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Personal and Socio-Psychological Characteristics of Farmers in Association with Performance of Different Farming Systems Adopted by farmers in Chickaballapura District of Karnataka, India

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A B S T R A C T

The study was conducted in Chickaballapura district of Karnataka, during the year 2015-16 to find out the association between personal and socio-psychological characteristics of farmers with performance of different farming systems adopted by farmers. In Chickaballapura district, two taluks i.e. Sidlaghatta and Chintamanitaluks were purposefully selected for the study, since these taluks are having more diversified farming compared to other taluks. From each taluk, five villages have been selected. From each village, 12 farmers are selected, which include three farmers under FS-1, three farmers under FS-2, three farmers under FS-3 and three farmers under FS-4. Thus, the total sample size from two taluks and 10 villages is 120. It was found that, the association between personal and socio-psychological characteristics with performance of FS-1 farmer, the variables achievement motivation, risk bearing ability and mass media participation had positive and significant association with performance at five per cent level of significance. With FS-2 farmers, the extension participation had positive and significant association with performance at one per cent level of significance. It was found that with FS-3 farmers, risk bearing ability and decision making ability had positive and significant association with performance at one per cent level of significance. With FS-4 farmers, education, farming experience, land holding, cropping intensity, management orientation, risk bearing ability, irrigation intensity, decision making ability, mass media participation and extension participation had positive and significant association with performance at five per cent level of significance. Majority of Ragi farmers perceived uneven rainfall (95.00 %), non-availability of labour (86.66 %), lack of knowledge (80.00 %), high cost of fertilizers (75.00 %) are the major constraints. A good number of dairy farmer's perceived shortage of green fodder and lack of pucca house (92.22 %), high investment (82.22 %) as their major constraints. A great majority of sericulture farmers expressed that lack of knowledge about spacing (86.66 %), lack of irrigation facility (83.33 %) as the major constraints. Horticulture farmers expressed that lack of water for irrigation (93.33 %), interrupted power supply and price fluctuation, high cost of hybrids (90.00 %), as the major constraints.

Introduction

In order to sustain a positive growth rate in agriculture, a holistic approach is the need of the hour. Farming system is a mix of farm enterprises in which farm families allocate resources for efficient utilization of the existing enterprises for enhancing productivity and profitability of the farm.

These farm enterprises are crop, livestock, aquaculture, agro-forestry, agri-horticulture and sericulture. In diversified farming, though crop and other enterprises coexist, the thrust is mainly to minimize the risk, while in such situations a judicious mix of one or more enterprises along with cropping, there exist a complimentary effect through effective recycling of wastes and crop residues which encompasses additional source of income to farmer. Combination of enterprises is focused around a few selected interdependent, interrelated and interlinking production system based on crops, animals and related subsidiary professions.

Farming system approach is not only a reliable way of obtaining fairly high productivity with considerable scope for resource recycling, but also concept of ecological soundness leading to sustainable agriculture. With increasing energy crisis due to shrinking of non-renewable fossil-fuel based sources, the fertilizer nutrient cost have increased steeply and gradual withdrawal of fertilizer subsidy. It is expected to have further hike in the cost of fertilizers. This would leave the farmers with no option but to fully explore the potential alternate sources of plant nutrients at least for the partial substitution of the fertilizer nutrients for individual crops and in the cropping systems. Hence, it was decided to know the association between personal and socio-psychological characteristics of farmers with performance of different farming systems adopted by farmers.

Materials and Methods

The study was conducted during 2016 in Chickaballapura district which comes under eastern dry zone (Zone- 5) of Karnataka. In Chickaballapura district, two taluks i.e. Sidlaghatta and Chintamani taluks were purposefully selected for the study, since these taluks are having more diversified farming compared to other taluks. Out of five taluks, Sidlaghatta and Chintamani are purposively selected for the study since these taluks have diversified farming systems compared to other taluks. From each taluk, five villages have been selected. From each village, 12 farmers are selected which include three farmers under FS-1, three farmers under FS-2, three farmers under FS-3 and three farmers under FS-4. Thus, the total sample size from two taluks and 10 villages is 120. In the present investigation, Ex-post facto research design was used. Data was collected by using a detailed interviewed schedule employed personal interview method. The responses were scored, quantified, categorised and tabulated using statistical methods like percentage, mean, standard deviation, frequencies and chi square test.

Key farming systems selected for the study

Crop production (FS-1)

Crop production and dairy (FS-2)

Crop production, dairy and sericulture (FS-3)

Crop production, dairy, sericulture and horticulture (FS-4)

Results and Discussion

Results from the Table 1 shows the overall profile of the farmers adopting different farming systems viz., more than half of the respondents (58.33 per cent) belonged to

middle age group, 36.66 per cent of the respondents had high school education, more than three-fifth of the respondents (62.50 %) belonged to high farming experience category, nearly three-fifth (58.3 %) of the respondents are marginal farmers, majority (61.67 %) of the respondents comes under medium level of cropping intensity, nearly two-fifth of the respondents (37.50 %) were found in high scientific orientation category, about 66.33 per cent of the farmers belonged to medium cropping pattern category, that nearly half of the respondents (49.16 %) of the farmers were belonged to medium Management orientation category, more than one third of the respondents (34.16 %) had high level of achievement motivation, medium innovative proneness was exhibited by a great majority (82.50 %) of farmers, about 57.50 per cent of the farmers were having medium level of deferred gratification, about three-fourth (75.83 %) of the farmers were belonged to medium level of risk bearing ability category, medium irrigation intensity was exhibited by 66.67 per cent of farmers, two-fifth of the respondents belonged to medium category (40.00 %), more than half of the farmers (53.33 %) belonged to medium extension contact category, more than three-fifth of the farmers (61.66 %) were under medium decision making ability category, about 45.00 per cent of the farmers belonged to medium mass media participation category.

The possible reason for this pattern of profile of farmers adopting different farming systems may be due to most of them is middle aged and they are enthusiastic and have more efficiency than young farmers or old farmers.

Due to fragmentation of land holding most of them are marginal farmers. All the farmers are relatively educated and they having good experience in farming, hence they have medium mass media participation and medium risk bearing ability.

Table 2 revealed that association between personal and socio-psychological characteristics with performance of FS-1, FS-2, FS-3 and FS-4 farmer. Under FS-4 the variables achievement motivation, risk bearing ability and mass media participation had positive and significant association with performance at five per cent level of significance. Under FS-2 farmers, the extension participation had positive and significant association with performance at one per cent level of significance, whereas farming experience, land holding, scientific orientation, management orientation, mass media participation and decision making ability had positive and significant association with performance at five per cent level of significance.

It was found that under FS-3 farmers, risk bearing ability and decision making ability had positive and significant association with performance at one per cent level of significance, whereas education, farming experience, land holding, cropping intensity, cropping pattern, management orientation, irrigation intensity, mass media participation and extension participation had positive and significant association with performance at five per cent level of significance.

Under FS-4 farmers, education, farming experience, land holding, cropping intensity, management orientation, risk bearing ability, irrigation intensity, decision making ability, mass media participation and extension participation had positive and significant association with performance at five per cent level of significance, whereas education, farming experience, land holding, cropping intensity, management orientation, risk bearing ability, irrigation intensity, decision making ability, mass media participation and extension participation had positive and significant association with performance at five per cent level of significance.

Table.1 Overall profile of the farmers adopting different farming systems

(n=120)

Sl. No.	Characteristics	Category	Number	%	
1	Age	Young (<32years)	27	22.30	
		Middle (32-56 years)	70	58.33	
		Old (>56 years)	23	19.60	
2	Education	Illiterate	21	17.50	Mean=2.7 S.D=1.2
		Primary school	26	21.66	
		High school	44	36.66	
		Pre-University	16	13.33	
		Graduation and above	13	10.83	
3	Farming experience	Low	12	10.0	
		Medium	33	27.5	
		High	75	62.5	
4	Land-holdings (farm size)	Marginal farmers(<2.5.0 acres)	70	58.3	Mean=2.3 S.D=1.6
		Small farmers (20.5-5.0 acres)	40	33.3	
		Big farmers(>5.0 acres)	10	8.3	
5	Cropping intensity	Low	18	15.00	Mean=22.3 S.D=3.9
		Medium	74	61.67	
		High	28	23.33	
6	Scientific orientation	Low	31	25.83	Mean=13.3 S.D=2.0
		Medium	44	36.66	
		High	45	37.50	
7	Cropping pattern	Low	12	10.00	Mean=2.3 S.D=1.1
		Medium	81	66.33	
		High	27	23.67	
8	Management orientation	Low	23	19.16	Mean=18.1 S.D=1.2
		Medium	59	49.16	
		High	38	31.66	
9	Achievement motivation	Low	40	33.33	Mean=14.8 S.D=1.0
		Medium	39	32.50	
		High	41	34.16	

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Sl. No.	Characteristics	Category	Number	%	
10	Innovative proneness	Low	15	12.50	Mean=15.8 S.D=0.69
		Medium	99	82.50	
		High	6	5.00	
11	Deferred gratification	Low	27	22.50	Mean=24.6 S.D=2.8
		Medium	69	57.50	
		High	24	20.00	
12	Risk bearing ability	Low	13	10.83	Mean=4.9 S.D=0.12
		Medium	91	75.83	
		High	16	13.33	
13	Irrigation intensity	Low	19	15.83	Mean=4.9 S.D=2.3
		Medium	80	66.67	
		High	21	17.50	
14	Extension participation	Low	35	29.16	Mean=4.8 S.D=2.0
		Medium	48	40.00	
		High	37	30.83	
15	Extension contact	Low	30	25.00	Mean=3.5 S.D=1.6
		Medium	64	53.33	
		High	26	21.66	
16	Decision making ability	Low	27	22.50	Mean=11.5 S.D=1.7
		Medium	74	61.66	
		High	19	15.83	
17	Mass media participation	Low	47	39.16	Mean=5.9 S.D=1.3
		Medium	54	45.00	
		High	19	15.83	

Table.2 Association between personal and socio-psychological characteristics with performance of different farming systems adopted by farmers

(n=120)

Sl. No.	Independent variable	FS-1 (n=30)		FS-2 (n=30)		FS-3 (n=30)		FS-4 (n=30)	
		x^2	C-value	x^2	C-value	x^2	C-value	x^2	C-value
1	Age	2.822NS	0.293	4.444NS	0.359	2.336NS	0.268	1.200NS	0.194
2	Education	1.520NS	0.209	4.240NS	0.350	9.492*	0.489	9.465*	0.488
3	Farming experience	4.100NS	0.346	9.769*	0.494	9.888*	0.496	13.973*	0.563
4	Land-holdings	1.042NS	0.290	9.532*	0.396	11.153*	0.519	9.854*	0.489
5	Cropping intensity	3.653NS	0.172	2.012NS	0.118	9.945*	0.432	10.364*	0.511
6	Scientific orientation	3.963NS	0.341	11.063*	0.518	6.501NS	0.421	14.125**	0.565
7	Cropping pattern	3.969NS	0.176	3.525	0.291	11.151*	0.510	6.121NS	0.412
8	Management orientation	3.316NS	0.314	9.619*	0.490	11.581*	0.527	9.856*	0.496
9	Achievement motivation	9.746*	0.494	5.617NS	0.396	0.874NS	0.167	4.171NS	0.349
10	Innovative proneness	1.440NS	0.045	3.438NS	0.319	1.364NS	0.207	4.955NS	0.375
11	Deferred gratification	7.924NS	0.456	6.100NS	0.409	2.704NS	0.286	13.360**	0.554
12	Risk bearing ability	9.784 *	0.494	10.787*	0.513	13.560**	0.557	10.271*	0.504
13	Irrigation intensity	1.354NS	0.106	3.412NS	0.301	9.773*	0.462	9.562*	0.454
14	Extension participation	7.432NS	0.251	13.971**	0.563	9.591*	0.491	10.131*	0.501
15	Extension contact	7.780NS	0.452	3.370NS	0.316	6.732NS	0.425	1.972NS	0.246
16	Decision making ability	4.440NS	0.357	11.621*	0.528	14.30**	0.567	9.912*	0.497
17	Mass media participation	9.879*	0.496	9.684*	0.493	9.490*	0.478	11.567*	0.527

*Significant at 5 per cent level, C- Contingency co-efficient
** Significant at 1 per cent level
NS- Non-significant

Table.3 Overall constraints as perceived by farmers adopting different farming systems

(n=120)

Sl. No.	Constraints	Number	Percentage	Rank
	CROP PRODUCTION (n=120)			
1	Uneven/ erratic rainfall	114	95.00	I
2	Non-availability of labor	104	86.66	II
3	High cost of fertilizers	90	75.00	IV
4	Lack of timely information	90	75.00	IV
5	Lack of knowledge	96	80.00	III
6	Non-availability of fertilizers	81	67.50	VI
7	Lack of finance	82	68.33	V
8	Psychological fear to use chemical for blast management	67	55.83	VII
9	Non-availability of quality seed materials	58	48.33	VIII
10	Lack of proper market facilities	44	36.66	IX
11	Exploitation by middlemen in the market	33	27.50	X
12	Non-availability of bio fertilizers	17	14.16	XII
13	High cost of biofertilizers	30	25.00	XI
	DAIRY FARMING (n=90)			
1	Shortage of green fodder	83	92.22	I
2	Lack of Pucca house	83	92.22	I
3	High investment	74	82.22	II
4	High cost of concentrates and other feeds	63	70.00	IV
5	Non-availability of dry fodder	70	77.77	III
6	Low milk production from local breeds	51	56.66	V
7	Non- availability of feeds	53	58.88	V
8	Lack of timely veterinary services	42	46.66	VI
9	Delay in payments from milk co-operative societies	28	31.11	VIII
10	Incidence of reproductive disorders in the milch	25	27.77	IX
11	Distantly located milk collection Centre	21	23.33	X
12	Low price for milk	32	35.55	VII
13	Non-availability of artificial insemination facility	10	11.11	XI

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SERICULTURE (n=60)				
1	Lack of Irrigation facility	50	83.33	II
2	Lack of knowledge about spacing	52	86.66	I
3	High cost of fertilizers	41	68.33	III
4	Incidence of ujifly and white muscardine	41	68.33	III
5	Improper disinfection of rearing house	41	68.33	III
6	Non-availability of labor	41	68.33	III
7	Untimely intercultural operations	29	48.33	V
8	Non-availability of loans from bank	30	50.00	IV
9	Fluctuations in market prices	30	50.00	IV
10	High investment	24	40.00	V
11	Lack of timely technical advise	22	36.66	VI
12	Lack of knowledge and skill about proper maintenance of rearing bed	8	13.33	VIII
13	Lack of knowledge about intercropping	10	16.66	VII
14	Non-availability of DFLs in time	7	11.66	IX
HORTICULTURE (n=30)				
1	Lack of water for irrigation	28	93.33	I
2	Price fluctuation	27	90.00	II
3	High cost of hybrids	24	80.00	III
4	High cost of fertilizers and chemicals	23	76.66	IV
5	Non-availability of fertilizers	21	70.00	V
6	Non availability of labour in time	20	66.66	VI
7	Non availability of recommended chemicals for seed treatment	19	63.33	VII
8	Non-availability of weedicides and bio agents	17	56.66	VIII
9	Lack of knowledge on important production technologies	16	53.33	IX
10	Lack of timely technical advice	14	46.66	X
11	Lack of transportation facility	7	23.33	XI
12	Interference of middlemen	6	20.00	XII

The possible reason is that, the education level of an individual is directly related to performance of the individual, it helps the individual to make progress in right direction developing awareness about new technology leading to adoption of technologies in different enterprises and the mass media carry more information on improved methods of cultivation. People are ready to change and more innovative would certainly adopt more number of improved agricultural practices. Higher Cosmo-politeness behaviour leads to higher information seeking on agriculture and growing of different crops and practicing different farming systems in same piece of land avoids the farmers from failure of crops and ensures the crop sustainability. These findings are in confirmation with those findings of Jyothi (2005).

The overall constraints faced by farmers in adopting different farming systems are presented in the Table 3. A great majority of farmers perceived uneven rainfall (95.00 %), non-availability of labor (86.66 %), lack of knowledge (80.00 %), high cost of fertilizers (75.00 %) and lack of timely information (75.00 %) as their major problems followed by lack of finance (68.33 %) and non-availability of fertilizers (67.50 %). A good number of dairy farmer's perceived shortage of green fodder and lack of pucca house (92.22 %), high investment (82.22 %) and high cost of concentrate feeds and other feeds (70.00 %) as their major constraints. Other constraints expressed are non-availability of dry fodder (77.77 %), low milk production from local breeds (56.66 %), non-availability of feeds (58.88 %) and lack of timely

veterinary services (46.66 %). A great majority of sericulture farmers expressed that, lack of knowledge about spacing (86.66 %), lack of irrigation facility (83.33 %) as the major constraints followed by high cost of fertilizers, incidence of uzifly and white muscardine, improper disinfection of rearing house, non-availability of labour (68.33 %), non-availability of loans from bank (50.00 %) as other important constraints expressed in sericulture farming (Table 3). Most of the horticulture farmers expressed that lack of water for irrigation (93.33 %), interrupted power supply and price fluctuation, high cost of hybrids (90.00 %), high cost of fertilizers and chemicals (80.00 %), non-availability of fertilizers (76.66 %) as the major constraints followed by non-availability of recommended chemicals for seed treatment (70.00 %), non-availability of labor in time (66.66 %), non-availability of weedicides and bio-agents (63.33 %), lack of knowledge on production technology (56.66 %) and untimely technical advice (46.66 %) as their other major constraints.

To overcome the above problems extension specialists need to educate the farmers to adopt moisture conserving technologies in dry land farming, promote drip irrigation and mulching techniques in horticulture production and provide the fertilizer chemicals at subsidized cost. Provide labour saving technologies, proper guidance about high yielding varieties in case of tomato, provide timely information about plant protection measures and conduct training programmes about improved cultivation practices in tomato.

As the above constraints listed in crop production, dairy and sericulture are crucial and demand driven activities, extension professionals should take at most care and make necessary arrangements for timely supply of critical inputs and quality seed materials, conduct skill oriented demonstrations, training on latest technologies and provide timely technical advice, on a constant basis to enhance the productivity.

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