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Information-seeking behaviour of Iranian extension managers and specialists

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Abstract

Introduction. We report an investigation designed to explore the information-seeking behaviour of extension managers and specialists in Iran, and to identify the factors that correlate with this behaviour.
Method. A questionnaire was developed to explore information-seeking behaviour of extension managers and specialists. The questionnaire was distributed to thirty-eight public extension managers and 175 public extension specialists who work for Deputy of Extension and Farming System of Iran's Ministry of Agriculture.
Analysis. Data collected were analyzed using the statistical package for the social sciences (SPSS). Appropriate statistical procedures for description (frequencies, percent, means, and standard deviations) were used.
Results. The main motivation for seeking job-related information by both public extension managers and specialists was interest in developing their own job-related information. The top three mostly used information sources by extension managers and specialists were *Persian books*, *Persian scientific magazines*, and *scientific-technical reports*. Concerning communication channels, *interpersonal communication with colleagues*, in-service training courses and *scientific-technical conventions* were ranked respectively as the three top communication channels used by respondents. There was a negative correlation between managers' years of extension work and their information-seeking behaviour. For specialists, a significant positive correlation was found between years of education, level of job satisfaction and information-seeking behaviour.
Conclusion. Providing valuable information sources, and removing information seeking barriers, can improve information-seeking behaviour of extension specialists and managers.

Introduction

Using information is a key issue in the information age. The real challenge of our time is not producing information or storing information, but getting people to use information. Information is a critical resource in the operation and management of organizations. Timely availability of relevant information is vital for effective performance of managerial functions such as planning, organizing, leading, and controlling (Babu, *et al.* 1997). A well-established and well-designed information system to facilitate decision making in various agricultural development projects is critical to the success of any organization. To be successful, any project requires efficient management of human and material resources. This cannot be done unless accurate, timely, and relevant information is available to decision makers (Waheed Khan 1990). In extension organization, like other organizations, information has its own importance to the individuals who are working in managerial or any other positions in the organization to make right decisions. Furthermore, because communicating information and knowledge from information resources or

developers to extension clientele is an integral part of the extension process (Blackburn and Flaherty 1994), the flow of information in extension organizations is of more importance than in organizations that are not responsible for providing their clients with useful information. In the information age, extension has a major role in pointing the way to increasing the use of knowledge and information through its people orientation. As Buford (1990) points out, agricultural extension depends to a large extent on information exchange between and among farmers on the one hand, and a broad range of other actors on the other hand. Extension, along with education and research is typically seen as a service, public or private, that responds to the needs of farmers and rural people for knowledge that they can use to improve their productivity, incomes and welfare and to manage the natural resources, on which they depend, in a sustainable way. It brings information and new technologies to farming communities, allowing them to improve their production, incomes and standards of living. Considering this situation, extension has little choice but to become information-based.

Information behaviour is a broad term encompassing the ways individuals articulate their information needs, seek, evaluate, select, and use information. In other words, information-seeking behaviour is purposive in nature and is a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with people, manual information systems, or with computer-oriented information systems (Wilson 2000). According to Pettigrew (1996), information-seeking behaviour involves personal reasons for seeking information, the kinds of information which are being sought, and the ways and sources with which needed information is being sought. Barriers that prevent individuals from seeking and getting information are also of great importance in understanding the information-seeking behaviour of individuals and organizations.

Information use is a behaviour that leads an individual to the use of information in order to meet his or her information needs. Information use is an indicator of information needs, but they are not identical (Meho and Hass 2001). As Line (1973) points out, individuals do not use all the information they need (partly because they are not always able to obtain what they need, partly because the materials may not be relevant when they obtain them, and partly because individuals sometimes do not know what they need). In addition, sometimes, individuals do not need all the information they intend to use.

Knowledge about the information-seeking behaviour and information use of individuals is crucial for effectively meeting their information needs. This knowledge may also lead to the discovery of novel information behaviour and user profiles that can be used to enhance existing information models or even develop new ones. Moreover, for librarians and other information professionals to be effective information providers, they require a fuller understanding of the information-seeking behaviour, needs, and uses of individuals. Wilson (1981) noted that the study of information-seeking behaviour can stand on its own as an area of applied research where the motive for investing is pragmatically related to system design and development. A different motivation is involved if we wish to understand why the information seeker behaves as he does. This is an area of basic research and, although the resulting knowledge may have practical applications, there is no necessity that it should. Therefore, what, when, and how information is gathered and used by extension managers and specialists is of critical importance to meet their information needs and, consequently, the needs of the clientele they serve (Radhakrishna and Thomson 1996).

It has been often accepted that information needs and information seeking processes depend on worker's tasks (Belkin *et al.* 1982; Ingwersen 1992; Mick *et al.* 1980). A complex task may require several of information seeking processes. If the needs are satisfied, the task (or one step through it) can be completed. If the needs can not be satisfied, the task can not be completed at all or it must be reformulated. If further information is still needed, new seeking actions are initiated. The process may be interrupted at any time if the worker sees no way to proceed (Byström and Järvelin 1995). For example, the work of managers is information-intensive and the environment in which it is done is very information-rich. Although the information-seeking behaviour of managers is in some ways the same as other people working in the organization, studies have shown that managers often prefer oral, face-to-face communication, quick resolution favouring access and speed to accuracy, not necessarily rational decision-making because of the instability, conflict, and uncertainty of situations. However, these situations are constrained and structured by managerial roles and activities, decision-making, and problem dimensions (Katzer and Fletche 1992).

According to Shin and Evans (1991), the main reason for seeking information by Illinois agriculture and horticulture Extension advisors was to answer client inquiries. In their study, they categorized information sources into three types: oral, written and electronic. Written-only sources accounted for the largest single share (45.9%), followed closely by written and oral combination (43%). Less than three percent used electronic information sources. Radhakrishna and Thomson (1996) found that extension agents regularly seek information to carry out their day-to-

day work. Extension agents frequently communicate with a variety of information sources. Prominent among these were: clients, another agent in the office, another agent in another county, extension specialists, their immediate supervisor, local news agencies, local business organizations, state, and federal agencies, and local school teachers and administrators. In exploring communication sources used by extension personnel in cotton and wheat technologies, Singh, *et al.* (2003) found that the most important source of acquisition of farm technology was state department of agriculture and the most important communication mode was staff specialists, while the least used mode was personal correspondence with researchers. According to Niedzwiedzka (2003), Polish health care managers obtained job-related information from various intermediaries. Turning to intermediaries (managers of a lower level, information officers, co-workers, etc.) was the most frequent and typical information behaviour of managers, while the personal use of information services (information centres, archives, libraries) or direct interaction with search systems (databases, Internet) was marginal and rare behaviour. An intermediary was the most important element in managers' information activity. Mohammadi (2002) investigated the factors influencing information-seeking behaviour of Extension workers in Zanjan Province, Iran. His research showed that there was a significant relationship between age, level of education, years of experience, and the worker's level of job-related information with information-seeking behaviour. The main reason for seeking information by extension workers was holding training courses, followed by solving daily problems of farmers and up-dating their information, respectively. According to Malek-Mohammadi (2000), Provincial Extension Specialists who were working for the Ministry of Jihad-e Sazandegi reported radio, TV, computer, seminars and training courses as their five most used information sources and channels. They indicated the lack of knowledgeable and skilled information personnel as the main problem of the information system of the Ministry of Jihad-e Sazandegi in Iran.

As Iran's Ministry of Jihad-e Agriculture addresses the goal of establishing an Agricultural Information Systems Network, exploring information-seeking behaviour of individuals who will be involved in this network, including extension managers and specialists, and determining several factors influencing their behaviour are of great importance. This article identifies the reasons why extension managers and specialists seek job-related information, the information sources and communication channels they use to get information and the barriers to seeking information.

Purpose and objectives

The major purpose of this study was to explore information-seeking behaviour of extension managers and specialists in Iran. Specific objectives of this study were to:

1. determine extension managers' and specialists' motivations for seeking and using job-related information;
2. identify information sources that extension managers and specialists used to get job-related information; and
3. identify communication channels that extension managers and specialists used to get job-related information; and
4. identify organization-related barriers that prevented extension managers and specialists from seeking and using information.

Methods and procedure

The descriptive research methodology was used in this study. The population consisted of thirty-eight public extension managers across the country, and 175 public extension specialists who work for Deputy of Extension and Farming System of Iran's Ministry of Agriculture in Tehran. The frame was obtained from Deputy of Extension and Farming System, Ministry of Jihad-e Agriculture. A questionnaire was developed to explore information-seeking behaviour of extension managers and specialists. The questionnaire covered four areas: demographic characteristics such as age, sex, marital status, and levels of education; reasons for seeking job-related Information (the extent of importance of six reasons for information seeking were measured on a five-point, Likert scale which ranged from 0 (not important) to 4 (extremely important)); the extent of use of sixteen selected information sources and eleven communication channels was measured on a five-point, Likert scale which ranged from 0 (never) to 4 (most frequently); and organization-related barriers for seeking job-related information (a multi choice question including six organization-related barriers). Face and content validity of the questionnaire was established using a panel of experts consisting of faculty in the Department of Agricultural and Extension Education at Tarbiat Modarres University, faculty in the Department of Information at Tehran University, and extension officers in the Ministry of Jihad-e Agriculture.

The questionnaire was field-tested in two provinces not included in the population. A pilot test was conducted to determine the questionnaire's reliability (Cronbach's alpha=0.83). After the initial mailing and two follow-ups (calling and sending another copy of the instrument), a total of 36 managers and 108 specialists responded, for a return of 95% and 62%, respectively. For specialists, the number of individuals who did not return the questionnaire was rather high and this could affect the results. For this reason, and since, as research has shown, late responders are often similar to non-responders (Miller and Smith 1983), early and late responders were compared on variables identified in the questionnaire as suggested by Lindner and Wingenbach (2002), to handle non-response error that threaten the external validity of the study. No significant differences were found between early and late respondents, and the data were generalized to the population.

Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS). Appropriate statistical procedures for description (frequencies, per cent, means, and standard deviations) were used.

Findings

Personal and socio-economic characteristics of respondents

The age of extension managers ranged from 32 to 47 years, and for extension specialists from 26 to 45 years. Extension managers were, on average, 40.67 years old and extension specialists 34.85 years old. Most of the managers (94.4%), and more than half of the specialists were male. The results showed that the majority of both managers (88.9%) and specialists (78.7%) were married. Only 2.8% of the specialists had high school education, 33.3% of the managers and 53.7% of the specialists had Bachelor of Science degrees, 44.4% of the managers and 20.9% of the specialists had Master's degrees and none of the managers and only one of the specialists had a Ph.D. degree. The number of years managers spent in education was on average 17.25, and for specialists it was 16.58. For both managers and specialists, years of experience in doing extension activities ranged from 1 to 24 years, but managers' experience was much higher (13.61 years) than extension specialists' experience (8.61 years).

Respondents' level of job satisfaction

Job satisfaction is a factor that can influence the information-seeking behaviour of individuals. In this research, managers' and specialists' job satisfaction was measured using a Likert-scale, including ten factors that affect job satisfaction. These factors were derived from several previous studies and were applied after a pilot-test and discussion with information and extension scientists. Table 1 shows the perception of the respondents' level of job satisfaction. As shown in Table 1, managers were very satisfied with the social position of their job, and specialists were very satisfied with their friendly relationship with co-workers. Both groups were rather unsatisfied with the salary paid for the work they did.

Factor	Job position							
	Manager				Specialist			
	N	Mean	SD.	Rank	N	Mean	SD.	Rank
Social position of job	34	2.44	0.70	1	100	2.07	0.79	4
Level of job security	34	2.44	0.85	2	101	1.68	1.13	5
Opportunity to applying personal abilities	34	2.38	0.81	3	101	2.16	1.20	2
Friendly relationship among co-workers	34	2.32	1.12	4	101	2.21	1.09	1
Time flexibility for doing tasks	34	2.31	0.64	5	99	2.12	1.16	3
Level of authority for doing tasks	34	2.26	0.79	6	101	1.65	1.18	7
Managerial method in organization	34	2.17	0.79	7	100	1.64	1.02	6
Rate of promotion	34	1.88	1.06	8	101	1.34	1.02	8
Basis for promotion	34	1.47	0.99	9	101	1.26	1.04	9
Salary in terms of work done by personnel	34	1	0.92	10	101	1.08	0.96	10

Note: Scale: 1) None; 2) Little; 3) Somewhat; 4) Much; 5) Very much

Table 1: Respondents' level of job satisfaction.

Motivations for seeking job-related information

Motivations for seeking job-related information is one of the components of information-seeking behaviour, and influence other concepts of this behaviour. Some motivations, which had been mostly investigated in previous studies, were selected and six were used in the questionnaire. The respondents were asked to indicate the extent of importance that each motivation had to them for seeking job-related information.

Table 2 provides ranking of different information seeking motivations based on their relative importance as perceived by the respondents. *Interest in developing job-related information* was the most important motivation for seeking information by both extension managers and specialists with mean scores of 3.47 and 3.27, respectively. *To update specialized information to improve organizational tasks* was the second most important motivation for seeking information by managers (mean=3.41), and for extension specialists it was *To do job tasks* (mean=2.98). Both groups ranked *competition against co-workers* as the least important motivation for seeking information.

Motivation	Job position							
	Manager				Specialist			
	N	Mean	SD.	Rank	N	Mean	SD.	Rank
Interest in developing job-related information	36	3.47	0.50	1	108	3.27	0.62	1
To update specialized information for doing tasks better	36	3.41	0.73	2	108	2.96	0.87	3
To do job tasks	36	3.02	1.05	3	106	2.98	0.94	2
To publish written materials for increasing job security	36	2.44	0.90	4	105	2.72	1.10	4
To publish written materials for showing off abilities and knowledge	36	2.16	1.02	5	106	2.25	1.00	5
Competition against co-workers	36	1.69	1.03	6	105	1.74	1.15	6

Note: Scale: 1) Not important; 2) Little important; 3) Somewhat important; 4) Very important; 5) Extremely important.

Table 2: Relative importance of different motivations for seeking information

The extent of use of information sources and communication channels

The extent of use of information sources and communication channels are another two components of information-seeking behaviour. Respondents were asked to indicate on a scale of 0 (never) to 4 (most frequently), the extent of use of selected information resources and communication channels. The data presented in Table 3 reveals that the top three information sources for both extension managers and specialists were *Persian books* with mean scores of 3.27 and 2.99, respectively; followed by *Persian scientific magazines*, and *scientific-technical reports* respectively. Both groups used *Non-Persian scientific magazines* least frequently.

Concerning use of communication channels, *interpersonal communication with colleagues*, *in-service training courses*, and *scientific-technical conventions* were ranked respectively as the first, second, and third communication channels mostly used by both extension managers and specialists. Among eleven selected communication channels, internet, as a modern communication channel, was ranked as eighth and sixth important communication channel used by managers and specialists, respectively.

Variable	Job position							
	Manager				Specialist			
	N	Mean	SD	Rank	N	Mean	SD	Rank

Information sources								
Persian books	36	3.27	0.65	1	108	2.99	0.95	1
Persian scientific magazines	34	3.05	0.73	2	108	2.78	0.89	2
Scientific-technical reports	36	2.97	0.65	3	107	2.48	0.82	3
Research reports	36	2.69	0.62	4	107	2.13	0.97	7
Reports on agricultural statistics	36	2.50	0.77	5	106	2.01	1.09	8
Video tapes	36	2.44	0.87	6	106	1.23	1.12	14
News papers	36	2.44	1.20	7	106	2.44	1.08	4
Inter-organizational newsletters	36	2.41	0.87	8	107	2.29	1.05	6
Reports on organization performance	36	2.33	0.86	9	107	2.34	0.98	5
Academic theses	36	2.30	0.95	10	108	1.75	1.15	9
Compact discs (CDs)	36	2.11	0.97	11	107	1.61	1.01	10
Floppy discs	36	1.94	0.79	12	106	1.50	1.04	11
Non-Persian books	34	1.38	0.65	13	108	1.46	1.10	12
Slides	36	1.33	0.67	14	106	0.76	0.93	15
Non-Persian scientific magazines	35	1.17	0.85	15	107	1.18	0.98	13
Communication channels								
Personal communication with co-workers	36	2.86	0.86	1	105	2.81	0.88	1
In-service training courses	36	2.75	0.55	2	107	2.40	0.87	2
Scientific-technical conventions	36	2.72	0.56	3	108	2.31	0.92	3
TV	36	2.69	1.30	4	105	2.08	1.20	8
Personal library	36	2.47	0.99	5	108	2.18	1.13	5
Office library	36	2.25	0.73	6	107	2.24	1.04	4
Scientific associations	34	2.17	0.71	7	107	1.78	1.09	9
Internet	36	2.05	0.79	8	104	2.10	1.26	6
Radio	36	1.83	1.10	9	106	1.39	1.05	11
Telephone	36	1.83	1.15	10	105	2.09	1.13	7
Other public libraries	36	1.77	0.63	11	106	1.71	1.10	10

Note: Scale: 1) Never; 2) occasionally; 3) At times; 4) Frequently; 5) Most frequently

Table 3: The extent of use of information sources and communication channels

Organization-related barriers to seeking job-related information

To obtain additional insight into organizational factors that influence information-seeking behaviour and use, study participants were asked to indicate the most important barrier to their use of job-related information in a multiple choice question including six organizational barriers. It is clear from Table 4 that eight out of sixteen managers, and eighteen out of fifty specialists who answered this question blamed *lack of time flexibility for doing job tasks* as the main barrier that prevented them from seeking and getting information, followed by *job complexity and ambiguity in tasks* which was mentioned as the main barrier by five managers and sixteen specialists.

Organizational factor	Job position					
	Manager			Specialist		
	N	Percent	Rank	N	Percent	Rank
Lack of time flexibility for doing job tasks	8	22.2	1	18	16.7	1
Job complexity and ambiguity in tasks	5	13.9	2	16	14.8	2

Some needed information is classified	2	5.6	3	7	6.5	4
No access to internet at office	1	2.8	4	11	10.2	3
Lack of in-service training courses	-	-	-	4	3.7	5
No access to direct telephone line at office	-	-	-	1	0.9	6

Table 4: Organizational barriers to seeking job-related information

Correlation between selected personal and organizational characteristics and factors making information-seeking behaviour

To change factors making "information seeking behaviour" to score variables, and seek their correlation with selected personal and organizational characteristics, Likert Scale scores of each factor were calculated for every person. The Pearson coefficient of correlation was used to explore the relationships. The correlation between some selected respondents' characteristics with factors encompassing their information-seeking behaviour is shown in Table 5. For both managers and specialists, there was a statistically significant correlation between the extent of use of information sources and motivation to seek information. There was a significant relationship between the extent of use of communication channels and motivation to seek information. For managers, the motivation to seek information was correlated with the extent of using information sources. For specialists, years of education, level of job satisfaction, motivation to seek information and the extent to which communication channels were used were correlated with the information sources use. In both groups, a significant correlation was found between the extent of information seeking motivation with the extent to which communication channels were used. For specialists, there was a significant correlation between the level of job satisfaction and the extent of using information sources with the extent to which communication channels were used.

Variable	The extent of information seeking motivation (r)		The extent to which information sources are used(r)		The extent to which communication channels are used(r)	
	Manager	Specialist	Manager	Specialist	Manager	Specialist
Age	-0.067	0.014	-0.118	0.058	-0.194	0.086
Years of extension work	-0.237	-0.085	-0.310	0.074	-0.420*	0.077
Years of education	-0.359	0.196	0.25	0.215*	0.318	0.241*
Level of job satisfaction	-0.200	-0.137	-0.135	0.296**	0.078	0.383**
The extent of information seeking motivation	-	-	0.475**	0.420**	0.353**	0.468**
The extent to which information sources are used	0.475**	0.420**	-	-	0.2904	0.693**
The extent to which communication channels are used	0.353**	0.468**	0.290	0.693**	-	-

Note. *: r <0.05; **: r <0.01

Table 5: Pearson correlation between some selected variables with factors making information-seeking behaviour

Correlation between some personal and organizational characteristics with information-seeking behaviour of respondents

To seek correlation between some selected factors and information-seeking behaviour of respondents, Likert scale scores for three factors which make information seeking behaviour, including (1) the extent to which individuals use information sources, (2) the extent to which individuals use communication channels, and (3) the extent of individuals' information-seeking motivation, were calculated for every person. Finally, to make *information-seeking behaviour* a scored variable, the above score factors were calculated. As shown in Table 6, the Pearson coefficient of correlation was used to explore the correlations between some selected respondents' characteristics with their information-seeking behaviour. According to the correlation analysis, there was a negative correlation between managers' years of extension work and their information-seeking behaviour; in other words, when managers' years of extension work increases, their information-seeking behaviour decreases. This may be the result of pride or too great self-confidence that they hold after some time doing extension activities and feel they are fully aware of everything concerning their job and do not need to seek additional information. For specialists, there was a significant positive correlation between both years of education and level of job satisfaction with their information-seeking behaviour.

Variable	Information seeking behaviour (r)	
	Manager	Specialist
Age	-0.168	0.67
Years of extension work	-0.423	0.46
Years of education	0.024	0.262*
Level of job satisfaction	-0.109	0.339**

Note. *: r <0.05; **: r <0.01

Table 6: Pearson correlation between some selected variables with information-seeking behaviour

Conclusions and recommendations

This study has provided insight into the information-seeking behaviour of public extension managers throughout Iran and extension specialists who work for the Extension and Farming Systems Deputy of Iran's Ministry of Agriculture in Tehran, a group that has not received much attention in information-seeking behaviour studies. In particular, the information-seeking behaviour of these individuals was examined in the context of their use and non-use of job-related information. The results show that the main motivation for seeking information by both groups was because they were interested in developing their own job-related information. The top three mostly used information sources by extension managers and specialists were *Persian books*, *Persian scientific magazines*, and *scientific-technical reports*, respectively. Concerning communication channels, *interpersonal communication with colleagues*, *in-service training courses*, and *scientific-technical conventions* were ranked respectively as the three top communication channels which were used by respondents for seeking and getting information. The results also showed that the majority of managers and specialists who believed their organization did not support them in seeking and getting information, reported *lack of time flexibility for doing job tasks* as the main barrier that prevented them from information seeking. There was a significant negative correlation between managers' years of extension work with their information-seeking behaviour. A significant positive correlation was found between specialists' years of education and their level of job satisfaction with their information seeking behaviour. Because of the significant positive correlation between specialists' level of job satisfaction and their information-seeking behaviour, it is recommended that extension organizations try to increase specialists' level of job satisfaction; it may consequently improve the information-seeking behaviour of extension specialists. According to the findings, there was a positive correlation between specialists' level of job satisfaction with the salary they received, it seems that increasing specialists' salary may increase their job satisfaction and consequently improve their information-seeking behaviour. Considering the significant negative correlation between managers' years of extension work and their information-seeking behaviour, managers should be taught about the importance of the flow of information in the organization, and the necessity of having up-to-date and relevant information to make the right decisions. In-service training courses could be useful to teach managers in this regard. In both groups, there was a significant positive correlation between individuals' information seeking motivation and the extent to which they used information sources and communication channels, it seems, therefore, that motivating extension managers and specialists to seek and get information, will increase their use of information sources and communication channels and may consequently improve their information-seeking behaviour. Since knowledge about information seeking behaviour

of extension managers and specialists plays a vital role in meeting their information needs effectively, the results of this study can be used to provide valuable information sources for extension personnel and remove information seeking barriers to facilitate the flow of agricultural information around the country and meet information needs of extension personnel and their clients consequently. The findings of this study should be shared with the officials and other individuals who are involved in establishing the Agricultural Information Systems Network so that the right decisions can be made.

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