



A STUDY OF RETAILER SATISFACTION PERTAINING TO MANUFACTURER'S SUPPLY CHAIN PRACTICES WITH REFERENCE TO AYURVEDIC MEDICINE RETAILERS IN KERALA

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Abstract

In this era of cut throat competition, it is an established fact that the competition in the market is not between companies but between supply chains. In this context the retailer, an important supply chain partner in the ayurvedic medicine supply chain has a prominent role, in the supply chain performance as they are close to the customers, who bring revenue to the supply chain. Retailer's satisfaction towards the manufacturer's supply chain practices has an important role in maximising the supply chain profitability and delivering customer value. This study attempts to identify the perception of retailer's regarding different supply chain management practices followed by small and medium ayurvedic medicine manufacturing companies in Kerala tries to establish a relationship between the said SCM practices and level of overall satisfaction of retailer's towards doing business with the manufacturers. It also tries to find out whether there is significant difference in SCM practices and overall satisfaction between retailers of small and medium ayurvedic medicine manufacturing companies in Kerala.

Key words: Supply chain management practices, ayurvedic medicine manufacturing, retailers satisfaction

1. INTRODUCTION

Ayurveda is a life science developed in India about 5000 years back and enjoys a growing recognition internationally as an alternative system of medicine. There is a positive trend of the global consumers towards ayurvedic system of medicine which offers herbal organic and wholesome health care solution especially for non-communicable disease management. Ayurveda medicine industry in India has a market size of Rs 30,000 crores and expected to grow with an annual compound growth rate (CAGR) of 16 %. The unique Ayurveda medicine system prevailing in Kerala popularly known as Kerala Ayurveda mainly uses classical Ayurveda medicine and therapies is very popular and attracts both in the domestic and international level health conscious people and tourists and hence contribute to state economy. The ayurvedic medicine manufacturing companies in Kerala are in the micro small and medium (MSME) sector. Out of the 680 manufacturing units only two are public sector units and majority are private enterprises in the micro segment having an annual turnover less than 5 crores. The remaining 21 ayurvedic medicine manufacturing units in the small scale segment having an annual turnover of 5-50 crores and 6 units in the medium segment having an annual turnover of 50-250 crores. Both small and medium manufactures resort to agency model of distribution for their medicinal products. In the agency model retailers stock 50-70 % of the pharmacopeia of the ayurvedic medicine manufacturers and rest of the medicines are supplied on the request or order from the customer. The product mix of the Arya vaidya sala Kottakkal, who is the biggest player in the sector consists of eight product lines and have more than 500 different products supplied through 1200 dealers and 20 branch offices. The supply chain of an ayurvedic medicine includes

medicinal plant primary collectors or cultivators, middlemen, private traders, commission agents, manufacturer, retailer and the customer. Out of these only the customer in the downstream side brings revenue to the supply chain and retailer supplies the product to the customer. Since the retailer is the only agency dealing directly to the customer who is the only source of revenue to the supply chain retailers have an important role in the chain. In this study an attempt is made to assess the retailer satisfaction pertaining to manufacturer's supply chain practices with reference to ayurvedic medicine retailers in Kerala.

2. SIGNIFICANCE OF THE STUDY

The size of Ayurveda products in India is forecast to rise threefold from US\$2.5 billion in 2015 to US\$8.0 billion by 2022 and in the International market; ayurveda market is expected to grow at a CAGR of 16.2% (Mehta, Raghavan, Gadi, & Kotak, 2018). So there is a considerable demand for ayurvedic products and services in India as well as the global market. However in 2013 there were 1100 registered ayurvedic medicine manufacturing units in the State. By the year 2018, there were only 680 ayurvedic medicine manufacturing companies operating in the State (Ramanathan, D, 2018). In this study it is proposed to assess the level of retailers satisfaction pertaining to manufacturer's supply chain practices with reference to ayurvedic medicine industry in Kerala state. This study is important as retailers are the supply chain partners dealing and delivering product to the final customers who bring revenue to the supply chain.

3. LITERATURE REVIEW

(Maher & Das, 2013) noted that for manufacturers to stay competitive in the market manufacturers have to identify and

understand pros and cons in all aspect of their relationship with retailers as they are the immediate customers in the supply chain context. Sub constructs used to measure Retailer's satisfaction were quality, delivery, cost and manufacturer retailer relationships. Regarding each factor one category is about the retailers expectations from manufacturers and the other category is how the retailers rate the manufacturers for their current performance in four afore mentioned attributes. T- test used to evaluate the difference in mean and found the retailers are not satisfied with the different sub constructs. (Ali & Ahmad, 2010) opined that in this globalisation era profit making attitude lead business organisationsto adopt measures for enhanced satisfaction of their retailers and customers.strategic decisions for the above objective are multi dimensional , interdisciplinary and complex.The variables considered for the study are Information, process, retailers service, retailers expectations. The study reveals that all factors are found significant in retailer's satisfaction. (Schellhase, Hardock, & Ohlwein, 1999) in a study related to food retail sector considered the variables such as contact person, intensity of cooperation, management of prices and condition, quality, flexibility, packing and logistics, sales promotion, shelf servicing, deliver competency and attractiveness of the trading margin, and spread conditions to measure retailers satisfaction .The study reveals that contact persons, intensity of co-operation, management of prices and conditions and quality and flexibility have a strong effect on overall satisfaction. Therefore, these points can be used as a basis for improving the overall satisfaction of the retailers vis-a-vis their suppliers. (Glynn, 2007) did a study in assorted industries and considered variables such as retailer's assessment of a brands performance, the role of category, satisfaction with the brand as independent variables and observed that retailer's assessment of a brands performance is influenced by the role of category and satisfaction with the brand.(Ali, Sadia Samar; Dubey, Rameshwar, 2014) opined that retailer's satisfaction was the buzzword of late 1990s due to the prominence given to service as a major marketing tool. Hence retailers enjoying a healthy share in any business organisations strategic decisions. The study was done by the above researchers to assess retailer's satisfaction index of a prominent FMCG company Nestle India Ltd using the data of 180 retailers. The variables used in the study were process, information, and retailer service and retailer expectation. The study suggested that implementing activities and schemes such as sales promotion, gifts, and exchange offers may provide good future prospects. (Ulrich, 2004) opined that all members in a supply chain should be able to work with others to benefit themselves. (Sahay, 2003) reported the importance of trust with supply chain partners as it enhances cooperation and collaboration. (Biju, Faisal, & Venugopalan, 2013) conducted a study to understand the opinion among retailers of Arya vaidyasala Kottakkal,the biggest ayurvedic medicine manufacturer in Kerala, towards their satisfaction regarding practices followed by the manufacturer. The major variables considered for retailers satisfaction included frequency of the visit of manufacturers sales executive, stock replenishment system ,grievance handling, product quality,

terms and conditions of dealership ,margins and incentives, credit policy and sales promotion technique. The study reveals that majority of the dealers do not find the incentives, discount and terms of conditions of the dealership like credit policy are not beneficial to the retailers. Majority of the retailers opined that a good store lay out and store maintenance policy will attract more customers .(Saravana Kumar & Angupriya, 2018) did a study on dealer satisfaction with reference to the Arya Vaidya Pharmacy (Coimbatore)Ltd. The variables considered for measuring satisfaction included Quality, availability, company policy, margin, credit policy, promotional activities, pricing, timely delivery ,relationship with manufacturers executives. The study reveals that retailers are not satisfied by the credit policy provided by the company.

4. OBJECTIVE OF THE STUDY

1. To identify factors influencing supply chain management practices adopted by ayurvedic medicine manufacturers and their retailers perception towards it
2. To assess the overall level of satisfaction of retailers towards doing business with the manufacturers
3. To establish a relationship between the said SCM practices and level of overall satisfaction of retailer's towards doing business with the manufacturers
4. To find out whether there is significant difference in SCM practices and overall satisfaction between retailers of small and medium ayurvedic medicine manufacturing companies

5. RESEARCH METHODOLOGY

The study is descriptive in nature. The population includes all retailers of small and medium ayurvedic medicine manufacturing companies in Kerala. The sampling method adopted is simple random sampling. The sample size is 51. The retailers of micro segment ayurvedic manufactures were not included as they are mostly owned by the manufacturers. The descriptive statistics of the retailer's given below (table 1.1) shows that 35.3 % of the respondents belong to retailers of small ayurvedic manufacturing companies and 64.7 % respondents belong to retailers of medium ayurvedic manufacturing companies.

Table 1.1 Type SME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small	18	35.3	35.3	35.3
	medium	33	64.7	64.7	100.0
	Total	51	100.0	100.0	

6. FACTOR ANALYSIS

Factor analysis was carried out here as statistical technique for data reduction and to find out latent variables related to supply chain practices. Here the correlation coefficient between all variables as a pair was computed and identified the highly interrelated variable. Those variables which are highly related were combined to form different factors. Principal component analysis was used for extracting variables .For carrying out

better analysis of the extracted item the plot was rotated incorporating the tool Rotation method varimax with Kaiser Normalization. The output of the factor analysis is shown in table 1.2 below. The significance (0.000 is less than assumed value (0.05). This means that factor analysis is valid. Sampling adequacy is ensured from KMO value 0.794. This represents a good factor analysis as the KMO value is greater than 0.5. As four factors have eigen value over 1. So this analysis has 4 factors. The factor analysis indicates four different factors

namely manufactures terms , infrastructure support, logistics support and confidentiality.

Table 1.2:KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.794
Bartlett’s Test of Sphericity	Approx. Chi-Square	694.949
	df	105
	Sig.	.000

Table 1.3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.792	48.514	48.514	6.792	48.514	48.514	3.882	27.302	27.302
2	1.843	13.165	61.679	1.843	13.165	13.165	3.408	24.343	51.664
3	1.553	11.095	72.774	1.553	11.095	11.095	2.451	17.505	69.149
4	1.072	7.660	80.434	1.072	7.660	7.660	1.580	11.285	80.434

Extraction Method: Principal Component Analysis.

Table 1.3 shows that 80.434 % of the variance are explained by four factors which are given below in the table 1.4 Rotated component matrix

Table 1.4 :Rotated Component Matrix

	Component			
	1	2	3	4
resolving stock related problem quickly	.803			
resolving quality related problem	.608			
manufacturer receptive to product quality info	.824			
margin and incentives are attractive	.784			
Retailer friendly credit policy	.757			
Policy to recall non-moving products	.635			
Provide infrastructure for storage of items		.778		
Well defined policy for store maintenance		.860		
Takes demand forecast from retailer		.866		

Provide updates before new product launching		.556		
Provide attractive posters, stickers, notices		.636		
Sales executive visit regularly and supports			.837	
order and delivery process are effective			.890	
Confidentiality is maintained				.866

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

As four factors have eigen value over 1. So this analysis has 4 factors. The factor analysis indicates four different factors namely terms of business, infrastructure support, logistics support and confidentiality. According to factor analysis following four factors were extracted

Factor1 includes variables such as margin and incentives are attractive, retailer friendly credit policy, policy to recall non-moving products, resolving stock related problem, resolving quality related problems, manufacture receptive to product quality information and is given the factor name as terms of business. Factor2 includes variables such as infrastructure for storage of items, well defined policy for store maintenance, takes demand forecast from retailer, provide updates before new product launch, provide attractive posters, stickers and notice and is given the factor name as infrastructure support. Factor 3 includes variables such as sales executive visit regularly and

is supportive, order and delivery process are effective and is given the factor name as logistics support. Factor 4 includes only one variable as confidentiality is maintained and is given the factor name as confidentiality

7. MODEL OF THE RETAILER'S SATISFACTION

From the four factors derived through factor analysis as the independent variables and retailers overall satisfaction as the dependent variable, a model was derived using multiple regression analysis as below.

Table 1.5 Model Summaries

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892 ^a	.796	.778	.372

a. Predictors: (Constant), confidentiality, logistics support, Infrastructure Support, Terms of Business

Table 1.6 ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	24.817	4	6.204	44.881	.000 ^b
	Residual	6.359	46	.138		
	Total	31.176	50			

a. Dependent Variable: overall satisfaction

b. Predictors: (Constant), confidentiality, logistics support, Infrastructure support, Terms of business

Table 1.7 Coefficientsa

Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	-.964	.608		-1.584	.020
	Terms of business	.104	.018	.497	5.745	.000
	Infrastructure support	-.013	.027	-.041	-.478	.635
	logistics support	.282	.044	.530	6.388	.000
	confidentiality	.118	.150	.058	.787	.435

Table 1.9 Independent samples test (Terms of business)

		Levenes's Test for Equality of variances		T-test for Equality for Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Terms of Business	Equal Variance assumed	5.400	.024	4.996	49	.000	4.5656	.91387	2.729	6.4021
	Equal Variances not Assumed			5.688	47.8	.000	4.5656	.80265	2.951	6.1796

a. Dependent Variable: overall satisfaction

Therefore overall satisfaction of retailer =

$$-0.964 + 0.104 \times \text{terms of business} + 0.282 \times \text{logistics support}$$

8. HYPOTHESIS

To test whether there is significant difference between retailers of small and medium ayurvedic manufacturing towards the supply chain practices of the manufacturing companies following hypotheses were framed.

H1: There is significant difference in perception of retailers on supply chain management practices between small and medium manufacturers

H1a: There is significant difference in perception of retailers on terms of business between small and medium manufacturers

H1b: There is significant difference in perception of retailers on logistics support between small and medium manufacturers

H2: There is significant difference in overall satisfaction of retailers on supply chain management practices between small and medium manufacturers

Since the retailers are different for small and medium ayurvedic medicine manufacturing companies, independent sample t test is used for testing the hypothesis.

The test results are shown below.

8.1 Terms of business

Table 1.8: Group Statistics (Terms of business)

	Type SME	N	Mean	Std. Deviation	Std. Error Mean
Terms of business	Small	18	24.7778	2.21108	.52116
	medium	33	20.2121	3.50676	.61045

Regarding the factor terms of business, the mean value of retailers of small manufacture is 24.7778 and that of medium manufacturer is 20.2121 and is found significant (0.000). So H1a is accepted and it can be concluded that regarding terms of business retailers of small manufactures have higher perception level than that of medium companies. Factor1 variables such as attractive margin and incentives, retailer friendly credit policy, policy to recall non-moving products, resolving stock related problem, resolving quality related problems, manufacture receptive to product quality information were found significantly different and high in retailers of small

ayurvedic medicine manufacturing companies compared to medium companies.

8.2 Logistics Support

Table 1.10 :Group Statistics (Logistics support)

	Type SME	N	Mean	Std. Deviation	Std. Error Mean
Logistics support	Small	18	8.2778	1.27443	.30039
	medium	33	7.5455	1.54295	.26859

Table 1.11 Independent samples test (Logistics support)

		Levenes's Test for Equality of variances		T-test for Equality for Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Logistics Support	Equal Variance assumed	.288	.594	1.717	49	.092	.7323	.4264	-1.2468	1.5893
	Equal Variances not Assumed			1.817	41.095	.076	.7323	.4029	-.08141	1.5460

Regarding logistics support the mean perceived score of retailers of small manufacturing companies is 8.2778 and that of medium manufacturing companies is 7.5455. How ever this difference is not significant (p >0.05). So H1b is rejected and it can be concluded that regarding logistics support retailers of small and medium manufactures are not significantly different.

retailers on supply chain management practices between small and medium manufacturers.

8.3 Overall satisfaction

Table 1.12 :Group Statistics(Overall Satisfaction)

	Type SME	N	Mean	Std. Deviation	Std. Error Mean
overall satisfaction	Small	18	4.22	.428	.101
	medium	33	3.52	.834	.145

Since H1a is accepted, it can be concluded that H1 is accepted and hence there is a significant difference in perception of

Table 1.13 Independent samples test (overall satisfaction)

		Levenes's Test for Equality of variances		T-test for Equality for Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
overall satisfaction	Equal Variance assumed	11.9	.001	3.355	49	.002	.707	.211	.284	1.131
	Equal Variances not Assumed			4.001	48.9	.000	.707	.177	.352	1.062

Regarding overall satisfaction the mean satisfaction score of retailers of small manufacturing companies is 4.22 and that of medium manufacturing companies is 3.52. Also this difference

is significant (p <0.05). So it can be concluded that regarding overall satisfaction, retailers of small manufactures are more satisfied than that of medium manufacturers.

9. DESCRIPTIVE STATISTICS OF THE VARIABLES

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
sales executive visit	51	2	5	3.98	.787
Demand forecast	51	2	4	2.82	.623
problem solving stock	51	2	5	3.71	.782
problem solving quality	51	3	5	3.84	.418
confidentiality	51	4	5	4.18	.385
new product update	51	3	5	4.35	.559
posters	51	3	5	4.25	.523
info abt product quality	51	3	5	4.00	.490
infrastructure	51	2	4	2.96	.667
store policy	51	2	4	2.94	.564
margin and incentives	51	2	5	3.51	.946
credit policy	51	2	5	3.61	1.041
recall products	51	2	4	2.99	.634
order and delivery process	51	2	5	3.82	.793
Valid N (listwise)	51				

From the descriptive statistics of each variable considering the entire sample of study, it is found that demand forecast, infrastructure, and store policy has mean value less than 3. It means the perception of retailers about these variables are relatively low.

10. DISCUSSIONS

Terms of business between the ayurvedic manufacturing companies and logistics support provided by the manufacturers are the two important factors significantly affecting overall satisfaction. Attractive margin and incentives, retailer friendly credit policy, policy to recall non-moving products, resolving stock related problem, resolving quality related problems, manufacture receptive to product quality information provided by retailers are the variables affecting the terms of business and regular visit by marketing executives of the manufacturers and their support and effectiveness of the order and delivery process are the variables affecting the factor logistics support. To improve retailers satisfaction above mentioned aspects are to be improved. Between retailers of small and medium manufactures, retailers of small category manufactures have significantly higher satisfaction compared to medium manufactures. Parameters like attractive margin and incentives, retailer friendly credit policy, policy to recall non moving products, resolving stock related problem, resolving quality related problems, manufacture receptive to product quality information provided by retailers are found to have higher perception score for retailers of small category manufactures compared to medium category. This may be because of higher bargaining capacity of medium manufactures because of their brand image, economies of scale. This is in line with the findings of (Biju, Faisal, & Venugopalan, 2013) and (Saravana Kumar & Angupriya, 2018) regarding their study of retailer satisfaction of medium ayurvedic medicine manufacturing companies. So medium manufacturers may take strategies so that perceived satisfaction of the retailers regarding profit margin, credit policy

may be enhanced. Manufactures especially in the medium category should help retailers to sell their non moving products specifically those medicines nearing expiry date or shelf life through other outlets. Majority of the ayurvedic manufacturers are not considering the input from retailers for their demand forecasting. If this is done demand forecasting will be more accurate and inventory and associated cost can be reduced without affecting the service level. This will reduce the bullwhip effect in the sector. In this era of digital technology it will be easier to capture point of sale data from the large retailers and manage their inventory to an optimum level without affecting the service level. Majority of the manufactures use bar code for the identification of products. However large companies may use RFID for the ensuring product quality of their products so that spurious items are not mixed. To reduce inventory training on inventory management, benchmarking and technical support should be given to retailers. Manufacturers may implement 3 PL (Third party logistics) where their logistics activities are outsourced to a competent agency efficiency and cost advantage can be obtained. Concepts like vendor managed inventory (VMI) and just in time (JIT), collaborative planning forecasting and replenishment models can be introduced. Infrastructure support for the store and related store policies the perceived score is less and does not affect retailer's satisfaction. In marketing of product including services physical evidence has an important place. So manufactures should help retailers for infrastructure support in the store, especially store layout, visual merchandising and related areas.

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