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Male-migration and it's effect on physical participation of women in agriculture

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Abstract
This paper provides effect of male-migration on physical participation of women in agricultural activities. It has been found that in incidence of male-migration, women's work- burden is influenced due to the reason that they are bound to act as 'de facto heads' of the family.

Keywords: migration, male-migration, women's physical participation, agricultural activity

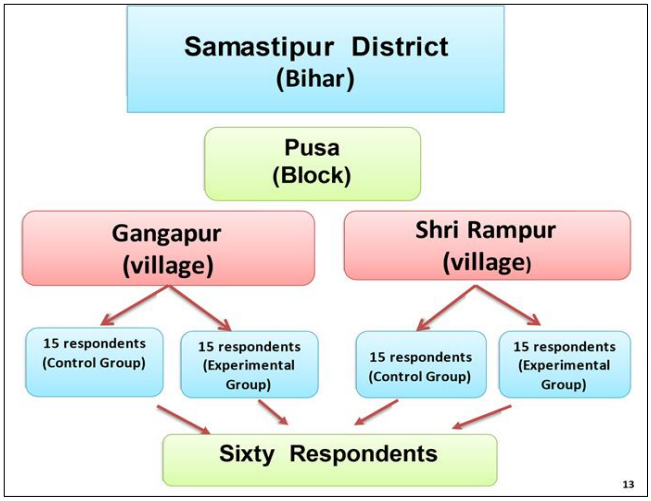
1. Introduction
Migration is both a cause and consequence of various social, cultural and economic constraints experienced by people in society. A series of structural changes in rural context, such as, polarization of land holding, degradation of natural resources, occurrence of natural calamities such as drought; and poor local employment opportunities accompanied by exponential population growth have contributed to spatial mobility or migration.
Hence, the workload of women enhances considerably due to male-migration. Women from nuclear families are affected more due to male-migration than women living in joint families- where the workload is shared by other family members.
As a result of male-migration participation of women in skilled agricultural activities has been found to increase. In the absence of their husbands, women have been found to perform agricultural work like preparation of land for cultivation, irrigation, pesticide application, harvesting, processing, packaging and storing agricultural products, milking cattle, feeding livestock, carrying loads, finding and hiring agricultural labours for cultivation and marketing etc.

2. Methodology
Research methods, procedures and measurement techniques followed for carrying out the research work to study the Effect of Male-Migration on physical participation of Women in Agriculture, in Gangapur and Shri Rampur villages of Pusa Block of Samastipur district of Bihar State.
2.1 Locale of the study
2.2. Research design and sampling procedure
2.3 Operationalisation of variables and their measurement
2.4 Preparation and pre-testing of schedule
2.5 Data collection and statistical analysis of data

2.1 Locale of the study
Samastipur district is a district of Bihar which is spread over an area of 2,904 kilometre square (1,121 sq mi). It is bound on the North by Bagmati River which separates it from Darbhanga district, in West by Vaishali and Muzaffarpur districts, in South by the Ganges and in East by Begusarai and Khagaria districts. According to 2011 census, Samastipur has a population density of 1,465 per square kilo meter and total population of the district as per census was 4.25 million. The district has a sex ratio of 909 females per 1000 males and a literacy rate of 64.21percent. Samastipur district is rich in agriculture, because of its fertile plain. Tobacco, maize, rice and wheat are the main crops. Litchi and mango fruits are grown in abundance. Samastipur district comprises of twenty Blocks, out of which Pusa Block was selected purposively for the study because this Block is having incidence of male-migration on huge scale.

Pusa Block comprises of forty villages, out of which only two villages, namely, Gangapur and Shri Rampur were selected for the study.

2.2 Research design and sampling procedure



Further, wives of migrant labourers of Gangapur and Shri Rampur villages of Pusa Block of Samastipur district comprised the population of the study. Survey design of research was used under the study. Fifteen women each from the categories of, non-migrant and migrant labourer households were selected for the study from both the villages, namely, Gangapur and Shri Rampur, thus comprising a total number of sixty women. Thirty from among them formed the control group and the other thirty experimental group for the study. Test of homogeneity for both of the groups was done before their final selection.

2.3 Operationalisation of variables and their measurement

2.3.1 Independent variables

2.3.1.1 Age: Age refers to the number of completed years from the birth to the last birth day (Napier *et al*., 1981). For the purpose of measurement, the respondents were classified into three groups according to their age, namely, young, middle and old age groups.

2.3.1.2 Caste category: Caste was categorized as per Government's categorizations as General, OBC, SC.

2.3.1.3 Occupation: It refers to the main source of livelihood of the family.

2.3.1.4 Education: Education refers to the respondent's ability to read and write and his/her formal educational attainment.

2.3.1.5 Type of land with the family: It refers to the type of land owned by the family of the respondent at the time of research.

2.3.1.6 Social Participation: For the purpose of the study, social participation was defined as the voluntary sharing in women group, and group to group relationship beyond the immediate household.

2.3.1.7 Exposure to mass-media: Here, the respondents were asked to indicate their degree of participation in terms of listening habit, viewing habit and reading habit.

2.3.1.8 Type of family: According to Sahay (1969), a family may be nuclear or joint. Nuclear family is the social group, consisting of married man and women with their children living together under the same roof and sharing a common wealth and joint family is a social group, consisting of several related individual families, especially those of a man and his sons or of a woman and her daughter, residing in a single large dwelling.

2.3.1.9 Size of family: Size of family refers to the number of individuals of all ages and both the sexes living in the same house sharing a common kitchen.

2.3.1.10 Type of house: It refers to the type of dwelling one lives in. In the present study, houses were classified into the categories of Katcha, Mixed and Pucca.

2.3.1.11 Farm implements: In this study, farm implements refer to the implements used for agricultural purposes and the possession of farm implements was measured in terms of type of items they possess and weightage assigned to each item as Improved plough, Bullock cart, Seed –cum-fertilizer drill, Sprayer, Duster, Thresher, Winnower, Maize sheller, Tube-well, Pump set /motor, Others.

2.3.1.12 Milch and small animals: It refers to the type and number of milch cattle and small animals like goat/poultry etc.

2.3.1.13 Material Possession: It refers to the household items and prestige items possessed by a family.

2.3.1.14 Dependent variables

Women's Physical participation in agriculture were treated as dependent variables for the study. Physical participation of women has been ascertained through getting dichotomous responses in form of Yes/No.

2.4 Preparation and pre-testing of schedule: An interview schedule was developed with the help of available literature and experts in concerned field. The schedule thus prepared was tested on women other than respondents. On the basis of experiences gained in pre-testing necessary modifications were made and final draft of the schedule was prepared.

2.5 Data collection and statistical analysis of the data: The data collected from the respondents through interview schedule were tabulated. Appropriate score was assigned to each of the responses as per prescribed scoring procedure; further, these scores of the respondents were put forth for statistical analyses to enable the researcher for easy and meaningful interpretation of the data using certain statistical techniques as frequencies, percentages, t-test, analysis of variance (ANOVA), correlation and regression.

1) **Frequency:** It was used to find out the number of respondents in a particular cell.
2) **Percentage:** It was used for making simple comparison. For calculating percentage, the frequency of particular item was divided by the total number of respondents in that particular category and multiplied by hundred.
3) **t- test:** t- test was used to measure the homogeneity between the control and experimental groups undertaken

in the study.

4) **Analysis of variance (ANOVA):** It was used for testing the difference in statistical significance between the rate of physical participation control and experimental women.
5) **Correlation analysis:** It was used to measure the relationship between the socio-personal characteristics of control and experimental group, women with their physical participation in agriculture.
6) **Regression analysis:** It was used to see the positive or negative correlation of socio-personal variables independently with the physical participation of women in agriculture.

3. Result and Discussion

The analyses and interpretations of present investigation are based on the calculation of collected information from the respondents. The data have been collected through well-structured interview schedule based on the objectives framed for investigation.

Table 1: Regression Coefficient of Socio-Personal characteristics with Physical Participation of Control Women in Agriculture

Socio-personal characteristics	Coefficients	Std. Error	Sig.	R^2
Age	-0.0024	0.0025	0.3498	
Caste	-0.0602	0.0557	0.2947	
Education	-0.0154	0.0214	0.4807	
Land Type	-0.0564	0.0536	0.3075	
Social Participation	-0.0227	0.0385	0.5625	0.377
Exposure to mass-media	0.0160	0.0161	0.3343	
Type of Family	-0.0949	0.0634	0.1524	
Size of Family	0.0021	0.0460	0.9633	
House	-0.0497	0.0595	0.4152	
Farm Implements	-0.0040	0.0115	0.7311	
Milch and small animal	-0.0044	0.0169	0.7995	
Material possession	0.1253	0.1533	0.4250	

The analysis of data in table 1 shows socio-personal characteristics, age, caste, education, land type, social participation, type of family, house, farm implements, milch and small animal were negatively associated with physical participation whereas exposure to mass-media, size of family, and material possession were positively associated with physical participation of control women in agriculture.

The R2 value (0.377) indicates that this set of variables explains thirty seven point seven percent of the total variability towards physical participation of control women in agriculture.

Table 2: Regression Coefficient of Socio-Personal characteristics with Physical Participation of Experimental Women in Agriculture

Socio-personal characteristics	Coefficients	Std. Error	Sig.	R^2
Age	0.00613	0.00302	0.05843**	
Caste	0.04490	0.05219	0.40161	
Education	0.01792	0.02074	0.39970	
Land Type	-0.01430	0.05590	0.80111	
Social Participation	-0.02217	0.06869	0.75077	0.375
Exposure to mass-media	0.02220	0.02170	0.20724	
Type of Family	0.04424	0.15221	0.77483	
Size of Family	0.02312	0.04757	0.63320	
House	-0.01087	0.05254	0.83855	
Farm Implements	-0.00372	0.01496	0.80640	
Milch and small animal	-0.01893	0.02168	0.39477	
Material possession	0.04922	0.17206	0.77831	

**=significant at five percent level of probability

The analysis of data in table 2 shows among all socio-personal characteristics Age was found to be positive significantly associated with physical participation of experimental women in agriculture were as caste, education, exposure to mass-media, type of family, size of family and material possession were positively associated with physical participation whereas land type, social participation, house, farm implements, milch and small animal were negatively associated with physical participation of experimental women in agriculture.

The R^2 value (.375) indicates that this set of variables explains thirty seven point five percent of the total variability towards physical participation of experimental women in agriculture.

Table 3: Pooled Regression Coefficient of Socio-Personal characteristics with Physical Participation of Control and Experimental Women in Agriculture

Socio-personal characteristics	Coefficients	Std. Error	Sig.	R^2
Age	0.0015	0.0016	0.3618	
Caste	0.0112	0.0293	0.7042	
Education	0.0123	0.0095	0.2018	
Land Type	-0.0428	0.0302	0.1628	
Social Participation	-0.0414	0.0265	0.1252	0.218
Exposure to mass-media	0.0080	0.0103	0.4433	
Type of Family	-0.0489	0.0477	0.3110	
Size of Family	0.0239	0.0297	0.4263	
House	-0.0335	0.0311	0.2870	
Farm Implements	-0.0017	0.0078	0.8270	
Milch and small animal	-0.0099	0.0117	0.4015	
Material possession	0.0673	0.0896	0.4560	

The analysis of data in table 3 shows age, caste, education, exposure to mass-media, size of family and material possession were positively associated with physical participation of control and experimental women in agriculture whereas land type, social participation, type of family, house, farm implements and milch and small animal were negatively associated with physical participation of control and experimental women in agriculture.

The R2 value (.218) indicates that this set of variables explains twenty-one-point eight percent of the total variability towards physical participation of control and experimental women in agriculture.

Table 4: Distribution of respondents on the basis of Physical Participation of Women in Agriculture (n=60)

Sl. No.	Physical participation	Control group				Experimental group			
		Yes		No		Yes		No	
1.	Agriculture	F	%	F	%	F	%	F	%
A.	Land preparation								
	i. Plouging	3	10	27	90	2	6.67	28	93.33
	ii. Spading	3	10	27	90	2	6.67	28	93.33
	iii. Beating the clods	30	100	0	0	29	96.67	1	3.33
	iv. Collecting weeds	30	100	0	0	29	96.67	1	3.33
B.	Seeding and planting Operations								
	i. Seed-bed preparation	30	100	0	0	29	96.67	1	3.33
	ii. Sowing	30	100	0	0	29	96.67	1	3.33
	iii. Puddling	30	100	0	0	29	96.67	1	3.33
	iv. Transplanting	30	100	0	0	29	96.67	1	3.33
C.	Interculturing								
	i. Weeding by khurpi	29	96.67	1	3.33	29	96.67	1	3.33
	ii. Hoing by spade/hoe	10	33.33	20	66.67	9	30	21	70
	iii. Uprooting weeds	29	96.67	1	3.33	29	96.67	1	3.33
D.	Irrigation								
	i. Canal prepration	23	76.67	7	23.33	29	96.67	1	3.33
E.	Fertilizer and manure application								
	i. Collection and preparation	23	76.67	7	23.33	28	93.33	2	6.67
	ii. Carrying and spreadin	23	76.67	7	23.33	28	93.33	2	6.67
F.	Plant Protection operations								
	i. Spraying	18	60	12	40	23	76.67	7	23.33
	ii. Dusting	18	60	12	40	23	76.67	7	23.33
G.	Harvesting	28	93.33	2	6.67	27	90	3	10
H.	Post-harvest operations								
	i. Threshing	27	90	3	10	3	10	27	90
	ii. Winnowing	30	100	0	0	30	100	0	0
	iii. Cleaning	30	100	0	0	30	100	0	0
	iv. Grading	30	100	0	0	30	100	0	0
	v. Seed selection and storage	30	100	0	0	29	96.67	1	3.33
	vi. Drying grain	30	100	0	0	30	100	0	0
	vii. Drying crop residues	30	100	0	0	30	100	0	0
	viii. Storing/bagging grain	30	100	0	0	28	93.33	2	6.67
	ix. Keeping crop residue	29	96.67	1	3.33	28	93.33	2	6.67
I.	Marketing of produce	24	80	6	20	12	40	18	60
2.	Money –related task								
	i. Receiving /Repaying loans	4	13.33	26	86.67	3	10	27	90
	ii. Keeping records	4	13.33	26	86.67	4	13.33	26	86.67
	iii. Keeping money	1	3.33	29	96.67	27	90	3	10

(F=Frequency and % = percentage)

The distribution of respondents on the basis of physical participation of women in agriculture. It is clear from the table 4 that out of sixty respondents, ten percent respondents were participating in ploughing and spading followed by hundred percent each in beating the clods and collecting weeds (control group); and sixty six point six seven percent respondents were participating in ploughing and spading followed by ninety six point six seven percent in beating the clods and collecting weeds under experimental group. Further, out of sixty respondents hundred percent respondents under control group and ninety six point six seven percent respondents under experimental group were found to be participating in seeding and planting operations.

Ninety six point six seven percent respondents under both control and experimental group were found to be participating in inter culturing. Seventy six point six seven percent respondents under control group were found to be participating in irrigation and fertilizer and manure application activity; and ninety six point six seven percent and ninety three point three percent respondents under experimental group were found to be participating in irrigation and fertilizer and manure application. Sixty percent respondents under control and seventy six point six seven percent respondents under experimental group were found to be participating in plant protection operations. Ninety three point three percent respondents under control and ninety percent respondents under experimental group were found to be participating in harvesting. Ninety percent respondents were involved in threshing and hundred percent respondents were involved in winnowing, cleaning, grading, seed selection

and storage, drying grain, drying crop residues, storing/bagging grain and eighty percent respondents were involved in keeping crop residue were belong to post-harvesting operations under control group; and ten percent respondents were involved in threshing and hundred percent respondents were involved in winnowing, cleaning, grading, drying grain, drying crop residues, storing/bagging grain, ninety six point six seven percent respondents were involved seed selection and storage and ninety three point three percent respondents were involved in keeping crop residue were belong to post- harvesting operations under experimental group in agriculture. Eighty percent respondents under control and forty percent respondents under experimental group were found to be participating in marketing of produce. Thirteen point three percent respondents under control group were found to be participated in receiving/paying loans and keeping records and three point three percent respondents were found to be participating in keeping money activity were belong to money related task under control group in agriculture; and ten percent respondents under experimental group were found to be participated in receiving/paying loans, thirteen point three percent respondents were belong to keeping records and three percent respondents were found to be participating in keeping money.

Table 5: The analysis of variance (ANOVA) for testing the significance of difference between the Physical Participation of Control and Experimental group of Women in Agriculture

ANOVA						
Source of Variation	**Sum of Square**	**df**	**Mean Square**	**F**	**P-value**	**F crit**
Between Groups	0.002241	1	0.002241	0.225557627	0.636621NS	4.006872822
Within Groups	0.576185	58	0.009934			
Total	0.578426	59				

NS= non-significance

The result presented in table 5 revealed the analysis of variance for testing the significance of difference between the physical participation of control and experimental women in agriculture was found to be non-significance. This was due to the reason that sixty seven percent of the households under investigation were leasing in land and they were using hired labor for agriculture.

4. Summary and Conclusion

Migration is both a cause and consequence of various social, cultural and economic constraints experienced by people in society.

As a result of male-migration participation of women in skilled agricultural activities has been found to increase. In the absence of their husbands, women have been found to perform agricultural work like preparation of land for cultivation, irrigation, pesticide application, harvesting, processing, packaging and storing agricultural products, milking cattle, feeding livestock, carrying loads, finding and hiring agricultural labours for cultivation and marketing etc.

Due to migration, the work- burden of women is influenced due to the reason that they are bound to act as de facto heads of the family. But there is dearth of data to throw light on these aspects of women's life.

The data collected from the respondents, through interview schedule were tabulated. Each schedule the appropriate scores were assigned to each of the respondents as per the described scoring procedure. Further, these scores of the respondents were put forth for the statistical analysis to enable too easy and meaningful interpretation of the data. Certain statistical techniques have been used such as frequency, percentages, t-test, analysis of variance (ANOVA), correlation and regression coefficient in order to put the result in more appropriate and comprehensive manner.

The result of the analysis of variance for testing the significance of difference between the physical participation of control and experimental women in agriculture was found to be non-significance.

This was due to the reason that 67 percent of the households under investigation were leasing in land and they were using hired labor for agriculture and contributing to enhance the family income by agriculture in absence of their husband.

5. References

1. Albanian Centre for Social-Economic Research & Analytica. Migration and Development in Albania and Macedonia: The Effects of Migration and of Remittances on Education and Health of Family Members Left Behind. Tirana: Albanian Centre for Socio- Economic Research, Policy Brief/Skopj: Analytica 2013.
2. Antman FM. The impact of Migration on Family Left Behind. Bonn: Institute of Labor Economics, IZA Discussion Paper No. 6374, 2012.
3. Antman Francisca M. Adult child migration and the health of elderly parents left behind in Mexico, American Economic Review 2010;100(2):205-08.
4. Antman, Francisca M. International migration, spousal control, and gender discrimination in the allocation of household resources, University of Colorado at Boulder Department of Economics Working Paper No. 10-15. Boulder, CO, USA 2010.
5. Atamanov A, Van Den Berg M. Heterogeneous Effects of International Migration and Remittances on Crop Income: Evidence from the Kyrgyz Republic. World Development 2012;40(3):620-30.
6. Binzel Christine, Ragui Assaad. Egyptian men working abroad: Labor supply responses by the women left behind, Labour Economics 2011;18(S1):S98-S114.
7. Brink JH. The effect of emigration of husbands on the status of their wives: an Egyptian case International Journal of Middle East Studies 1991;23(2):201-211.
8. Chang H, Dong X-Y, MacPhail F. Labor Migration and Time Use Patterns of the Left-Behind Children and Elderly in Rural China. World Development 2011;39(12):2199-210.
9. Datta A, Mishra KS. Glimpses of Women's Lives In Rural Bihar: Impact of Male-Migration, The Indian Journal of Labour Economics 2011, 54(3).
10. Menjivar C, Agadjanian V. Men‟s migration and women‟s lives: views from rural Armenia and Guatemala. Social Science Quarterly 2007;88(5):1243-1262.
11. Mu Ren, Dominique van de Walle. Left behind to farm? Women‟s labor reallocation in rural China, Labour Economics 2011;18(S1):S83-S97.

12. Piracha M, Randazzo T, Vadean F. Remittances and Occupational Outcomes of the Household Members Left-Behind. Discussion Paper 7582. Bonn: IZA 2013.
13. Singh KM, Singh RKP, Kumar A. Male Worker Migration and Women Empowerment: The case of Bihar, India Munich Personal RePEc Archive, Paper No. 49385, posted 2013;15:13-46.
14. Singh RKP, Singh KM, Jha AK. Effect of Migration on Agricultura Productivity and Women Empowerment in Bihar. Labor: Demographics & Economics of the Family eJournal 2012, 4(73). http://dx.doi.org/10.2139/ssrn.211155.