

COMPUTERISED HOSPITAL MANAGEMENT INFORMATION SYSTEM- PUBLIC AND PRIVATE SECTOR

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Abstract

A computerized Management Information System generally refer as computerized Management Information System defined as a high speed, computer controlled, multistation, authorized access, information flow network for the hospitals. The study of the hospitals carried out by the author finds that the government hospitals have more information problems in comparison with private hospitals. The major reasons identified for the gaps in information flow are: non-availability of prescribed forms, use of adhoc formats, poor recording of data, too many duplications leading to errors, difficult retrieval of data, difficult report generation etc. The study conducted through a structured questionnaire has come out with the finding that the computers can play a significant role in hospitals working. The wise and careful use of computers for the optimum utilization of scarce resources is widely acknowledged by the hospitals. It provides many meaningful and useful observations to reach at the important conclusion. Keeping the objective in view, we present comparative study, which contains the intra-level analysis of evaluation of MIS effectiveness. It deals with the analysis of responses of managers about other related aspects of MIS.

INTRODUCTION

Hospital is a complex organization humming with activities of heterogeneous groups of people such as doctors, nurses, paramedical and administrative staff, all working with a common goal of providing medical care to the patients. The volume of the patients is gradually increasing along

with their expectations of quality health care facilities. The cost of medical services is rising with no corresponding increase with a number of challenges. Unfortunately, the public hospitals have lagged far behind their private sector counterparts in meeting these challenges and even the most sophisticated public hospitals is governed by conventional systems and procedures that are out of date. They have made little or no use of scientific techniques in the management of hospitals. Further, hospitals are so overburdened that they are hardly able to perform their preventive, curative, primitive and rehabilitative functions. Other weaknesses in the present system are: Lack of resources, absence of cost consciousness, lack of proper maintenance for expensive equipments, unsatisfactory system of drugs management and medical supplies, poor management of general services etc.

The primary goal of MIS in hospitals is to elaborate the present system of information management in hospitals, identifying the diverse information requirements and assessing the feasibility of introducing computers in these hospitals. It deals with how the hospitals should implement the computerization plan along with a proposed framework for design and development. It also provides a comparative assessment of various factors affecting the process of computerization in public and private hospitals.

METHODOLOGY

The purpose of questionnaire was to conduct an opinion survey on personnel working in the sample hospitals and their readiness to accept computer as problem-solving tool. A detailed questionnaire is drafted for collecting the required information. Questionnaire is objective oriented and all the questions are based on respective objectives of the study. One of the objectives of the study is “To study the effectiveness of MIS in Public and Private Sector Hospitals”. Respondents of the Public and Private sector hospitals gave their replies on the questions asked to them in relation to this objective of the study and the same are reproduced herein below.

MIS IN PUBLIC AND PRIVATE SECTOR

1. *How MIS is useful in following areas:* This question ask about the usefulness of MIS in different areas such as Budgeting, cost analysis, Investment decisions, business expansion etc.

Table 1 Analysis of the MIS Figures Vs Budgeted Figures

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
MIS figures VS Budgeted Figure Analysis	Always	-	-	52	86.6
	Sometimes	40	100	1	1.7
	Seldom	-	-	1	1.7
	No Reply	-	-	6	10

Table 1 shows the respondents' replies for analysis of the MIS figures Vs Budgeted figures by the Public and Private sector hospitals. All the Public sector hospital respondents replied that analysis of the MIS Vs budgeted figures is rarely done by the Public Sector hospitals. Whereas 52 (86.6%) out of 60 Private sector hospital respondents replied that MIS Vs Budgeted figure analysis is always carried out by the Private sector hospitals.

Table 2 Use of MIS for Gross Margin Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Gross Margin Analysis	Always	-	-	39	65
	Sometimes	-	-	21	35
	Never	40	100		

Table 2 shows the respondents' replies for use of MIS for Gross Margin (GM) Analysis by the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for GM analysis by the Public Sector hospitals. Whereas 39 (65%) out of 60 Private sector hospital respondents replied that MIS is always used to calculate GM analysis by the Private sector hospitals.

Table 3 Use of MIS for Cost Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Cost Analysis	Always	-	-	39	65
	Sometimes	40	100	19	31.7
	Seldom	-	-	2	3.3

Table 3 shows the respondents' replies for use of MIS for Cost Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for cost analysis by the Public Sector hospitals. Whereas 39 (65%) out of 60 Private sector hospital respondents replied that MIS is always used to calculate Cost Analysis by the Private sector hospitals.

Table 4 Use of MIS for Specialty Wise Doctor Wise Cost Revenue Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Specialty wise doctor wise cost revenue analysis	Always	-	-	58	96.7
	Seldom	-	-	2	3.3
	Never	40	100		

Table 4 shows the respondents' replies for use of MIS for Specialty Wise Doctor Wise Cost Revenue Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for such type of analysis by the Public Sector hospitals. Whereas 58 (96.7%) out of 60 Private sector hospital respondents replied that MIS is always used for Specialty Wise Doctor Wise Cost Revenue Analysis by the Private sector hospitals.

Table 5 Use of MIS for Patient Wise Margin Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Patient wise margin analysis	Always	-	-	33	55
	Sometimes	-	-	7	11.7
	Seldom	-	-	15	25
	Never	40	100	5	8.3

Table 5 shows the respondents' replies for use of MIS for Patient Wise Margin Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for Patient Wise Margin Analysis by the Public Sector hospitals. Whereas 33 (55%) out of 60 Private sector hospital respondents replied that MIS is always used for Patient Wise Margin Analysis by the Private sector hospitals.

Table 6 Use of MIS for Cash from Operations Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Cash from operations analysis	Always	-	-	51	85
	Sometimes	-	-	3	5
	Seldom	-	-	5	8.3
	Never	40	100	1	1.7

Table 6 shows the respondents' replies for use of MIS for Cash From Operations Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for Cash from Operations Analysis by the Public Sector hospitals. Whereas 51 (85%) out of 60 Private sector hospital respondents replied that MIS is always used for Cash From Operations Analysis by the Private sector hospitals.

Table 7 Use of MIS for Future Investment Decision making

Particular	Factors	Public		Private	
		Frequency	%	Frequency	%
Future Investment Decision Making	Always	-	-	36	60
	Sometimes	-	-	19	31.7
	Never	40	100	5	8.3

Table 7 shows the respondents' replies for use of MIS for Future Investment Decision Making by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for Future Investment Decision Making by the Public Sector hospitals. Whereas 36 (60%) out of 60 Private sector hospital respondents replied that MIS is always used for Future Investment Decision Making by the Private sector hospitals.

Table 8 Use of MIS for Market Share Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Market Share analysis	Always	-	-	34	56.7
	Sometimes	-	-	2	3.3
	Seldom	-	-	8	13.3
	Never	40	100	15	25
	Don't Know	-	-	1	1.7

Table 8 shows the respondents' replies for use of MIS for Market Share Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for Market Share Analysis by the Public Sector hospitals. Whereas 34 (56.7%) out of 60 Private sector hospital respondents replied that MIS is always used for Market Share Analysis by the Private sector hospitals. 15 (25%) out of 60 Private sector

hospital respondents replied that MIS is never used for Market Share Analysis by the Private sector hospitals.

Table 9 Use of MIS for Inventory Holding Analysis

Particulars	Factors	Public		Private	
		Frequency	%	Frequency	%
Inventory Holding analysis	Always	-	-	36	60
	Sometimes	-	-	2	3.3
	Seldom	-	-	8	13.3
	Never	40	100	11	18.4
	Don't Know	-	-	1	1.7
	Missing System	-	-	2	3.3

Table 9 shows the respondents' replies for use of MIS for Inventory Holding Analysis by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied that MIS is rarely used for Inventory Holding Analysis by the Public Sector hospitals. Whereas 36 (60%) out of 60 Private sector hospital respondents replied that MIS is always used for Inventory Holding Analysis by the Private sector hospitals.

2. *Management Decisions are based on MIS:* This asks the respondents about what type of management decisions are based on MIS reporting. There are various important decisions to be taken by the management of the Public and Private Sector Hospitals. This may include Expansion/Reduction of services and business facilities, recruitment/retrenchment of additional staff, increase/decrease in fees, cost cutting and budgeting etc. Which of these decisions are taken by the management on the basis of information gathered from MIS?

Table 10 Use of MIS for Expansion/Reduction of Services

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Expansion/Reduction of services	Always	-	-	3	5
	Sometimes	-	-	47	78.3
	Seldom	-	-	8	13.4
	Don't Know	40	100		
	No Reply	-	-	2	3.3

Table 10 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Expansion/Reductions of Services. All the Public sector hospital respondents replied in ignorance about the subject. Whereas only 3 (5%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions for Expansion/Reductions of Services. 47 (78.3%) out of 60 Private sector hospital respondents replied that MIS is sometimes used for making Expansion/Reductions decisions by the management of the Private sector hospitals.

Table 11 Use of MIS for Expansion/Reduction of Business Facilities

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Expansion/Reduction of Business facilities	Always	-	-	20	33.3
	Sometimes	-	-	35	58.4
	Seldom	-	-	2	3.3
	Never	40	100	1	1.7
	No Reply	-	-	2	3.3

Table 11 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Expansion/Reductions of Business Facilities. All

the Public sector hospital respondents replied that MIS is rarely used for making decisions on the Expansion/Reductions of Business Facilities. Whereas only 20 (33.3%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions for Expansion/Reductions of Business Facilities. 35 (58.4%) out of 60 Private sector hospital respondents replied that MIS is sometimes used for making decisions on Expansion/Reductions of Business Facilities by the management of the Private sector hospitals.

Table 12 Use of MIS for Recruitment/Retrenchment Additional Staff

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Recruitment/Retrenchment of additional staff	Always	-	-	18	30
	Sometimes	40	100	5	8.4
	Seldom	-	-	32	53.3
	Never	-	-	2	3.3
	No Reply	-	-	3	5

Table 12 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Recruitment /Retrenchment of Additional Staff. All the Public sector hospital respondents replied that MIS is sometimes used for making decisions on the Recruitment /Retrenchment of Additional Staff. Whereas only 18 (33.3%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions for Recruitment /Retrenchment of Additional Staff. 5 (8.4%) out of 60 Private sector hospital respondents replied that MIS is sometimes used for making decisions on Recruitment /Retrenchment of Additional Staff by the management of the Private sector hospitals.

Table 13 Use of MIS for Expansion/Reduction of Business Facilities

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Increase/Decrease in fees	Always	-	-	24	40
	Sometimes	-	-	30	50
	Seldom	-	-	4	6.7
	Never	40	100	-	-
	No Reply	-	-	2	3.3

Table 13 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Increase/Decrease in Fees. All the Public sector hospital respondents replied that MIS is never used for making decisions on the Increase/Decrease in Fees. Whereas 24 (40%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions by the management for Increase/Decrease in Fees. 30 (50%) out of 60 Private sector hospital respondents replied that MIS is sometimes used for making decisions on Increase/Decrease in Fees by the management of the Private sector hospitals.

Table 14 Use of MIS for Cost Cutting in Making Decision

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Cost Cutting	Always	-	-	55	91.7
	Sometimes	1	2.5	2	3.3
	Never	39	97.5		
	No Reply	-	-	3	5

Table 14 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Cost Cutting. 39 (97.5%) out of 40 Public sector hospital respondents replied that MIS is never used for making decisions on the Cost Cutting.

Whereas 55 (91.7%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions by the management for Cost Cutting.

Table 15 Use of MIS for Budgeting

Management Decisions	Factors	Public		Private	
		Frequency	%	Frequency	%
Budgeting	Always	-	-	57	95
	Never	40	100	-	-
	No Reply	-	-	3	5

Table 15 shows the respondents' replies for use of MIS in making decisions by the management of the Public and Private sector hospitals for Budgeting. All the Public sector hospital respondents replied that MIS is never used for making decisions on the Budgeting. Whereas 57 (95%) out of 60 Private sector hospital respondents replied that MIS is always used for making decisions by the management for Budgeting.

3. *Type of actions is taken based on MIS reporting:* Various type of actions may be taken by the management based on MIS reporting and these may include Responsibility fixation and Revision of Budgets. MIS brings out lots of information which helps in taking such type of actions.

Table 16 Use of MIS for Responsibility Fixation

Actions	Factors	Public		Private	
		Fre.	%	Fre.	%
Responsibility Fixation	Always	-	-	56	93.3
	Seldom	-	-	2	3.3
	Don't Know	40	100	-	-
	No Reply	-	-	2	3.3

Table 16 shows the respondents' replies for use of MIS in fixing responsibility of the employees by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied in ignorance about the subject. Whereas 56 (93.3%) out of 60 Private sector hospital respondents replied that MIS is always used for fixing responsibility of employees by the management.

Table 17 Use of MIS for Revision of Standard/Budget

Actions	Factors	Public		Private	
		Frequency	%	Frequency	%
Revision of standards/Budget	Always	-	-	37	61.7
	Sometimes	-	-	17	28.3
	Seldom	-	-	4	6.7
	Don't Know	40	100	-	-
	No Reply	-	-	2	3.3

Table 17 shows the respondents' replies for use of MIS in revision of budgets by the management of the Public and Private sector hospitals. All the Public sector hospital respondents replied in ignorance about the subject. Whereas 37 (61.7%) out of 60 Private sector hospital respondents replied that MIS is always used for revision of budgets by the management. Whereas 17 (28.3%) out of 60 Private sector hospital respondents replied that MIS is sometimes used for revision of budgets by the management.

CONCLUSION

Although MIS makes a positive contribution towards the overall performance of the select hospitals, combining the complementary investments in work practices with MIS investments is essential to stabilize and support the positive contribution in future. After detailed analysis, a significant difference between the perceived and the actual impact on various performance factors has been seen. According to respondents of the respective hospitals under study, there has

been an improvement with the use of Management Information Systems. In fact the improvement in case of the private sector hospitals has been more than expected.

The empirical evidence also supports the impact of organizational factors, which acts as antecedent factors in influencing Information System success.

The alignment of Information Systems' strategy and hospitals objectives, has been found in all important organizational factors for ascertaining the success of Information Systems, viz a viz its impact on performances. This shows that Information Systems strategic role has gained much interest among the employees in the organizations under study.

Important confirmation has been obtained that MIS effectiveness here is, at least in part, a function of the relationship between perceived important and actual performance on individual organization performance attributes. It may be concluded that those organizations that concentrate their greater success than those that spread their information resources in the most important areas will achieve greater success than those that spread their information resources thinly, focusing on areas of traditional success only or worse yet, losing sight of the need to plan for information and thus deteriorating into day to day firefighting and crisis.

It is especially important for those firms enjoying less success in this sector are to re-evaluate the quality of their information systems and reliability of information services. This finding is consistency with the growth stage of the organizations. Organizations are now making a major transition to automating tasks, building societies and are competing vigorously on the same ground with each other to improve their services and to offer maximum flexibility to the individual clients. Corporate success will depend in large measure on excellent and reliable information processing.

It is to be expected that the many differences between industries, companies, growth in Management information Systems and so on, will dictate the very specific variables influencing management Information Systems' success in the individual organization. On the basis of these study findings, however, a management strategy for accessing and improving management information systems effectiveness' is needed by the Indian Hospitals.

This analysis also provided some interesting evidence regarding the validity of alternative images of employees as users of Management information Systems, as described in the beginning of the paper and also being described as under:

Most employees do not have an aversion to Management Information system. On the contrary and to a surprising extent, most employees admit to being very dependent upon computing and attribute broad importance to MIS more useful than personal experience in identifying problems, a dramatic shift in the utility attribute to Management Information System.

Management information System seems to be valued more highly by the employees who have been termed as Management Information System Consumer. Indeed, MIS have been judged most useful by the employees who are higher users of MIS and who do not rely upon have not been judged as useful by those employees whose computing use is more frequent, direct and hands-on.

It can be concluded that higher age have more expectations from the MIS, whereas the younger age groups have a higher impact on actual performance. Care must be taken while implementing MIS, to include the higher age groups as well. Also, the data indicates high impact on cooperativeness effectiveness and best practices. Whereas other factors such as business ownership, strategic Development and shared vision also needs to given special focus. Also the impact has been more on, Finance and Accounts, HRM, Logistics, Technology, Infrastructure, operation, However the impact on marketing and sales Departments. It can be concluded that the impact of MIS on Availability and Timelines of information needs to be improved further in all the organizations Vis-a vis actual performance.

It can also be concluded the MIS has contributed significantly towards the enhancement of profitability of the companies beyond the expectations of the employees. Further MIS has improved the capability of the said hospitals to take new business initiatives.

Product/service Lead time of the companies under study has come down after the implementation of MIS. This shows that the factor has been, although there is a scope of improvement.

Regarding efficiency, the expected and the actual impacts are nearly the same. Therefore it can be concluded that further work can be done in this regard and that the efficiency of work systems has improved due to computerization on expected lines.

It has been that there is still a need to implement MIS in a way which reduces the customer's complaints. As it has been seen that MIS has need reduced the customers complaint's, but somewhat less than the expectation of the employees.

MIS has improved the quality of decision making in the selected organization under study. The impact on decision making has been felt more in the Indian hospitals.

Implementation of MIS has ensured the availability of complete and comprehensive information. The employees of all organization expected the same and it has been seen that the users are receiving complete/ comprehensive information from MIS.

MIS analysis shows that the implementation of Information system in the organization has improved the reputation of the firms; this has also been confirmed by the employees.

There has been an improvement in the growth of sales in the organization after they have implemented MIS. This has been confirmed by the employees during the MIS analysis, that there has been constant growth of sales. Implementation of MIS has indeed resulted in constant growth in hospital's assets. This is in line with the expectations of the employees.

Management Information System has improved the working of the employees. MIS analysis supports the fact that implementation of information Systems has indeed contributed towards the constant growth in hospital's profit.

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