

# Information seeking behaviour of ordinary and elite saffron farmers in Iran

Information  
seeking  
behaviour

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## Abstract

**Purpose** – The present research aims to compare information-seeking behaviour of ordinary and elite saffron farmers in Iran.

**Design/methodology/approach** – The study sample consisted of 375 saffron farmers (295 ordinary and 80 elite saffron farmers) selected using the cluster sampling method. Data were collected by a kind of researcher-made questionnaire.

**Findings** – The results showed saffron onion, pesticides, cultivators and farmland worker were the main components of saffron farmers' information-seeking behaviour of both groups. The most important sources of information for both groups included reference to past experience, neighbouring saffron farmers, contact with informants and other family members. The main criteria which affected the behaviour of the two groups on the use of information sources were provided information in local language, native people, clear and intelligible information and low cost. Farmers were also confronted with common problems such as lack of attention to the needs of farmers and insufficient number of technical experts. It was also found that there was no significant relationship between information-seeking behaviour of elite and ordinary saffron farmers and their performance.

**Originality/value** – Saffron is one of the most important agricultural export products in Iran, and this paper is the first research in this subject. The results can help develop information-seeking behaviour of farmers.

**Keywords** Iran, Information seeking behaviours, Elite saffron farmers, Ordinary saffron farmers

**Paper type** Research paper

## Introduction and motivation

In an era where information is considered to be power, the distribution of information based on the actual needs of users is essential. In other words, dissemination of information and information-seeking play a crucial role in the success of sustainable development activities. Bachhav (2012) noted that using information is the most important factor in enhancing agricultural productivity. In this regard, farmers constantly manage and adapt their farm businesses to remain competitive in a changing world. This is done by fine-tuning existing



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practices and technologies or by adopting innovations, such as novel products, technologies or practices. This adoption requires the farmers to choose the innovation which will provide the most benefit and best meet the needs of the farm business. Therefore, when making an important decision, farmers will devote time and effort to collecting information, considering alternatives and selecting the best option (Hill, 2009). This purposeful search for information to inform decision-making is called information-seeking behaviour (Wilson, 1997).

Saffron is the most important agricultural export commodity in Iran (Bazrafshan and Ebrahimzadeh, 2011); therefore, it has a significant role in the economic and social situation of the inhabitants of the region. Moreover, with regard to the central importance of Iran and its potential in development of the region, and its capacity to extend the area under cultivation of this strategic product (Esmaelpor and Kardavani, 2012), it is essential to investigate the effect of saffron farmers' information-seeking behaviour on increasing saffron production as a strategic and gaining product. In this regard, the existing obstacles and difficulties should be taken into consideration as well.

Most saffron farmers have characteristics against change, such as introversion, rigidity and stability. As ordinary farmers, they often have a traditional lifestyle and livelihood, which in turn prevents innovation and seeking new methods of doing things (Habbershon as quoted in Eftekhari and Purtaheri, 2010). In contrast, there are successful farmers who, with their particular talent for futurism and progressive character, can take into account environmental interests and constraints and are able to identify and assess the best and most recent farming methods according to indigenous and/or modern knowledge. These elite farmers rationally enjoy the potential and actual opportunities of the agricultural market based on their ingenuity, external information and guidance (Kayne as quoted in Eftekhari and Purtaheri, 2010). In this study, the phrase elite saffron farmers refers to those who are officially selected by the Iranian Department of Agriculture each year as an elite farmer based on criteria, such as the highest amount of products, healthy and organic products, success in marketing of agricultural products, minimizing product waste and consideration of safety issues before planting and harvest.

Given that elite saffron farmers frequently outperform ordinary saffron farmers (Shaban *et al.*, 2013), their difference in information-seeking behaviour, communication skills, applied resources and communicative channels may play an effective role in this regard. Thus, this research aims to explore saffron farmers' information-seeking behaviour using the survey method. Identifying information-seeking behaviour and its influential factors among farmers, especially those involved in the development of the rural economy, is of great importance.

### Literature review

The conceptual framework of the current study is based on Wilson's (1997) model of user's information-seeking behaviour. This model consists of components including user's information needs (a requirement that drives people into information seeking), their information seeking (the purposive search for information to satisfy certain goals), the channels and sources they use to get information and the factors (including demographic and social/environmental variables and the characteristics of information sources) that encourage or inhibit information use.

A number of studies in the field literature have addressed information needs of farmers. Okwu and Umoru (2009) determined Nigerian women farmers' agricultural information needs and accessibility which showed that the highest information needs are in the areas of pesticides, fertilizer applications and improved farm implements. Husbands, fellow women and mass media were the main sources of agricultural information to women farmers, and

accessibility of information from these sources was relatively high. Age, educational level and income of women farmers showed significant relationships with their accessibility to agricultural information. Yusuf *et al.* (2013) surveyed South African rural women farmers to determine their agricultural information needs. They reported that weed control and management, insect attacks on vegetables and fowl theft were the major information needs of the women farmers in Nkonkobe in South Africa. More than half of the respondents depend on friends, neighbours, and colleagues for agricultural information; however, the majority preferred extension workers coupled with on-the-farm demonstrations for agricultural information. Similarly, Benard *et al.* (2014) revealed that rice farmers in Tanzania have a wide variety of information needs including information on marketing, weather condition, agricultural credit/loan, new seeds, storage methods, planting methods, diseases and pest control and pesticide availability and its application.

Information seeking is another area of concentration in the present study in which there are some previous studies. Malek-Mohammadi *et al.* (2008) examined the information-seeking behaviour of strawberry farmers in the Kordestan province of Iran. The analytical results revealed that there was a significant relationship between the dependent variable of the strawberry farmers' information-seeking behaviour, with the variables of number of family members, area under cultivation, income, distance from farm to market, access to productive resources and need to obtain information. Ghiyasi and Paryab (2013) discovered that 65.3 per cent of respondents did not have sustainable behaviours in a study of watermelon farmers in the Jovin county in Iran. However, there was a positive relationship between the sources of information including neighbouring farmers, other farmers and TV programmes, with the information-seeking behaviour of the farmers towards sustainable agriculture. Similarly, Owolade and Kayode (2012) concluded that there was a significant relationship between the sources of information and information-seeking behaviour of snail farmers in Oyo State, Nigeria, as well as the utilization of such information. A significant relationship also existed between constraints faced by the farmers and information-seeking behaviour, as well as utilization by these farmers. Most of the respondents had high information-seeking behaviour and utilization, which implies that the farmers were willing to seek information that would improve their productivity.

There were several studies conducted about the farmers' information sources as another field of concentration in this study. In a study by Daudu *et al.* (2009) on information sources used by farmers in Bornu State, Nigeria, the analyses revealed that most of the farmers preferred extension agents as their main source of information, followed by friends, with libraries being the last information source. Hejazi and Sharifi's (2011) study indicated that amongst Iranian rice farmers' utilized channels and information sources, neighbours and relatives and suppliers of agricultural inputs were the primary sources of information. Verma *et al.* (2012) surveyed Indian farmers to determine their sources of information. They concluded that the majority of the respondents utilized neighbours followed by progressive farmers as local sources for livestock-related information. Ghiyasi and Paryab (2013) in their study on watermelon farmers also described similar results in which neighbouring and other farmers were the main sources of information in the field of sustainable agriculture. Adebayo and Oladele (2013) noted that organic vegetable farmers in southwestern Nigeria were more dependent on other farmers, neighbours, farmers' organizations and family members. Benard *et al.* (2014) also found that key sources of information used by rice farmers in Tanzania were their family or parents, personal experiences, neighbours and agriculture extension officers. The same results were reported by Kumar (2014) on the farmers of two villages in India where they searched and obtained information from friends and relatives. Ashraf *et al.* (2015) also determined that information from fellow farmers, pesticide agencies

and extension field staff were ranked as the most effective sources among the citrus growers in Punjab, Pakistan.

Based on the reviewed literature, there have been a variety of studies on the information-seeking behaviour of farmers in general, but there is no study about the needs and behaviour specifically of saffron farmers and the relationship with their agricultural performance. Thus, in the present study, the authors are studying the information needs of saffron farmers, their sources and methods of access to agricultural information and existing obstacles and difficulties in accessing information. The research question is effectively determining the effect of the information-seeking behaviour of saffron farmers on their performance.

### Research purpose

The main objective of the present research is to compare the elite saffron farmers' information-seeking behaviour with that of ordinary saffron farmers in Iran. To achieve the main objective of the study, the following sub-objectives have been formulated:

- identifying components of elite and ordinary saffron farmers' information-seeking behaviour;
- identifying information-seeking resources of elite and ordinary saffron farmers;
- identifying leading criteria of information-seeking behaviour of elite and ordinary saffron farmers;
- identifying problems of elite and ordinary saffron farmers in the process of information seeking; and
- determining the relationship between information-seeking behaviour of elite and ordinary saffron farmers and their performance.

### Methodology

Given the subject matter and population of the present study, it can be regarded as an applied research conducted using the descriptive survey method. The research population consisted of elite and ordinary saffron farmers. According to the available statistics from agriculture institutions, the total number of saffron farmers was more than 17,387. As counties select four people as elite saffron farmers each year (Iranian Department of Agriculture, 2014), 80 elite saffron farmers from the last five years (2009-2014) were selected through the census method. Based on the Krejcie and Morgan table for sample size, 375 people were selected through the cluster sampling method of which 295 (78.7 per cent) were ordinary saffron farmers and 80 (21.3 per cent) were elite saffron farmers. Four out of seven cities of South Khorasan Province, the main province of saffron in Iran, were selected due to their greater production of saffron (Table I).

A researcher-made questionnaire was designed to collect the necessary information. To determine the validity of the questionnaire, it was distributed among a number of experts in the field, including information and knowledge science professors. It was then revised

**Table I.**  
Selected counties,  
population and the  
number of samples of  
each county

County	<i>N</i>	<i>N</i>
Sarayan	6,666	145
Ferdows	2,021	70
Qaen	6,467	125
Birjand	451	35

according to their suggestions. The reliability of the research instrument was measured using Cronbach's coefficient alpha. In this regard, a pilot study was conducted with 30 respondents among whom questionnaires were distributed, collected and then analysed. For all components, the measured alpha was between 0.70 and 0.90.

Collected data were analysed by SPSS 18.0 using descriptive and inferential statistics. Descriptive statistics incorporated the frequency distribution table, central tendencies (mean), dispersion (standard deviation) and ranking mean. Inferential statistics included the non-parametric single sample sign test, ratio test, Mann-Whitney *U* test, *Z* statistics and Spearman correlation coefficients. The Kolmogorov–Smirnov test was used to determine the normality of variables.

## Findings

### *Demographic and professional qualities of the research population*

Majority of participants were aged between 30 to 50 years (129, 43.7 per cent), followed by those below 30 years (82, 27.8 per cent). Elite saffron farmers followed the trend with 73.3 per cent (59) falling into the 30 to 50 age range. The smallest range of elite farmers was aged less than 30 years (6.3). The middle-aged participants were the largest group, and young participants constituted the lowest per cent of the ordinary saffron farmers group as well.

The majority of saffron farmers did not have a college education, as only 16.3 per cent have a college education. Among the elite saffron farmers group, the same situation exists with only nine (11.3 per cent) having a college degree. Hence, due to the higher age and lack of educational attainment, as well as educational facilities, saffron farmers should be provided with necessary training and education.

A surprising number of ordinary saffron farmers (44.1 per cent) rarely participated in agricultural extension and promotion classes, and only 9.8 per cent of them had frequently participated in the above-mentioned classes. However, a majority of the elite saffron farmers (57.4 per cent) frequently participated in these classes. The results indicate a possible lack of willingness to participate in these classes for ordinary saffron farmers, while elite saffron farmers regarded it as useful and necessary.

With regard to the average amount of production, most of the ordinary saffron farmers (81.7 per cent) had less than 5 kg/ha and only 0.7 per cent could harvest more than 25 kg/ha. On the other hand, related data about elite saffron farmers revealed that most of them (58.7 per cent) had harvested more than 25 kg/ha and a few of them (1.3 per cent) had harvested less than 5 kg/ha.

### *Information-seeking behaviour and components*

As the data are not evenly distributed, the Mann-Whitney *U* test is used to compare elite and ordinary saffron farmers' behaviour in determining information-seeking components. The results are shown in Table II.

As illustrated in Table II, the significance level of comparison between elite and ordinary saffron farmers' behaviour in determining information seeking components is above 0.05; thus, the null hypothesis is accepted; that is, there is no significant difference between elite and ordinary saffron farmers' behaviour in determining information-seeking categories. For comparing information-seeking sources of elite and ordinary saffron farmers, due to the related not normal data, the Mann-Whitney *U* test is used due to the related but not normalized data. The results are shown in Table III.

As shown in Table III, previous experience ( $M = 2.673$ ), neighbouring saffron farmers ( $M = 2.561$ ), contact with informants ( $M = 2.608$ ) and other family members ( $M = 2.606$ ) were four priorities to which ordinary saffron farmers referred more. On the other hand, referring to previous experience ( $M = 2.682$ ), neighbouring saffron farmers

**Table II.**  
Mann-Whitney *U* test  
to compare elite and  
ordinary saffron  
farmers' behaviour in  
determining  
information-seeking  
components

Information-seeking components	Saffron farmers	Mean	SD	Mean rank	Mann-Whitney <i>U</i>	Z Statistics	Significance
Saffron onion	Ordinary	3.58	0.44	191.74	10,695.5	-1.288	0.198
	Elite	3.57	0.42	174.19			
Pesticides and fertilizers	Ordinary	3.56	0.43	190.6	11,032.5	-0.896	0.37
	Elite	3.55	0.4	178.41			
Agriculture machinery	Ordinary	3.11	0.53	186.45	11,343.5	-0.567	0.57
	Elite	3.12	0.4	193.71			
Market-related information	Ordinary	3.49	0.42	192.42	10,497	-1.52	0.128
	Elite	3.4	0.39	171.71			
Cultivable lands	Ordinary	3.5	0.39	192.46	10,485.5	-1.541	0.123
	Elite	3.42	0.38	171.57			
Farm	Ordinary	3.54	0.65	190.82	10,967.5	-0.979	0.328
	Elite	3.53	0.64	177.59			
State institution supports	Ordinary	3.21	0.52	190.01	11,208	-0.693	0.488
	Elite	3.17	0.47	180.6			

( $M = 2.671$ ) and contact with informants ( $M = 2.647$ ) were the primary information-seeking sources used by elite saffron farmers. In contrast, brochures, other media, agricultural extension publications, TV programmes and the Internet are relatively less frequently used for receiving and obtaining information. As indicated by the results in Table III, the level of significance for the comparison between elite and ordinary saffron farmers' information-seeking sources is above 0.05; thus, the null hypothesis is accepted; that is, there is no significant difference among information-seeking sources of elite and ordinary saffron farmers.

#### *Leading criteria for elite and ordinary saffron farmers' information-seeking behaviour*

To compare the leading criteria of information-seeking behaviour among elite and ordinary saffron farmers, the Mann-Whitney *U* test is used. The results are shown in Table IV.

As demonstrated in Table IV, for the ordinary saffron farmers group, information in local language ( $M = 4$ ), relevant to daily work ( $M = 3.7$ ) and other farmers' success ( $M = 3.6$ ) were the most used information sources; while in the elite saffron farmers group, information in local language and clear and intelligible information (both with means of 4.0 per cent) provided information by local people ( $M = 3.8$ ), newness and up-to-datedness ( $M = 3.9$ ) and low cost ( $M = 3.8$ ) were the most important criteria. These factors have influenced the use of those sources by saffron farmers of both groups. As seen in Table IV, the significance level for comparing leading criteria of elite and ordinary saffron farmers' information-seeking behaviour is above 0.05; thus, the null hypothesis is accepted; that is, there is no significant difference between the leading criteria of elite saffron farmers' information seeking behaviour with that of ordinary saffron farmers.

#### *Problems encountered during information seeking*

To compare the problems encountered by elite and ordinary saffron farmers while looking for information, the Mann-Whitney *U* test is used because the variable under investigation is not normal. The results are shown in Table V.

As illustrated in the Table V, lack of attention to farmers' needs on the part of experts and the lack of sufficient technical experts were the main problems mentioned by saffron farmers

Factor	Saffron farmers	Mean	SD	Rank mean	Mann-Whitney		
					<i>U</i> statistics	<i>Z</i> statistics	Significance
Neighbouring saffron farmers	Ordinary	2.651	0.567	176.08	10,123.5	-0.038	0.970
	Elite	2.671	0.502	175.68			
Input sellers (fertilizer, pesticides, etc.)	Ordinary	2.253	0.564	148.14	7,170	-0.389	0.697
	Elite	2.286	0.551	19.152			
Local authorities	Ordinary	1.593	0.845	132.47	5,740.5	-0.942	0.346
	Elite	1.712	0.892	141.70			
Agriculture experts	Ordinary	2.413	0.684	162.26	8,355.5	-1.321	0.186
	Elite	2.535	0.629	177.42			
Elite farmers	Ordinary	2.080	0.718	89.22	2,770.7	-0.142	0.887
	Elite	2.098	0.735	90.43			
Visiting elite farms	Ordinary	2.123	0.719	90.13	2,847	-0.672	0.502
	Elite	2.205	0.734	95.80			
Extension publications	Ordinary	2.126	0.663	99.36	3,077.5	-0.611	0.541
	Elite	2.195	0.676	104.94			
Instruction along with input (fertilizer, pesticides, etc.)	Ordinary	2.554	0.594	122.20	4,593	-0.360	0.719
	Elite	2.531	0.581	118.73			
Educational/promotion classes	Ordinary	2.014	0.956	139.95	6,367.5	-0.023	0.981
	Elite	2.017	0.946	140.20			
Employing extension experts	Ordinary	2.276	0.600	141.96	6,261	-1.355	0.175
	Elite	2.393	0.585	156.36			
Meeting centre experts	Ordinary	2.200	0.598	166.28	6	-1.321	0.186
	Elite	2.301	0.617	181.19			
Brochures	Ordinary	1.485	0.696	79.91	1,873	-1.292	0.196
	Elite	1.667	0.777	90.24			
Radio programmes	Ordinary	1.760	0.840	124.79	5,153.5	-0.963	0.336
	Elite	1.877	0.847	134.59			
TV programmes	Ordinary	1.655	0.752	162.72	8,853	-0.884	0.377
	Elite	1.743	0.777	172.86			
Internet	Ordinary	1.606	0.684	86.12	2,076	-0.839	0.401
	Elite	1.750	0.803	93.63			
Previous experience	Ordinary	2.673	0.610	169.14	9,406.5	-0.066	0.947
	Elite	2.682	0.631	168.49			
Whole buyers	Ordinary	2.019	0.515	134.00	5,829	-0.003	0.998
	Elite	2.018	0.561	133.98			
Contact with informants	Ordinary	2.608	0.642	161.65	8,581.5	-0.160	0.873
	Elite	2.647	0.567	163.30			
Other media	Ordinary	1.776	0.644	67.35	2,195.5	-0.689	0.491
	Elite	1.879	0.740	93.47			
Family members	Ordinary	2.606	0.656	176.54	10,398.5	-0.402	0.688
	Elite	2.649	0.507	180.95			

**Table III.**  
Mann-Whitney *U* test for comparing information-seeking sources of elite and ordinary saffron farmers

in the process of information seeking. While ordinary saffron farmers stated insufficient time of services ( $M = 3.4$ ) as their problem in this process, elite saffron farmers stated inappropriate information about inputs (fertilizers, pesticides and similar) ( $M = 3.4$ ) as their main problems in the process of information seeking. As indicated in Table V, the significance level for comparing elite and ordinary saffron farmers' problems in the process of information seeking is above 0.05; thus, the null hypothesis is accepted; that is, there is no significance difference among elite and ordinary saffron farmers' problems in the process of information seeking.

**Table IV.**  
Mann-Whitney *U* test  
for leading criteria of  
elite and ordinary  
saffron farmers'  
information-seeking  
behaviour

Criteria	Saffron farmers	Mean	SD	Mean rank	Mann-Whitney <i>U</i>	<i>Z</i> statistics	Significance
Information in local language	Ordinary	4	0.5	190.45	11,077.5	-1.009	0.313
	Elite	3.98	0.55	178.97			
Information presented by local people	Ordinary	3.58	0.51	185.12	11,489.5	-0.15	0.881
	Elite	3.78	0.63	186.88			
Relevant to daily work	Ordinary	3.7	0.58	190.2	11,152	-0.857	0.391
	Elite	3.6	0.68	179.9			
Other farmers' success	Ordinary	3.58	0.93	190.21	11,149.5	-0.827	0.408
	Elite	3.6	0.81	189.87			
Access to information in proper time	Ordinary	3.41	0.79	190.28	11,126.5	-0.889	0.374
	Elite	3.65	0.75	179.58			
Information utilisation capacity	Ordinary	3.41	0.94	190.24	11,139.5	-0.835	0.404
	Elite	3.52	0.76	179.74			
Confirmed by specialists	Ordinary	3.29	0.85	189.64	11,316.5	-0.679	0.497
	Elite	3.61	0.72	181.96			
Presented by other reliable information sources	Ordinary	3.47	0.72	190.31	11,119.5	-0.892	0.372
	Elite	3.56	0.77	179.49			
Clear and intelligible materials	Ordinary	3.52	0.99	189.93	11,231	-0.699	0.484
	Elite	3.98	0.93	180.89			
New and up-to-date	Ordinary	3.41	0.94	190.94	10,933	-1.061	0.289
	Elite	3.88	0.98	177.16			
Low cost	Ordinary	3.52	1.17	191.01	10,913	-1.102	0.271
	Elite	3.82	1.26	176.91			

#### *Relationship between information-seeking behaviour and performance*

As the frequency distribution of behaviour and level of performance are not normally distributed, the Spearman correlation was used to determine the relationship between elite and ordinary saffron farmers' information-seeking behaviour and their performance. The results are shown in Table VI.

As illustrated in Table VI, the correlation coefficient between the amount of performance and information-seeking behaviour is -0.08 and the significance level is 0.133; thus, the existence of a relationship is not confirmed.

#### **Discussion**

Saffron is one of the agricultural products that makes a significant contribution to the national economy in Iran. There are about 88 thousand hectares of saffron under cultivation in Iran with an annual production of 250 tonnes. The primary saffron production area is located in Southern Khorasan Province, and about 60 tonnes of saffron is annually produced by the more than 17,400 farmers in this province (Iranian Department of Agriculture, 2014). The Iranian government has always looked at saffron as a strategic agricultural product, because it is a traditional production of Iran and the production share of this product is 93.7 per cent of the world's total production, with 82.0 per cent being exported (Ghorbani, 2007). Thus, the government's policy is to increase the saffron production quantitatively and qualitatively. In this regard, one option is to improve per acre yield by applying modern saffron growing technologies and by using ways and means to improve saffron production.

To reach the above aim, it is essential for saffron farmers to be equipped with need-based, accurate, reliable and timely information. In other words, it seems that the dream of advancement in agricultural production cannot come true until farmers' timely access to



Factor	Saffron farmers	Mean	SD	Mean rank	Mann-Whitney <i>U</i>	<i>Z</i> statistics	Significance
Insufficient number of experts	Ordinary	3.41	0.71	187.67	11,524.5	-0.253	0.8
	Elite	3.42	0.72	184.56			
Lack of attention to the needs of the farmers	Ordinary	3.47	0.87	186.09	11,453	-0.351	0.726
	Elite	3.52	0.63	190.34			
Lack of access to mass media	Ordinary	2.88	1.22	185.55	11,294.5	-0.517	0.605
	Elite	2.41	1.25	192.32			
Inappropriate information of inputs	Ordinary	3.17	0.81	186.79	11,658	-0.079	0.937
	Elite	3.35	0.79	187.78			
Inapplicable education	Ordinary	3.05	0.83	188.05	11,411	-0.383	0.702
	Elite	2.88	0.85	183.14			
Inappropriate ways of access to experts	Ordinary	2.76	0.97	183.44	10,677	-1.318	0.187
	Elite	2.22	1.21	200.04			
Unresponsive experts	Ordinary	3.11	0.6	188.14	11,385	-0.432	0.666
	Elite	3.02	0.71	182.81			
Inappropriate education classes	Ordinary	2.94	0.74	186.4	11,544	-0.218	0.827
	Elite	3.18	0.91	189.2			
Inappropriate time of service	Ordinary	3.35	0.71	185.89	11,396	-0.406	0.685
	Elite	3.13	0.86	191.05			
Complexity of brochures	Ordinary	2.76	1.03	184.69	11,042.5	-0.824	0.41
	Elite	2.38	0.11	195.47			
Unwillingness to co-operate	Ordinary	2.47	1.17	189.19	11,483	-0.289	0.773
	Elite	2.37	1.07	189.96			
Lack of attention of local authorities	Ordinary	2.7	1.26	184.89	11,100.5	-0.772	0.44
	Elite	2.16	1.21	194.74			

**Table V.**  
Mann-Whitney *U* test for comparing information-seeking problems

Factor	Saffron farmers	Mean	SD	Spearman coefficient	Significance
Information-seeking process behaviour	Ordinary	3.48	0.34	-0.08	0.133
	Elite	3.42	0.32		
Average performance of saffron farmers kg/ha	Ordinary	3.9	2.33		
	Elite	15.71	5.43		

**Table VI.**  
Spearman correlation test for investigating relationship between information-seeking behaviour and performance

their required information is assured (Naveed and Anwar, 2013). Generally, understanding what saffron farmers need to know, how and from whom they receive their needed information, and what obstacles they face in the way of getting information will be helpful in planning the proper information delivery systems. In addition, comparing the information-seeking behaviour of elite saffron farmers with ordinary saffron farmers would lead to an estimation of a relation between the farmers' information-seeking behaviour and their farming performance. Therefore, the main purpose of this study was to explore the information seeking of the elite and ordinary saffron farmers in the Southern Khorasan Province of Iran.

The results revealed that most saffron farmers require more information about the saffron onion, farm workers and pesticides, while information about equipment and agricultural machinery was of the least importance. Elite saffron farmers had also regarded providing state supportive services as necessary. These results agree with the findings of Okwu and Umoru (2009) and Yusuf *et al.* (2013) who demonstrated that traditional methods of farming are still governing saffron agriculture, as neither elite nor ordinary farmers are

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seeking new technologies and modern farming knowledge. This may be because the average farmer's education level is very low. The low literacy of the majority of farmers was considered as the main cause of underdevelopment of agriculture in Iran (Moradei *et al.*, 2013). To compensate for this defect, it is highly recommended that extension agents hold short-term educational courses to help farmers with new advancements and technologies of modern saffron farming.

The results demonstrated that – out of the 20 studied sources of information – previous experiences, neighbouring saffron farmers, contact with informants and contact with other family members were the top four most used sources. Most ordinary saffron farmers used these four components, while elite farmers referred to experts in agricultural service centres as well. In contrast, other efficient sources of information, such as brochures, other media, agriculture promotional publications, television and radio programmes and the Internet, were relatively less frequently used by elite and ordinary farmers. These findings are supported by results of Verma *et al.* (2012) and Yusuf *et al.* (2013). Kumar (2014) reported that most farmers depend on local sources of information and do not welcome other media, such as official publications, or new information technologies, such as the Internet. This situation may be caused by infrastructural factors, including insufficient individual skills and technological defects. If the government wishes to develop modern saffron farming, it is necessary to equip the farmers with new information technologies. As a large amount of agricultural information is delivered by official and commercial web sites and databases, it is highly recommended that the Internet penetration rate be increased among the saffron farming areas through providing technical infrastructure and improving the information literacy of farmers by related governmental agents.

For farmers to use information, it was determined that providing information in the local language, making it relevant to daily work and information presented by native and successful farmers were the main criteria in the ordinary saffron farmers group. Additionally, elite farmers included “being timely and up-to-date” and “low cost” in their criteria. These findings are in line with the results of Hejazi and Sharifi (2011) and Ghiyasi and Paryab (2013), revealing that both ordinary and elite saffron farmers lack information-evaluation skills and rely on easily accessed information, such as information found in their neighbourhood area. Although the social network of rural people is very limited and farmers traditionally learn from each other, this condition could be improved by teaching them how to acquire and use better and more reliable information through the use of other sources. This responsibility could be put on the shoulders of extension agents in the Iranian Department of Agriculture. Elite saffron farmers also use local sources of information. Therefore, it can be concluded that their success in improved performance is highly related to their talent in using their traditional knowledge more effectively under the guidance of extension experts. They were not sufficiently encouraged or educated to use modern knowledge independently so that it could be some kind of deficiency.

According to the results, the lack of professionals' attention to the needs of farmers, inadequate technical experts and inappropriate training/promoting classes were the most important obstacles in information seeking across both groups of saffron farmers. Furthermore, ordinary saffron farmers stated an inappropriate time of services as their main problem, while inappropriately provided information on inputs (fertilizers, pesticides, etc.) was stated by elite saffron farmers as their major concern. The results of the present study agree with Benard *et al.* (2014) and Kumar (2014) whose findings showed that most farmers suffered from a lack of attention to their information needs by the agricultural extension experts and the shortage of proper sources. As assessing

farmers' information needs is a point of departure of any attempt to improve the availability of, and access to, information among farmers (Elly and Silayo, 2013), failure in doing that would rarely lead to the actual agricultural development due to lack of proper information for farmers.

Finally, the results did not support the relationship between the farmers' information-seeking behaviour and their agricultural performance. In other words, the saffron farmers' amount of product harvest is independent of their information-seeking behaviour. These findings are in contrast with the results of Malek-Mohammadi *et al.* (2008) who reported that the strawberry farmers' agricultural performance was affected by their information-seeking behaviour. As discussed above, both elite and ordinary saffron farmers mainly depend on local sources of information, including their neighbours and family members, and shared their knowledge among themselves and did not tend to use other effective sources of information, such as electronic networks and the Internet; thus, these findings are likely expected. Starasts (2015) believed that, in agriculture, information access for farmers in developed countries has transformed over the past two decades through increasing digitisation of industry and government information and services. This has been accompanied by an explosion of agricultural online content (Starasts, 2015). However, in Iran, like many other developing countries, the proper infrastructures at both the individual level (i.e. proper level of literacy, particularly information literacy) and national level (i.e. the proper online content for low literate farmers, as well as accessing necessities including national networks and Internet access) have not yet been provided. Thus, if there is any difference between elite and ordinary agricultural performance, it will be found in other differences such as cultivation area and past personal experiences and knowledge.

## Conclusion

Altogether, saffron farmers need to be aware of information such as pests, weeds control and use of pesticides. Holding related classes tailored to help farmers can be useful in this regard. Saffron farmers should be encouraged to join local institutions and create groups of farmers in the field to discuss and exchange information and experiences. Thus, more supervision on providing facilities and their quantity increase as well as a decrease in the amount of related interests is recommended. Extension agents need to consider how best to reach farmers with low literacy and consider their criteria for accepting information. The government needs to expand technology and Internet access to saffron farmers to allow them to effectively make use of online content.

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