Studying the Effect of Mechanized Systems (Official Automation) on Managers Decision Making Quality: Case Study

Farhad Nejadirani[1*], Leila Mosafer Yadegari[2], Reza Rasouli[1], Hadi Nasirzadeh[3]

[1] Department of Management, Mahabad Branch, Islamic Azad University, Mahabad, Iran

*E-mal: nejadirani@gmail.com

[2] Department of Management, Payame Noor University, PO BOX 19395-4697 Tehran, I.R. of IRAN

[3] Department of Management, Bonab Branch, Islamic Azad University, Bonab, Iran.

Abstract

Decision making is among the major managerial tasks in an organization. In fact, it is making proper decisions that lead the organization toward predetermined objectives. Present study is conducted aiming at examining the effect of official (official automation) systems on increasing Eastern Azerbaijan Social Services Organization mangers' decision making quality. Regarding the objective, essence of the subject of this enquiry, and methodology, it is an applied research. Statistical community of the study comprised 70 individuals including all managers and deputies of the organization. Statistical sample equaled statistical community; instrument of the study is questioner the last part of it is conducted using SPSS and alpha test. The study is conducted based on 1 main hypothesis and 5 hypothesis questions statistically confirmed after statistical data analysis of all research hypotheses. Results from descriptive statistics are higher than an average level (research mean scores) for hypothesis testing. Considering the mean from hypothesis testing; the extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making quality is respectively: timeliness, validity, cost-effectiveness, speed, and accuracy of Eastern Azerbaijan Social Services Organization mangers decision making.

Keywords: Official Automation, Decision Making Speed, Decision Making Accuracy, Decision Making Validity, Decision Making Timeliness, Decision Making cost-effectiveness.

Introduction

In recent years, increasing complexity of tasks and activities has drawn managers and administrators attention to technology. In the same regard, official automation is included in official reform plans in the country's organization to reinforce their operational efficacy. Computer boom in the offices has been a concomitant with increasing new communications, computer products and recording information and fundamental changes in implementing official affairs. As a result, we witness increasing fast application of computer and various tools for mechanizing the affairs. Since 1960s when further features of official and commercial activities and applications were developed, the need for a solid official system with a huge capacity for information, communications and etc was clearly felt called using different names such as official systems, official information systems, final user systems and calculation systems. Yet the most conventional and supreme degree of official systems automation is called official automation meaning the use of electronic devices in official activities to enhance efficiency; the efficiency is resulted from information trade-off

evolution, within the office and between offices and their environment and as a corollary providing better information for decision making can be productive for managers (Berg, 2004). Sat the time, there are a variety of official automation systems.

What the managers do at different organizational levels along which they always move is decision making and one of its key factors is information. Having accurate, relevant, timely and fast will accelerate decision making, enhance its speed and prevent from making invalid decisions. Establishing official automation at different organizational levels and exploiting modern data collection and processing tools can contribute and support the managers in realizing the objectives. Computer increase speed, accuracy and validity of decision making and consequently speed, accuracy and validity level will be enhanced in the organization (Marler et al.,2006; Parasuraman and Riley, 1997).

Establishing official automation has significantly affected Social Services Organization mangers' decision making speed, accuracy and validity and facilitated customer services by improving the turnover. Management and decision making are two interrelated terms in both organization management and affairs fulfillment, and obviously decision making is the main task of top managers can be easily misled. However, if the whole process is considered in a different way, there will be a far different outcome. Most managers regard decision making as an individual even occurring at a certain time, whereas it is indeed a process integrated with power games, policies, personal conflicts and organizational background. Leaders discerning the point can make better decisions highlighting more or less the matter that some decision making processes are more effective and efficient than the others (Garvin and Roberto, 2001).

Accessing accurate, relevant and updated information is significant at decision making time; the more complex the environment, the higher the speed and rate of change and the harder the decision making. And, the only factor facilitating decision making and reducing mistrust is accurate, relevant and timely information. Process management includes the effective and efficient application of material and human resources in planning, decision making, organizing, mobilizing the resources and facilities, leadership and control. Management process requires a series of decision making all the way through the course from planning operation to controlling the activities. In fact, management is nothing but decision making and an accurate decision making necessarily requires information. Information is indeed the management decision making tool and the accuracy, validity and speed of the decisions also depend on the accuracy, validity and speed of the information. Traditional managers gained information by direct presence in the organization; however, the old fashion is no longer capable of meeting the complex conditions of the age. New mechanized systems conducting data collection, organization and production and transferring to the managers have appeared at all organizational levels as a powerful supervisor and expanded and knowledge insight of the managers for making accurate decisions (Kraft, 1991; Garvin and Roberto, 2001). General decision making process can be considered as data collection and processing. Accessing accurate, relevant and updated information is significant at decision making time. Speed and accuracy of manager's decision making totally depends on the quality and quantity of information. And, the only factor facilitating decision making and reducing mistrust is accurate, relevant and timely information. Information quality and its process efficiency reflect in its accuracy, relevance, timeliness and desirability. Now, using official automation and IT are among suitable methods for enhancing managers' decision making quality. Accordingly, present study is aimed at examination and recognition of the subject that whether employing official mechanized systems (official automation) affects Eastern Azerbaijan Social Services Organization mangers decision making quality increase?

Theoretical Framework of the Study

In This Study, We believes that decision making quality of the managers is evaluated based on the dimensions of speed, accuracy, validity, timeliness and cost-effectiveness. What managers do at different organizational levels along which they always move is decision making and information is one of its key factors? Having accurate, relevant, timely and fast will accelerate decision making, enhance its speed and prevent from making invalid decisions.
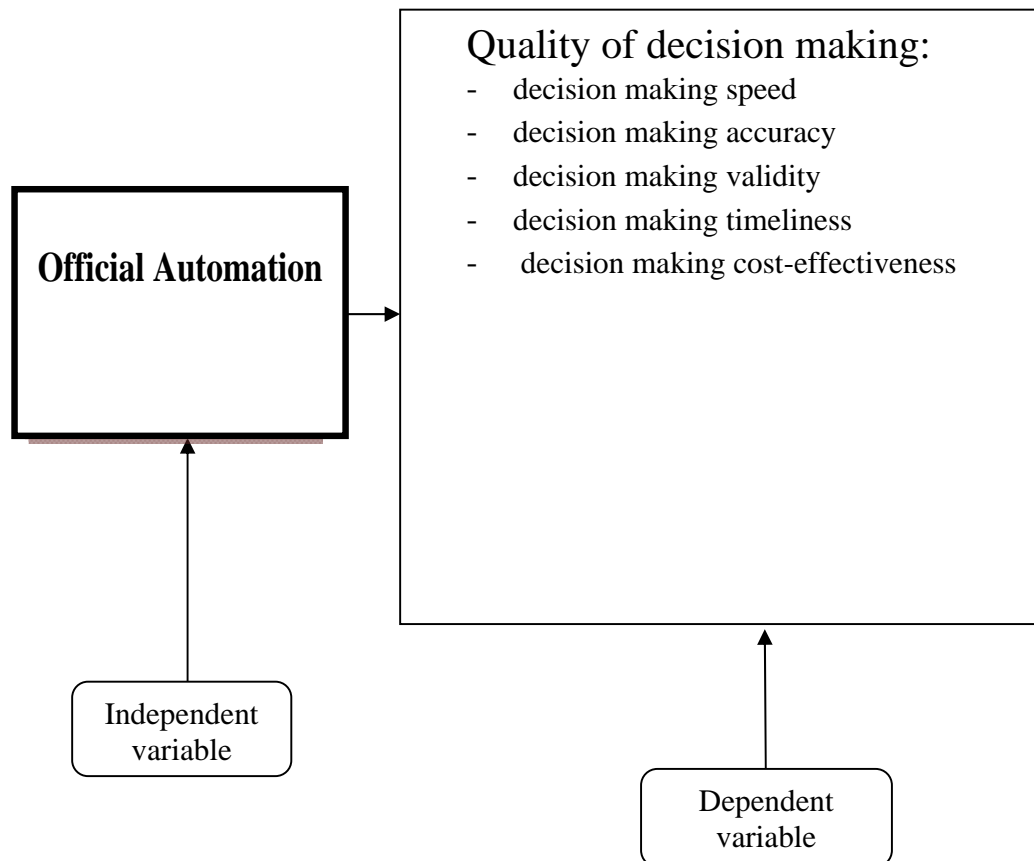
```
┌──────────────────┐         ┌─────────────────────────────────────────┐
│                  │         │  Quality of decision making:            │
│                  │         │  -   decision making speed              │
│  Official        │──────▶  │  -   decision making accuracy           │
│  Automation      │         │  -   decision making validity           │
│                  │         │  -   decision making timeliness         │
│                  │         │  -    decision making cost-effectiveness │
└──────────────────┘         │                                         │
        ▲                    │                                         │
        │                    │                                         │
┌───────────────┐            │                        ▲                │
│ Independent   │            └────────────────────────┼────────────────┘
│ variable      │                                     │
└───────────────┘                           ┌──────────────────┐
                                            │ Dependent        │
                                            │ variable         │
                                            └──────────────────┘
```

Figure 1: Analytical Model of the Study

Literature Review

Cai's (2004) study as "*Estimation and Exploration Automation of System Level Design*" puts it that: recently, automation system design has increasingly used for optimizing tasks and different official levels in saving costs, labor and time. Automation facilitates service affairs and enhances productivity. The process requires the provision and of syntaxes and system activities plot. Automation design is conducted based on system performance and behavior upon which various structural activities of the system are fulfilled (Cai, 2004).

Galster**'s** (2003) study as **"***An examination of complex human-machine system performance under multiple levels and stages of automation***"** pints out: introducing automation requires the knowledge of multi-design principles of that system. Application of the principles mostly results from mutual component relationship regarding human performances within the system. With the advantages from technology increase or multiple factors technology are appropriately involved in

effectively designing automation systems. There are cases in man-automation systems interaction leading to imbalance between them: task volume, quick alarm system, avoiding judgment in decision making, mistrust, enhanced trust, satisfaction, and manual skill decrease. If automation is not conducted with great care, it will intensify the above mentioned problems (Miller, 2012).

Huerta et. al (2010) has conducted a study as "*Fraud-prevention software and its effect on decision making*". The study examines automatic system application in contributing to decision making and detecting fraud agents and trouble makers. Results of this empirical study show that automatic system and software application is effective in detecting fraud agents. When automatic systems were used, results disclosed significantly more individuals committed crimes and violations, and better contributed to accuracy and validity of decision making comparing to manual systems. Inaccurate detection of individuals committing the crimes or fraud has been observed further with manual systems. In general, results demonstrate that decision making influence using automatic systems depends on information format.

Ajai and Fadkhami (2007) conducted a study as "*The use of Management Information Systems (MIS) in decision making in the South-West Nigerian Universities*"**.** This examines Information Management Systems (MIS) application in long term, short term planning and budgeting decision making in Southwestern Nigeria, Universities. Descriptive research design is used in the study and it is a survey. Data collection was conducted using a 6-participant sample (comprising 4 scientific board members and 2 top official staff employees) and the data was classified using random sampling procedure. Data analysis was run based on number, frequency, percent, instruments, standard deviation and t-test. Results demonstrated that information systems are not adequately employed in long term, short term planning and budgeting. There is a significant difference between federal and state universities regarding the use of information systems for decision making in both long and short term planning. There is a significant difference between federal and state universities on the use of information systems in decision making regarding the budget for federal universities. It was suggested that information systems unit must be adequately financed and budgeting must be planned for reassuring open information flow and sufficient use of information system in short term and long term decision making, as well.

Ozgen, and Turan (2007) have conducted a study as "*Usage and Adoption of Online Tax Filing and Payment System in Tax Management: An Empirical Assessment with Technology Acceptance (TAM) Model in Turkey*". The article is written based on reviewing modern IT development and application in managerial finance and enhancing tax offices. In specific, this has an attempt to examine tax statement and electronic payment in Turkey. E-statement (or establishing on-line tax file, electronic registering of tax return, E-registering) can be defined as tax return registering system using computer and internet. Payment system E-tax (and or on-line tax payment system, electronic tax of depositing system) is an information system through which tax payers electronically pay tax. There are three tax payment methods in Turkey. One is called traditional tax collection method, in which tax payers refer to tax offices to pay. Two other types include using interactional bank accounts in the internet and or automated teller machine in front of the bank building. These are different from the traditional methods and payment system on-line tax in Turkey. The government has allowed banks and financial institutes to collect electronic tax in Turkey. Two data collection methods are employed here: first, reports, government policy documents broadcasted in media, magazines articles, and other written materials are used in data analysis and then in-depth interviews are held with tax offices managers, and a poll is conducted with Certified Public Accountants (CPA) in Turkey. Results show that project executed by the government are concerned with IT technologies and communications in managerial finance and tax management in modern Turkey and objectives and plans of the government are recommended using

E-tax (exploiting electronic system). Finally, this article empirically examines and confirms tax filing electronic system in Turkey by accepting technology model (TAM).

Research Hypotheses
Main Hypothesis:
Using official mechanized systems (official automation) affects managers' decision making quality increase.

Secondary Hypotheses:
1- Using official mechanized systems (official automation) affects managers' decision making speed increase.
2- Using official mechanized systems (official automation) affects managers' decision making accuracy increase.
3- Using official mechanized systems (official automation) affects managers' decision making validity increase.
4- Using official mechanized systems (official automation) affects managers' decision making timeliness increase.
5- Using official mechanized systems (official automation) affects managers' decision making cost-effectiveness increase.

Methodology
Essence- and method-wise, this study is a descriptive-survey research. Data collection is conducted in field study and using questioner (closed questions). Literature review of the study is organized using library research and referring to textbooks, journals, and internet as well as taking notes. Objective-wise, this study is an applied research, since applied study is an inquiry findings of which can be used by other organizations as well (Sarmad et al, 2004, 82).

Statistical Analysis Methods
In the end, tools analysis, definitions and triangulation are conducted using SPSS Software under windows space to indexing and evaluating variables and testing hypotheses. After coding and extracting data, the analysis procedure is conducted using SPSS Software.

Table 1: Statistical Sample of Eastern Azerbaijan Social Services Organization Managers and Deputies

Town	Frequency	Town	Frequency	Town	Frequency
Branch1 of Tabriz	5	Bonab	2	Maragheh	3
Branch 2 of Tabriz	5	Kaleibar	2	Marand	2
Branch 3 of Tabriz	5	Heris	2	Miyaneh	2
Branch 4 of Tabriz	5	Heris	2	Malekan	2
Branch 5 of Tabriz	5	Shabestar	2	Mameghan	2
Azarshahr	2	Ajabshir	2	Varzeghan	2
Oskou	2	Sarab	2	Hadishahr	2
Ahar	2	Bostanabad	2	Hashtrod	2
Ilkhchi	2	Jolfa	2		
Sofian	2	Torkamnchai	2		
Total	70				

Descriptive statistics are used in describing demographic characteristics of the respondents (educational level, work background, age group, and sex) and main questions of the research questioner. Statistical indices (including frequency, percent and diagram) are used for each educational level, work background, age group, and sex variables. Since the sample is statistical community of this study, descriptive statistics indices such as mean, standard deviation, variance, minimum and maximum, variation range, extension and skewness are applied.

Statistical Sample of the Study

Statistical sample of the study comprises Eastern Azerbaijan Social Services Organization managers and deputies. Regarding the number of managers and deputies of Eastern Azerbaijan Social Services Organization, census procedure is used and since the number of respondents was narrow, the whole statistical community (70 respondents) is considered as statistical sample.

Data Collection Instrument

Questioner data collection tool is established and composed of three sections; first section introduces the study and its objective for respondent, the second considers 5 questions including educational level, work background, age group, and sex, and the third contains 20 closed response questions to examine decision making quality and data collection. Questions are in form of five-option Likert Scale developed. For data analysis and hypothesis testing, managers' decision making quality questioner was used with speed, accuracy, validity, timeliness, and cost-effectiveness features in the third section of the questioner. The questioner includes 5 sets of questions as follow: the first set comprises 4 questions to examine decision making speed variable, the second 4 questions to examine decision making accuracy variable, the third 4 questions to examine decision making validity variable and the forth 4 questions to examine decision making cost-effectiveness variable. Table 2 lists research variables.

Table 2: Questions of Research Variables Questioner

Variable	Variable features	Frequency	Question No.
Decision making quality	Speed	4	1-4
	Accuracy	4	5-8
	Validity	4	9-12
	Timeliness	4	13-16
	Cost-effectiveness	4	17-20

Data Analysis Methods

For the sake of census, descriptive statistic methods are used in data analysis. Descriptive statistics is used in describing demographic characteristics of respondents (educational level, work background, age group, and sex) and in the main questions of the questioner. Statistical indices (including frequency, percent and diagram) are used for each educational level, work background, age group, and sex variables. Since the sample is statistical community of this study, descriptive statistics indices such as mean, standard deviation, variance, minimum and maximum, variation range, extension and skewness are applied.

Frequency Distribution of each Decision making Quality Variables Indices

For data analysis and hypothesis testing, managers' decision making quality questioner was used with speed, accuracy, validity, timeliness, and cost-effectiveness features and included 5 sets of questions as follow: the first set comprises 4 questions to examine decision making speed variable, the second 4 questions to examine decision making accuracy variable, the third 4 questions to examine decision making validity variable and the forth 4 questions to examine decision making

cost-effectiveness variable. Table 3 represents frequency distribution of each decision making quality variables indices based on frequency from 1 to 5 scores (very little to very much), respectively:
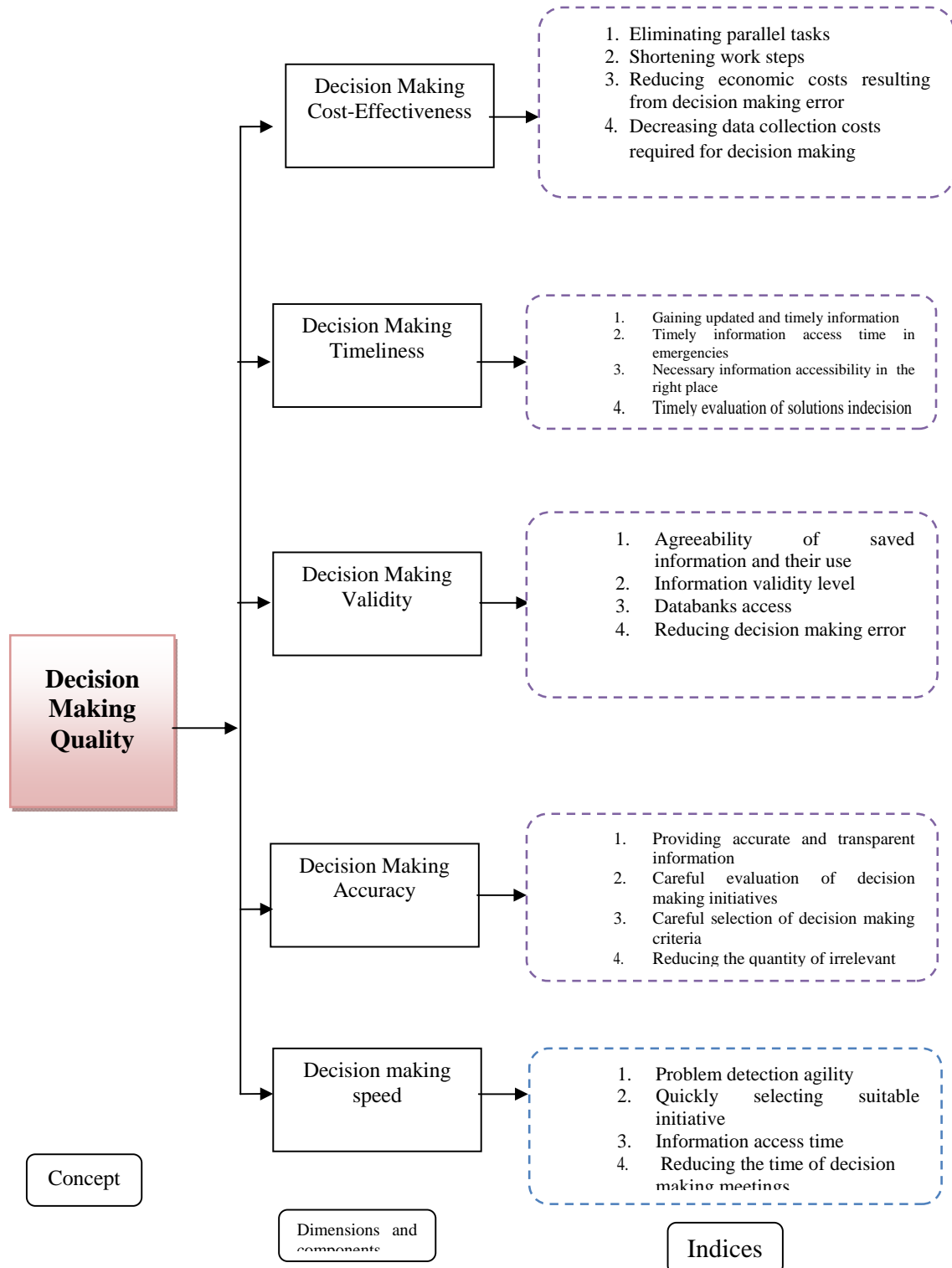
Decision Making Cost-Effectiveness
1. Eliminating parallel tasks
2. Shortening work steps
3. Reducing economic costs resulting from decision making error
4. Decreasing data collection costs required for decision making

Decision Making Timeliness
1. Gaining updated and timely information
2. Timely information access time in emergencies
3. Necessary information accessibility in the right place
4. Timely evaluation of solutions indecision

Decision Making Validity
1. Agreeability of saved information and their use
2. Information validity level
3. Databanks access
4. Reducing decision making error

Decision Making Quality

Decision Making Accuracy
1. Providing accurate and transparent information
2. Careful evaluation of decision making initiatives
3. Careful selection of decision making criteria
4. Reducing the quantity of irrelevant

Decision making speed
1. Problem detection agility
2. Quickly selecting suitable initiative
3. Information access time
4. Reducing the time of decision making meetings

Concept

Dimensions and components

Indices

Figure 2: Operational Model Dependent Variable

Table 3: Frequency Distribution of each Decision making Quality Variables Indices

Decision making quality variable (1 to 5 score)		Very Little	A Little	Average	Much	Very Much
Speed	Official automation systems role in problem detection speed	1	3	15	25	26
	Official automation systems role in increasing suitable initiative selection speed	0	3	9	38	20
	Official automation systems role in increasing information access time for decision making	0	5	10	27	28
	Official automation systems role in decreasing the time of decision making meetings	9	8	12	19	22
Accuracy	Official automation systems role in providing accurate and transparent information for decision making	0	10	9	27	24
	Official automation systems role in accuracy of evaluating decision making initiatives in works	0	2	15	29	24
	Official automation systems role in accuracy of selecting managers decision making criteria	0	10	16	24	20
	Official mechanized automation systems role in reducing the quantity of irrelevant data for decision making	0	8	19	26	17
Validity	Official automation systems role in increasing agreeability of recorded data and …	0	0	8	34	28
	Official automation systems role in information validity for decision making	0	2	12	28	28
	Official automation systems role in accessing to existing databases for decision making	2	0	6	30	32
	Official automation systems role in decreasing decision making error	4	0	14	34	18
Timeliness	Official automation systems role in gaining timely and updated information for decision making	0	4	12	28	26
	Official automation systems role in required information access time in the emergencies	2	4	8	24	32
	Official automation systems role in accessibility of the required information in desirable place	0	0	8	26	36
	Official automation systems role in timely evaluation of initiatives in decision making	0	6	16	18	30
Cost-Effectiveness	Official automation systems role in eliminating parallel tasks in managers decision making	0	10	16	28	16
	Official automation systems role in shortening work steps in decision making	0	2	12	36	20
	Official automation systems role in decreasing economic costs from decision making error	2	2	20	22	24
	Official automation systems role in decreasing costs from data collection for decision making	2	4	6	29	29

Results

Testing the Main Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making quality is examined by 5 main components and 20 closed response questions and at interval level. It is inferred from Table 4 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making quality 75 is located on spectrum (20-100). On the other hand, it can be said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making quality is above average level for respondents. Skewness 0.45 also indicates that most individuals are scored higher than mean. As seen in Table 4, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making quality equal or above the average level.

Table 4: Descriptive Statistics of Employing Official Automation on Decision Making Quality

Mean: 75	Extension: -0.11
Standard deviation: 8.5	Variation range: 39
Variance: 73.23	Min: 54
Skewness: 0.45	Max: 93

Testing the First Secondary Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making speed is examined by 4 closed response questions and at interval level. It is inferred from Table 5 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making speed 15.8 is located on spectrum (4-20). On the other hand, it can be said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making speed is above average level for respondents. Skewness 0.08 also indicates that most individuals are scored higher than mean.

As seen in Table 5, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making speed equal or above the average level.

Table 5: Descriptive Statistics of Employing Official Automation on Decision Making Speed

Mean: 15.8	Extension: -0.7
Standard deviation: 2.22	Variation range: 9
Variance: 4.9	Min: 11
Skewness: 0.08	Max: 20

Testing the Second Secondary Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making accuracy is examined by 4 closed response questions and at interval level. It is inferred from Table 6 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making accuracy 15.47 is located on spectrum (4-20). On the other hand, it can be

said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making accuracy is above average level for respondents. Skewness 0.21 also indicates that most individuals are scored higher than mean. As seen in Table 6, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making accuracy equal or above the average level.

Table 6: Descriptive Statistics of Employing Official Automation on Decision Making Accuracy

Mean: 15.47	Extension: -0.25
Standard deviation: 2.5	Variation range: 10
Variance: 6.27	Min: 10
Skewness: 0.21	Max: 20

Testing Third Secondary Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making validity is examined by 4 closed response questions and at interval level. It is inferred from Table 7 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making validity 16.63 is located on spectrum (4-20). On the other hand, it can be said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making validity is above average level for respondents. Skewness 0.38 also indicates that most individuals are scored higher than mean. As seen in Table 7, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making validity equal or above the average level.

Table 7: Descriptive Statistics of Employing Official Automation on Decision Making Validity

Mean: 16.63	Extension: -0.81
Standard deviation: 2.18	Variation range: 8
Variance: 4.75	Min: 12
Skewness: 0.38	Max: 20

Testing Forth Secondary Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making timeliness is examined by 4 closed response questions and at interval level. It is inferred from Table 8 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making timeliness 16.66 is located on spectrum (4-20). On the other hand, it can be said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making timeliness is above average level for respondents. Skewness 0.71 also indicates that most individuals are scored higher than mean. As seen in Table 8, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making timeliness equal or above the average level.

Table 8: Descriptive Statistics of Employing Official Automation on Decision Making Timeliness

Mean: 16.66	Extension: -0.77
Standard deviation: 2.21	Variation range: 10
Variance: 4.92	Min: 10
Skewness: 0.71	Max: 20

Testing Fifth Secondary Hypothesis:

The extent of employing official mechanized systems (official automation) effect on increasing Eastern Azerbaijan Social Services Organization mangers decision making cost-effectiveness is examined by 4 closed response questions and at interval level. It is inferred from Table 9 results that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making cost-effectiveness 15.81 is located on spectrum (4-20). On the other hand, it can be said that the extent of employing official mechanized systems (official automation) effect on increasing mangers decision making cost-effectiveness is above average level for respondents. Skewness 0.79 also indicates that most individuals are scored higher than mean. As seen in Table 9, the above hypothesis is confirmed, that is – in respondents' view - employing official mechanized systems (official automation) results in increasing Eastern Azerbaijan Social Services Organization mangers decision making cost-effectiveness equal or above the average level.

Table 9: Descriptive Statistics of Employing Official Automation on Decision Making Cost-Effectiveness

Mean: 15.81	Extension: 0.11
Standard deviation: 2.6	Variation range: 13
Variance: 6.76	Min: 7
Skewness: 0.79	Max: 20

Discussion and Conclusion

Today, official systems are global systems aimed at establishing communications and improving information. The communication is remarkably significant regarding commercial information and managers' decision making quality. And, organizations can sustain only if they are equipped with IT Age competitive tools (i.e. information and IT systems). Positive effects of automation systems are not the matter of controversy but it is the result itself that matters. According to the results, the extent of employing official mechanized systems (official automation) effect on increasing the mangers decision making quality is higher than average, namely, the further the extent of employing official mechanized systems (official automation), the higher the mangers' decision making quality. Results from Eastern Azerbaijan Social Services Organization managers' decision making timeliness and validity correspond with Cai (2004) results. Also, results from Eastern Azerbaijan Social Services Organization managers' decision making validity correspond with study of Ozgen and Turan (2007) and from speed increase and costs decrease as well as cost-effectiveness of managers' decision making with Cai (2004). In addition, results of managers' decision making accuracy go together with the findings of Galster (2003), Huerta et. al (2010), Ajai and Fadkhami (2007) and Ozgen, and Turan (2007). Regarding the mean for each of the managerial decision making variables from hypothesis testing procedure, the extent of employing official mechanized systems (official automation) effect on increasing the mangers decision making quality in following respect:

1. Eastern Azerbaijan Social Services Organization managers decision making timeliness
2. Eastern Azerbaijan Social Services Organization managers decision making validity
3. Eastern Azerbaijan Social Services Organization managers decision making cost-effectiveness
4. Eastern Azerbaijan Social Services Organization managers decision making speed
5. Eastern Azerbaijan Social Services Organization managers decision making accuracy

Based on the results from this empirical study and previous respective studies as well as theories, it can be said that: using official mechanized systems (official automation) is effective in increasing Eastern Azerbaijan Social Services Organization managers decision making quality and will accelerate the administration process of official mechanized systems in different dimensions of Eastern Azerbaijan Social Services Organization managers decision making including speed, accuracy, validity, timeliness and cost-effectiveness.

References

Ajayi, I.A. and F.F. Omirin, 2007. The use of Management Information Systems (MIS) in decision making in the South-West Nigerian Universities. *Educational Research and Review*, 2 (5): 109-116.

Berg, M. (2004). Health Information Management. 1th Edition, London, Routledge Press.

Cai, L. (2004). Estimation and Exploration Automation of System Level Design. Dissertation, University of California. Retrieved from http://www.citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.129.8596&rep=rep1&type=pdf.

Galster, S. (2003). An examination of complex human-machine system performance under multiple levels and stages of automation. Doctoral Dissertation, Catholic University. Retrieved from http://www.dtic.mil/docs/citations/ADA420328.

Garvin, D.A., & Roberto, M.A. (2001). What you don't know about making decision. *Harvard Business Review,* 79 (8): 108-16.

Huerta, E., Glandon, T., and Petrides, Y. (2010). Fraud prevention software and its impact on decision making. Working Paper, Center for Business and Accounting Information Systems Autonomous Technological Institute of Mexico.

Kraft, D. H. (1991). Operations Research for Libraries and Information Agencies: Techniques for the Evaluation of Management Decision Alternatives. Emerald Group Publishing Limited.

Marler, J. H., Liang, X., & Dulebohn, J .H. (2006). Training and effective employee information technology use. *Journal of Management*, 32: 721-743.

Miller, C.A. (2012). Frameworks for Supervisory Control: Characterizing Relationships with Uninhabited Vehicles. *Journal of Human-Robot Interaction*, 1 (2): 183-201.

Ozgen, F.B., & Turan, A.H., (2007). Usage and Adoption of Online Tax Filing and Payment System in Tax Management: An Empirical Assessment with Technology Acceptance (TAM) Model in Turkey. *9th International Scientific Conference, Management Horizons: Visions and Challenges,* Vytautas Magnus University, 27 - 28 September 2007, Kaunas-Lithuania, pp: 215-233.

Parasuraman, R., and Riley, V. (1997). Humans and Automation: Use, Misuse, Disuse, Abuse. *Human Factors*, 39 (2): 230-253.