J. Basic. Appl. Sci. Res., 2(9)8962-8971, 2012

ISSN 2090-4304
Journal of Basic and Applied Scientific Research
www.textroad.com

Relationship between Information Systems Capabilities and Stock Exchange Corporation's Performance: Resource Based View

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ABSTRACT

Based on resourced-based view, the comprehensive explanation of information systems capability dimensions, cover the systemic relationship gap between these capabilities and corporations performances. In this research, based on this view, the relationship between information systems capability types (inside-out, spanning, outside-in) and the performance of stock exchange corporations have been studied. This research is descriptive and has applied orientation. A conceptual model for surveying the relations has been developed. Also two questionnaires separated for gathering information and analyses of university and industry experts; and information systems managers of 67 corporations in Tehran bourse has been distributed. Based on the results, the outside-in information systems capabilities in contrast with the others, has most influence on corporations performance. Also, the return on assets (ROA) is the most affected variable of these capabilities.
KEYWORDS: Information system capabilities, Corporation performance, Resource -based view, outside-in capabilities, Return on assets

1. INTRODUCTION

Since the 1980s, researchers have showed that IS provides potentially competitive advantage (Cheng et al., 2008; Wang and Alam, 2007). First researches have considered strategic value of information systems and effect of ones on firm performance (Rust, et al., 2000; Tippins and Sohi, 2003). This attention to value of information systems has arisen from organization investments and additive role that information systems play strategic thinking major firms (Wade and Hulland, 2004). Organizations implement information systems in other to better performance and offer of excellent services to customers (Yoon, 2010). These changes may enable organizations that understand preference of customers better than past and increase your level of customers' satisfaction and as many that lead to better financial advantages. Some of researchers have suggested conceptual frameworks, processes, view of industrial and organizational for investigation of competitive advantages due applications of information systems (Bakos and Treacy, 1986).

From when those information systems have applied additive, focus on applications of information systems such as competitive advantage resource has revised. Result some of considerations have showed that competitive advantage cannot provide only information systems applications (Clemons and Row, 1991). In other to explanation of this problem since the 1990s, resource-based view has used in researches related to information technology. Resource-based view describe that firm resource are main motivations for firm performance. According to resource-based view, information systems resources that are cheap and imitative certainly enhance lesser firm competitive performance (Bakos and Treacy, 1996). For organizations, development of information systems capabilities with supplied competitive value creates better financial performance and as well as provide offer of critical and acceptable services (Song et al., 2007). In fact, in environments that recourses have strategic important for organizations, information systems capabilities have unique and especial importance (Yoon, 2010). on the other hand we can state that effect of resources and information systems are unique on firm performance (Clemons and Row, 1991).

2. REVIEW OF LITERATURE

2.1. Information System Resource And Resource-Based view

According to view of Ravichandran and Lertwongsatien (2005), information systems capabilities is set of regular and continuous actions in one part or one unit that enable one that deliver information technology services to the organization and as increase the efficiency for transformation inputs into outputs (Ravichandran and Lertwongsatien, 2005). Nonetheless, information systems capabilities lead to constant competitive advantage that is valuable, rare and unique. So using resource-based in context of information systems be potential in other to identification of key motivations for enhanced firm performance (Jeffers et al., 2008). According to importance of resource-based view and valuable advantages

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that provide for support from information systems related to firm performance table.1 show difference findings from functions of resource-based view.

Table 1.Considerations based on resource in researches related to IS/IT

Resource	Using resource-based view	Finding	Type of consideration	Title
(Ravichandran and Lertwongsatien, 2005)	The theoretical model and the empirical results support from relationship IS-firm performance and resource-based perspective.	IS functional resources determine of how IT is deployed in the organization, which in turn can affect firm performance.	Empirical	Effect of information systems resources and capabilities on firm performance: a resource-based perspective
(Ray et al., 2005)	Resource-Based view which describe the kinds of IT resources and capability that lead to efficiency on the performance of the customer service.	Effects of IT are best documents at the level of firm and They are unique on firm performance.	Empirical	Information technology and the performance of the customer service process: resource- based analysis
(Tsou et al., 2007)	Resource-based view support conceptual model.	Service delivery and service customization are significant mediators in customers' service process that through IT influences firm performance.	Conceptual	Performance Effects of IT Capability and Customer Service: The Moderating Role of Service Process Innovation
(Doherty and Terry, 2009)	Resource-based view support effect of using IS capabilities for constant competitive advantage delivery.	Investment in set of IS capabilities in long-term will succeed inside of firm and competitive environment.	Empirical	The role of IS capabilities in delivering sustainable improvements to competitive positioning
(Stoel and Muhanna, 2009)	Resource-Based view support contingency model in consideration.	The association between aggregate measures of IT capabilities and firm performance depends on the net effect of individual components of IT capability in the context of the environment in which the firm operates.	Empirical	IT capabilities and firm performance: A contingency analysis of the role of industry and capability type

Wade and Hulland (2004), believed that firms have limited resource acquire maximum of productivity and benefit from their resources and processes redesign and implementation create strategic primal results (Wade and Hulland, 2004). So based on Ray et al (2005) idea can tell that when resources are valuable that increase process efficiency and effectiveness in contrast with situations that these resources do not use in processes (Ray et al., 2005) as resources are valuable that enhance level of firm process performance especially.

2.2. Comperhencive Taxonomy of IT/IS resources

Several primal tries have did for taxonomy of IT/IS assets, capabilities and resources (Bharadwaj 2000; Ravichandran and Lertwongsatien 2005; Bhatt and Grover 2005). But Santhanam and Hartono (2003) state that has not achieved convergence and overlap between these taxonomies so have to are provided characteristic for multi dimensional criteria's of IT capabilities based on theatrical aspect (Santhanam and Hartono, 2003). Table 2 show several taxonomies of IT/IS capabilities and resources.

Table 2. Taxonomy of IS/IT

Typology of IS Resources (Wade and Hulland, 2004)		
Technology resources	Business resources	**Human resources**
A Typology of IS Resources (Wade and Hulland, 2004)		
IS capabilities (systems-based)	**IS assets (technology-based)**	
A Typology of IS Resources (Wade and Hulland, 2004)		
Inside-Out	Spanning	**Outside-In**
IS infrastructure IS technical skills IS development Cost effective IS operations	IS-business partnerships IS planning and change management	**External Relationship management** **Market responsiveness**
A Typology of IS Capabilities (Ravichandran and Lertwongsatien, 2005)		
IS Operations Capability	IS Support Maturity Systems Development Capability	**IS Planning Sophistication**
A Typology of IS Resourses (Ravichandran and Lertwongsatien, 2005)		
IS partnership quality	IT infrastructure flexibility	**IS human capital**
Internal partnership quality External partnership quality	Network and platform sophistication Data and core application sophistication	**IS personnel skill** **IS human resource specificity**
A Typology of IT resources and capabilities (Ray et.al., 2005)		
Flexible IT infrastructure	IT spending Generic information technologies Technical IT skills	**Shared knowledge**
A Typology of IT capabilities (Tsou et al., 2007)		
IT human resource	IT relationship infrastructure IT business experience	**IT infrastructure**
A Typology of IT capabilities (Stoel and Muhanna, 2009)		
Externally-focused IT Capabilities	**Internally-focused IT Capabilities**	
IT resources IT skills	**operational support** **fulfillment processes**	

According to firm resource-based view, some of capabilities categories are important for better performance in contrast with the rest of categories (Song et al., 2007). So Day (1994), suggested integrated and comprehensive framework for identification among IS resources (Day, 1994). He has believed that capabilities are including three of classes: Inside-out resources, outside-In and Spanning. Inside-out capabilities are deployed from inside the firm in response to market

requirements and opportunities, and tend to be internally focused that they encompass IS infrastructures, technical IS skills, IS development, cost effective IS operations. In contrast, outside-in capabilities are externally oriented, placing an emphasis on anticipating market requirements, creating durable customer relationships, and understanding competitors and encompass market responsiveness, managing external relationships. Finally, spanning capabilities, which involve both internal and external analysis, are needed to integrate the firm's inside-out and outside-in capabilities and involve managing IS/business partnerships, IS management and planning (Wade and Hulland, 2004).

2.3 decisions about firm performance

Because the goal of this study is survey of relationship between IS capabilities and firm performance so measures have selected for investigation of firm performance that reflect advantages of IS capabilities more than other measures (Bharadwaj, 2000; Santhanam, and Hartono, 2003).

Therefore we have used some accounting parameters in relating to IS capabilities as shown in table 3.

Table 3: accounting parameters in relating to IS capabilities

Parameter	Formula	Description
Return on sales	Profits before taxes and interest / sales	The return on sales shows the firm s profitability from current operations without taking into consideration the interest charges
Return on assets (ROA)	Net profit / total assets	Almost analysts considered this ratio as an index for measuring the efficiency management in administrate firm.
Operating income to sales (OIS)	Sales minus cost of goods manufactured (before depreciation and amortization), SGA and R&D costs / Sales	Operating income to sales is important because it is an indirect measure of efficiency. The higher the operating income to sales, the more profitable a company's core business is.
Cost of goods sold to sales (COGS/S)	Beginning Merchandise Inventory + Net Purchases of Merchandise - Ending Merchandise Inventory / Sales	The COGS/S ratio can be considered as an index for efficiency manager in operation cost management.
selling and general administration expense to sales (SGA/S)	payroll costs(salaries, commissions, and travel expenses of executives, sales people and employees) + advertising expenses / sales	High SGA/S ratio can be a serious problem for almost any business. A good management will often attempt to keep SGA/S ratio limited to a certain percentage of revenue. This can be accomplished through cost-cutting initiatives and employee lay-offs.

Stoel and Muhanna (2009), believed that these measures do not effect on activities cost, income and profit directly but measure of operating income to sales survey effect of IS on firm performance directly and impact of the Cost of goods sold to sales and selling and general administration expense to sales as some business impact may only be seen through measures of internal business operation and may not necessarily be visible in overall measures of business performance due to other capabilities of the firm (Stoel and Muhanna, 2009).

2. RESEARCH METHODOLOGY

This research is descriptive and has applied orientation that a conceptual model for surveying the relationship between firm performance and IS capabilities has been developed. Also two questionnaires separated for gathering information and analyses of university, industry experts and information systems managers of 67 corporations in the Tehran stock exchange (TSE) has been distributed.

In this study, population is university, industry experts and information systems managers of corporations in Tehran stock exchange (TSE), that have been used for validity and view of conceptual model. Information about responders that respond to questionnaires has been described in Appendix A.

Per corporations in stock exchange has been distributed via purposeful sampling corporations that: 1.In stock exchange has been distributed after 2001; 2.Embrace manufacturing corporations; 3.Corporation's information is available and 4.After that to delete effects of season changes their financial period over to 19th March because this time is ending of financial period (year) in Iran, so according to these items we have selected data sample. In view of above qualifications, 188 corporations in stock exchange have accepted. Related information about the research variables and questionnaires has sent via email, post, fax and direct referral. Since information about financial period of 2009 - 2010 is timely and up date from 2001 - 2008. So we have used financial information about these years for corporation performance data and environmental factors test.

For gathering data about this research has been used from questionnaire. According to research goals and hypothesizes questionnaires was formulated based on Likert spectrum.

3.1 Research Conceptual Framework

According to theatrical literature that was stated we have considered relationship between firm performance and IS capabilities by submission of conceptual model and available gaps will survey in regular evaluation of IS capabilities. Fig1. Show research conceptual framework.

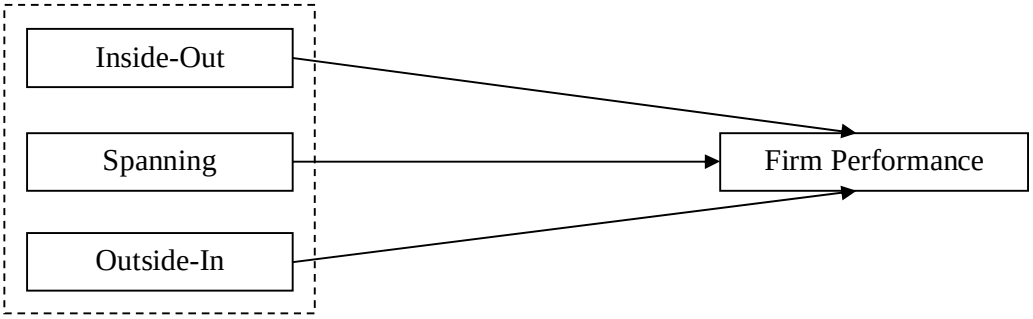

Figure1. Relationship between IS capabilities and firm performance

3.2 Research Hypothesizes

In order to exact identification and investigation impact of critical variables between IS capabilities and firm performance, we have stated follow hypothesizes:

Hypothesis A (H1): Inside-Out capabilities have meaningful effect on firm performance;

Hypothesis B (H2): Spanning capabilities have meaningful effect on firm performance;

Hypothesis C (H3): Outside-In capabilities have meaningful effect on firm performance.

3.2.1 Variables of Hypothesizes Testing

3.2.1.1 Independent Variables

According to effect evaluation of IS capabilities on firms performance based on resource-based view three main capabilities has been selected for evaluation that are including 8 measures and 38 sub measures. These items have been showed in table 3.

Table 4. Independent Variables

Capability	measure	Sub measure	Resource
Outside-In	External Relationship management	Customer service	(Bharadwaj, 2000)
		Coordination of buyers and suppliers	(Bharadwaj, 2000)
		Contract monitoring	(Feeny and Willcocks, 1998)
		Vendor development	(Feeny and Willcocks, 1998)
		Contract facilitation	(Feeny and Willcocks, 1998)
		Strong community networks	(Jarvenpaa and Leidner, 1998)
	Market responsiveness	Flexible IT systems	(Bharadwaj, 2000)
		Strategic flexibility	(Jarvenpaa and Leidner, 1998)
		Organizational flexibility	(Powell and Dent-Micallef, 1997)
		Ability to act quickly	(Bharadwaj 2000)
		Increased market responsiveness	(Bharadwaj 2000)
Spanning	IS-business partnerships	Integrate IT and business processes	(Bharadwaj 2000)
		IT/strategy integration	(Powell and Dent-Micallef, 1997)
		Relationship building	(Feeny and Willcocks, 1998)
		IT/business synergy	(Bharadwaj 2000)
		IT/business partnerships	(Ross et al., 1996)
		Aligned IT planning	(Ross et al., 1996)
	IS planning and change management	IT management skills	(Bharadwaj 2000)
		Leadership	(Feeny and Willcocks, 1998)
		Business understanding	(Feeny and Willcocks, 1998)
		Information management practices	(Marchand et al., 2000)
		Architecture planning	(Feeny and Willcocks, 1998)
Inside-Out	IS infrastructure	IT infrastructure	(Bharadwaj 2000)
		Information technology practices	(Marchand et al., 2000)
		Technology asset	(Ross et al., 1996)
		Communication technologies	(Bharadwaj 2000)
		Computer technologies	(Bharadwaj 2000)
		Data standard &platform	(Feeny and Willcocks, 1998)
		Shared technical database	(Bharadwaj 2000)
	IS technical skills	Technical IT skills	(Bharadwaj 2000)
		Component of organization architecture	(Bharadwaj 2000)
		Team knowledge	(Bharadwaj 2000)
		Using knowledge assets	(Bharadwaj 2000)
	IS development	Technical innovation	(Bharadwaj 2000)
		Experimentation with new technology	(Wade and Hulland, 2004)
	Cost effective IS operations	Enhanced product quality	(Bharadwaj 2000)
		Enhanced special information	(Feeny and Willcocks, 1998)
		Functional using IT	(Feeny and Willcocks, 1998)

3.2.1.2 Dependent Variable

Our purpose in this study is evaluation of effect IS capabilities on firms performance that according to former studies in this context, dependent variables have identified that in table 5 have showed.

Table 5.Dependent Variable

Dependent Variable	Resource
return on sales (ROS)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
return on assets(ROA)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
operating income to sales (OIS)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
operating income to assets (OIA)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
operating income to employees (OIE)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
Cost of goods sold to sales (COG/S)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)
selling and general administration expense to sales (SGA/S)	(Stoel and Muhanna 2009),(Bharadwaj 2000),(Santhanam and Hartono 2003)

According to investigation from financial and accounting system of Iran is discovered that operating income to assets and operating income to employees' variables haven't been defined in, so they have been deleted.

3.3 Questionnaires Reliability and Validity

In other to validity first via research literature for each of capabilities extract necessary measures after that via 24 people of university and industry experts and information systems managers of corporations in bourse has been distributed then suggested revisions are got and is formulated second questionnaire. On the other hand, to assess the internal consistency of the questionnaires questions, Cronbach α coefficient has been used. Scale is reliable that Cronbach α coefficient be 0.7 or higher than 0.7 (Jugdev and Mathur, 2006). In questionnaire related to experts Cronbach α coefficient was 0.88 and in questionnaire related to information systems managers of corporations in stock exchange was 0.92. Therefore both of questionnaires have adequate reliability.

3. DATA ANALYSIS

In this research from three tests of statistical have been used for data analysis and hypothesizes confirmation. In other to confirmation effect of three IS main capabilities (include 8 measures and 38 sub measures) and firm performance that has been evaluated for first questionnaire use Chi-Square Test nonparametric method. As well as for investigation of importance three IS main capabilities in second questionnaire, has been used one-sample t-test and then in other to research hypothesizes confirmation or reject, relationship between IS capabilities and firms performance in this research analyze by liner regression. In analysis first questionnaire, two measures of IT/business partnerships and aligned IT planning did not confirm and deleted from research process. Important test of IS capabilities and firm performance has described in Appendix B.

4.1. Test of Research Hypothesizes

4.1. 1Test of First Hypothesize

Based on first hypothesize, measures of inside-out IS capabilities (IS infrastructure, technical IS skills, IS development and cost effective IS operations) have support enable from sustaining competitive advantage so enhance firm performance. Therefore can tell that:

Hypothesis A (H1): Inside-Out capabilities have meaningful effect on firm performance.

For investigation and analysis above hypothesize has been used from liner regression. While significance level be lower than %5 can state that this capability meaningful effect on firm performance. Result of analysis liner regression method has showed for inside-out IS capability in table 6.

Table 6.Output data of liner regression for inside-out IS capabilities

IS Capability	Independent variables (functional)	R	R Square	Adjusted R Square	Sig
Inside-Out	ROS	0.693	0.480	0.472	0.000
	ROA	0.703	0.494	0.486	0.000
	OIS	0.367	0.135	0.121	0.002
	COG	0.548	0.301	0.290	0.000
	SGA	0.494	0.244	0.232	0.000

Based on table 6 can deduce that significance level for all firm functional variables is lower than %5. so absolutely can state that inside-out IS capabilities have meaningful effect on firm performance and since H1 accept. Too can state that based on corporation functional variables, return on assets in contrast with other functional variable have more relation with inside-out IS capabilities because it has more R Square. R Square in contrast with R has more efficiency and is exactly.

For surveying effect amount of inside-out IS measures in contrast with firm performance, we had to calculated average measures of these sub measures in second questionnaire and after that we assessed new data these measures with stock exchange corporations' performance. Table 7 show output result of liner regression for inside-out measures

Table 7.Output data of liner regression for inside-out IS measures

Inside-out IS measures	Independent variable	R	R Square	Adjusted R Square	Sig
IS infrastructure	ROS	0.658	0.433	0.424	0.000
	ROA	0.706	0.498	0.490	0.000
	OIS	0.448	0.201	0.188	0.000
	COG	0.458	0.210	0.198	0.000
	SGA	0.344	0.119	0.105	0.004
IS technical skills	ROS	0.542	0.294	0.283	0.000
	ROA	0.587	0.344	0.334	0.000
	OIS	0.305	0.093	0.079	0.012
	COG	0.456	0.208	0.196	0.000
	SGA	0.422	0.178	0.165	0.000
IS development	ROS	0.483	0.234	0.222	0.000
	ROA	0.461	0.212	0.200	0.000
	OIS	0.162	0.026	0.011	0.037
	COG	0.368	0.136	0.122	0.002
	SGA	0.276	0.076	0.062	0.024
Cost effective IS operations	ROS	0.568	0.323	0.312	0.000
	ROA	0.535	0.286	0.275	0.000
	OIS	0.286	0.082	0.067	0.019
	COG	0.493	0.243	0.231	0.000
	SGA	0.548	0.300	0.289	0.000

According to table 7 conclude that R Square have contingency aspect for inside-out IS sub indexes. So we assigned comparison scale based on Stoel and Muhanna (2009) idea is that since operating income to sales functional variable in IS technical skills and IS infrastructure sub measures is more than other. Therefore these two measures have more effect on stock exchange corporations' performance in contrast with cost effective IS operations and IS development measures (Stoel and Muhanna, 2009).

4.1.2 Test of Second Hypothesize

Based on second hypothesize, measures of spanning capabilities (IS-business partnerships building and IS planning and change management) lead to competitive situation and enhance of firm performance. Therefore can tell that:

Hypothesis B (H2): Spanning capabilities have meaningful effect on firm performance.

For investigation and analysis above hypothesize has been used from liner regression. While significance level was lower than %5 can state that this capability meaningful effect on firm performance. Result of analysis liner regression method has showed for spanning IS capability in table 8.

Table8. Output data of liner regression for spanning IS capabilities

IS Capability	Independent Variable	R	R Square	Adjusted R Square	Sig
Spanning	ROS	0.671	0.451	0.442	**0.000**
	ROA	0.685	0.470	0.462	**0.000**
	OIS	0.422	0.178	0.166	**0.000**
	COG	0.479	0.229	0.217	**0.000**
	SGA	0.530	0.281	0.270	**0.000**

Based on table 8 can deduce that significance level for all firm functional variables is lower than %5. so absolutely can state that spanning IS capabilities have meaningful effect on firm performance and since H2 accept; as well as can state that based on corporation functional variables, return on assets in contrast with other functional variables have more relationship with spanning IS capabilities because it has more R Square.

Now for survey importance amount of spanning IS measures in contrast with firm performance have to calculate average measures of these sub measures in second questionnaire and after that we assessed new data these measures with stock exchange corporations'. Table 9 show output result of liner regression for spanning measures.

Table 9.Output data of liner regression for spanning IS sub indexes

Spanning IS measures	Independent Variable	R	R Square	Adjusted R Square	Sig
IS-business partnerships building	ROS	0.530	0.281	0.270	**0.000**
	ROA	0.567	0.321	0.310	**0.000**
	OIS	0.308	0.095	0.081	**0.011**
	COG	0.451	0.203	0.191	**0.000**
	SGA	0.414	0.172	0.159	**0.000**
IS planning and change management	ROS	0.675	0.456	0.448	**0.000**
	ROA	0.664	0.441	0.432	**0.000**
	OIS	0.450	0.202	0.190	**0.000**
	COG	0.409	0.167	0.154	**0.001**
	SGA	0.537	0.289	0.278	**0.000**

According to table 9 conclude that R Square amount for all of functional variables in IS planning and change management measure, expect cost of goods sold to sales is more than IS-business partnerships building measure. So for spanning measures, IS planning and change management has more effect on stock exchange corporations' performance in contrast with IS-business partnerships building measure.

4.1. Test of Third Hypothesize

Based on third hypothesize, measures of outside-in capabilities (External relationship management and Market responsiveness) are organizational important resources that lead to competitive advantage and firm high performance. Therefore can tell that:

Hypothesis C (H3): Outside-in capabilities have meaningful effect on firm performance.

For investigation and analysis above hypothesize has been used from liner regression. While significance level was lower than %5 can state that this capability meaningful effect on firm performance. Result of analysis liner regression method has showed for outside-in IS capability in table 10.

Table 10. Output data of liner regression for outside-in IS capabilities

IS Capability	Independent Variable	R	R Square	Adjusted R Square	Sig
Outside-In	ROS	0.570	0.325	0.314	**0.000**
	ROA	0.694	0.482	0.474	**0.000**
	OIS	0.500	0.250	0.238	**0.000**
	COG	0.485	0.236	0.224	**0.000**
	SGA	0.472	0.222	0.210	**0.000**

Based on above table can deduce that significance level for all firm functional variables is lower than %5. so absolutely can state that outside-in IS capabilities have meaningful effect on firm performance and since H3 accept. Other result that can state this is that based on corporation functional variables, return on assets in contrast with other functional variable have more relation with outside-in IS capabilities. Finally can say that return to assets is the important functional variable for stock exchange corporations according to effect of IS capabilities.

In other to survey effect amount of outside-in IS measures in contrast with firm performance, we have to calculate average measures of these sub measures in second questionnaire. after that we assigned new data these measures with stock exchange corporations' performance. Table 11 show output result of liner regression for outside-in measures.

Table 11. Output data of liner regression for outside-in IS measures

Outside-in IS measures	Independent Variable	R	R Square	Adjusted R Square	Sig
External relationship management	ROS	0.580	0.336	0.326	**0.000**
	ROA	0.672	0.451	0.443	**0.000**
	OIS	0.507	0.257	0.245	**0.000**
	COG	0.447	0.200	0.187	**0.000**
	SGA	0.360	0.130	0.116	**0.003**
Market responsiveness	ROS	0.458	0.210	0.197	**0.000**
	ROA	0.601	0.361	0.351	**0.000**
	OIS	0.406	0.165	0.152	**0.001**
	COG	0.446	0.199	0.186	**0.000**
	SGA	0.520	0.270	0.259	**0.000**

According to table 11 conclude that R Square amount for all of functional variables in external relationship management measure except selling and general administration expense to sales is more than market responsiveness measure. therefore in outside-in measures, external relationship management has more effect on stock exchange corporations' performance in contrast with market responsiveness.

5. DISCUSSION AND CONCLUSION

Competitive situation understanding depends on identification some of qualifications that organizations do these activities better than competitors as these differences are valuable for customers and competitors cannot pattern directly. In recent years resource-based view has engaged some of scholars as this view introduce logical justification based on how can achieve sustaining competitive advantage. In a competitive environment, organizations have to have additional attention to IT/IT using for business performance development. Since implementation these capabilities help delivery better services to customers so they have acquire additive importance for organizations. Therefore resource-based view like fundamental theory has been described like motivation for implementation of these capabilities. In this research have survey relationship between IS capabilities and the performance of stock exchange corporations by linear regression method and conclude that external relationship management in contrast with market responsiveness in outside-in measures have more effect on corporation performance so stock exchange corporations know interaction with stakeholders and IS supplier for corporation competitive performance is more important than organizational strategic changes. Too for spanning measures, these corporations give more important to IS planning and change management in other to corporation performance development so appropriate use and usage from technology architectures has more important for the stock exchange corporation in contrast with aligned among IS functional units. On the other hand, IS infrastructure and IS technical skills are more important than cost effective IS operations and IS development in inside-out IS measures so the stock exchange corporations in other to performance development have to pay attention to software and hardware systems and organizational intellectual capitals more than usage new technologies and decreasing costs. Finally results show that all of IS capabilities certainly effect on corporation performance and outside-out IS capabilities are more effect than inside-out and spanning capabilities on the stock exchange corporations' performance so these corporations for enhanced performance spot factors of new technologies development, decreasing costs, knowledge capitals and IS infrastructures. As well as functional variable of return on sales is the most important variable for the stock exchange corporations' performance that more than other functional variable react IS capabilities. In under table has been showed comparative among usage variables and model of this research with other past researches in this extent.

Table12. Similar researches and models

(Ravichandran and Lertwongsatien, 2005)				
Network and platform sophistication	IT support for functionality related competence	IS human resource	Technical IS skills	**Used variable in model**
External partnership quality	IT support for integrity capabilities	IS support maturity	Data and applications sophistication	
Internal partnership quality	Operating performance	Market-based performance	IS planning	
	Information intensity	IS operations capability	Access to market capabilities	
(Ray et al., 2005)				
IT budget	Information generic technologies	Flexible infrastructure	Shared knowledge	**Used variable in model**
Number of IS employees	Annual customer service budget	Number of products manufacture	Customer service performance	
(Tsou et al., 2009)				
Core data processing applications	Critical shared data	Communications network	Computing platform	
Technical IT skills	IT management skills	Interaction of the IT with the business units	Integrate IT Strategy and business strategy	
Increase the quality of customer service	Services Customization	Service delivery	reduce the service cost	
			Development of products and services	
(Yongmei et al., 2008)				
IT-enabled intangibles	Human-IT resource	IT infrastructures	Annual IT/IS budget	**Used variable in model**
In this study				
Vendor development	Contract monitoring	Coordination of buyers and suppliers	Customer service	**Used variable in model**
Strategic flexibility	Flexible IT systems	Contract facilitation	Strong community networks	
Integrate IT and business processes	Increased market responsiveness	Ability to act quickly	Organizational flexibility	
IT/business partnerships	IT/business synergy	Relationship building	IT/strategy integration	
Business understanding	Leadership	IT management skills	Aligned IT planning	
IT practices	IT infrastructure	Architecture planning	Information management practices	
Technical IT skills	Computer technologies	Communication technologies	Technology assets	
Using knowledge assets	Component of organizational architecture	Data standards and platform	Shared technical database	
Enhanced products quality	Experimentation with new technology	Technical innovation	Team knowledge	
Return on assets	Return on sales	IT functional using	Having unique information	
	Selling and general administration expense to sales	Cost goods sold to sales	Operating income to sales	

Research models that in table 12 have been showed, each model from view has attended to investigation of relationship between capabilities and performance and comprehensive approach has not produced but this research has enhanced these weaknesses and has been considered all of variables that are effective on capabilities. Therefore comprehensive view and add new variables are point of strength and model innovations. Based on result, systems based on market and customer becomes important in contrast with past. Information about potential and actual customers is critical factor for success. Complex information systems have been developed in other to gathering customers' data, their Sociological information (age, sex and level of income) and preferences. For example, customer relationship management is trying for customer attraction and retention that in these approach customers is core of business and success of corporation depends on relations effective management with customers. These systems focus on stable and long-term relations that enhance value of customer and corporation. This approach needs customer-oriented mission and culture that support marketing, efficient services and sale procedures. So recommend that is used information systems that create high loyalty in customers as well as present correct analysis from market and lead to higher performance and benefit. These systems have to encompass several capabilities as operational (like usual functions of business e.g. customer service delivery, order management, marketing/sale management and automation), analytical (like recovery, save, extract, process, analysis and report of customers' data to organizational user) and common (like communication, coordination and cooperation among customers and vendors). Too recommend that marketing database, mess custom-built manufacture IS, personalization and advertisement have to develop for support of inside-out capabilities in corporations. Of course should be having especial attention to resources and capabilities in based on resource-oriented view that enhance higher value and create added value.

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Appendix A: Sociological information

In this research has used two questionnaires and two groups of responders. In first questionnaire our target confirms three main capabilities and corporation performance variables. Due to scientific and special nature this study has used from professors, students and graduates of universities and highlight experts in business that have had enough knowledge and experience in IS context that they respond questionnaires via email or direct referral. Experts' least age is equal 24 years old and most age is equal 56 years old that 8 people work in university, 4 people work in business and 12 people work both of them. So 5 people are graduate of industrial engineering, 4 people are graduate of IT engineering and 15 people are graduate of IT management and branch of management (commercial and financial). As well as 2 people are Bachelor of Science, 13 people are Master of Science and 9 people are doctorate. Their experience is between 2 to 25 years-old.

Second questionnaire' target specify effect amount three IS main capabilities on the stock exchange corporation' performance and situation that in other to we request from corporations' (188 corporations) IS managers and experts that respond to questionnaires. Table 12 show number of responder corporations (67 corporations) based on industry segregation.

Table12. Responder corporations based on industry segregation

No.	Industry	Companies
1	Food	Labaniyate Pak, Roghannabatei Jahan, Mahram, Khorak Dame Pars, Noshe Mazandaran, Shokopars, Behnoshe Iran, Pichak, Ghande Shirvan, Pars Mino, Salamin, Pegahe Esfehan
2	Textile	Pashmbafi Toos, Nasaji Mazandaran, Iranmerinos, Nasaji Brojerd, Dana, Eksir, Sobhan, Alborzdaro, Zahravi, Paksan, Amin, Loghman
3	Plastic & Tire	Iran Tire, Gorohe Sanatei Barez, Lastik Alborz, Pelastike Shahin, Sanaye Lastiki Sahand
4	cement	Ghaen, Oromiye, Shahrod, Azareit, Takseram, Simane Kerman, Simane Shomal
5	Casting & Metal	Abgine, Alomtak, Alominiom Pars, Bastebandi Iran, Parsmetal, Kaghazsazi Kaveh, Rikhtegari Taraktorsazi, Pashmeshishe Iran, Folade Khozestan
6	Electric & Equipment	Azarab, Pars Khazar, Absal, Lavazme Pars, Kable Bakhtar, Ariaelecteric Iran, Iran Transfo, Kable Bakhtar, Kontorsazi Iran, Lampe Parsshahab
7	Automotive	Irankhodro Dizel, Tolid Mehvare Khodro, Ghataate Atomobil Iran, Sipashishe
8	Oil	Khark, Farabi, Behran, Pars, Dodesanati pars, Fanavaran, Karbone iran

These corporations' background is between 10 to 54 years-old. 67 People respond second questionnaire that 22 people were computer engineering, 7 people were IT engineering, 19 people were industrial engineering, 3 people were electrical engineering and 16 people were in branch of management and 45 people were bachelor of science, 22 people were master of science as well as their experience was from 4 to 37 years.