# On Different Characteristics of Iranian Farmer Women in Rural Development Activities Based on Animal Husbandry

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**Abstract**

Rural women play a significant role in domestic and socio-economic life of the society so that national development is not possible without developing this important and substantial segment of our society. Given the importance of women in agriculture, this study was conducted to examine the role of Iranian women in the farm management decision-making processed concerning animal husbandry. The sample of the study comprised 200 farm women, who were recruited by the help of the proportionate stratified sampling technique. Data were collected in East Azerbaijan in the Northwest of Iran. Women's contribution to agriculture is thus fundamental for the socio-economic development of rural areas. They are extensively involved in agriculture as female farm heads, co-owners, family farm workers, and also employees. In order to find out the relationship between different characteristics of rural women and participation in animal husbandry, the GLM multivariate method was employed as a robust statistical method. As the final results showed, women age, family size, level of aspiration, extension contact, perceived role overloads, and inter-spouse communication correlated highly with work participation in animal husbandry.

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## INTRODUCTION

In today's Iranian society, women have demonstrated their capabilities and potential talent, which, under proper conditions can greatly contribute to national wealth and economic development. The awareness and voluntary participation of Iranian women in a wide range of economic fields have greatly increased since they have been provided with more technical and scientific information. Therefore, enhancement of women's participation in economic activities is one of the most important objectives of many governmental organizations. Given the importance of women in agriculture, this study was conducted to examine the role of Iranian women in animal husbandry-based farm management decision-making process.

Ommani and Chiizari (2006) found that Iranian farm women workforce is used as gratis family labours and therefore, the real value of the women's roles is unknown in surplus economic production of peasant families. Since women have a significant role in agriculture workforce in Iran, it is very important to identify this role if we seek to improve the rural economy and support food production.

Rahmani et al. (2007) found that in Guilan females account for 76% of the labour input for rice and 80% of tea, in Mazandaran 50% for rice and in Gorgan 40% for cotton and 90% of summer crops. Women provide labour input for fruits, animal husbandry, dairy products, and preservation and processing activities. Sarada (2007) found that participation of women through the provision of training in management skills, appropriate technology and resources must receive priority in agricultural development programs if such programs are to significantly contribute to economic development and the reduction of poverty.

In a study on participation level of farm women in entrepreneurship activities under self-help groups in Kadur Taluk of Chikmagalur district, Bhagyavathi et al. (2008) found that the majority of the farm women (52.5%) belonged to the medium participation category, followed by high (30.83%) and low (16.67%) participation categories, respectively.

Anonymous (2008) mentioned that the challenge for rural development programs is to identify the constraints on women's full participation in economic and public life at local level, and to develop specific initiatives in their favour. Women were also seeking a better balance in the division of labour in the domestic household, needing encouragement for their personal and professional development and more support in their bid to achieve financial independence, and to participate fully in decision-making.

Behzadnasab (2008) found that rural female literacy was only 1% of the total female population of ten years and older in 1956. This rate was 60% in 1996, and has risen since then. Mechanization is another factor that has contributed to the decline in female labour participation. With some exceptions, girls are not trained to learn, and they do not show an interest in learning to use mechanized inputs or to manage farms.

Karbasioun et al. (2008) mentioned that agricultural and other rural products produced by women were sold in the market. But women often participated as unpaid family workers. Therefore, their work may be perceived as a part of household labour. Thus, women were active in households as well as cash-earning activities for their families. But neither men, nor women made a distinction between purely household related activities, and those related to the market.

Aref (2010) outlined some of the barriers to participation of farm women in agricultural activities. These barriers included lack of knowledge, lack of ability of individuals to participate, lack of effective and strong government institutions, inadequate focus on human resource development, and dependency on government and lack of authority in communities.

Naseri and Bevrani, (2013; 2015) reported that Iranian farm women had low levels of extension participation. Their results showed a high level of mass media exposure, in case of marginal and small farm families. They revealed that the majority of farm women of all the three groups had medium and high level of inter-spousal communication, and that the majority

of farm women belonged to low level of cosmopolitan.

The reviewed studies revealed that farm women have an important and significant role in Iran agriculture and economy, which could be supported by proper and special program for farm women. This study was conducted to examine the role of Iranian women in the farm management decision-making process based on animal husbandry.

## MATERIAL AND METHODS

The study was conducted in Tabriz, East Azerbaijan Province, Iran. It comprises two districts of Markazi and Khosroshar, six Taluk and seventy-five villages. As was pointed out, the study was conducted in Tabriz area to know the participation of farm women in different agricultural activities. However, Khososhahr and Markazi districts were purposively selected. Out of a list of the total villages in these districts, and other farm women population based on the census data, 200 farm women selected from the age group of older than 18. This age group is considered as the active population in agriculture.

The total sample size of the study was 200 farm women, which were obtained through the proportionate stratified sampling technique. Cooper and Schindler (1999) defined this technique as a process by which each stratum is properly responded, so the sample drawn from it is proportionate to the stratum's share in total population. This approach is more appropriate than any other stratified sampling procedure and will generally have a higher statically efficient than the simple random sample. The details are given in Table 1.

The variables selected and empirical measurements used in the study are presented in Table 2.

The statistical design explains what observations to make and how to make. It also indicates what types of statistical test are to be applied for analyzing the data. In the present study, the ex-post facto research design was used.

According to Gay (1992), content validity is the degree to which a test measures an intended content area and is determined by expert judges. Relevancy weightage is defined as the ratio of actual score obtained by an item to maximum possible score of that item. The relevancy weighted for each statement was calculated using the formula:

The responses of 40 judges were obtained in a four-point scale, including most relevant, relevant, undecided, least relevant given the scores of four, three, two, and one, respectively. After collection of the judge opinions, the relevant percentage and weight age scores were obtained.

Considering the magnitude of obtaining relevancy scores and other criteria like coverage of diverse dimensions, 39 items from animal husbandry component were accepted

The primary scale was administered to a group of 30 respondents randomly selected in a non-sample area. The respondents were selected from a different socio-economic background in order to cover women from different categories. The Cronbach's Alpha was estimated at 0.895, which was highly significant at one per cent level indicating the high reliability of the scale.

In order to find out the relationship between different characteristics of rural women with the participation in animal husbandry, the GLM

Table 1

*Selection of Respondents Based on Proportionate Stratified Sampling*

| Districts | Name of Taluk | Popu. | % of Popu. | No. of village | % of village | Selected villages number | % | Number of respondent |
|-----------|---------------|-------|------------|----------------|--------------|--------------------------|------|----------------------|
| Markazi | Ajichai | 11864 | 26 | 10 | 14.3 | 8 | 14.5 | 52 |
| | Espiran | 2955 | 6.6 | 16 | 22.9 | 13 | 23.6 | 13 |
| | Maydanchai | 18319 | 40.2 | 23 | 32.9 | 18 | 32.8 | 80 |
| Khosroshahr | Sarvsahra | 4502 | 10 | 7 | 10 | 5 | 9.1 | 20 |
| | Lahijam | 3193 | 7 | 6 | 8.5 | 5 | 9.1 | 14 |
| | Tazekand | 4871 | 10.2 | 8 | 11.4 | 6 | 10.9 | 21 |
| Total | | 45704 | 100 | 70 | 100 | 55 | 100 | 200 |

Table 2

*Operationalization and Measurement of Independent Variables*

| Variables | Empirical measurement |
|---|---|
| **Dependent variable** | |
| Participation of farm women in animal husbandry | Scale developed for the study |
| **Independent variables** | |
| Age | A structured schedule |
| Education | A procedure developed by Trivedi (1963) |
| Annual income | A structured schedule |
| Landholding status | A structured schedule |
| Family size | A structured schedule |
| Animal possession | A structured schedule |
| Marketing infrastructure | A structured schedule |
| Innovativeness | A procedure developed by Moulik and Rao (1965) |
| Level of aspiration | A procedure developed by Seema (1986) |
| Perceived role overload | A structured schedule |
| Extension participation | A structured schedule |
| Extension contact | A structured schedule |
| Mass media exposure | A procedure developed by Trivedi (1963) |
| Inter-spouse communication | A structured schedule |
| Cosmo-politeness | A procedure developed by Desai (1981) |

(general linear model) multivariate method was applied as strong statistical method. GLM is a general procedure for analysis of variance and covariance (ANCOVA) as well as regression. It can be used for univariate, multivariate, and repeated measures designs. The GLM Multivariate procedure allows you to model the values of multiple dependent quantitative variables based on their relationships to categorical and scale predictors (MANCOVA).

## RESUTS AND DISCUSSION

The present research was designed to study the participation of farm women in agricultural development in Iran. Fifty percent of total farm women belong to 18- 35 age group. A majority (81.3 %) of marginal farm women and 85.7 per cent of small farm women, and 72.5 per cent of big farm women were less than 45 years age group. A great majority (94.50 %) of farm women of Markazi and Khosroshar, were literate, received education up to the middle school level and high school level. A majority of farm women in both districts belonged to the medium level of income. 58.60 per cent of the big farm families had a larger number of farm women with the medium level of income. 73.60 percent of the marginal respondents had low level family

income, whereas 71.40 per cent of small farm families had a medium level of family income. Women exhibited a high level of decision-making participation in many aspects of agricultural activities, particularly in animal husbandry activities.

## Relationship between independent variables and animal husbandry participation in agricultural activities

A look at Table 3 reveals that age, family size, level of aspiration, perceived role overload, extension contact, and inter-spouse communication had a positive relationship with work participation. Other variables, including annual income, education, and landholding marketing infrastructure, innovativeness, mass media exposure, and cosmo politeness had a negative relationship with work participation. Animal possession had relationship with work participation of farm women in animal husbandry at five per cent level. Perceived role overload and inter-spouse communication were related to work participation at 1% level of significant. As shwon in Table 3, the independent variables of age, education, marketing infrastructure, innovativeness, perceived role overload, marketing infrastructure, cosmopolitans, and mass media exposure had a positive rela-

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Table 3

*Relationship between Independent Variables with Animal Husbandry Participation in Agricultural Activities*

| Independent variables | Animal husbandry activities (n=200) | | | | | |
|---|---|---|---|---|---|---|
| | Work participation | | Decision-making participation | | Overall participation | |
| Age | 0.033 | (0.324) | 0.051 | (0.238) | 0.012 | (0.436) |
| Education | -0.061 | (0.195) | 0.039 | (0.290) | 0.003 | (0.481) |
| Annual income | -0.042 | (0.276) | -0.194** | (0.003) | -0.002 | (0.487) |
| Landholding status | -0.070 | (0.161) | -0.197** | (0.003) | -0.049 | (0.249) |
| Family size | 0.108 | (0.064) | -0.057 | (0.210) | 0.074 | (0.150) |
| Animal possession | 0.116* | (0.049) | -0.085 | (0.115) | 0.109 | (0.063) |
| Marketing infrastructure | -0.006 | (0.468) | 0.078 | (0.136) | -0.014 | (0.424) |
| Innovativeness | -0.044 | (0.270) | 0.039 | (0.293) | -0.017 | (0.404) |
| Level of aspiration | 0.043 | (0.274) | -0.028 | (0.346) | 0.032 | (0.329) |
| Perceived  role overload | 0.428** | (0.000) | 0.078 | (0.139) | 0.410** | (0.000) |
| Extension contact | 0.043 | (0.272) | -0.077 | (0.139) | -0.006 | (0.468) |
| Mass media exposure | -0.047 | (0.255) | 0.050 | (0.240) | -0.101 | (0.078) |
| Inter-spouse communication | 0.497** | (0.000) | -0.054 | (0.244) | 0.488** | (0.000) |
| Cosmo politeness | -0.043 (0.272) | | 0.008 (0.454) | | -0.017 (0.405) | |

**p<0.01          * p<0.05

tionship with decision–making. Other variables such as annual income, land holding, extension contact, animal possession, family size, animal possession, and level of aspiration had a negative relationship with participation in decision-making in animal husbandry. Annual income and land holding had a relationship with decision-making participation in animal husbandry at one per cent level.

Table 3 indicates that the independent variables such as age, education, family size, and animal possession, level of aspiration, inter-spouse communication, and perceived role overload had a positive relationship with overall participation. It shows that other variables had a negative relationship with overall participation in animal husbandry. Moreover, inter-spouse communication and perceived role overload had a relationship with overall participation in animal husbandry at one per cent level.

GLM multivariate tests based on animal husbandry activities by the independent variables

GLM (general linear model) is a general procedure for analysis of variance and covariance

Table 4

*Tests of Between-Subjects in GLM Multivariate Tests Based On Animal Husbandry Activities by Independent Variables (n=200)*

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | p-value |
|---|---|---|---|---|---|---|
| GLM Mult. Model | Overall | 15264.816[a] | 28 | 545.172 | 4.136 | .000* |
| | Work | 14565.246[b] | 28 | 520.187 | 5.106 | .000* |
| | Decision | 388.231[c] | 28 | 13.865 | .878 | .646 |
| Intercept in the GLM model | Overall | 5342.564 | 1 | 5342.564 | 40.533 | .000* |
| | Work | 2232.891 | 1 | 2232.891 | 21.919 | .000* |
| | Decision | 656.517 | 1 | 656.517 | 41.556 | .000* |
| Error | Overall | 21879.830 | 166 | 131.806 | | |
| | Work | 16910.672 | 166 | 101.872 | | |
| | Decision | 2622.518 | 166 | 15.798 | | |
| Corrected Total | Overall | 37144.646 | 194 | | | |
| | Work | 31475.918 | 194 | | | |
| | Decision | 3010.749 | 194 | | | |

a. R Squared = 0.411 b. R Squared = 0.463  c. R Squared = 0.129

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(ANCOVA) as well as regression. It can be used for univariate, multivariate, and repeated measures designs.

The GLM Multivariate procedure allows you to model the values of multiple dependent scalar variables based on their relationships to categorical and scale predictors (MANCOVA).

Reasons to use GLM as a statistical tool for this particular research can be summarized as:

1. The presence of nominal, ordinal and scale types of independent variables. For example, marital status and districts are nominal, and level of aspiration and education is ordinal. Age and annual income are scalar variables.

2. The presence of more than one dependent variable; for example, animal husbandry activities have three variables, including overall, work and decision making.

3. In this specific research, it was not suitable to use regression, even multivariate regression because the regression method will only predict one dependent variable.

Table 4 shows the effects of independent variables on animal husbandry on three different aspects including overall, work, decision making at the same time.

The omnibus or overall F test, tests the null hypothesis that there is no difference in the means of the dependent variables for the different groups formed by categories of the independent variables. The multivariate formula for F is based not only on the sum of squares between and within groups, as in ANOVA, but also on the sum of cross products, that takes covariance into account as well as group means. Significance tests for multiple dependents all follow the F distribution and so an F value and corresponding significance level are printed out for each of these tests.

As the results showed, there was a significant relationship within independent variables in models of overall, work animal husbandry participation, and independent variables did not significantly affect participation in decision-making. Also about the individual effects of independent variables on dependent variables, this variable had significant effects at 5 per cent level.

1. For overall animal husbandry activities: perceived role overload, inter-spouse communication.

2. For work participation: perceived role overload, inter-spouse communication, family size.

3. For decision making activities: education, innovativeness.

Results of the GLM method were clearly shown in Figure 1. Also, Figure 2 shows the results of GLM and significance test in that the dotted lines show insignificant relations and solid lines shows significant relations between animal husbandry activities and independent variables.
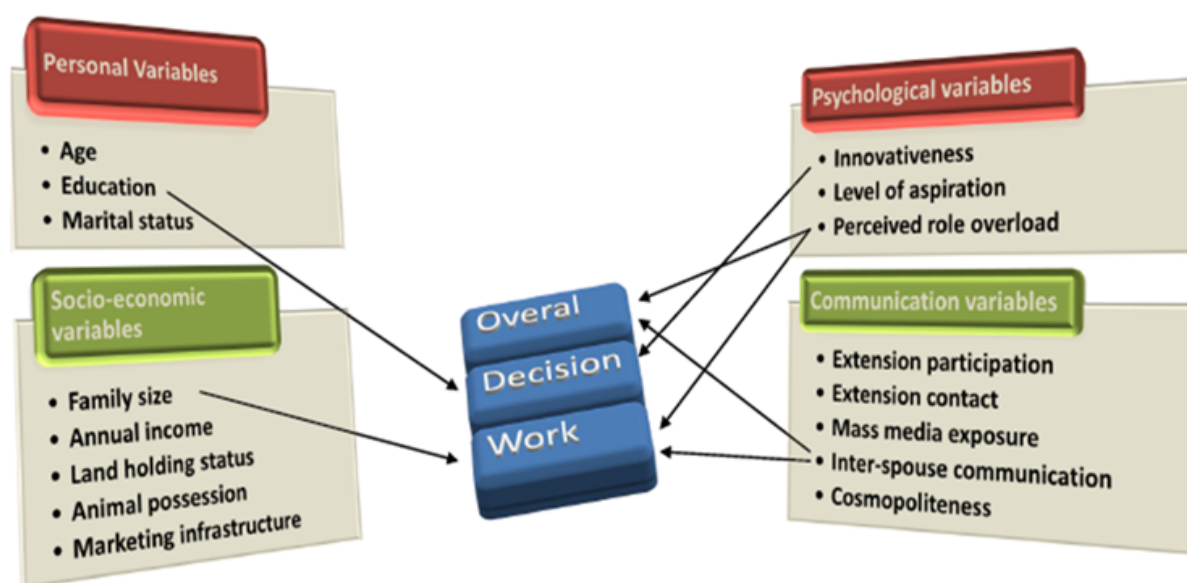
*Figure 1.* Result of GLM multivariate tests based on animal husbandry activities with indipendent variables
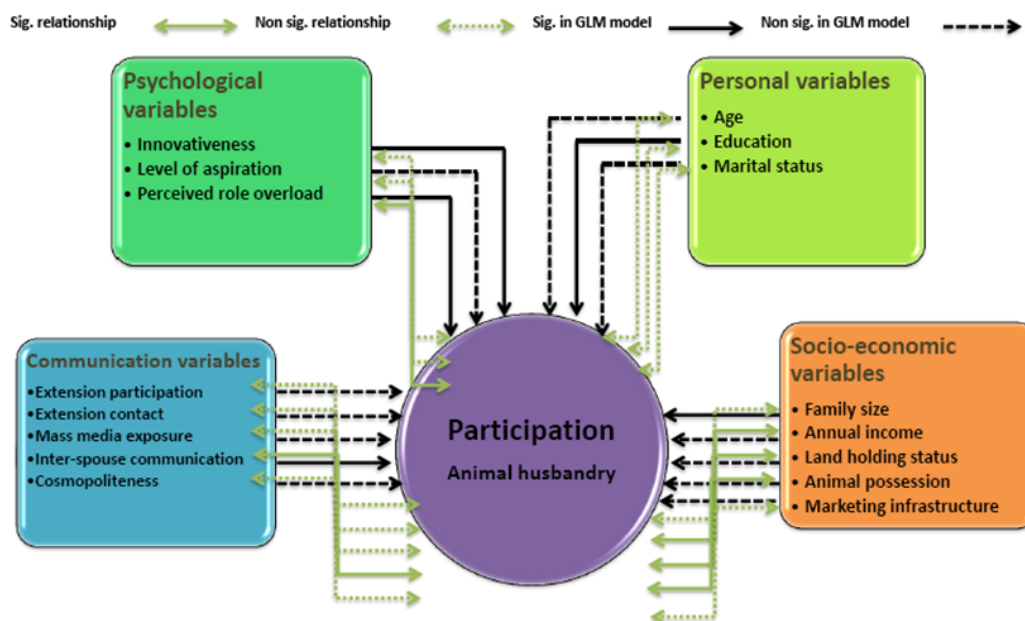
*Figure 2.* Emprical model of the study based on animal husbandry activities with indipendent variables

## CONCLUSION

In Iranian farms, women play an important role in achieving rural development goals. In Iran's rural society, every family can be counted as a production unit. Results showed that age, education, family size, animal possession, level of aspiration, inter-spouse communication, and perceived role overload had a positive relationship with overall participation. Examination of the effects of independent variables on animal husbandry at three different parts including overall participation, work participation, and decision-making participation showed a significant relationship within independent variables in models and overall participation and participation in animal husbandry, and none of the independent variables significantly influenced participation in decision-making.

## ACKNOWLEDGMENT

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