

Implications of Education Management Information System: A study across B-Schools in Bengaluru City

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Abstract

An institution's MIS, or Management Information System, is crucial to the success of the institution as a whole because of the role it plays in facilitating effective management. The Education Management System (EMIS) is a critical component of educational administration because it provides timely access to accurate data that can be used to influence strategic decisions. One conclusive motivation behind this research is to examine the impact of MIS on organizational success at private universities with a business school from the academic viewpoint. The objective population of this sample comprised 120 faculties from Business Schools in Bangalore. As based colleges, a simple sample of (10) colleges is browsed and 140 answers are transmitted (14 surveys per college). Statistical Tools are used to evaluate hypotheses, such as ANOVA and SEM. The main results have shown that the MIS, the performance of its employees and the job characteristics (Education, Experience and Designation) of the respondents impact the performance of the faculty members relevant to the MIS, indicating that the higher the administrative data structures, the higher the institutional appearance. In addition, the results indicate that Management information system greatly influenced the Performance of B-schools. In the last segment, the researcher gives several intriguing ideas for B-schools in Bengaluru and their staff.

Keywords: Management Information system, Organization Performance.

Introduction

One of the most crucial parts of any comprehensive plan for the effective administration of a corporation is the "Management Information System," often known by its abbreviation MIS. The Education Management System (EMIS), a crucial part of educational administration, is in charge of furnishing relevant data at the right time and in the right format to aid in managerial decision making. This is done to guarantee that all aspects of educational management are functioning normally. Management information systems (MISs) have been studied by Al-Mamary et al. in relation to their impact on business success in the telecommunications sector of Yemen (2015). The focus of the study

was on the role that MISs play in the overall prosperity of businesses, and the researchers sought to know more about this. The results confirmed the validity of their hypothesis. That is to say, the performance of the organisation was positively correlated with technological factors (such as system quality, information quality, and service quality), organisational factors (such as top-level management's support and user training), and human factors (such as computer self-efficacy and user experience). Alshawaf and Khalil (2008) found significant differences between public and private organisations with regard to end-user support, top management, and information systems management in IS financial decisions, all of which favour public organisations. These

distinctions were proven to benefit government agencies. This was uncovered during their study of how IT affects the performance of government and private organisations. They also discovered that private and public organisations were quite different when it came to the availability of IS resources, the engagement of senior management in IS plans, the participation of end users in the development of IS, and the training of end users on IT. This study found no statistically significant differences between private and public organisations in Kuwait when it came to the average age of their IS units, the number of levels in their IS hierarchy, the sophistication of their IS, or the apparent transparency of their IS strategy. IS human capital, defined as IS skills and specificity, IT infrastructure flexibility, defined as the complexity of networks and applications, IS partnership quality, defined as the quality of both internal and external partnerships, and organisational performance, defined as both operational and market-based performance, are positively correlated, as was found by Ravichandran and Lertwongsatien (2005). These companies represent a diverse array of industries, including banking, insurance, financial services, retail, manufacturing, transportation, and many more.

Literature Review

The relevance of management information systems has been the topic of inquiry from a range of distinct viewpoints (MISs) (MISs). One of these factors is the role that MISs play in boosting business efficiency, as demonstrated by research from Lipaj and Davidavien (2013) and Kharuddin & et al. (2010). While many businesses have adopted MISs, not all have seen the returns on their investment. Farzandipur, F., Jeddi, F. and Azimi, E.(2016) (2016). The factors that are crucial to the successful deployment of MIS have so received a great deal of attention and study. The research efforts of two separate groups have been merged into one. The first explores the variables that impact the deployment of management information systems across a number of industries, while the second investigates the link between management information systems and the performance of companies.

One might look to the findings of a research by Al-Mamary et al., 2014 for insight into what elements play a role in the degree to which Yemeni businesses are able to successfully employ management information systems (MISs). They categorised these considerations into three major groups: technical factors, people factors, and organisational difficulties. According to research conducted in 2015 by Al-Mamary et al., these factors have a positive effect on an organization's productivity (OP). Bacha(2012) emphasised the significance of top management and staff attitudes in the adoption of management information systems by utilising a sample that comprised of one hundred different French enterprises. In Kuwait, Alshawaf and Khalil(2008) proposed four success criteria of information systems (ISs): information system planning and funding, user assistance, system complexity, user involvement at various levels of an organisation, and so on.

In the United States, Kearns (2007) studied the effects of top-management support of ISs and management participation in the creation of an information system on the design and implementation of an IS. The results indicated that these two aspects were crucial in reducing IS implementation problems. In their study, Farzandipur et al.(2016) categorised the factors that influence the implementation of MISs in hospitals as human factors (computer skills, IS usefulness, and IS ease of use), managerial and organisational factors (IS project management, IS cost, training, user participation, and IS confidentiality), and technological factors. The human elements included things like being able to utilise computers; the utility of the information system; and how simple it is to use the information system (support, safety, development and communication) (support, safety, development and communication). Rahimi et al.(2014) highlighted the importance of user participation in the early stages of IS development as a factor influencing the creation of ISs in healthcare settings. This was done in order to shed light on a hitherto unknown link between user interaction and IS development. They say that users are able to participate in the following stages of information system development: analysis, design, implementation, and assessment.

In their study, Fu et al.(2014) identified three major characteristics that play a significant influence in deciding whether or not small and medium-sized firms in Taiwan use ISs. These characteristics are referred considered as the technical factors, organisational factors, and environmental elements, respectively. Each of these groups has its own set of objectives that fall into one of the three types listed. More specifically, technological factors are linked to system functionality, trust in technology, and cognitive benefit; organisational factors are linked to organisational characteristics, organisation readiness, and partners' willingness and abilities; and environmental factors are linked to the overall industry, the industry environment, and external pressure.

To analyse the link between MISs and OP, Al-Gharaibeh and Malkawi (2013) performed a case study of the Ministry of Planning. Researchers examined MISs from three perspectives: hardware/software components; networks; and people/processes. Their findings reveal that MISs do, in fact, have an influence on the performance of enterprises functioning in public environments in Jordan. Inter-organizational information systems (IAIS) are data-sharing computer networks between different businesses. DA Silveira and Cagliano(2006) examined and validated the association between inter-organizational information systems and operational

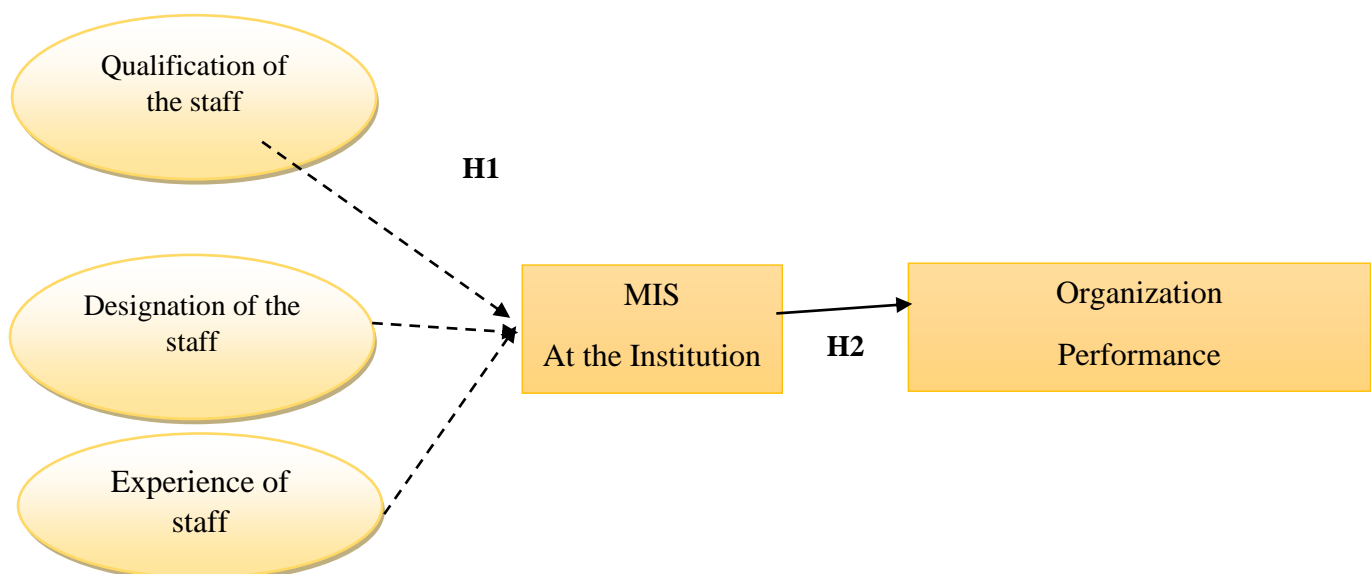
performance by examining data obtained from thirteen different nations. Batra(2006) hypothesised that businesses will become more productive after adopting IT. Research shows that IT has an impact on overall organisational flexibility, which in turn affects company performance and efficacy.

Building on the prior research, the goals of this study are twofold: first, to investigate the factors affecting the implementation of MISs in B-Schools in Bangalore; second, to investigate the relationship between MIS components and organizational performance in those institutions; and third, to understand the impact of demographic variables on the faculty's opinion of MIS Factors. MIS stands for management information system.

Research Gap

There have been no studies conducted to analyse the work profile, particularly the educational qualifications of academics or the performance of academicians in relation to MIS. No studies were conducted across all of the business schools in the city of Bangalore, which is one of the most important centres for business education. There have been very few research that evaluate the correlation between MIS variables and organisational performance.

Conceptual framework



Statement of the problem

In Bangalore, the use of MIS technology in education has been shown over the last 7-10 years. The use of MIS technologies in the education sector provides a perceived benefit, making the performance of academics better for supplying information to students. Several studies was undertaken to find the implications of the installation and usage of MIS technologies in academic fields. The factors impacting the better implementation and usage of this technology should be investigated and their effect on the efficiency of the workers further analysed.

OBJECTIVES OF THE STUDY

- To know the history and development of MIS at B-schools
- To analyze the impact of Job profile (qualification, experience and designation) on MIS related performance
- To assess the relationship between MIS technology Factors and Staff performance

RESEARCH HYPOTHESIS

- H1: There is significant difference in MIS related performance based on the Job profile (qualification, experience and designation) of the staff
- H2: There is significant association between MIS technology factors and staff performance

SAMPLE, SOURCES OF DATA AND TOOLS USED FOR DATA ANALYSIS

Sample size

The sample size of the research academics is calculated using Cochran's proposed sample size calculation formula. The sample size is determined by assuming that the finite number of academic workers in B-Schools in Bengaluru is 3305 members of the faculty; hence the sample size formula from the finite population is as follows:

$$n = \frac{z^2 * p(1-p)}{1 + \left(\frac{z^2 * p(1-p)}{e^2 N}\right)} = \frac{1.959964^2 * 0.5(1-0.5)}{1 + \left(\frac{1.959964^2 * 0.5(1-0.5)}{0.08^2 * 3305}\right)}$$

= 120 Academic staff (10 colleges*12 Faculty members)

Data collection tools and techniques

Data was collected by designing a structured questionnaire,

Table 1- Questionnaire design

PART	Type of Variable	Descriptions
A	Personal and job information	Multiple choice and close ended questions
B	Independent variables	Elements of MIS
C	Dependent variables	Performance of the staff through self-assessment statements

Statistical tools for data analysis

The following statistical tests will be used

1. Determine the validity and durability – Average Volatility, Hybrid Reliability and Cronbach Alpha Clarification
2. The effect of MIS on the efficiency of employees - SEM
3. Difference Research MIS focused on profiles of work (education, expertise and appointment) – ANOVA

RESULTS AND DISCUSSION

Reliability analysis: Cronbach's Alpha is checked for their reliability and internal accuracy in data collection tools. The test results are outstanding as they meet the predicted excellence criterion. The alpha of the cronbach is 0.918 which indicates that the survey is accurate and stable.

Demographic Profile: The respondents' demographic profile shows that 49 male respondents constitute 70%, while the majority of the respondents are females. Age is a significant factor in technology usage in any sector. 51 percent belong to the 35-45 age

range, 25.7 percent are above the age of 45. The qualification of the respondents is very significant in the academic field. 14% faculty members completed their doctorates, 66 % scholars completed their postgraduate studies. Majority of 52% of the samples are teaching associates. The assistant professors are 37.1% of respondents. A majority of 40% of faculty

members have more than 9 years of experience. The biographical features of the respondents will be related to the usage and results of MIS technologies in the further sections

7.4 Hypothesis testing

H1: There is significant difference in MIS related performance based on Job profile

Table 2 : ANOVA Statistics for MIS related performance based on job profiles (education, experience and designation)

ANOVA							
		Qualification		Experience		Designation	
		F	Sig.	F	Sig.	F	Sig.
MIS_DM_1	Between Groups	1.855	0.140	2.612	0.154	2.174	0.094
	Within Groups						
	Total						
MIS_DM_2	Between Groups	4.656	0.004	0.081	0.970	5.738	0.001
	Within Groups						
	Total						
MIS_DM_3	Between Groups	2.504	0.062	3.352	0.121	5.260	0.002
	Within Groups						
	Total						
MIS_DM_4	Between Groups	6.545	0.000	2.046	0.110	2.837	0.040
	Within Groups						
	Total						
MIS_DM_5	Between Groups	0.563	0.640	1.080	0.360	6.442	0.000
	Within Groups						
	Total						
MIS_DM_6	Between Groups	1.030	0.381	1.989	0.119	0.924	0.431
	Within Groups						
	Total						
MIS_DM_7	Between Groups	2.333	0.077	1.873	0.137	3.311	0.022
	Within Groups						
	Total						
MIS_DM_8	Between Groups	3.620	0.015	4.039	0.109	7.233	0.000
	Within Groups						
	Total						
MIS_DM_9	Between Groups	4.064	0.008	0.637	0.592	6.140	0.001
	Within Groups						
	Total						
MIS_DM_10	Between Groups	2.492	0.063	0.965	0.411	5.784	0.001
	Within Groups						
	Total						
MIS_DM_11	Between Groups	2.732	0.066	2.468	0.065	7.072	0.000
	Within Groups						

	Total						
MIS_DM_12	Between Groups	0.406	0.749	0.487	0.692	3.369	0.020
	Within Groups						
	Total						

Source: Primary data

In the case of credentials, the views of faculty vary greatly, depending on their level of experience. The meaning values for most MIS claims are below the meaning $p=0.05$. Post hoc scheffe thus showed that PhD students had the highest degree of consensus on all MIS-related aspects relative to the other lower qualifications.

In the event of experience, the experience has little substantial effect on the views of teachers in the organization about MIS.

When selected, there is a major variation in the viewpoints of Faculty depending on their

designations . For most MIS-related sentences, indicating values are below $p=0.05$. Therefore, Post-hoc scheffe was discovered that associate professors had the least agreement with the teaching colleagues, assistant professors and teachers in all aspects connected with MIS

Alternate Hypothesis of H1: There is significant difference in MIS related performance based on Job profile s accepted

H2: There is significant association between MIS technology factors and organization performance

Scale reliability and validity

Table 3: Average Variance Explained, Composite Reliability and Cronbach Alpha

Indicator Variables		Latent Variables	No of Indicators	Average Variance Explained	Composite Reliability	Cronbach Alpha
MIS related aspects	<-----	MIS in the Organization	9	0.5411	0.7213	0.7866
Staff Performance Aspects	<-----	Staff performance	9	0.5287	0.7832	0.6891
AVE > 0.5, CR > 0.7, CA > 0.7, All Criteria Achieved						

This is a measure for checking the stability of the systems or latent variables under inquiry. In this analysis, the construct attempts to calculate the relationship between the MIS aspects and the output of the workers and to assess if the

construct tests the correlation between the dependent and the independent variables correctly.

The minimal requirements for building validity have been met by all Structures.

Table 4: Results for Model Fit – relationship between MIS related aspects and Staff performance

Fit Indices	χ^2 (Chi-square)	df (Degrees of Freedom)	Chi-square/df (χ^2/df)	GFI (Goodness of Fit Index)	RMSEA (Root Mean Square Error of Approximation)
Actual Model Value	445.187	137	3.2782	0.921	0.0967
Accepted value			< 3	> 0.90	< 0.10

The model suits the results well from the CFA performance since the Chi-Square value of 445.187 is statistically important with 137 degrees of freedom since the p value is 0.00.

The Goodness of Fit Index (GFI) = 0.921, which is above the estimated Root Mean Square Error Approximation and Parameters (RMSEA) = 0.0967, which indicates that the

model is similar to the good fitness criteria expected. The model below is the pictorial performance of the proof that the model has

been running and the structured relationship figures are seen in the model.

Table 5 : Structural relationship between MIS related aspects and Staff performance

			Unstand ardiesd Estimate	Standar dised Estimate	S.E.	C.R.	P
Staff Performance	<---	Management Information systems at B-schools	1.016	0.826	0.135	7.502	***

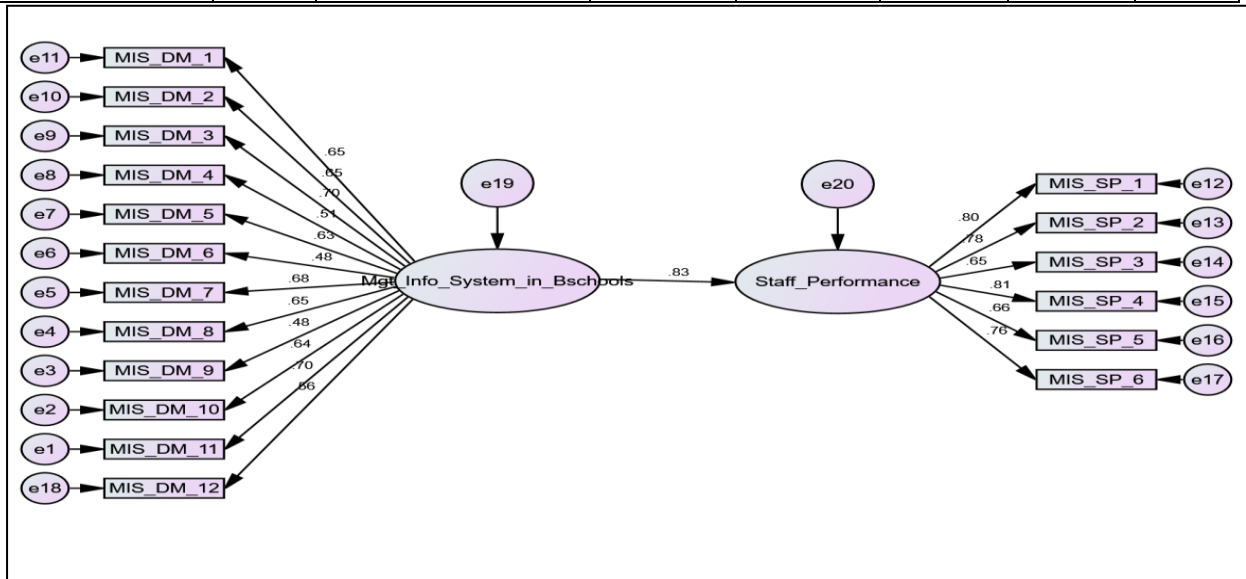


Figure 1: Pictorial representation of Structural relationship between MIS related aspects and Staff performance

The findings of the CFA illustrate the relationship between aspects relevant to MIS and employee success at select B-schools in BengaluruArea. The first column displays the unstandardized estimates of regression that reflect the disparity in the respondents' mean values. The sum of change in the dependent variable due to the independent variable is reflected. A calculation of the precision of forecasts is the standard error of the forecast. Estimate/ Standard error is the critical ratio and the p column shows the result's importance.

It can be shown that as items linked to MIS boost by 1, the efficiency of workers improves by 0.83.

The two variables MIS-DM-3 (senior executive at the University followed up on upgrade to modernise the hardware used and MIS-DM-11 (university employees can access their applications easily lead to a 70 percent improvement in staff efficiency in the case of management information system.

Alternate Hypothesis of H2: There is significant association between MIS technology factors and organization performance

Findings, suggestions and conclusion

Outcome to the discoveries, this investigation prescribes the accompanying:

- In Bangalore, B-Schools are strongly urged to create an unmistakable approach for the MIS data structures in order to optimise its presentation and to benefit further from its open capability.
- Top management of the B-Schools in Bengaluru is welcome to adopt a participatory way of thinking of exchanging learning through trading all the relevant data and experiences that can lead to a profound change in implementation, this should be possible by

developing a traditional structure with each other.

- B-Schools in Bengaluru are enormously urged to deliver further grants or, if nothing else to provide individuals (scholastic as well as non-scholarly representatives) who have the capacity to pursue their higher education with a gradually adaptable work schedule, which would prompt better execution.
- The B-Schools Board in Bengaluru should create an inward database to ensure that authentic, reliable, trustworthy, relevant, and culmination data are transmitted among members, which can prompt more adequacy and effectiveness of execution.
- The current examination investigated the interpretation of scholastic individuals. In addition, the appraisal of the non-scholastic is critical in explaining the role of the MIS data structures in the execution of the institution; therefore, future analysis needs to evaluate their feelings by performing a study or top-to-bottom meetings with key Business School employees.

This study makes a contribution to management and research by investigating the elements that influence the adoption of MIS as well as the consequences that the implementation of MIS has on the results of company operations. The powers of information technology for storing, processing, and conveying information and the components that accompany it are insufficient if they are not accompanied by human, organisational, and technological components. These factors determine management, and as a direct consequence, there are not enough resources devoted to information technology. The authors of this study propose, on the basis of their results, that any future investigations of the association between MIS adoption and organisational performance take into account the elements that could impact MIS characteristics. This recommendation is based on the findings of this study. In the future, the model that was proposed can be developed by making use of new elements and MIS constructs. This can be done in order to get a deeper understanding of the potential mediating role that MIS components play in the connection between MIS implementation and MIS performance. When this occurs, a more in-depth examination of the association between

the adoption of MIS and its performance is possible. Only administrators and technicians currently employed by government entities in the fields of information technology and information services may participate in the survey. Therefore, more generalizable conclusions might be achieved via using a bigger sample size in conjunction with other information sources.

References

- [1] Al-Mamary, Y., Shamsuddin, A. and Aziati, N.(2015) "The pilot test study of relationship between management information systems success factors and organizational performance at Sabafon Company in Yemen," *International Journal of u- and e- Service, Science and Technology*, 8(2), pp. 337-346, 2015.
- [2] Alshawaf, A. and Khalil, O.(2008) "IS Success factors and IS organizational Impact: Does ownership type Matter in Kuwait?," *International Journal of Enterprise Information Systems*, 4(2), pp. 13-33, 2008.
- [3] Ravichandran, T. and Lertwongsatien, C. (2005) "Effect of information systems resources and capabilities on firm performance: A resourcebased perspective," *Journal of Management Information Systems*, 21(4), pp. 237-276, 2005.
- [4] Lipaj, D., and Davidaviciene, V(2013) . "Influence of information systems on business performance," *Science: Future of Lithuania*, 5(10), pp. 38-45, 2013.
- [5] Kharuddin, S., Ashhari, Z. and Nassir, A. (2010) "Information System and Firms' Performance: The Case of Malaysian Small Medium Enterprises," *International Business Research*, 3(4), pp. 28-35, 2010.
- [6] Farzandipur, F., Jeddi, F. and Azimi, E.(2016) "Factors affecting successful implementation of hospital information systems," *ACTA INFORM MED*, 24(1), pp. 51-55, 2016.
- [7] Al-Mamary, Y., Shamsuddin, A. and Aziati, N.(2014) "Factors affecting successful adoption of management information systems in organizations towards enhancing organizational performance," *American Journal of*

- Systems and Software, 2(5), pp. 121-126, 2014.
- [8] Al-Mamary, Y., Shamsuddin, A. and Aziati, N.(2015) "The pilot test study of relationship between management information systems success factors and organizational performance at Sabafon Company in Yemen," International Journal of u- and e- Service, Science and Technology, 8(2), pp. 337-346, 2015.
- [9] Bacha, E.(2012) "The impact of information systems on the performance of the core competence and supporting activities of a firm," Journal of Management Development, 31(8), pp. 752-763, 2012.
- [10] Alshawaf, A. and Khalil, O. (2008) "IS Success factors and IS organizational Impact: Does ownership type Matter in Kuwait?," International Journal of Enterprise Information Systems, 4(2), pp. 13-33, 2008.
- [11] Kearns, G. (2007) "How the internal environment impacts information systems project success: An investigation of exploitative and explorative firms," The Journal of Computer Information Systems, 48(1), pp. 63-75, 2007.
- [12] Rahimi, B., Safdari, R. and Jebraeily, M.(2014) "Development of hospital information systems: User participation and factors affecting it," ACTA INFORM MED., 22(6), pp. 398-401, 2014.
- [13] Fu, H-P., Chang, T-H., Ku, C-Y., Chang, T-S. and Huang, C-T (2014) "The critical success factors affecting the adoption of inter-organization systems by SMEs," Journal of Business & Industrial Marketing, 29(5),pp. 400-416, 2014.
- [14] AL-Gharaibeh, Sh. and Malkawi, N. "The impact of management information systems on the performance of governmental organizations: Study at Jordanian ministry of planning," International Journal of Business and Social Science, 4(17), pp. 101-109, 2013.
- [15] DA Silveira, G. and Cagliano, R. "The relationship between interorganizational information systems and operations performance," International Journal of Operations & Production Management, 26(3/4), pp. 232-253, 2006.
- [16] Batra, S. "Impact of information technology on organizational effectiveness: A conceptual framework incorporating organizational flexibility," Global Journal of Flexible Systems Management, 7(1/2), pp. 15-25, 2006.