

# THE ROLE OF MANAGEMENT INFORMATION SYSTEM AS A CATALYST IN IMPROVING ORGANIZATIONAL PERFORMANCE AND EFFECTIVENESS IN THE 21<sup>ST</sup> CENTURY - A STUDY OF TIRUPATHI ADMINISTRATION REVENUE AUTHORITY IN ANDHRA PRADESH

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## Abstract

*Management information system (MIS) produces information products that support many of the day to day decision making needs of managers and business professional reports, displays provide information products satisfy the information needs of decision make at the operational and tactical level of organization that are faced with more structured types of decision situations. Currently the effectiveness of the organization directly related to the appropriate management information system. MIS provides managers with reports and in some cases, on line access to the organization current performance and historical data records. Most of organizations mainly depend up on MIS to process, record store and manipulate accurate data and information for the existence as well as profitability of the organization in processing data into accurate and well defined data, however without applying MIS organization does not have values for profit oriented as well as no profit firms. MIS needs to be strategically managed soaps to bring about sound and profitable organization and thereby increase organizational effectiveness of surviving to increase competitive advantage, to avoid challenges. The key findings indicated that, there is a significant positive relationship between MIS and organizations performance; which implies that the higher the management information systems, the higher the organizations performance.*

## Keywords:

*Management Information Systems, Organizational Effectiveness*

## 1. INTRODUCTION

Information Technology is a powerful force in today's global society [1]. The advent of computers and Information Technology (IT) has been the single massive drive influencing organizations during past few decades [2]. Information Technology is revolutionizing all the living ways [3]. Information Technology has drastically changed the business landscapes, and word "IT" has become the "Catchword" of the modern life today [4]. Information Technology has become, within a very short time, one of the basic building blocks of modern industrial society [5]. The effective use of IT is an essential element of competing in a fast-paced, knowledge based economy [6]. Information Technology is the major contributor to the progress of the developed countries [7]. The rapid growth of the personal computer industry, substantial decreases in computer unit cost, and simultaneous increases in computer capabilities have made vast amount of information readily available to individuals in organizations [8].

The goal of every management information systems (MIS), in any organization is to improve job performance, and this performance efficiency is only achieved when IT is accepted and used warmly by the concern employees in organizations [9] [10].

## 1.1 STATEMENT OF THE PROBLEM

Most of the organizations in India is using information systems [11] in different ways from ten years ago, because they recognized the critical benefit that can get from merging MIS in business processes, so the core problem of this study nested in answering how far the MIS will give a better organizational Performance.

## 1.2 OBJECTIVES

Contemplating the study problem, and its ultimate purpose, the following specific objectives could be generated:

- Explanation relationship between MIS and organizations performance.
- Explanation of the impact of MIS on organizations performance.
- To investigate the roles of management information system in the organization.
- To explore the management information system contributes to the organizational performance and effectiveness.
- To evaluate the effectiveness of MIS in supporting decision making process.
- To identify challenges that hinders the application of MIS in the organization.

## 2. SIGNIFICANCE OF STUDY

We are in the midst of a swiftly moving river of technology and business innovations, which is transforming the global business landscape [12]. An entirely new internet business culture is emerging with profound implications for the conduct of business [13]. We can see this every day by observing how business people work using high-speed internet connections for e-mail and information gathering, portable computers connected to wireless networks, and hybrid devices to an increasingly mobile and global workforce [14]. We have all come to expect online services for purchasing goods and services, we expect our business colleagues to be available by e-mail and cell phone, and we expect to be able to communicate with our vendors, customers, and employees any time of day or night over the internet, so information technology will make difference to you as a manager and an employee throughout your career, and this well reinforce businesses competitive advantage in the marketplace to gain an edge over other businesses that are seeking the same customers.

## 2.1 MAJOR TYPES OF MIS SYSTEMS

The main categories of information systems serve different organizational levels: Operational level systems that support operational managers by keeping track of the elementary activities and transactions of the organization. Management level systems serve the monitoring, controlling, decision-making, and administrative activities of middle managers. Strategic-level systems help senior management tackle and address strategic issues and long-term trends, both in the firm and in the external environment. Laudon and Laudon (2008) divides systems to four major specific types that correspond to each organizational level:

- **Transaction Processing Systems** which is a computerized system that performs and records the daily routine transactions necessary to conduct business.
- **Management information systems** that serve the management level system of the organization, providing managers with reports and often online access to organization's current performance and historical records.
- **Decision Support Systems:** They also serve the management level system of the organization, and help managers make decisions that are unique, rapidly changing, and not easily specified in advance.
- **Executive Support Systems:** Senior managers use support systems to help them make decisions; they serve the strategic level of the organization. They address non routine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution.

## 2.2 ORGANIZATIONS PERFORMANCE

Performance is a measure of results achieved by individual, group, and organization. Organization performance is defined as a continuous and action oriented with focus on improving performance by using objective, standards, appraisal, and feedback. Organizations performance comprises the actual output or results of an organization achievement as measured against its intended goals and objectives. Organizations adopt performance measurement because it creates accountability, provides feedback to operations, and result in more effective planning, budgeting and evaluation.

The performance is an end result of an activity, and an organizational performance is accumulated end results of all the organization's work processes and activities. Managers measure and control organization performance because it leads to better assessment for management, to increase the ability to provide customer value, to improve measures of organizational knowledge, and measure of organizational performance do have an impact on an organization's reputation. When the performance of the organization is assessed, the past management decisions that shaped investments, operations and financing are measured to know whether all resources were used effectively, whether the profitability of the business met or even exceeded expectations, and whether financing choice were made prudently. Organizational performance is conducted to support decisions concerning whether program or project should be continued, improved, expanded, or curtailed.

### 2.2.1 Measuring Impact of Information System on Organizations Performance:

In an IT context when we measure the effectiveness, we basically measuring the capacity of the outputs of information systems or an IT application to fulfill the requirements of the company, and to achieve its goals.

In this study, they begin their analysis by focusing on just one aspect of information system integration, namely in terms of data architecture, commonly referred to as the single database concept. They argue that whilst this particular aspect of integration should be related to perceived system success, the variety of ways in which information might be drawn on in practice means, it provides no strong basis for predicting a link to business unit performance. They used Two types of bureaucracy: Enabling and coercive. They argue that the level of information system integration fosters the four design characteristics that make up an enabling approach to management control. Each of these in turn is related to both perceived system success and business unit performance.

## 3. STUDY METHODOLOGY

### 3.1 SAMPLES

The target population for this study comprised all the business faculties deans and department managers, individuals whom they represent managerial positions, and whom they are closely related to MIS. This study targeted Tirupathi public and private Industries that include business managers of both the Industries. 120 questionnaires were distributed among Public and private Industries and the response rate was 70% (84 usable responses)

### 3.2 DATA COLLECTION

Secondary data was collected based on the findings of published papers, articles, books, prior studies, and the World Wide Web. The primary data collection was carried out using a self-designed questionnaire.

**Instrument Validity and Reliability:** To ensure the face validity of the instrument, it was given to ten expert referees from Indian Industries. The referees displayed their constructive comments and suggestions, which were taken into consideration. The reliability of data collected instrument was measured using Cronbach's alpha coefficient; the reliability test was conducted to check for inter-item correlation in each of the variables in the questionnaire. "The closer Cronbach's alpha is to one, the higher the internal consistency reliability" [14]. The test results are as follows: Cronbach alpha for Independent Variable = 0.86, for dependent Variable = 0.89, and for over all instruments = 0.93 which approached to the acceptable limit.

### 3.3 DATA ANALYSIS METHODS

Statistical Package for Social Sciences (SPSS) was used to analyze the data. Descriptive techniques such as, frequencies, percentages, means, standard deviation (Std.), and coefficient of variation (CV) were used to describe the variables. Spearman correlation and simple regression analysis were used to test hypothesis of the study.

## 4. STATISTICS ANALYSIS AND HYPOTHESIS TESTING

### 4.1 DEMOGRAPHIC PROFILE

The sample was divided between males (96.4%) and females (3.6%), 94% of the respondents were between 30 and less than 50 years of age, 8.3% were Managers, 20.2% Administrators, and 71.4% were Assistant managers 59.5% of the respondents were between 5 and less than 10 years of experience; and 20.3% of the respondents were in dean position, while 53.6% were departments heads.

Table.1 shows the detailed descriptive statistics of the respondent's demographics like gender, age, performance ranking, experience, and current position.

Table.1. Demographic Profile of Study (N=84)

Content	Demographic Variables	Frequency	Percentage
Gender	Male	81	96.4
	female	03	3.6
	Less than 30 years	01	1.2
	30 less than 40 years	43	52.2
Age	40 – less than 50 years	36	41.9
	More than 50 years	04	4.8
	Manager	07	8.3
Ranking	Administrator	17	20.2
	Asst. manager	60	71.4
Experience	Less than 5 years	12	14.3
	Less than 10 years	50	59.5
	Less than 20 years	22	26.2
	Administrative Head	17	20.2
Current position	Vice- Administrator	17.9	15
	Departmental managers	53.6	45
	Assistant departmental managers	07	8.3

### 4.2 STUDY RESULTS DESCRIPTION

The mean, standard deviation, and coefficient of variation (CV) of the study questions related to management information systems factors (independent variable) and the level of performance (dependent variable) are summarized in Table.2 and Tabel.3.

#### 4.2.1 Management Information Systems Factors:

The Table.2 shows the results that represent management information systems factors.

Table.2. Results of the management information systems factors

Item	Mean	Std. deviation	C. V.
Technological Factors	3.83	0.64	0.17
1. The interest in computerizing works and operations	4.37	0.80	0.18

2. Developing and continuously Updating database supports organizational activities	4.24	0.59	0.14
3. Provided software for organizational work	4.43	0.64	0.14
4. Accessibility of knowledge base	3.14	0.55	0.18
5. Management Information	4.31	0.65	0.15
6. Employees Commitment	4.43	0.61	0.14
7. Electronic communication	2.86	0.74	0.26
8. website to communicate	4.27	0.80	0.19
9. Data and network	2.42	0.42	0.17
<b>Structural factors</b>	3.64	0.73	0.20
Organizational structure	2.86	0.68	0.24
Cultural environment	4.47	0.65	0.15
MIS Importance	4.45	0.83	0.19
Simplify the MIS	2.77	0.77	0.28
<b>Public</b>	2.88	0.63	0.22
Organizational commitment	4.53	0.82	0.18
Computer usage	2.17	0.46	0.21
MIS	1.94	0.61	0.31

### 4.3 TECHNOLOGICAL FACTORS

Examination of the mean value listed in Table.2 reveals that, the most important items in technological factors as indicated by the respondents were: providing updated software for implementing the organizations work (4.43), the commitment for providing personal computers for all employees (4.43). the interest in computerizing works and operations (4.37), the contribution of management information systems in getting the required information in suitable time (4.31), using the available website to communicate with external environment (4.27), developing and continuously updating database that support organizations activities (4.24), The results also shows that the less important items in technological factors in terms of mean value were: availability and accessibility of knowledge base (3.14), electronic communication with customers, suppliers, and employees between each other (2.86), and the interested in data and networks security (2.42). The standard deviation for technological factors lies between (0.42-0.80), while the coefficient of variation lies between (0.14-0.26).

### 4.4 STRUCTURAL FACTORS

Based on mean values the results show that the most important items were: the organizational structure and cultural environment that encourage the use of management information systems (4.47), and high management believable in the management information systems importance (4.45). The results also show that the less important items in structural factors were: the organizational structure that simplify the exchange of knowledge and information (2.86), and the procedures and rules that simplify the work of management information systems (2.77). The standard deviation lies between (0.65-0.83), while the coefficient of variation lies between (0.15-0.28).

#### 4.4.1 Public:

The mean values in the same table show that the most important item in people factors was: organizations commitment to train and qualify employees to use management information systems (4.53). While the less important items were: adopting computer usage capability as a criteria in employment selection process (2.17), and having specialists in management information systems (1.94). The standard deviation lies between (0.46-0.82), while the coefficient of variation lies between (0.18-0.31). In comparison between three groups of management information systems factors, it is obvious that the most important factors were: the technological factors (3.83) that represent the information technology (IT) side for the management information systems, this may be because management information systems are mostly depend on IT components (software, hardware, database, networks, etc) to work effectively. The second group was: structural factors (3.64) which represent the most important element in internal environment for all the organizations, which could be used to support the process of transformation from manual to electronic (computer based management information systems). Finally, the results indicated that the people factors were the less important factors (2.88) except the organizations commitment to train and qualify employees to use management information systems, interpreted by top management commitment to the importance of training and qualifying employees to use MIS as indicated earlier.

#### 4.4.2 Organizations Performance:

The Table.3 shows the results that represent to what extent MIS factors improve organizations performance, and it appeared as follow:

Table.3. Performance Factors and Success Rate

Item	Mean	Std. Deviation	C.V.
Performance Effectiveness	4.10	0.65	0.16
1. Introduce the support to customers	4.43	0.55	0.12
2. Speed the achieving required works	4.35	0.61	0.14
3. Authority delegation	2.88	0.58	0.20
4. Accelerate the process	4.46	0.62	0.14
5. Innovation degree for the employees	4.37	0.67	0.15
6. Dependence on teamwork	3.32	0.72	0.22
7. New market or markets segments	4.28	0.67	0.16
8. Identifying market	4.45	0.81	0.18
<b>Performance Efficiency</b>	4.10	0.75	0.18
9. Inventory minimization	4.55	0.87	0.19
10. Productivity improvement	4.53	0.75	0.17
11. Quality improvement	3.36	0.63	0.19
12. Resources controlling	4.53	0.87	0.19
13. Managerial levels	3.27	0.66	0.20
14. Operating cost controlling	3.29	0.69	0.21
15. Services quality	4.50	0.74	0.16
16. Work flexibility	4.48	0.78	0.17

*Hypotheses Testing H<sub>1</sub>*: There is a significant correlation between management information systems and organizations performance.

The Table.4 indicates to the Correlation of MIS factors and Organizations performance.

Table.4. Correlation of the Mis-Factors and Organizations Performance

Spearman's rho	MIS	Correlation Coefficient	1.000	.864**
		Sig. (2-tailed)		.006
		N	84	84
	OP	Correlation Coefficient.	.864**	1000
		Sig. (2-tailed)	.006	
		N	84	84

\*\* . Correlation is significant at the .01 level (2-tailed).

This output indicates that there is a strong positive significant correlation at ( $P=0.05$ ) between MIS factors and organizations performance, which implies that the higher the management information systems, the higher the organizations performance at ( $r=0.86$ ).

H<sub>2</sub>: There is a significant impact for MIS on organizations performance.

## 4.5 THIRUPATHI INDUSTRIES

MIS plays a vital role for good decision making through providing relevant, accurate and consistent information to the managers. Concerning the main challenges regarding application of MIS are lack of computer professional and lack of finance to run the business. The application of MIS has its own paramount effect for the increasing operating performance of employees. Concerning the extent employees satisfied with the role of MIS is moderately in day to activities of the organization. In tirupathi Industries we find the overall problems of MIS are data redundancy, delaying data processing, data inconsistencies and other problems mostly which affect to run the system effectively is delaying in processing data due to bulky information processed and the existing system cannot accommodate. Since, MIS as a current emerging system of managerial tool for employees. So the employee requires an intensive training about how to use and operate the system. But, the organization is not giving much emphasis requiring to employee training about how to use the system.

## 5. CONCLUSION

Management Information system collects data, organizes people, procedures, databases and devices used to provide routine information that will assist managers in making effective and efficient decisions that will improve both individual and organizational performances, plays a vital role in realizing the objectives of an organization. It helps in ensuring that actual organizational performance conforms to the expected performance objective of the organization through the provision of accurate and necessary information needed for effective decision making that will lead to the achievement of organizational objectives.

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