and independent variables. R-Square for

this model is .656 which means that 65% of variation in inventory management can be explained from the five independent variables. Adjusted R square (.753) indicates that if anytime another independent variable is added to model, the R-square will increase. Further beta values reveal significant relationship of independent variables with dependent variable. "Inventory control paves for competitive ability" had emerged as the strongest predictor whereas "Sufficient inventory is build to minimise price fluctuation" is found to be the weakest as represented by their relative t-values. Change in R square is also found to be significant with F-values significant at 5% confidence level. Errors in regression are independent as indicated by Durbin-Watson value (1.98) being close to 2.00. The aforesaid findings support the hypothesis "Effectual inventory management influences competitive ability of retailers".

Table 14
Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	F Value ANOVA	Sig. level	p	t	Sig. level	Durbin-Watson
1.	.770	.656	.753	2427	223.395	.000	.870	4.946	.000	1.984
2.	.828	.788	.782	2277	132.24	.000	.613	8.280	.000	
3.	.895	.801	.783	2222	94.095	.000	.499	5.983	.000	
4.	.913	.816	.806	2153	76.605	.000	.341	3.366	.001	
5.	.929	.827	.814	2105	64.939	.000	.179	2.043	.005	

- a) Predictor: (Constant), Enhances competitive ability
- b) Predictor: (Constant), Enhances competitive ability, Improves service level
- c) Predictor: (Constant), Enhances competitive ability, Improves service level, Reduces storage costs
- d) Predictor: (Constant), Enhances competitive ability, Improves service level, Reduces storage costs, Enhances market share
- e) Predictor: (Constant), Enhances competitive ability, Improves service level, Reduces storage costs, Enhances market share. Minimises price fluctuations
- f) Dependent Variable: Effectual inventory management

Therefore it was found and proved with the testing of hypothesis and its results that effectual inventory management fosters and improves service levels, enhances competitive ability, reduces storage costs, enhances market share" and minimises price fluctuation.

Association Between Inventory Management and Competitive Ability

The Chi-square (Table 15) shows positive and significant association of 8 items for appropriate inventory planning & management and competitive ability. All the below stated statements are ingredients of inventory management which have some impact on the competitive ability of the firms. These statements results in improving competitive ability which is the ultimate aim of the contemporary business. The items "Inventory planning & management reduces storage costs" and "High inventory turnover affects revenue costs" are highly significant among all, with significance value of .001 ($p < 0.05$). The items "Inventory planning improves service level", "Inventory control paves for competitive ability", "You keep inventory in accordance to your firm size", "Sufficient inventory is build to minimise price fluctuation", "Effective inventory control enhances market share" and "Inventory control enhances product quality" exhibit significant association as the Chi-square value is less than 0.05. Overall, the hypothesis "Competitive ability of a business is positively associated with appropriate inventory management policies" is accepted on all the eight variables.

Table 15
Association Between Inventory Management and Competitive Ability
(Chi-Square Test)

Statement	Chi-square value	Sig. value	Outcome
1. Inventory planning improves service level	16.991	.004	Significant
2. Inventory planning & management reduces storage costs	20.114	.001	Significant
3. Inventory control paves for competitive ability	6.109	.028	Significant
4. You keep inventory in accordance to your firm size	22.529	.001	Significant
5. High inventory turnover affects revenue costs	19.765	.001	Significant
6. Sufficient inventory is build to minimise price fluctuation	5.419	.020	Significant
7. Effective inventory control enhances market share	11.833	.005	Significant
8. Inventory control enhances product quality	5.662	.030	Significant

In the nutshell, all the aforesaid items promote competitive ability of the retailers operating in district Udhampur.

One Way ANOVA

To test the third hypothesis, the work experience of retailers was taken into consideration. The previous work experience was divided into six categories viz., 1-10 years, 10-20 years, 20-30 years, 30-40 years, 40-50 years and above 50 years. The results of ANOVA (Table 1.6) revealed that retailers with different work experience differ significantly with regard to their competitive ability (Sig. 0.003) as the p value is less than .05. Therefore, the hypothesis is accepted.

Table 16
ANOVA for Work Experience

Description of Work Experience (years)	Nature of Variable	Sum of Squares	df	Mean Square	F	Sig.
1-10	Between Groups	12.577	4	.394	13.417	.003
10-20	Within Groups	10.855	199	.278		
20-30	Total	21.432	203			
30-40						
40-50						
Above 50						

In order to test the fourth hypothesis, again one way ANOVA was applied. The location factor was divided into three parts i.e. Udhampur, Ramnagar, others. The results of test revealed that retailers in different locations don't differ significantly with regard to effective inventory management and handling as represented by effective p value (.742) which is more than 0.05. Thus, the last hypothesis is also accepted (Table 1.7).

Table 17
ANOVA for Location

Description Of Location	Nature of Variable	Sum of Squares	df	Mean Square	F	Sig.
Udhampur	Between Groups	.003	4	.001	.104	.742
Ramnagar	Within Groups	.984	199	.014		
Others	Total	.986	203			

In order to test the final hypothesis (Table 1.8), the single metric dependent variable "Inventory Management Policy" is examined with "Competitive ability". The correlation is significant with value (.714**) which signifies high positive correlation between Inventory Management Policy and Competitive ability. Therefore, the last hypothesis "Proper inventory management policies bring competitive ability" is accepted.

Table 18
Correlation Matrix

		Inventory Management Policies	Competitive ability
Inventory Management Policies	Pearson Correlation	1	.714****)
	Sig (2-tailed)		.000
	N	203	203
Competitive ability	Pearson Correlation	.714(**)	1
	Sig (2-tailed)	.000	
	N	203	203

C-) Correlation is significant at 0.01 level (2-tailed)

Conclusion

Competitive ability of a business can be enhanced by stressing on proper inventory control measures and its effective management. The study provides substantive support for previous findings in the inventory control literature and fresh insights about inventory management that exists among retailers and is recognized as a vital tool in improving asset productivity & inventory turns, targeting customers & positioning

products in diverse markets, enhancing intra & inter organisational networks, enriching technological capabilities to produce quality products thereby imparting effectiveness in inter-firm relationships. The present study reveals that business competitive ability can be enhanced due to effective and frequent inventory control. Proper inventory management even results in reduction of storage costs, affects revenue costs, balances firms inventory, minimises price fluctuation, enhances market share and product quality. Competitive ability of a business is positively associated with appropriate inventory management & control policies. Further, results divulged that retailers with different work experience differ significantly with regard to their competitive ability and retailers in different locations doesn't differ significantly with regard to effectual inventory management and handling. From the practical perspective, the government functionaries must take initiatives to organise trade shows, seminars, workshops, conferences to strengthen supply chain linkages by integrating fragmented Supply chain intermediaries. Sensitizing retailers through periodic training & education programmes the need & strategies for profitable inventory management so that effectuate inventory decisions can be taken in order to equilibrium demand and supply.

Limitations of the Study

- i. The study is area specific and cannot be generalised for other retailers operating in other parts of the country having dissimilar environmental business conditions.
- ii. The conclusions drawn were not completely free from biasness for the responses obtained from the different retailers through surveys. Meaning and concepts of all scale items was explained to the respondents in local dialect as majority of them were nee-literate. Though utmost care was taken to entice correct information, an element of subjectivity cannot be ruled out as it made little difference in the originality of ideas obtained in the field survey and final interpretation.

Directions for Future Research

Some of the dimensions like quality management, shared goals & objectives, SCM ethics, Transportation management, warehousing management, commitment & collaboration, transparency etc. are not included in the existing study. So, future research can be done taking into

consideration the retailer's attitude towards the above dimensions. Future researches can also be undertaken regarding inventory management from the perspective of wholesalers and retailers for medium & large scale industries.

References

- Otopra, S. and Sodhi, M.S. (2004). "Managing Risk to Avoid Supply Chain Breakdown", MIT Sloan Management Review, Fall, pp. 53-61.
- Otristopher, M. and Peck, H. (2004). "Building the Resilient Supply Chain", International Journal of Logistics Management, Vol. 15, No. 2, pp. 1-13.
- Dess, G.G., Lumpkin, G.T. and Covin, J.C. (1997). "Entrepreneurial Strategy Making and Firm Performance: Tests of Contingency and Configurational Models", Strategic Management Journal, Vol. 18, No.9, pp. 677-695.
- Easterly, W., Levine, R. (2002). "Tropics, Germs, and Crops: How Endowments Influence Economic Development", NBER working paper, August, No.9106.
- Establish Inc./Herbert W. Davis & Co. (2006). "Logistics Cost And Service 2005", paper presented at Council of Supply Chain Management Professionals Conference, available at: www.establishinc.com.
- European Logistics Association/ AT. Kearney (2004). "Differentiation for Performance", Deutscher Verkehrs-Verlag GmbH, Hamburg.
- Field, AP. (2004). "Discovering Statistics Using SPSS.5 for Windows", London, Sage Publications, pp. 619-672.
- Gordon, L.A. and Narayanan, (1984). "Management Accounting Systems, Perceived Environmental Uncertainty and Organisational Structure: An Empirical Investigation", Accounting, Organisations and Society, Vol. 19, No. 1, pp. 330-348.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995). "Multivariate Data Analysis", New Jersey: Prentice Hall, pp. 87-115.
- Harland, C.M. (1996). "Supply Chain Management: Relationships, Chains, and Networks", British Journal of Management, Vol. 7, pp. 63-80.

- Huang, M., Ding, J., IP, W.H., Yung, K.L., Liu, Z. and Wang, X. (2006). "The Research on the Optimal Control Strategy of a Serial Supply Chain", ICNC, Part 1, LNCS 4221, pp. 657-665.
- Huson, M. and Nanda, D. (1995). "The Impact of Just-in-time Manufacturing on Firm Performance in the US", *Journal of Operations Management*, Vol. 12, Nos. 3/4, pp. 297-310.
- Koufteros, X.A., Vonderembse, M.A. and Doll, W.J. (1998). "Developing Measures of Time-based Manufacturing", *Journal of Operations Management*, Vol. 16, No. 1, pp. 21-41.
- Lee, H.L. (2002). "Aligning Supply Chain Strategies with Product Uncertainties", *California Management Review*, Vol. 44, No. 3, pp. 105-119.
- Prater, E., Biehl, M. and Smith, M.A. (2001). "International Supply Chain Agility: Tradeoffs Between Flexibility And Uncertainty", *International Journal of Operations & Production Management*, Vol. 21, Nos 5/6, pp. 823-839.
- Radnor, J.Z. and Boaden, R. (2004). "Developing an Understanding of Corporate Anorexia", *International Journal of Operations & Production Management*, Vol. 24, No. 4, pp. 424-440.
- Suri, R. (1998). "Quick Response Manufacturing", Productivity Press, Portland, OR.
- Womack, J.P., Jones, D.T. and Roos, D. (1990). "The Machine that Changed the World", Rawson Associates, New York, NY.
- Wong, A., Tjosvold, D. and Zhang, P. (2005). "Supply Chain Management for Customer Satisfaction in China: Interdependence and Cooperative Goals", *Asia Pacific Journal of Management*, No. 22, pp. 179-199.