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Assessment of relationship between personal and socio-economic characteristics with adoption of backyard poultry rearing practices in Bhandara district of Maharashtra

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Abstract

The present investigation was carried out on 240 respondents of Bhandara district of Maharashtra to assess the relationship between personal and socio-economic characteristics of backyard poultry owners with adoption of backyard poultry rearing practices. It was observed that there was significant relationship between land holding and adoption of backyard poultry rearing practices and the occupation of the respondents has significant relation with the adoption. There was significant correlation between annual income and adoption. The highest number of the respondents i.e. 62.92 percent were in medium category in respect of their level of information source utilization, followed by low level category, which is comprised of 18.75 percent respondents and 18.33 percent respondent were found in high level of information source utilization. The majority of the respondents were labour (42.92 percent), had marginal land (44.58 percent) had medium flock size (52.92 percent) and had very low annual income significantly associated with adoption of backyard poultry rearing practices whereas majority poultry owners with medium poultry farming experience had negative and non significant relationship with adoption of backyard poultry rearing practices.

Keywords: Agriculture, animal husbandry, backyard poultry, rearing practices, labour, adoption, socio economic status

Introduction

Animal Husbandry is highly potential sector of Indian economy, especially of rural economy. Rural population living in India constitutes 72.2 per cent (Dhillon *et. al.* (2018) of the total population, which is predominantly occupied by poor, marginal farmers and landless labourers. Backyard poultry production is an old age profession of rural families of India. In India, poultry is one of the fastest growing segments of livestock/agriculture and contribute a major share in terms of protein supplementation from eggs and poultry meat. Presently, the total Poultry population in our country is 729.21 million (as per 19th Livestock Census) and egg production is around 82.93 billion during 2015-16 (Anonymous, 2017) [2]. It is well known that poultry farming is possible in widely different agro-climatic environment as the fowl possesses marked physiological adaptability. Requirement of small space, low capital investment, quick return from outlay and well distributed turn over throughout the year make poultry farming remunerative in both rural and urban areas. At present, more numbers of farmers are attracted towards backyard poultry rearing practices. Therefore, the present investigation was carried out to assess the relationship between personal and socio-economic characteristics of backyard poultry owners with adoption of backyard poultry rearing practices in Bhandara district of Maharashtra.

Materials and Methods

In the present study the personal, socio-economic characteristics of the respondents were studied as Independent variables *viz.* age (Younger: Up to 30 years; Middle aged: Between 31 to 50 years; Older: Above 50 years), Education (Illiterate: Having no formal education; Primary education: Education up to 4th standard; Secondary education: Education between 5th to 10th standard; Higher Secondary and above: 11th and above standard education), Caste, Family Size (Small family: Up to 4 members; Medium family: 5 to 6 members; Big family: 7 and above members), Family Type (Joint Family & Nuclear Family), Occupation (Laborer, Farmer, Employee, Others), Land Holding (Landless: No land; Marginal farmer: Up to 2.5 acres; Small farmer: 2.6 to 5.0 acres; Medium farmer: 5.1 to 10.0 acres; Large farmer: Above 10.0 acres), Flock Size of backyard poultry (Small flock size: Between 3 to 6 birds; Medium flock size: Between 7 to 24 birds; Large flock size: 25 and above birds). Poultry farming Experience (Low poultry rearing experience: Up to 4 years; Medium poultry rearing experience: 5 to 15 years; High poultry rearing experience: 16 and above years), Annual Income (Very low income group: Up to Rs. 25000; Low income group: Rs. 25001-50000; Medium income group: Rs. 50001-75000; High income group: Above Rs. 75001) and Knowledge level (Low level of knowledge: Score up to 19; Medium level of knowledge: Score between 20 to 36; High level of knowledge: Score 37 and above). The socio-economic

variables i.e. age, education, caste, family size, family type, occupation, land holding, flock size, poultry rearing experience, annul income, information source utilization and knowledge included in this study as an independent variables.

The co-efficient of correlation between independent variables and dependent variables were calculated with the help of co-efficient of correlation with the formula given under

$$r = \frac{N\sum XY - [\sum(X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2] \times [\sum Y^2 - (\sum Y)^2]}}$$

Where,

r = co-efficient of correlation.

x = score of independent variables

Y = score of dependent variables

Mx = mean of 'x' series

My = mean of 'y' series

N = Total number of respondents

$\sum X^2$ = sum of squared 'x' value

$\sum Y^2$ = sum of squared 'y' value

If 'r' calculated was more than the table value, at 0.05 and 0.01 level of probability at (N-2) degree of freedom the relationship was considered to be significant.

Results and discussions

The independent variables i.e. age, education, caste, family size, family type, occupation, land holding, flock size, poultry rearing experience, annual income, information source utilization and knowledge with their frequencies and percentage are presented in Table 1. It revealed that there was negative and non-significant relationship between age of backyard poultry owners and their adoption level of backyard poultry practices (Table 2). The positive and highly significant relationship was observed between education and adoption level of backyard poultry practices. It indicates that the adoption increases with the increase in the education level of the respondents. Education modernizes the way of thinking and acting. This might be the reason for educated respondents possessing higher adoption level Table 3.

The majority of the backyard poultry owners were from other backward class (55%) followed by schedule caste/schedule tribes (30%), Vimukta Jati/Nomadic Tribes (13.75%) and open (01.25%). These findings are in

agreement with the finding by Sethi (2007) [6] (Table 4). The majority of the respondents 47.92 percent were from medium family size group (5 to 8 members) followed by small (35.83 percent) and large (16.25 percent) family size group (Table 5). It revealed that as regards to the family type majority (84.17 percent) were from nuclear family and remaining (15.83 percent) belonged to joint family. The majority (65.89 percent) respondents from joint family had medium level of adoption.

The observation is similar with Saha (2003) [5] and Mandal et al. (2006) [3]. The correlation between type of family and adoption was found negative and significant (Table 6). It was found that the occupation of the respondents has significant relation with the adoption. It shows that there is unawareness and low knowledge amongst labours about adoption practices (Table 7). There was significant relationship between land holding and adoption of backyard poultry rearing practices. Big farmers adoption level was high because grains, farm residue, more space available for feeding and capacity to pay on input (Table 8). The significant relationship was found between flock size and adoption of backyard poultry practices. From the finding it is clear that with increase in flock size significantly increase the adoption level it might be due to more income generation from large flock within low input and without extra care (Table 9).

It revealed that there is negative and non significant relationship between poultry rearing experience and adoption (Table 10). The finding indicated that there was significant correlation between annual income and adoption. It shows that there is increase in trend of adoption from lower income to higher income category. It might be due to sound economic position of respondents who are capable to procure inputs needed for the adoption of practices (Table 11). The results indicated that highest number of the respondents i.e.62.92 percent were in medium category in respect of their level of information source utilization, followed by low level category, which is comprised of 18.75 percent respondents and 18.33 percent respondent were found in high level of information source utilization (Table 12). The findings of the investigation in Table No.18 showed that the knowledge of the backyard poultry owners was positively and significantly correlated with the adoption of poultry rearing practices (Table 13). The data revealed that there was increase trend in higher adoption level from low knowledge level to high knowledge level.

Table 1: Personal, socio-economic characteristics of backyard poultry owners

Characteristics	Category	Frequency	Percentage
Age	Up to 30 years (Young)	18	07.50
	31 – 50 years (Middle)	170	70.83
	51 years and above (Old)	52	21.67
Education	Illiterate (00)	41	17.08
	Primary (1 to 4 Std.)	80	33.33
	High school (5 to 10 Std.)	83	34.59
	College education (11 Std & above)	36	15.00
Caste	OBC	132	55.00
	SC / ST	72	30.00
	VJ / NT	33	13.75
	OPEN	3	01.25
Family size	Small (Up to 4members)	86	35.83
	Medium (5 – 6 members)	115	47.92
	Big (7 and above members)	39	16.25
Family type	Nuclear	202	84.17

	Joint	38	15.83
Occupation	Agriculture	90	37.50
	Labour	103	42.92
	Service	30	12.50
	Other	17	07.08
Land holding	Landless (00)	47	19.58
	Marginal (0.1 to 2.5 ac.)	107	44.58
	Small (2.6 to 5 ac.)	68	28.33
	Medium (5.1 to 10 ac.)	16	06.67
Flock size	Big (Above 10 ac.)	02	00.83
	Small (Up to 6 birds)	15	06.25
	Medium (7 – 15 birds)	127	52.92
Poultry rearing experience	Large (16 and above birds)	98	40.83
	Upto 4 years	50	20.83
	5to 15 years	150	62.50
Annual income	16 years and above	40	16.67
	Upto Rs.25000	114	47.50
	Rs. 26000 to 50000	80	33.33
	Rs. 51000 to 75000	29	12.08
Information	Rs. 76000 and above	17	07.08
	Score Upto 10	45	18.75
	Score 11to19	151	62.92
Knowledge	Score 20 and above	44	18.33
	Score Upto 19	44	18.33
	Score 20 to 36	144	60.00
	Score 37 and above	52	21.67

Table 2: Relationship between Age and Adoption of backyard poultry practices

Age in years	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Up to 30 (Young)	02(11.11)	13(72.22)	03(16.67)	18(07.50)	- 0.0947 ^{NS}
31 – 50 (Middle)	36(21.18)	93(54.70)	41(24.12)	170(70.83)	
51 and above (Old)	12(23.08)	32(61.54)	08(15.38)	52(21.67)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; NS = Non-significant, N = Number of Respondents)

Table 3: Relationship between education and adoption of backyard poultry practices

Educational level	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Illiterate (00)	24(58.54)	16(39.02)	01(02.44)	41(17.08)	0.7109 ^{**}
Primary (1 to 4)	23(28.75)	53(66.25)	04(05.00)	80(33.33)	
High school (5 to 10)	03(01.25)	60(25.00)	20(08.33)	83(34.59)	
College education (11 std and above)	00(00.00)	09(03.75)	27(11.25)	36(15.00)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 4: Relationship between caste and adoption of backyard poultry practices

Caste of the respondents	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
OBC	12(09.09)	80(60.61)	40(30.30)	132(55.00)	0.8736 ^{**}
SC / ST	19(26.39)	44(61.11)	09(12.50)	72(30.00)	
VJ / NT	19(57.57)	14(42.42)	00(00.00)	33(13.75)	
OPEN	00(00.00)	00(00.00)	03(100.00)	3(01.25)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 5: Relationship between family size and adoption of backyard poultry practices

Family Size (No. of Family members)	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Small (Up to 4 members)	22(25.58)	43(50.00)	21(24.42)	86(35.83)	0.1507 ^{NS}
Medium(5 – 6 members)	24(20.87)	70(60.87)	21(18.26)	115(47.92)	
Big(7 and above members)	04(10.26)	25(64.10)	10(25.64)	39(16.25)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; NS = Non-significant, N = Number of Respondents)

Table 6: Relationship between family type and adoption of backyard poultry practices

Family type	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Nuclear	46(22.77)	113(55.94)	43(21.29)	202(84.17)	-0.5869 ^{NS}
Joint	04(10.53)	25(65.89)	09(23.68)	38(15.83)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; NS = Non-significant, N = Number of Respondents)

Table 7: Relationship between occupation and adoption of backyard poultry practices

Occupation of the respondents	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Agriculture	06(06.67)	67(74.44)	17(18.89)	90(37.50)	0.9080 ^{**}
Labour	41(39.80)	55(53.40)	07(06.80)	103(42.92)	
Service	03(10.00)	15(50.00)	12(40.00)	30(12.50)	
Other	00(00.00)	01(05.88)	16(94.12)	17(07.08)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 8: Relationship between land holding and adoption of backyard poultry practices

Land holding of the respondents	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Landless (00)	22(46.81)	22(46.81)	03(06.38)	47(19.58)	0.5121 ^{**}
Marginal (0.1 to 2.5 ac.)	26(24.30)	64(59.81)	17(15.89)	107(44.58)	
Small (2.6 to 5 ac.)	02(02.94)	45(66.18)	21(30.88)	68(28.33)	
Medium (5.1 to 10 ac.)	00(00.00)	07(43.75)	09(56.25)	16(06.67)	
Big (Above 10 ac.)	00(00.00)	00(00.00)	02(100.00)	02(0.83)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 9: Relationship between flock size and adoption of backyard poultry practices

Flock Size (No. of birds)	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Small(Up to 6 birds)	07(46.67)	07(46.67)	01(06.67)	15(06.25)	0.3307 ^{**}
Medium(7 – 15 birds)	32(25.20)	73(57.48)	22(17.32)	127(52.92)	
large(16 and above birds)	11(11.22)	58(59.18)	29(29.59)	98(40.83)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 10: Relationship between poultry rearing experience and adoption of backyard poultry practices

Poultry Rearing Experience	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Upto 4	14(28.00)	29(58.00)	07(14.00)	50(20.83)	-0.0137 ^{NS}
5to 15	28(18.67)	84(56.00)	38(25.33)	150(62.50)	
16 and above	08(20.00)	25(62.50)	07(17.50)	40(16.67)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; NS = Non-significant, N = Number of Respondents)

Table 11: Relationship between annual income and adoption of backyard poultry practices

Annual income	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Up to Rs.25000	42(36.84)	65(57.02)	07(06.14)	114(47.50)	0.6298 ^{**}
Rs. 26000 to 50000	07(08.75)	59(73.75)	14(17.5)	80(33.33)	
Rs. 51000 to 75000	01(03.45)	11(37.93)	17(58.62)	29(12.08)	
Rs. 76000 and above	00(00.00)	03(17.65)	14(82.35)	17(07.08)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 12: Relationship between information source utilization and adoption of backyard poultry practices

Information source utilization	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Upto 10	35(77.78)	10(22.22)	00(00.00)	45(18.75)	0.8740 ^{**}
11to19	15(09.93)	119(78.81)	17(11.26)	151(62.92)	
20 and above	00(00.00)	9(20.45)	35(79.54)	44(18.33)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figures in parenthesis indicate percentage; ^{**}P<0.01, N = Number of Respondents)

Table 13: Relationship between knowledge and adoption of backyard poultry practices

Knowledge level	Adoption of backyard poultry practices			Total No.	Correlation Coefficient “r”
	Low	Medium	High		
Upto 19	42(95.45)	02(04.54)	00(00.00)	44(18.33)	0.9596**
20 to 36	08(05.55)	130(90.28)	06(04.17)	144(60.00)	
37 and above	00(00.00)	06(11.54)	46(88.46)	52(21.67)	
Total No.	50(20.83)	138(57.50)	52(21.67)	240	

(Figure in parenthesis indicate percentage; ** $P < 0.01$, N = Number of Respondents)

Conclusions

There was significant relationship between education and caste whereas non-significant relationship with family size and the correlation between type of family and adoption was found negative and significant. Majority of the respondents were labour had marginal land, had medium flock size and had very low annual income significantly associated with adoption of backyard poultry rearing practices whereas majority poultry owners with medium poultry farming experience had negative and non-significant relationship with adoption of backyard poultry rearing practices.

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