

Analysis of Factors Influencing Farmers' Attitude Toward Private Crop Insurer Using Path Analysis

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Abstract: The aim of this study was to evaluate farmers' attitude towards private crop insurance agents in Fars province, Iran. 385 farmers were surveyed. Using path analysis, the effect of exogenous variables (age, type of farming, years of experience in farming, economic status, educational level, access to resources, crop insurance background, satisfaction toward private crop insurer) through an intervening variable (perception toward agricultural insurance) to an outcome variable (attitude toward private crop insurer) was tested. Results revealed that farmers had a positive attitude towards private insurance agents. Among exogenous variables, farmers' satisfaction with private agents and perception toward agricultural insurance coupled with access to resources had direct impact on farmers' attitudes toward private agents. Moreover, two intervening variables namely, age and crop insurance background had indirect impact on farmers' attitudes toward private crop insurance agent.

Key word: Crop insurance • private agent • attitude • perception • satisfaction • path analysis

INTRODUCTION

Research reveals that farming is one of the world's most tension-filled occupations. In a review of the limited empirical literature on farm stressors, Walker & Walker [1] categorized sources of stress to farm families as financial, weather, workload, social, hassle and worry. If farmers are to overcome weather stressors, they need to be equipped with farm risk management strategies. Crop yield insurance seems to be an appropriate strategy for farmers in order to cope with agricultural adversities. Although crop insurance has been used in a variety of purposes in more than 70 countries [2], Miranda & Glauber [3] argue that systemic risk component is the major obstacle that prevents an independent private crop insurance industry from emerging. Moreover, there is less demand for private crop insurance due to multidimensional farm risks inherent in agricultural activities. Some have even argued that it is impossible for private crop insurer to offer insurance contracts without government support [4]. However, what is limited in the literature is insurance-buying behavior of farmers. Moreover, it has become clear that economic theories are not adequate to account

for insurance behavior. If we are to understand the insurance-buying behavior of farmers, then we need to evaluate farmers' attitudes toward crop insurance in general and private crop insurance in particular. From this point of view, the aim of this study was to evaluate farmers' attitudes towards private crop insurer. The specific objectives were 1) to analyze the factors that determine farmers' attitude towards private insurer and 2) to make policy recommendations. Understanding the attitudes of farmers can lead to understanding why farmers adopt or reject private crop insurance contracts beyond the economic benefit and what industry and researchers may focus on to affect adoption of private crop insurance management strategies.

Agricultural Insurance in Iran: Agricultural insurance is a government program that provides insurance protection to agricultural producers against loss of the crops, livestock and agricultural assets on account of natural calamities, plant pests and disease and/or other perils. The Iranian Agricultural Product Insurance Funds (APIF) supported by Ministry of Agricultural Jihad is directly responsible for its implementations. During the past five

years and as a part of a national privatization program in 2002, the agricultural insurance programs in Iran have gradually been turned over to private sector. It is further planned that in the next ten years, 80% of all crop insurance contracts are to be managed by private insurance companies [5-7]. This study was conducted because of two imperative needs. First, there is little current research on attitudes of farmers toward private crop insurance agents. Second, knowing how farmers perceive private insurance contracts could provide agricultural policy-makers with the necessary information to reach their ultimate goals of turning over crop insurance policies to private sector.

Further justification for the need to investigate attitudes towards private insurance industries is exemplified in the seemingly observed relationship between attitude and behavior. So conceived, the more one hold a positive attitude towards a behavior, the more likely is the occurrence of the behavior [8]. In other words, farmers' positive attitudes toward private insurance agents will lead to faster rate of adopting private insurance contracts.

MATERIALS AND METHODS

The target population (N = 95147) included insured farmers living across Fars province. There are 21 townships across Fars province. All 21 townships were included in the study for adequate coverage and representation of the diverse groups of insured farmers. Seven townships were randomly sampled from 21 townships across Fars province. From each township, two private insurance offices were sampled and from each office, 30 names of insured farmers were randomly selected. In all, 385 insured farmers were sampled to provide data for the study. The instrument for data collection comprised structured questionnaire and interview schedule. The questionnaire was validated by the members of faculty in the Department of Agricultural Extension, Sociology, Psychology and Business Management in Shiraz University. The questionnaire was pilot tested with 40 insured farmers who were not in the sample. The Cronbach's alpha of reliability coefficient from the pilot test was 0.79 for the attitude scale, 0.71 for the perception scale and 0.75 for the satisfaction scale at 0.05 level of significant. A total of 385 copies of the questionnaire were valid and used for the analysis.

Statistical Analysis: As shown in Figure 1, a particular causal flow from a set of exogenous variables (age, type of farming, years of experience in farming, economic

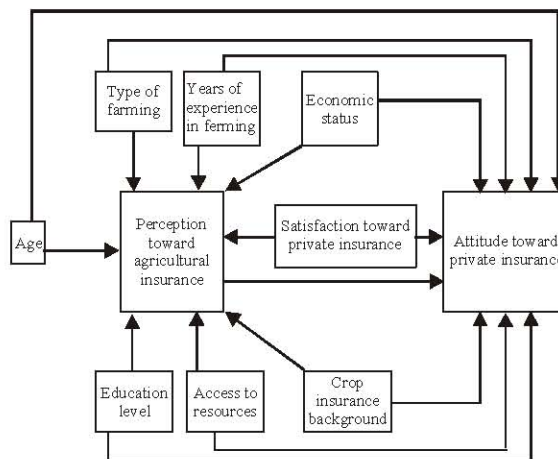


Fig. 1: Proposed Path Model

status, educational level, access to resources, crop insurance background, satisfaction toward private crop insurer) through an intervening variable (perception toward agricultural insurance) to an outcome variable (attitude toward private crop insurer) is proposed. The proposed model was tested with a path analysis, which is an appropriate and often employed technique for testing the fit between such a model and the observed set of correlations between variables in the model. Before employing a path analysis, the elements of the model were checked to determine whether they related significantly to each other. All correlations were significant beyond 0.01 level except economic status, educational level and crop insurance background.

RESULTS AND DISCUSSION

Selected demographic characteristics of the respondents such as age, educational level, years of experience in farming, crop insurance background, type of farming, access to resources and economic status were inquired. Results indicated that the majority (23.4%) of the respondents belonged to the age group of 41-50 years followed by the age group of 31-40 (22.6%). The majority (28.3%) of the respondents had elementary level education. Only 10.1% of the respondents had university level education. The majority (25.5%) of the respondents had 10 to 19 years of farming experience followed by 19.7% who had 20 to 29 years of farming experience. The majority (30.9%) of the respondents had 3 to 4 years of crop insurance record followed by 23.1% who had 1 to 2 years of crop insurance record. The majority (44.9%) of the respondents were involved in crop production followed by 17.4% who were involved in both crop

Table 1: Farmers' perception toward agricultural insurance

Statements	Frequency	Mean	Standard	Rank
		Ranking	Deviation	
The good thing about agricultural insurance is that it is not compulsory	382	4.37	1.13	1
Agricultural insurance is worth it	384	4.30	0.91	2
I like to see what other farmers do before buying insurance	378	4.25	0.98	3
I am aware of insurance benefits	384	4.19	.075	4
I feel relaxed with having crop insurance	384	4.09	.094	5
Crop insurance is to help damaged farmers	381	4.07	0.92	6
Crop insurance reduces my stress	380	4.07	0.93	7
With crop insurance I feel that government supports me	383	3.96	1.11	8
Crop insurance pays more than what you paid for in your premiums	380	3.92	1.22	9
Insurance coverage does not always cover the whole loss	379	3.81	1.01	10
I think of crop insurance as personal savings	385	3.65	1.18	11
Crop insurance protects against future fluctuations in the economy	384	3.64	1.10	12
Crop insurance is a policy instrument to provide equal protection among farmers	385	3.64	1.20	13
Crop insurance is just another way to get qualified for getting access to resources such as loan and input supplies	380	2.72	1.37	14
Crop insurance is just a policy instrument for paying for damages	383	1.67	1.24	15
Overall perceptions toward agricultural insurance = 3.77				

Scale: 1 = strongly disagree 5 = strongly agree

Table 2: Farmers' satisfaction toward private crop insurer

Statement	Frequency	Mean Rank	Standard Deviations	Rank
My crop insurance management is made easier through private insurer	378	3.08	1.35	1
My insurance claims are handled quicker by private insurers	379	2.69	1.41	2
Private insurers are easily accessible in my village	382	2.38	1.34	3
Private insurers provide the information we need	380	2.34	1.18	4
Private insurers are very accurate in estimating damages	380	2.28	1.24	5
Private insurers make sure that you understand all the rules of insurance contract	378	1.41	0.85	6

Overall satisfaction toward private insurers = 2.36

Scale: 1 = strongly disagree 5 = strongly agree

production and orchard farming. Information regarding access to resources such as drinking water, electricity, gas, telephone, rural health clinic and secondary school was sought. Results revealed that only 16.6% of the respondents had access to above mentioned resources while 2.9% had no access at all. Finally, the economic status of farmers was assessed using three criteria: size of crop landholdings, size of orchard landholding and number of livestock. The majority (35.1%) of respondents considered themselves in a poor living condition followed by 25.2% who believed that they were in somewhat better condition.

Respondents' perceptions regarding agricultural insurance were recorded by responses on a 15 items Likert-type scale. The response categories for this scale ranged from 1 (strongly disagree) to 5 (strongly agree). Mean scores for all questions in rank order are

summarized in Table 1. It was found that farmers had a positive perception toward agricultural insurance (mean = 3.77, SD= 0.47). The highly rated questions were: "The good thing about agricultural insurance is that it is not compulsory (mean = 4.37)," and "agricultural insurance is worth it (mean = 4.30)." Questions that received lowest agreement were the following two items: "agricultural insurance is just another way to get qualified for getting access to resources such as loan and input supplies (mean = 1.67)," and "agricultural insurance is just a policy instrument for paying off damages (mean = 2.72)."

Farmers' satisfaction toward private crop insurer was measured by responses on a 6 item Likert-type scale. The ratings ranged from 1 (strongly disagree) to 5 (strongly agree). Table 2 presents the mean score by question in rank order, as well as the overall level of satisfaction. Results revealed that the majority of

Table 3: Farmers' attitude toward private crop insurer

Statement	Frequency	Mean ranking	Standard Deviations	Rank
Private crop insurer treat me with outmost respect	380	4.19	0.86	1
I voluntarily decided to use private agent for my crop insurance	368	4.16	0.95	2
I am in good hands with private insurer	373	4.10	0.93	3
I trust my private insurer	378	3.94	1.01	4
I am satisfied with my private insurer	375	3.86	1.07	5
My private insurer lets me know about the benefits of my insurance	380	3.61	1.22	6
My private insurer is prompt in answering my questions	373	3.55	1.13	7
I don't have to go long ways to find a private insurer	381	3.45	1.32	8
Private insurers are easily accessible	380	3.42	1.32	9
All my insurance claims are handled in a quick time period	381	3.34	1.14	10
I save a lot of time and hassle by using private insurer	378	3.29	1.40	11
My private insurer cut a lot of red tape when designing my contract	383	3.14	1.53	12
My private insurer teaches me about insurance policies in non-formal classes	379	2.15	1.37	13
I prefer government to handle my insurance plans	382	1.84	1.31	14
Overall attitude toward private crop insurer = 3.42				

Scale: 1 = strongly disagree 5 = strongly agree

farmers were somewhat satisfied with private insurers (mean = 2.36). Farmers rate the following two statements with the highest agreement: "my crop insurance management is made easier through private insurers (mean = 3.08)," and "my insurance claims are handled quicker by private insurers (mean = 2.69)." The statements which received the lowest agreement were: "private insurers are very accurate in estimating damages (mean = 2.28)" and "private insurers make sure that you understand all the rules and regulations about the contract (mean = 1.41)."

Respondents' attitude towards private crop insurer was measured by farmer ratings on a 14 item Likert-type questions. The ratings ranged from 1 (strongly disagree) to 5 (strongly agree). Table 3 presents the mean score by question in rank order as well as the overall level of attitude toward private crop insurer. The mean score of the items in the scale represented the farmers' attitude towards private crop insurers. Results revealed that the farmers' overall mean score for attitude scale was 3.42, indicating a positive attitude. Farmers rated the following three statements with the highest agreement: "private crop insurers treat us with outmost respect (mean = 4.19)," "my selection of private crop insurer was voluntarily (mean = 4.16) and "you are in good hands with private crop insurer (mean = 4.10)." The statements which received the lowest agreement were: "only government can manage crop insurance policy (mean = 1.84)" and "my private crop insurer has taught me about insurance policy through group non-formal classes (mean = 2.15)."

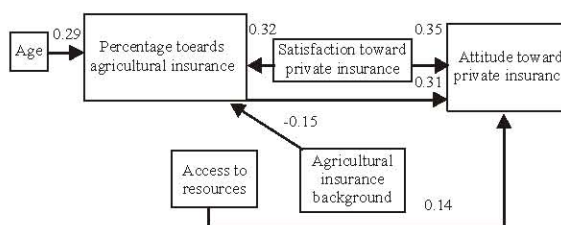


Fig. 2: Factors influencing farmers' attitude toward private crop insurer

A path analysis was conducted to test the fit between the data and the proposed model. The final model and the resulting path coefficients are shown in Figure 2. This resulting model could be interpreted as follows:

- Age with a path coefficient of 0.29 ($p = 0.05$) had an indirect effect on farmers' attitude toward private crop insurance through farmers' perceptions toward agricultural insurance. Farmers' perceptions toward agricultural insurance in turn influenced attitude with a path coefficient of 0.31 ($p = 0.01$). The result implies that older farmers perceive agricultural insurance more positively which in turn hold a more positive attitude toward private crop insurers. This could be attributed to increasing consciousness and self-realization of the importance of crop insurance with age based on experience. The findings agrees with the result of Sedighi [9], Karimi and Chizari [10] and Dinpanah *et al.* [11]

but disagrees with Nouroozi and Chizari [12] and Farokhi and Sedighi [13].

- More positive perception toward agricultural insurance led to more positive attitudes toward private crop insurer. As shown in Figure 3, perception had a direct effect on attitude with path coefficient of 0.31 ($\rho = 0.01$). The result implies that farmers welcome private insurers just as long as they perceive agricultural insurance beneficial to their farming operations. This is in line with findings of Zamani *et al.* [14].
- Figure 2 shows that farmers' satisfaction towards private crop insurers has a direct influence (path coefficient = 0.35, $\rho = 0.01$) on attitude and indirect influence through perceptions (path coefficient = 0.32, $\rho = 0.01$) which in turn influences attitude (path coefficient = 0.31, $\rho = 0.01$). The results imply that as farmers' satisfaction increases their perception as well as their attitude increases in positive direction. This could be explained by the fact that agents have been prompt in providing feedbacks to farmers' insurance claims. The findings agree with the result of Zamani *et al.* [14].
- Access to resources with a path coefficient of 0.14 ($\rho = 0.01$) had a direct effect on farmers' attitudes toward private crop insurer. This indicates that the more resources available to farmers, the more they would be interested to buy insurance from private insurers. This could be explained by the fact that more resourceful farmers are able to cover premiums offered by private insurers. Because of their resources they are in a better position to take more maladaptive measures during agricultural adversities. The result is in line with findings of Nouroozi and Chizari [12].
- Finally, farmers' crop insurance background had a negative effect on farmers' perceptions toward agricultural insurance (path coefficient = -0.15, $\rho = 0.01$) which in turn influenced farmer' attitudes (path coefficient = 0.31, $\rho = 0.01$) private crop insurer through farmers' perception toward agricultural insurance. This implies that farmers who have never bought insurance coverage perceive agricultural insurance as an effective mechanism to cope with unpredictable weather and at the same time hold a positive attitude toward it. This could be attributed to the positive image of agricultural insurance policies maintained by insurance agents in general and private agents in particular. This finding agrees with studies of Shanteau and Ngui [15].

CONCLUSIONS

The study analyzed the determinants of farmers' attitudes toward private crop insurance insurer. Overall, farmers had positive attitude toward private crop insurer. Moreover, they held positive perception toward agricultural insurance and were somewhat satisfied with private insurance agent. Farmers' attitudes were determined by such direct factors as perception toward agricultural insurance and access to resources. Age and agricultural insurance background had indirect effect on farmers' attitude toward private crop insurer. Moreover, farmers' satisfaction toward agricultural insurance had both direct and indirect effect on farmers' attitude toward private crop insurer. Based on the findings, the following recommendations are made:

- Younger farmers should be encouraged to buy insurance coverage through private agents in order to motivate older farmers.
- Agricultural extension agents should use more resourceful and satisfied farmers as contact farmers to promote crop insurance in the region with emphasis on private insurance companies.
- Agricultural extension agents could organize extension classes in order to encourage farmers with less or no background in agricultural insurance to take on insurance coverage through private insurers.

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