

A study on the constraints influencing the agricultural information network output of the Farm women in sub-Himalayan region of India

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ABSTRACT

A number of studies revealed that farm women in India perceived different type of farm level constraints. But few studies were found on the influence of the different constraints on agricultural information network output of farm women. Keeping this in view the present study was undertaken to find out the different type of constraints perceived by the farm women for reaching out to relevant farm information and the influence of these constraints on agricultural information network output. The study was conducted in Cooch Behar district of West Bengal, which is located at foothills of the eastern sub-Himalayan Mountain belts of India. Ex post facto research design was used to conduct the study. It was found from the study that the majority of the farm women perceived medium level of socio-psychological and extension and training constraints and high level of marketing and communication constraints. This study further revealed that the socio-psychological and communication constraints negatively and significantly influence on the agricultural information network output of the farm women and extension and training constraints positively and significantly influence on the agricultural information network output of the farm women.

1. Introduction

Contribution of farm women in Indian agriculture is immense. In spite of their significant contribution in Indian agriculture, farm women don't have an easy access to scientific and technical information related to agriculture. Hence it is at most important to equip the farm women with timely and appropriate information for their better performance in farm sector (Shailaja and Reddy, 2003). Due to inadequate support from the extension system as well as lack of competent information sources makes it extremely difficult for the farm women to enhance their technical competency (Olowu and Yahaya, 1998). Although farm women in India plays an important role in food production, processing and marketing, yet social and economic constraints have become a major impediment for their access to scientific and technical information (Daman, 1997). Past studies by Ishola and Margaret (1987); Udry (1994); Mehra

and Gammage (1999); Raju *et al.* (2001); Sadaf *et al.* (2005); Iftikhar *et al.* (2007); Sakunthala *et al.* (2007) and Enete and Amusa (2010) indicated that the major constraints perceived by the farm women were socio-economic, cultural, personal, financial, technical, organisational and managerial in nature. Nath *et al.* (2012) found from their study that majority of the farm women were not participated in training programme due to busy work schedule of domestic work and majority farm women perceived that training were more theoretical than practical and which was less useful. Santhi *et al.* (2013) found that lack of time, marketing of the products, lack of financial assistance and non-co-operation at home were the major constraints of the farm women. Malabasari and Uma (2016) revealed that major constraints faced by farm women were financial assistance, non-availability of raw materials, market facility, non-co-operation and lack of family encouragement. Singh (2018) found that major constraints of farm women

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were domestic workload, less freedom of movement, little time available to spend away from home, lack of proper facilities at KVKs, lack of planned workshop for women training and lack of family support. The knowledge level of the farm women on agriculture is not quite high. It is due to several constraints such as social, economics, communication, training, marketing, extension and others associated constraints (Abraham, 2003; Nath *et al.* 2012; Santhi *et al.* 2013; Malabasari and Uma, 2016). It is difficult for female farmers to regular contact with male extension agents and male progressive farmers due to social and family constraints and it is also difficult for farm women to independently participate in the field work due to family constraints (Dagnachew, 2002; Quisumbing and Pandolfelli, 2010; Kondylis *et al.*, 2014; Singh, 2018). Keeping this in view the present study was undertaken to find out the different type of constraints perceived by the farm women for reaching out to relevant farm information and the influence of these constraints on agricultural information network output. A necessary recommendation was suggested at the end of the study for minimizing these constraints.

2. Methodology

The study was conducted on the farm women of Cooch Behar District, West Bengal in the year 2017-2020. The district located at the foothills of the eastern sub-Himalayan Mountain belts of West Bengal, India.. The research design was followed in the study was ex-post facto research design. Cooch Behar district was purposively selected for the study since it has significantly highest share of rural population and sex ratio was low (Economic Review 2011-2012). This study employed a five-stage sampling procedure in which both purposive and simple random sampling techniques were used to select the sample respondents. In the first stage Cooch Behar district was selected purposively. In the second and third stage three numbers of subdivision and one block from each subdivision were selected randomly. In the fourth and fifth stage random sampling methods were used for selection of four numbers of village from each block and 25 numbers of respondents from each village. In this way total 12 numbers of villages from 3 numbers of blocks and 3 numbers of sub divisions were selected randomly and from the selected area total of 300 respondents (n, sample) were taken for the study. The important

statistical measures that were used to analysis the research data included mean, standard deviation, Coefficient of Variation, range, pair wise ranking and correlation coefficient. To measure the degree of constraints as experienced by the respondents, the respondents were asked to rate the constraints on a four-point continuum about the extent to which constraints was perceived as crucial factor in relation to the present study. Constraints of farm women were categories in four sub heading. A) Socio-psychological constraints, B) Extension and training constraints, C) Marketing constraints and D) Communication constraints. A structure schedule was developed and a score was assigned as extreme constraints (score=3), moderate constraints (score=2), somewhat constraints (score=1), nil (score=0). The dependent variable of the study was the agricultural information network output in terms of knowledge of the farm women.

3. Results and Discussion

Farm women perception on different on socio-psychological constraints:

It is observed from the table 1 that means score of socio-psychological constraints of the respondents were highest in case of “drudgery is more in various agricultural processes” (2.09) followed by “few operations are restricted to the women by the society” (1.49), “male farmers are dominating in case of farm decision ” (1.29), “agriculture were not considered as occupation of women” (1.07) and “house work is more over field work ” (1.03). It is revealed from the table 1 that the socio-psychological constraints of the farm women were more in case of “drudgery is more in various agricultural processes” followed by “society restricted the farm women to participate all farm activities”, “male farmers are dominating in case of farm decision”, “agriculture were not considered as occupation of women” and “house work is more over field work”. It is concluded from the table 1 that socio-psychological constraints of the farm women were less in case of “working with male person is prohibited”, followed by “restriction from the family on agricultural work”. The findings of this study is in line with the result of Dagnachew, (2002), Bala, (2010), Nath *et al.* (2012), Santhi *et al.* (2013), Singh and Vinay, (2013), Malabasari and Uma, (2016) and Singh (2018).

Table 1. farm women perception on socio-psychological constraints

n=300

S.N.	Socio-psychological constraints	Extent of Socio-psychological constraints				Mean score	Rank
		High	Medium	Somewhat	Nil		
		<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>		
1.	Male farmers are dominating in case of farm decision	18	95	144	43	1.29	III
2.	Restriction from the family on agricultural work	22	22	85	171	0.65	VI
3.	working with male person is prohibited	03	27	116	154	0.60	VII
4.	House work is more over field work	29	53	116	102	1.03	V
5.	Society restricted the farm women to participate all farm activities.	17	171	60	52	1.49	II
6.	Drudgery is more in various agricultural processes.	117	109	59	15	2.09	I
7.	Agriculture was not considered as occupation of women	18	46	176	60	1.07	IV

*Score: high=3, medium=2, somewhat=1, nil=0

Farm women perception on training and extension constraints

It is observed from the table 2 that means score of training and extension constraints of the respondents were highest in case of “lack of capital to purchase materials required for training” (1.93) followed by “insufficient female extension worker” (1.72), “agricultural work pressure” (1.68), “lack of transport facility” (1.66), “lack of time” (1.51) and “lack of incentive” (1.49). It is observed from table 2 that majority number of the respondents not perceived any extension and training constraints in case of “training not considered benefited by the farm women” followed by “no one to look after children and elderly person at home”, “no participation of farm women in demonstration”, “majority of the training are dominated by the male farmers”, “gender biased technology”, “lack of credibility of expert” and “no attempt for sharing of technical information”. So, it is concluded from the study majority of the farm women perceived not any extension and training constraints on “training not benefited”, “no one to look after children and elderly person at home” and “no participation of farm women in demonstration”.

It is revealed from the table 2 that the training and extension constraints of the farm women were highest in case of “lack of capital to purchase materials required for training” followed by “insufficient female extension worker”, “agricultural work pressure”, “lack of transport facility” and “lack of time”. It is concluded from the table 2 that the training and extension constraints of the respondents were lowest in case of “no one to look after children and elderly person at home” followed by “no participation of farm women in demonstration”, “training not considered benefited by the farm women”, “gender biased technology” and “lack of credibility of specialist”. This finding of the study is in line with the result reported by Quisumbing and Pandolfelli (2010), Nath *et al.* (2012), Santhi *et al.* (2013), Kondylis *et al.* (2014), Malabasari and Uma (2016) and Singh (2018).

Table 2. Perception of the farm women on training and extension constraints

n=300

Sl. No.	Training and extension constraints	Extent of training and extension Constraint				Mean score	Rank
		High	Medium	Somewhat	Nil		
		<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>		
1.	Insufficient female extension worker	79	107	66	48	1.72	II
2.	Majority of the training are dominated by the male farmers	12	86	73	129	0.94	XVI.V
3.	Training timing are not appropriate to the farm women	13	67	171	49	1.15	X
4.	Training information are not communicated to the farm women	04	43	218	35	1.05	XIII
5.	No effort for sharing of technical information	12	30	186	72	0.94	XVI.V
6.	Lack of capital to purchase materials required for training	92	117	68	23	1.93	I
7.	Gender biased technology	26	54	99	121	0.95	XV
8.	Lack of time	37	106	130	27	1.51	V
9.	No participation of farm women in demonstration	11	32	106	151	0.68	XIX
10.	Training not considered benefited by the farm women	32	26	72	170	0.73	XVIII
11.	Lack of incentive	25	121	131	23	1.49	VI
12.	Considered herself unfit for training	22	47	176	55	1.12	XI
13.	Lack of training programme	30	98	126	46	1.37	VIII
14.	Lack of transport facility	49	122	108	21	1.66	IV
15.	Lack of interest to support farmers	14	105	165	16	1.39	VII
16.	lack of credibility of expert	29	32	158	81	1.03	XIV
17.	Biasness on the selection of the trainees	17	75	158	50	1.20	IX
18.	No one to look after children and elderly person at home	02	64	67	167	0.67	XX
19.	Physically unfit to attend the training	18	54	159	69	1.07	XII
20.	Agricultural work pressure	49	121	116	14	1.68	III

*Score: high=3, medium=2, somewhat=1, nil=0

Farm women perception on marketing constraints:

It is observed from the table 3 that means score of marketing constraints of the respondents were highest in case of “minimum support price” (2.14) followed by “lack of marketing networking knowledge” (2.02), “monopoly of traders” (2.01), “lack of *mandis*” (2.00) and “inadequate transport communication” (1.71).

It is observed from table 3 that a smaller number of the respondents perceived no any marketing constraints on “no support from govt. department” followed by “lack of *mandis*”, “inadequate transport communication”, “less accessibility of market”, “minimum support price” and “lack of knowledge on post-harvest operation”. So, it is concluded from the study that a smaller number of farm women were perceived no any marketing constraints on no support

This finding is line with the study of Abraham (2003) and Worinu (2009). from govt. department followed by lack of *mandis*, inadequate transport communication, less accessibility of market, minimum support price and lack of knowledge on post-harvest operation.

It is found from the table 3 that farm women perception on marketing constraints was highest in case of “minimum support price” followed by “lack of marketing networking knowledge”, “monopoly of traders” and “lack of *mandis*”. It is also found from the table 3 that marketing constraints of the farm women were lowest in case of “no support from govt. department” followed by “lack of knowledge on post-harvest operation”, “less accessibility of market” and “insufficient knowledge on value addition”.

Table 3. Perception of the farm women on marketing constraints

n=300

Sl. No.	Marketing constraints	Extent of Marketing Constraint				Mean score	Rank
		High	Medium	Somewhat	Nil		
		<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>		
1.	Monopoly of traders	118	83	84	15	2.01	III
2.	Minimum support price	123	112	48	17	2.14	I
3.	Inadequate transport communication	23	198	49	30	1.71	V
4.	Lack of marketing networking knowledge	95	128	65	12	2.02	II
5.	Insufficient knowledge on value addition	46	119	122	13	1.66	VI.V
6.	No support from govt department	13	109	125	53	1.27	IX
7.	Lack of knowledge on post-harvest operation	42	126	116	16	1.65	VIII
8.	Less accessibility of market	23	172	85	20	1.66	VI.V
9.	Lack of mandis	123	92	46	39	2.00	IV

*Score: high=3, medium=2, somewhat=1, nil=0

Farm women perception on communication constraints:

It is observed from the table 4 that means score of communication constraints of the respondents were highest in case of “lack of computer” (2.67) followed by “lack of computer teacher or trained person ” (2.61), “high cost of mobile phone /computer repairing ” (2.45), “short length of mobile phone battery charge ” (2.37), “lack of mobile phone/computer servicing centre” (2.37), “high price mobile phone ” (2.27), “lack of information about mobile apps” (2.16), “non availability of smart phone” (2.14) and “lack of knowledge on smart phone operating ” (2.11).

It is evident from table 4 that a smaller number of respondents not perceived any communication constraints in case of “unexpected call” followed by “technical problem of phone”, “lack of mobile phone/computer servicing centre”, “electricity problem”, “lack of initiative from family” and “network problem”. So, it is concluded from the study that a smaller number of farm women perceived not any communication constraints on “unexpected call”, “technical problem of phone”, “lack of mobile phone/computer servicing centre”, “electricity problem, “lack of initiative from family” and “network problem”.

It is revealed from the study that the farm women perception on communication constraints were highest in case of “lack of computer” followed by “lack of computer teacher or trained person”, “high cost of mobile phone/computer repairing”, “short length of mobile phone battery charge” and “lack of mobile phone/computer servicing centre”. It is concluded from the study that communication constrains of the farm women were lowest in case of “unexpected call” followed by “problem of electricity”, “network problem”, and “lack of initiative from the family.”

Table 4. Farm women perception on communication constraints

n=300

Sl. No	Communication Constraint	Extent of Communication Constraint				Mean score	Rank
		High	Medium	Somewhat	Nil		
		<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>		
1.	Non availability of smart phone	119	111	63	07	2.14	VIII
2.	Lack of computer	212	78	08	02	2.67	I
3.	Non availability of internet	65	93	139	03	1.73	XIII
4.	Lack of computer teacher or trained person	212	64	19	05	2.61	II
5.	Lack of information about mobile apps	131	87	80	02	2.16	VII
6.	Slow internet connectivity	65	133	99	03	1.87	X.V
7.	lack of mobile phone/computer servicing centre	167	95	21	17	2.37	IV.V
8.	High price mobile phone	111	166	17	06	2.27	VI
9.	lack of initiative from the family	67	97	122	14	1.72	XIV
10.	Anxiety	69	130	95	06	1.87	X.V
11.	High cost of mobile phone /computer repairing	166	105	27	02	2.45	III
12.	Problem of electricity	29	128	128	15	1.57	XVI
13.	Unexpected call	22	81	167	30	1.32	XVII
14.	Lack of knowledge on smart phone operating	89	160	45	06	2.11	IX
15.	Technical problem of mobile phone	51	158	65	26	1.78	XII
16.	short length of mobile phone battery charge	171	76	46	07	2.37	IV.V
17.	Network problem	54	107	127	12	1.68	XV

*Score: high=3, medium=2, somewhat=1, nil=0

Comparative evaluation of different types of constraints perceived by the farm women:

It is revealed from the study (table 5, sl. 1) that level of socio psychological constraints perceived by the farm women were medium (47.33%) followed by high (27%) and low (25.67%). The coefficient of variation value within the distribution 41.80% indicates that there was a medium consistency level of the distribution for the variable psychological constraints. It is found from the study (table 5, sl. 2) that level of training and extension constraints perceived by the farm women were medium (68.33%) followed by high (16.33%) and low (15.33%). The coefficient of variation value within the distribution 37.22% indicates that there was a medium consistency level of the distribution for the variable training and extension constraints. It is shown from the table 5 and sl. 3 that level of

marketing constraints perceived by the farm women were high (64%) followed by medium (30%) and low (6%). The coefficient of variation value within the distribution 27.79% implies that there exists a high consistency level of the distribution for the variable marketing constraints. It is observed from study (table 5, sl. 4) that level of communication constraints perceived by the respondents were high (58%) followed by medium (39.33%) and low (2.67%). The coefficient of variation value within the distribution 17.58% implies that there exists a high consistency level of the distribution for the variable communication constraints.

Table 5. Level of constraints perceived by the farm women

n=300

Sl.	Level of constraints	Category	Score	Frequency	Percentage	Statistics
1.	Socio psychological constraints	Low	0 to 5.33	77	25.67	Range= 0 to 16, Mean= 8.23, SD= 3.44 CV=41.80%
		Medium	5.34 to 10.67	142	47.33	
		High	10.68 to 16.00	81	27.00	
2.	Training and extension constraints	Low	0 to 16.33	46	15.33	Range= 0 to 49 Mean= 24.29 SD= 9.04 CV= 37.22%
		Medium	16.34 to 32.67	205	68.33	
		High	32.68 to 49.00	49	16.33	
3.	Marketing constraints	Low	0 to 8.00	18	6	Range= 0 to 24 Mean= 16.12 SD= 4.48 CV= 27.79%
		Medium	8.01 to 16.00	90	30	
		High	16.01 to 24.00	192	64	
4.	Communication constraints	Low	3 to 18.33	8	2.67	Range= 3 to 49 Mean= 34.69 SD= 6.10 CV= 17.58%
		Medium	18.34 to 33.67	118	39.33	
		High	33.68 to 49.00	174	58.00	

Association between the different types of constraints perceived by the farm women with the agricultural information network output

It is found from the study (Table 6) that the variables socio-psychological and communication constraints negatively and significantly associated with the agricultural information network output in terms of knowledge of the farm women. It is also found from the study that the variables extension and training constraints

were positively and significantly correlated with the agricultural information network output of the farm women. The variables marketing constraints had not significantly associated with the agricultural information network output of the farm women.

Table 6. Association between the different types of constraints perceived by the farm women with the agricultural information network output

Correlations		
Agricultural information network output (Variables Y)		
Socio-psychological constraints (Variables X1)	Pearson Correlation	-.163**
	Sig. (2-tailed)	.005
	N	300
Extension and training constraints (Variables X2)	Pearson Correlation	.126*
	Sig. (2-tailed)	.029
	N	300
Marketing constraints (Variables X3)	Pearson Correlation	.072
	Sig. (2-tailed)	.212
	N	300
Communication constraints (Variables X4)	Pearson Correlation	-.249**
	Sig. (2-tailed)	.000
	N	300
** Correlation is significant at the 0.01 level (2-tailed).		
*Correlation is significant at the 0.05 level (2-tailed).		

4. Conclusion

It is concluded from the study that farm women of Cooch Behar district perceived different type constraints for reaching out to the relevant the farm information. Among them majority of the farm women perceived high level of communication and marketing constraints and medium level of socio-psychological and training and extension constraints. It is noted from the study that drudgery, family restriction and less decision-making ability of the farm women were the major socio-psychological constraints that influence on the agricultural information network output. Majority of the farm women were unable to purchase input which is required for training. Society restricted the farm women to contact with the male extension person. It is shown from the study that majority farm women were not get minimum support price of the crops which is discourage them to learn new agricultural practices and marketing information. It is revealed from the study that the socio-psychological and communication constraints were the major constraint which was negatively and significantly influence on the agricultural information network output of the farm women. It is concluded from the study that extension and training constraints might be influencing the farm women to learn more scientific agricultural practices from locally available sources which was positively impact on knowledge development. It is well established fact that there exists a wide gap between the demand and supply of farm information among the farm women. To overcome this

constraint, it is imperative for the planners, policy makers and the development agent to evolve an effective strategy to reach the millions of farm women.

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