

Evaluation of Role of Management Information Systems in Improving Quality Of Decision-Making of Parsian Bank's Managers

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ABSTRACT: The present article's aim is to evaluate role of management information systems in improving quality of decision-making of Parsian Bank's managers. Managers, experts and heads of selected branches of Tehran Parsian Bank formed the statistical population of present research. The present research is aim applied in terms of purpose, and survey in terms of data collection and of type of descriptive - correlational in terms of data analysis method. Managers, experts and heads of selected branches of Tehran Parsian Bank formed the statistical population of present research. Statistical sample size was estimated 40 people by using Cochran formula. Sample members selection is in simple random form. Researcher-made questionnaire was used to collect the data. The questionnaire includes 26 questions in Likert five degrees spectrum from very high to very low. Confirmatory factor analysis test was utilized in order to measure the questionnaire validity. KMO index value was equal to 0.943 (more than 0.6). Therefore the number of sample (number of respondents) is sufficient for analysis. Sig Bartlett's test's value is also less than 0.05. This showed that factor analysis is appropriate to identify the factor model structure. Hypothesis of the correlation matrix being known was rejected. Bivariate regression test by use of SPSS software was used in order to analyze the data. Results showed that t-statistics and error level are less than 0.01. This indicates that the intended variables have been with significant effect on explaining the changes in variable of quality of decision-making improvement in the bank. The regression coefficient ($0.989 = \beta$), ($0.985 = \beta$) and ($0.983 = \beta$) of the independent variables specified the contribution of independent variables (establishment of management information system), (Bank managers respond to domestic issues), and (Improve cohesion of the bank's internal systems) in predicting the changes in dependent variable (quality of decision-making improvement in the bank).

Keywords: Coherence, Information, Decision-Making, Response.

INTRODUCTION

Nowadays access to correct, timely and relevant, information plays a very important role in the competitive and rapidly changing business environment. So that the very activities of organizations such as making decision, forecasting and business analysis depends on this information. Information technology is a tool that is able to meet the information needs of organizations and it assist them in achieving to the goals (Dehning et al., 2007).

Information technology will be caused with adjusting business processes, improve efficiency and service quality and also maintain a comprehensive database about customers, suppliers, employees and processes and

projects, development and progress of the organization. This technology, tries to control and monitor everything from a central point by providing a logical solution for management with reducing costs and time (Tavakkoli Moghaddam & Haidari Firouzjani, 2004).

This is same necessity that requires all individuals and organizations to move in the direction of information technology. Information technology needs software too, aside from its hardware requirements such as infrastructures and necessary tools. This software brings up itself like information systems in an organization so that the TPS and management information systems and DSS, can be considered the most important information systems (Banaian, 2008). Management information system is formal system in the organization that it obtains the necessary reports for management making decision in the different levels of organization and it brings up past information, present and projected about the company and that environment (Khanore et al., 2011).

Information systems and management information systems evaluate the information systems in the organization. Information system consists of a network of communicational channels that they are used in the organization. Components of information system perform collecting and manipulating data and information. These components include of hardware, software, individuals, telecommunication systems and data. Activities that are conducted in this field include: data entry, data processing to information, storage of data and information and produce the output such as managerial reports (Qrunfleh & Tarafdar, 2014).

On the other hand, management is consciously and of a conscious and continuous for shape the formal organization and the art of decision making is a fundamental condition of this action. The decision making is identification and select a career path for faced with a problem or using the advantage of an opportunity

Managers need to different and multiple information sources for decision making until through that they can step for problem resolving and achieve the goals of the organization quickly and necessary accurately with their decision making. So the lack of managerial information resources is as one of the very large injuries in the companies and economic agencies and that existence is a suitable way for explore the opportunities and identify the precise limitations. Lack of management information systems deprives the management possibility of correlate the current activities and effect of each activity on amount of performance (Dastgir & Ghalebi, 2010).

Ian McCormack City and Mk kormak of information and technology systems cause to in the administrative, specialized and managerial processes are integrated by network (software and hardware) and organization units cannot act island. This integrating work flow is optimum reference of duties and presence of phenomenon under the title "unity of action" it the same plurality of units from the perspective of parallelism avoiding (Heidarkhani et al., 2013). Solidarity and Integration of employing management information systems, lead to integrating Plans and projects in a main form and also it lead to increase the information coordination in the organization and decreasing activities and spread information needs (Vladimir, 2010).

Based on the research results of Pfeffer and Lablasy, the information systems increase ability of managers for conyrol the complexity of organization and it gives to them possibility of control and coordination of more complex structures and with more dissociation. The research results of Wigand also showed that the use of management information systems has reduced for ambiguous, complex and unusual tasks that they need to more coordination, and the use of these systems has increased for the simple and normal tasks (Wigand, 1995).

With these details, the aim of this article is evaluates the role of management information systems in improve the quality of decision making of Parsian bank managers of Tehran.

The research empirical background

Hassanzadeh et al (2010) conducted a research with title of "evaluate the role of information systems in improving decision making's quality of management's telecommunication company of Iran case study of Tehran". The results showed, the correct use of these systems can a lot of scrounge in terms of economic for organizations such as reduction of the decisions making time, improve the quality of make decision, savings in the costs of organization and So the creation and application of these systems in the organizations of country can improve the managers' decision making and it steers the existing resources can improve management decisions existing resources more effectively in order to perform the goals of organizations.

Roshan et al (2012) conducted a research with title of "evaluate the improvement of managements' decisions making with the use of administrative automation (Case Study: West Azerbaijan's governorship)". The obtained results from the questionnaire information analysis that 47 persons of managers' under study of this research answered, showed that the administrative automation system has positive effect on increase the precision, accuracy, updating and economic decision making and there is no , has a And there is no evidences based on reject the quad hypotheses .

Shayan (2013), conducted a research with title of "evaluate the role of management information systems in improving decision making's quality of management's general cooperatives office, work and social welfare of the Sistan and Baluchestan ".Statistical population of research include of all managers and assistants of general cooperatives office, work and social welfare of the Sistan and Baluchestan and Subordinate offices . The number of managers 28 persons and assistants 12 persons has estimated. The sample size for managers and assistants was selected 40 persons by census. The measurement tool made in this research is the Self-made questionnaire role of management information systems in decision making. Cronbach's alpha coefficient was used for determine the questionnaires reliability that accordingly, the questionnaires reliability obtained 0.89.

Data obtained with the use of statistical indexes such as averages, univariate T-test and also to verify the models And LISREL 8.7 software and structural equation pattern has been used. Amount of each effectiveness variable with provide the integrated pattern and interaction between variables based on direct and indirect relationships. The research results showed that: management information systems cause to improve the quality of decision making, increase the ability of managers in decision making, and increase the better respond to environmental changes greatly.

Overall, the totality of structural equation modeling of management information systems effects on quality of decision making, increase the ability and better respond to environmental changes was confirmed. Also the causal variables relationships was confirmed that have Significant relationship with increasing ability of managers to decide making by coefficient of 0.97, the quality of decision-making by coefficient of 0.87 and better respond to environmental changes by coefficient of 0.80 in the confidence level of 99 percent have been Significant relationship with management information systems.

Purkiany and Darijani (2014) conducted a research with title of "the establishment of management information systems and decision-making style of managers". The decision making is the first step in the implementation of management tasks .the decision-making is important task of manager in each organization and the success or defeat of each organization depends on that. The decision making is commented as transform information to performance often. Since that management information systems are the most vital supplier source of required information of managers in the serious order of decision making Equipping organization to a correct and sure management information system that to extols the ability of management in necessary decisions making about the planning, organizing and control, it has been became the one necessity of present age. Information systems should provide the necessary information about the nature and role of internal factors and external factors and gives them to manager for the decision making. In this article, initially the history and definition of management information systems and the types of that, explanation and description of the types of decision make styles of managers and then the relationship of management information systems establishment and decision making styles of managers have been discussed due to sensitivity of the issue and the need to clarify that.

Fathai et al (2015) conducted a research with title of "the role of management information systems in improvement of decision making of managers' organization ". They expressed in today's world that management science is advancing rapidly, without the use of modern information systems and technology cannot be a successful manager. On the one hand diversity and dispersion of information systems have been led to complexity and lack of consistency in the decisions making of managers' organizations.

In order to solving this complexity, information systems are defined in two general categories in special relationship and public relationship with operational field. Management information systems and decision making support systems are systems in general relationship with operational field that they have a determinative role in the organizational hierarchy and decision making process of managers. Information systems provide the required management for management of one organization, and data decision making support system offers the models and data analysis tool for help to decision making in the unusual conditions in the organization. so creation and employment of these systems can improve in the organizations of country, decision making of managers and this Steers the existing resources to form of more effectively in order to goals of organization.

Jackson (2011) conducted a research with title of "organizational culture of absorption capacity and acceptance of information systems ". In this article, has pointed to organizational culture as an important factor in the success or defeat of the acceptance of information systems (IS). There are evidences that from past few decades a growing trend has been started in the number of studies that evaluated the cultural issues in the literature of information systems. Regardless from share of many research studies up to now, still there are a number of different challenges need to response : The first challenge; is the existence of studies for observe the culture that they adapt together as well and they share among the members of the organization equally .

The second challenge, there is a tendency to conducted studies for underplay the dynamics of culture and that how its effects on acceptance of information systems during the time; and thirdly challenge, there is the increasing need to culture analysis with using interpretative and widespread methods geographically. In this article has been

suggested that can be increased our understanding from the culture of information systems by combining theoretical approaches that in them the weakness of one of these approaches can lead to another power.

Al-Mamary et al (2014) conducted a research with title of "the role of different types of information systems in the business organizations". They expressed that the various types from information systems use in the business organizations that include; event processing systems, that usually they use in the organization for record the simple and repetitive works and things that are conducted daily, in order to guidance of work. Administrative automation system, the main task of these systems is document management and facilitates the correspondence and information within the organization.

In these systems are used with help of communicational technology and with the use of word-processing, electronic files, e-mails, electronic conference and ... for administrative automation. Process control systems that are designed in order to monitor and control of industrial processes and installation. Management information system that is related to convert data from internal sources to information that its function is connecting between managers in all levels and hence it helps to them for effective and timely decision making. Decision support systems; these systems are used for implementation of complex statistical and mathematical models; data analysis and decision support also for select the best option and anticipate the results. Executive information systems; help to senior executives for strategic and tactical decisions. Expert information systems, has been designed for use the human reasoning.

Eslam Hassan and et al (2014), conducted a research with title of "the effect of role of management information system on the decision-making process in the sections: case study: River Nile state: Sudanese". For this purpose, with cluster random sampling method they selected 200 employees in the various job positions in the public sector and a similar number selected in the private sector. Finding showed; that there is no difference between compatibility of managers in the different levels in the private and public sectors. Also there was no significant differences between the two sectors within the management information system for reinforce the return and efficiency of decision-making process. Also the study showed, there was no significant differences between the two sectors in the help of management information system to managers for policies and strategic formulations. Finally the results showed there was no significant difference between the two sectors in the managerial and technical obstacles that limits to implementation and application of management information system.

Darwish et al. (2014) conducted a research entitled "Effect of office automation system on managers' decision-making (The Country Airports Company)". The results showed that the automation system has a positive effect on increase of veracity, integrity, accuracy, as well as timeliness and propriety of managers; decision-making and increase o their ability.

Pérez-Méndez and Machado-Cabezas (2015) conducted a research entitled "The relationship between management informational systems and performance of the company". This article with the aim to help add the existing knowledge in the field of factors explain the success of implementation of IS classifies these factors through cluster analysis. It uses a sample of Spanish companies with regard to evaluation of their financial managers (CFOs), the quality of these systems and their use for strategic purposes. This classification is useful to answer three questions: Do companies that give better score to their informational systems improve also their performance? How informational systems' quality and strategy affect the results? Is there a positive relationship between the use of NMTs and improvement of performance?

The results showed that quality and strategy of IS has a positive effect on improvement of the profitability of companies. Logic regression indicates the interaction between use of NMTs and strategic approach of informational systems with positive effects on improving profitability. The results achieved from this study have important and significant consequences for companies. The results show that investment in informational systems and NMTs must be accompanied by a clear sense of strategy.

Research theoretical background

Management Information System

Management information system is an organized system and appropriate tool that provides proper and summarized information for the organization decision-makers at the right time. It provides the possibility of proper and accurate decision-making for the organization managers. Management information systems as a formal system provide the necessary reports for managers' decision-making at different levels of the organization.

Therefore, managers of these companies with development of the necessary technologies and applying them in various companies will be able to control the activities of the different parts of the organization by using these capabilities. They can also make the integrity required between the sections of the organization. They thus will cause more efficiency of the organization (Eydi & Azadi, 2015).

Concepts of decision-making

Four main concepts of decision-making have been provided to describe the behavior of organizations in decision-making, which include:

1. Quasi-solving oppositions: the oppositions existing among the organization sections and groups in the decision-making process is an obvious thing. They are resolved based on the quasi-solving oppositions and in certain ways, such as budget planning in form of mutual consent. This trend continues in the decision-making process.

2. Avoiding uncertainty: time horizon of decision-making reduces in order to decrease the risk. Or environmental resources are placed under control in long-term decisions to minimize the probability of occurrence of unforeseen events. Thus avoiding uncertainty takes place.

3. Searching problem solving: the concept of searching problem solving means research on a different strategy to solve the problem and selection of best strategies continues regularly in decision-making process.

4. Organizational learning: the concept of organizational learning suggests that organizations learn over time how to adapt themselves with environmental changes.

Informational system in all the above cases can help the decision maker at reducing oppositions, decreasing environmental uncertainty, increasing awareness of the problem and providing appropriate responses by providing the needed information and measuring changes and controlling the organization's reaction against these changes (Mckeown & Leitch, 2009).

The process of taking decision and management information system

Whereas to decide at all levels of the executive organization it is need to different information, the data management system is basically related to process of collection, processing, storage and transmission of data related to management performance in all organizations. Informational systems should be focused on the informational data needs of senior managers, middle managers and chief executives .Thus, the success of the decision making, which is the heart of the administrative process largely, relies on the information available and functioning of the components of the process.

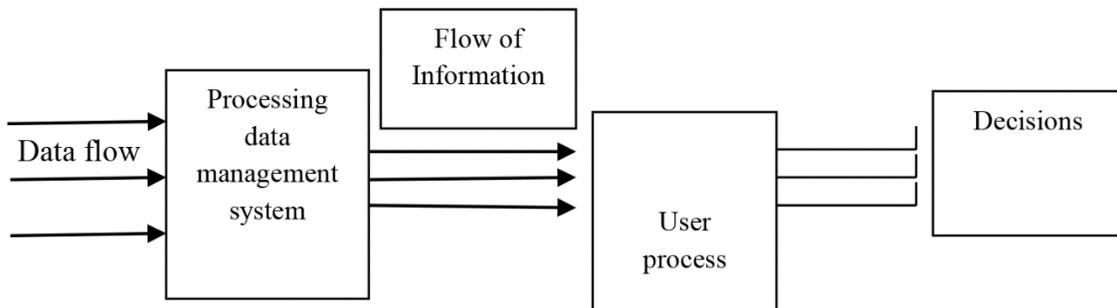


Figure 1. The process of taking decision, data management system.

Islam Hassan, Wang, Zhi and Osman Abdalla (2014)

In confirming the importance of the role of information in decision making (Sisodia, 1992) can be said that the idea of precedence over the decision-making as the overall process requires cleaned and separate activities. The first of these activities is the data collection or in other words, evaluate options and finally is selection (Adesina, 1988).On the other hand, successful decision making is based on the accuracy of the information obtained to implement an effective data management system (Obi, 2003). Accordingly, data management system in the area of decision-making is important because it can monitor on disturbances within the system, to determine the path to act and to control system by him. It is also appropriate with decisions by non-designed that by providing information to search, analyze, evaluate, and select and implement the decision-making process of encoding (Fabunmi, 2003).

Decision making Models

Decision-making model of Simon has three-step (Figure 2), then Huber (1980), extended the decision-making of Simon added two-stage another to it (Figure 3). Goory and Martan (1971) were put decision structurally based on three categories: 1. Structured decisions: components, elements, are known commitments and decisions are also measured quantitatively. 2. Unstructured decisions components, elements, commitments of decisions cannot be quantitatively assessed. 3. Semi-structured decisions: are between the structured and unstructured decisions. Usually most business decisions are placed in this group. Goory and Martan followed computer applications in terms on degree of structure in decision-making (Figure 4) (Karaman & Ghaffarzadeh, 2014).

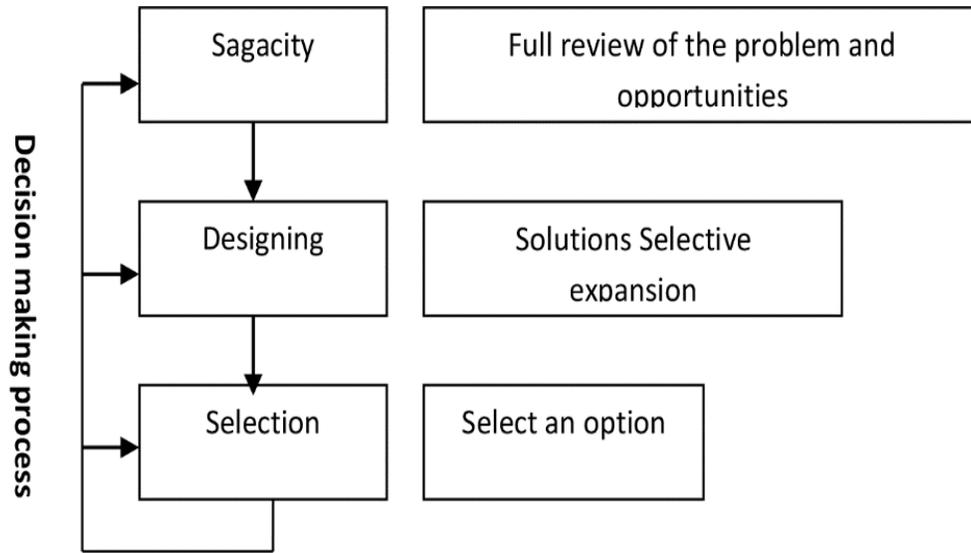


Figure 2. Model Stages of Simon (1997).

Degree of structured	Administrative control	Management control	Strategic Planning
	structured	Acceptable accounting principles Registration of orders in the office Inventory control	Budget analysis Managed cost Short term forecast
Semi-structured	The timing of production Monetary Fund management Calculation / cost system	Total budget variance analysis Budget preparation Sales and production	Corporate mergers and ownership New product design Design of review and decision
Structured			

Figure 3. Model Stages of Haber (1980).

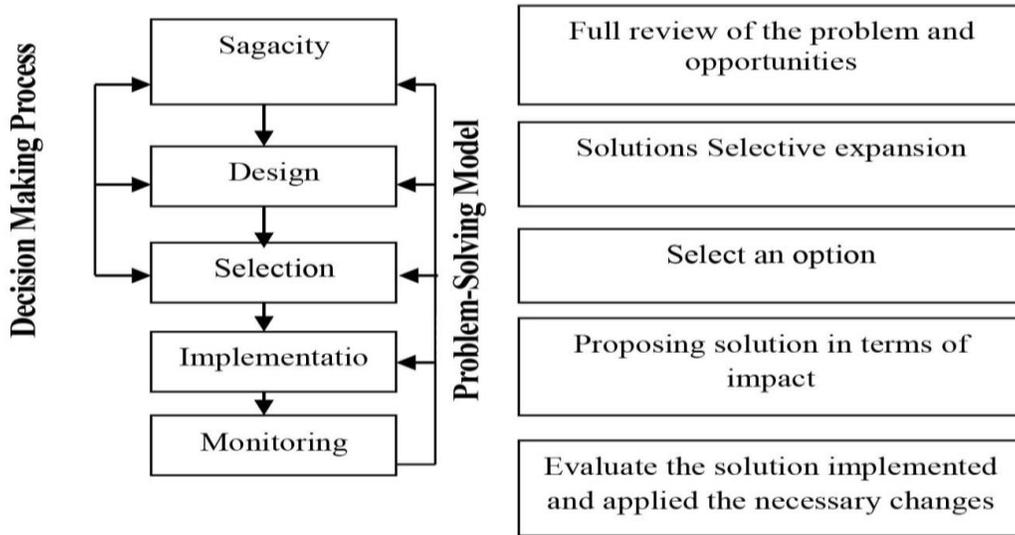


Figure 4. Model Stages of Goory and Martan (1971).

Conceptual model of research

By examining the experimental background and theoretical foundations, Conceptual model of research extracted and the research variables are set as follows:

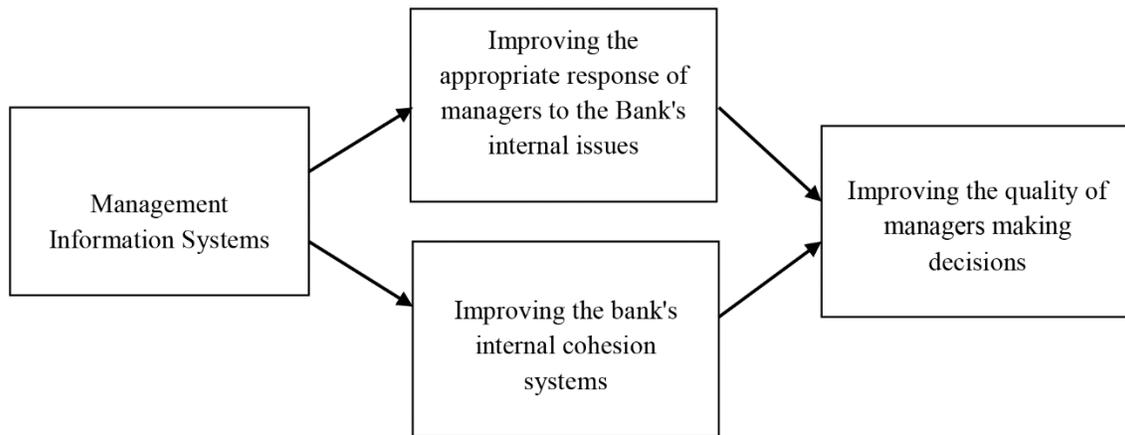


Figure 5. Conceptual model of research.

Main hypothesis

The establishment of management information systems improves the quality of decision-making of managers in Parsian Bank.

Sub-Hypotheses

The establishment of management information systems improves the appropriate response of managers to the internal problems of the bank.

The establishment of management information systems improves the coherence of the bank's internal systems.

METHODOLOGY

This study in terms of aim is applied, in terms of data collection is survey and in terms of the method of data analysis is descriptive-correlational. The populations of study are managers, experts and heads of selected from branches of Tehran Parsian Bank. Statistical sample was estimated by using the Cochran formula as 40 people. Selection of sample members is form of simple random. A questionnaire was used to collect the data. The questionnaire consists of 26 questions in the form of five point Likert range from very high to very low. The test Confirmatory factor analysis was used in order to assess validity of the questionnaire. The output of this test was presented in Tables 1 and 2.

According to Table 1, KMO index value is equal to 0.943 (greater than 0.6), the sample size (number of respondents) is sufficient for factor analysis. The amount of Sig of Bartlett test is smaller than 0.05 that indicates factor analysis is the optimal to identify factor model structure and assumption of reorganization of correlation matrix is rejected.

Table 1. KMO and Bartlett's test for questions.

	test KMO	0.943
Bartlett's test	χ^2	5154.850
	Degrees of freedom	325
	Sig	0.000

According to Table 2, Share of extractive amount for all the questions is greater than (0.5) and no question of the questionnaire is not required to be set aside. According to the table, three factors have extracted with specific value higher than one that all the questions have taken place in these three factors. Also according to the factor loadings of questions; each of the questions have highest load factor on the same factor that was predetermined, after each question is exactly the same factor measured for which it has been designed for it, so the questions of the questionnaire have necessary reliability.

Table 2. Matrix of factors rotated with components analysis method and Varimax rotation with Kaiser Normalization for questions.

Questions	First factor Establishment	Second factor Improvement	Third factor coherence	Extractive Subscription
Question 1	0.497	0.419	0.651	0.847
Question 2	0.871	0.168	0.161	0.813
Question 3	0.687	0.160	0.494	0.742
Question 4	-0.943	-0.0091	-0.0041	0.900
Question 5	0.884	0.337	0.088	0.902
Question 6	0.854	0.295	0.319	0.918
Question 7	0.825	0.436	0.225	0.922
Question 8	0.760	0.541	0.077	0.876
Question 9	0.854	0.360	0.225	0.910
Question 10	0.907	0.293	0.016	0.909
Question 11	0.853	0.355	-0.0029	0.855
Question 12	0.823	0.291	0.360	0.892
Question 13	0.712	0.402	0.450	0.871
Question 14	0.880	0.238	0.131	0.848
Question 15	0.755	0.486	0.314	0.905
Question 16	0.114	0.766	0.525	0.876
Question 17	0.162	0.817	0.452	0.897
Question 18	0.205	0.906	0.233	0.917
Question 19	0.112	0.723	0.599	0.894
Question 20	0.079	0.786	0.456	0.833
Question 21	0.204	0.903	0.280	0.935

Question 22	0.106	0.330	0.878	0.891
Question 23	0.391	0.373	0.789	0.915
Question 24	0.024	0.490	0.783	0.855
Question 25	0.084	0.569	0.761	0.910
Question 26	0.214	0.206	0.908	0.912

Cronbach's alpha coefficient was used to assess reliability of the questionnaire. Amount of Cronbach's alpha coefficient obtained (0.988) showed acceptable reliability of the questionnaire. Investigating the research hypothesis was performed by using the bivariate regression test with the use of SPSS software.

RESULTS

According to the results presented in Table 3, the regression coefficient ($\beta=0.989$) share of the independent variable (establishment management information system) to predict the dependent variable changes (Improving the quality of decision-making in the Bank) determines, as well as t-statistic and the error level of less than 0.01, for it shows that intended variable has a statistically significant impact to explain the changes of variable improvement of the managers making decisions quality.

Table 3. Output of regression coefficient to test the Main hypothesis.

Model		non-standardized coefficient	SD	Value of standard beta	t	Sig.
1	(Constant)	0.942	0.044	0.989	21.0523	0.000
	Improving the quality of decision-making in the bank	0.786	0.012		61.0301	0.000

According to the results presented in Table 4, the regression coefficient ($\beta=0.985$) determines the share of the independent variable (establishment management information system) to predict the dependent variable changes (Improving the appropriate response of managers to the internal issues), as well as t-statistic and the error level of less than 0.01, for it shows that intended variable has a statistically significant impact to explain the changes of variable improvement of appropriate response of managers to the internal issues.

Table 4. Output of regression coefficient to test the sub-hypothesis 1.

Model		non-standardized coefficient	SD	Value of standard beta	t	Sig.
1	(Constant)	-1.0190	0.085	0.985	13.927	0.000
	improvement of appropriate response of managers to the internal issues	1.0298	0.023		57.0473	0.000

According to the results presented in Table 5, the regression coefficient ($\beta=0.983$) determines the share of the independent variable (establishment management information system) to predict the dependent variable changes (Improving the coherence of bank's internal systems), as well as t-statistic and the error level of less than 0.01, for it shows that intended variable has a statistically significant impact to explain the changes of variable improvement of Improving the coherence of bank's internal systems.

Table 5. Output of regression coefficient for the sub-hypothesis test 2.

Model		non-standardized coefficient	SD	Value of standard beta	t	Sig.
1	(Constant)	-0.0036	0.071	0.983	-0.509	0.612
	Improving the coherence of bank's internal systems	1.007	0.020		53.0404	0.000

CONCLUSION

Here a summary of the findings is provided:

The regression coefficient ($\beta=0.989$) specified the contribution of independent variable (establishment of management information system) in predicting the dependent variable (quality of decision-making improvement in the bank). In addition, t-statistics and error level less than 0.01 for that also showed that the intended variable has been with a significant effect in explaining the changes in variable of the quality of managers' decision making improvement. This research result is consistent with the research results of (Hassanzadeh et al., 2010).

The regression coefficient ($0.985 = \beta$) specified the contribution of independent variable (establishment of management information system) in predicting the dependent variable (improvement of managers' appropriate reaction to internal issues). In addition, t-statistics and error level less than 0.01 for that also showed that the intended variable has been with a significant effect in explaining the changes in variable of improvement of managers' appropriate reaction to internal issues.

The regression coefficient ($\beta=0.983$) specified the contribution of independent variable (establishment of management information system) in predicting the dependent variable (improvement of the bank's internal systems' coherence). In addition, t-statistics and error level less than 0.01 for that also showed that the intended variable has been with a significant effect in explaining the changes in variable of improvement of the bank's internal systems' coherence.

Suggestions

Parsian Bank managers have a special effort in proper applying and explaining the strategic perspective of informational systems' effectiveness in decision-making section.

Have a great effort in making culture of using and explaining the organization's strategic mission to improve decision-making procedures based on implementing advanced informational systems, especially Business Intelligence Technology.

It is suggested due to positive role of establishing management information systems in improving managers' reaction to the bank's internal issues that Parsian bank managers give operating value to actual decisions making based on effective informational systems to improve work processes.

It is suggested due to the positive effect of applying management information systems on coherence and integrity of the bank's internal systems that Parsian Bank managers provide the context required for strategic planning of development and integration of informational systems in their supplementary dimensions, which is considered as a competitive advantage.

Conflict of interest

The authors declare no conflict of interest

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