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CHALLENGES TO IMPLEMENT INFORMATION SYSTEMS IN BUSINESS ORGANIZATIONS IN BANGLADESH: AN EMPIRICAL STUDY

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ABSTRACT

This study has investigated IT infrastructure of several business organizations in Bangladesh and has examined information systems launching and implementation problems in several industries operated in Bangladesh. Results from the study have revealed that most of the organizations have sufficient IT infrastructure but they still face lots of problems regarding information systems launching and process. The results have also revealed that lack of strategic planning and improper interdepartmental coordination are liable for inappropriate information systems in the business organization in Bangladesh. The hypothesis analysis has proved that failing to get top management support and not having a clear-cut business strategy to guide the IS strategy effort are liable for launching problematic IS strategy in Bangladesh. The regression analysis reveals that IS implementation varies on failing to get top management support and negligence to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy.

Keywords: IS implementation, IT infrastructure, Computer Applications, Business, Bangladesh.

1. INTRODUCTION

Technology has greater revelation on our life as it reforms the arrangement of our working process. Every aspect of our daily lives is subject to technological innovations. Today it is widely recognized that a "business information system" is essential for most organizations to survive and compete with other organizations. Information is life blood of every organization, the modern business organization needs integrated, accurate and up to date information. To fulfill the needs of information the management of information is critical for the prosperity of every

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business organization (Beynon-Davies 2009). Business information systems assist companies to extend their business, offer services, reshape jobs, redesign work flows and modify the ways of controlling business (Lucas, JR 1981). The implementation of business information system is an ongoing process which includes the deployment of the business information system through feasibility study, analysis, design programming, training, conversion and installation of the system. According to (Gioia, 2001) survey 51% of the business information systems implementation was unsuccessful. In our country, we also see that though business organizations use information technology but most of the cases the organizations cannot implement information systems due to various reasons. There are some underlying assumptions about the IS implementation failure. This study is designed to determine which reasons create aggravation to implement information systems on business organization in Bangladesh.

1.1 Objectives of the Study

The following objectives are set while conducting the research:
- To study the present IT infrastructure of Business organizations in Bangladesh;
- To study the present Information systems of Business organizations in Bangladesh;
- To find out the problems of IS implementation on Business organizations in Bangladesh.

1.2 Literature Review

As Laudon defined "Information system technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination and control, information systems may also help managers and workers analyze problems, visualize complex subjects, and create new products". In the light of the definition of IS, it can be said that information system is the core of decision making. Organizations' overall control depends on the successful implementation of IS.

A number of surveys have attempted to identify the criteria for successful IS/IT strategy development. Lederer and Mendelow surveyed 20 US companies to determine the senior management problems preventing effective development of IS/IT strategic plans. An earlier survey had shown that obtaining top-management commitment was a prerequisite or success, but it was often difficult to obtain. In a similar UK survey, Wilson identified a number of barriers that prevented an effective IS/IT strategy being developed and then implemented. Organizations claiming to have an IS/IT strategy (73 of the total of 186 surveyed) were asked to identify barriers inhibiting, first, the development of the strategy and, second, implementing it. In this survey, top-management commitment was less critical than the ability to measure benefits from the overall plan, to deal with major business issues such as diversification or growth and to provide appropriately-skilled user and IT resources. The factors cited seem to reflect views based on the past evolution of IS/IT, rather than its future implications. The survey also highlights one or two of the 'softer' issues — politics and middle management's insecurity in the face of change. Ninety percent of the respondents claimed that the IS/IT strategy was either a formal documented part of the business strategy, or the

strategy was aligned to strategic aims. In a more recent survey of senior IS executives, Teo and Ang identified the major problems associated with the IS/IT strategy process. Dividing the process into three phases (the launch phase, the plan development phase and the implementation phase), they reported that, in all three phases, failing to secure top management support is the most serious problem. Not having free communication flow and not being able to obtain sufficiently-qualified personnel are the other two major problems in the first phase. In the second phase, respondents reported ignoring business goals and failing to translate these goals/strategies into action plans as major problems as well.

Considering previous research results, this study is design to find out the implementation problems in launching information system and problems with the information system's strategic process. Though there were several studies which presented various problems in implementing information technology, no other studies have ever made to judge the problems in launching information system and problems with the information systems strategy in Bangladesh. That is why this study is designed to test some underlying assumptions regarding IS implementation.

1.3 Significance of the Study

An in-depth understanding of the specific issues related to IS implementation is essential for the establishment of appropriate principals and effective approaches with regard to the management of information systems in an organization. Each individual issue is important in its own context as well as producing multiple impacts which affect the organization and implementation of ISs within it. Subsequently, effective management of ISs across the board can only take place when a more comprehensive understanding of the myriad of issues is achieved. In the area of information technology, a good portion of the research conducted prior to this study tended to focus primarily on private sector systems and was based on what Ward terms "supply-side" issues, or those issues related to how IT based systems can be "made to work effectively, economically, and in the end — deliver the expected benefits". In this case the issues were those which surround the problems to implement Information Systems not the IT. Most of the cases, people usually make mistake to differentiate IT and IS. And for this reason the organizations are unable to get actual benefit of information systems.

2. METHODOLOGY OF THE STUDY

This study is empirical in nature. Quantitative method has been mainly used in this study while field survey has been used as the main technique for data collection. As the study is about understanding the challenges of implementing IT and IS in the business organizations, all types of business organization were considered as population of the study and IS manager, IT manager, or responsible IT head of the business organizations were considered study units.

2.1. Sample Design

The study has observed 162 respondents' data from 81 organizations. In Bangladesh, there are various types of business organizations. From the categories', the most commoner sectors are

Communication, Education, Health Services, Financial Services, Manufacturing, IT, NGO and other various service industries. The study selected different industries from which overall 81 organizations were surveyed. From 81 organizations, the study has observed 28 financial organizations, 14 educational institutions, 7 communication services organizations, 6 manufacturing organizations, 2 technology based organizations, 12 health service organizations, 5 service based organizations and 7 from others industries.

2.2. Collection of Data

The sample has been selected using non-random opportunity sampling technique (purposive) as most of the business organizations' head office is located in the Dhaka city. In this study, structured questionnaire has been used through scheduled interview to collect primary data from the respondents while secondary data like books, thesis papers, articles, reports etc. also have been used.

2.3. Analysis of Data

Descriptive statistics, Regression analysis, ANOVA and Chi square tests have been used to analyze data efficiently through SPSS.

2.4. Research Hypotheses

H1: Lack of top management support is responsible for not launching IS or implementing problematic IS in the business organization.

H2: Lack of free flow communication and commitment to change throughout the organizations is responsible for not launching IS or implementing problematic IS in the business organization.

H3: Lack of qualified personnel to do a proper job is responsible for not launching IS or implementing problematic IS in the business organization.

H4: Lack of clear-cut business strategy to guide the IS strategy is responsible for not launching information systems in the business organization.

H5: Failing to anticipate new developments in IT is responsible for not launching IS or implementing problematic IS in the business organization.

H6: Ignoring the people and political side of strategy formulation and planning is responsible for not launching IS or implementing problematic IS in the business organization.

H7: Failing to involve top management sufficiently is responsible for not launching IS or implementing problematic IS in the business organization.

H8: Failing to translate business objectives and strategies into action plan is responsible for not launching IS or implementing problematic IS in the business organization.

H9: Negligence to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy is responsible for not launching IS or implementing problematic IS in the business organization.

H10: Failing to review the IS strategy with all managers so as to obtain support and cooperation for its implementation is liable for problematic IS strategy in Bangladesh.

3.   ANALYSIS AND FINDINGS

The light of quantitative data analysis regarding IT infrastructure in Bangladesh

An analysis of the characteristics of the target population of the study indicates that 4.5% of the respondents are Chief Information Officers, 3.7% of the respondents are System Analysts, 43% of the respondents are Information System Manger/Administrator, and 48.1% of the respondents holds others positions. Respondents' education level shows, 45.7% of them hold graduate degree and remaining 54.3% hold post graduate degree. 63% of the surveyed organizations has implemented IS department in their organizations and remaining 37% has not implemented IS department in their organizations. 90.1% of the surveyed organizations has an in-house MIS/IT or data processing department and 9.9% has no in-house MIS/IT or data processing department.

Software usages level and data based decision making in the various departments of the organizations shows, 77.8% of the surveyed organizations maintains software to address business issues related to Finance and Accounts departments. Likewise 55.6% in HR, 39.5% in Marketing, 77.8% in IT, 42% in Operations, 27.2% in Supply Chain, 49.4% in Administration, 39.5% in R & D, and 32.1% in Sales department of the surveyed organizations maintain software to address business issues.

To know the extent of various software uses, the study has designed some questions. The result shows, 4.9% of the surveyed organizations uses Windows 8 to operate their systems. Likewise 53.1% uses Windows 7 and 42% uses Windows XP Professional to operate their systems. All of the surveyed organizations use Microsoft Office. To address the web development, 4.9% of the surveyed organizations uses Web Studio, 27.2% uses HTML-kit tools, 39.5% uses Adobe Dreamweaver software and 28.4% uses other software. To address programming language, 32.1% of the surveyed organizations uses Java, 18.5% uses PHP, 25.9% uses Visual Basic and 23.5% uses Net.

To know the computerization status in various departments, the study has designed some questions. The result shows, 97.5% of the surveyed organizations maintains fully computerized Finance and Accounts departments. Likewise, 75.3% in HR, 100% in IT, 27.2% in Marketing, 54.3% in Operations, 53.1% in Supply Chain, 43.2% in R & D, 46.9% in General Management and 55.6% in Sales department of the surveyed organizations have maintained fully computerized departments. The observed frequency also shows, some departments still operate their activities in manual basis. 2.5% of the surveyed organizations maintains their Operations departments in manual basis, and 4.9% of the surveyed organizations maintains their Sales department in manual basis.

To know the extent of IT infrastructure, the study has designed some questions. The result shows, 81.5% of the surveyed organizations has sufficient availability of software infrastructure. All of the surveyed organizations have sufficient availability of network facility.

Table – 01: Do you have sufficiency of software infrastructure?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	132	81.5	81.5	81.5
	no	30	18.5	18.5	100.0
	Total	162	100.0	100.0	

Source: The Author

For data backup systems, 67.9% of the surveyed organizations updates database in daily basis, 27.2% updates database in weekly basis and 4.9% updates database occasionally. All the surveyed organizations maintain security measures for data processing of the computer systems. 48.15% of the surveyed organizations maintains ERP software.

What is the frequency of Data Backup system used for present computer system?
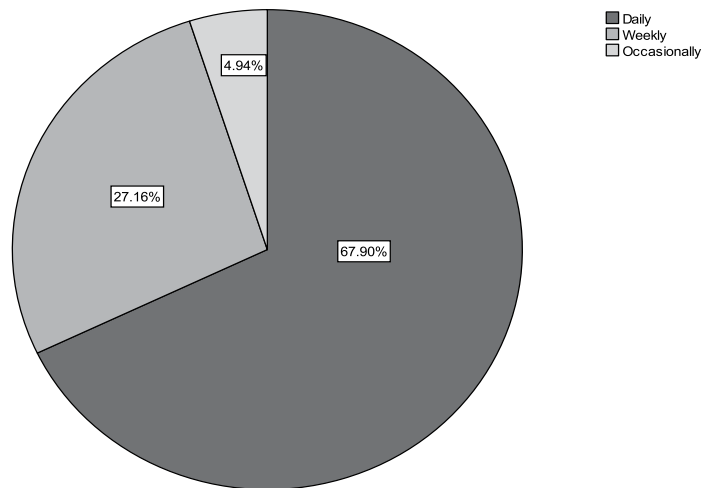
4. **PROBLEMS OF IS IMPLEMENTATION**

To find out the research objectives, the study has designed the questionnaire containing some questions related to IS implementation problem. There are some underlying problems like leadership, environment, technical and personnel problems. In case of leadership issue, the observed frequencies reveal, 51.9% of the surveyed organizations points out interdepartmental coordination problematic for IS implementation. For management related issue, 72.8% of the surveyed organizations points out strategic planning problematic for IS implementation. For technical issue, 61.7% of the surveyed organizations points out lack of standardization problematic for IS implementation. For personnel issue, 60.5% of the surveyed organizations points out, lack of trained staff is somewhat problematic for IS implementation. There are some other issues like, 24.7% of the surveyed organizations points out inappropriate organizational culture somewhat problematic for IS implementation.

Hypothesis Test

The study has observed some underlying assumptions regarding problems in launching the IS strategy process. From all the assumptions, first one is H1: "Failing to get top management support is disposed to not launching information systems". The observed frequency shows the mean value 4.46, which means, most of the surveyed organizations agreed with the statement. To measure this hypothesis the study has observed one sample t test.

The calculated statistics shows the significant two tailed value .391 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that at 0.05 significance level, failing to get top management support is disposed to not launching information systems in Bangladesh.0

One-Sample Test						
	Test Value = 4.40					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Failing to get top management support	.862	80	.391	.057	-.07	.19

H2:"Not having free communication and commitment to change throughout the organization is disposed to not launching proper information systems". The observed frequency shows the mean value 4.47, which means most of the surveyed organizations agreed with the statement. The calculated statistics shows the significant two tailed value.241 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that at 0.05 significance level, not having free communication and commitment to change throughout the organization is disposed to not launching proper information systems in Bangladesh.

H3: "Being unable to obtain sufficiently qualified personnel to do a proper jobis disposed to not launching proper information systems". The calculated statistics shows the significant two tailed value .003 which is outside the acceptance region. So the null hypothesis should be rejected and alternative hypothesis should be accepted. And it may be assumed that at 0.05 significance level, being unable to obtain sufficiently qualified personnel to do a proper job is not disposed to launch problematic IS strategy.

H4: "Not having a clear-cut business strategy to guide the IS strategy effort is liable for launching problematic IS strategy". The calculated statistics shows the significant two tailed value .383 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that at 0.05 significance level, not having a clear-cut business strategy to guide the IS strategy effort is liable for launching problematic IS strategy in Bangladesh.

H5: "Failing to anticipate new developments in IT that might affect the strategy is liable for launching problematic IS strategy". The calculated statistics shows the significant two tailed value

.071 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that failing to anticipate new developments in IT might have affected the strategy liable for launching problematic IS in Bangladesh.

H6: "Ignoring the people and political side of strategy formulation and planning is disposed to launch problematic IS strategy". The calculated statistics shows that the significant two tailed value .006 which is outside the acceptance region. So the null hypothesis should be rejected and alternative hypothesis should be accepted. And it may be assumed that at 0.05 significance level, ignoring the people and political side of strategy formulation and planning is disposed to launch problematic IS strategy.

The study has also observed some underlying assumptions regarding problems with the IS strategy process. From all the assumptions, first one is H7: "failing to involve top management sufficiently is liable for problematic IS strategy". To measure this hypothesis the study has observed one sample t test. The calculated statistics shows the significant two tailed value .019 which is outside the acceptance region. So the null hypothesis should be rejected and alternative hypothesis should be accepted. And it may be assumed that at 0.05 significance level, failing to involve top management sufficiently is not liable for problematic IS strategy.

H8: "Failing to translate business objectives and strategies into action plans is liable for problematic IS strategy". The calculated statistics shows the significant two tailed value .141 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that failing to translate business objectives and strategies into action plans is liable for problematic IS strategy in Bangladesh.

H9: "Neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy is liable for problematic IS strategy in Bangladesh". The calculated statistics shows the significant two tailed value .550 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy is liable for problematic IS strategy in Bangladesh.

One-Sample Test						
	Test Value = 4					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy	.601	80	.550	.049	-.11	.21

H10: "Failing to review the IS strategy with all managers so as to obtain support and cooperation for its implementation is liable for problematic IS strategy in Bangladesh". The

calculated statistics shows the significant two tailed value .088 which is inside the acceptance region. So the null hypothesis should be accepted and alternative hypothesis should be rejected. And it may be assumed that failing to review the IS strategy with all managers so as to obtain support and cooperation for its implementation is liable for problematic IS strategy in Bangladesh.

Regression Analysis of Factors Affecting IS Implementation

To measure the factors affecting IS implementation, the study has examined some predictors like failing to get top management support, not having free communication and commitment to change throughout the organization, insufficiency of qualified personnel to do a proper job, lack of clear cut business strategy to guide IS strategy, failing to anticipate new developments in IT that might affect the strategy, ignoring the people and political side of strategy formulation and planning, failing to involve top management sufficiently, failing to translate business objectives and strategies into action plans and neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy. The calculated statistics shows, 39.1% of the total variation in IS implementation can be explained by the regression model by the variation in all the independent variables mentioned above. Though this result does not refer high variation, but there are some factors highly significant with the IS implementation. Failing to get top management support (.001), neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy (.003) – in both cases the significance value is less than 5%. That implies IS implementation varies on failing to get top management support and neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy.

5. CONCLUSION AND RECOMMENDATIONS

The findings of the study suggest that there are lots of problems in the IS implementation process. From them some issues are vital for the organizations' success. First, strategic planning for IS is fundamental to the ultimate effectiveness of IT. Strategic planning for IS is an important key to the effectiveness of the whole implementation process. The organizations which do not make use of a strategic plan for IS run the risk of investing in technologies, which may not prove to be viable in the long term. In addition, lack of planning might foster other problematic issues. Failure to engage in a formal planning process for ITs may ignore many of the factors which could enhance or hinder IS implementation. Second, interdepartmental coordination has been proven as a major factor in effective IS implementation. Interdepartmental coordination is needed to establish the implementation of IS. Finally, it is shown that the expertise level of executives with regard to IT has been proven as a contributing factor to effectiveness of the IT development and deployment process.

IT is the most influential sector of business. To survive in the market an organization should create a strong IS department for its own. The growing IT provides the organization to enroll pertinent IS in order to survive in the market. The analyses provides that IT infrastructure in the business arena in Bangladesh is good and it is recommended that the organizations should execute proper strategic plan for IS to get actual benefit from IT investments.

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Appendix –A[1]: List of Variables

Variables

SCS = Sufficiency of hardware and software infrastructure.

IIS = Implementation status of IS.

LMS = Failing to get top management support.

LCC = Not having free communication and commitment to change throughout the organization.

LQP = Sufficiency of qualified personnel to do a proper job.

LBS = Lack of clear cut business strategy to guide IS strategy.

FDI = Failing to anticipate new developments in IT that might affect the strategy.

IPS = Ignoring the people and politics side of strategy formulation and planning.

FMS = Failing to involve top management sufficiency.

FOS = Failing to translate business objectives and strategies into action plans.

NWI = Neglecting to assess realistically internal weaknesses of the IS function in determining capabilities to implement the recommended strategy.

Appendix −A²: Descriptive Statistics

		SCS	IIS	LMS	LCC	LQP	LBS	FDI	IPS	FMS	FOS	NWI
						Statistics						
N	Valid	162	162	162	162	162	162	162	162	162	162	162
	Missing	0	0	0	0	0	0	0	0	0	0	0
Mean		1.19	1.37	4.46	4.47	3.81	4.43	4.05	4.21	4.64	4.21	4.05
Std. Error of Mean		.031	.038	.046	.041	.043	.045	.058	.052	.042	.052	.058
Std. Deviation		.390	.484	.591	.525	.549	.567	.738	.663	.530	.663	.738

Frequency Table:

SCS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	132	81.5	81.5	81.5
	no	30	18.5	18.5	100.0
	Total	162	100.0	100.0	

IIS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	102	63.0	63.0	63.0
	No	60	37.0	37.0	100.0
	Total	162	100.0	100.0	

LMS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Sure	8	4.9	4.9	4.9
	Agree	72	44.4	44.4	49.4
	Strongly Agree	82	50.6	50.6	100.0
	Total	162	100.0	100.0	

LCC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Sure	2	1.2	1.2	1.2
	Agree	82	50.6	50.6	51.9
	Strongly Agree	78	48.1	48.1	100.0
	Total	162	100.0	100.0	

LQP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.2	1.2	1.2
	Disagree	4	2.5	2.5	3.7
	Not Sure	18	11.1	11.1	14.8
	Agree	136	84.0	84.0	98.8
	Strongly Agree	2	1.2	1.2	100.0
	Total	162	100.0	100.0	

LBS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Sure	6	3.7	3.7	3.7
	Agree	80	49.4	49.4	53.1
	Strongly Agree	76	46.9	46.9	100.0
	Total	162	100.0	100.0	

FDI

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	3.7	3.7	3.7
	Not Sure	22	13.6	13.6	17.3
	Agree	92	56.8	56.8	74.1
	Strongly Agree	42	25.9	25.9	100.0
	Total	162	100.0	100.0	

IPS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	1.2	1.2	1.2
	Not Sure	16	9.9	9.9	11.1
	Agree	90	55.6	55.6	66.7
	Strongly Agree	54	33.3	33.3	100.0
	Total	162	100.0	100.0	

FMS				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Sure	4	2.5	2.5	2.5
	Agree	50	30.9	30.9	33.3
	Strongly Agree	108	66.7	66.7	100.0
	Total	162	100.0	100.0	

FOS				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	1.2	1.2	1.2
	Not Sure	16	9.9	9.9	11.1
	Agree	90	55.6	55.6	66.7
	Strongly Agree	54	33.3	33.3	100.0
	Total	162	100.0	100.0	

NWI				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	3.7	3.7	3.7
	Not Sure	22	13.6	13.6	17.3
	Agree	92	56.8	56.8	74.1
	Strongly Agree	42	25.9	25.9	100.0
	Total	162	100.0	100.0	

Appendix – B[1]: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
		ANOVA				
LMS	**Between Groups**	**3.445**	**1**	**3.445**	**10.447**	**.001**
	Within Groups	52.753	160	.330		
	Total	56.198	161			
LCC	Between Groups	.393	1	.393	1.430	.234
	Within Groups	43.953	160	.275		
	Total	44.346	161			
LQP	**Between Groups**	**1.339**	**1**	**1.339**	**4.547**	**.035**
	Within Groups	47.106	160	.294		
	Total	48.444	161			
LBS	Between Groups	.114	1	.114	.353	.553
	Within Groups	51.639	160	.323		
	Total	51.753	161			
FDI	**Between Groups**	**4.499**	**1**	**4.499**	**8.662**	**.004**
	Within Groups	83.106	160	.519		
	Total	87.605	161			
IPS	Between Groups	.052	1	.052	.118	.731
	Within Groups	70.812	160	.443		
	Total	70.864	161			
FMS	Between Groups	.007	1	.007	.025	.874
	Within Groups	45.227	160	.283		
	Total	45.235	161			
FOS	Between Groups	.052	1	.052	.118	.731
	Within Groups	70.812	160	.443		
	Total	70.864	161			
NWI	**Between Groups**	**4.499**	**1**	**4.499**	**8.662**	**.004**
	Within Groups	83.106	160	.519		
	Total	87.605	161			

Appendix – C[1]:

Correlations											
		IIS	LMS	LCC	LQP	LBS	FDI	IPS	FMS	FOS	NWI
Pearson Correlation	IIS	1.000									
	LMS	-.248	1.000								
	LCC	.094	.026	1.000							
	LQP	.166	-.082	-.042	1.000						
	LBS	.047	.038	-.101	-.021	1.000					
	FDI	.227	.090	.100	.053	.067	1.000				
	IPS	.027	.007	.072	.312	.022	.080	1.000			
	FMS	-.013	.010	.027	.027	.518	-.113	.038	1.000		
	FOS	.027	.007	.072	.312	.022	.080	1.000	.038	1.000	
	NWI	.227	.090	.100	.053	.067	1.000	.080	-.113	.080	1.000
Sig. (1-tailed)	IIS										
	LMS	.001									
	LCC	.117	.373								
	LQP	.017	.149	.300							
	LBS	.277	.318	.100	.397						
	FDI	.002	.126	.102	.250	.197					
	IPS	.366	.463	.180	.000	.392	.155				
	FMS	.437	.451	.366	.367	.000	.075	.314			
	FOS	.366	.463	.180	.000	.392	.155	.000	.314		
	NWI	.002	.126	.102	.250	.197	.000	.155	.075	.155	.

Appendix – C²: Regression Analysis of factors affecting IS implementation

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate					
1	**.391**[a]	.153	.114	.456					
a. Predictors: (Constant), NWI, LQP, LBS, LMS, LCC, FOS, FMS									

ANOVA[b]							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	5.771	7	.824	3.967	.001[a]	
	Residual	32.007	154	.208			
	Total	37.778	161				
a. Predictors: (Constant), NWI, LQP, LBS, LMS, LCC, FOS, FMS							
b. Dependent Variable: IIS							

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.790	.628		1.259	.210	-.450	2.030
	LMS	-.213	.061	-.260	-3.476	.001	-.334	-.092
	LCC	.088	.070	.095	1.250	.213	-.051	.226
	LQP	.135	.070	.152	1.934	.055	-.003	.272
	LBS	.057	.076	.067	.757	.450	-.093	.208
	FMS	-.022	.081	-.024	-.269	.788	-.182	.139
	FOS	-.032	.057	-.044	-.562	.575	-.146	.081
	NWI	.150	.050	.229	2.982	.003	.051	.250
a. Dependent Variable: IIS								