

Participation and Time Utilization Pattern of Agricultural Households

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ABSTRACT

The present study was carried out during 2022 in Bangalore Rural district and Ramanagara districts of Karnataka state to know the participation and time utilization pattern of agricultural households. One hundred and ninety six agricultural households were interviewed for the study using a pre-tested interview schedule. The head of the family and his spouse were interviewed for the research study, thus the total sample comprised of 196 farm men and 196 farm women. The results of the *t*' test revealed a highly significant difference existed in respect of mean participation score between farm men and women. Education, experience in farming, achievement motivation, management orientation, mass media participation, innovative proneness, extension agency contact, farm scientist contact and extension participation had significantly contributed in increasing the participation of the respondents in agricultural activities. Further, the results revealed that 183 and 148 mandays per year is spent by farm men and women, respectively in agricultural activities.

Keywords: Agriculture, Farm men, Farm women, Participation, Time utilization

Agriculture sector plays an important role in the livelihood of people in India, providing employment and income. Agricultural interventions that involve the adoption of new technology and practices for enhancing productivity are critical for improving nutrition and incomes in rural areas of low- and middle-income countries, where most of the world's undernourished and poor households live. While these interventions offer the potential for enhancing productivity and household incomes, they can also fundamentally alter the patterns of time and physical effort devoted by men and women to productive and reproductive activities. Improving gender equality and women's empowerment in agriculture is considered essential to economic development,

because it can improve women's and children's health and household productivity.

Rural women share abundant responsibilities and perform a wide spectrum of activities like running the family, maintaining the household, attending to farm labour, performing several farm activities, attending domestic animals and extending a helping hand in rural artisanship and handicrafts; but their contribution in economic terms has not been recognized. This situation prevails in almost all the

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developing countries (Veena *et al.* 1990). Women's immense contribution to household food security in India remains largely invisible. Yet, the Food and Agriculture Organization estimates that "women produce between 60 and 80 per cent of the food in most developing countries and are responsible for half of the world's food production." Although majority of the female workforce in India is engaged in agriculture, most women do not have land rights. "Our society thinks that men alone are farmers".

Women referred as 'invisible farmers' are the backbone of agricultural work force in our country. Women do the most tedious tasks in agriculture production and they are active partners associating in almost all unit operations of agriculture sharing work between 20 to 80 per cent. They participate in most of the agricultural operations like manuring, land preparation, sowing of setts, transplanting, weeding, applying fertilizers, harvesting etc. The success and failure of farm depends mainly on the contribution made by farm women. Women are involved in all the important aspects related to agriculture, decision making, finance and marketing. They get limited opportunities in modern occupations as they do not have access to the training required for new technologies. It has often been said that a women is physically fragile and unfit to do strenuous jobs involving hard labour. But, it is not the physical incapacity, which has kept her in background; it is illiteracy, social restriction, her low self -esteem and lack of facilities for technical training.

Women are extensively involved in agriculture as female farm heads, co-owners, family farm workers and also employees. About 38 per cent of family workers in agriculture are women. But, although their contribution to local and community development is significant, their role still goes unnoticed and they are still not fully involved in decision-making, besides, sharing various duties and responsibilities and participating in on-farm and off-farm activities. In this backdrop, the present study is undertaken with the following specific objectives:

1. To analyse the extent of participation of farm men and women in agricultural activities.
2. To find out the extent of contribution of profile characteristics of farm men and women on the participation in agricultural activities.

3. To know the time utilization pattern of farm men and women in agricultural activities.

METHODOLOGY

The present study was carried out during 2021-22 in Devanahalli and Doddaballapur taluks of Bangalore Rural district and Kanakapura and Ramanagar taluks of Ramanagar districts of Karnataka state. One hundred and ninety-six agricultural households were interviewed for the study using a pre-tested interview schedule. Both husband and his spouse were interviewed for the research study, thus the total sample constituted 196 farm men and 196 farm women.

Participation in agriculture activities

Extent of participation is defined as '*the degree to which the farm men and women have participated in various agriculture activities*'. A list of 11 agricultural activities (Table 1) were presented to the respondents to know their extent of participation. To analyse the extent of participation of the participants a score of 0 and 1 were assigned for non-participation and participation in the agricultural activities, respectively. The minimum and maximum score one could get was 0 and 11, respectively. Based on the total score by the respondents on all the 11 agriculture practices, they were categorized into low, medium and high level of participating considering mean and standard deviation.

| Category | Criteria | Farm men (n ₁ =196) | Farm women (n ₂ =196) |
|----------|-----------------|-----------------------------------|-------------------------------------|
| Low | < (Mean - ½ SD) | <5.80 | <4.70 |
| Medium | (Mean + ½SD) | 5.80 to 8.76 | 4.70 to 7.06 |
| High | > (Mean + ½ SD) | > 8.76 | > 7.06 |

Twelve profile characteristics namely, age, education, farming experience, achievement motivation management orientation, deferred gratification, social participation, innovative proneness, mass media participation, extension participation, farm scientist contact, and extension agency contact of both farm men and women were collected using standardized scale/procedure.

Time utilization pattern

Seven agricultural and domestic activities (Table 4) were considered for calculating the average time

utilization in a day (24 hours) on various chores by farm men and women in agricultural and domestic activities. While, 11 activities (Table 5) were included to know the time utilization pattern of farm men and women for a year in agriculture activities.

The collected data was scored, tabulated and analysed using frequency, percentage, mean, standard deviation, student 't' test and multiple regression analysis. The extent of contribution of profile characteristics on the participation level of households in agriculture activities was found out by employing multiple regression analysis.

RESULTS AND DISCUSSION

1. Participation of households in agricultural activities

This section deals with the activity-wise participation of households in agricultural activities and the overall participation of households in agricultural activities.

Activity-wise participation of households in agricultural activities

The results in Table 1 reveals that all the farm men had participated in the land preparation (100.00%), application of manure and fertilizer (100.00%), crop protection (plant protection measures (100.00%) and harvesting (100.00%) activities, while a majority of the farm men had participated in sowing/transplanting (97.45%), irrigation (68.37%) and marketing of produce (96.94%). Less than half of the farm men had participated in weeding/intercultivation (40.82%), seed treatment (39.29%), post-harvest (11.22%) and storage (6.63%) activities.

On the contrary, a majority of farm women had participated in weeding/intercultivation (63.27%), sowing/transplanting (55.10%) and seed treatment (54.08%), while less number of farm women participated in application of manure and fertilizers (34.18%), harvesting (33.67%), irrigation (32.14%), storage (22.96%), post-harvest (21.94%), land preparation (21.43%), crop protection (plant protection measures (20.41%) and marketing of produce (12.24%). Activities such as land preparation and crop protection (plant protection measures are laborious, tough and cumbersome and hence

being performed exclusively by farm men, whereas majority of farm women had participated in sowing/transplanting, weeding/intercultivation and seed treatment because these activities are less cumbersome and do not demand much physical energy. More or less similar findings were reported by Nishitha (2016) and Rakesh Bhatthad (2020) is in line with the findings of the present study.

Table 1: Activity-wise participation of households in agricultural activities

| Sl. No. | Particulars | Farm men (n ₁ =196) | | Farm women (n ₂ =196) | |
|---------|---|--------------------------------|--------|----------------------------------|-------|
| | | No. | % | No. | % |
| 1 | Land preparation | 196 | 100.00 | 42 | 21.43 |
| 2 | Seed treatment | 77 | 39.29 | 106 | 54.08 |
| 3 | Application of manure and fertilizers | 196 | 100.00 | 67 | 34.18 |
| 4 | Sowing/transplanting | 191 | 97.45 | 108 | 55.10 |
| 5 | Irrigation | 134 | 68.37 | 63 | 32.14 |
| 6 | Weeding/intercultivation | 80 | 40.82 | 124 | 63.27 |
| 7 | Crop protection (Plant protection measures) | 196 | 100.00 | 40 | 20.41 |
| 8 | Harvesting | 196 | 100.00 | 66 | 33.67 |
| 9 | Post-harvest activities | 22 | 11.22 | 43 | 21.94 |
| 10 | Marketing of produce | 190 | 96.94 | 24 | 12.24 |
| 11 | Storage | 13 | 6.63 | 45 | 22.96 |

Overall participation of households in agricultural activities

It is observed from Table 2 that as high as 45.93 per cent of the farm men were belonging to high level of participation in agricultural activities, while 33.67 and 20.40 per cent of the farm men were belonging to medium and low level of participation, respectively. On the other hand, 34.70 per cent of the farm women were belonging to high participation level, whereas 33.67 and 31.63 per cent of the farm women were belonging to medium and low level of participation in agricultural activities, respectively. The results of the 't' test (2.01) revealed a highly significant difference in respect of mean participation score between farm men (7.28) and women (5.88). The findings indicate that more number of farm men

had participated in agricultural activities compared to the farm women.

Table 2: Overall participation of households in agricultural activities

| Sl. No. | Participation level | Farm men (n ₁ =196) | | Farm women (n ₂ =196) | | 't' value |
|---------|---------------------|--------------------------------|-------|----------------------------------|-------|-----------|
| | | No. | % | No. | % | |
| 1 | Low | 40 | 20.40 | 62 | 31.63 | – |
| 2 | Medium | 66 | 33.67 | 66 | 33.67 | |
| 3 | High | 90 | 45.93 | 68 | 34.70 | |
| | Mean | 7.28 | | 5.88 | | 2.01** |
| | Standard deviation | 1.48 | | 1.18 | | – |

**Significant at 1 per cent.

2. Extent of contribution of profile characteristics of households in the participation of agricultural activities

A bird's eye view of Table 3 reveals that age, deferred gratification and social participation of farm men and women had not significantly contributed to the participation in agricultural activities.

Table 3: Extent of contribution of profile characteristics of households in the participation of agricultural activities (n=392)

| Sl. No. | Profile characteristics | Regression co-efficient (RC) | Standard error of RC | 't' value |
|---------|--------------------------|------------------------------|----------------------|---------------------|
| 1 | Age | 0.600 | 0.666 | 1.111 ^{NS} |
| 2 | Education | 0.189 | 0.398 | 2.212* |
| 3 | Farming experience | 0.178 | 0.414 | 2.318* |
| 4 | Achievement motivation | 0.138 | 0.289 | 2.098* |
| 5 | Management orientation | 0.184 | 0.399 | 2.168* |
| 6 | Deferred gratification | 0.612 | 0.596 | 0.973 ^{NS} |
| 7 | Social participation | 0.912 | 0.818 | 0.896 ^{NS} |
| 8 | Innovative proneness | 0.74 | 0.216 | 2.911** |
| 9 | Mass media participation | 0.236 | 0.518 | 2.199* |

| | | | | |
|----|--------------------------|-------|-------|--------|
| 10 | Extension participation | 0.118 | 0.512 | 4.33** |
| 11 | Farm scientist contact | 0.120 | 0.514 | 4.28** |
| 12 | Extension agency contact | 0.090 | 0.615 | 6.83** |

NS = Non significant; *Significant at 5%; ** Significant at 1%; F = 22.23**, R² = 0.798

Education, experience in farming, achievement motivation, management orientation and mass media participation of farm men and women were significant at five per cent level, while innovative proneness, extension agency contact, farm scientist contact and extension participation of farm men and women had highly significance at one per cent with the participation in agricultural activities. It can inferred education, experience in farming, achievement motivation, management orientation, mass media participation, innovative proneness, extension agency contact, farm scientist contact and extension participation of farm men and women have synergic effect on one another influencing the respondents for increased participation in agricultural activities. The present findings are in line with the findings reported by Bharath Kumar (2010), Nishitha (2016) and Nataraju *et al.* (2019).

3. Average time utilization in a day on various chores by households in agricultural and domestic activities

A perusal of Table 4 reveals that the average time spent (hours/day) is more by farm men compared to farm women in farm work (4 hours 15 minutes and 3 hours 30 minutes), rearing of animals (1 hour 15 minutes and 2 hours), cooking (30 minutes and 2 hours), household work (1 hour and 2 hours), caring of family members (1 hour and 1 hour 30 minutes), personal hygiene (1 hour and 1 hour 15 minutes) and rest (recreation, sleep etc.) (15 hours and 11 hour 45 minutes), respectively. The above findings reveal that more time is spent by farm women in rearing animals, cooking, household work, caring of family members, and personal hygiene as compared to farm men. Whereas, farm men spend average time (hours/day) more than the farm women in farm work and taking rest (recreation, sleep etc.).

Table 4: Average time utilization in a day on various chores by households in agricultural and domestic activities

| Sl. No. | Particulars | Average time spent (hours/day) | |
|--------------|-------------------------------|--------------------------------|----------------------------------|
| | | Farm men (n ₁ =196) | Farm women (n ₂ =196) |
| 1 | Farm work | 4 hours 15 minutes | 3 hours 30 minutes |
| 2 | Rearing of animals | 1 hour 15 minutes | 2 hours |
| 3 | Cooking | 30 minutes | 2 hours |
| 4 | Household work | 1 hour | 2 hours |
| 5 | Caring of family members | 1 hour | 1 hour 30 minutes |
| 6 | Personal hygiene | 1 hour | 1 hour 15 minutes |
| 7 | Rest (recreation, sleep etc.) | 15 hours | 11 hour 45 minutes |
| Total | | 24 hours | 24 hours |

4. Time utilization by households in agricultural activities

The findings in Table 5 reveals that the average time spend (mandays/year) in agricultural activities by farm men and women on land preparation (22 and 9), seed/seedling treatment (8 and 6), application of manure and fertilizers (16 and 12), sowing/transplanting (12 and 9), irrigation (22 and 17), weeding/intercultivation (30 and 32), crop protection (plant protection measures) (24 and 18), harvesting (15 and 9), post-harvesting activities (10 and 16), marketing of produce (14 and 6) and storage (10 and 14), respectively.

Table 5: Time utilization by households in agricultural activities

| Sl. No | Agricultural activities | Average time spent (Man days/year) | |
|--------|---------------------------------------|------------------------------------|----------------------------------|
| | | Farm men (n ₁ =196) | Farm women (n ₂ =196) |
| 1 | Land preparation | 22 | 9 |
| 2 | Seed/Seedling treatment | 8 | 6 |
| 3 | Application of manure and fertilizers | 16 | 12 |
| 4 | Sowing/transplanting | 12 | 9 |
| 5 | Irrigation | 22 | 17 |

| | | | |
|--------------|---|------------|------------|
| 6 | Weeding/intercultivation | 30 | 32 |
| 7 | Crop protection (Plant protection measures) | 24 | 18 |
| 8 | Harvesting | 15 | 9 |
| 9 | Post-Harvesting activities | 10 | 16 |
| 10 | Marketing of produce | 14 | 6 |
| 11 | Storage | 10 | 14 |
| Total | | 183 | 148 |

It could be seen from the above findings that farm men had spent more mandays/year in land preparation, seed treatment, application of manure and fertilizers, sowing/ transplanting, crop protection, harvesting and marketing of product compared to farm women, while farm women has spent more mandays/year in agricultural activities such as weeding/intercultivation, post-harvest activities and storage. A total of 183 and 148 mandays/year was spent by farm men and women in agricultural activities, respectively. The above findings are in line with the findings reported by Bharat Kumar (2010), Arti Pandey *et al.* (2014), Archana (2019) and Arora *et al.* (2021).

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CONCLUSION

The research findings indicated that more number of farm men were participating in agricultural activities compared to farm women. Agricultural extension agencies, farm universities and other concerned agencies should educate the farm men to encourage women for motivating her to involve in decision making and participate actively in farming activities. Hence, both farm men and women can profitably engage themselves in different agricultural activities.

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