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Impact of Accounting Information Systems (AIS) on Organizational Performance: A case Study of TATA Consultancy Services (TCS) - India

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ABSTRACT

Objective: Accounting Information System (AIS) as one of the most critical systems in the organization has also changed its way of capturing, processing, storing and distributing information. Nowadays, more and more digital and on-line information is utilized in the accounting information systems. **Methodology:** Organizations need to take an action, which put such systems at the forefront, and consider both the system and the human related factors while managing their accounting information systems. In managing an organization and implementing an internal control system, the role of accounting information system (AIS) is crucial. **Results:** In brief, this research has provided an understanding of impact of accounting information systems on organizational performance in TCS. That is, data quality management is factors for accounting information systems in organizations. Further in TCS financial managers are highly complacent as they are not taking any initiatives on their own to reach out and meet the organizational goals. Further in TCS financial managers are highly complacent as they are not taking any initiatives on their own to reach out and meet the organizational goals. Particularly in managers using AIS is done through budgetary allocation and its utilization plan would be the responsibility of top managers. **Conclusion:** Researcher has examined the relationship between variables considering Kolmogorov-Smirnov test and lack of normality of data, Pearson correlation coefficient was used. In this study researcher after analysis of data with statistical software which has been used in SPSS .22 find the positive relationship between accounting information system and influence factors on the organizational performance.

1. Introduction

The Accounting Information System is considered to be one of the most important systems of any organization. Its objective is to provide necessary information to the managers at different levels. This information helps them in discharging their responsibilities in an effective and efficient manner in the areas of planning, resource control, performance evaluation and decision making. Accounting Information System (AIS) is vital to all organizations (Borthick et al., 1990; Curtis, 1995; Rahman & Halladay, 1988; Wilkinson, 1993; Wilkinson et al., 2000) and perhaps, each organization either profit or non-profit-oriented need to maintain the AISs (Wilkinson et al., 2000). On the other hand, an AIS is the whole of the related components that are put together to collect information, raw data or ordinary data and transform them into financial data for the purpose of reporting them to decision makers (Salehi et al., 2010). To better understand the term 'Accounting Information System', the three words constitute AIS would be elaborated separately. Firstly, literature documented that accounting could be identified into three components, namely information system, "language of business" and source of financial information (Wouters & Verdaasdonk, 2002). Secondly, information is a valuable data processing that provides a basis for making decisions,

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taking action and fulfilling legal obligation. Finally, system is an integrated entity, where the framework is focused on a set of objectives (Thomas & Kleiner, 1995).

1.1. APPLICATION OF THE SYSTEMS APPROACH

The systems approach has the potential for application to a wide variety of problems. To illustrate how it can be put into practice, the accounting information system in analysed in term of its purpose, environment, subsystem structure, performance, and quality considerations. In a real situation, the analysis would be followed by the identification of problem areas and the search for solutions (Jenkins, 1969; Sajady et al., 2012).

1.2. The Accounting Information System – illustrate

Purpose: The accounting information system is a formal vehicle for the operational processing of accounting data and for related decision support activities. It communicates financial and other data to interested parties both inside and outside the organization. It meets a large proportion of management's internal decision – making needs and provides for the compliance with external reporting requirements. The accounting system is a major part of the overall business information system which is the 'nervous system' of the enterprise.

Environment: The AIS exists in an organization environment consisting of people, technology, data, informational requirements, organizational objectives, management policies, and professional standard. Its users include virtually everyone inside the organization and many people outside. The accounting system interfaces with other components of the overall business information system, such as the management, production, and marketing subsystems.

Structure: Accounting system can be divided into component subsystems on functional lines, that is, into purchasing, order processing, accounts receivable, inventory control, and so forth. This is a fruitful basis for analysis for some purposes; but it is not the only one. Another approach is to identify the highest-level subsystems with the major transaction cycles (Figure 1).

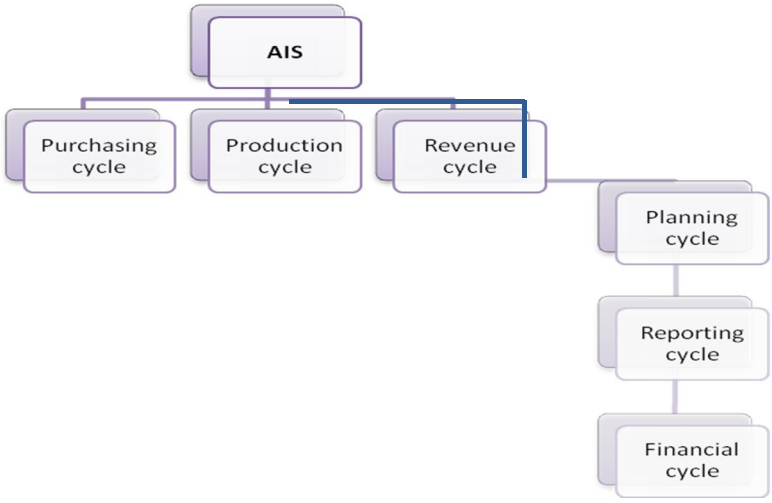

Figure 1: Subsystem of AIS identified with the major transaction cycles

A third structural form might emphasize the components of people, facilities, technology, media, and procedures (Figure 2), and a fourth approach could be to identify the operational and decision support functions and subsystems (Figure 3). It must be stressed that there is no single 'right' way to analyze a system into subsystems. The choice between available alternatives has to be made according to the purpose that will be served. The systems approach is pragmatic and is intended to serve the immediate objectives at hand; at some other time, a different method of analysis may be preferred.

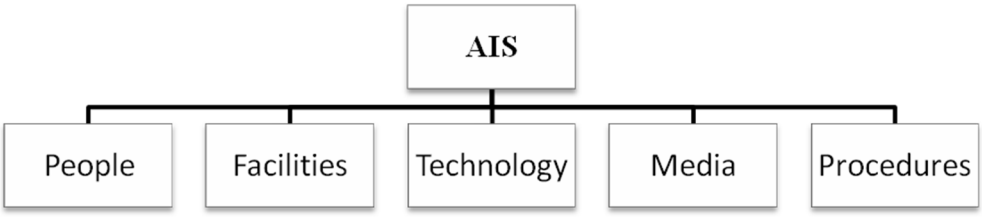

Figure 2: Subsystems of AIS emphasizing components

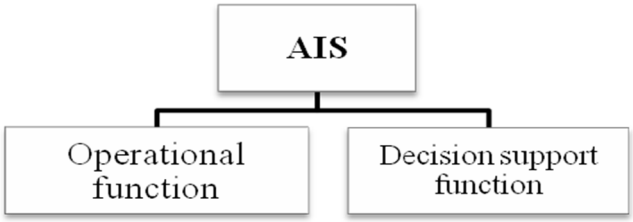

Figure 3: Subsystems of AIS identified by the operational and decision support functions.

Performance: The effectiveness of the AIS is measured by its ability to provide essential service, such as customer billing and payroll, and to meet the informational needs of its users. The outputs from the system include some that could be regarded as discretionary, such as sales analysis, and others that are mandatory such as tax and regulatory reporting. Ultimately, the effectiveness of the accounting system must be measured by its contribution to the continued by its contribution to the continued survival and success of the organization. The efficiency of the AIS is evaluated in terms of the costs that are incurred to support it. These costs include labor costs, supplies, building occupancy expense, and equipment costs.

Quality: The accounting information system must be reliable in operation and must provide accurate, trustworthy information to its users in a time frame, and in a form, that are relevant to their needs. It must include suitable internal control to protect the integrity of the information, to protect the resources of the enterprise (particularly in the area of liquid assets such as cash and inventory), ant to further the objectives of management. In view of the Foreign Corrupt Practices Act, the internal controls may also be a matter of legal obligation. Finally, in recognition of the behavioral aspects of information, the accounting system must play its proper role in motivating the internal user toward goal congruence and in projecting an appropriate organizational image to the external users.

1.3. LITERATURE REVIW

Accounting information is useful because the quantification process translates each dimension of the decision into a common financial dimension, thus making new, unfamiliar or complex trade-offs easier to assess. Accounting also allows managers to explain decision consequences via a common financial language, rather than in operational language that managers in different functions or locations may not understand (Romney et al., 2000). Several theoretical perspectives are discussed as alternative ways of viewing AIS research and applications. Here, we continue this line of inquiry by considering how to frame AIS research and application within a pluralistic context so as to initiate and sustain multiple voices engaging in dialog and debate. Such a framing provides theoretical and methodological guidance in the design, implementation, and evaluation of AIS in work organizations (Salehi et al., 2010). Under the title “The Role of Accounting Information in Decision-Making Processes in a German Dairy Cooperative", this research has significant implications for the international application of management accounting procedures and practices in decision-making processes. Multinational enterprises, governments and researcher would benefit from such insights into the utilization of accounting information in various national contexts. Under the title “evaluation of the effectiveness of accounting information systems", in this study the effectiveness of accounting information systems of finance managers of listed companies at Tehran stock exchange is evaluated. The results indicate that implementation of accounting information systems at these companies caused the improvement of managers’ decision-making process, internal controls, and the quality of the financial reports and facilitated the process of the company’s transactions. The results did not show any indication that performance evaluation process had been improved. Automated Accounting Information System (AAIS) provides a tool for finance department to enhance organizational effectiveness especially in this era of global technology advancement. The study examined the effect of accounting information system on organizational effectiveness with special reference to selected construction firms in the Ibadan metropolis. Specifically, the study examined the effects of accounting information on quality of financial reports and decision –making (Onaolapo, & Odetayo, 2012).

1.4. OBJECTIVES OF THE STUDY

The objective of the research work is to know to what extent the accounting information is effective on organizational performance. In brief, the objectives of this study are as follows:

- To study the role of accounting information systems and its potential contribution in Tata Consultancy services (TCS).
- To identify the lacunas of the accounting information system.
- To determine the extent of awareness and perception of managers regarding accounting information system.
- To study the difference between the managers who use accounting information system with other managers who do not use the same while taking various decisions.
- To determine the effectiveness of accounting information system in decision making of managers on organizational performance.

1.5. STATEMENT OF HYPOTHESES

The hypotheses of the research work of this study are as follows:

- There is no significant relationship between accounting information systems and the organizational performance.
- There is no significant relationship between overall financial performance of the organization and effectiveness accounting information system.
- Return on investment (ROI) of the organization has no significant relationship with the effectiveness accounting information system.

2. Materials and methods

2.1. SAMPLE SIZE

This refers to the number of items to be selected from the universe to constitute a sample. The statistical population or universe of this research will be out of the Tata Consultancy Services (TCS) companies in India.
The researcher, for authenticate to the hypotheses test, selected TCS company as 215 enterprises in three groups following:
a. Finance managers
b. Managers using AIS
c. Non-financial executives
This refers to the number of items to be selected from the universe to constitute a sample. The statistical population or universe of this research obtains from the Tata Consultancy Services (TCS) companies in India. Date collected from executives working in finance and accounting departments of TCS & other executive using Accounting information and Non-financial executives in Chennai office. Therefore, the necessary sample size from TCS companies determined as 215 enterprises, include 15 Finance managers, 150 Managers using AIS and 50 Non financial executives. Then total sample were taken out of 180 executives working in finance, accounting and non-financial executives return the questionnaire.

2.2. CASE STUDY METHOD

The respondents in this research Tata Consultancy Services (TCS) companies where the complied and regular accounting information systems, have main role in managers' decision making. Data will be summarized in one or several numbers in a manner that these numbers include information about the complete data. Inference statistics is based on probability theory base and its matter is generalizing circumstances of obtained results of samples of population in a manner that the obtained error of this generalization will be minimum. In other words, inference statistics will minimize this error and increase confidence in generalizing the obtained results of samples to population. This is the working process that is going to be done in this chapter. Doing this complex operation needs specific tools and equipments. These tools consist of statistical software that will assist the researcher in the matter. The statistical software which has been used in SPSS .22 and also official software i.e. Microsoft Office Excel has been used for suitable analysis and precise results.

2.3. Validity

The concept of validity answers to the question that how much the measuring tool measures the respective feature. Precision of data obtained can't be trusted if the validity of measuring tool isn't known. A measuring tool may be valid for measuring a particular feature; however, it may not be valid for another feature on another population. In the present paper, the validity of the measuring tool for measuring research variables was assured by referring to experts and professionals' viewpoints.

2.4. Reliability

In this research, a prototype with the size of 20 was used to study the reliability of the questionnaire. In the following table, Cronbach's alpha coefficient was calculated by the software SPSS22. If Cronbach's alpha value is higher than 0.7, it indicates good reliability of the questions posed. (Table1).

Table1: Reliability test of the questionnaire with Cronbach's alpha

Variables	Number of questions	Cronbach's Alpha		
		Finance Manager	Managers using AIS	Non Financial Executives
Accounting Information System (AIS)	6	0.891	0.849	0.763
Effectiveness Accounting Information system (EAIS)	6	0.778	0.887	0.904
Organization Performance (OPE)	6	0.874	0.934	0.831
Overall Financial Performance (OFPE)	6	0.838	0.931	0.913
Return On Investment (ROI)	6	0.858	0.849	0.913

Total of questionnaire	0.816	0.761	0.833

As shown in the above table, reliability of all variables of the research model is inacceptable range (higher than 70%) indicating reliability of the questionnaires employed. It can be concluded that all three questionnaire has good validity and reliability.

2.5. Descriptive Dtatistics of the Research Variables

Measures describing data are divided into two groups of central tendency and variability. In this section, how the research variables are distributed is examined in terms of the most important central tendency measures (mean) and variability measures (variance and standard deviation).

Table 2: Descriptive Statistics

Variables	N	Mean	Std. Deviation
AIS	180	3.190	0.873
EAIS	180	3.364	0.586
OPE	180	3.520	0.500
OFPE	180	3.605	0.507
ROI	180	3.654	0.524

Considering data in table 2, the highest mean value is for the variable ROI with 3.605 and the variable AIS has the lowest mean value (3.190).

2.6. Checking normality of variables

To perform statistical methods and calculate test statistic and obtain a logical inference on the research hypotheses, the most important thing is selection of an appropriate statistical method for the research. To this end, knowledge of data distribution is a priority. So in this research, Kolmogorov-Smirnov test was used to test the assumption of the research data normality.

Table 3: One-Sample Kolmogorov-Smirnov Test

Index	AIS	EAIS	OPE	OFPE	ROI
N	180	180	180	180	180
Mean	3.190	3.364	3.520	3.605	3.654
S.D	0.873	0.586	0.500	0.507	0.524
Kolmogorov-Smirnov Z	2.132	1.05	1.559	1.32	1.547
Sig.	0.000	0.022	0.016	0.041	0.017

Regarding data in table 3, sig is bigger than 0.05 in all variables so distribution of variables is normal. Considering the results of Kolmogorov-Smirnov test, parametric tests are used to test the research hypotheses.

3. Discussion and results

3.1. Research Hypotheses Testing

In this section, research hypotheses are discussed and tested.

Hypothesis 1:

In this section, to examine the relationship between AIS and OPE considering Kolmogorov-Smirnov test and lack of normality of data, Pearson correlation coefficient was used. The results of the test are shown in table 4for three groups in general and separately.

Table 4: Correlations between groups for first hypothesis

Variables	Group	N	Pearson Correlation	Sig.
AIS & OPE	Finance Managers	10	0.638	<0.030
	Managers using AIS	130	0.333	<0.001

	Non-Finance Executives	40	0.461	<0.001
	Total	180	0.448	<0.001

Regarding data in table 4, the correlation between two variables AIS and OPE is significant at 95% in all groups studied. Also considering the correlation value, it is found that the relationship between two variables is the strongest for the group Finance Manages. In the last line of table 4, it is shown that in general the correlation value between tow variables OPE and AIS is 0.448 and Sig<0.01. So, the correlation is significant at the confidence level 99%. According to the above results, the first hypothesis is rejected. This means that there is a significant relationship between accounting information systems and organizational performance.

Hypothesis 2:

In this section, to examine the relationship between OFPE and EAIS considering Kolmogorov-Smirnov test and lack of normality of data, Pearson correlation coefficient was used. The results of the test are shown in table 5.

Table 5: Correlations between groups for second hypothesis

Variables	Group	N	Pearson Correlation	Sig.
EAIS & OFPE	Finance Managers	10	0.740	<0.014
	Managers using AIS	130	0.333	<0.001
	Non-Finance Executives	40	0.448	<0.001
	Total	180	0.468	<0.001

Regarding data in table 5, the correlation between two variables EAIS and OFPE is significant at 95% in all groups studied. Also considering the correlation value, it is found that the relationship between two variables is the strongest for the group Finance Manages. In the last line of table 5, it is shown that in general the correlation value between tow variables OFPE and EAIS is 0.468 and Sig<0.01. So, the correlation is significant at the confidence level 99%. According to the above results, the second hypothesis is rejected. This means that there is a significant relationship between accounting information system tools and financial performance.

Hypothesis 3:

In this section, to examine the relationship between ROI and EAIS considering Kolmogorov-Smirnov test and lack of normality of data, Pearson correlation coefficient was used. The results of the test are shown in table 6.

Table 6: Correlations between groups for third hypothesis

Variables	Group	N	Pearson Correlation	Sig.
ROI & EAIS	Finance Managers	10	0.655	<0.040
	Managers using AIS	130	0.376	<0.001
	Non-Finance Executives	40	0.248	<0.018
	Total	180	0.377	<0.001

Regarding data in table 6, the correlation between two variables ROI and EAIS is significant at 95% in all groups studied. Also considering the correlation value, it is found that the relationship between two variables is the strongest for the group Finance Manages. In the last line of table 6, it is shown that in general the correlation value between tow variables ROI and EAIS is 0.379 and Sig<0.01. So the correlation is significant at the confidence level 99%. According to the above results, the third hypothesis is rejected. This means that there is a significant relationship between return of investment (ROI) and accounting information systems.

In brief, this research has provided an understanding of impact of accounting information systems on organizational performance in TCS. That is, data quality management is factors for accounting information systems in organizations. Further in TCS financial managers are highly complacent as they are not taking any initiatives on their own to reach out and meet the organizational goals. Particularly in managers using AIS is done through budgetary allocation and its utilization plan would be the responsibility of top managers.

In this study researcher after analysis of data find the significant relationship between AIS and influence factors on the organization, after analysis of three groups in finance managers, managers using AIS and non-financial executives with hypothesis (H1, H2, H3) for each group, researcher find the positive relationship. The Table 7 has shown the above result:

Table 7: Summary results of hypothesis for three groups

Groups	Hypothesis 1	Hypothesis 2	Hypothesis 3
Finance Managers	Rejected	Rejected	Rejected
Managers Using AIS	Rejected	Rejected	Rejected
Non-Financial Executives	Rejected	Rejected	Rejected

Considering the table 7, it means under the study topic, AIS is effective on the organizational performance in TCS.

4. Conclusion

There are four recommendations for further research.

First, replication of this study in other countries including both developed and developing countries may give interesting insights into international practice. The research on cross-country and across-culture comparison of impact of accounting information systems is very important and useful for theory building as well as for practical implications. It can not only advance the literature but also provide a useful benchmark for real-world practice, as organisations nowadays need to become more competitive in order to survive in a more open international trading environment.

Second, Organizations need to take an action, which put such systems at the forefront, and consider both the system and the human related factors while managing their accounting information systems. In managing an organization and implementing an internal control system, the role of accounting information system (AIS) is crucial.

Third, research into building the relationship between the AIS and performance output is needed. This research focused on identifying the factors. Further research that links the performance of those factors to business output can provide a wider picture of the issues and aid towards building an understanding of cause-effect relationships between different variables in data quality management area. The measurement of output could be the overall level of quality achieved as well as financial data such as return on investment.

Fourth, a longitudinal experiment may be useful to further test the theory built in this study. This would be to investigate whether continuous improvement effort on data quality management can lead to better business performance. If there are any variations on performance, an attempt could be made to develop the measurement of how much those variations are caused by improvement activities.

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