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Determinants of Income Improvement Demand of Poor Women in Tra Cu District, Tra Vinh Province, Vietnam

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ABSTRACT

This paper aims at define the determinants of income improvement demand of poor women in Tra Cu district, Tra Vinh province. The Data of the paper was collected from 280 poor women in Tra Cu district, Tra Vinh province by random sampling system method. Using Logit regression model, the findings shown that the income improvement demand are significantly affected by the marital status, education level, housework hours, developmental needs, family type, the total income of the family, and connection need. Of which, the connection needs by the women is the strongest factor impact on demand for participation in the labor force to raise family incomes of women.

Keywords: Poor women, Income, Logit regression

1 INTRODUCTION

Women account for 50% in the population structure of every country in the world. Therefore, the participation of women in the labour force is very important to increase the income, living standards and household saving percentage, sustainably reduce the poverty and contribute to enhance the development of local economy.

The start point of this research is based on the reality of poor women in Tra Vinh (especially in Tra Cu district). Although they are assisted to develop the economy and supported by the local government, union council, they cannot rise in their lives and make stable income for themselves and their family. Some of them do not participate in laboring to make stable income and enhance their role of manufacturing in society. The reason mentioned in the research is women's demand of development. Women have fewer rights to make decision in their family and in the society because of their weak role coming from the patriarchal family (Hung, 2008). They are not quite equal in major decisions of the family work, in property control, the heirs although they hold responsibility for the financial management (Ha at al., 2006). It is evident that women work more hours than men but it is mainly the housework that does not make income for the household (Hafeez and Ahmad, 2002). Besides, the factors related to individuals, families, economy and society also play important roles in increasing the income of poor women (Phu and Y, 2014).

With the aim of synthesizing and studying the factors related to individuals, families, economic – social situation in order to figure out which factors have a great effect on increasing the income of poor women, "Research on participating demand in increasing family income of poor women in Tra Cu district, Tra Vinh province" is necessary to be conducted.

2 THEORETICAL BASIC AND RESEARCH MODEL

2.1Theoretical basis

Modern theories indicate that the two most influential factors in joining the labour force to improve the income of the family are personal and family characteristics of the women (Sills, 1968). Personal characteristics include ethnic factors, age, educational background, marital status, number of hours doing housework and the development demands of women.

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Besides, family characteristics include household type, household size, dependent children and gender of the owners. According to the theory of labour assignment due to gender, women often suffer a heavier burden of re-manufacture role than men because to women, happy family is their sacred and extremely important property. Therefore, the decision to participate in the economic development of women needs to be considered carefully because it will directly affect to family happiness.

Besides, when the women involve in economic development, a factor playing an important role is family economic status. Two concepts related to the economic status of households which have been suggested in a number of studies are the total income and property values held by the family. Women living in families with high income and owning valuable property, have less motivation to participate in economic development (Rosett, 1957).

Finally, if the human capital affects to the income and the salary of workers, connected demands of women have influence on the searching process of their job opportunities. For women, the connected demand is not only important in finding appropriate work but also in successfully completing the work (Sanchez, 2007).

2.2 Theoretical research model

The groups of factors should be considered in the specific conditions of Vietnam in general and particularly in Tra Cu to appropriately adjust before applying them into the research model. Theoretical research model is described as follows:

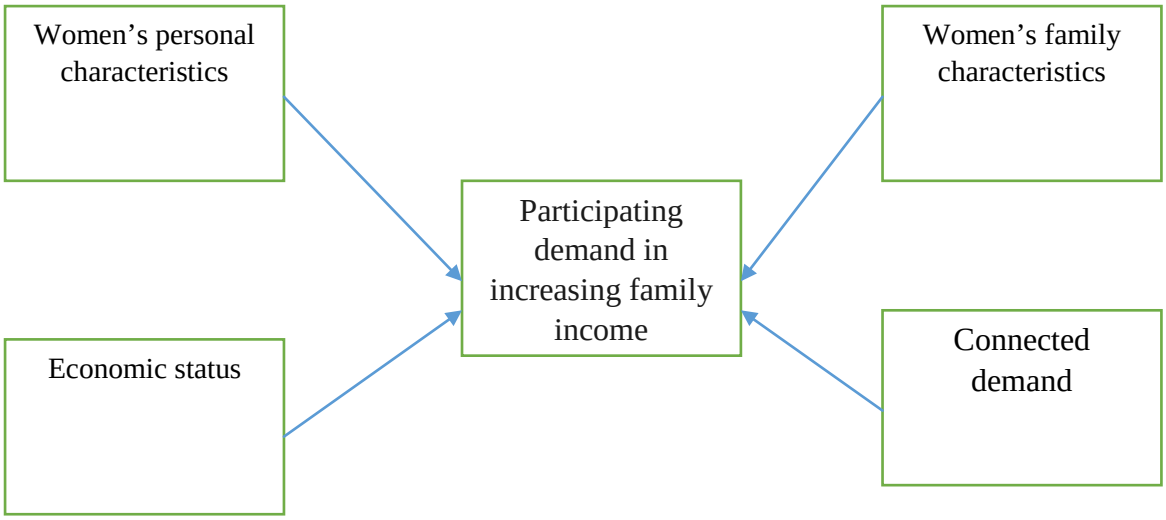

Figure 1: Theoretical research model

In order to build the scale of measuring two concepts of the potential development needs (in personal characteristics of women) and connected demands, a qualitative study was undertaken for the purpose of building the relevant analysis criteria. Through the method of experts, the researcher had a discussion to get opinions from the experts whose work related to women about measuring variables for each concept. Then, the opinions were collected to make scales for each concept. The scale used in this research was the Likert 5 points (used for quantitative variables), from level 1 with "Very disagree" to level 5 with "Very agree". Table 1 showed 12 observation variables built to measure 2 concepts of development need and connected demand.

Table 1: Scale of two concepts of development need and connected demand

Scales	Symbol
1. Development need	**F1**
You feel satisfied with your current job	F11
You feel satisfiedwith the income from that job	F12
The current job brings you opportunity of development and innovation in your life	F13
You love your life and your current job	F14
2. Connected demand	**F2**
Your neighbours are easy going and sociable	F21
Your neighbours usually help you when you have difficulties	F22
You joined Women's Union to borrow loan to do business effectively	F23
You and other women here were united to develop economy to overcome poverty.	F24
You usually join regular meeting in your local area	F25
You feel proud of yourself because you can earn money to pay for you and your family	F26
You feel proud of yourself because you are a member of local organizations	F27
Everyone always believe and love you	F28

3 RESEARCH METHOD

3.1 Data collecting method

Data used in the research was the primary data that was collected from a survey by a questionnaire. The survey was conducted on March of the year 2016 with participants who are 288 poor women with or without needs to work to enhance their family's income in Tra Cu district, Tra Vinh province, including, 230 people with the motivation to work to enhance their family's income interviewed (make up 82.1%) and 50 people without needs to earn money for their family's income (make up 17.9%). Poor women were interviewed by the systematic sampling method with saltus of 33 till there were enough the number of poor women necessary for the interview based on the list of poverty household in Tra Cu district attached with the Decision No. 116/QĐ-UBND dated on 24/01/2014 of Chairman of Tra Vinh province.

3.2 Data analysis method

Descriptive statistical method was used in the research to describe the fact of women who work to enhance their family's income in Tra Cu district. Descriptive statistics is describing the data by calculations and common statistical index such as average number, minimum, maximum, standard deviation, frequency table.

Cronbach's Alpha reliability coefficient was used to check the reliability of the scale of development need and connected demand.

Exploratory Factor Analysis (EFA) was used to collect observation variables into one variable to put in an analysis model (variable of development need – there are 4 observation variables, variable of connected demand – there are 8 observation variables).

The main tool used in the research was Logistic regression model. Because this model is suitable for binary dependent variable, interviewed poor women were divided into two groups: the group of women who want to work to enhance their family's income (defaulted for 1 in regression model) and the group of women who do not want to work to enhance their family's income (defaulted for 0 in regression model). Binary Logistic model has a format as follows:

Including:

- Y is need of participating in labour force to enhance the family's income of poor women and measured by two values 1 and 0 (1 is for women who want to work to enhance their family's income and 0 is for those who do not want to work to enhance their income).

- X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, F_1, F_2 are independent variables (explanatory variables). These variables were defined and explained in detail in Table 2 below:

Table 2. Independent Variables in Logistic Regression Model

Variables	Description	Expectations	Variable basis
Women's personal characteristics			
Ethnic group (X_1)	Dummy variable, 1 is for Kinh people, 2 is for Khmer people	+	Sills (1968), Faridi and Chaudhry (2009)
Age (X_2)	Respondents' age (age)	+	Sills (1968), Hafeez and Ahmad (2002), Ejaz (2007), Contreras and Plaza (2010), Mujahid (2014)
Quadratic age (X_2^2)	Quadratic age of respondents (Quadratic age)	-	Sills (1968), Contreras and Plaza (2010), Mujahid (2014)
Marital status (X_3)	Dummy variable, 1 means living with husband, 2 means single	-	Sills (1968), Ejaz (2007), Contreras and Plaza (2010), Mujahid (2014)
Educational background (X_4)	the total number of years that a woman went to school (year)	+	Sills (1968), Ejaz (2007), Contreras and Plaza (2010)
Working hours as a housewife (X_5)	A number of hours for doing housework (hour/day)	-	Sills (1968), PhuandY (2014)
Development needs (F_1)	Development needs of women, based on the Likert scale of 5 levels	+	Sills (1968), PhuandY(2014)
Women's family characteristics			
Type of family (X_6)	Dummy variable, 1 is type of modern family, 0 is type of traditional family	+	Sills (1968), PhuandY(2014)
A number of family members (X_7)	A number of family members (people)	+	Sills (1968), Hafeez and Ahmad (2002), Faridi and Chaudhry (2009)
A number of children under 6 years old (X_8)	A number of children that are under 6 years old (people)	+	Sills (1968), Ejaz (2007), Contreras and Plaza (2010)
A number of children from 7 to 22 years old (X_9)	A number of children that are enough 7 to 22 years old (people)	+	Sills (1968), Faridi and Chaudhry (2009)
Gender of household owner (X_{10})	Dummy variable, 1 is for female household owner, 0 is for male household owner	+	Sills (1968), Ejaz (2007)
Economic status			
Total income of family (X_{11})	The total amount of money which the main breadwinner in the family earns a monthly average (million VND / month)	-	Rosett (1957), Hafeez and Ahmad (2002)
Properties of family (X_{12})	The value of land held by households (million)	-	Rosett (1957), PhuandY(2014)
Connected demand (F_2)	Connected demands of women, based on the Likert scale of 5 levels	+	Sanchez (2007), PhuandY(2014)

4 RESEARCH RESULTS

4.1 Personal characteristics, family and economic situation of the women surveyed

Among 280 respondents, 65% is Khmer women, 35% is Kinh women. Among those figures, 77,5% women are living with their spouses, 49,1% graduated from secondary school and 82,1% women need to take part in the workforce to support the family income. One of the characteristics related to any individual who is participating in the labor market is educational background. When a human being is educated and highly skilled, it is almost always the person intending to labor to create income than others.

All of the total women surveyed, the average age is 44, the youngest is 20 years old and the oldest is 82 years old. With this group of age, women in the area have the advantages of experiences when joining the labor force. The average working hour of doing the housework is about 5 hours / day, individual cases up to 20 hours / day. Detailed information on the age and number of hours of doing the chore are detailed in Table 3.

Table 3: Information on the age and number of hours of doing housework of a woman

Criteria	Observation	Min	Mean	Max	Standard deviation
Age (age)	280	20	44	82	14
Working hours as a housewife(hour/day)	280	0	5	20	4

Source: from author's self-survey in 2016

With the surveyed sample, 43,6 % women live in traditional families and 20% of household owners are female. This result showed that a majority of women still live in the traditional family style and depend on men.This involved in who has the right to make decision, usually the heads of households, and the breadwinner of the family. In Vietnam, the determination of the family household owner is an administrative requirement. The household owner is usually the oldest person in the family, and often men.In case of being a headed female of a family not her husband, the woman had to work much longer than her spouse. In other words, men are ordinary householders in any family. Meanwhile, the female head of household is normally in the absence of the husband in the family, or has a high-paid job than her partner.This fact showed the distinction between a systematic headed men or women.

The average member of a family is 4, the highest number of member is 10 people. The number of dependent children is relatively low, on average one under-six-year-old-child and one child aged from 7-22. Details about household members are shown in Table 4.

Table 4: Members of the family of a woman

Criteria	Observation	Min	Mean	Max	Standard deviation
A number of family members (people)	280	1	4	10	1
A number of children that are under 6 years old (people)	280	0	1	4	1
A number of children that are enough 7 to 22 years old (people)	280	0	1	5	1

Source: from author's self-survey in 2016

Table 5 showed the total income of the women is relatively low, 1.98 million VND on average, there are cases only 0.3 million VND (the case of living alone without stable job). Besides, the property of the woman family has up to about 300 millionVND, 78.39 million VND on average and the lowest of all is 8 million VND.

Table 5: Economic situation of the family of a woman

Criteria	Observation	Min	Mean	Max	Standard deviation
Total income of family(million VND / month)	280	0.3	1.98	6	1.1
Properties of family(million VND)	280	8	78.39	300	92.49

Source: from author's self-survey in 2016

After analyzing the characteristics of individuals, families, the economic situation of the women surveyed, the research continued to analyze the factors affecting the demand for participation in the labor force to increase income of poor women's family in Tra Cu district, Tra Vinh province.

4.2 Factors affecting demand for participation in the labor force to raise the family income of poor women

Scale of development needs with Cronbach 's coefficient Alpha reliability is 0.861. EFA analysis results (based on 4 observation variables) were for KMO = 0.784 value, value expertise Bartlett significant (sig = 0.000 < α = significance level of 1%). 4 observation variables were grouped into 1 variable which represented the development needs of women. This represented enough variables included in the model reliability analysis.

Scale of connected demand with Cronbach's coefficient Alpha reliability is 0.795. EFA analysis results (based on 8 observation variables) were for KMO = 0.813 value, value expertise Bartlett significant (sig = 0.000 < α = significance level of 1%). 8 observation variables were divided into one variable representing the connection needs of women. These variables were also reliable enough to be included in the model analysis.

As stated in the research methodology section, the research used the logistic regression model to estimate the factors affecting the demand for participation in the labor force to raise the family income of poor women in Tra Cu, Tra Vinh. The dependent variables in this model were the needs of participating in the labor force to raise the family income of the poor women). There were 14 explanatory variables included in the model such as age, ethnicity, marital status, educational background, number of hours of doing housework, development needs, family type, number of family members, number of children under 6 years old, children from 7-22 years old , gender of household owners, the total income of the family, the family 's assets, connected demands.

The estimated results presented in Table 6 showed that there were 07 factors that affected the demand for participation in the labor force to raise the family income of poor women in less than 10% of significance level.

The value of the model was 2LL = -45.5737. The accuracy was 92.4% and the correlation coefficient among variables was less than 0.6, so there was no likely for multicollinearity to occur. Therefore, this model was statistical and appropriate. Provided that other factors were unchanged, the factors affecting the demand for participation in the labor force to raise the household income of the poor women were explained as follows:

As the results of Sills (1968), Ejaz (2007), Contreras and Plaza (2010), Mujahid (2014), marital status variable (X_3) had direct proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 1%). Specifically, when the women were living with their husbands, their possibility of the participation in the labor force to raise the household income was higher than 44.18% compared to single cases. In theory, married women had less demand for participation in the labor force to raise the household income, because they spent much time doing chores and taking care of children. However, the result of the study was opposite because after getting married, the women wanted to enhance their role in the family as well as share the financial

burden with the husband's family. Another reason was that the impact of the propagation of local organizations (mainly Women's Union) and the impact of women participating in the labor force to raise household income to contribute to the local economic development.

Table 6. The estimated results of Logistic Regression Model

Variables	Coefficients	dy/dx	Z value
Contant (C)	0.8856	-	-0.20
Women's personal characteristics			
Ethnic group (X_1)	-0.3568	-0.0115	-0.54
Age(X_2)	0.0254	0.0008	0.16
Quadratic age (X_2^2)	0.0004	0.0000	0.26
Marital status (X_3)	4.1687	0.4418	4.07***
Educational background(X_4)	2.0561	0.0746	2.13**
Working hours as a housewife(X_5)	-0.4265	-0.0129	-3.62***
Development needs (F_1)	1.7451	0.0528	3.68***
Women's family characteristics			
Type of family(X_6)	2.0771	0.0778	2.76***
A number of family members(X_7)	0.3038	0.0092	0.94
A number of children under 6 years old (X_8)	0.2731	0.0083	0.47
A number of children from 7 to 22 years old (X_9)	0.2815	0.0085	0.67
Gender of household owner (X_{10})	1.3666	0.0300	1.33
Economic status			
Total income of family(X_{11})	-1.0985	-0.0333	-4.00***
Properties of family (X_{12})	-0.0004	-0.0000	-0.13
Connected demand (F_2)	0.8199	0.0248	1.80*
2LL= -45,5737***			
Correctly classified: 92,4%			
The correlation coefficient between the variables are< 0,6			

*Note: *, **, *** Significant at 10%, 5% and 1%*
Source: from author's self-survey in 2014

Variable of educational background (X_4) had direct proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 5%). Specifically, graduated women from secondary school would have the possibility of the participation in the labor force to raise the household income more than 7,46% compared to under graduated those from secondary school. As the results of Sills (1968), Ejaz (2007), Contreras and Plaza (2010), women who had higher education level would have higher opportunity costs (higher salaries in participating in the labor force to raise income) when they didn't participate in the labor force, therefore, women who had higher education level often wanted to participate in the labor force to raise income and promote the role of women.

Variable of hours for doing housework (X_5) had inverse proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 1%). As the results of Sills (1968), Phu and Y (2014), women spending more time on doing housework would have less demand of participation in the labor force to raise the household income. Specifically, when the number of hour for doing housework increased to one hour, the possibility of participation in the labor force to raise income decreased by 1,29%. It might be explained that the number of hour for doing housework was getting higher; they were interested in the welfare of the family rather than in participation in the labor force to increase income. They wanted to spend more time taking care of family, children and old parents.

Variable of development needs (F_1) had direct proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 1%). As the results of Sills (1968), Phu and Y (2014),the more the women had personal development demand, the higher their needs of participation in the labor force to raise the household income was.

Variable of family type (X_6) has direct proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 1%). Women living in a traditional family had the demand of participation in the labor force to raise the household income less than 7,78% compared to women living in a modern family. As the results of Sills (1968), Phu and Y (2014), if women lived in a traditional family, they would be affected by family ideology: women must only do household chores, take care of children, old parents and supporting the income of the family is men's responsibility (considered as the breadwinner in family).

Variable of total income of the family (X_{11}) had inverse proportion with the demand for participation in the labor force to raise the household income of the poor women (significance level of 1%). If the households had high income, the demand for participation in the labor force to raise the household income would decrease. Specifically, when the household income increased 1 million VND,the possibility of participation in the labor force to raise the household income wouldreduce by 3,33%. The estimated results were explained that people were often more interested in the welfare of the family when they had high income. This meaned that women had to spend more time with family than participation in the labor force to raise the household income. These results were the same as the results of Rosett (1957), Hafeez and Ahmad (2002).

Variable of connected demand (F_2) had direct proportion with the demand for participation in the labor force to raise the family income of the poor women in 10% significance level. As same as the results of Sanchez (2007), Phu and Y (2014), if a woman had the high connected demand, she would have the demand to participate in the labor force to raise her family income because the information for employment was relatively full such as neighbors, Women Union, ... who were persuaded to participate in the labor force to raise the family income.

The variables of age, square age, ethnicity, number of family members, number of children under 6 years old, children from 7-22 years old, gender of household owners, household assets didnot have the meaning of statistic, or in other words they didnot have enough evidence to suggest that these factors affected the demand for participation in the labor force to raise the family income of the poor women in Tra Cu district, Tra Vinh province.

5. CONCLUSION

This research analysed the factors affecting the demand to participate in labour force in order to raise the family income of the poor women in Tra Cu district, Tra Vinh province. Applying the Logistic Regression Model, the research identified the factors affecting the

demand for participation in the labour force in order to raise the family income for the poor women which were marital status, education level, number of hours for doing housework, development need, family types, the total income of the family, and the connected demand. In which the connection demand factor of women had the strongest impact on the demand for participation in the labor force to raise family incomes of women. The research haven't discovered that factors of age, square age, ethnicity, number of family members, number of children under 6 years old, children from 7-22 years old, gender of household owners, household assets affect the demand for participation in the labor force to raise family income of the poor women in Tra Cu district, Tra Vinh province. Thus, for poor women to participate in the labor force to raise the family income, the author proposed some following recommendations:

Firstly, persuading and facilitating all women regularly to participate in activities, meetings, women's organizations, youth, farmers' association; study, have the condition to approach to books, newspapers and the media, ... in order to improve all aspects of women and create an environment for them to grow and connect with the society.

Secondly, in agricultural production, we should strengthen the agriculture, create conditions for women to have greater access to knowledge and new technologies. We help women to access to capital, new production tools, ... and apply new knowledge on cultivation, breeding to get effective yield and high income. Gradually restructuring the local economy with a strong industrial development and rural services, we should create more non-farm jobs for women, create the conditions to raise income for families with off-farm income resources, reduce the burden and worries about the economic of women. Besides, we need to research the market, build a reasonable suport levels and suitable training lists with the strengths of each area to attract the participation of poor female trainees in order to give them stable jobs.

Thirdly, we should build pattern of model families, happiness in life, equality between spouses without the gender prejudice idea, and unity in family activities, the couples manage and name in asset possession, discuss and make decision in the family together, ... gradually spread and replicate the pattern of model family throughout hamlets and communes.

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APPENDIX

1. Logit model

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. logit Y X1 X2 X2SQ X3 X4 X5 X6 X7 X8 X9 X10 X11 X12 F1 F2

Iteration 0:   log likelihood = -117.84837
Iteration 1:   log likelihood = -59.452251
Iteration 2:   log likelihood = -47.281544
Iteration 3:   log likelihood = -45.598018
Iteration 4:   log likelihood = -45.573721
Iteration 5:   log likelihood = -45.573671
Iteration 6:   log likelihood = -45.573671

Logistic regression                               Number of obs   =        250
                                                  LR chi2(15)     =     144.55
                                                  Prob > chi2     =     0.0000
Log likelihood = -45.573671                       Pseudo R2       =     0.6133

------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          X1 |    -.356842   .6588857    -0.54   0.588    -1.648234    .9345503
          X2 |   -.0254306   .1628237    -0.16   0.876    -.3445592     .293698
        X2SQ |    .0003966   .0015456     0.26   0.798    -.0026328    .0034259
          X3 |    4.168667   1.024154     4.07   0.000     2.161362    6.175971
          X4 |    2.056079   .8894133     2.31   0.021     .3128605    3.799297
          X5 |   -.4264995    .117877    -3.62   0.000    -.6575341   -.1954648
          X6 |    2.077068   .7522584     2.76   0.006     .6026685    3.551467
          X7 |    .3038061   .3227679     0.94   0.347    -.3288074    .9364195
          X8 |    .2730802   .5793835     0.47   0.637    -.8624906    1.408651
          X9 |    .2815103   .4193606     0.67   0.502    -.5404214    1.103442
         X10 |    1.366631   1.025898     1.33   0.183    -.6440924    3.377355
         X11 |   -1.098548   .2746832    -4.00   0.000    -1.636917   -.5601792
         X12 |   -.0004067    .003147    -0.13   0.897    -.0065747    .0057614
          F1 |    1.745095   .4747092     3.68   0.000     .8146824    2.675508
          F2 |    .8199411   .4563686     1.80   0.072    -.0745249    1.714407
       _cons |    .8855588   4.337518     0.20   0.838    -7.615821    9.386938
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2. Marginal impact of Logit model

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. mfx

Marginal effects after logit
      y  = Pr(Y) (predict)
         =  .96875061
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
X1*	-.0114596	.02229	-0.51	0.607	-.055139	.03222	.336
X2	-.0007699	.00494	-0.16	0.876	-.01046	.00892	42.9
X2SQ	.000012	.00005	0.26	0.798	-.00008	.000104	2026.91
X3*	.4417859	.20029	2.21	0.027	.049221	.834351	.78
X4*	.0745636	.03806	1.96	0.050	-.000032	.149159	.524
X5	-.0129114	.00584	-2.21	0.027	-.024362	-.001461	5.442
X6*	.0778466	.03822	2.04	0.042	.002933	.15276	.54
X7	.0091971	.00999	0.92	0.357	-.010385	.028779	4.244
X8	.0082669	.01793	0.46	0.645	-.026871	.043404	.684
X9	.0085221	.01314	0.65	0.517	-.01723	.034274	1.064
X10*	.0299784	.02285	1.31	0.190	-.014804	.074761	.2
X11	-.0332562	.01406	-2.37	0.018	-.060804	-.005708	1.99018
X12	-.0000123	.0001	-0.13	0.897	-.000199	.000174	77.856
F1	.052829	.02093	2.52	0.012	.011802	.093856	.009683
F2	.024822	.015	1.66	0.098	-.004569	.054213	-.026772

(*) dy/dx is for discrete change of dummy variable from 0 to 1

3. Correctly classified

```
. lstat

Logistic model for Y
```

	True		
Classified	D	~D	Total
+	200	14	214
-	5	31	36
Total	205	45	250

```
Classified + if predicted Pr(D) >= .5
True D defined as Y != 0
```

Sensitivity	Pr(+| D)	97.56%
Specificity	Pr(-|~D)	68.89%
Positive predictive value	Pr(D| +)	93.46%
Negative predictive value	Pr(~D| -)	86.11%
False + rate for true ~D	Pr(+|~D)	31.11%
False - rate for true D	Pr(-| D)	2.44%
False + rate for classified +	Pr(~D| +)	6.54%
False - rate for classified -	Pr(D| -)	13.89%
Correctly classified		92.40%

4. Test multicollinearity

```
. cor X1 X2 X2SQ X3 X4 X5 X6 X7 X8 X9 X10 X11 X12 F1 F2
(obs=250)
```

	X1	X2	X2SQ	X3	X4	X5	X6
X1	1.0000						
X2	-0.0642	1.0000					
X2SQ	-0.0701	0.9852	1.0000				
X3	0.0098	-0.3419	-0.3662	1.0000			
X4	0.2032	-0.4480	-0.4214	0.3832	1.0000		
X5	-0.1874	0.1110	0.1187	-0.1930	-0.2054	1.0000	
X6	0.1298	-0.2659	-0.2720	0.3236	0.3416	-0.1362	1.0000
X7	-0.2118	0.0833	0.0655	0.2477	-0.0876	0.0213	-0.1042
X8	-0.0613	-0.2187	-0.1854	0.0976	0.0786	-0.0542	-0.0569
X9	-0.0644	0.1518	0.1230	-0.0048	-0.1436	0.1502	-0.0384
X10	-0.0593	0.3281	0.3496	-0.5794	-0.3644	0.1661	-0.3010
X11	0.0513	-0.0811	-0.0820	0.0474	0.0872	0.0057	0.1690
X12	0.0026	-0.0443	-0.0691	0.1960	0.0062	-0.0184	0.0652
F1	-0.0457	-0.0222	0.0038	0.0680	-0.0987	0.2645	-0.0913
F2	-0.0529	0.0390	0.0799	-0.3660	-0.1823	0.2531	-0.1506

	X7	X8	X9	X10	X11	X12	F1
X7	1.0000						
X8	0.1647	1.0000					
X9	0.4471	-0.3391	1.0000				
X10	-0.2276	-0.0027	0.0186	1.0000			
X11	0.0051	-0.1080	0.0112	-0.2387	1.0000		
X12	0.1394	-0.0647	0.0429	-0.2211	0.0639	1.0000	
F1	0.1646	0.0564	0.1221	0.1517	-0.1963	-0.0118	1.0000
F2	-0.2028	0.1684	-0.1688	0.2280	-0.0082	-0.2126	0.1090