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EVALUATION OF THE AFFECTING FACTORS ON LIVESTOCK FARMER'S AWARENESS TO ACCEPTING LIVESTOCK INSURANCE (CASE STUDY: KHORRAMABAD CITY)

Nasim Amiri, *Tahmasb Maghsoudi and Sirous Salmanzadeh Totonchi

Department of Agricultural Management, Shoushtar Branch, Islamic Azad University, Shoushtar, Iran

**Author for Correspondence*

ABSTRACT

This study was aimed at evaluating and identifying the effect of livestock farmers' rate of awareness on accepting livestock insurance in Khorramabad city. In terms of objective, this study is an applied one carried out by descriptive-correlation method, which was conducted in the field using a questionnaire. Statistical society of the present study includes all livestock farmers of Khorramabad city (N=8100) in the crop year of 2011-12. Based on stratified classification, 250 farmers were selected as sample and data was analyzed using SPSS software. Results indicated that variables of the farmers' level of education, number of households members, number of livestock, rate of experience in livestock farming activities, animal farming's revenue, attitude toward livestock insurance, value of the livestock, and livestock farmers financial debt have a positive and significant relationship at a 99 % level with the rate of livestock farmers awareness of livestock insurance, and variables of the farmers age and distance of livestock farm from insurance brokerage office have a negative and significant relationship at a 99% level with rate of livestock farmers awareness of livestock insurance.

Keywords: *Insurance, Insurer, Awareness, Livestock Insurance, the Insured, Khorramabad City*

INTRODUCTION

Agriculture sector is one of the most important economical sectors of Iran, seeing that it provides 14% of gross domestic production (GDP), 23% of employment, 26% of non-oil exports, and more than 80% of the country's foodstuff (Hayati *et al.*, 2010). Compared with other economical sectors of the country, livestock farming has special capabilities as one of the agriculture's sub sectors because of heaving economical stable and continuous growth, food security, capital efficacy and providing social justice, thus this sub sector have a vital role in Iran's agriculture economy because about 70% of people working in villages, 90% of tribes, and 10% of urban population are directly involved with livestock farming activities (Moradnia, 2005). Like other agriculture activities, animal farming always faces risks such as the risk of price and production. This causes the farmer to be uncertain about his or her future income leading to the reduction of investment in livestock farming industry. Thus, supporting the farmers against price and production risks is always a necessity in this sub sector. In this regard, livestock products insurance is one of the most appropriate approaches to counter this sub sectors risk and uncertainty and can prepare to shift from traditional livestock farming to the industrial one- the use of new technologies- by preparing a new opportunity of investment. Based on the policies of livestock insurance, agricultural products insurance fund, as insurer, repays a large amount of the loss resulted from livestock death of some familiar disease or because of the emergency slaughter of livestock to the farmers (Hayati *et al.*, 2010). Since livestock products insurance is considered a new phenomenon for the producers community, accepting it, like other new ideas, is not easy for some producers leading them to resist against it, seeing that one of the insurance issues in developing societies such as Iran is the attitude of the rural society toward insurance and insuring, which is necessary for livestock farmers based on the importance of insurance for livestock farmers and its economical-supplying and psychological role. Thus, to develop and institutionalize the insurance culture in rural society, it is necessary to make the livestock farmers aware of accepting the livestock insurance to remove the barriers in developing the livestock products insurance, and increasing and stabilizing the revenue of villagers (Fahima and Shydaee, 2006). From 2010 to 2011, Lorestan province had a capacity of livestock of 96152 head and 99941 insured livestock so

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it is ranked 26th province of the country in terms of the percent of realizing insurance. From 2008 to 2009, Khorramabad had 939201 livestock, 27236 insured livestock, and realization percent of 4.3. In addition, from 2010 and 2011, it had 939241 livestock, 20139 insured ones, and realization percent of 2.1. Light livestock population of this city was 864495 in 2012, of which 71899 ones were insured. Information indicates that this province has not a good situation in terms of accepting the livestock insurance, and tendency of farmers toward accepting the insurance of livestock has been reduced in the recent years. According to the report of Lorestan Agriculture Jihad organization, insurance fund has failed in the retention of the last years` insured people, which can be because of the rate of compensation received in the last years, way of receiving the compensation, and lack of proper and on time answering from insurance agencies, low compensation paid to the farmers, and the attitude of farmers toward agricultural insurance. It seems that a part of the insurers` dissatisfaction of agricultural products insurance is derived from the insured farmers because some farmers believe that compensation should be paid to them regardless of the type and amount of damage (Agricultural Insurance Fund, 2012).

There are several studies conducted on accepting the agricultural products and livestock insurance, and some are discussed below.

Tabatabaee *et al.*, (2012) indicated that the most important methods of risk management among livestock farmers are consultation with experts and use of veterinarian. In addition, they reported a positive and significant relationship between the variable of accepting the risk management and distance between the farm and living place, rate of capital, rate of using the loan, annual revenue, and number of livestock in farm unit as well as the rate of communication with informational resources.

Moeini *et al.*, (2011) believed that the major hazardous factors in cattle farm are disease, fire, and coldness. In addition, they concluded that more than 74% of cattle farmers have a positive attitude toward insurance. It was also estimated that positive attitude toward insurance, rate of satisfaction of insuring situation, rapidity of paying compensation, observance of health and nutrition principles, and number of cattle are the most important factors affecting the acceptance of insurance by traditional cattle farmers. Improvement of livestock farmers` attitude toward insurance and satisfaction of insurance fund can affect the increase of accepting the insurance.

Zare and Esmaeili (2009), in an evaluation of factors affecting the acceptance of livestock insurance by Kerman city`s livestock farmers, identified the items affecting the behavior of livestock farmers. Results indicated that the type of livestock farm, level of education, work experience, number of livestock, age, side jobs, and last years revenue are factors affecting the behavior of farmers.

Hayati *et al.*, (2010) indicated that 62% of livestock farmers do not like to insure their livestock because of the low rate compensation, high rate of premium, and longtime of compensation payment. Results of Logic model of estimation showed that variables of age, level of education, income fluctuations, rate of revenue, number of dead livestock, number of livestock, rate of awareness of livestock insurance advantages, secondary occupation, and receiving facilities are factors affecting the acceptance of livestock insurance by livestock farmers, which except age and secondary occupation, all variables have a positive and significant effect on livestock farmers` acceptance of livestock insurance.

Razavi and Sabori (2009) in their study aimed at identifying factors affecting the acceptance and non-acceptance of tribal livestock insurance and other mechanisms in Semnan province, concluded that based on correlation test, accepting the livestock insurance have a relationship at 5% level with level of education, main revenue of livestock farming, relations with communicational channels, and contact with experts. There is also a relationship at 1% level between accepting the livestock insurance and rate of damages, received loan, and awareness of objectives and advantages of insurance; these factors have led to the acceptance of insurance.

Ahmadi (2007) indicated that there is a significant difference between two groups of livestock farmers, who accepted the light livestock insurance and noninsured ones in terms of level of education, experience of livestock farming, rate of annual revenue, awareness of livestock insurances objectives and advantages, and number of contacts with the experts of insurance fund, but there is not any significant difference between the mentioned groups in terms of participation in training-promotional classes, number of

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livestock units, and use of communicational channels. Results of the correlation coefficient between variables showed that there is a positive and significant relationship between the variables of the rate of accepting the livestock insurance and ones of level of education, annual revenue of livestock farming, awareness of livestock insurances objectives and advantages, and number of contacts with the experts of insurance fund, participation in training classes, suitability of the determined tariff and premium, desirability of the rate of compensation paid to the insurer, on time payment of compensation to the damaged insurer (livestock farmers), informing and dissemination of the insurance culture by the insuring organization, rate of trust and confidence between the insurer and insured, rate of subsidy help of the government to the livestock farmers for livestock insurance, and granting the payoff of the premium for non-damaged insurers during the validity of previous insurance.

Enjolars and Sentis (2008) evaluated the individual and agricultural criteria affecting the acceptance of products insurance. Results indicated that insured farmers, compared with noninsured ones, work at a larger financial and agricultural scale. As well, more productive diversity is observed among the insured farmers.

Jakinda *et al.*, (2006), using descriptive and quasi-regression criteria, determined factors affecting the acceptance of insurance in cattle farms in Kenya. Results of analysis showed that farmer`s gender, level of revenue, cultural habits, race of the available livestock, value of livestock, and level of education are factors affecting the acceptance of insurance.

Shaik and Atwood (2003) evaluated factors affecting the demand of insurance for cotton. Results indicated that producers with more output and larger land are more interested in insurance. In addition, increase of the product`s price increases the farmers` tendency of being insured.

Vandever (2001) evaluated the participation of South Vietnams farmers in the proposed plan of regional performance insurance using Legit model of estimation and indicated that the rate of premium, age, level of education, and rate of compensation received by farmers have the most effect on accepting this proposed insurance plan.

Patrick (1998), evaluating factors affecting the acceptance of wheat insurance, indicated that standard deviation of output rate, dummy variable of legume crops and dummy variable of risk attitude have positive and significant effect on the demand of wheat.

Importance of the present study, in the other hand, is noteworthy because Khorramabad does not have a appropriate situation of livestock insurance and the tendency of this city`s farmers to insure their livestock had a decreasing trend during the recent years. Thus, in one hand, large number of livestock and undeniable natural situation and, in the other hand, unwillingness of farmers to the insurance plan led us to carry out this study. This study was generally aimed at evaluating the effect of the rate of farmers` awareness on accepting livestock insurance in Khorramabad city and the specific objectives are the followings:

- Evaluation of demographic and occupational characteristics of Khorramabad
- Evaluation of the rate of khorramabad farmers` awareness on livestock insurance
- Evaluation of Khorramabad farmers` problems and barriers facing them
- Evaluation of solutions to notify the farmers of insurance

MATERIALS AND METHODS

Given the main objective of the study, which is the evaluation of effect of the rate of awareness of livestock farmers on accepting livestock insurance in Khorramabad city, this study is a descriptive-correlation. Questionnaire was the main study tool. To prepare it, first the theoretical basis of the subject was evaluated based on the related references and resources. Then, considering the results of studies, the primary questionnaire was prepared and, after being sure of its validity and reliability as well as modifying it, the final questionnaire was written. To evaluate the validity of questionnaire, it was given to the assistance and associate professors and, after some modification and changing some question, its validity was confirmed. To test the reliability of the questionnaire, 30 ones were completed by Khorramabad city`s livestock farmers and their Cronbach`s alpha coefficient was calculated ($\alpha=0.89$)

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which was a proper reliability coefficient for the present study. Statistical society of the present study includes all livestock farmers of Khorramabad city (8100 ones) in the crop year of 2011-12. Based on stratified classification, 250 farmers were selected as sample and data was analyzed using SPSS software SPSS_{ver17} was used for data analysis. In the descriptive statistics section, measures of central tendency such as mean, median, and mode as well as dispersion measures such as standard deviation and variance were used. Spearman and Pearson coefficients of correlation were used to evaluate the correlation between the dependent variable and independent ones based on their scale.

RESULTS AND DISCUSSION

Findings

Evaluation of Demographic and Occupational Characteristics of Khorramabad

Evaluating the results obtained from the respondents` individual characteristics, farmers` average age is 38, the youngest is 18 and the oldest is 65. Average number of light livestock is 22, the smallest number is 10 heads and largest number is 60. In addition, average number of heavy livestock is about 3, the smallest number is 2 heads and the largest one is 3. Note that 88.8% of the society has no heavy livestock. Average experience of livestock farming activity is about 10.61 years, the minimum experience is 2 years and the maximum experience is 30. Average rate of loan used in the field of animal farming is 6.64 million, minimum rate is 2 million and the maximum one is 18. The highest frequency is related to loans, which are less than 10 million. Note that 0.64% did not receive any loan of livestock farming. Results of the study indicate that in terms of the level of education, 2.4% of farmers are illiterate, 16.4% are just able to read and write, 26.2% have guidance school degree, 0.26% have high school degree, and 28.8% have bachelor and higher degrees. Given the findings of the present study, 40% of farmers have insured their livestock and 60% have not. It is also indicated by the findings that the average distance of the farmers` location from insurance brokerage office is about 20.26km, the shortest distance is 5km and the longest is 35km. Average rate of farmers` debt to the bank for the received loan is about 3.51 million Rials, minimum debt is 1 million and the maximum one is 10 million Rials (Table 1).

Table 1: Description of farmers` individual and occupational characteristics

Variable	Mean	Sd	Median	Mode	Min	Max
Farmer`s age(year)	38.66	5.89	40	40	18	65
Number of light livestock(head)	22.08	8.89	20	20	10	60
Number of heavy livestock(head)	2.78	0.41	3	3	2	3
Livestock farming experience(year)	10.61	6.13	10	10	2	30
Rate of using banking loans in livestock farming	6.64	3.20	5	5	2	18
Distance of livestock farm from insurance brokerage office(km)	20.34	11.63	25	30	5	35
Rate of farmers` financial debt (Million Rials)	3.51	2.11	3	2	1	10

Prioritization of the Rate of Khorramabad Farmers` Awareness on Livestock Insurance

Items prioritization based on the variation coefficient indicates that the items of i know what document is needed to make the insurance contract, I know the moratorium and time limit of making the contract, and I am aware of the possibility and impossibility of objection with variation coefficients of 0.378, 0.393, and 0.397 are the top priorities in terms of awareness on livestock insurance, respectively (table 2).

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Table 2: Prioritization of Khorramabad farmers` rate of awareness on livestock insurance (n=250)

Items	Mean	Sd	CV	Rank
I know what document is needed to prepare the insurance contract	3.11	1.20	0.387	1
I know the moratorium and time limit of making the contract	3.9	1.21	0.393	2
I am aware of the possibility and impossibility of objection	3.8	1.21	0.394	3
I know the place to sign the insurance contract	3.19	1.26	0.392	4
I know the time of paying compensation	3.08	1.29	0.418	5
I am aware of the conditions of keeping the corps of damaged livestock	3.09	1.29	0.419	6
I know the time of veterinary visit to determine the compensation	3.12	1.31	0.421	7
I know the rate of compensation according to the breeding stage and type of livestock	3.08	1.30	0.423	8
I know the rate of premium	2.95	1.25	0.425	9
I know the items covered in compensation	3.11	1.34	0.430	10
I know the legal time and time limit of objection to the expert of compensation	2.97	1.32	0.445	11
I know the time of compensation payment	2.98	1.36	0.456	12
I know the needed documents for compensation payment	3.04	1.39	0.458	13
I know the bank conditions and terms to pay the compensation	2.79	1.29	0.462	14
I know the conditions of insuring the livestock	2.76	1.33	0.483	15
I know the objectives and advantages of insurance	2.67	1.37	0.513	16

(1 = completely disagree, 2= disagree, 3 =no idea, 4= agree, 5= completely agree)

Prioritization of Farmers` Attitudes toward Problems and Barriers

Items prioritization based on the variation coefficient indicates that long-term receiving of compensation, lack of appropriate promotional training in the field of livestock insurance, and low rate of compensation with variation coefficients of .0161, 0.166, and 0.169 are the top priorities in the field of farmers` problems and barriers facing them, respectively (table 3).

Table 3: Prioritization of farmers` attitudes toward problems and barriers (n=250)

Items	Mean	Sd	CV	Rank
long-term receiving of compensation	4.48	0.723	0.161	1
lack of appropriate promotional training in the field of livestock insurance	3.98	0.661	0.166	2
low rate of compensation	4.58	0.778	0.169	3
Lack of trust to promoters	3.77	0.686	0.181	4
Inappropriate rapidity of experts visits	3.79	0.695	0.183	5
Livestock farmers` low level of education	4.31	0.859	0.199	6
Inappropriate quantity and quality of promotional classes	3.85	0.825	0.214	7
Lack of facilities and technology of supplying information	3.63	0.905	0.249	8

Prioritization of Farmers` Attitudes toward Solutions to Notify the Farmers of Insurance

Items prioritization based on the variation coefficient indicates that holding training and promotional classes, using nongovernmental and native resources (local leaders, sample`s farmers), and preparing advertising brochures about insurance with variation coefficients of 0.121, 0.123, and 0.137 are top priorities in the field of solutions to notify Khorramabad city`s farmers of insurance(table 4).

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Table 4: Prioritization of farmers` attitudes toward solutions to notify the farmers of insurance

Items	Mean	Sd	CV	Rank
holding training and promotional classes	4.68	0.568	0.121	1
using nongovernmental and native resources (local leaders, samples farmers)	4.56	0.564	0.123	2
preparing advertising brochures about insurance	4.12	0.568	0.137	3
Use of training journals and magazines	3.87	0.580	0.149	4
Cooperation with the TV to produce programs about insurance	3.73	0.648	0.173	5
Reducing the distance of farmer from insurance brokerage office	4.31	0.810	0.188	6
Increasing the government subsidy for farmers in the field of livestock insurance	4.24	0.813	0.191	7
Publication of newsletter to inform the farmers of the insurance fund performance	3.90	0.754	0.193	8

Pearson correlation coefficient and stepwise multivariable regression were used to determine the relationship between dependent and independent variables and evaluate the effect of one or more independent variables on the dependent one, respectively. Table (5) shows that variables of farmers level of education, number of farmers household members, number of farmers livestock, rate of experience in livestock farming activities, revenue obtained from farmers activity, attitude toward livestock insurance, value of livestock, and rate of farmer`s financial debt have a positive and significant relationship at 99% with the rate of farmers` awareness on insurance. Variables of farmers age and farms distance from insurance brokerage office have a negative and significant relationship at 99% with the rate of farmers` awareness on insurance.

Table 5: Correlation between the independent variables and the rate of farmers` awareness on livestock insurance

Criterion variables	Predictor variable	r	P
Farmers age	rate of farmers` awareness on livestock insurance	-0.348**	0.001
Farmers level of education		0.602**	0.001
Number of farmers household members		0.690**	0.001
Number of farmer`s livestock		0.585**	0.001
Rate of livestock farming experience		0.623**	0.001
Livestock farm`s distance from insurance brokerage office		-0.864**	0.001
Revenue obtained from farmers livestock farming activity		0.645**	0.001
Rate of farmer`s financial debt		0.322**	0.003
Value of livestock		0.673**	0.001
Type of farmers attitude toward livestock insurance		0.947**	0.001

*= significance at 0.05 level **= significance at 0.01 level

Conclusion

In the present study, negative relationship between age and rate of awareness on insurance was confirmed. This negative relationship is reasonable because young farmers, compared with older ones, are more educated and have a better awareness on different fields including insurance advantages. This is

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confirmed by Abyar and Qadirian (2001), Hayati *et al.*, (2010), and Faraji and Mirdamadi (2006). One other hypothesis of the present study is the positive relationship between level of education and rate of awareness on insurance. This positive relationship is confirmed in the present study. Increase of individuals' awareness and knowledge on current issues such as insurance can be mentioned as an effect of the increase of educational level, which is confirmed by Ahmadi (2007), Jakinda *et al.*, (2006), and Mashreghi *et al.*, (2011). Given that the increase of household members makes it necessary to make money and reduce the risk of production, hypothesis of positive relationship between the number of household members and rate of awareness on insurance is accepted. This is also concluded by Abdeslahi *et al.*, (2010) and Kohansal (2006). Positive relationship between the number of farmer's livestock and rate of awareness on insurance is another hypothesis, which is accepted. Tabatabaee *et al.*, (2012), Jamshidi *et al.*, (2011), and Haji and Kasaeian (2012) confirm this hypothesis. It is obvious that as the livestock farming unit gets larger, its manager focuses on issues such as risk reduction so being aware of risk-reducing methods can be a factor increasing the farmer's awareness on livestock insurance. Shabanali *et al.*, (2007), Mosavi and Torkamani (2011), Darijani and Qorbani (1998) addressed the positive relationship between type of ownership and awareness to loan. This positive and significant relationship is also confirmed in the present study. This hypothesis is reasonable because when the farmer is the owner, due to the sense of ownership and responsibility to the livestock, he or she will pay more attention to the production issues such as insurance. In other words, by reinforcing the sense of ownership, individual's tendency to reduce the effect of risk in the production process leads him or her toward obtaining more information about insurance.

One other finding of the present study is the positive relationship between value of livestock and level of awareness. Given that farmers' sensitivity to their assets is increased as the value of livestock is raised, it is typical that they focus on issues such as insurance. This positive relationship is concluded by Jakinda *et al.*, (2006), too. In the present study, several studies such as Mosavi and Torkamani (2011), Ahmadi (2007), and Mohammadzadehh and Kohansal (2011) approved the positive relationship between experience and awareness on insurance. It is obvious that when the experience of farmers and their confronting with different issues are increased, their awareness on issues such as insurance will be completed and increased. Rate of social participation is a characteristic in individuals which can affect several behaviors and performances of them. In this study, the positive effectiveness of social participation on the rate of farmer's awareness on insurance is accepted. Ertebaee and Barabadi (2012), Razavi and Sabori (2009), Rezvanfar and Veysi (2002), and Palis *et al.*, (2002) confirmed this positive effect, as well.

When the farmers' rate of debt is increased, they consider solutions such as product insurance to reduce risk and grantee definite revenue in order to reduce the effect of income fluctuations. Thus, increase of awareness and these individuals' concentration on insurance is natural. This increase of awareness level is also confirmed by Abyar and Qadirian (2011), Goodwin *et al.*, (1993), and Zamani *et al.*, (2005).

Farmers' revenue is a viable affecting their acts and reacts. Like Mohammadzadeh and Kohansal (2011), Razavi and Sabori (2009), Jakinda *et al.*, (2007), and Tabatabaee *et al.*, (2012), this study accept the hypothesis of the relationship between farmers' revenue and level of awareness on insurance. Positive effect of having a secondary occupation on the individual's level of awareness is also emphasized in the present study. It seems that farmers' involvement with other occupations especially agriculture sector's occupations make the insurance important for them and increase their attention and awareness on it. This is also accepted by Zare and Esmaili (2010), Torkamani (2009), Hayati *et al.*, (2010), and Karbasi (2001).

Suggestions

1. Increase of government subsidy for livestock farmers as an economical factor to increase the farmers' level of awareness on insurance in the study region is suggested.
2. Holding training and promotional classes as a social factor has a great effect on increasing the level of farmers' awareness on insurance. So, holding training and promotional classes on the insurance objectives, advantages, and structure in rural regions is suggested.

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3. Use of nongovernmental and native resources (local leaders, sample`s farmers) as a social factor has a great effect on increasing the level of farmers` awareness on insurance. So, paying attention to this special group of and using them to execute insurance training programs as well as notifying farmer groups of insurance are suggested.
4. Results indicate a positive effect of the increase of farmers` revenue on their level of awareness on insurance so policies in order to increase and stabilize the revenue of farmers can be a factor suggested to increase their awareness.
5. Results show that increase of educational level can increase the level of awareness on insurance so use of tools increasing the farmers` level of education is suggested. In addition, adding some lessons about different issues of insurance in the syllabus of high school or academic books can increase this level of awareness.
6. Execution of any policy and measure to create an attitude toward insurance among the regions farmers especially by related organizations such as insurance fund and agriculture Jihad is also suggested.
7. Results indicate a negative effect of framers` distance from insurance brokerage offices on the level of their awareness on insurance. Increasing the number of offices and using virtual methods of information can reduce these distances and increase the effect of offices in improving the level of farmers` awareness.
8. Given the effectiveness of the type of ownership on the level of farmers` awareness, it is suggested that government and related organizations initiate increasing the private ownership among the region`s farmers by using suitable policies proportional with the society's conditions.

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