

# Social and Economic Issues of Home Staying Women in China

## A Case Study in a Village of Jiangsu Province

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**Abstract** — In China, many cities are creating large labor demands, which however leaves many females staying at their home villages. This could be a serious bottleneck to the enhancement of overall economy and living quality in China. In this paper, a study to home staying women in a village of Chinese Jiangsu Province is conducted, while the living status and future trends of home staying women are surveyed and investigated. The fuzzy mathematics was employed to identify the key factors that keep the women home with different age groups. Further, a Grey Model with very small ( $<0.55\%$ ) modeling errors was calibrated to have predicted a decrease of home staying women in the future. Based on the identified key factors and also referred to the practices in other countries, pertinent policies and programs are recommended for the government to address the issues.

**Keywords-component;** *home staying women; social issues; economic issues; fuzzy mathematics; grey model; prediction; countryside policy*

### I. INTRODUCTION

The home staying women, or called home staying wives, are women staying along or with other family members (seniors, children, etc.) at home village when their husbands are out for jobs in town or even abroad. With the Economic Reform and Open-door Policy that Chinese government pursues since 1979, many countryside labors flow into urban areas for job opportunities in industries, business, and many other non-agriculture majors, and have advanced the social and economical development of the country, especially for the urban areas. The majority of such flow-out labors is male, who leaves their seniors, wives, and children staying in their home villages [1]. This creates a special group of home staying women, who have to suffer from the separation with their husbands, cultivate crops over normally very limited amount of lands, take care of the seniors, and foster the children. The home staying women has become a real “disadvantaged group”, which attracts special attentions from the entire society and the government. There are several research questions generated: (1) What are the reasons that limit the home staying women to start their careers outside their home villages? (2) How to enhance the efficiencies of manpower for those women? and (3) What are the recommendations to the government so that the situations

will be changed and those women can quickly find suitable jobs or become self-employed?

### II. CURRENT STATUS OF HOME STAYING WOMEN

#### A. Selection of Study Site

In order to better understand the current status of home staying women in China, a study site in Jiangsu Province of China is selected, which is in the Xuyu Village under the Sankeshu Township in City of Suqian. This city is the smallest one in the province in terms of the gross economic products.

#### B. Survey Method

A set of questionnaire were designed for women in the target village to answer, together with necessary focus group interviews.

A total of 20 questions were listed in the questionnaire, including age, education background (for both the woman and her husband), family size, yearly family income, husband salary, self-evaluation of overall family lives, whether worked before marriage, intention and reason to work outside recently, intention to learn skills, level of working skills, frequency for the husband to visit home, ways to spend idle time, ages of children, impacts to children when husband is out for job, expectations to children, any supports from woman’s own parents, needs from the government.

Focus group interviews were mainly conducted to the village administrators and officials.

#### C. Survey Process

A total of 162 survey forms were returned from those home staying women during Oct. 20 - Nov. 15, 2013. Table I lists the sampling rates for different age groups.

TABLE I. SAMPLES UNDER DIFFERENT AGE RANGE

Age	Number of Women Surevyyed	Percentage
>20-40	114	70%
>40-50	24	15%
>50	24	15%

There are a total of 679 families in the village. The overall sampling rate is 23.9%

#### D. Statistical Analyses Based on Survey Results

Based on the statistics to survey results, it is found that, most of the home staying women have no college level education (98%), 88% of their husbands has not gone to college. Most of the families have five and more peoples (66%).

The income of about half family is RMB 20,000- RMB 30,000 (50.43%, while about the other half family is RMB 10,000 – RMB 20,000 (49.42%). The jobs of husbands' are normally non-technical ones: self-employed business (31%), architecture workers (28%); transporting goods (11%), normal workers (17%). Only 11% are technicians. Most of these women feel that their lives are not so good (77%).

Reasons that may attract the women to work outside include: higher salary (51%), no job available in nearby area (43%), bad environment in home village (18.5%), and stay with husbands (20%). 44% of these women intend to study, while 43% never think about the study.

Most of them have no (53%) or very basic (35%) working skills, they spend most of the spare time in conversation (33%) and watching TV (52%). Most of their children are still young: 39% under 7 and 41% aging 7-13. 39% think that to separate with their husband will have great impacts to children, but others do not think so. Their best expectation to children is to change their lives through excellent education (89%).

The women normally do not receive the supports from their own parents (68%). They expect the government to offer more job opportunities for women (35%), address security problems (28%), offer stable jobs for their husbands (35%), promote local economy so that the husband can work at home (41%), and offer more technology trainings (43%).

### III. FUZZY MATHEMATICS BASED MODELING FACTORS AFFECTING HOME STAYING WOMEN'S JOB SELECTIONS

Home staying women normally do not have their own jobs except for the house works. There are many ways to identify the most important factors that would affect the women's selection of jobs. One of the feasible approaches is the fuzzy mathematics based selection. Based on fuzzy mathematics, all fuzzy values are associated with a set of membership functions (or weights) [2].

#### A. Fuzzy Weights for Women Aging 20-40

There are five candidate home staying factors prepared for the analyses:  $A_1$ : busy with farm works;  $A_2$ : taking care of children;  $A_3$ : taking care of seniors;  $A_4$ : nearby job opportunity; and  $A_5$ : no special work skill.

These subjects were asked about the importance of each factor ( $A_1$  to  $A_5$ ) with most important as 5 and least important as 1. The weights of subject  $j$  to factors  $A_1$  to  $A_5$  are defined as  $\{v1j, v2j, v3j, v4j, v5j\}$ .

The total weights for all five factors are:  $\{TW_1, TW_2, TW_3, TW_4, TW_5\} = \{0.24, 0.31, 0.19, 0.11, 0.15\}$ , where TW means "total weight" and the total sample is 114. Table II lists the analytical weights for factors  $A_1$  to  $A_5$ .

TABLE II. WEIGHTS OF HOME STAYING FACTORS  $A_1$  TO  $A_5$

Sample	$A_1$	$A_2$	$A_3$	$A_4$	$A_5$
1	3	5	2	1	4
2	5	4	2	1	3
3	3	5	2	1	4
...	...	...	...	...	...
114	5	3	4	1	2
Score	404	529	321	195	264
Weight	0.24	0.31	0.19	0.11	0.15

The sequence of weights is:  $A_2 - A_1 - A_3 - A_5 - A_4$ , meaning that the importance order of reasons that home staying women did not go outside for work follows the sequence below. (1) taking care of children; (2) busy with farm works; (3) taking care of seniors; (4) no special work skill; and (5) nearby job opportunity.

The village Xuyu that the survey was conducted in is an economically poor village with a traditionally big family structure. These home staying women need to take care a lot of house works. Since they are all very young with relatively good ability to learn working skills, there are high possibilities for them to find their jobs in the case that the above listed reasons are carefully addressed.

#### B. Fuzzy Weights for Women Aging 40-50

The factors selected for these women are:  $A_1$ : taking care of seniors;  $A_2$ : taking care of children;  $A_3$ : busy with farm works;  $A_4$ : nearby job opportunity; and  $A_5$ : no special work skill.

By using the similar analyses, the total weights are:  $\{TW_1, TW_2, TW_3, TW_4, TW_5\} = \{0.25, 0.13, 0.17, 0.13, 0.31\}$ . This group of women is normally with lower education background with lower working skills. No work skill and taking care of seniors are two major reasons why they did not go for outside jobs. Even though their first child may almost grow up, they may have second child who needs their close care.

#### C. Fuzzy Weights for Women Aging 50 plus

The factors selected for these women are:  $A_1$ : taking care of seniors;  $A_2$ : taking care of children;  $A_3$ : busy with farm works;  $A_4$ : nearby job opportunity; and  $A_5$ : no special work skill.

The total weights are:  $\{TW_1, TW_2, TW_3, TW_4, TW_5\} = \{0.17, 0.27, 0.21, 0.16, 0.28\}$ . The most significant reasons for this age group are with no special work skill and taking care of children. They take care of their grand children so that their sons/daughters can go outside for work. They are with very lower education background with almost no work skills.

### IV. GREY MODELING OF THE RATE OF HOME STAYING WOMEN

As there are many factors affecting the decisions if the home staying women will go outside for job, and the

relationships are normally complicated, grey box model is used to predict the percentage of women staying at homes.

#### A. Grey Modeling

A grey model (or called grey box model) means that, although the peculiarities of what is going on inside the system are not entirely known, a certain model based on both insight into the system and experimental data is constructed. There are however, still a number of unknown free parameters in this model, which can be estimated using system identification approaches [3].

Through focus group interview and searching relevant documents, the rates of home staying women for the past years are: 30% (year 2008), 28% (year 2009), 26.6% (year 2010), 25% (year 2011), and 23.9% (year 2012). The time series of such rates are:  $x^{(0)} = (x^{(0)}(1), x^{(0)}(2), x^{(0)}(3), x^{(0)}(4), x^{(0)}(5)) = (0.3, 0.28, 0.266, 0.25, 0.239)$ .

The DPS software, which is a software of data processing system for Practical Statistics [4], was employed to build up the GM (1,1) model. The resulted model is in (1), where the two parameters are:  $a=0.053812$ ;  $b=0.303676$ .

$$x(t+1) = -5.343296 e^{-0.053812t} + 5.643295 \quad (1)$$

The parameter C that is used to measure the goodness of the model is 0.0404, which is smaller than the critical value 0.35.

The modeling errors from the Grey Model are listed in Table III, where the prediction values are all very close to the observation values. The relative errors of predictions are all within a small range [-0.55%, 0.34%] (based on the readings in Table III).

TABLE III. MODELING ERRORS FROM GREY MODEL

Prediction step	Observation value	Prediction Value	Absolute Error	Relative Error
$x(2)$	0.28000	0.27993	0.0007	0.02385%
$x(3)$	0.26600	0.26527	0.00073	0.27523%
$x(4)$	0.25000	0.25137	-0.00137	-0.54792%
$x(5)$	0.23900	0.23820	0.00080	0.33411%

#### B. Grey Predictions

From model (1), the rates of home staying women in village Xuyu for the next three years are: 22.57% (year 2013), 21.39% (2014), and 21.39% (2015).

From the past data and the predicted value from (1), it is seem that the rate of home staying women is decreasing. This means there is an increasing trend that women are find more jobs. The administrators of the surveyed village Xuyu expresses that there are several factories and fish fields newly established there, which attracts women to change their living style for jobs. However, these newly created jobs need kinds of work skills and are still mainly for males.

### V. WOMEN POLICIES IN CANADA AND INDIA

In order to synthesize the proper policies to recommend to the government, the practices on home staying women in

other countries are studied, including Canada (a developed country) and India (a developing country).

#### A. Policies Supporting Countryside Women in Canada

Canada is the developed countries country with one of the most advanced agriculture systems in the world [5]. Women in Canada is very important in the countryside, however, they still have not full obtained the equal rights as the males. The Canadian government has the following policy to help women to find jobs.

1) *Established Women's Organization with all Levels*: There are always special national countryside women's assemblies discussing the topics that are related to women. The government encourages countryside women to actively participate in to these organizations.

2) *Special Education and Training*: The Canadian government has a special education bureau for countryside women to help them for opportunities of advancement. The bureau has a foundation to protect the health and support the education of those women.

3) *Equal Rights with Males*: The Canadian government working with social workers for the proper evaluation of the functions of countryside women, and publish policies to help them to overcome difficulties such as children care and education, training fund, and temporary labors.

#### B. Policies Protecting Countryside Women in India

The India has a large population as China with complicated culture background and social structure. Women will participate not only industry and agriculture work, but also science, culture and education affairs. However in the countryside, many women lost the connection with the market and resources, with the only function as producing new lives.

The Indian government has a series of policies to promote the women to look for jobs, including (1) protecting the women's rights through the publishing of laws and other special policies; and (2) special programs by the government and volunteer organizations to encourage women's participation to share with the benefits [6].

### VI. RECOMMENDATIONS

Based on the review of current status, the prediction of the trend of social and economic aspect of home staying women, and the policies in other countries, a series of working strategies and policies are recommended to Chinese government.

#### A. Establish the Cooperative Mechanizm among Families

Since the women group aging more than 50 years is with lower education background and work skill, it is not recommend encouraging them for outgoing jobs. The local govern can raise special funds to combine several families as a cooperative working group. Those women aging more than 50 years old will take care of all seniors and children within this family group. The government will offer a certain funding support to these women. In this way, the young

women in these families will be released for training and working outside.

#### *B. Centralize Land Use for more Efficient Operations*

By focus group interview to officials in Suqian City, it is learned that in Donghai County of Jiangsu Province, China, the land lords there have established a land cooperative group. The land is rented by a company from Nanjing City for proper fruit planting. Part of the peasants work in the fruit company, while the land lords can still receive rent fees. These kind of jobs are suitable to the women aging from 20-40 with moderate training of work skills. This experience can be widely applied to other countryside including the Xuyu village.

#### *C. Special Training to Women Aging between 20 and 40*

Women aging between 20 and 40 are with relatively higher education background and stronger ability of working. They are easy to adopt new concepts and learn new technologies. The local government can provide suitable training to them and work with other industry companies to make sure they will meet the job requirements of these companies.

#### *D. Promote Self-employment of Women and Provide Technical Supports*

In the studied Xuyu village, most of the women have no such a concept as self-employment. The government can lunch kinds of educational program to them. On the other hand, the government should provide necessary technical supports and fund supports.

#### *E. Improve the Plateform of Information Technology*

The information technology in Xuyu village is not so advanced. There is no job information provided by the village administration. The only channel that the women may obtain such information is through the TV. It is recommend delivering job and technical support information to the countryside families, especially to home staying women promptly and in a timely way.

#### *F. Establish Social Security Mechanizms for Women in Countryside*

The social security mechanism is a very important part that can protect women to better find or even create their own jobs. This may include insurance, liability of incidents, retirement and medical benefits, etc.

#### *G. Enhance educational programs on the indenpency of women*

The women related organizations and government should both enhance their educational programs to home staying women. The women should be more independent and have

equal rights with the males in all aspects including looking for jobs and self-employment.

## VII. CONCLUSIONS

In this paper, the social and economic issues of home staying women are analyzed through the interview of women in Xuyu village in Jiangsu Province of China. The current status of these women was scanned via the statistical analyses to the questionnaire survey. It is found that there are serious social and economic issues for the home staying women.

The reasons why whose home staying women do not work outside are analyzed by using the fuzzy membership method. The analyses are conducted separately for different age groups since the reasons are changing among these groups.

The prediction of the rate of home staying women is conducted by using the grey modeling technique. It is found that there will be less home staying women in the studied village, probably because of the new industries in recent years there.

By reviewing the practices in Canada and India and considering the real case in the studied village in China, recommendations of seven policies and/or working program are proposed to government.

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