

## The Investigation perception of Agricultural Extension Agents about affective factors on effectiveness of Agricultural Advisory Services Companies in Iran

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**Abstract:** The main purpose of this study was to investigation perception of extension agents about problems that Agricultural Advisory Services Companies (AASC) faced with them and reduced their effectiveness. Statistical population of the study consisted of Agricultural extension agents (N=381). By using the formula Cochran, sample size was determined at 179. Questionnaire was the data instrument. The appearance and content validity of questionnaire was obtained by comments of extension experts. Reliability coefficient of the questionnaire 0.83 was obtained by Cronbach alpha. The results showed that AASC Increasing farm management skills of farmers. AASC also increasing the specialty of extension services to farmers. By using exploratory factor analysis barriers are classified in four factors, including Policy-making, Socio – cultural, Infrastructural and economical factors. These factors could explain 61% of variance in reduced effectiveness of AASC Services among farmers.

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### 1. Introduction

The Human population growth and increasing urbanization are putting a massive pressure in demand for food production in developing countries. Agricultural extension service can play an important role in increasing production and improving the quality of food produced by farmers (Hosseini et al, 2008). Extension, in general terms, is a function that can be applied to various areas of society. It operates in the industrial, health and education sectors, as well as agricultural and rural development. Agricultural extension operates within a broader knowledge system that includes research and agricultural education (Rivera, 2001).

Shaffril et al (2010) stated that agriculture is generally used as a tool to overcome poverty and unemployment problem in the world. In Iran agriculture is one of the most important economic sectors. The agricultural sector provides about a quarter in employment human force and 33% of exports in Iran. Also Iran has advantages in producing almost of agricultural goods (Manzoralibadi, 2009; Kohansal, 2010). Despite the important role of agriculture in food production, employment and exports, unfortunately rural community is faced with numerous problems. These involves issues such as poverty, unequal income distribution, unemployment, low productivity,

unskilled labor force and lack of appropriate extension system in the agricultural sector (Merzaiy et al., 2008). To increase agricultural production level, farmers needs to have access in extension services. But despite the long term of starting agricultural extension programs, in Iran, numerous of farmers have not been covered by public extension services. Because extension agents not access on all farmers in Iran. FAO statistics in Africa show that two of every three farmers do not have access to public services. This ratio in Asia is three of every four people, Latin America six of the every seven people, and five of the six people in the Middle East (Zamanipour, 2001; Lashgarara and Peshbien, 2004; Shekara, 2001). Agricultural extension services have been widely criticized due to inability to perform assigned functions and the absence of expected effectiveness and efficiency. Therefore, major changes such as structural reform, decentralization and privatization are essential to agricultural extension (Birner et al., 2009). Rivera (2008) argues that the agricultural extension in the public sector has been seriously criticized in many countries due to its inefficiency.

Rivera (2001) described the environment of agricultural extension was changed. A large number and variety of reforms have already been put in place worldwide. Since the early 1990s, there has been

large worldwide decrease trends of the public involvement in the financing and management of agricultural extension services. There are various programs for the withdrawal and changes from decentralization of public extension services to commercialization or privatization (Rivera 2000).

Increasingly privatized, agricultural information has in fact become a price commodity (Buttel 1991; Rivera 2000). The commoditization of agricultural information is a major factor to change of public sector agricultural extension and the development of private extension services. Wolf (1998) believes this change towards information commoditization reflects the privatization of information and agricultural industrialization. One result is that farmers, mainly in high-income and middle-income countries, have begun to pay for extension services.

The role of public extension in transferring of technology to farmers has been questioned (Rasouliazar and Fealy, 2008). Public extension service in Iran faced with many obstacles that influence effectiveness of its services. So that Ahmadi (2005) pointed out that negligence to capital and human factors in agriculture, lack of covering comprehensive stockholders in agricultural extension, limited resources, manpower and funds in public extension system, dearth of fitness levels of staffing and professionalism to the needs of farmers are the main problems existing in agricultural knowledge and information system of Iran (Ahmadi, 2005). Other countries have different strategies to cover reduces and weaknesses of public extension (Mandler, 2010). Policy-makers in these countries have reached an important consensus to find other alternatives to public extension. One of these alternatives is the use of private companies to provide information and transfer technologies to farmers. Privatization of extension services refers to the services that extension staff in private organizations provides for those farmers who pay the cost of services (Hanchinal et al, 2001; Saravanan, 2001; Anderson, 2004).

Amirani (2001) argues that the solution of these problems would be possible through consulting services. Privatization of extension services has been introduced as one of the suitable strategies of restructuring the public extension system obstacles (Christoplos, 2008). Application of AASC to enhances access to financial facilities and marketing would increase the production level and improves performance of farmer's production (Smith and Munoz, 2002).

Benin et al (2007) stated that the main purpose of AASC was to increase agricultural productivity by strengthening the technical skills of

farmers, and to monitor their activities through delivery information and consulting services to them. Anderson (2008) believes that consulting services are critical elements which provide key information and improve the welfare of farmers. He believes that the term consulting services refers to a complete set of agricultural organizations that facilitate and support participation of farmers and solve their problems in agricultural sector with transmission of information, skills and techniques.

Transferring from public extension service to agricultural consulting services could enhance productivity in agricultural farms (Arbenz, 2004). Application of consultancy companies is meant to achieve goals such as: increased efficiency and faster economic growth, agricultural development and a decrease in government intervention in the executive of decisions (Rasouliazar and Fealy, 2008). One of the important challenges that extension planners are faced with it, that is how to increase level of effectiveness and efficiency of technical consulting services (Chipeta, 2006). Designing effective extension systems have always been indispensable to system designer and policy-makers. Sundberg (2005) asserted that effective counseling services have significant impact on performance and efficiency of farmers.

The Ministry of agriculture in 2010 reported that West Azerbaijan province has a high capacity in agriculture production (Anonymous, 2008). But due to its geographical situation (being mountainous) and scattered villages farmers have limited access to public extension services, and a large number of farmers are deprived of obtaining extension services. Accordingly, using AASC can solve many of this structural problems and bottlenecks of public extension system. Based on the statistics of Agricultural Engineering Organization over 1900 AASC have been formed and established in Iran. The largest of AASC was based in West Azerbaijan and informed in 162 AASC companies (Anonymous, 2009). Considering the important role of AASC in providing extension services to farmers, it is necessary to identify obstacles that influence the effectiveness of these companies. These obstacles will reduce the effectiveness of AAS services (Barret et al., 2005). Agricultural extension agents have good experience in delivery extension services to farmers; therefore, the main goal of this study was identify obstacles factors that influence on effectiveness of AASC in Iran.

Government plays an important role in agricultural and rural development, therefore by identifying these factors, policy-makers and extension planners could have suitable strategies to

solve their problems and enhancement effectiveness agricultural advisory services.

## 2. Material and Methods

The methodology used in this study involved a combination of descriptive and quantitative research and included the use of correlation and descriptive analysis as data processing methods. A questionnaire was developed based on interviews and relevant literature. The questionnaire included both open-ended and fixed-choice questions. A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was applied as a quantitative measure. Content and face validity were established by a panel of experts consisting of faculty members and experts in the Ministry of Agriculture. A pilot study was conducted with extension workers who had not been interviewed before the earlier exercise of determining the reliability of the questionnaire for the study. Cronbach's Alpha coefficient was 0.83 which demonstrated that the questionnaire was highly reliable. The research population included extension agents that employed in public extension systems in the Provinces of West Azerbaijan (N = 381). By using a Cochran formula, sample size was determined at 179. Factor analysis statistical methods were used, with the aid of Statistical Package of social Science (SPSS).

## 3. Results

Table 1 shows the demographic profile and descriptive statistics. The results of descriptive statistics indicated that the all of extension agents were men. The results showed that the average age of consultants was 39 years, with 13 years work experience. The majority of them (66.5%) were Bachelor of Science (Table1).

**Table 1: Descriptive statistics of Extension agents**

Variables		f	%	Mean	SD.
Age				38.92	6.68
Age experience				12.63	7.40
Education	Diploma	34	19		
	Bachelor of science	119	66.5		
	Master of Science	26	14.4		

## Advantages of AASC from viewpoint of Extension agents

Priorities viewpoints of extension agents about advantages of advisory services companies indicated that improving farm management skills of farmers was ranked as the first advantage (CV=0.233), also increasing the specialty of extension services (CV=0.234) was ranked as the 2<sup>th</sup>, and Increasing bargaining power of farmers for acquire information and services (CV=0.250) was in the next rank. Other findings are shown in Table 2.

**Table 2: Advantages of AAS from Extension agents perception**

Advantages	Mean	SD	(CV)	Rank
Increasing farm management skills of farmers	4.12	0.92	0.223	1
increasing the specialty of extension services	4.14	0.97	0.234	2
Increasing bargaining power of farmers for acquire information and services	3.83	0.96	0.250	3
Increasing participation of farmers in planning and decision making process	4.06	1.03	0.253	4
Increasing responsibility of extension consultants	4.04	1.05	0.259	5
Improving access to Demand-Driven extension services	4.06	1.06	0.261	6
Increasing the extension services to farmers	3.75	1.01	0.269	7
Providing rural development fields	3.72	1.03	0.276	8
Increasing quality of extension services	3.57	1.03	0.288	9
Reducing cost in public sector	3.57	1.06	0.296	10

Strongly agree=5, Agree=4, Intermediate=3, Disagree=2, Strongly disagree=1

Factor analysis is a general term for some multivariate statistical methods whose main purpose to reduce the number of variables in a data set into smaller number of dimension. This method examines internal correlation in a large number of variables, and eventually is explained in the form of general operating and restricted categories. Performed calculations display that internal coherence is proportional (KMO=0.89) and the Bartlett statistics is significant ( $\chi^2= 1831.82$  and P=0.000). To determine

the number of factors, special amount and percentage of variance was used.

Table 3 shows the classification of the factors into four latent variables using the ordinal factor analysis. The basic idea of factor analysis is to find a set of latent variables that contain the same information. The variables were named into policy-making, socio-cultural, structural and economical factors.. The classic factor analysis assumes that, both observed and the latent variables are continuous variables. But, in practice, the observed variables are often ordinal. Results show that the four factors explain 61% of the total variance in reduces effectiveness of AASC (Table 3).

The first factor referred to policy-making factors with a principal component of (3.105), which is higher than other factors, explains 17.24% of the total variance. The second factor was named socio-cultural factors. This factor according to the specific amount 2.94 could explain 16.37% of total variance. The third factor was named structural factors. These factors according to the specific amount 2.63 could explain 14.05 % of total variance. The fourth factor was named economical factor. This factor according to the specific amount 2.403 could explain 13.37% of total variance. Between these factors, policy-making factors can cause the most to explain the variance in the reduce effectiveness of AASC from viewpoint of agricultural extension agents. So should increasing the effectiveness of AASC and necessary will be done some practices and pointed to items mentioned by policy-making and extension planners (table 3).

**Table 3: Total variance explained**

Factor	Rotation sums of squared loading		
	Total	% of Variance	Cumulative %
1	3.105	17.22	17.22
2	2.948	16.37	33.59
3	2.632	14.05	47.64
4	2.403	13.34	60.98

Table (4) explained variance by each of the factors reducing effectiveness of AASC. As it can be seen policy-making factors, socio – cultural factors, structural factors and economical factors were identified as major components that effecting in the effectiveness of AASC from viewpoint of Agricultural extension agents.

**Table 4: Classification of factors by using ordinal factor analysis**

Factor name	Variables	Variance by factor (%)	% of Variance
Policy-making factors	Lack of services to marginal farmers	0.585	
	Lack of subsidies and grants from the government for AASN and farmers	0.709	
	Lack of recognition signed of AASC	0.737	17.24
	Lack of executive power of AASC	0.564	
	Lack of monitoring and evaluation activities of AASC	0.554	
Socio-cultural factors	Unhealthy competition between advisory agencies	0.552	
	Lack of trust in advisory services companies	0.543	16.37
	Illiteracy of farmers	0.626	
	Little attention to the needs of small farmers	0.771	
Structural factors	Lack of cooperation from other institutions and organizations(public) with AASC	0.605	
	Lack of expert and technical personnel in AASC	0.710	14.05
	Lack of coordination in the activities of public and private extension services	0.735	
	Lack of necessary facilities (vehicle) by the consultants	0.681	
	Distribute of agricultural farm		
Economical factor	High cost of consultancy services	0.705	
	Lack of credit and financial power of farmers	0.842	13.34
	Low performance in yield produce	0.647	

#### 4. Discussions

The role of AASC in agriculture development has been the subject of intense debate among policy-makers in agriculture sector in Iran. The improving farm management skills and increasing the specialty of extension services were the main advantages of using AASN. Also increasing bargaining power of farmers for acquires information and services were identified as other advantages of counseling services. Conclusion in which there is that AASN has great capacity for agricultural development and enhancing the effectiveness of extension services to farmers. Therefore considering the cases and factors on the effectiveness of AASN is very crucial. These findings also accord with studies such (Shekara, 2001; Saravanan, 2001; Anderson, 2008; Sadighi, 2004; Rezvanfar and Arabi, 2006).

Results from factor analysis shows that some components such as policy-making, socio – cultural factors, infrastructural components and economical factors influence effectiveness of AASC. The most important factors were policy-making components. There are issues such as lack of livelihood and subsistence farmers to advisory services, lack of subsidies and financial assistance from the government to provide services to marginalized groups such as women and rural youth, lack of executive power of advisory companies, and lack of credit the signing of AASC. On the other hand lack of assessment and a monitoring sector has caused many problems for AASC. Undoubtedly providing appropriate plans and programs of government can enhance AASC. Use of specialized assessment and evaluation committees to review the performance of consultants and the increase of the executive power of AASC through obtaining funding, and recognition of the sign companies could reduce the problems that are classified as obstacles factors in policy. Research findings are in line with these studies (Rezaei, 2005; Rashidpour et al., 2010; Beglarian et al., 2001).

The other component that acts on effectiveness of AASC among farmers was socio-cultural factors. Unhealthy competition between AASC, Lack of trust in advisory services companies, the low educational levels of farmers and the problem of having access to women in order to deliver advisory services are considered as socio-cultural barriers. In order to solve this problem, AASC should increase their technical competences about farmers' issues in order to increase farmers' confidence and trust toward them. Also it is highly crucial that female consultants provide services to rural women. This finding is also pointed by several authors (Rasouliazar and Fealy .2008; Ahmadi, 2005;

Waddington et al., 2010; Pamela t al., 2003; Rasouliazar et al., 2010).

Factors such as lack of cooperation with AASC from other organizations (public organization), lack of specialists in the AAS structure, tasks interference with public extension sector, lack of communication infrastructure (roads and ICT), and also shortage of vehicles and equipment have been identified as barriers for infrastructural factors. Therefore to increase efficiency of AASC these issues should be resolved. Therefore it is necessary that the consultants should increase their technical competences .Finally the missions and tasks of each sectors (public, private) should be explained and determined. These finding were also pointed by several authors (Arbenz, 2004; Povellato and Scorzelli, 2006; Nederlof et al., 2008; Fealy et al., 2007).

Economical factors such as high cost of consultancy services for farmers and lack of access to financial resources by farmers were identified as other barriers to the effectiveness of AASC. The extension designers and policy makers should be considering strategies to provide funding sources to farmers (such as loans), so to reduce the financial barriers. Moreover evaluation committee should be monitoring the services offered to farmers. Consultants should also use other methods to provide cost of services such contract among farmers at the end of the production process. Agricultural advisory services as a private sector were establishment to reducing problems of public extension sector and improving farm management skills of farmers. Providing information and consulting services to farmers cause the increase of quality and quantity of agricultural products (Rasouliazar and Fealy, 2008). According to these issues the following suggestions will be presented to reduce problems that faced by AASC. Some of preventing problems will be solved through reform and changes in the structure of AASC activities. Therefore acquiring professional and technical skills by consultants and employing female consultants were necessary. Furthermore the policy-makers should develop facilitate mechanisms such as (providing supportive policies and infrastructure development) to AASC. In order to improve the effectiveness of AASC, agricultural extension policy makers should provide the accurate information about benefits, risks and impacts to the private sectors through variety of communication tools.

Based upon the results of this research, it is apparent that there is need to increase effectiveness of AASC and increase participation of AASC in the agricultural development. Suitable involvement will enhance the adoption of AASC among farmers and

which would eventually lead to more investment in the AASC and increase effectiveness of them.

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