IV－17 A STUDY OF FACTORS DETERMINING SATISFACTION WITH VILLAGE LIFE AMONG RESIDENTS OF CORBAL REGION IN IRAN

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1. INTRODUCTION

One of the fundamental trends of Iranian government after the Islamic Revolution is the implementation of consistent strategies for overcoming significant differences between urban and rural areas.

A rural development strategy that has real support from the government will increase the country's capability to produce, both for local consumption and for export.

Today many villagers emigrate to urban areas because their villages don't satisfy them and, of course, because of the many problems that they face in their villages. That is why it is important to give priority to developing rural societies.

Historically, the execution of questionnaire surveys has developed from the end of the nineteenth and beginning of the twentieth centuries, principally by Mayhew, Booth and Rowntree[6]. Since then, sample surveys have been used increasingly and have become a principal research tool in a vast range of subjects, and are used in all countries of the World, especially the Third World countries.

So, by questionnaire we try to find the villagers' problems and their demands. The case study to which the model is applied is the Corbal region in the south part of the Islamic republic of Iran.

2. STUDY AREA

The Corbal region is located in Fars province in the south of Iran as shown in Figure 1. Its neighbors are as follow: Arsenjan city in the North, Zarghan and Kharameh city in the South, Shiraz township in the southwest, Marvdasht city in the West, and Niriz township in the East. The Corbal area is 918.75 squ are kilometers and its population is 44819, so the population density is 49 people per square kilometer.

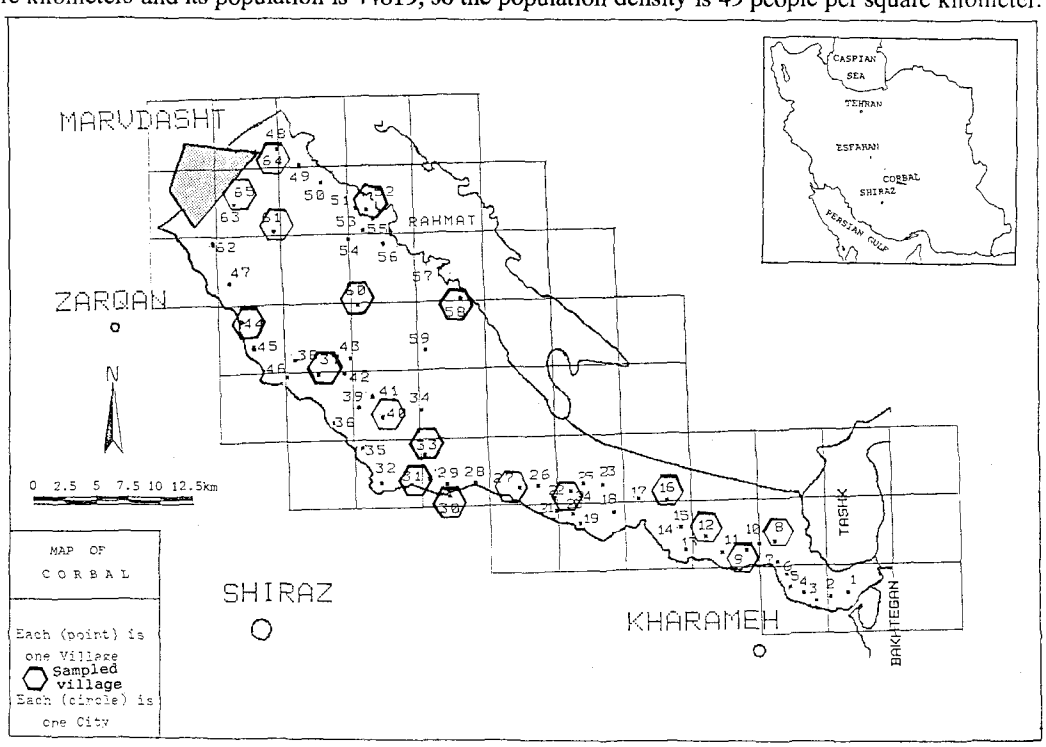

Figure 1. Map of Corbal Region

イランコルバル地域住民の農村生活での満足度決定要因に関する研究

Its agricultural area is 45,892 hectares and its biological density of population is 1 person per hectare. Corbal region is plainland, and the average altitude is 1,590 meters above see level. Its climate is temperate[8].

2.1 PROBLEMS OF CORBAL REGION

Existing information and statistics of Corbal region show that this region has problems, the most important of which can be written as follows:

1. In rural areas transportation of agricultural products is one of the most important limiting factors; low quality roads are one of the problems of Corbal.
2. Shortage of public services and infrastructure facilities.
3. Low level of education
4. Jobless problem.
5. Immigration of Corbal inhabitants to cities, one of the most important problems.

However, the existence of Kor and Sivand rivers, and Corbal being a plain region, and having suitable soil and rich mines; as well as existence of sufficient labor; show that the Corbal region has capability for development.

2.2: OBJECTIVES OF THE CASE STUDY

An underlying purpose of the paper is to lay the groundwork for an approach to the reduction of rural problems and the development of the rural situation.

The importance of emigration of villagers to cities leads us to consider the social portrait and social welfare. And also because satisfaction of inhabitants with their villages has a great influence upon their emigration to cities, we try to derive the characteristics of villagers which have influence on their satisfaction level. For this purpose we used a questionnaire, and by using statistical analysis, (especially the

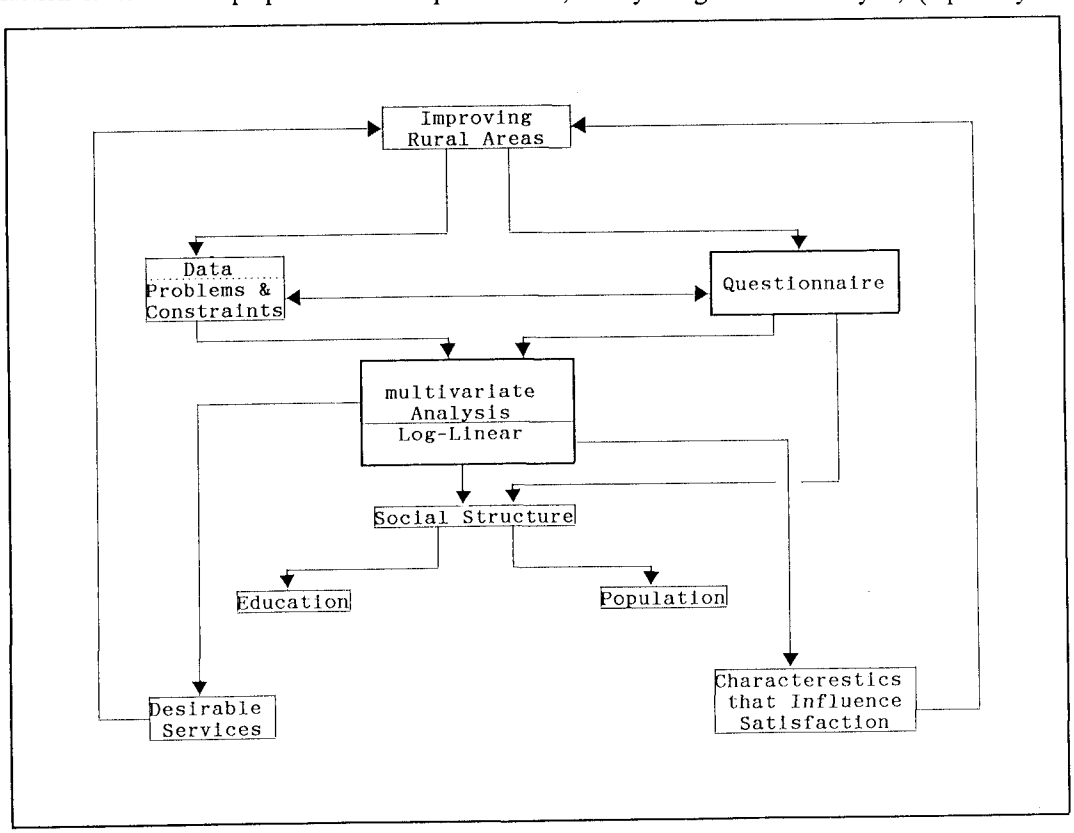

Fig. 2 CONCEPTUAL FRAMEWORK OF STUDY

log linear model) of the results, we tried to obtain our objective; that is, a simple model that will fit the data. Finally, because existence of public services will reduce emigration, we try to find the five most desirable services, needed in this region.

3. METHODOLOGY & CONCEPT

3.1 CONCEPT

The lack of information, especially in rural areas, represents one of the problems of the Third World countries.

Also, due to the limitation of data and information available in Corbal region, the technique of questionnaire's process is used in this study.

The analyzing of the questionnaire was done by SAS (Statistical Analysis System) program. Chi-square test, log-linear analysis and multivariate analysis have been implemented for planning. Using this analysis desirable services required by respondents, and characteristics of respondents influencing their satisfaction could be found by log-linear modeling.

Fig. 2 shows the conceptual framework of study.

3.2 QUESTIONNAIRE

In the last four decades there has been an increase in the recording of the opinions of people by doing questionnaire. Below are the main stages in the construction of the questionnaire.

(i) Stating the objective of the survey.
(ii) Choosing the case study.
(iii) Selecting a method of data collection.
(iv) Writing a questionnaire.
(v) Selecting the sample.
(vi) Coding, editing and preparation of data file.
(vii) Analyzing and interpreting the characteristics.

The questionnaire which we did consist of 31 questions.

The villages which answer the questionnaire involve 18 villages out of the total 65 villages in Corbal region. The bases for selection were:

1. There are three zones in Corbal region, so six villages from each zone were chosen.
2. In each zone the most populated village and the least populated villages were chosen.
3. Other four villages were chosen randomly in each zone.

Table 1. Some Population-household characteristics of sampled villages

VILLAGE NUMBER	VILLAGE NAMES	HOUSEHOLD 1986	POPULATION 1986	NUMBER OF SAMPLES	% SAMPLE/ HOUSEHOLD
8	SOFLA	233	1191	25	10.7
9	BONGIR	130	685	15	11.5
12	HOSAIN ABAD	56	334	7	12.5
16	SOLTAN ABAD	296	1592	33	11.1
24	HASHEM ABAD	38	192	6	15.8
27	NOSRAT	40	313	6	15
30	RAHMAT ABAD	487	2387	50	10.3
31	MEHRIAN	117	625	14	12
33	MEHMAN ABAD	72	411	9	12.5
37	EKRAD	43	254	6	14
40	DOLAT ABAD	37	286	6	16.2
44	BANDE AMIR	299	1634	33	11
52	SOLTAN VALAYAT	150	1180	15	10
58	ESMAEIL ABAD	87	462	10	11.5
60	DEH CHASHT	49	292	6	12.2
61	RAJA ABAD	281	1506	31	11
64	KENARE	1166	6191	100	8.6
65	KUSHK(M)	481	2513	50	10.4
	TOTAL	4062	22048	422	10.4

The questionnaire survey was carried out from the 25th of December ;1990; until the 15th of January ; 1991.

The questionnaire method was the direct interviewing method. Table 1 shows the villages and the number of questionnaires done.

4. COMPONENTS OF THE MODELS APPLIED

4.1 STATISTICAL ASSOCIATION BETWEEN SATISFACTION WITH OTHER VARIABLES

The Chi-squared Test.

The chi-squared test is a statistical model which tests a goodness of fit to the distribution of the data. By the chi-squared test we tried to investigate whether or not there is any relationship or association between any two characteristics [9],[7].

For an r x c contingency table with observations O_{ij}, marginal totals $O_i = \sum_j O_{ij}$, $O_j = \sum_i O_{ij}$, and total sample size n, the expected frequency for cell(A_i,B_j) is:

$$E_{ij} = \frac{O_{i.} \times O_{.j}}{n} \qquad (1)$$

and the chi-squared test is:

$$\chi^2 = \frac{(O - E)^2}{E} \qquad (2)$$

with (r-1)(c-1) degrees of freedom.

By looking to the tables constructed to show satisfaction of respondents with village and their characteristics, and also the chi-squared results, we find the following.

There is a relationship between satisfaction of respondent and their age, marital status, education, relation to the agricultural cooperation, parental encouragement of sons to move out of village, plans to stay forever in the village, and also in which zone of the Corbal region they live .

4.2 LOG LINEAR ANALYSIS

Log-linear model is a statement of the expected cell frequencies of a cross-tabulation (Fij's) as function of parameters representing characteristics of the categorical variables and their relationships with each other. Log-linear model for a 2 X 2 cross-tabulation is:

$$F_{ij} = \eta \tau_i^V \tau_j^m \tau_{ij}^{VM} \qquad (3)$$

By taking natural logarithms of all the terms, the equation can be transformed into linear equations, which are linear in their logaritms (Ln;hence,log-linear) [2],[3].

$$Ln(F_{ij}) = Ln(\eta \tau_i^V \tau_j^m \tau_{ij}^{VM}) = Ln(\eta) + Ln(\tau_i^V) + Ln(\tau_j^m) + Ln(\tau_{ij}^{VM}) \qquad (4)$$

$$G_{ij} = \theta + \lambda_i^V + \lambda_j^M + \lambda_{ij}^{VM} \qquad (5)$$

Log linear analysis as explained in last part was carried out to find a simple model which shows the effects of each characteristics of respondents.

At first from chi-square test we found the characteristics of villagers related to their satisfaction level. They can be use as explanatory variables.

1. Marital status

Marital status was categorized into two items, the first one being "single", 27.25 percent of respondents, the second one being "married", 72.75 percent of respondents.

2. Education level

Education level was categorized into two, the first being those who are "illiterate", 29.62 percent of the respondents, and the second one being "literates", 71.38 percent of the respondents.

3. Age

Age was categorized into three items, the first being "young"(less than 25 years), 45.50 percent of respondents, the second "middle aged"(less than 45 years), 41.94 percent of respondents, and the third "old"(more than 45 years), 12.56 percent of respondents.

4. Zone

The place in which they live was categorized into three, the first was" **zone one**", in which 21.80 of respondents live, the second one "**zone two**", in which 27.96 percent of respondents live, and the third one "**zone three**", in which 50.24 percent of respondents live.

5. Ownership of domesticated animals

Ownership of domesticated animals was categorized into two groups, those who have domesticated animals, 33.89 percent, and those who don't have domesticated animals, 66.11 percent.

6. Household size

Households with five or fewer members were classified as small households, 67.30 percent, and more than five members as large households, 32.70 percent.

The S A S program was employed for estimating parameters, standard error, and standard lambda. Table 2 shows the results. Because the data output is large, only those with standard lambda greater than +1.96 or less than −1.96 are reported.

The equation of log-linear model can be written as follows:

$$G_{ijklmnop} = \theta + \lambda^{A}_{i} + \lambda^{E}_{j} + \lambda^{O}_{k} + \lambda^{L}_{l} + \lambda^{H}_{m} + \lambda^{S}_{n} + \lambda^{AS}_{in} + \lambda^{SZ}_{no} + \lambda^{LZ}_{lo} + \lambda^{AH}_{im} + \lambda^{ZM}_{op} + \lambda^{EA}_{ij} + \lambda^{OL}_{kl} \qquad (6)$$

VARIABLE NAMES:

A = Age of respondent	E = level of Education
O = Ownership of animals	L = ownership of Land
H = Household size	S = Satisfaction with village
M = Marital status	Z = Zone of domicile

The likelihood ratio is 133.38 and the degree of freedom 106. Its probability is 0.0372, so we can say that this model fits the data.

Note: Because the appearance of zeros in cells frequencies can be a problem, a small value (about 0.5/n) was added to every zero cell frequencies.

Table 2. Results of Log-linear Analysis

VARIABLES	PARAMETER ESTIMATE	STANDARD ERROR	STANDARDIZED LAMBDA
satisfy of village	0.231585	0.0819558	2.83
age of respondent	0.421572	0.123904	3.4
education level	-0.450688	0.124863	-3.61
ownership of animal	0.126179	0.0721194	1.75
ownership of land	0.420336	0.101863	4.13
household size	0.312698	0.0801994	3.9
satisfy x age	0.233516	0.0967797	2.41
satisfy x zone	-0.338281	0.0812368	-4.16
zone x land	-0.428556	0.12096	-3.54
household x age	-0.434493	0.0923634	-4.7
zone x marital	-0.175998	0.0963575	-1.83
education x age	0.49032	0.12654	3.87
education x marital	-0.316963	0.133102	-2.38
animal x land	0.202558	0.0719694	2.81

PROBEBILITY OF LIKELIHOOD RATIO = 0.0372

4.3 Necessity of public facilities

In the questionnaire we asked about the five most desirable facilities needed in order of preference.

Procedure for finding the five most desirable services

The five most desirable services in preferential order were asked of 422 persons all in region so we can record it as a data matrix with 29 services rows and 422 answer columns. Each answer is represented by a column of preferences in the matrix, and will agree to a greater or less extent with the others, and thus, we can measure their agreement by calculating the correlation coefficients between all pairs of answers. These coefficients can be shown as a square 422 x 422 correlation matrix.

After analyzing the correlation coefficients matrix by using factor analysis, here the multivariate analysis method, we obtain factor loading by 422 persons[5],[11].

Then the services scores can be obtained and the most desirable services will have the highest scores. Then the five most desirable facilities become:

1. BITUMEN ROAD 2. HIGH SCHOOL 3. HOSPITAL 4. WATER SUPPLY 5. ELECTRICITY

5. CONCLUSIONS & RESULTS

In this paper, the case study, was the Corbal region in the southern part of Iran. By the questionnaire and its analysis as presented in this paper, we tried to show the situation of the Corbal region and its individual characteristics.

The result reported in this paper lead to the following conclusions:

(1) Questionnaire and information of census report show that in the Corbal region, (a), Zone three has the best situation of living related to accessibility to services, (b), by population pyramid, we found that Corbal is a young region because the age of more than 80 percent of the population is less than 25, (c), about 29.6 percent of respondents are uneducated, and only 7.6 percent are of high school level, (d), about 41.5 percent of respondents are farmer and about 1.2 percent are jobless, (e), about 29.6 percent encourage their children to move out of the village, and (f), about 69.2 percent of respondent plan to stay in their villages.

(2) By using the chi-square test, the characteristics of strong relationship with the satisfaction of respondents were examined simultaneously in terms of their influence on the respondents. The results show that: age, martial status, education level, ownership of domesticated animals, ownership of agricultural vehicles, the zone of Corbal region in which the respondents live , and the household size all greatly influence the villager's satisfaction level.

(3) By using log linear analysis we tried to find one model which fit our data from the through questionnaire by the chi- square test.

(4) By multivariate analysis, the five most desirable services needed in the Corbal region, were found. The preferences among the services are as follows:

1.Bitumen Road 2.High School 3.Hospital 4.Water Supply 5.Electricity

REFERENCES

[1] Askew Ian "The location of services facilities in rural areas: A model for generating and evaluating alternative solutions ,Regional studies, vol. 17, pp 307-314"
[2] Daniel H. Freeman "Applied Categorical Data Analysis"
[3] David Knoke,Peter J.Burke" Log-Linear Models "
[4] Earal M.Kulp "Rural Development Planning (System and analysis and working method)"
[5] Etsuo Yamamura "Human Settlement Environment in Felda of Malaysia
[6] Herbert H. Hyman "Interviewing in Social Research"
[7] Ian R. Dun Smore "Categorical Data (Statistical methods unit 9)"
[8] Ministry of rural construction (Fars Province)" Rural development studies"
[9] Neil Wrigley "Categorical data Analysis for Geographers and Environmental scientist"
[10]R.L. Plackett "The Analysis of Categorical Data"
[11]Shuichi Katoh "Felda Jengka Settlers Preferences for Living Environment by Mental Map Presentation"