Frequency of Visit to Doctor and Health Problem Redresses of Farm Women: The Interactions and Impact in Rural Health Management

Riti Chatterjee*, Sankar Kumar Acharya** and Amitava Biswas**
*Senior Research Fellow (PhD scholar),**Professor
Department of Agricultural Extension, BCKV, Mohanpur, Nadia, West Bengal

Abstract – The farm women are one of the neglected individuals in the farm ecology in Indian scenario. They have to work for a longer time under the scorching sun and rain in the field as well as they serve their family along with. So, they suffer from various types of diseases and physical problems all the year round. But at the end of the day their health issues are severely neglected. Sometimes they pay visit to the doctor at later stages of problem or sometimes there is no visit to doctor . Lack of systematic screening and prevention for both acute and chronic illness is a greater constraint for poor farm women. The present study focuses its target on the farm womens' frequency of visit to the doctor.A study on this topic, was carried out at Boinchigram village under Pandua Block in Hooghly district of west bengal with objectives to generate classified information on occupational hazards of farm women,to estimate the level visit to doctor by the farm women s in terms of a score of socio-economic and ecological factors ,to estimate the interactive relationships between frequency of doctor's visit and the set of socio-economic and ecological variables and to generate micro level policy implication based on the empirical study. In order to collect the reliable experimental data, the selected parameters were taken, like: Height, Weight, B.M.I., Blood report, Perceived physical problems, functional literacy, mental stress, frequency of visit to doctor etc. Majority of the population under study are poor, undernourished farm women. From the study it has seen that the variable Body Mass Index (BMI) has recorded both the highest direct and indirect effect to the dependent variable frequency of visit to doctor. Because , who are physically weak and have less weight and height mainly suffer from many physical problems and the frequency of visit to doctor is highest in case of them .And the total calorie consumption per day has recorded the highest indirect effect because calorie is the most important component to eke out one's daily lives. So, we should immediately take both preventive and curative measures, otherwise it will affect future workforce of Agriculture.

Keywords: BMI, Doctor, Farm women, Health, Occupational hazards.

I.   INTRODUCTION

The derelict impact of green revolution in India has been well discernible through the health hazards of farm women recorded. All the dividend from the enhancement agricultural productivity has harshly been negated by the toxic ground water, entries of heavy metals in food chain and subsequently the coercive impact on the women health who are engaged in farm operations along with farmers as well. Visit to a doctor with differential frequency by farm women can be well taken as an indicator to measure the verbosity of exposure and its subsequent forms of health hazards. The present research clearly focuses its target on the farm women's' health vis-a-vis occupational hazards to elicit the facts what are factors under which they are relying with broken health and eroded motivation .

Adejare (2001) used self rated health status, frequency of seeking treatment and frequency of inability to work were used to compute the health status rating scale of rural women. Similarly, the burden of diseases can be measured in terms of disability adjusted life years (DALYs), physical quality of life index (PQLI) and gender related development (GDI) to determine the overall level of physical well-being. But lack of systematic screening and prevention for both acute and chronic illness is a greater constraint for poor and rural populations. It disproportionately affects their burden of disease and expenditures (Rao and Mant, 2012). Research on health care use in rural areas shows that a stark ninety percent of the population seeks care from private providers, with over seventy percent of those providers being unqualified (MAQARI, 2011).

So, it is necessary also to identify the pathway of coercive and pernicious molecules in the agro-ecosystem and keeps engulfing the economic, ecological and psycho-somatic health of farm women.

Objectives :-
- To generate classified information on occupational hazards of farm women
- To estimate the level visit to doctor by the farm women in terms of a score of socio-economic and ecological factors
- To estimate the interactive relationships between frequency of doctor's visit and the set of socio-economic and ecological variables
- To generate micro level policy implication based on the empirical study

Methods:-
Research locale and sampling:
Bantika-boinchi Gram Panchayat of the Pandua block of Hooghly district in West Bengal was purposively selected for the study. The village namely Boinchigram was selected by random sampling. The area had been selected for the study because of-
(a) There is ample scope for collecting relevant data for the present study.
(b) Acquaintance with the local people as well as the local language.
(c) The concern area was easily accessible to the researcher in terms of place of
Residence .
(d) The area was very easily accessible to the researcher in terms of transportation
(e) The closure familiarities of the student researcher with the area, people, officials and local dialects.
Purposive as well as simple random sampling techniques were adopted for the
study. For selection of state, district, block and gram panchayat purposive sampling
techniques was adopted because the area was ideal for Occupational Health Management study, convenient for researcher and having the infrastructural facilities and in case of
selection of villages and respondents simple random sampling technique was taken up.

Table.1. Sampling Technique and Sampling Design

Step	Items	Level	Approach
1	State	West Bengal	Purposive
2	District	Hooghly	Purposive
3	Block	Pandua	Purposive
4	Gram -Panchayat	Bantika- Boinchi	Purposive
5	Village	Boinchigram	Purposive
6	Respondents	90	Random
Total number of respondents : 90			

Pilot study:-
Before taking up actual fieldwork a pilot study was conducted to understand the
area, its people, institution, communication and extension system and the knowledge,
perception and attitude of the people towards climate change concept. An outline of the
socio-economic background of the farm women of the concerned villages, their perception on health issues , natural resources , ecology , nutritional aspects etc helped in the construction of reformative working tools.
Variables:- The socio personal, agro economic, socio-psychological and communication variablesare such type of variables, which determine the behaviour of an individual.

Independent variables:
Age (x1),No of children(x2),Number of farm work (x3),working hour per day (x4),Incidence level of miscarriage (x5), Number of animals reared (x6),Height (ft) (x7),Weight (kg) (x8),BMI(x9),Cereals consumed per day (g) (x10), Protein consumed per day (g) (x11),Fruits consumed per day(g) (x12), Vegetables consumed per day (g) (x13), Total carbohydrate consumed per day (g) (x14), Fat taken per day (g)(x15), Breakfast time in a.m. (x16), Lunch time in p.m. (x17), Dinner time in p.m. (x18),Calorie in carbohydrate per day(x19), Calorie in protein per day(x20), Calorie in fat per day (x21),Total calorie per day (x22), Size of holding
in katta (x23), Family income per annum(x24),Per capita income per annum (x25),Family expenditure per annum (x26), Per capita expenditure (Rs.) per annum (x27),Functional literacy (x28).

Dependent variables:
Perceived physical problems (y1), Psycho-social hazards (y2) and Frequency of Visit to doctor (y3).

II. RESULTS AND DISCUSSION

Correlation Analysis: **Table.2.Co-efficient of correlation (r) : Frequency of visit to doctor (y3) vs. 28 Exogenous variables (x1-x28)**

Serial Number	Variables	r value	Remarks **:significant at0.01 level *:significant at 0.05 level
1	Age (x1)	0.145	
2	No of children (x2)	0.0805	
3	Number of farm work (x3)	-0.0428	
4	workinghour perday(x4)	-0.0154	
5	Incidence level of miscarriage (x5)	0.1234	
6	Number of animals reared (x6)	0.021	
7	Height(ft) (x7)	0.2284	**
8	Weight(kg) (x8)	-0.057	
9	BMI (x9)	-0.2323	**
10	cereals consumed per day(g)(x10)	0.0662	
11	protein consumed per day(g) (x11)	-0.0483	
12	fruits consumed per day(g) (x12)	-0.0671	
13	vegetables consumed per day(g) (x13)	-0.0338	
14	Total carbohydrate consumed per day(g) (x14)	0.0527	
15	fat taken per day (g/day) (x15)	0.1435	
16	Breakfast time(a.m.) (x16)	0.1872	*
17	lunch time(p.m.) (x17)	0.0266	
18	dinner time(p.m.) (x18)	-0.1376	
19	calorie in carbohydrate per day (kcal) (x19)	0.0527	
20	calorie in protein per day (kcal)(x20)	-0.0483	
21	calorie in fat per day (kcal) (x21)	0.1435	
22	totalcalorie perday(kcal) (x22)	0.0732	
23	size of holding(katta) (x23)	-0.1029	
24	family income(Rs.) per annum (x24)	-0.1233	
25	per capita income (Rs.) per annum (x25)	-0.0649	
26	family expenditure per annum (x26)	-0.0843	
27	per capita expenditure (Rs.) per annum (x27)	0.1601	
28	functional literacy(x28)	0.3012	**

Revelation: The result revels that , frequency of visit to doctor has been higher for those having lower BMI (Body Mass Index) or an individual having poorer health condition is more prone to pay visit to the doctors frequently .

For the rest other variables viz. ,Height (x7) , Breakfast time (x16) and Functional literacy (x28) have predicted the Frequency of visit to doctors in a positive and proportionate way to imply further that these variables have offered an apparently direct but substantive prediction of the dependent variable .

Regression Analysis:

Table.3.Multiple Regression Analysis: Frequency of visit to doctor (y3) vs. 28 causal variables(x1-x28)

Serial Number	variables	beta	beta *R	STRU-R	reg coef-B
1	Age (x1)	0.171	3.18	0.164	0.031
2	No of children (x2)	0.255	2.622	0.091	0.593
3	Number of farm work (x3)	-0.009	0.049	-0.048	-0.015
4	working hour per day(x4)	0.036	-0.071	-0.017	0.101
5	Incidence level of miscarriage(x5)	0.104	1.636	0.14	0.738
6	Number of animals reared (x6)	0.011	0.03	0.024	0.013
7	Height(ft) (x7)	-0.37	-10.8	0.258	-3.432
8	Weight(kg) (x8)	0.384	-2.8	-0.064	0.258
9	BMI (x9)	-0.852	25.328	-0.263	-0.843
10	Cereals consumed per day (g)(x10)	4.163	4.163	0.075	0.281
11	protein consumed per day (g)((x11)	3.499	3.499	-0.055	1.103
12	fruits consumed per day (g) (x12)	1.213	1.213	-0.076	0.471
13	vegetables consumed per day (g) (x13)	-0.037	-0.037	-0.038	-0.005
14	Total carbohydrate consumed per day (g) (x14)	15.178	15.178	0.06	0.988
15	fat taken per day(g) (x15)	5.459	5.459	0.162	3.57
16	Breakfast time(a.m.) (x16)	0.198	0.198	0.212	0.794
17	lunch time(p.m.) (x17)	0.046	0.046	0.03	0.159
18	dinner time(p.m.) (x18)	-0.052	-0.052	-0.156	-0.209
19	calorie in carbohydrate per day (kcal)(x19)	-0.245	-0.245	0.06	-0.004
20	calorie in protein per day(kcal)(x20)	0.047	0.047	-0.055	0.004
21	calorie in fat per day (kcal) (x21)	-0.589	-0.589	0.162	-0.043
22	total calorie per day (kcal) (x22)	-15.389	-15.389	0.083	-0.245
23	size of				

	holding(katta) (x23)	-0.235	-0.235	-0.116	-0.042
24	family income(Rs.) per annum (x24)	-0.37	-0.37	-0.14	0
25	per capita income (Rs.) per annum (x25)	1.002	1.002	-0.73	0
26	family expenditure per annum(x26)	0.431	0.431	-0.095	0
27	per capita expenditure (Rs.) per annum(x27)	-0.947	-0.947	0.181	0
28	Functional literacy(x28)	1.282	1.282	0.341	0.002

Revelation: Table 3 presents the Multiple Regression Analysis wherein 28 causal variables have been regressed against the consequent variable y3 (Frequency of visit to doctor) . It has found that the variables BMI (Body Mass Index) has made the highest contribution in the frequency of visit to doctors.

Body Mass Index is vital thing to maintain one's nutrition-related matters .If it doesn't maintain properly, health condition deteriorates. Thus, in turn, it leads them to visit to doctor. For this reason, frequency of visit to doctor have come up as one of the important determinants in illuminating this dependent variable .

The R^2 value being 78.16 per cent, it is to infer that with the combination of these 28 causal variables, 78.16 per cent of variance embedded with consequent variable y3 has been explained. Inclusion of more number of variables or higher level of consistency in the variable selected could have contributed to higher level of variance explained.

Table.4.*Stepwise Regression Analysis:* **Frequency of visit to doctor (y3) vs. 6 causal variables(x2,x9,x25,x27,x28)**

Serial Number	Variables	beta	beta *R	STRU- R	reg coef- B	SE of B	T-val of B	VIF	variables
1	No of children (x2)	0.292	8.19	0.15	0.681	0.325	2.099	2.288	No of children (x2)
2	BMI (x9)	0.324	-26.213	-0.433	-0.321	0.094	3.426	1.056	BMI (x9)
3	per capita income (Rs.) per annum (x25)	0.962	-21.728	-0.121	0	0	3.638	8.245	per capita income (Rs.) per annum (x25)
4	per capita expenditure (Rs.) per annum (x27)	- 0.986	-54.914	0.299	0	0	3.459	9.577	per capita expenditure (Rs.) per annum (x27)
5	functional literacy(x28)	1.358	142.239	0.562	0	0.001	4.517	10.65	functional literacy(x28)

Multiple R-sq = 28.75   F-value for R = 6.78 with 5 and 84 dfs

Revelation: Table 4 presents the stepwise regression wherein 5 causal variables have been retained at the last step to imply their critical and effective contribution to the resultant behaviour of the variable y3 (Frequency of visit to doctor) . So, these 5 variables can be as important as in optimum resource allocation or strategic importance in elucidating the frequency of visit to doctor to farm women.

This is interesting to observe that when the number of effective variables has been downsized through the stepwise regression, the importance of causal variable functional literacy has been topped up. It can speak that

functional literacy of an individual is the important contributor to the frequency of visit to doctor to maintain the level of health and nutritional performance beyond other concerns and issues. Whenever these 5 variables acted isochronously, they together can explain 28.75 per cent of variance.

The solitary contribution of these three variables have (28.75/ 78.16 * 100) = 36.78 per cent .

Path Analysis:

Table.5.Direct, Indirect and Residual relationship Perceived Frequency of visit to doctor (y3) vs.28 Independent variables (x1-x28)

Serial Number	Variables	Total effect	Direct effect	Indirect effect	Highest Indirect effect	
1	Age (x1)	0.1714	0.145	0.0264	3.2589	x19
2	No of children (x2)	0.2545	0.0805	0.174	1.5653	x19
3	Number of farm work (x3)	-0.009	-0.0428	0.0338	-2.8444	x19
4	working hour per day(x4)	0.0358	-0.0154	0.0512	-3.3613	x19
5	Incidence level of miscarriage (x5)	0.1036	0.1234	-0.0198	-1.4787	x19
6	Number of animals reared (x6)	0.0111	0.021	-0.0099	-0.3589	x22
7	Height(ft) (x7)	-0.3695	0.2284	-0.5979	0.7804	x22
8	Weight(kg) (x8)	0.3842	-0.057	0.4412	1.1262	x22
9	BMI (x9)	-0.8521	-0.2323	-0.6198	-1.1806	x19
10	cereals consumed per day(g)(x10)	0.2883	0.0662	0.2221	19.889	x19
11	protein consumed per day(g)((x11)	-0.7276	-0.0483	-0.6793	-1.0398	x19
12	fruits consumed per day(g)((x12)	0.0148	-0.0671	0.0819	5.6481	x19
13	vegetables consumed per day(g) (x13)	-0.0372	-0.0338	-0.0034	-1.6097	x19
14	Total carbohydrate consumed per day(g) (x14)	0.044	0.0527	-0.0087	20.171	x19
15	fat taken per day(g) (x15)	3.9877	0.1435	3.8442	3.9877	x15
16	Breakfast time(a.m.)(x16)	0.1979	0.1872	0.0107	2.3412	x19
17	lunch time(p.m.) (x17)	0.0457	0.0266	0.0191	-2.6058	x19
18	dinner time(p.m.) (x18)	-0.0524	-0.1376	0.0852	3.599	x19

19	calorie in carbohydrate per day (kcal) (x19)	20.171	0.0527	20.1183	20.171	x19
20	calorie in protein per day (kcal)(x20)	4.9905	-0.0483	5.0388	-1.0398	x19
21	calorie in fat per day (kcal) (x21)	0.6611	0.1435	0.5176	3.9877	x15
22	total calorie per day (kcal) (x22)	-20.9918	0.0732	-21.065	19.1832	x19
23	size of holding(katta) (x23)	-0.2348	-0.1029	-0.1319	-0.6751	x20
24	family income(Rs.) per annum (x24)	-0.3699	-0.1233	-0.2466	2.3291	x19
25	per capita income (Rs.) per annum (x25)	1.0024	-0.0649	1.0673	-0.2342	x19
26	family expenditure per annum(x26)	0.4306	-0.0843	0.5149	2.0268	x19
27	per capita expenditure (Rs.) per annum(x27)	-0.9467	0.1601	-1.1068	-2.3956	x19
28	functional literacy(x28)	1.2816	0.3012	0.9804	1.2816	x28

Revelation : Table 5 presents the Path Analysis: the decomposition of r values into direct, indirect and residual effect. The variable Body Mass Index (BMI) has recorded both the highest direct and indirect effect. Because, who are physically weak and have less weight and height mainly suffer from many physical problems and the frequency of visit to doctor is highest in case of them.

And the total calorie consumption per day has recorded the highest indirect effect because calorie is the most important component to eke out one's daily lives.

The variable x19 (calorie in carbohydrate per day) has got the highest indirect effect on y3 with highest frequency.

So, total calorie consumption per day has got great importance.

The residual effect being 0.5925 , it is to infer that even with the combination of 28 exogenous variables 59.25 per cent variance in y3 (Frequency of visit to doctor) cannot be explained .

Factor Analysis:

Table.6.Factor Analysis: Conglomeration of 28 explanatory variables into 14   factors.

Factors	Factor loading	Variables	Eigen value	Variance (%)	Cumulative variance (%)	Factor renaming
	0.929 0.933 0.933	x10 x14 x19				Calorie consumption level
Factor - 1	0.894	x22	4.467	15.955	15.955	
	-0.558 0.563	x2 x24				Family Finance
	0.839	x25				
Factor - 2	0.844	x27	3.254	11.622	27.577	

Factor - 3	0.523 0.427 0.568	X1 x9 x23	3.026	10.806	38.383	Family Resource
Factor - 4	0.47 0.782	x20 x21	2.514	8.98	47.363	Calorie content
Factor - 5	0.684 0.585	x9 x11	2.11	7.536	54.899	Protein level and Health
Factor - 6	0.435	x28	1.865	6.66	61.559	Functional literacy
Factor - 7	-0.405 -0.453	x4 x12	1.66	5.93	67.489	Work Proficiency
Factor - 8	-0.417	x18	1.318	4.709	72.198	Dinner time
Factor - 9	0.447 0.591	x8 x16	1.185	4.23	76.428	Food value
Factor - 10	0.63	x13	0.957	3.417	79.845	Vegetables consumed
Factor - 11	-0.416 0.486	x7 x17	0.92	3.284	83.129	Health and Nutrition
Factor - 12	-0.433 -9.21E-05	x3 x26	0.841	3.003	86.132	Farm composition and family farm
Factor - 13	0.58 -0.498	x5x6	0.826	2.952	89.084	Gender Health
Factor - 14	0.42	x15	0.646	2.307	91.39	Fat taken per day

The above mentioned table 6 presents the factor analysis for the conglomeration of apparently different variables (28 by count) into a small number of factors (i.e. 14) based on factor loading and respective Eigen values.

Factor 1 has accommodated 4 variables viz. Cereals consumed per day (x10) , Total carbohydrate consumed per day(x14), Calorie in carbohydrate consumed per day(x19)and Total calorie consumed per day(x22) with Eigen value 4.461 and variance 15.95 per cent. Factor has been renamed as **Calorie Consumption Level.**

 Factor 2 has accommodated 4 variables viz. Number of children(x2), Family income per annum (x24), Per capita income per annum(x25) and Per capita expenditure per annum (x27) with Eigen value 3.254 and variance 11.62 per cent. The factor has been renamed as **Family Finance.**

Factor3 has accommodated 3 variables viz. Age(x1) ,BMI(x9), size of holding(x23) with Eigen value 3.026 and variance 10.806 per cent. Factor has been renamed as **Family Resource.**

Factor4 has accommodated 2 variables viz. Calorie in protein consumed per day(x20), Calorie in fat per day(x21) with Eigen value 2.514 and variance 8.98 per cent. The factor has been renamed as **Calorie content.**

Factor 5 has accommodated 2 variables viz .Height (x7), BMI (x9) , Protein consumed per day (x11), Calorie in protein consumed per day (x20) with Eigen value 2.11 and variance 7.53 per cent. The factor has been renamed as **Protein Level.**

Factor 6 has accommodated only one variable viz. Functional literacy (x28) with Eigen value 1.865 and variance 6.66 per cent. So, the name would not be changed.

Factor 7 has accommodated 2 variables viz. Working hour per day (x4) , Fruits consumed per day (x12) with Eigen value 1.66 and variance 5.93 per cent. Factor has been renamed as **Work Proficiency.**.

Factor 8 has accommodated only one variable viz. Dinner time (x18) with Eigen value 1.66 and variance 4.70 per cent. So, the name has not been changed.

Factor 9 has accommodated 2 variables viz. Weight(x8) ,Breakfast time(x16)with Eigen value 1.185 and variance 4.23 per cent. Factor has been renamed as **Work Proficiency.**.

Factor 10 has accommodated only one variables viz. Vegetables consumed per day (x13) with Eigen value 0.957 and variance 3.41 percent. So,the name would not be changed**.**

Factor 11 has accommodated 2 variables viz. Height (x7) , Lunch time (x17) with Eigen value 0.92 and variance 3.28 per cent . Factor has been renamed as **Health and Nutrition .**

Factor 12 has accommodated 42 variables viz. Number of farm work (x3) , Family expenditure (x26)
With Eigen value 0.841 and variance 3 per cent. Factor has been renamed as. **Farm composition and family farm.**

Factor 13 has accommodated 2 variables viz. Number of miscarriage(x5), Number of animals reared(x6) with Eigen value 0.826 and variance 2.95 per cent. Factor has been renamed as **Gender health.**

Factor 14 has accommodated only one variables viz. Fat consumed per day(x15)with Eigen value 0.646 and variance 2.30 per cent. So, the name would not be changed**.**

Revelation- The factor calorie consumption level (Variance contribution 15.955) by becoming the prime driving force of a farm woman's everyday life, has contributed substantially towards the healthy living conditions along with family income and resources.

Canonical Discriminant Function Analysis with Critical Variables:
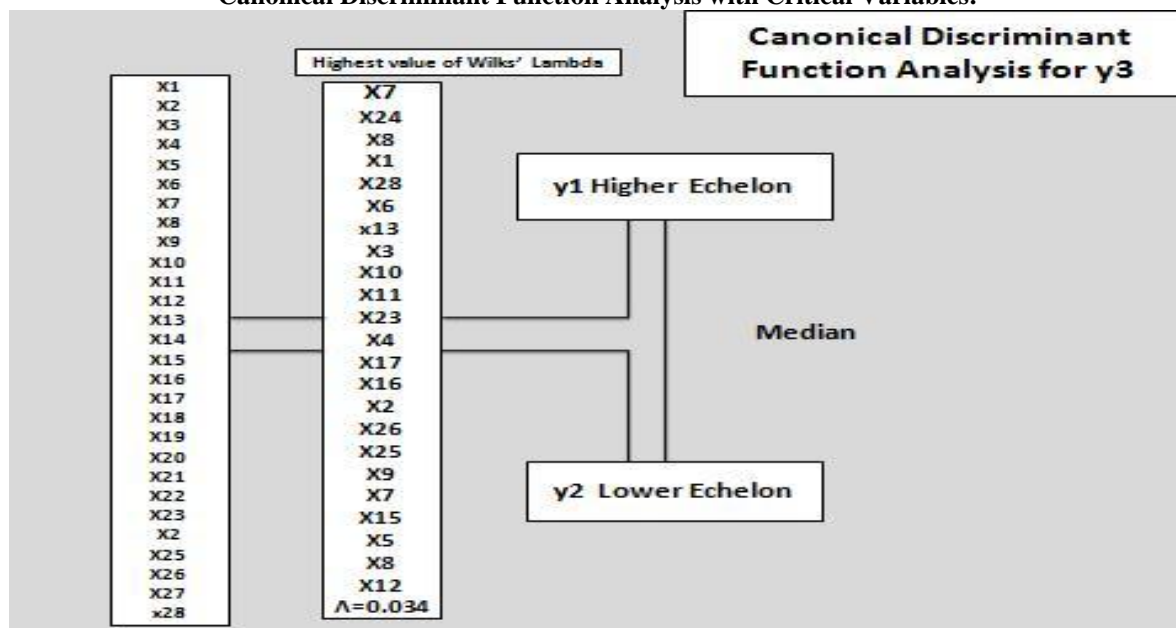
The following variables have ability to discriminate y3 :
x7,x24,x8,x1,x28,x6,x13,x3,x10,x11,x23,x4,x17,x16,x2,x26,x25,x9,x7,x15,x5,x8,x12 .
x7 (Height) has the highest ability. So, these have been the most critical variables .

III. CONCLUSION

Having a reference from Gunnar Myrdal's "Asian Drama" ,it has been observed that poor health and nutrition have been one of the reason while productive performance of Indian farmers are so poor. Low level of nutrition, fragile BMI and sub-optimal intake of calorie are all responsible for poor farm productivity and quality. Here , in this study , even the breakfast time has been found so critical for the farm women and subsequently being reflected in the frequency of visit to doctor recorded. If a productive human resource is so frequent to farm and the same time equally frequent to doctor, the farm production is certain to be jeopardized. The present study offers tremendous empirical importance for the policy formulation at the grass-root level as to deal with issues of drudgery, ill-health and productivity as well.

BIBLIOGRAPHY

[1]. Adejare, Taiwo Grace. (2001). "Health Problems of Women Cassava Processors in Oluyole Local Government area." M.sc Thesis, Department of Agricultural Extension and Rural Department. University of Ibadan. Ibadan.

[2]. MAQARI Team (2011). Mapping Medical Providers in Rural India: Four Key Trends. Center for Policy Research. New Delhi: *Centre for Policy Research*. Retrieved on December 6, 2013, from http://cprindia.org/sites/default/files/policy%20brief_1.pdf

[3]. Rao, M., Mant, D. (2012). Strengthening Primary Healthcare in India: White Paper on *Opportunities for Partnership. BMJ.* **344**- *e3151. Doi:* http://dx.doi.org/10.1136/bmj.e3151