

# INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE & MANAGEMENT

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# CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	HOSPITALS OUTSOURCING COMPLETE DEPARTMENTS: A STUDY <i>DR. T. LATA SUJATA, B. KRISHNA REDDY &amp; DR. C.JAYALAKSHMI</i>	1
2.	A STUDY OF CORPORATE BOND MARKET IN INDIA AND ITS LIQUIDITY <i>HEMA GWALANI &amp; DR. D. B. BHARATI</i>	5
3.	FRUIT AND VEGETABLE MARKETING FOR SMALL SCALE GROWERS IN INDIA <i>DR. M S SUBHAS &amp; HALASWAMY D. NAIK</i>	9
4.	PERFORMANCE OF PROFITABILITY MANAGEMENT IN LANCO INDUSTRIES LIMITED: AN EVALUATION <i>N. K. PRADEEP KUMAR &amp; P. MOHAN REDDY</i>	12
5.	KEY CHALLENGES FOR INDIAN MANAGERS: IMPACT OF FDI ENTRY IN RETAIL MARKET <i>CHELLAM SHENBAGAM</i>	16
6.	IMPACT OF FOREIGN INSTITUTIONAL INVESTMENT ON STOCK INDICES IN INDIA <i>DR. S. NIRMALA &amp; ARUNA.G</i>	19
7.	TREND AND PROSPECT OF PRIVATE EQUITY FUND IN ASIA-PACIFIC COUNTRIES: A LESSON FROM INDIA <i>DR. MANAS CHAKRABARTI</i>	26
8.	CORPORATE ENVIRONMENTAL REPORTING IN THE CONTEXT OF RECENT CHANGES IN REGULATORY FRAMEWORK WITH SPECIAL REFERENCE TO INDIA <i>DR. BHASKAR JYOTI BORA &amp; TILAK CH DAS</i>	32
9.	BRAND CHOICE DECISION OF INDIAN URBAN FAMILY <i>SRI. JAYA PRAKASH RATH, SRI. RAJESH KUMAR SAIN &amp; SRI. ANJAN KUMAR MOHANTY</i>	39
10.	FOREIGN DIRECT INVESTMENT IN INDIAN MULTI BRAND RETAIL TRADE: STAKEHOLDER PERSPECTIVE <i>PRATIK MAVANI &amp; DR. AMIT R. PANDYA</i>	42
11.	EFFICIENT MARKET HYPOTHESIS IN CHINA STOCK MARKETS <i>SHIKHA MAHAJAN &amp; MANISHA LUTHRA</i>	47
12.	PORTFOLIO PERFORMANCE EVALUATION OF SELECTED SECTORS INDEX OF BSE <i>KARAN SAGAR &amp; ALPESH GAJERA</i>	51
13.	A STUDY OF SERVICE QUALITY PERSPECTIVES AND CUSTOMER SATISFACTION <i>RAVINARAYANA K.S.</i>	55
14.	A STUDY ON COST EFFECTIVE METHOD OF RECRUITMENT AT KGISL <i>PARVATA RAJ PRABHU</i>	59
15.	STRUCTURED EMOTIONAL CAREER COUNSELLING AND CAREER DEVELOPMENT <i>DR. SEHBA HUSAIN</i>	66
16.	CUSTOMER PERCEPTION OF SERVICE QUALITY DIMENSIONS IN INDIAN BANKING INDUSTRY <i>AISHWARYA GOYAL</i>	75
17.	A COMPARATIVE STUDY OF ORGANIZED AND UN-ORGANIZED FOOD RETAILING IN AHMEDABAD CITY OF GUJARAT <i>SANJIV KUMAR</i>	81
18.	MERGERS AND ACQUISITIONS A PREREQUISITE GROWTH STRATEGY FOR INDIAN HEALTHCARE INDUSTRY: A CRITICAL ANALYSIS OF RANBAXY-DAIICHI ALLIANCE <i>PREETI SINGH</i>	85
19.	IFRS: NEED OF PRESENT SCENARIO <i>NEERU RANI</i>	87
20.	THE ROLE OF LEADERSHIP IN THE GROWTH OF YOUTH OWNED ENTREPRISES IN KENYA: A CASE OF NYERI COUNTY <i>SAMWEL MACHARIA CHEGE &amp; CATHERINE KAIMENYI</i>	93
21.	INFLUENCE OF UNIVERSITY INCENTIVES FOR CAREER DEVELOPMENT ON LECTURERS' PERFORMANCE IN PUBLIC UNIVERSITIES IN KENYA <i>DR. JANET N.MANYASI</i>	97
22.	ENTREPRENEURIAL BEHAVIOUR AND BUSINESS SUCCESS OF SMALL SCALE ORGANIC VEGETABLE FARMERS <i>M.G.P.P. MAHINDARATHNE</i>	102
23.	DOES ENTREPRENEURSHIP PROGRAMS INFLUENCE BUSINESS PERFORMANCE? AN EMPIRICAL INVESTIGATION OF THE NIGERIA SMEs <i>DR. AKANDE O.O</i>	107
24.	VOLATILITY OF INDIAN STOCK MARKET WITH REFERENCE TO CHANGE IN FII POLICY 2001 <i>AMEE I. DAVE &amp; PRIYA D. PARIKH</i>	112
25.	INFLUENCE OF EMPOWERMENT ON EMPLOYEE PERFORMANCE: A CASE OF PRIMARY SCHOOL TEACHERS' IN KAKAMEGA CENTRAL DISTRICT, KENYA <i>ROBERT K.W. EGESEA &amp; SHITSESWA E. AYUB</i>	117
26.	THE IMPACT OF HRM PRACTICES IN INDIAN SUGAR INDUSTRY <i>DR. S. SURESH &amp; K. V. MURALIDHARA RAO</i>	121
27.	RADIO LISTENERS AND ADVERTISEMENTS: AN EXPLORATORY APPROACH <i>IRFAN MUMTAZ K.S.</i>	126
28.	THE IMPACT OF TOTAL QUALITY MANAGEMENT ON BANKS AND WORKERS PERFORMANCE: A CASE STUDY <i>RAKESH, C &amp; SHABARISHA, N</i>	128
29.	EXAMINING THE RELATION OF WORK ETHICS TO JOB SATISFACTION AND WORK STRESS IN EMPLOYEES OF PAYAME NOOR UNIVERSITY CENTRAL ORGANIZATION <i>BAHAREH SHAHRIARI</i>	131
30.	FDI AND MULTI BRAND TRADE IN INDIA <i>ASHISH KUMAR</i>	136
	REQUEST FOR FEEDBACK	139

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**NEED/IMPORTANCE OF THE STUDY**

**STATEMENT OF THE PROBLEM**

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**HYPOTHESES**

**RESEARCH METHODOLOGY**

**RESULTS & DISCUSSION**

**FINDINGS**

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**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

**CONFERENCE PAPERS**

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**HOSPITALS OUTSOURCING COMPLETE DEPARTMENTS: A STUDY**

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**ABSTRACT**

*Some of the hospitals are outsourcing various Departments. This article investigates what are the various Departments outsourced by those hospitals separately. Further, the study also analyzes the relationship between various Departments by using a procedure called Pattern Analysis. The procedure identifies various Departments that are outsourced by the hospitals and gives a binary digit either 1 or 0. Further, the procedure also generates a code value of various Departments outsourced by the hospitals. The code provides us to identify various combinations of Departments that are outsourced by hospitals. By using these code values we can decompose the Codes and can identify various Departments that are outsourced by various hospitals.*

**KEYWORDS**

Outsourcing, Hospitals, Departments, Pattern Analysis.

**INTRODUCTION**

As services spread out, a number of non-cores necessary activities are also coming into view. Now-a-days most of the world's largest hospitals are facing the challenge of competition. To meet this challenge, leading hospitals are concentrating more on their core services rather than non-core services. These processes need the management time, energy and also additional cost.

**Outsourcing** is one of the best solutions for such problems. **S. Nakkiran et al (2004)**, defined as "the transfer or delegation, to an external service provider of the operations and day-to-day management of the business process"<sup>2</sup>. Outsourcing means delegating the ownership, administration and operation of a process to a third party. It helps the hospitals to concentrate more on core competencies and also helps the patients to get better services for their diseases.

Outsourcing and downsizing has become a buzzword for all the three sectors, viz., government, public and private, as the volume and nature of activities within the organizations are changing. Following are the other important reasons for outsourcing.

- lack of technical know-how or not being able to provide whatever is required for the hospitals,
- the in-house cost of service may be high,
- to reap the benefits of lower costs globally,
- the service process may require a special equipment and may not be competent enough to match with a major service provider,
- to reduce waiting – time,
- reduced capital and operational expenditure,
- reduced time-to-serve, access to sophisticated and scarce technical expertise,

Hospitals and healthcare systems are facing increased financial difficulties because of the Balanced Budget Act of 1997 and managed care. As a result, healthcare executives face the challenge of reducing costs while maintaining quality patient care. One of the strategic tools healthcare executives use to meet this challenge is outsourcing. Managing outsourcing requires an understanding of outsourcing strategy, the benefits and risks of outsourcing, the evaluation process, and the methods to manage outsourcing strategically. With appropriate management, strategic outsourcing should provide healthcare executives with a viable strategy for controlling costs and maintaining quality patient care.

Before 1980, it was obligatory on the government to look after the health of the general public. Some charitable trusts on their own interest started hospitals to serve society. As the Indian economy started growing, corporate hospitals entered the healthcare industry. The lead of corporate hospitals was taken in India is by *M/S Apollo Healthcare* (Apollo hospitals). The first corporate hospital was opened in *Chennai*, and now corporate hospitals are available in all major cities throughout India.. *Yashoda, Medwin, Mediciti, Kamineni, Usha Mullapudi* followed suit in and around *Hyderabad*.

**REVIEW OF LITERATURE**

**Achal Dhruva (2003)**, mentioned in the study that Industrial Development Bank of India (IDBI), located at IDBI Towers, Cuffe Parade (south Mumbai), has two canteens in the building, one for the officers and the other for the class III and IV employees. While they out-source the food from a private contractor to cater to the class III and class IV employee, the officers' canteen is run by the company, which caters to a staff of 800 on a daily basis. IDBI has a staff of 56 employees plus two officers assisting A H Dudhani, general manager, catering to run the operations of the officers' canteen, which also looks after buffet and banqueting for company functions.

**Soumya,v (2001)**, mentioned in the study that Hardikar hospital, Pune(2001), they outsourced laundry and catering services and observed that it reduces cost to half<sup>4</sup>.

**Olenchek et al. (2002)**, mentioned in their study that The Cipla Foundation, in Pune, outsource housekeeping, laundry, gardening, catering and partly nursing services<sup>5</sup>.

In studies (2003), it came to know that "Pinnacle Health System, the Harrisburg based health system saves \$1.75 million every year by hiring outside companies to handle certain hospital services, such as patient transport management and laundry. That savings helps Pinnacle Health put more resources into patient care."

### NEED/IMPORTANCE OF THE STUDY

Health care is one of the most important components in our life. Disease or illness can really mean a down turn in our life. The biggest asset we can have in life therefore is health. Health care is normally defined as the management or treatment of any health problem through the services that might be offered by medical, nursing, dental or any other related service. When we talk about the care of health, we are talking of all goods and services that are produced to improve on our health. They may be curative, preventative or even palliative solutions. A system of health care is one that is organized to give health services to a population or a group of people.

A number of health problems require intensive medical treatment and personal care which normally are not available at the patients' home or in the clinic of a doctor. The hospital, a major social institution, offers considerable advantage to both patient and society. It is the place where a large number of professionally and technically skilled people apply their knowledge and skill with the help of world class expertise, advanced and sophisticated equipment and appliances. The first and foremost function of a hospital is to give proper care to the sick and injured without any social, economic or racial discrimination. Of late, the hospitals are set up with a motto to serve all sections of the society. The increasing of health conscious, awareness of various diseases, availability of health insurance schemes are some of the reasons for people are opting for better treatment.

The traditional concept of managing the hospital services can serve for few purposes. The application of modern management principles would cover the way for rationalising the services, standardising the services offered, optimising the fee structure, and promoting the services with the help of most sophisticated communication devices. The world opened the doors for challenging the services. One of the strategic tools healthcare executives use to meet this challenge is outsourcing.

### OBJECTIVE OF THE STUDY

The present paper has two objectives:

- To know various Departments those are completely outsource to other Hospitals in Hyderabad and Secunderabad.
- To examine the degree of association, if any, between various Departments that are completely outsource to other hospitals.

### DESCRIPTIVE PROFILE OF THE RESPONDENTS FOR THE STUDY

As per the records of APNA (Andhra Pradesh Private Nursing Homes Association) and Directorate of Government Hospitals there are 586 registered Private and 16 government hospitals were identified for this study in Hyderabad and Secunderabad, all together 602 hospitals were considered initially. Among those 602 hospitals, 102 private and 9 government hospitals have responded for the purpose of the study. A well structured questionnaire consisting of the questions on the aspect that various hospitals that are outsourced to various services has been given to CEOs and Directors of these hospitals. The questionnaire has included open-ended questions, structured questions and ranking questions. The present study includes questions about various hospitals that completely outsourced various Departments.

### ANALYSIS AND INTERPRETATION

The Data analysis is mainly divided into two sections

- Completely outsourced Departments to other hospitals
- The degree of association, if any, between various Departments that or which are completely outsource to other hospitals.

#### I) COMPLETELY OUTSOURCED DEPARTMENTS

Some hospitals have completely outsourced Medical and Non-medical Departments for the smooth running of the hospital. The table 1 shows the various Departments completely outsourced by the hospital.

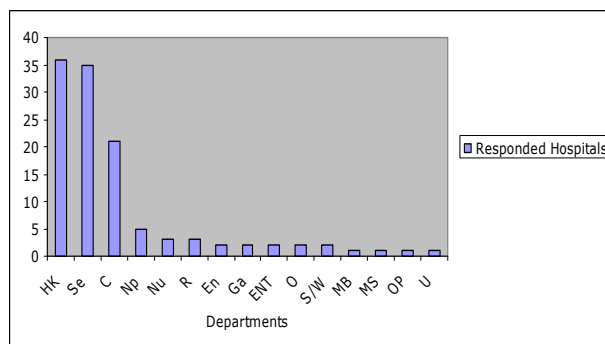
36 hospitals (32.4 percent) have completely outsourced Housekeeping Department. 35 hospitals (31.5 percent) have completely outsourced Security Department. 21 hospitals (18.9 percent) have completely outsourced Cardiac Surgery Department. Five hospitals (4.5 percent) have completely outsourced Nephrology Department.

TABLE 1: COMPLETELY OUTSOURCED DEPARTMENTS

Department	Responded Hospitals	Percentage
Housekeeping (Hk)	36	32.4
Security (Se)	35	31.5
Cardiac (Card)	21	18.9
Nephrology (Nph)	5	4.5
Neurology (NU)	3	2.7
Radiology (R)	3	2.7
Endocrinology (En)	2	1.8
Gastroenterology (Ga)	2	1.8
ENT	2	1.8
Oncology (On)	2	1.8
Software Development (S/W)	2	1.8
Microbiology (MB)	1	0.9
Microsurgery (MS)	1	0.9
Ophthalmology (OP)	1	0.9
Urology (U)	1	0.9



FIG 1: COMPLETELY OUTSOURCED DEPARTMENTS



## II ) PATTERN ANALYSIS COMPLETELY OUTSOURCING DEPARTMENTS

Further, to substantiate the study statistically the following procedure is developed by Prof. B.Krishmareddy and T. Lata Sujata which is termed as **Pattern Analysis**. The simple procedure adopted in previous section, gave 15 (see Table 1) departments that are completely outsourced to other hospitals in the descending order of order of priority. Then  $2^0$  is given to the Department for which maximum number of hospitals are completely outsourcing i.e., outsourcing "Housekeeping",  $2^1$  is assigned to the next Department for which hospitals are outsourcing i.e., the service "Security". Similarly, the remaining 13 Departments are also assigned a code from  $2^2$  to  $2^{14}$ . These codes and their values for all 15 Departments are given below:

TABLE 2: CODES FOR DEPARTMENTS

$2^0=1$ = Housekeeping	$2^5=32$ = Radiology	$2^{10}=1024$ = S/W Development
$2^1=2$ = Security	$2^6=64$ = Endocrinology	$2^{11}=2048$ = Microbiology
$2^2=4$ = Cardiac	$2^7=128$ = Gastroenterology	$2^{12}=4096$ = Micro Surgery
$2^3=8$ = Nephrology	$2^8=256$ = ENT	$2^{13}=8192$ = Ophthalmology
$2^4=16$ = Neurology	$2^9=512$ = Oncology	$2^{14}=16384$ = Urology

Using these codes for each hospital we can obtain a "Coded value" to specify what Departments are outsourced by that hospital. If a hospital is given Departments that are outsourced we can find the "Coded value" for that hospital and if the "Coded value" is given for any hospital we can de-code the value and identify the Departments outsourced by the hospital using **Pattern Analysis**.

If any hospital is outsourcing 'n' number of Departments then the pattern will be  $2^n - 1$  combination.

## PATTERN ANALYSIS PROCEDURE

Using these codes for each hospital we can obtain a "Coded Value" to specify what services ready to outsource by that hospital. If "Coded Value" is given for any hospital we can de-code the value and identify the Departments that are outsourced by that hospital using

## PATTERN ANALYSIS

These numbers can be put into a vector C where

$$C = [2^0 \ 2^1 \ 2^2 \ 2^3 \ 2^4 \ 2^5 \ 2^6 \ 2^7 \ 2^8 \ 2^9 \ 2^{10} \ 2^{11} \ 2^{12} \ 2^{13} \ 2^{14}]$$

$$= [1 \ 2 \ 4 \ 8 \ 16 \ 32 \ 64 \ 128 \ 256 \ 512 \ 1024 \ 2048 \ 4096 \ 8192 \ 16384]$$

The number of possible patterns of their incidence is  $2^{14}-1=16383$ , though many patterns are not found to occur in reality.

Each hospital is associated with 15 Departments. A binary vector is defined if the hospital was outsourced any one of the Department. An index value of 'one' is given for that Department which is outsourced and is given, a 'zero' if any Department is not outsourced. All these vectors representing each hospital can be put into a matrix called **Incidence matrix** having 0 or 1 as its entry and it is represented by vector I.

Multiplication of vector C with vector  $I^T$  corresponding to  $i^{th}$  hospital results in a composite index whose (i.e., coded value) binary expansion reveals the pattern of services which would like to be outsourced. The number obtained as a result of the inner product of C and  $I^T$  vectors.

For example:- Suppose a hospital X gives its specified Departments outsourced as vector I. Consider the C vector given in the procedure.

$$C = [1 \ 2 \ 4 \ 8 \ 16 \ 32 \ 64 \ 128 \ 256 \ 512 \ 1024 \ 2048 \ 4096 \ 8192 \ 16384]$$

$$I = [1 \ 0 \ 1 \ 1 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0]$$

$$C \cdot I^T = (1 \times 1 + 2 \times 0 + 4 \times 1 + 8 \times 1 + 16 \times 0 + 32 \times 1 + 64 \times 0 + 128 \times 0 + 256 \times 0 + 512 \times 0 + 1024 \times 0 + 2048 \times 0 + 4096 \times 0 + 8192 \times 0 + 16384 \times 0)$$

$$= \{1+4+8\}$$

$$= 13.$$

13 is the "Coded Value" for hospital X.

This Coded Value 13 can be decomposed to get back the details of individual Department which is outsourced by that hospital. Thus, we can determine the combination of Departments which are outsourced by each hospital and also identify the number of hospitals which are outsourcing the same combination of Departments.

If two hospitals get same Coded Value, then the two hospitals are outsourcing the same Departments.

Example: two hospitals X and Y are considered with code value 13. The decomposition can be done by using back calculation. Since the highest power of 2 whose value is less than 13 is 3, i.e.,  $2^3 = 8 < 13$ . The code  $2^3$  represents Nephrology (from Table 3). By subtracting this from Coded Value we get the balance Coded Value.

$$= 13 - 2^3 = 13 - 8 = 5.$$

The balanced Coded Value after subtracting the code  $2^2 < 5$  for Cardiac will be

$$= 5 - 2^2 = 5 - 4 = 1.$$

This Coded Value is for Housekeeping. It is nothing but  $2^0$ . This decomposition can be summarized in the following table.

TABLE 3: DECOMPOSITION OF CODED VALUE

Code Value	Eliminated Department Code	Eliminated Department
13	$8=2^3$	Nephrology
5	$4=2^2$	Cardiac
1	$1=2^0$	Housekeeping

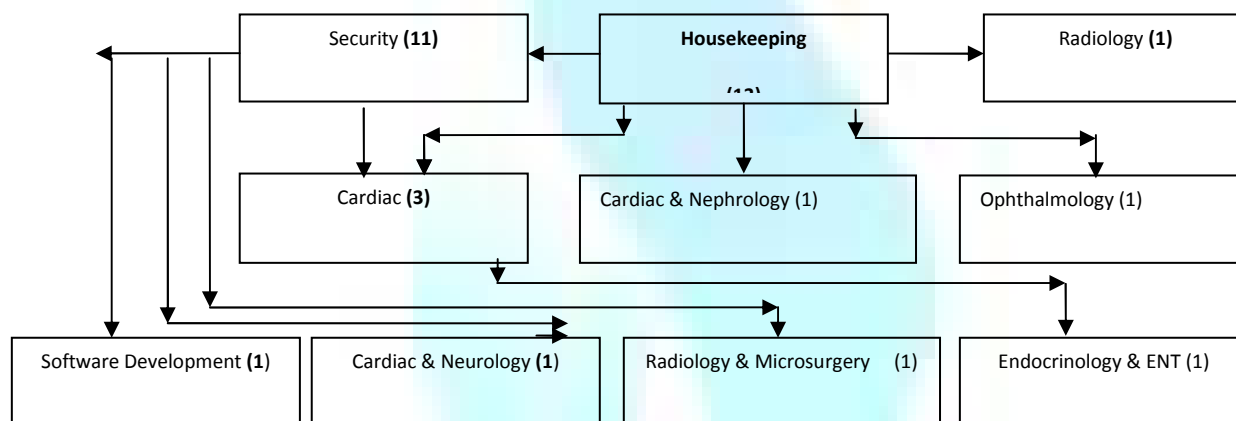
Therefore, these two hospitals are outsourcing Departments Nephrology, Cardiac and Housekeeping.

By saying "degree of association between hospitals" we mean that the number of hospitals are outsourcing of Departments in the same combination. The following table gives the degree of association between various Departments which are already outsourcing by hospitals.

TABLE 4: COMBINATION OF DEPARTMENTS OUTSOURCED

Code Value	Department	Responded Hospitals
1	Housekeeping	13
2	Security	17
3	Housekeeping & Security	11
4	Cardiac	9
5	Housekeeping & Cardiac	3
12	Cardiac & Nephrology	3
13	Housekeeping , Cardiac & Nephrology	2
20	Cardiac & Neurology	1
23	Housekeeping, Security, Cardiac & Neurology	1
32	Radiology	1
33	Housekeeping & Radiology	1
128	Gastroenterology	1
327	Housekeeping, Security, Cardiac , Endocrinology & ENT	1
454	Security, Cardiac , Endocrinology, Gastroenterology & ENT	1
512	Oncology	2
1027	Housekeeping, Security & Software Development	2
2048	Microbiology	1
4131	Housekeeping, Security, Radiology & Microsurgery	1
8193	Housekeeping & Ophthalmology	1
16402	Security, Neurology & Urology	1

FIGURE 2: VARIOUS COMBINATIONS OF DEPARTMENTS



## CONCLUSION

1. Different hospitals are outsourced different Departments. 36 (32.4 percent) hospitals outsourced Housekeeping Department, 35 (31.5 percent) hospitals outsourced Security Department, and 21 (18.9 percent) hospitals outsourced Cardiac Department.
2. The **Pattern Analysis** results show that 3 hospitals are outsourced Housekeeping Department and Cardiac while 2 hospitals outsourced Housekeeping, Cardiac & Nephrology and 3 hospitals outsourced Cardiac & Nephrology.

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