Investigate the Relationship Between Information Management Systems and Supply Chain Performance in the Asia Zholeh Company

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Abstract: The aim of this research is to examine the relationship of the information management systems and supply chain performance. This research in terms of aim is developmental-applied and in terms of how to implement is the survey. Statistical population in this research was employees of Asian Zholeh Company in Tehran. Sample size was determined 70 persons. The sampling method to access to studied samples was available sampling. To collect information was used from the questionnaire of information management system contains 19 questions and a questionnaire of supply chain performance with 36 questions. Questionnaires were to some specialists (experts) and the results of this review led to reform in the items. As a result, questionnaires were received the content and face validity. The value of Cronbach alpha coefficient over 0.7 was obtained for each variable and thus reliability of the questionnaire was approved. To identify hypotheses of research, andinferential bivariate regression test was used at a significance level <0.05. In this regard, the SPSS Software version 19 and was used. The results showed that, based on standardized regression coefficient ($\beta = 0.728$) for every one unit increase in the costs reduction by information management systems, supply chain performance rate improve 72.8%. Standardized regression coefficient ($\beta = 0.63$) revealed that for every one unit increase in the fast and up to date information available by information management systems, supply chain performance rate improve 63%. Standardized regression coefficient ($\beta = 0.55$) revealed that for every one unit increase in the control rate of data entry by the andinformation management systems, supply chain performance rate improves 55%. Standardized regression coefficient ($\beta = 0.49$) revealed that for every one unit increase in the elimination rate of repetitive activities by the management information systems, supply chain performance rate improves 49%. Standardized regression coefficient ($\beta = 0.61$) revealed that for every one unit increase in the security of information andby information management systems, supply chain performance rate improves 61%.

Key words: Information management systems, performance, supply chain, Asia Zholeh Company, Iran

INTRODUCTION

According to today's competitive environment supply chain management andhas been recognized as a strategic factor in the success of organizations and can have positive and significant effect on the activities of the organization. the increasingly changes of technology the changing conditions of the market, changing the way of business, diferrent and variable expectations of customers and has been the factors affecting on changing in the supply chain. In this business environment, innovation in products and organizational processes is peresented as a critical and sensitive factor in the success of companies and (Tabatabaei *et al.*, 2012). Activities such as supply and demand planning, providing materials, production and planning of the product, product maintenance services, inventory control, distribution, delivery and service to customer that previously all were done at company level. Now has moved to the level of chain. Supply chain is a system composed of parts such as raw material suppliers, manufacturing facilities, distribution services and customers, that these sections through the vanguard and backward of information flow is related to each other (Namdarian *et al.*, 2011). The key issue in a supply chain is management and coordination control all these activities. Supply chain management is a phenomenon that performs this work in a way that the customers can receive fast and reliable services with high quality products and at minimum cost.

For effective management of the supply chain , it is necessary that suppliers and customers engage with each other and andin an integrated manner and with full information sharing and communication. This means fast flow of information among elements of the chain andmakes enable them to create a highly efficient supply chain. Supply chain management is the process of

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planning, execution and control of operations associated with the supply chain in the most possible and efficient manner. Supply chain management includes all movements and storage of raw materials, stock during the work and finished products from the initial start point to the end point of consumption. Supply chain management is an integrated approach to planning and control of material and information that as the andit flows in various tasks in an organization.

Supply chain management, is a set of methods used for effective and efficient integration of suppliers, Manufacturers, warehouses and sellers in such a way that in order to minimize system costs and fulfill the needs of services, goods to be distributed producted to the correct number in the proper place at the appropriate time. Since, the proper supply chain performance has a key role in the success of an organization andand stable achievement to objectives and in particular its profitability. In this regard, the establishment a measurement system of supply chain performance andis recommended to continuously improve its performance.Today, managers have realized that to improve supply chain performance in order to the establishment of lean manufacturing andneed to create a system of performance measurement in the supply chain. Enabling in measuring performance as one of the most important elements of improvement and development in different levels of the supply chain supply chain in terms of managerial hierarchy can be separated into three levels, that each of these levels have their own indicators: Strategic level indicators: they are effective on decisions andof the top management level and are in order to evaluation of and the policies, programs of competitive and and financial contribution and its subsequent organizational goals .the indicators of tactical level: effective on the level of middle management including resource allocation and measurement of the performance andwith respect to the achievement amount to the mentioned objectives. Indicators of operational level: These indicators are effective on the company's bottom-level management and often have a role in making small decisions of supply chain. Main processes of a supply chain are divided into four main sections: projection (include: objectives/policy/strategies), resources and resource management, product realization (production), deliver to the customer. Today, organizations encounter with new opportunities and threats that are the resulting experience continuous change of business space within the organization, outside the organization and internationally (Jafari *et al.*, 2011). One of the features that is essential to achieve competitiveness of supply chain, is the information systems management (Seresht *et al.*, 2008).

Information systems and management information systems study information systems in an organization, information system is the system consists of a network of communication channels that are used in organization. Components of an information system do collect and manipulate data and information. These components include hardware, software, people, telecommunication systems and data. Activities that are made in this field include: data entry, data processing to information and storing data and information and product outputs such as managerial reports (Ahmadi, 2002).

This is the same necessity that all individuals and organizations are required to move in the direction of information technology. Information technology regardless of own hardware requirements such as infrastructures and necessary tools needed needs the software too. This software considers itself as information systems in an organization so that the most important information systems can be considered Transaction Processing Systems (TPS), Management Information Systems (MIS) and Decision Support System (DSS) (Banayian, 2008). Management information system is formal system in organization that provides the necessary reports for management decisions at different levels of organization and andprovides past, present and forcated information about the company and its environment. In fact, management of information systems is the application of information technology in support of business activities of company and supply chain optimization and update company information because day to day business is evolving and among this andalways people with high analytical power and angle of view and business background are required to make business processes more productive. Thus it can be found clearly, become better the supply chain process and higher efficiency in each company is one of the main works of using the information management systems (Shafei, 2000).

Asia Zholeh Company (PJS) is a pioneer in the production of special industrial lubricants in the Middle East. Asia Zholeh Company from the very beginning due to the high quality and quantitative ability of produce has established quickly its position in Mother industries such as steel, Zob Ahan, rolled steel, cement and other industries. Asia Zholeh Company now has six major product lines and a line pilot plant and full laboratory equipments that it can produce >50 types of special lubricants. The 90% of these lubricants in Iran for the first time have been produced by Asia Zholeh Company.

So with regard to the mentioned items as well as the importance of management information systems to

improve supply chain performance, the main research question is that, what relation exists between management information systems with performance of supply chain of Asia Zhole Company? The empirical background of research. Amid *et al.* (2007) conducted a study entitled "Analysis of the impact of strategic planning of information systems to improve the performance of supply chain management". Results showed high level of attention to strategic knowledge, high level of attention to analyzing the situation, high level of attention to perception of strategy at the design stage of the supply chain leads to improve performance of chain management. High level of attention to strategy formulation in planning stage of the supply chain leads to improve performance of chain management.

Drodchi and Nick Mehr conducted a study entitled "The studies of importance and use of information technology in supply chain management". Conducted studies indicate the impact of information technology on improving accountability, distribute and transmit the information, chain efficiency and promote cooperation in both domestic and foreign dimensions, to prevent the emergence of bullwhip effect and development the sales channels. As well as IT applications in supply chain management with two approaches of technology and information systems are very important. In addition, studies have shown that factors such as the size of the organization, the success rate, uncertainty and pressure other chain partners and have important role in the adoption of information technology.

Saeedi and Purnabavi (2010) conducted a study entitled "Evaluation of the effectiveness of Management Information Systems (MIS) industrial estates Company (Case study: Golestan province).' System evaluation pattern was IPO model and has been used to measure Ahitof and Neuman model. In this evaluation method emphasizes on three fundamental axes include input, process and output that involves the whole system. A questionnaire was the data collection instrument .In order to analyze the data, were used descriptive statistics. Results showed above-average information system is effective and can attract relatively user satisfaction in Industrial Estates Company.

Hassanzadeh and coauthors conducted a study entitled "studying the role of Information Systems in improving the quality of management decision making of Telecommunication Company of Iran, Case Study, Tehran". The results showed that the correct use of these systems can save a lot of economic sense for organizations such as reduction the time of decision making, improve the quality of decision making, saving in

the costs of organization. Thus creation and use these systems in organizations of country can improve management decisions and guide existing resources more effectively in order to accomplish the goals of organizations.

Taghva *et al.* (2012), conducted a study entitled "The role of information security management systems in improving supply chain performance". The results indicate that effect of different dimensions of ISMS that include: coordination of information, prevent human errors, accuracy of information and creation the field education, on four dimensions of customer, financial, internal process and training and growth at the three strategic, technical and operational levels in the chain. Finally, ISMS causes to improve and increase the supply chain performance.

Varedi *et al.* (2013) conducted a study entitled "Study the effect of IT on supply chain capabilities and firm performance: The Case study is Saipa Company". With regards to results of the analysis can be said that the implementation of IT on supply chain capabilities and also in performance has a significant effect. This significant effect shows this important that ability and of IT implementation in the studied company can be the source of improved the performance and supply chain capabilities. In addition, IT implementation both directly and indirectly has a positive impact on performance and must also their outcomes have a significant relationship. The interesting point is that the indirect effect of implementing IT on performance find meaning of channel of supply chain capabilities. In fact, despite the fact that supply chain capabilities directly do not increase the performance but causes to increase the intense of positive effect of IT implementation on the performance.

Al-Mamari and colleagues conducted a study entitled "The role of different types of information systems in business organizations: review article". They stated that different kinds of information systems are used in business organizations that include: event processing systems which are used usually to register simple and repetitive tasks and tasks that can be performed on a daily basis in organizations and are used in order to guide the work. Office automation system, the main task of these systems is document management and cause to facilitate in writing letters and information within the organization. In these systems with the help of communication technology and by using processers, e-files, e-letters, e-conferences. Were used in order to office automation.
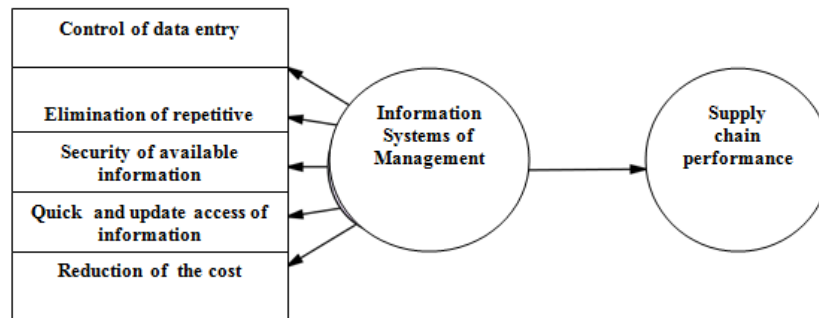
Fig. 1: Conceptual model of research

Process control systems which they have been designed to monitor and control industrial processes and facilities. Management information system which is mainly related to data conversion from domestic sources to information that its function is to communicate between managers at all levels and thus, it helps effective and timely in decision making. Decision support system; these systems are used to perform complex statistical and mathematical models; data analysis and decision support for choosing the best option and anticipate results. Executive information systems; it helps senior executives for strategic and tactical decisions. BS Information Systems has been designed to apply human reasoning.

Islam Hassan and colleagues, conducted a study entitled "The Effect of management information system on the decision-making process in sections: Case Study: Nile river state: Sudanese". For this purpose, 200 employees selected in various job opportunities in the public sector and a similar number in the private sector by random sampling. Results showed that has not had difference between compliance of managers in different levels in the private and public sectors. There is also no significant difference between the two sectors of management information system in order to strengthen the efficiency and effectiveness of decision-making process. Also the study showed that there was no significant difference between the two sections in the help management information system to administrators in order to policies and strategic formulations. Finally the results showed a significant difference between the two parts in administrative and technical obstacles that limits the implementation and application of management information system. and

Dervish and coauthors, conducted a study entitled "The impact of office automation system on the decision-making of executive (Airports Company of Country)". Results showed that the automation system positive impact to increase the accuracy, integrity,

accuracy and being proper and timeliness of decision-making of managers and to increase their abilities Fig. 1.

Research hypotheses
First hypothesis: Share of reducing costs by management information systems is positive and significant in explaining changes of supply chain performance of Asia Zholeh Company.

Second hypothesis: Share of quick and update access to information by andmanagement information systems is positive and significant in explaining andthe changes of supply chain performance in Asia Zholeh Company.

Third hypothesis: Share of control of data entry by management information systems is positive and significant in explaining changes of supply chain performance in Asia and Zhole Company.

Fourth hypothesis: Share of remove the repetitive activities andby management information systems is positive and significant in explaining changes of supply chain performance in Asia Zholeh Company.

Fifth hypothesis: Share of andinformation security by management information system is positive and significant in explaining changes of supply chain performance in Asia Zholeh Company.

MATERIALS AND METHODS

This research in terms of purpose is kind of applied-developmental study. Also in terms of how to implement and based on the objectives of the research survey method was chosen to achieve the desired information. customers of Asia Zholeh Company in Tehran were statistical population in this study. Sample size was determined as 70 persons. Sampling method to

access the studied samples was available sampling. questionnaire of management information system including 19 questions on a range of 5 degree of Likert andfrom very high to very low and questionnaire of supply chain performance with 36 questions in range of 5 degree of Likert from very weak to very good was used to data collection. Questionnaires were given to some specialists (experts) and the results of this review led to applying reforms in the items. As a result, questionnaires were received content and formal validity. The Cronbach alpha coefficient was obtained for each variable over 0.7 and thus reliability of the questionnaire was approved. To identify hypotheses of research, inferential bivariate regression tests was used at a significance level <0.05. The SPSS Software version 19 was used in this regard.

RESULTS AND DISCUSSION

First hypothesis: Share of reducing costs by management information systems is positive and significant in explaining changes of supply chain performance of Asia Zholeh Company. According to Table 1, the obtained value of andF (117.509) that is significant at the level of error smaller than the 0.05 shows that regression equation is significant. The value of correlation coefficient (R = 0.728) shows that reducing costs by management information systems has a strong and positive relationship with the rate of supply chain performance, adjusted coefficient of determination ($R^{2.adj}$ = 0.526) shows reduce costs variable by management information systems explains 52.6% the changes of variable of supply chain performance rate. Standardized regression coefficient (β = 0.728) also determines the share of reducing costs variable by management information systems to predict changes of dependent variable. This means that for one unit increase in the cost reduction rate by management information systems, the supply chain performance improves as 72.8%. The t-statistic and the error level of <0.05 also shows for it that considered variable has had

statistically significant impact on explaining the changes of variable in supply chain performance. Therefore, the first hypothesis was confirmed.

Second hypothesis: Share of quick and update access to information by management information systems is positive and significant in explaining the changes of supply chain performance in Asia Zholeh Company. According to Table 2, the obtained value of and F (70.236) that is significant at the level of error smaller than the 0.05 shows that regression equation is significant. The value of correlation coefficient of (R = 0.635) shows that quick and update access to information has a intermediate and positive relationship with the rate of supply chain performance, adjusted coefficient of determination ($R^{2.adj}$ = 0.397) shows quick and update access variable explains 39.7% of changes of variable of supply chain performance. Standardized regression coefficient of (β = 0.63) also determines the share of quick and update access variable to information in prediction of changes for dependent variable . This means that for one unit increase in the quick and update of information , the supply chain performance improves as 72.8% . The t-statistic and the error level of less than 0.05 for it also show that considered variable has had andstatistically significant impact on explaining the changes of variable in andsupply chain performance. Therefore, the second hypothesis was confirmed.

Third hypothesis: share of control of data entry by management information systems is positive and significant in explaining changes of supply chain performance in Asia and Zhole Company. According to Table 3, the obtained value and of and F (45.276) that is significant at the level of error smaller than the 0.05shows that regression equation is significant. The value of correlation coefficient (R = 0.551) shows that control the entry information has a strong and intermediate relationship with the rate of supply chain performance, adjusted coefficient of determination ($R^{2.adj}$ = 0.297) shows

Table 1 :Bivariate regression between reducing costs variable by management information systems and performance rate of supply chain

Variable	R	$R^{2.adj}$	B	F-values	Sig.	t-value	Sig.
Rate of supply chain performance	728.0	526.0	728.0	509.117	000.0	840.10	000.0
Reducing costs by management information systems							

Table 2: Bivariate regression between quick and update variable of information andand performance rate of supply chain

Variable	R	$R^{2.adj}$	B	F-value	Sig	t-value	Sig.
Rate of supply chain performance	635.0	397.0	63.0	236.70	000.0	381.8	000.0
rapid and updated andaccess to andinformation							

Table 3: Bivariate regression between control variable of entry information andand performance rate of supply chain

Variable	R	$R^{2.adj}$	B	F-values	Sig.	t-value	Sig.
Rate of supply chain performance	551.0	297.0	55.0	276.45	000.0	729.6	000.0
Control of data entry							

Table 4: Bivariate regression between removing variable of repetitive activities and performance rate of supply chain

Variable	R	$R^{2.adj}$	B	F-value	Sig.	t-value	Sig.
Rate of supply chain performance	499.0	242.0	49.0	553.34	000.0	878.5	000.0
Removing repetitive activities							

Table 5: Bivariate regression between security variable of information and performance rate of supply chain

Variable	R	$R^{2.adj}$	B	F-value	Sig.	t-value	Sig.
Rate of supply chain performance	618.0	376.0	61.0	174.64	000.0	011.8	000.0
Security of information							

control variable of entery information explains 29.7% of the changes of variable of supply chain performance and standardized regression coefficient (β = 0.55) also determines the share of control variable of entry information in prediction of changes of dependent variable. This means that for one unit increase in the control rate of entry information andthe supply chain performance improves as 55%. The t-statistic and the error level of <0.05 for it also shows that considered variable has had statistically significant impact on explaining the changes of variable in andsupply chain performance. Therefore, the third hypothesis was confirmed.

Fourth hypothesis: Share of remove the repetitive activities andby management information systems is positive and significant in explaining changes of supply chain performance in Asia Zholeh Company. According to Table 4, the obtained value of and F (34.553) that is significant at the level of error smaller than the 0.05shows that regression equation is significant. The value of correlation coefficient (R = 0.499) shows that of removing the repetitive activities has a strong and intermediate relationship with the rate of supply chain performance, adjusted coefficient of determination ($R^{2.adj}$ = 0.242) shows removing and variable of repetitive activities explains 24.2% the changes of variable of supply chain performance and Standardized regression coefficient (β = 0.49) also determines the share of removing variable of repetitive activities in prediction of changes of dependent variable. This means that for one unit increase in the removing rate of repetitive activities the supply chain performance andimproves as 49%. The t-statistic and the error level of <0.05 for it also show that considered variable has had andstatistically significant impact on explaining the changes of variable in andsupply chain performance. Therefore, the fourth hypothesis was confirmed.

Fifth hypothesis: Share of and information security by management information system is positive and significant in explaining changes of supply chain performance in Asia Zholeh Company. According to Table 5, the obtained value of F (64.174) that is significant at the level of error smaller than the 0.05 shows that

regression equation is significant. The value of correlation coefficient (R = 0.618) shows that security of information has a strong and positive relationship with the rate of supply chain performance, adjusted coefficient of determination ($R^{2.adj}$ = 0.376) shows security andvariable of information explains 37.6% the changes of variable of supply chain performance. Standardized regression coefficient (β = 0.61) also determines the share of security variable of information in prediction of changes of dependent variable. This means that for one unit increase in the security rate of information, the supply chain performance improves as 61%. The t-statistic and the error level of >0.05 for it also show that considered variable has had andstatistically significant impact on explaining the changes of variable in and supply chain performance. Therefore, the fifth hypothesis was confirmed.

CONCLUSION

Here summary of the findings is presented: Based on the results, the obtained value andof and F (117.509) that is significant at the level of error smaller than the 0.05 showd that regression equation is significant. Standardized regression coefficient of (β = 0.728) also showd for one unit increase in the costs reduction value by management and information systems, supply chain performance improves as 72.8%.

Based on the results, the obtained value and of and F (70.236) that is significant at the level of error smaller than the 0.05 showd that regression equation is significant. Standardized regression coefficient of (β = 0.728) also showd for one unit increase in rapid and up to date access of information by management andinformation systems, supply chain performance improves as 63%.

Based on the results, the obtained value and of and F (45.276) that is significant at the level of error smaller than the 0.05 showd that regression equation is significant. Standardized regression coefficient of (β = 0.55) also showd for one unit increase in In control of data entry by management andinformation systems, supply chain performance improves as 55%. Based on the results, the obtained value andof and F (34.553) that is

significant at the level of error smaller than the 0.05 showd that regression equation is significant. Standardized regression coefficient of (β = 0.49) also showd for one unit increase in amount of elimination of repetitive activities by management andinformation systems, supply chain performance improves as 49%.

Based on the results, the obtained value and of and F (64.174) that is significant at the level of error smaller than the 0.05 showd that regression equation is significant. Standardized regression coefficient of (β = 0.61) also showd for one unit increase in amount of elimination of repetitive activities by management andinformation systems, supply chain performance improves as 61%.

SUGGESTIONS

Based on results it is suggested that:

- All raw data that is logged to the system is analyzed by applications that are available
- Also can be used of a group of experts who have the ability and science of data analysis that people have had any information that they need
- Additional administrative ceremonies like a lot of paper works that are done in companies make less and if possible be eliminated them
- Making systemic some processes which causes to need less physical presents of people
- At the beginning of entering information into the system, information as the focused and classified enters into the system
- Information categorized in such way that every person has access to his needed information and a hierarchy to be observed in it
- necessary trainings andto be done for people of each company and people have adequate control to perform affairs related to their own unit that in absence of one of the employees does not occur problem in that unit
- By giving more information in the working field of some special persons that have the ability to improve their job field and we remove the repetitive activities in that field
- User and Password are defined for all users that are identifiable with it

- In the all processes of work to be done by all activities such as delete, create, change and.... with user registration

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