

**Outsourcing in Purchase Department of Hospitals****Dr. T. Lata Sujta****Associate Professor****Department of Business Management****R.B.V.R.R. Womens College****Abstract**

Purchasing means to buy various materials by paying money or its equivalent from suppliers / vendors. Purchasing is the responsibility of the store to procure needed material which is of right quality, at the right price, from the right source, at the right time and at the right place in a most economical way. Hospital purchasing alliance is voluntary consortia of hospitals that aggregate their contractual purchases of supplies from manufacturers.

**Introduction**

Purchasing means to buy various materials by paying money or its equivalent from suppliers / vendors. In this process, the materials are bought and acquired using some standardized specifications. The act of purchasing is a fundamental function in the supply cycle. Purchasing is the responsibility of the store to procure needed material which is of right quality, at the right price, from the right source, at the right time and at the right place in a most economical way. This also includes selection of sources of supply, finalization of terms of purchase, placement of purchase order, follow up, maintenance of smooth relation with suppliers, approval of payments of suppliers, evaluating and rating suppliers.

**Summary of Prior Research**

The bulk of the academic literature suggests that the performance of purchasing alliances should be gauged by the value (e.g., tangible savings and intangible benefits) they add to their hospital members (Schneller & Smeltzer, 2006, pp. 102 and 110). There is a clear presumption in the academic research that such value is conferred based on prior research documenting lower alliance prices (Cleverly & Nutt, 1984) and given that an estimated 90–98% of hospitals belong to purchasing alliances. Nevertheless, there is considerable controversy in the public arena and the courts and little empirical data. This study seeks to document the degree to which hospitals acknowledge this value-added contribution and in which alliance areas.

**Purpose of the Study**

This study thus builds upon prior research but also seeks to extend it in several ways. First, the analysis is based on empirical data drawn from a survey of hospitals of Hyderabad and Secunderabad to identify various attributes which will improve the functioning of Purchasing Department by outsourcing. Second, to group the attributes that are identified which will improve the Purchase Department capabilities by outsourcing them by those hospitals into factors to have an effective focus on them. Third, to identify the reasons, for which outsourcing is needed in Purchase Departments of various hospitals in Hyderabad and Secunderabad. Fourth, to examine the degree of association, if any, between identified reasons, those are effective in Purchase Departments in various hospitals of Hyderabad and Secunderabad.

**Outsourcing Rationale in a Healthcare Setting**

Outsourcing, or transferring internal activities to third parties (Greaver, 1999), can assume several forms in a wide spectrum of relationships (Ballou, 2003; Franceschini & Galetto, 2003; Sanders et al., 2007). A theoretical evolution from transaction cost analysis (TCA) (Coase, 1988, Williamson, 1979) and agency theory (Eisenhardt, 1989) to a resource-based view (RBV), which supports outsourcing noncore activities, keeping core activities internal (Bettis et al., 1992; Kelley, 1995; Lacity et al., 1995; Mullin, 1996; Peisch, 1995; Prahalad & Hamel, 1990; Quinn & Hilmer, 1994). Outsourcing decisions frequently result in organizational change. Even low-volatility sectors such as healthcare (Goepfert, 2002) have riotous periods resulting from regulations alteration, more informed and demanding patients. In this entrepreneurship environment, healthcare organizations adopt outsourcing solutions for the same reasons as in other sectors (Quinn & Hilmer, 1994): looking for efficiency, quality, and profitability gains. However, in healthcare units, outsourcing is part of volume flexible strategies to adapt capacity (namely in bigger organizations such as academic medical centers) trying to respond to demand flotation's, care that is increasingly complex, and to the linkage between clinical performance and number of medical acts (Jack & Powers, 2006). In fact, according to some authors (Atun, 2006; Campos, 2004), in some European countries that are more politically reluctant to privatizations (e.g., the United Kingdom, Sweden, Spain, and Portugal), outsourcing of clinical services was a response to waiting lists. Through contracting agreements with public and private providers (including public-private partnerships [PPPs]), healthcare systems looked for access, quality, equity, and efficiency advantages (Abramson, 2001; Liu et al., 2004).

Although the extension of outsourcing decisions from nonclinical to clinical activities occurred in the healthcare sector later than in other sectors, the phenomenon took a global scale with many reported cases, from medical transcription to the latest trend of "medical tourism" with people travelling abroad for healthcare services seizing the best relaxing environment for recovering (Bies & Zacharia, 2007; McCallum & Jacoby, 2007).

**Main Drivers**

From reviewing the literature, the most pointed drivers for outsourcing in healthcare units re (1) cost reduction, (2) risk mitigation, (3) adapting to quick changes without jeopardizing internal resources, and (4) value stream redefining (Alper, 2004; Bhattacharya et al., 2003; Chen & Perry, 2003; Hazelwood et al., 2005; Lorence & Spink, 2004; Roberts, 2001; Wholey et al., 2001; Yang & Huang, 2002). Wigglesworth and Zelcer (1998) defend the outsourcing of healthcare units' supply chain global management to specialized providers identifying three reasons: (1) the possibility of externalizing noncore activities but critical to process-oriented organizations; (2) the transference of information technology to support SCM investment, which allows the leverage of its nuclear capacities; and (3) the possibility for critical mass to build up and achieve economies of scale.

Yang and Huang (2002) identify four imperatives for outsourcing growth in the healthcare sector: (1) organizational, (2) strategic, (3) regulatory, and (4) technological. Still, outsourcing decisions in healthcare units depend on (1) the kind of activity (modular versus integral; more or less contractible); (2) the type of contract (classical versus relational); (3) contract duration depending on contract type and supplier selection process; (4) specification of performance requirements (process and outcomes indicators); and finally (5) payment mechanisms (Liu et al., 2007).

**Methodology**

The study employs primary data collected by communicating with CEOs and Directors of the hospitals with the help of a structured questionnaire. The survey was carried out in Hyderabad and Secunderabad. The study employed an enquiry to represent the true characteristic of the population by using purposive sampling. The respondents were CEOs and Directors of hospitals. The final sample size is 111 hospitals. The analysis of data was carried out using Statistical Package for the Social Sciences (SPSS) 10.0 for Windows. An open end questions are used in the questionnaire for the purpose of data collection of this paper.

**Outsourcing Practices in Purchase Department**

Purchasing department deals mostly with outsourcing activities in hospitals. The table 1 shows the extent of adoption of outsourcing practices by purchasing department in hospitals.

Table 1: Outsourcing practices in Purchase Department

Outsourcing Practices in Purchase Department	Responded Hospitals	Percentage
Yes	64	57.7
No	47	42.3
Total	111	100.00

64 hospitals (i.e., 57.7 percent) are adopting outsourcing practices in purchase department.

Twelve important attributes are identified for the improvement of Purchase Department, and the respondents are requested to rank these reasons on a 5-point Likert scale.

Table 2: Improvements from outsourcing in the purchase department

S. No	Percent of Responses							
	Attributes	5	4	3	2	1	p	Z  Value
1	Improved asset Productivity	41.4	12.6	14.4	17.1	14.4	0.41	1.993
2	Reduced Paper Work	26.1	25.4	7.2	24.3	17.1	0.41	1.803
3	Improved team work and cooperation among employees	23.4	19.8	18.9	29.7	8.1	0.41	1.803
4	Improved consistency of services to other areas	28.8	7.2	22.5	33.3	8.1	0.41	1.803
5	Increased Customer Satisfaction	24.3	20.7	15.3	15.3	24.3	0.396	<b>2.183*</b>
6	Increased flexibility in Product	31.5	13.5	16.2	24.3	14.4	0.39	<b>2.373*</b>
7	Improved relationships with customers	37.8	8.1	17.1	28.8	8.1	0.369	<b>2.753*</b>
8	Improved relationships with suppliers	36.1	8.1	18.9	29.7	6.3	0.36	<b>2.953*</b>
9	Reduce Inventory Levels	36.9	16.2	12.6	19.8	14.4	0.34	<b>3.322*</b>
10	Compressed Order Cycle Time	36.9	5.4	23.4	31.5	2.7	0.34	<b>3.322*</b>
11	Reduce Operating Cost	38.7	26.1	6.3	22.5	6.3	0.28	<b>4.161*</b>
12	Increased Market Share	36.0	20.7	15.3	22.5	5.4	0.28	<b>4.65*</b>

Note: \* indicates that z value is significant

### Hypotheses:

H<sub>01</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing to **improve customer satisfaction** in Purchase department and Proportion of Hospitals not used the outsourcing to improve customer satisfaction in Purchase department

H<sub>02</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing to **increase flexibility in Product** in Purchase department and Proportion of Hospitals not used the outsourcing to increase flexibility in Product in Purchase department

H<sub>03</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing to **Improved relationships with customers** in Purchase department and Proportion of Hospitals not used the outsourcing to Improved relationships with customers in Purchase department

H<sub>04</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing **Improved relationships with suppliers** in Purchase department and Proportion of Hospitals not used the outsourcing to Improved relationships with suppliers in Purchase department

H<sub>05</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing **Reduce Inventory Levels** in Purchase department and Proportion of Hospitals not used the outsourcing to Reduce Inventory Levels in Purchase department

H<sub>06</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing **Compressed Order Cycle Time** in Purchase department and Proportion of Hospitals not used the outsourcing to Compressed Order Cycle Time in Purchase department

H<sub>07</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing **Reduce Operating Cost** in Purchase department and Proportion of Hospitals not used the outsourcing to Reduce Operating Cost in Purchase department

H<sub>08</sub>: There is no significance difference of Proportion of Hospitals used the outsourcing **Increased Market Share** in Purchase department and Proportion of Hospitals not used the outsourcing to Increased Market Share in Purchase department

**Z<sub>α</sub> = 1.96 at 5% level of significance**

From the above table p=0.396. Calculated |Z| Value =2.183. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to improve customer satisfaction in Purchase Department is not equal to Proportion of Hospitals not used the reason for outsourcing to improve customer satisfaction in Purchase Department.**

p=0.39 Calculated |Z| Value =**2.373**. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to Improve Quality of Product in Purchase department is not equal to Proportion of Hospitals not used the outsourcing to Improve Quality of Product in Purchase Department.**

p=0.369. Calculated |Z| Value =**2.753**. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to Improve relationships with customers in Purchase department is not equal to Proportion of Hospitals not used the outsourcing to improve relationships with customers in Purchase Department.**

p=0.36. Calculated |Z| Value =**2.953**. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to improve relationships with suppliers in Purchase department is not equal to Proportion of Hospitals not used the outsourcing to improve relationships with suppliers in Purchase department.**

p=0.34. Calculated |Z| Value =**3.322**. Hence it may be concluded that **Proportion of Hospitals used the reason for outsourcing to Reduce Inventory Levels in Purchase department is not equal to Proportion of Hospitals not used the reason for outsourcing to Reduce Inventory Levels in Purchase department.**

p=0.34. Calculated |Z| Value =**3.322**. Hence it may be concluded that **Proportion of Hospitals used the reason for outsourcing to Compress Order Cycle Time in Purchase department is not equal to Proportion of Hospitals not used the reason for outsourcing to Compress Order Cycle Time in Purchase department.**

$p=0.28$ . Calculated  $|Z|$  Value = **4.161**. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to Reduce Operating Cost in Purchase department is not equal to Proportion of Hospitals not used the outsourcing to Reduce Operating Cost in Purchase department.**

$p=0.2523$ . Calculated  $|Z|$  Value = **5.219**. Hence it may be concluded that **Proportion of Hospitals used the reason for outsourcing to Increase Coordination with Supplier in Purchase department is not equal to Proportion of Hospitals not used the reason for outsourcing to Increase Coordination with Supplier in Purchase department.**

$p=0.28$ . Calculated  $|Z|$  Value = **4.65**. Hence it may be concluded that **Proportion of Hospitals used the outsourcing to Increase Market Share in Purchase department is not equal to Proportion of Hospitals not used the outsourcing to Increase Market Share in Purchase department.**

### ***Factor Analysis - Outsourcing Practice in Purchase Department***

The respondents were asked to rate the improvements that they realized from outsourcing in purchase department for twelve items. A five-point scale ranging from fully realized to have not begun to realize. These data were analyzed through principal component analysis.

The following table shows the factor analysis outputs for the practices followed in outsourcing in the purchase departments of various hospitals.

$V_1$ = Reduce Operating Cost	Improved relationships with customers
$V_2$ = Reduce Inventory Levels	Improved relationships with suppliers
$V_3$ = Improved asset Productivity	Improved team work and cooperation among employees
$V_4$ = Compressed Order Cycle Time	
$V_5$ = Reduced Paper Work	$V_{11}$ = Improved consistency of services to other areas
$V_6$ = Increased Customer Satisfaction	$V_{12}$ = Increased flexibility in Product
$V_7$ = Increased Market Share	

The first step in interpreting the output is to look at the factor extracted by Principal Components Technique. Important factors are extracted by using Eigen values of one or more than one value and the cumulative percentage of variance.

From Table 3, it can be seen that there are two factors which have an Eigen value 1 or more than 1. The last column in the table shows cumulative percentages for the two extracted factors together account for 73.164 percent of the total variance. This is a good deal because with only two factors (reduced from 12 variables) we have lost only 27 percent of the information content, while 73 percent is retained by two factors extracted out of 12 original variables. The factors identified are internal core competence and Relationship management with Customers, Suppliers and Employees

Table 3: Factors in Purchase Department – Variances and Loads

S.no	Attributes	Initial Eigen values			Factors Loads	
		Total	% of Variance	Cumulative %	1	2
1	V <sub>1</sub>	7.131	59.424	59.424	<b>0.788</b>	0.106
2	V <sub>2</sub>	1.649	13.740	73.164	<b>0.843</b>	0.296
3	V <sub>3</sub>	.904	7.535	80.699	<b>0.827</b>	0.317
4	V <sub>4</sub>	.681	5.677	86.376	0.486	0.647
5	V <sub>5</sub>	.496	4.137	90.513	<b>0.880</b>	0.162
6	V <sub>6</sub>	.307	2.561	93.073	<b>0.809</b>	0.405
7	V <sub>7</sub>	.232	1.936	95.010	0.561	0.545
8	V <sub>8</sub>	.196	1.634	96.644	0.103	<b>0.887</b>
9	V <sub>9</sub>	.164	1.367	98.011	0.045	<b>0.901</b>
10	V <sub>10</sub>	.123	1.024	99.035	0.442	<b>0.739</b>
11	V <sub>11</sub>	.065	.545	99.580	0.405	<b>0.698</b>
12	V <sub>12</sub>	.050	.420	100.00	0.447	<b>0.690</b>

Extraction Method: Principal Components Analysis.

The interpretation of these two factors can be done with the help of Table 3.

### Factor 1: Internal Core Competence

Looking at table 5.3, the components have reduced paper work, reduced inventory levels, improved asset productivity, increased customer satisfaction and reduced on operation costs have loading of 0.880, 0.843, 0.827, 0.809 and 0.788 respectively on factor 1. Hence, factor 1 could be named as 'Internal Core Competence'.

### Factor 2: Relationship Management

.The components identified as improved relationships with suppliers, improved relationships with customers, improved team work and cooperation among employees, improved consistency of services of other areas, increased flexibility in product selection and compressed order cycle time have loading of 0.901, 0.887, 0.739, 0.698, 0.690 and 0.647 respectively on factor 2. This factor can be named as 'Relationship management' which includes Customers, Suppliers and Employees.

Table 3(a): Summary of Factors

<b>FACTOR I</b>	<b>FACTOR II</b>
<b>Internal core competence</b>	<b>Relationship management with Customers, Suppliers and Employees</b>
Reduced operation costs	Compressed order cycle time
Reduce inventory levels	Improved relationships with customers
Improved asset productivity	Improved relationships with suppliers
Reduced paper work	Improved team work and cooperation among employees
Increased customer satisfaction	Improved consistency of services of other areas
	Increased flexibility in product

**Pattern Analysis - Outsourcing Practices in Purchase Department**

Purchasing department is a very important functional area in any hospital. The following table shows the various reasons for which hospitals are going for outsourcing in purchase department.

Many reasons lead to outsource some activities in purchase department in various hospitals. If the degree of association between various activities which are outsourcing is known, then the cause of outsourcing can be identified. The same numbering scheme is followed for finding the association between departments and calculated the code count and code total for all combinations of outsourced departments.

The following table gives the frequency distribution of reasons for outsourcing in purchase department.

$2^1 = 2$  = Improve Quality of Product (IQP)

$2^2 = 4$  = Reduce Costs of operations (RCO)

$2^3 = 8$  = Improve Communication with Supplier Operation (ICwS)

$2^4 = 16$  = Improve System Reliability (ISR)

$2^5 = 32$  = Reduce Lead Time (RLT)

$2^6 = 64$  = Improve Flexibility of Product (IFP)

$2^7 = 128$  = Maintain Competitiveness (MC)

$2^8 = 256$  = Increase Coordination with Supplier (ICoS)  $2^9 = 512$  = Increase Market Share (IMS)

Table 4: Combinations of reasons for outsourcing

<b>Code Total</b>	<b>Combination</b>	<b>Responded Hospitals</b>
671	Improve Customer Satisfaction, Improve Quality of Product, Reduce Costs of Operation, Improve Communication with supplier, Improve System Reliability, Maintain Competitiveness & Increase Market Share	8
1023	All	7
5	Improve Customer Satisfaction & Reduce Costs of Operations	6
55	Improve Customer Satisfaction, Improve Quality of Product, Reduce Costs of Operation,	5

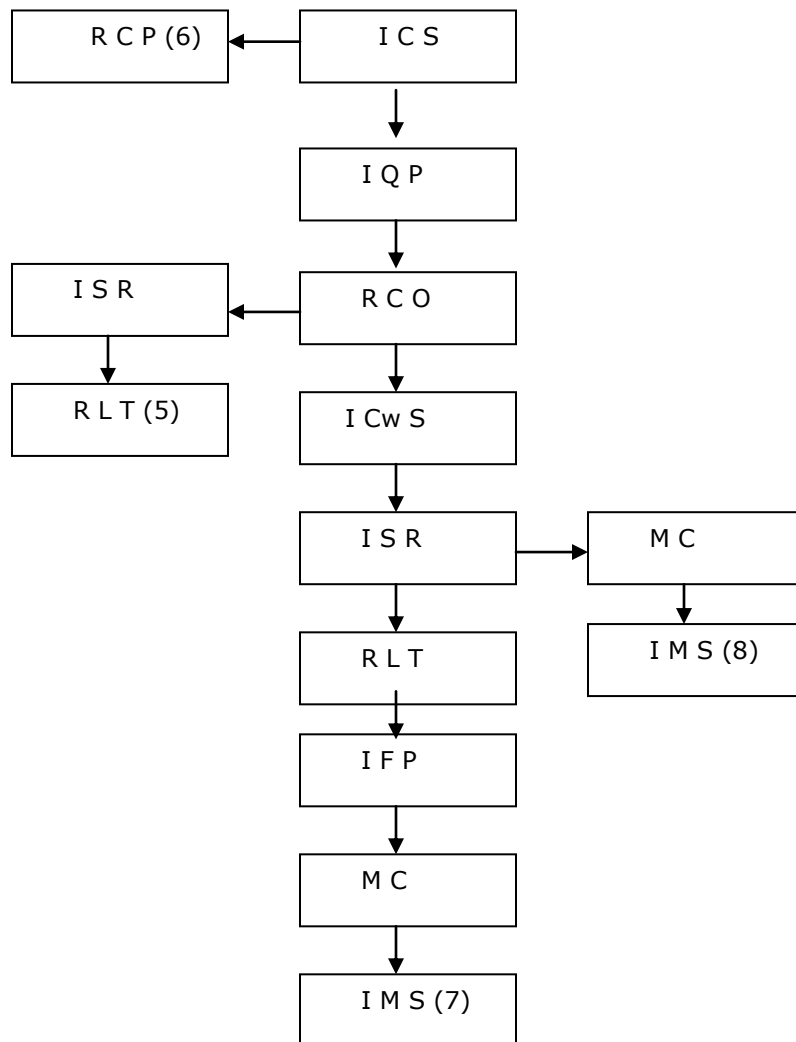


	Improve System Reliability & Reduce Lead Time	
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The hospitals opting for outsourcing for various combinations of reasons in their purchase departments is depicted in the following figure.

ICS= Improve Customer Satisfaction	RLT = Reduce Lead Time
	IFP = Improve Flexibility of Product
RCO = Reduce Costs of	MC = Maintain Competitiveness
	ICoS = Increase Coordination with Supplier
ISR = Improve System	IMS = Increase Market Share

Fig 2: Combinations of various reasons



### Conclusions:

58 percent of the hospitals have adopted outsourcing practices in purchase department. 45.05 percent of the hospitals practice outsourcing in the purchase department in order to improve customer satisfaction and improve quality of product respectively. 44.14 percent of hospitals have adopted outsourcing practices in the purchase department to reduce cost of operations. 32.43 percent of hospitals that practice outsourcing in the purchase department do so to improve communication with the supplier while 31.53 percent of hospitals practice outsourcing for improving reliability in the purchase department. 27.93 percent of hospitals practice outsourcing in the purchase department for reducing the lead time, 25.23 percent of hospitals practice outsourcing to improve flexibility of product and to maintain competitiveness respectively. 24.32 percent of hospitals practice outsourcing for increasing coordination with suppliers in the purchase department. 17.12 percent of hospitals that practice outsourcing do so to increase market share.

The factor analysis results show that factor 1 is 'Internal core competence', and factor 2 is 'Relationship management with Customers, Suppliers and Employees'.

The **Pattern Analysis** results show that 8 hospitals opted to adopt outsourcing in purchase department for various reasons like improving Customer Satisfaction, Improving Quality of Product, Reducing Costs of Operation, Improving Communication with supplier, Improving System Reliability, Maintaining Competitiveness & Increasing Market Share.

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