

# Impact of Supply Chain Management Practices on Competitive Advantage of Small Manufacturing Firms in Coimbatore District

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## ABSTRACT

The Indian economy was forced to adopt a structural adjustment program in the beginning of 1991. The structural adjustment program or liberalization initiated Supply chain management is the complete, deliberate harmonization of the conventional business actions and methods across these business actions within specific firms and across various business activities within the supply chain for the objectives of increasing performance and profit of firms. The strategic supplier partnership, information quality, internal lean practice, information sharing and customer relationship have significant and positive impact on competitive advantage of small manufacturing firms. In order to improve the supply chain management practices in manufacturing firms, they should include their major suppliers in planning and goal formation process and they must evaluate degree of customers' satisfaction regularly. In addition, manufacturing firms and their trading partners should share information fully and they must reduce wastage of time for various operations and give shorter lead times to their suppliers. Meanwhile, to improve the competitive advantage of small manufacturing firms, they should supply products swiftly to the market.

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## 1. Introduction

Supply chain management is the complete, deliberate harmonization of the conventional business actions and methods across these business actions within specific firms and across various business activities within the supply chain for the objectives of increasing performance of firms in the long run and the supply chain as a whole. The proper understanding of supply chain management practices is an important requirement for firms to be competitive and also for improving performance and profit of firms

The aim of supply chain management practices is to combine both flow of materials and information across the chain as a valuable competitive weapon. To stay competitive, firms should understand the significance of supply chain management practices that increase not only their performance, but also combine with their partners in supply chain to increase their joint

performance. Hence, the contemporary supply chains are anticipated to react quickly and efficiently to transformations in the market so as to maintain and furthermore generate competitive advantage.

Furthermore, the present business environment is highly competitive due to globalization, technology and customer orientation, shrinkage of life of product, introduction of more new products, and higher demand from customers for quality products, quick response and higher dependability of products. Therefore, firms have to introduce innovative products and improve their manufacturing practices and marketability of their products. Therefore, the present study is made to examine the impact of supply chain management practices on competitive advantage of small manufacturing firms.

## 1.1. Review of Literature

The suppliers could provide cost saving design options, helped in choosing good technologies and elements and assisted in evaluation of design (Tan et al, 2002) stated that. The customer relationship functions had an important role in creating efficient supply chain management approach (Wisner, 2003). The capacity of firms to response swiftly to demand of customer was depending on the response time of suppliers to create number of changes. Whenever troublesome caused namely modern technology, (Walker, 2005) or stiff competition tended to make the supply chain networks should be prepared to response to any undulation effect.

The high level of supply chain management practices had increased competitive advantage and organizational performance. Also, competitive advantage had a positive and direct effect on performance of organization. The competitive advantages of firm depended on pricing, quality, value addition, reliable delivery and innovative methods (Li et al, 2006). The development of personalized and customized services led to improved customer relationship and it was critical for survival of firm in long run (Ragatz, 2007).

Good relations with members of supply chain along with customers were important for victorious execution of supply chain management practices. The quantum and quality of sharing of information were very essential for successful implementation of supply chain management practices (Monczka, 2008). The manufacturing firms could be capable of considering demand for inventory and decide number of products and quantum of stock and lean period required (Mark et al, 2009). By deciding schedules for production, supply of raw materials, production activities and distribution should be planned adequately (Ou et al, 2010).

The supply chain management practices customer relationship, strategic supplier partnership and sharing of information had positive effect on performance of firms (Lori et al, 2011). The responsiveness of supply chain and competitive advantage were positively influenced by supply chain management practices (Sukati et al, 2012). Besides, there was a positive and significant relation between competitive advantage and supply chain management practices (Ghatebi et al, 2013) and there was a significant and positive relation between performance of firms and supply chain management practices (Karimi and Rafiee 2014).

The supply chain management practices were determined by firm size, position of supply chain, capital for supply chain, structure of firm and government policy (Afande et al, 2015). The competitive advantage of firm was directly affected by supply chain management practices, but affecting the performance indirectly (Yunas et al, 2016). The performance of firms was positively correlated with supply chain management practices and this relationship was mediated by competitiveness of firms (Wijetunge, 2017).

## 2. Methodology

The present study is done in Coimbatore district. The 300 small manufacturing firms are selected randomly and data are collected from them through pre-tested structured questionnaire. The percentage analysis is carried out to know the profile of small manufacturing firms. The mean and standard deviations are computed to understand supply chain management practices and competitive advantage of small manufacturing firms. The multiple liner regression is used to analyze the impact of supply chain management practices on competitive advantage of small manufacturing firms.

## 3. Results and Discussion

### 3.1. Profile of Small Manufacturing Firms

The findings reveal that 61.33 per cent of small manufacturing firms are proprietorship firms, while, the remaining of 38.67 per cent of small manufacturing firms are partnership firms. The results show that 42.33 per cent of small manufacturing firms have investment of Rs.20-30 lakhs followed by Rs.10-20 lakhs (27.00 per cent), Rs.30-40 lakhs (20.67 per cent) and Rs.40-50 lakhs (10.00 per cent).

The results indicate 48.67 per cent of small manufacturing firms are operating in leased establishments followed by owned establishments (34.00 per cent) and rented establishment (17.33 per cent). The results imply that 50.67 per cent of small manufacturing firms have annual turnover of Rs.5-10 lakhs followed by less than Rs.5 lakhs (31.00 per cent) and more than Rs.10 lakhs (18.33 per cent)

### 3.2. Supply Chain Management Practices in Small Manufacturing Firms

The supply chain management practices in small manufacturing firms were analyzed and the results are hereunder presented.

### 3.3. Strategic Supplier Partnership

The strategic supplier partnership in small manufacturing firms was analyzed and the results are presented in Table 1.

**Table 1 Strategic Supplier Partnership in Small Manufacturing Firms**

S. No	Strategic Supplier Partnership	Mean	Standard Deviation
1	We apply quality as primary principle for choosing suppliers	3.84	0.27
2	We usually resolve issues together with suppliers	3.7	0.28
3	We assist suppliers to enhance quality of their products	3.68	0.34
4	We have development plans that comprise our main suppliers	3.76	0.39
5	We take in our main suppliers for planning and goal formation	3.32	0.45

The results show that small manufacturing firms are agreed with they apply quality as primary principle for choosing suppliers, they usually resolve issues together with suppliers, they assist suppliers to enhance quality of their products and they have development plans that comprise their main suppliers, while, they are neutral with they take in their main suppliers for planning and goal formation.

### 3.4. Customer Relationship

The customer relationship in small manufacturing firms was analyzed and the results are presented in Table 2.

**Table 2 Customer Relationship in Small Manufacturing Firms**

S. No	Customer Relationship	Mean	Standard Deviation
1	We regularly get feedback from customers	3.9	0.65
2	We regularly measure and assess satisfaction of customers	3.37	0.83
3	We often decide expectation of customers	3.93	0.51
4	We encourage customers to ask for help from us	3.96	0.62
5	We assess significance of our relations with our customers frequently	3.88	0.74

The results indicate that small manufacturing firms are agreed with they regularly get feedback from customers, they often decide expectation of customers, they encourage customers to ask for help from us and they assess significance of our relations with our customers frequently, while, they are neutral with they regularly measure and assess satisfaction of customers.

### 3.5. Information Sharing

The information sharing in small manufacturing firms was analyzed and the results are presented in Table 3.

**Table 3 Information Sharing in Small Manufacturing Firms**

Sl. No.	Information Sharing	Mean	SD
1	We communicate our trading partners about changes in advance	3.98	0.32
2	Our trading partners exchange proprietary information with us	3.92	0.41
3	Our trading partners inform problems related to our business	3.85	0.53
4	Our trading partners exchange information on important business practices with us	3.73	0.36
5	We and our trading partners share information that helps for business planning	3.97	0.47

The results reveal that small manufacturing firms are agreed with they communicate their trading partners about changes in advance, their trading partners exchange proprietary information with them, their trading partners inform problems related to their business, their trading partners exchange information on important business practices with them and they and their trading partners share information that helps for business planning.

### 3.6. Information Quality

The information quality in small manufacturing firms was analyzed and the results are presented in Table 4.

**Table 4 Information Quality in Small Manufacturing Firms**

S. No.	Information Quality	Mean	Standard Deviation
1	We and our trading partners share information timely	3.79	0.71
2	We and our trading partners share information accurately	3.82	0.7
3	We and our trading partners share information completely	3.21	0.73
4	We and our trading partners share information adequately	3.74	0.65
5	We and our trading partners share information constantly	3.69	0.68

The results show that small manufacturing firms are agreed with they and their trading partners share information timely, they and their trading partners share information accurately, they and their trading partners share information adequately and they and their trading partners share information constantly, while, they are neutral with they and their trading partners share information completely.

### 3.7. Internal Lean Practice

The internal lean practice in small manufacturing firms was analyzed and the results are presented in Table 5.

**Table 5 Internal Lean Practice in Small Manufacturing Firms**

S. No.	Internal Lean Practice	Mean	Standard Deviation
1	We attempt to decrease waste of time in operations	3.22	0.64
2	We have programees for improvement of quality	3.81	0.66
3	We supply products as demanded	3.77	0.7

	of customers		
4	We provide short lead times to suppliers	3.3	0.59
5	We regularize business activities properly	3.89	0.38

The results indicate that small manufacturing firms are agreed with they have programees for improvement of quality, they supply products as demanded of customers and they regularize business activities properly, while, they are neutral with they attempt to decrease waste of time in operations and they provide short lead times to suppliers.

### 4. Competitive advantage of small manufacturing firms

The competitive advantage of small manufacturing firms was analyzed and the results are presented in Table 6.

**Table 6 Competitive Advantage of Small Manufacturing Firms**

S. No.	Competitive Advantage	Mean	Standard Deviation
1	We provide products at competitive prices	3.75	0.67
2	We have superior quality	3.8	0.61
3	We deliver products on time	3.71	0.73
4	We offer customized products	3.78	0.69
5	We provide products quickly to market	3.35	0.56

The results reveal that small manufacturing firms are agreed with they provide products at competitive prices, they have superior quality, they deliver products on time and they offer customized products, while, they are neutral with they provide products quickly to market.

#### 4.1. Impact of Supply Chain Management Practices on Competitive Advantage of Small Manufacturing Firms

To analyze the impact of supply chain management practices on competitive advantage of small manufacturing firms, the multiple linear regression is used and the results are presented in Table 7.

**Table 7 Impact of Supply Chain Management Practices on Competitive Advantage of Small Manufacturing Firms**

Supply Chain Management Practices	Regression Co-efficients	t-Value	Sig
Intercept	1.756**	12.53	0
Strategic Supplier Partnership ( $X_1$ )	.382**	9.765	0
Customer Relationship ( $X_2$ )	.145**	5.316	0
Information Sharing ( $X_3$ )	.198**	5.834	0
Information Quality ( $X_4$ )	.324**	8.985	0
Internal Lean Practice ( $X_5$ )	.219**	6.472	0
$R^2$	0.71	-	-
Adjusted $R^2$	0.69	-	-
F	39.792**	-	0

\*\* Significance at one per cent level

The coefficient of multiple determination ( $R^2$ ) is 0.71 and adjusted  $R^2$  is 0.69 revealing the regression model is good fit. It is inferred that 69.00 per cent of the variation in dependent variable is explained by the independent variables. The F-value

of 39.792 is significant at one per cent level implying that the model is significant.

The results show that strategic supplier partnership, information quality, internal lean practice, information sharing and customer relationship have significant and positive impact on competitive advantage of small manufacturing firms at per cent level. Hence, the null hypothesis of there is no significant impact of supply chain management practices on competitive advantage of small manufacturing firms is rejected.

## 5. Conclusion

The foregoing analysis shows that more than three fifth small manufacturing firms are proprietorship firms and more than two fifth of small manufacturing firms have investment of Rs.20-30 lakhs. Nearly half of small manufacturing firms are operating in leased establishments and just more than half of small manufacturing firms have annual turnover of Rs.5-10 lakhs. The strategic supplier partnership, information quality,

internal lean practice, information sharing and customer relationship have significant and positive impact on competitive advantage of small manufacturing firms.

In order to improve the supply chain management practices in manufacturing firms, they should include their major suppliers in planning and goal formation process and they must evaluate degree of customers' satisfaction regularly. In addition, manufacturing firms and their trading partners should share information fully and they must reduce wastage of time for various operations and give shorter lead times to their suppliers. Meanwhile, to improve the competitive advantage of small manufacturing firms, they should supply products swiftly to the market. Besides, small manufacturing firms must practice supply chain management practices effectively and efficiently for enhancing their competitive advantage in turn it influences performance of small manufacturing firms.

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