



**THE FACTORS AFFECTING ABILITY OF WHEAT FARMERS RISK MANAGEMENT IN IRAN (Case Study: Ilam Province)**

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**ABSTRACT:** This study tries to scrutinize the diverse features affecting the aptitude of farmers regarding the risk management of wheat harvesting. The current paper is an applied research regarding its objectives and it is a descriptive survey type research regarding its method. In order for us to gather the required information we used the questionnaire tool. The justifiability of this tool was confirmed by a panel of experts and its stability was assessed using Cronbach's Alpha coefficient which was equal to 0.85. The statistical population for the study included wheat farmers in Ilam province in 2012. Then using random strata sampling with proportional assignment 381 participants were chosen as the sample of this study. The results show that there is a significant relationship between the variable of the ability of the farmers in risk management and educational level, the attitude towards risk, the amount of the awareness of risk, the wheat cropping area, the dimensions of the field, using information resources, and the relationship between the farmers and the agricultural trainers.

**Keywords:** Risk management, Wheat farmers, Iran.

## INTRODUCTION

The production in the agronomic segment has got some dissimilarity with other commercial and manufacturing arenas. The most imperative one of them is the high amount of the reliance of this field's deeds on the nature and also being tackled with a wide variety of natural perils and complications such as deluge, hail, heat and cold and vegetal infections. All of which render the undertakings of this field perilous and risky ones [1]. In most cases the economical reimbursements of the extant jeopardies in agriculture led the farmer to lose his or her incentive for staying in the community and decide to abandon his or her habitation. Hence the ground for economical and societal glitches as well as under expansion of the state is wholly constructed. Vacating the village because of the existence of risk sources, mainly production risks, has led to the fact that the country loses a major portion of its producers and in turn the development of the country has encountered voluminous complications [5]. The capability of small and average farmers to admit risks in old-fashioned economy is pretty restricted. Most of the farmers try to thwart risks and hazards but the main chunk of the jeopardies in nature are very stiff to prevent. This issue is a critical concern regarding the most important product of agriculture which is wheat. Hence, considering the risk factors which lead to diminishing product ratios in farms as well as dwindling motivation for investment and in turn the entering of new technologies into the farm, is very important. So bearing in mind apt management methodologies for dealing with these risk factors is inevitable [8].

Risk management as a vibrant and dynamic approach for decreasing and controlling the risk in the agronomic segment is considered a viable policy [4]. Roustafar [7] by exploring the operative aspects on the capability to cope with the risks among wheat farmers of South Khorasan Province in Iran established that the most significant risks threatening wheat production according to their importance are natural and economic risks and the most prominent strategies used to deal with them were technological and financial strategies. Geravandi and Ali Beigi [5] in a study tried to identify the determining factors in agricultural risk management among the farmers of Kermanshah City District in Iran. The results of their study show that farmers habitually use outmoded strategies such as using chemical fertilizers and the family's own work force in order to deal with the risk factors and regrettably they do not use the more up-to-date methodologies such as diversification of deeds, variegated yields and pre-selling the products. Kolli [6] considered evaluating risk management as one of the principal traits of security policy in the agricultural sector of India. The results of this study show that in India the agricultural risks are aggravated by several diverse causes such as climate multiplicity, recurring natural adversities, vagueness of output and rates, the feebleness of agricultural infrastructures, defective and unsatisfactory marketplaces and indecorous financial amenities. The main objective of this study is to gauge the operative factors on the competence of wheat farmers in Ilam Province, Iran for risk management. The supplementary objectives conferring to the core one are the following: appraising the bearings of individual, societal and economical dynamics, farm physiognomies and training and expansion aspects on the aptitude of wheat farmers in agrarian risk management.

## MATERIALS AND METHODS

This study is descriptive-correlative regarding the data gathering method and it has been carried on using the survey strategy. The population under study includes all the wheat farmers in Ilam province which adds up to 57262 farmers. The sample size for each city is 381 based on the Morgan's Table. Considering the fact that in this study the Variance for the studied characteristic inter-strata (different cities of Ilam Province) is more than intra-strata, we used random strata sampling method with proper assignment. In order to gather the required data, we designed a questionnaire including 9 discrete parts including individual, economical, and social factors, farming, and training-expansion factors, the awareness of the wheat farmers pertaining to the risk factors, the attitude of wheat farmers towards the risk factors, and the usage amount of the risk management tools. In order to identify its justifiability, the questionnaire along with the objectives and research hypotheses were presented to the lecturers of the agricultural expansion school and after revising, its justifiability was confirmed. In order to assess the stability of the questionnaire, thirty copies of it were completed by the wheat farmers. The completed questionnaires were assessed using the SPSS software application's Cronbach's Alpha statistic. The results showed that Cronbach's Alpha Coefficient for the different parts of the questionnaire was 0.85.

## RESULTS

The results of the study show that the average age of the wheat farmers is 55 years. The eldest one of them was 90 years old and the youngest one was 22 years old. The highest frequency belonged to the age group of 41 to 50 years with the frequency percent of 26.7 %. Regarding the educational level the highest frequency (46.7%) was for the illiterate people. The average family work force was 2 people with the frequency percent equal to 46.2 %. Among 381 under study wheat farmers, 293 ones were male and 88 ones were female. 57.7 percent of the participants were not members of any associations and 42.3 percent of them were a member of at least one association. The major share of the considered partakers included married people with the frequency percent of 97.4%. 54.1 percent of the participants stated that they attended training courses and 45.9 percent stated that they did not. Based on the results of the study the average experience stretch in agricultural career was 35 years and this average for planting wheat was 34 years. 127 participants stated that their plantation was irrigated and 194 ones stated that they used dry farming. Moreover 60 people used both of these methods. Based on the obtained results 305 participants considered farming their main job and 76 ones considered other jobs as their main job. Based on the research results 43.3 percent of the participants stated that they have a proper financial support for accepting risk and 57.2 percent stated that they do not have this kind of support. Based on the results 53.3 percent of the participants stated that they used bank loans. After the field study it was obvious that farmers considered communicating with other farmers as the most important source of information. The results from Spearman's Correlation Coefficient show that there is a significant relationship between the attitude of wheat farmers towards risk and their awareness of the risks with their capability to manage the risks. The results from Pearson's Correlation Coefficient show that there is a significant relationship between age, annual income from selling wheat, wheat cropping area, production per hectare, the farm area, and the capability of wheat farmers for risk management. However there is not any significant relationship between the annual income of farming and the capability of wheat farmers for risk management.

The results from Cramer's V Correlation Coefficient show that there is a significant relationship between membership of institutions, contacting trainers, capital, farming as the main job, wheat farmers reactions towards risk, using information sources and communication channels, using bank loans, and the capability of wheat farmers for risk management. (Table 1)

**Table 1: The Results of Spearman, Pearson, and Cramer's V Correlation Coefficients**

Test	Variable	Correlation Coefficient	Significance level
Spearman	THE ATTITUDE OF WHEAT FARMERS TOWARDS RISK	0.702**	0.000
	THE AWARENESS OF THE RISKS	0.662**	0.000
Pearson	AGE	0.376**	0.000
	ANNUAL INCOME	0.105	0.125
	INCOME FROM SELLING WHEAT	0.104*	0.043
	THE FARM AREA	0.263**	0.001
	WHEAT CROPPING AREA	-0.311*	0.014
	PRODUCTION PER HECTARE	0.175**	0.000
	WHEAT CROPPING EXPERIENCE	-0.427**	0.000
Cramer's V	MEMBERSHIP OF INSTITUTIONS	0.587**	0.000
	FARMING AS THE MAIN JOB	0.704**	0.000
	CAPITAL	0.746**	0.000
	CONTACTING TRAINERS	0.665**	0.000
	USING INFORMATION SOURCES AND COMMUNICATION CHANNELS	0.660**	0.000
	WHEAT FARMERS' REACTIONS TOWARDS RISK	0.612**	0.000
	USING BANK LOANS	0.629**	0.000

\*: 5% Significance Level    \*\*: 1% Significance Level

The results of the Mann-Whitney test show that there is a significant difference in attending training courses regarding the ability to manage risks. Moreover there is a significant difference between single and married wheat farmers regarding the capability to manage risks. However there is no significant difference between male and female wheat farmers regarding the capability to manage risks (Table 2).

**Table 2: The Results of the Mann-Whitney Test**

Test	variable	Frequency	Ratings Average	U	sig	
Mann-Whitney	Attending Training Courses	Attending	175	148.17	-5.991	0.000
		Not Attending	206	214.29		
	Gender	Male	293	186.47	-1.467	0.142
		Female	88	206.10		
	Marital Status	Single	10	315.30	-3.618	0.000
		Married	371	187.65		

The results from the Kruskal-Wallis test show that there is a significant difference among wheat farmers regarding the level of education and the ability to manage risks (Table 3)

**Table 3: Results from the Kruskal-Wallis Test**

Educational Level	Frequency	Ratings Average	Chi-Square	Sig
Illiterate	178	146.57	59.757	0.000
Elementary	84	219.38		
High School	44	210.32		
Diploma or Higher	77	252.44		
Total	381			

In this research we used simultaneous multiple regression in order to assess the impact of the research variables on the dependent variable that is the capability of wheat farmers to implement risk management. The results from the multiple regression show that the value of the adjusted coefficient of determination is 0.61 which says that 61 percent of the changes in the dependent variable is determined by the changes in independent variables. Based on the obtained findings the variables including the awareness of risk sources in production, having a second job, attending training courses, using bank loans, risk acceptance, the attitude towards risk, age, educational level, wheat farming experience, and membership in social institutions determine 61 percent of the dependent variable that is the attitude of the wheat farmers towards risks (Table 4). The linear regression equation is the following:

$$Y = 0.919 + 0.372x_1 + 0.081x_2 + 0.061x_3 + 0.089x_4 + 0.126x_5 + 0.242x_6 - 0.007x_7 + 0.018x_8 + 0.003x_9 + 0.094x_{10}$$

**Table 4: Multiple Regressions for Assessing the Effective Factors on the Ability of the Farmers to Implement Risk Management**

Model	Non-Standard Coefficients		Standard Coefficients	T	Sig
	Std. Error	B	Beta		
Constant Coefficient	0.217	0.919	.....	4.227	0.000
the awareness of risk sources in production	0.062	0.372	0.324	5.975	0.000
having a second job	0.041	0.081	0.072	1.970	0.050
attending training courses	0.028	0.061	0.091	2.179	0.030
using bank loans	0.044	0.089	0.079	2.022	0.044
risk acceptance	0.045	0.126	0.102	2.769	0.006
the attitude towards risk	0.042	0.242	0.307	5.796	0.000
Age	0.003	-0.007	0.179	-2.241	0.026
educational level	0.044	0.018	0.017	0.409	0.682
wheat farming experience	0.003	0.003	0.089	0.981	0.327
membership in social institutions	0.044	0.094	0.083	2.121	0.035
R=0.78                      R Square= 0.62                      Adjusted R Square= 0.61					

**CONCLUSIONS**

The research findings show that there is a significant relationship between the attitudes of the wheat farmers towards risk, and the wheat farmers’ awareness of risk, with their capability to implement risk management. These findings confirm the findings of Rousta [7]. The research findings illustrate that there is a significant relationship between age, annual income from selling wheat, and the capability of farmers to implement risk management. However the findings show that there is no significant relationship between the annual income from selling wheat and the capability of farmers to implement risk management. The research shows that there is a significant relationship between wheat cropping area, product per hectare, and farm area and the capability of farmers to implement risk management. These findings confirm the findings of Rousta [7]. Also there is a significant relationship between the wheat farming experience and the capability of farmers to implement risk management. The findings illuminate that there is a significant relationship between the membership in institutions, contacting trainers and the capability of farmers to implement risk management. These findings confirm the findings of Rousta [7].

There is a significant relationship between the capital and the capability of farmers to implement risk management. These findings confirm the findings of Alimi and Wall [1]. There is a significant relationship between those farmers whose main job is farming and their capability to implement risk management. There is also a significant relationship between the reactions of the wheat farmers in the face of risks and their capability to implement risk management. There is a significant relationship between using information sources and communication channels, and using bank loans and the capability of farmers to implement risk management. There is no significant difference between male and female wheat farmers regarding their capability to implement risk management. These findings do not confirm the findings of Rousta [6].

There is a significant difference between attending training courses as well as the educational level of wheat farmers regarding the capability to implement risk management. These findings confirm the findings of Geravandi and Ali Beigi [5]. There is a significant difference between single and married wheat farmers regarding the capability to implement risk management. The results of this study show that by increasing variables including capital, annual income from farming and selling wheat, using bank loans, attitude and awareness towards risk factors, wheat cropping area, farm size, accessing information sources, contacting trainers, and attending social institutions, the ability of the wheat farmers to implement risk management increases. However by getting older the capability of the wheat farmers regarding risk management implementation reduces. The study shows that increasing the educational level, attending training courses and marriage affect the ability to implement risk management strategies. However gender does not have any impact on such ability. Hence increasing the capital power of farmers leads to their increased ability to implement risk management strategies it is recommended that the government help their capital budget by lending them low-interest loans. Regarding the fact that the accessibility of information and communication channels for wheat farmers has got a significant relationship with their ability to implement risk management strategies it is recommended that we help the farmers to access these channels easily and cheaply. Hence there is a significant relationship between the awareness and the attitude of the wheat farmers towards risk and their ability to implement risk management strategies, it is recommended that the necessary actions in educational, service and supportive field be taken so that the motivation of farmers to use risk management strategies soars up. As we've seen in the analytical statistics section getting older has got a negative impact on the ability of wheat farmers in risk management. It is obvious that the average age of the farmers is 55 years which is relatively high. Hence by choosing the proper policies to attract the young people to work in the agricultural sector and produce wheat, we can significantly improve risk management in this section. Hence there is a significant relationship between the farm size and the ability of wheat farmers in implementing risk management strategies we can help improve participatory farming and land integration by founding cooperatives and improving the interactions between farmers.

Due to the fact that there is a significant relationship between attending training courses and increasing the ability of the wheat farmers to implement risk management strategies we recommend that the educational and expansion courses regarding the approaches of risk management be held more often and with more rigorous planning and also they be more tuned with the information needs of wheat farmers in villages. Moreover authorities and practitioners should help farmers to attend these courses more by considering economical, cultural and societal characteristics of the wheat farmers as well as their time frame.

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