The Study of the level of the Managers' Information Literacy based on ACRL Standard and its Relationship with Decision Assessment in Governmental Organizations of Kerman

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ABSTRACT

This study investigated the level of the managers' information literacy based on ACRL Standard and its relationship with decision assessment in governmental organizations of Kerman in 2011. Out of the subjects of this study who were the managers, assistants and the supervisors of the governmental organizations of Kerman, 182 were selected randomly and then they were asked to answer the questionnaires. After analysing the data using CHI 2, Kendall & Spearman Rank Correlation, the following results were obtained. There is a significant correlation between the managers' information literacy as well as their informational needs with their decision assessment. The result of the analyses also revealed that there is a significant correlation between the locating of the managers' information as well as the assessment of these managers' information with decision assessment. This study also showed that there is a significant correlation between the effective use of the managers' information with decision assessment. Based on the results, the mangers' information literacy is also satisfactory.

KEYWORDS: information literacy, decision assessment, ACRL Standard, managers' information literacy, governmental organizations.

1. INTRODUCTION

Nowadays, the man is experiencing the evolutions more than the previous generations during his life. So, information literacy in those countries which follow information society programs is considered as an essentiality. On the other hand, information is the base of decision-making and decision-making is the most important duty of the managers in a way that decision-making and management are sometimes used interchangeably. Proper training of how to seek information is one of the informational needs of the new era. Lack of informational ability may lead to loss of funds and may extend the gap between individuals and communities. Collecting informational resources and the possibility of accessing to them is not enough for filling this gap. It is more important that every member of the society especially those who play a vital role in the development of it be trained to know what information is, what its value in the development is, how it can be obtained and applied effectively [1]. From now on, the difficulties of the managers' responsibilities are not performing the programs and plans but also determining the goals, making decision and knowing how to direct the organizations. The managers would have a lot of information and communications and they would be concerned more about selecting them. A manager as

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a decision-maker who uses the information should be able to analyze and recognize the right one among a lot of information [2].

1.1. Purposes of the Study

1. Investigating correlation between managers' information literacy and decision assessment in governmental organizations of Kerman.

2. Investigating managers' information literacy in governmental organizations of Kerman based on ACRL Standard.

3. Investigating the degree of identification of information needs of managers in governmental organizations of Kerman and its correlation with decision assessment.

4. Investigating the degree of locating information by the managers in governmental organizations of Kerman and its correlation with decision-making assessment.

5. Investigating the degree of assessment of managers' information in governmental organizations of Kerman and its correlation with decision assessment.

6. Investigating the degree of effective usage of managers' information in governmental organization of Kerman and its correlation with decision-making assessment.

2.Information Literacy in Organizations

Information literacy has been defined as follows: a collection of abilities and capabilities to determine when information is required and when it is not, and the ability to locate, assess and use needed information efficiently. In 21st century which is called information era citizens who enjoy information literacy are held as the basis of a society that has established social equity and possess the potential of economic growth and the people need information capabilities to run their business and personal and entertainment affairs. Present and future working environments need human workforces who have novel skills. In a global market data are transferred with the speed of 1 gigabyte in a second and have to saved, assessed and utilized. Under such circumstances majority of the employees tend to get access to the most available qualitative information [3]. Process of gaining knowledge and the way of viewing information and relating skills are the most important factors in an information society . Information literacy should be highlighted as a critical part of any organization and be considered vital like staff of the organizations. Three groups of people who might be interested in obtaining experiences related to information literacy in working environments include: 1. Managers who are interested in professionalization of their human workforce to adapt to the changes and developments. 2. Information managers who are interested in instructing their clients to make their organization's information services more functional. 3. Trainers and instructors who are willing to prepare learners for choosing their professions .

All types of information literacy in organizations are divided into three general categories:

1. Management information literacy which is includes skills that managers need to have for identifying, gaining, assessing and using needed information to make decisions.

2.Organizational information literacy which includes skills that employees of an organization need to fulfill their daily tasks and get aware of the process of optimal execution of workers and coordinate themselves with intra systemic and extra systemic developments and use innovations and initiatives and share specialized knowledge and learn from others in order to achieve organizational purposes effectively.

3. Specialized information literacy which includes skills that library and information transmission experts need. These experts deal with information and have to get familiar with the process of production and distribution and usage of information and learn how to gain information and collect and organize and analyze and retrieve information in their organizations and help their colleagues in this respect. Communication skills which enable one to establish relationships with others and consolidate them to gain access to information and analyze and use it creatively for removing their needs.

3.ACRL Standard
This set of standard has been issued by American College and Research Libraries (ACRL) in 2000 and contains guide line on conducting learning programs of information literacy and provides a conceptual framework for assessing the degree of information literacy or related programs and is usable for any community and class with minimum change [6]. This source offers a framework for planning and assessing information literacy capabilities and includes five standards and twenty two performance indexes.

3.1.The Situation of Information Literacy in Iran
On the one hand need for information has increased in our country intentionally or unintentionally. On the other hand all countries are competing with global giants in fields of economy and culture, etc. because of increasing globalization [4]. Some administrative and managerial obstacles which restrict obtaining information literacy in Iran include:
-Lack of scientific stance among managers to produce and retrieve and analyze information as an important element of defining information literacy
-Lack of proper policies to create necessary incentives among managers to conduct researches related to their activities and creating the same situation for other employees
-Lack of consistency in regulating and reflecting the news related to information literacy and managerial decision-making and results of negotiations in sessions and councils, etc.
-Non-allocation of sufficient budgets for equipping libraries and other information centers with necessary supplies and workforce for developing information and technology literacy such as specialized librarians and suitable information sources, computers, etc.

4.Decision-making
The term "decision" is mostly defined in various ways, which indicate the situation of making decisions. Decision-making is a process or a series of activities carried out by one person or a group for identifying a solution for a problem or a probable one [5]. The most important role played by a manager is making decisions about their administrative, financial or political tasks [6]. Knowledge of management which is reflected through a series of theories related to recognizing institutions, planning, organizing, equipping human workforce, incentives and leadership and control, etc. is actually utilized in decision-making [7]. A manager has to go through six stages of decision-making as follows:
1. Identifying the problem
2. Stabilizing the aim (defining the problem)
3. Getting access to the secondary solutions (various)
4. Choosing one of the secondary solutions
5. Executing the decision
6. Assessing the effects of executed decisions
Decisions are basically divided into two groups: 1. Planned decisions: If we are dealing with repetitious affairs whose elements are capable of being analyzed, predicted and defined then decision-making could be planned. Exact analysis and identification of the elements of the issues help planned decision-makings. However, using planned decisions restricts managers' latitude because minor decision-making systems will decide instead of managers. On the other hand, using planned decisions makes managers freer to focus on more important issues [8]. 2. Unplanned decisions: These decisions are not placed in the framework of policies and principles and methods. Such decisions are usually made in exceptional circumstances such as emerging problems and are based on managers' flair and judgment [9]. If a problem is not repeated several times to draw up a special policy for that then we should make unplanned decisions and solve that problem in an appropriate way [8].

4.1.Significance of Information in Decision-making
Information is as the fuel for organizations to move forward and one of the main aims of any manager is to change information into action in the process of decision-making. When an organization is looked at as

a system of "information-decision", the importance of information provision for making effective decisions is proved [9]. Since information is considered as the basis of decision-making, a part of organizational structure which regulates flow of information gains more attention. A decision which is based on 90% of information and 10% intuitive judgment is held a reasonable one. One can reinforce their authority in an organization by collecting exclusive and proper information and applying consistent realities seriously [10].

4.2.Assessment of Decisions

An important point in choosing and assessing solutions is that any decision has positive and negative and also direct and indirect side effects that should be taken into account in assessment stage [7]. Any manager should create and collect agreeable options and then assess them with respect to their function and effectiveness. Any option should be assessed according to organizational aims and sources because an agreeable option might not be enforceable. In addition, all options should be assessed with respect to their side effects in an organization. Following factors should be taken into account while enforcing any option:

1. Considering level of employees' interest or reluctance to enforce plans
2. Studying side effects of enforcing options and comparing it with repercussion of not enforcing them
3. Considering practical problems arising from enforcing any option [8].

Any logical decision-maker should be able to assess probable side effects of any option based on recognized criteria [11]. A fundamental assessment includes a cost-benefit analysis which means comparing costs of a solution with its expected benefits. Benefits of a chosen solution should be more than its costs. Another point relates to time which means the speed of obtaining reasonable results and degree of consistency between solutions and ethical criteria of beneficiaries [4]. If other managers or subordinates reject decisions, it may undermine any manager's ability to make and enforce any decision [12]. Any manager should have necessary courage and creativity and preparedness to make any decision and also enjoy others' support. One of the main problems of enforcing decisions is lack of participation which relates to any decision-maker's negligence to involve people whose support for full administration of decisions is very significant. Managers who take advantage of others' participation involve useful people in problem-solving from the outset wisely. In such contexts decisions are administered with high speed and others' satisfaction and without any specific problem.

5.Review of Literature

Tabandeh [3] in a research titled as "Investigating the Effect of Positive Performance on Improving the Quality of Information Literacy and Application of Comprehensive System of Quality Management" deals with investigating the effect of positive factors on improving the quality of information literacy and application of comprehensive system of quality management. Obtained results showed that making changes for improving the quality of information literacy and skills is feasible under the auspices of managers and any effort to make developments without establishing systemic thinking would fail and it is up to managers to accomplish this purpose. Surveying customers and delivering the results to managers to provide needed material and sources is very vital for improving information literacy and skills [13].

Julahi Sarvi [14] in another research titled as "Investigating the Level of Information Literacy of Managers of Tehran Private Hospitals" has employed survey-analysis technique to investigate the level of managers' familiarity with search tools and sources for retrieving information. Such data have been gathered through questionnaires and attendance in private hospitals of Tehran. The results of this research indicate that lack of computer and software skills and mastery over English texts and familiarity with search tools is one of the most important obstacles to get access to information sources. These findings totally indicate that level of information literacy among managers of Tehran private hospitals is not satisfactory [15].

Costantino [2] in his thesis titled as "Investigating the Degree of Beneficiaries' Understanding of the Importance of Information Literacy Capabilities and Establishing Awareness of Information Literacy Skills among them in BA" has used questionnaires and interviews to gather data. Results obtained from 141 BA students and 24 members of the university faculty indicated that students' first choice for conducting a research was internet and there was no formal plan to teach information literacy skills to students and members of the university faculty who had much effect of students' choice of references. But due to lack of access to this thesis the effect of members of the university faculty remains unknown.

Perrine et al. [5] in a research titled as " Students of Nursing's Information Literacy before and after Education" presented in Fifth International Conference of Australia have investigated the effect of teaching skills of searching information to students. As it is pointed out in this article Southern Quizland University of Australia acknowledges putting programs of teaching information literacy in nursing syllabus as a necessity to improve these students' knowledge. They surveyed freshmen students of nursing and used questionnaires and data analysis and finally came to this conclusion that utilizing such programs would be very useful.

6.Theoretical Framework

In this study information literacy variable has been considered as the predictor variable. Information literacy has four aspects according to the definition presented in National Conference of Information Literacy:

1. Identifying information needs: It includes defining information and information needs and recognizing subject area of application and prioritizing information needs.

2. Locating information: It includes locating needed information sources and approaches of using information sources and search strategies (computer literacy).

3. Assessing information: It includes analyzing search results and prioritizing them.

4. Using information effectively: It includes operational zing information and measuring the level of the effects of information [16].

Considering the important role played by information literacy in managers' decision-making, the criteria or aim variable in this study is assessment of decision done by managers. It should be highlighted that variable of decision assessment is investigated through its two aspects (palpable quality of decision and acknowledgment of decision by administrators) based on Norman Mayers' theory.

1. Palpable quality of decision: It is determined by response to this question, "To what extent logical process of decision-making has been used to make this decision?"

2. Acknowledgment of decision by administrators: A manager while considering the situation and assessing optional solutions should take into account administrators' reaction since administering a decision requires their support.

7.Research Hypotheses

7.1.Main hypothesis:

There is a correlation between level of managers' information literacy based on ACRL Standard and assessing decisions in governmental organizations of Kerman.

7.2.Peripheral hypotheses:

1. There is a correlation between identifying managers' information needs and assessing decisions in governmental organizations of Kerman.

2. There is a correlation between locating managers' information and assessing decisions in governmental organizations of Kerman.

3. There is a correlation between assessing managers' information and assessing decisions in governmental organizations of Kerman.

4. There is a correlation between using managers' information effectively and assessing decisions in governmental organizations of Kerman.

8.Research Method, Subjects, Sampling Method & Sample Size

This study is operational and is descriptive in its approach to gathering information (correlational). Surveys and libraries have been used to gather information for conducting it. The subjects here include managers and assistants of 12 governmental organizations of Kerman who are indeed 344 persons according to obtained information. For sampling an accidental approach has been used and the size of the sample is 182 persons based on Kokeran formula.

8.1.Instrument for Collecting Information

8.1.1.Managers' Information Literacy Questionnaire

This questionnaire has been provided based on ACRL Standard and evaluates the level of managers' information literacy. It contains 35 questions which cover four main aspects of information literacy. The measurement scale is Lakert which is reflected by five options (very much, much, average, low and very low) and possesses values 1 to 5 respectively

8.1.2.Managers' Decision Assessment Questionnaire

This questionnaire includes 20 questions which cover the aspects of decision assessment based on Norman Mayer's theory. Measurement scale in this questionnaire is Lakert scale which is reflected by five options (always, often, occasionally, rarely, never) and possesses values 1 to 5 respectively.

8.2.Validity and Reliability

For determining the validity of the questionnaire of information literacy and the questionnaire of decision assessment the approach of content validity and counting sigma has been used. Four professors of Management Department of Islamic Azad University and Shahid Bahonar University of Kerman filled the questionnaires and estimations revealed the validity of the questionnaire related to information literacy at 0.96% and the validity of the questionnaire related to the assessment of decision at 0.95%. For measuring the level of the reliability of both questionnaires Bach's Alpha Crown approach has been used which has shown the reliability of the questionnaire related to information literacy at 0.98% and the reliability of the questionnaire related to the assessment of decision at 0.96%.

8.3.Data Analysis

Needed data were gathered through 182 questionnaires and a description of demographic indexes and hypotheses was provided. The data were analyzed with an SPSS software and CHI 2, Kendall and Spearman rank correlation.

8.4.Variables and Elements

8.4.1.Information Literacy Variable

To explain the variables of the information literacy its grades were divided to five categories (great, many, average, few and very few). Out of 182managers who answered the questions, 11 (6.04%) had few abilities, 65 (35.71%) had average abilities, 94 (51.65%) had many abilities and 12 (6.59%) had great abilities.

8.4.2.The Managers' Information Needs Variable

Out 182 managers who answered the questions, 5 (2.75%) had few abilities to determine information needs, 38 (20.88%) had average abilities, 99 (49.45%) had many abilities and 49 (26.92%) had great abilities in this respect.

8.4.3.Managers' Information Locating Variable

Out of 182 managers who answered the questions, 11 (6.04%) had few abilities to locate information, 28 (17.58%) had average abilities, 78 (42.86%) had many abilities and 61 (33.52%) had great abilities in this regard.

8.4.4Managers' Information Assessment Variable

Out of 182 managers who answered the questions, 25 (13.74%) had few abilities to assess information, 42 (23.08%) had average abilities, 79 (43.41%) had many abilities and 36 (19.78%) had great abilities in this respect.

8.4.5.Effective Use of Managers' Information Variable

Out of 182 managers who answered the questions, 5 (2.75%) had few abilities to use the information effectively, 57 (31.32%) had average abilities, 76 (41.76%) had many abilities and 44 (24.18%) had great abilities in this regard.

8.4.6.Decision Assessment Variable

Out of 182 managers who answered the questions, 15 (8.24%) never paid attention to the assessment of decision, 33 (18.13%) rarely, 46 (25.27%) occasionally, 42 (23.08%) often and 46 (25.27) always did this respectively.

8.4.7.Palpable Quality of Decision Variable

Out of 182 managers who answered the questions, 10 (5.49%) occasionally paid attention to the palpable quality of decision, 79 (43.41%) often and 93 (51.10%) always did this respectively.

8.4.8.Administrators' Acknowledgment of Decision Variable

Out of 182 managers who answered the questions, 11 (6.04%) rarely paid attention to the acknowledgment of decision by administrators, 24 (13.19%) occasionally, 52 (28.57%) often and 95 (52.20%) always did this respectively.

8.5.Investigating Research Hypotheses

8.5.1. Main Hypothesis:

There is an interdependence between managers' information literacy and assessment of decision.

H0:

There is no interdependence between managers' information literacy and assessment of decision.

H1:

There is an interdependence between managers' information literacy and assessment of decision.

Kendall and Spearman rank correlation became significant among all elements of information literacy and assessment of decision. So, it is very important to find a correlation coefficient between information literacy and assessment of decision as two general variables. Measurement of Kendall and Spearman correlation coefficient revealed that these two variables were respectively 0.492 and 0.672 and their significance was 0.000. Therefore zero theory which presumes that there is no interdependence between two above-mentioned variables at significant level of 0.05, is rejected. It could be concluded that there is a direct interdependence between these variables, which means that improving managers' information literacy can lead to improving decision assessment.

First Peripheral Hypothesis:

There is an interdependence between determining of managers' information needs and assessment of decision.

CHI2 Test

H0:

There is no interdependence between managers' information needs and assessment of decision.

H1:

There is an interdependence between managers' information needs and assessment of decision.

In analyzing the statistical results of CHI2 and its significance it was measured that these were 32.664 and 0.000 with freedom grade of 4, therefore H0 is rejected at the significant level of 0.05 which means that there is an interdependence between managers' information needs and assessment of decision.

Interdependence Test

H0:

There is no interdependence between managers' information needs and assessment of decision.

H1:

There is an interdependence between managers' information needs and assessment of decision.

Kendall and Spearman interdependence coefficient between two above-mentioned variables was 0.389 and 0.424 respectively and significance rate of both was 0.000, therefore zero theory which means no interdependence between these two variables at significance level of 0.05, is rejected. It could be concluded that there is a direct interdependence between these variables, which means that increasing determining of managers' information needs leads to increasing assessment of decision.

8.5.2. Second Peripheral Hypothesis:
There is an interdependence between locating of the managers' information and assessment of decision.
CHI2 Test
H0:
There is no interdependence between locating of the managers' information and assessment of decision.
H1:
There is an interdependence between locating of the managers' information and assessment of decision.

In conducted analysis, the results of CHI2 and its significance were respectively 29.815 and 0.000 with freedom grade of 4, therefore H0 at significance level of 0.05 is rejected which means there is an interdependence between locating of the managers' information and assessment of decision.
Interdependence Test
H0:
There is no interdependence between locating of the managers' information and assessment of decision.
H1:
There is an interdependence between locating of the managers' information and assessment of decision.
Kendall and Spearman Interdependence Coefficient between these two above-mentioned variables was 0.375 and 0.406 respectively and significance of both was 0.000, therefore zero theory which means that there is no interdependence between these variables at significance level of 0.05 is rejected. It could be concluded that there is a direct interdependence between these variables which means that increasing the locating of the managers' information can lead to increasing assessment of decision.

8.5.3.Third Peripheral Hypothesis:
There is an interdependence between assessment of managers' information and assessment of decision.
CHI2 Test
H0:
There is no interdependence between assessment of managers' information and assessment of decision.
H1:
There is an interdependence between assessment of managers' information sources and assessment of decision.
In conducted analysis the results of CHI2 and its significance were 42.687 and 0.000 respectively with freedom grade of 4, therefore H0 at significance level of 0.05 is rejected which means that there is an interdependence between assessment of managers' information and assessment of decision.
Interdependence Test
H0:
There is no interdependence between assessment of managers' information and assessment of decision.
H1:
There is an interdependence between assessment of managers' information and assessment of decision.
Kendall and Spearman Interdependence Coefficient between two above-mentioned variables was 0.448 and 0.491 respectively and the significance of both was 0.000, therefore H0 which means that there is no interdependence between these variables at significance level of 0.05 is rejected. It could be concluded that there is a direct interdependence between these variables which means increasing assessment of managers' information can lead to increasing assessment of decision.

8.5.4.Four Peripheral Hypothesis:
There is an interdependence between effective use of managers' information and assessment of decision.
CHI2 Test
H0:
There is no interdependence between effective use of managers' information and assessment of decision.
H1:
There is an interdependence between effective use of managers' information and assessment of decision.
In the conducted analysis the statistical results of CHI2 and its significance were 42.687 and 0.000 respectively with freedom grade of 4, therefore H0 at significance level of 0.05 is rejected which means that there is an interdependence between effective use of managers' information and assessment of decision.
Interdependence Test
H0:
There is no interdependence between effective use of managers' information and assessment of decision.
H1:
There is an interdependence between effective use of managers' information and assessment of decision.
Kendall and Spearman Interdependence Coefficient between these above-mentioned variables was 0.448 and 0.491 respectively and the significance of both was 0.000 with freedom grade of 4, therefore H0 which means that there is no interdependence between these variables at significance level of 0.05 is rejected. It could be concluded that there is a direct interdependence between these variables which means that increasing effective use of managers' information can lead to increasing assessment of decision.

Investigating Managers' information Literacy in Governmental Organizations of Kerman
This study indicated that the level of managers' information literacy in governmental organizations is satisfactory and 93.95% of them have an intermediate or upper-intermediate level of information literacy.

9.Conclusion
    Due to the importance of information literacy for learning at novel environment of information and technology, it is very crucial to equip Iranian managers with information literacy which could have positive effects on management and administration. In addition, structures of information are getting more complex and people need to increase their skills in businesses, so all people should acquire necessary skills to survive. Discussions and skills related to information literacy have been presented in various places in Iran but there has been no clear investigation of information literacy situation and no prior planning. Our senior managers have set up a 20-year panorama whose major directions and aims include: turning our country into the greatest power in Middle East and establishing strong and fair ties with all countries of the world. In order to achieve such purposes, it is very vital to have a look at global trends and conduct researches about future and study other countries' panoramas. Most developed and developing countries are trying to become knowledge-based and create learning environments (and also become economy-based). Previous researches clearly state that rapid global changes and fast development of different sciences and technologies and globalization and changing economic condition (intensification of competitions) have all required us to move towards social structures and knowledge-based economies.

    All manages are expected to get to high levels of information literacy according to National Development Documents and such high expectations are in accordance with managers' grades in this respect. However, comparing the situation of information literacy in Iran with that of other counties does not affirm this positive response and in reality Iran does not possess a satisfactory position in respect of true indexes of movement towards a scientific society in conjunction with an information society. Here some indexes will be presented to be compare with those of other countries in order to make this claim more tangible.

Azad et al. [17] in a research ranked Iran 29 among 50 countries in terms of Gross Domestic Product based on statistics of the year 1996. Jordan, Afghanistan and Pakistan ranked 30, 32 and 38 respectively. This research also studied the number of articles delivered to three information banks (Eric, Agris and Medline) up to the year 2002 and ranked Jordan 23, Iran 37, Pakistan 38 and Afghanistan 43 among 50 countries in terms of information production. Ensafi and Gharibi [18] in another source compare 10 developing countries (Pakistan, Turkey, China, Iraq, Saudi Arabia, South Korea, Kuwait, Egypt, India and Iran) with 6 developed countries (USA, UK, France, Germany, Canada and Japan) and investigate the situation of scientific production annually. According to the latest results of this source (whose data are obtained through American Information Science Institute) Iran ranked 13 in the years 1999 and 2000 and 12 in the years 2001 and 2002 and 11 in the years 2003 and 2004 (with average ranking of 12 in the years 1999 to 2004) [19].

Managers have acquired good grades for information literacy, but it should be pointed out that these grades have been obtained through questionnaires which have been filled voluntarily and Iran has not taken sufficient steps to improve information literacy in comparison with other developed countries. If one searches the simple phrase "information literacy" in Persian websites of universities, few pages may appear. In the meanwhile managers have not experienced formal education and planning courses and have attained their information literacy skills through informal channels.

This present study was conducted because of the lack of such initiatives related to information literacy in Iran. According to National Development Documents a great number of managers and specialists who have the potential to create necessary knowledge and values are needed to fulfill such goals. Managers and specialists should be equipped with information literacy skills and capabilities. Undoubtedly paying serious attention to the development of information literacy at major levels and providing essential facilities and equipment can move Iran towards an information society and create big changes in education and research systems and information transmission structures, and finally this culminates in a spectacular increases of knowledge production and fills the scientific gap between Iran and developed countries.

10.Suggestions

1. Determining information needs and investigating finished and unfinished programs and plans can help identify managers' real information needs and remove them.

2. Holding seminars and lectures in organizations to raise awareness of various innovations relating to information sources and information literacy.

3. Providing handbook and brochures and encouraging managers to use them.

4. Planning educational courses on information literacy for managers at different levels to optimize the use of information sources to produce knowledge.

5. Reinforcing specialized human workforce and using agencies and educational institutions to instruct prospective workforce.

6. Reinforcing managers' knowledge and skills by means of educational courses administered by professional groups and associations and conferring bonuses for admission.

7. Using other means of evaluation of users' information literacy other than voluntary filling of questionnaires since such methods do not reflect the actual situation, and this is due to the nature of information literacy which is held as a skill and not a kind of knowledge and awareness.

10.1.Further Suggestions

1. Investigating the effects of managers' information literacy on knowledge production.

2. Investigating plans of Education Ministry and Science Ministry for developing information literacy.

3. Predicting the system of assessment of the effects of continuous educational activities on performance of organizations and its reciprocal effect on managers' information literacy.

4. Conducting similar researches for assessment of information literacy of managers of other organizations.

5. Investigating the effects of managers and other staff's information literacy on creativity, innovation, inventions and discoveries.

6. Investigating the administration of educational courses for improving managers' information literacy and its effect on decision-making.

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