

A Study of Socio-Economic Aspects of Equine Farmers in Haryana, India

Abstract

The research was aimed to study socio-economic aspects of equine farmers in Haryana, India. The study was conducted in four districts (provinces) of Haryana; Hisar, Bhiwani, Jind and Rohtak. The study was descriptive and exploratory in nature and data were collected during January 2022 to March 2022. Selection of respondents was done by simple random sampling method at sampling site. Structured interview schedule was adopted for data collection. Statistical Package for Social Sciences (SPSS) version was adopted for analysis of data. It was found that majority of respondents 51.2% were of middle age group and 43.2% were illiterate, 56.1% respondents belong to other backward class, 86.1% were landless, 45.9% respondents live in nuclear family, household total monthly income of maximum of respondents (34.3%) is 20001 to 30000 INR (Indian Rupee), 65% rear single equine and 48.8% get monthly income 5000 to 15000 INR from per equine rearing. The study revealed that socio-economic profile of equine farmers is not satisfactory in study area, equine population is declining rapidly and equine farmers are migrating from equine rearing to other profession and exploring new source of income.

Key Word : Equine Farmers, socio-economic profile, rural and urban area

1. Introduction:

Present study was aimed to conduct study of socio-economic aspects of equine farmers in above said four districts Haryana, India. There are total 28 states in India and Haryana is one of these and it is situated in northern part of India [11]. Respondents are equines farmers engaged in equine rearing profession since ages; their livelihood depend on equine rearing; equine rearing is a part and partial of their life style and integral part of farming sector in Haryana. Equines help in generating direct and indirect income for their keepers; they are major components of livestock and play important roles in socio-economic aspects of households engaged in their rearing in Haryana [15]. In India, multiple tasks are taken from equines and generally reared by every group of farmers, especially landless and marginalized farmers and

livelihood of these farmers are dependent on earning of these animals [16]. Equines are contributing globally and they are considered as a symbol of speed, courage, power, leadership and success and their roles have been duly acknowledged in history of China [19]. Equines are used worldwide for transportation of agricultural products, water, fuel and dairy products [20]. Equines are essential parts in agriculture and transportation sectors in urban and peri-urban area in developing countries and are power source for these countries [22]. Globally there are approximately 100–112 million equines [18]. The animal is facing problems due to negligence of government policies. There is a great decline in equine population worldwide and also in Kashmir [8].

Table 1: Trend of equine population in India:

Sl. No.	Category	1997	2003	2007	2012	2019
1.	Horse & pony*	827000	751000	474679	624732	342226
2.	Donkey	882000	182000	437937	318787	123587
3.	Mule	221000	52000	137123	196378	84261
Total population		1930000	985000	1049739	1139897	550074

*The available data of horse and pony population combined. Source: <https://dahd.nic>.

In India, equine population was 1930000 in 1997, 985000 in 2003, 1049739 in 2007, 1139897 in 2012 and 550074 in 2019. In this way, there is a declining trend in equine population during last few decades [Table-1].

Table 2: Trend of equine population in state of Haryana (India):

Sl. No.	Category	1997	2003	2007	2012	2019
1.	Horse & pony*	49000	25000	21091	36655	9702
2.	Donkey	63000	8000	4838	2903	800
3.	Mule	35000	14000	10600	9009	2500
Total population		147000	47000	36529	48567	13002

*The available data of horse and pony population combined. Source: <https://dahd.nic>.

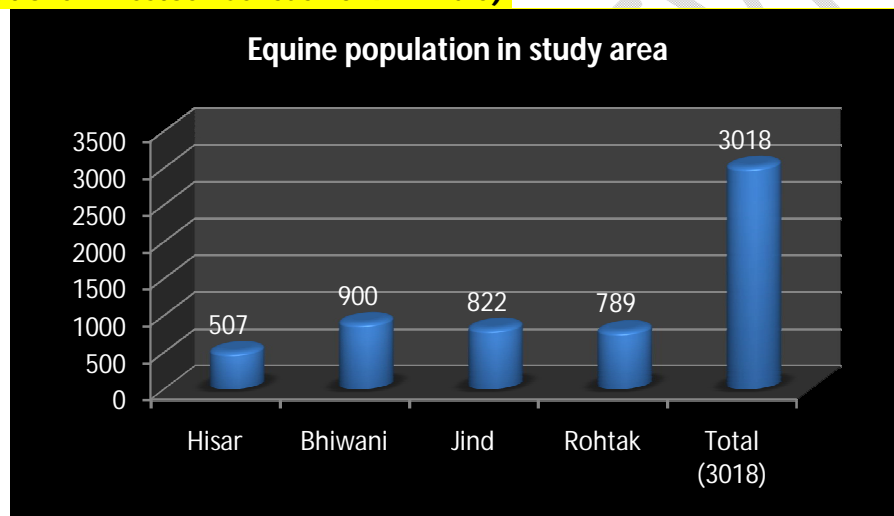
In Haryana, equine population was 147000 in 1997, 47000 in 2003, 36529 in 2007, 48567 in 2012 and 13002 in 2019. In this way, there is a great decline in equine population during last few decades [Table-2].

2. Methodology:

2.1 Study area:

The study was conducted in above said four districts of Haryana and it was conducted in rural and urban area as well and data collection was done during January 2022 to March 2022. Haryana is surrounded by National Capital New Delhi from three sides. Contribution of Haryana is significant in national GDP. There are 22 districts and as per national census –2011, population of the state is approximately 25.3 million and per capita income is 163992 INR (2,095.69 \$) per annum [7].

Graph 1: Graphic presentation of district wise equine population in study area (as per National Livestock Census 2019 in India):



[Source: www.pashudhan.haryana.gov.in].

2.2 Methods of data collection:

Structured interview schedule was adopted for data collection containing questions designed especially as per the requirement of the study. Multistage random sampling method was applied for data collection and personal interview method was adopted.

2.3 Selection of respondents:

Selection of respondents was done by simple random sampling method at sampling site. Total 303 respondents took part in study and out of these 88 were from Hisar district, 77 from Bhiwani district, 73 from Jind district and 65 from Rohtak district.

2.4 Data management and analysis:

Interview schedules were arranged district and category wise. List was prepared and all filled interview schedules were examined thoroughly; missing digits were updated by contacted respondents through telephonic conversation. Editing and post coding was done and classification was done to convert raw data into a meaning full. Data entered in Microsoft office excel worksheet. Statistical analysis was done by using IBM Special Package for Social Sciences (SPSS) version.

3. Results:

3.1 Social profile:

Table 3: Classification of respondents on the basis of their social profile:

Social Profile	Frequency (percentage)					
	Variables	Hisar (n-88)	Bhiwani (n-77)	Jind (n-73)	Rohtak (n-65)	Overall (n-303)
Age profile (years)	Young age (up to 35)	27 (30.7%)	27 (35.1%)	25 (34.2%)	14 (21.5%)	93 (31%)
	Middle age (36 to 55)	43 (48.9%)	40 (51.9%)	35 (47.9%)	38 (58.5%)	156 (51.2%)
	Old age (above 55)	18 (20.5%)	10 (13%)	13 (17.8%)	13 (20%)	54 (17.8%)
Gender Profile	Male	87 (98.9%)	76 (98.7%)	73 (100%)	65 (100%)	301 (99.3%)
	Female	01 (1.1%)	01 (1.3%)	00 (0.0%)	00 (0.0%)	02 (0.7%)
Education profile	Illiterate.	40 (45.5%)	33 (42.9%)	38 (52.1%)	20 (38.8%)	131 (43.2%)
	Below 10 th standard	27 (30.7%)	29 (37.7%)	28 (38.4%)	34 (52.3%)	118 (38.9%)
	10 th pass	12 (13.6%)	8 (10.4%)	5 (6.8%)	9 (13.8%)	34 (11.2%)
	12 th pass	6 (6.8%)	2 (2.6%)	1 (1.4%)	1 (1.5%)	10 (3.3%)
	Graduate and above	3 (3.4%)	5 (6.5%)	1 (1.4%)	1 (1.5%)	10 (3.3%)
Family profile	Nuclear	39 (44.3%)	28 (36.4%)	28 (38.4%)	40 (61.5%)	135 (45.9%)
	Joint	36 (40.9%)	41 (53.2%)	32 (43.8%)	25 (38.5%)	134 (43.9%)
	Extended	13 (14%)	7 (9.1%)	12 (16.4%)	00 (0.0%)	32 (9.6%)

	Women headed	00 (0.0%)	1 (1.3%)	1 (1.4%)	00 (0.0%)	02 (0.7%)
Marital profile	Married	81 (92%)	68 (88.3%)	70 (95.9%)	65 (100%)	284 (93.7%)
	Unmarried	5 (5.7%)	6 (7.8%)	3 (4.1%)	00 (0.0%)	14 (4.6%)
	Widow	2 (2.3%)	2 (2.6%)	00 (0.0%)	00 (0.0%)	4 (1.3%)
	Other	00 (0.0%)	1 (1.3%)	00 (0.0%)	00 (0.0%)	1 (0.3%)
Community profile	Scheduled Caste (SC)	20 (22.7%)	24 (31.2%)	28 (38.4%)	14 (21.5%)	86 (28.4%)
	Other Backward Category (OBC)	52 (59.1%)	31 (40.3%)	41 (56.2%)	46 (70.8%)	170 (56.1%)
	Minority Category	03 (3.4%)	02 (2.6%)	2 (2.7%)	5 (7.7%)	12 (2.3%)
	General Category	13 (14.8%)	20 (26%)	2 (2.7%)	00 (0.0%)	35 (13.2%)
Location profile	Urban	7 (08%)	18 (23.4%)	13 (17.8%)	18 (27.7%)	56 (18.5%)
	Rural	64 (72.7%)	38 (49.4%)	55 (75.3%)	26 (40%)	183 (60.4%)
	Semi-urban	17 (19.3%)	21 (27.3%)	5 (6.8%)	21 (32.3%)	64 (21.2%)
Housing profile	Kucha	1 (1.1%)	1 (1.3%)	00 (0.0%)	2 (3.1%)	4 (1.3%)
	Pucka	73 (83%)	51 (66.2%)	69 (94.5%)	56 (86.2%)	249 (82.2%)
	Semi	13 (14.8%)	24 (31.2%)	3 (4.1%)	5 (7.7%)	45 (14.9%)
	Rented	1 (1.1%)	1 (1.3%)	1 (1.4%)	2 (3.1%)	5 (1.7%)

3.1.1 Age Profile:

The study revealed that equine farming is preferred by respondents of middle age group and majority of respondents 51.2% were of this age group. Respondents of old age group were only 17.8%. Similar situation was found in every district [Table 3].

3.1.2 Gender profile:

It emerged out that equine rearing is done by male respondents and 99.3% respondents were male. Participation of female respondents was very less. Only 0.7% was female respondents. No transgender was found among respondents. Same situation was found in Hisar and Bhiwani district. In Jind and Rohtak district no female respondent was found [Table 3].

3.1.3 Educational profile:

43.2% respondents were illustrate, 38.9% below 10th standard, 11.2% 10th standard pass, 3.3% 12th pass and only (3.3%) were graduate and above. In Hisar district, 45.5% respondents were

illiterate, 30.7% below 10th standard, 13.6% 10th standard pass, 6.8% 12th pass and 3.4% graduate and above. In Bhiwani district, 42.9% respondents were illiterate, 37.7% below 10th standard, 10.4% 10th standard pass, 2.6% 12th pass and 6.5% graduate and above. In Jind district, 52.1% respondents were illiterate, 38.4% below 10th standard, 6.8% 10th standard pass, 1.4% 12th pass and 1.4% were graduate and above. In Rohtak district, 38.8% respondents were illiterate, 52.3% below 10th pass, 13.8% 10th standard pass, 1.5% 12th pass and 1.5% were graduate and above [Table-3].

3.1.4 Family Profile:

45.9% respondents live in nuclear family, 43.9% in joint family, 9.6% in extended family and 0.7% respondents live in women headed family. In Hisar district, 44.3% respondents live in nuclear family, 40.9% in joint family and 14% in extended family. In Bhiwani district, 36.4% respondents live in nuclear family, majority of respondents 53.2% live in joint family, 9.1% live in extended family and 1.3% respondent lives in women headed family. In Jind district, out of 38.4% respondents live in nuclear family, 43.8% respondents live in joint family, 16.4% in extended family and 1.4% respondent lives in women headed family. In Rohtak district, 61.5% of respondents live in nuclear family, 38.5% respondents live in joint family [Table-3].

3.1.5 Marital profile:

93.7% were married, 4.6% unmarried 1.3% widow/divorcee and 0.3% respondents were in others. In Hisar district, 92% were married, 5.7% unmarried and 2.3% widow/divorcee. In Bhiwani district, 88.3% were married, 7.8% unmarried, 2.6% widow/divorcee and 1.3% respondents were in others. In Jind district, 100% respondents were married. In Rohtak district, 100% were married [Table-3].

3.1.6 Community profile:

28.4% respondents belong to SC community, majority 56.1% respondents belong to OBC community, 3.4% belongs to minority (all Muslim), 14.8% belong to general community. In Hisar district, 22.7% respondents belong to SC community, majority 59.1% respondents belongs to OBC community, 2.3% belongs to minority (all Muslim) and 13.2% belong to general community. In Bhiwani district, 31.2% respondents belong to SC community, 40.3% respondents belong to OBC community, 2.6% belongs to minority (all Muslim) and 26% belong

to general community. In Jind district, 38.4% respondents belong to SC community, majority 56.2% respondents belongs to OBC community, 2.7% belongs to minority (all Muslim) and 2.7% belong to general community. In Rohtak district, 21.5% respondents belong to SC community, majority 70.8% respondents belongs to OBC community, 7.7% belongs to minority (all Muslim) [Table-3].

3.1.7 Location profile:

18.5% respondents were from urban area, majority 60.4% respondents were from rural area and 21.2% were from sub-urban area. In Hisar district, 8% respondents were from urban area, majority 72.7% respondents were from rural area and 19.3% were from sub-urban area. In Bhiwani district, 23.4% respondents were from urban area, 49.4% respondents were from rural area and 27.3% were from sub-urban area. In Jind district, 17.8% respondents were from urban area, majority 75.3% respondents were from rural area and 6.8% were from sub-urban area. In Rohtak district, 27.7% respondents were from urban area, 40% respondents were from rural area and 32.3% were from sub-urban area [Table-3].

3.1.8 Housing profile:

1.3% respondents have kuchha houses, majority of respondents 82.2% have pukka houses, 14.9% respondents have semi kuchha-pukka houses and 1.7% respondents live in rented houses. In Hisar district, 1.1% respondents have kuchha houses, majority of respondents 83% have pukka houses, 14.8% respondents have semi kuchha-pukka houses and 1.1% respondents live in rented houses. In Bhiwani district, 1.3% respondents have kuchha houses, majority of respondents 66.2% have pukka houses, 31.2% respondents have semi kuchha-pukka houses and 1.3% respondents live in rented houses. In Jind district, it emerged out that housing profile is better in Jind district and majority of respondents 94.5% have their own pukka houses, 4.1% respondents have semi kuchha-pukka houses and 1.4% respondents live in rented houses. In Rohtak district, 3.1% respondents lives in kuchha houses, majority of respondents 86.2% have their own pukka houses, 7.7% respondents have semi kucha-pukka houses and 3.1% respondents lives in rented houses[Table-3].

3.2 Economic profile:

Table 4: Classification of respondents on the basis of their economic profile:

Economic Profile	Frequency (percentage)					
	Variables	Hisar (n-88)	Bhiwani (n-77)	Jind (n-73)	Rohtak (n-65)	Overall (n-303)
Agricultural land holding size	Landless	69 (78.4%)	60 (77.9%)	69 (94.5%)	61 (93.8%)	259 (86.1%)
	Small (Up to 1.5 hectare)	4 (4.5%)	3 (3.9%)	2 (2.7%)	1 (1.5%)	10 (3%)
	Moderate (up to 4 hectare)	9 (10.2%)	7 (9.1%)	0 (0.0%)	2 (3.1%)	18 (5.9%)
	Large (>4 hectare)	6 (6.8%)	7 (9.1%)	2 (2.7%)	1 (1.5%)	16 (5%)
Monthly income from per equine rearing (INR)	Nil	22 (25%)	14 (18.2%)	06 (8.2%)	6 (9.2%)	48 (15.8%)
	Up to 5000	05 (5.7%)	13 (16.9%)	03 (4.1%)	2 (3.1%)	23 (7.6%)
	5001 to 15000	39 (44.3%)	34 (44.2%)	36 (49.3%)	39 (60%)	148 (48.8%)
	15001 to 25000	14 (15.9%)	12 (15.2%)	17 (23.3%)	14 (21.5%)	57 (18.8%)
	> 25000	08 (9.1%)	4 (5.2%)	11 (15.1%)	4 (6.2%)	27 (8.9%)
Monthly maintenance expenses on per equine rearing (INR)	Nil	7 (8%)	5 (6.5%)	4 (5.5%)	5 (7.7%)	21 (6.9%)
	Up to 2000	18 (20.5%)	25 (32.5%)	26 (35.6%)	36 (55.4%)	105 (34.7%)
	2001 to 4000	34 (38.6%)	23 (29.9%)	28 (38.4%)	15 (23.1%)	100 (33.0%)
	4001 to 6000	19 (21.6%)	16 (20.8%)	7 (9.6%)	8 (12.3%)	50 (16.5%)
Household total monthly income (INR)	Up to 10000	10 (11.4%)	9 (11.7%)	1 (1.4%)	1 (1.5%)	21 (6.9%)
	10001 to 20000	22 (25%)	30 (39%)	24 (32.9%)	21 (32.3%)	97 (32%)
	20001 to 30000	31 (35.2%)	16 (20.8%)	26 (35.6%)	31 (47.7%)	104 (34.3%)
	> 30000	25 (28.4%)	21 (27.3%)	22 (30.1%)	12 (18.5%)	80 (26.4%)
Household total monthly expenses (INR)	Up to 5000	8 (9.1%)	13 (16.9%)	2 (2.7%)	2 (3.1%)	25 (8.3%)
	5001 to 10000	19 (21.6%)	32 (41.6%)	41 (56.2%)	43 (66.2%)	135 (44.6%)
	10001 to 20000	41 (46.6%)	18 (23.4%)	19 (26%)	18 (27.7%)	96 (31.7%)

	> 20000	20 (22.7%)	14 (18.2%)	11 (15.1%)	2 (3.1%)	47(15.5%)
--	---------	------------	------------	------------	----------	-----------

3.2.1 Agricultural land holding profile:

It emerged out that majority of respondents 86.1% were landless, 3% respondents were having agricultural land up to 1.5 hectare, 5.9% respondents 4 hectare and 5% more than 4 hectare. In Hisar district, 78.4% were landless, 4.5% respondents were having agricultural land up to 1.5 hectare, 10.2% up to 4 hectare and 6.8% more than 4 hectare. In Bhiwani district, it emerged out that majority of respondents 77.9% were landless, 3.9% respondents were having agricultural land up to 1.5 hectare, 9.1% respondents up to 4 hectare and 9.1% more than 4 hectare. In Jind district, majority of respondents 94.5% were landless, 2.7% respondents were having agricultural land up to 1.5 hectare, and 2.7% respondents more than 4 hectare. In Rohtak district, majority of respondents 93.8% were landless, 1.5% respondents up to 1.5 hectare, 2.3% respondents up to 4 hectare and 1.5% respondents more 4 hectare [Table-4].

3.2.2 Monthly income from per equine rearing (INR):

It find out that 15.8% respondents were getting no income from their equines, 7.6% were getting monthly income up to 5001 (INR), 48.8% respondents 5001 to 15000 (INR) and maximum respondents falls under this category, 18.8% respondents 15001 to 25000 (INR) and 8.9% respondents above 25000 (INR). In Hisar district, 25% respondents were getting no income from their equines, 5 (5.7% were getting monthly income up to 5001 (INR), 44.3% respondents 5001 to 15000 (INR) and majority of respondents falls under this category, 15.9% respondents 15001 to 25000 (INR) and 9.1% respondents above 25000 (INR). In Bhiwani district, 18.2% respondents were getting no income from their equines, 16.9% were getting monthly income up to 5001 (INR), 44.2% respondents 5001 to 15000 (INR) and majority of respondents falls under this category, 15.2% respondents 15001 to 25000 (INR) and 15.2% respondents above 25000 (INR). In Jind district, 8.2% respondents were getting no income from their equines, 4.1% were getting monthly income up to 5001 (INR), 49.3% respondents 5001 to 15000 (INR) and majority of respondents falls under this category, 23.3% respondents 15001 to 25000 (INR) and 15.1% respondents above 25000 (INR). In Rohtak district, 8.2% respondents were getting no income from their equines, 3.1% were getting monthly income up to 5001 (INR), 60% respondents 5001 to 15000 (INR) and majority of respondents falls under this

category, 21.5% respondent 15001 to 25000 (INR) and 6.2% respondents above 25000 (INR) [Table-4].

3.2.3 Monthly maintenance expenses on per equine rearing (INR):

6.9% respondents incur nil monthly maintenance expenses on per equine rearing, 34.7% respondents incur up to 2000 (INR) and maximum respondents falls under this category, 33.0% respondents incur 20001 to 4000 (INR), 16.5% respondents incur 4001 to 6000 (INR) and 8.9% respondents incur above 6000 (INR). In Hisar district, 8% respondents incur nil, 20.5% respondents incur up to 2000 (INR) 38.6% respondents incur 20001 to 4000 (INR) and maximum respondents falls under this category, 21.6% respondents incur 4001 to 6000 (INR) and 11.4% respondents incur above 6000 (INR). In Bhiwani district, 6.5% respondents incur nil monthly, 32.5% respondents incur up to 2000 (INR) and maximum respondents falls under this category, 29.9% respondents incur 20001 to 4000 (INR), 20.8% respondents incur 4001 to 6000 (INR) 10.4% respondents incur above 6000 (INR). In Jind district, 5.5% respondents incur nil, 35.6% respondents incur up to 2000 (INR) and maximum respondents falls under this category, 38.4% respondents incur 20001 to 4000 (INR) monthly maintenance expenses on per equine rearing, 7 (9.6%) respondents incur 4001 to 6000 (INR) and 11% respondents incur above 6000 (INR). In Rohtak district, 7.7% respondents incur nil monthly maintenance expenses on per equine rearing, 55.4% respondents incur up to 2000 (INR) and maximum respondents falls under this category, 23.1% respondents incur 20001 to 4000 (INR), 12.3% respondents incur 4001 to 6000 (INR) and 1.5% respondents incur above 6000 (INR) [Table-4].

3.2.4 Household total monthly income (INR):

Household total monthly income of 6.9% respondents were up to 10000 (INR), 32% were 10001 to 20000 (INR), 34.3% were 20001 to 30000 (INR) and maximum respondents falls under this category and 26.4% were above 30000 (INR). In Hisar district, household total monthly income of 11.4% respondents were up to 10000 (INR), 25% were 10001 to 20000 (INR), 35.2% were 20001 to 30000 (INR) and maximum respondents falls under this category and 28.4% were above 30000 (INR). In Bhiwani district, household total monthly income of 11.7% respondents were up to 10000 (INR), 39% were 10001 to 20000 (INR) and maximum respondents falls under this category and 20.8% were 20001 to 30000 (INR) 27.3% were above 30000 (INR). In Jind district, household total monthly income of 1.4% respondents were up to 10000 (INR), 32.9%

were 10001 to 20000 (INR), 35.6% were 20001 to 30000 (INR) and maximum respondents falls under this category and 27.3% were above 30000 (INR). In Rohtak district, household total monthly income of 1.5% respondents were up to 10000 (INR), 32.3% were 10001 to 20000 (INR), 47.7% were 20001 to 30000 (INR) and maximum respondents falls under this category and 18.5% was above 30000 (INR) [Table-4].

3.2.5 Household total monthly expenses (INR):

Household total monthly expenses of 8.3% respondents were up to 5000 (INR), 44.6% were 5001 to 10000 (INR), 31.7% were 10001 to 20000 (INR) and maximum respondents falls under this category and 15.5% were above 30000 (INR). In Hisar district, household total monthly expenses of 99.1% respondents were up to 5000 (INR), 21.6% were 5001 to 10000 (INR), 46.6% were 10001 to 20000 (INR) and maximum respondents falls under this category and 22.7% were above 30000 (INR). In Bhiwani district, household total monthly expenses of 41.6% respondents were up to 5000 (INR) and maximum respondents falls under this category, 23.4% were 5001 to 10000 (INR), 18.2% were 10001 to 20000 (INR) and 22.7% were above 30000 (INR). In Jind district, household total monthly expenses of 2.7% respondents were up to 5000 (INR), 56.2% were 5001 to 10000 (INR) and maximum respondents falls under this category, 26% were 10001 to 20000 (INR) and 15.1% were above 30000 (INR). In Rohtak district, household total monthly expenses of 3.1% respondents were up to 5000 (INR), 66.2% were 5001 to 10000 (INR) and maximum respondents falls under this category, 27.7% were 10001 to 20000 (INR) and 3.1% respondents were above 30000 (INR) [Table-4].

4. Discussion:

Age profile: The study revealed out that 51.2% respondents were of middle age. The study agrees with study of Pal et al.2013 [14] in which it was found that majority of equine farmers are of middle age group in Rajasthan.

Gender profile: Majority of respondents 99.3% were male and 0.7% were female. This study agree with study of Sudhakar et al. (2015) [15] which was conducted in Telangana, India and it was found that 97.22% and 2.78 % were female.

Education profile: Literacy rate was very low and of 43.2% respondents were illiterate. The study disagrees with study of Chauhan-2008 [6] in which conducted in Himachal Pradesh, India it was found that 52 percent equine owners had been observed illiterate.

Family profile: 45.9% live in nuclear family and majority of them 93.7% were married. The study agree with study of Pal et al.2013 [14] in which it was found that majority of equine farmers are of middle age group and literacy rate was more than up to 80% in Jhunjhunu province of Rajasthan, India.

Marital profile: 93.7% respondents were married. It agree with study of Chauhan-2008 [6] in which it was found that majority of respondents are married in Himachal Pradesh, India.

Community profile: It emerged out that majority of respondents 56.1% belong to other backward class. Current study agrees with study of Fazili et al. (2011) [8] which was conducted in Kashmir, India and it was found that 58% respondents are socially deprived.

Location profile: 60.4% respondents were from rural area and equine rearing is ancestral profession of 56.1% respondents. However, it has variation with study of Chauhan-2008 [6] in which it was found that found that majority of households 80% are engaged in equine rearing more than 10 years in Himachal Pradesh, India.

Housing profile: It emerged out that majority of respondents 82.2% have their own pucca houses. It has variation with study of Bhatt-2018 [3] in which it was found that in Kashmir (India) equines are reared by marginal farmers and mostly 73.36% live in kucha houses.

Agricultural land holding profile: It was found that majority of respondents 86.1% were landless. Current study agree with study of Pal et al. (2008) [13] which was conducted in Haryana and in which it was found that majority of respondents are land less.

Monthly income from per equine rearing (INR): In current study, it emerged out that monthly income of 48.8% respondents from per equine rearing is 5000 to 15000 (INR). However, this study agrees with www.thebrooke.org, Invisible Worker [23] in which it was found that equines are the reliable source of production chain of several industries.

Monthly maintenance expenses on per equine rearing (INR): It emerged out that 34.7% respondents incur up to 2000 (INR) per month on maintenance of per equine; household total monthly income from all sources of 34% respondents is 10000 to 20000 (INR), household total monthly income from all sources of 34.3% respondents is 20000 to 30000 (INR). Current study agrees with study of Fazili et al. (2011) [8] which was conducted in Kashmir, India and it was found that household monthly income is very of equine owners in Kashmir.

Conclusion and recommendations:

In current study, it was found that equines are still source of earning for large number of households; they play a significant role in generating their livelihood, in employment generation, women empowerment and poverty eradication. Socio-economic profiles of respondents are not so satisfactory, input cost is more in comparison of output cost from equine rearing. Respondents are very enthusiastic and their contribution cannot be ignored in the society. The current study is very significant in current situation and will be helpful for policy makers in addressing socio-economic issues of equine farmer community in Haryana. It is suggested that special financial provision should be made for promotion of equine husbandry in Haryana at government level.

Consent:

Prior to start interview, respondents were explained about the study and their consents were taken to conduct interviews and subsequently interviews were performed.

References:

1. Abaynew G., Haben F. Assessment of Socio-economic Importance and Major Constraints of Working Equines in and around Dabre Behran Town, Central Ethiopia. *Veterinary Journal Open Journal*. 5 (2008), 30-38.
2. Alam M.P., Bhuiyan M.S.A. and Bhuiyan A.K.F.H. Socio-Economic Status of Horse Owners in Rural Areas of Bangladesh. *The Agriculturists* (2015), 13(1), 46-52.
3. Bhatt M.A., Ganai A.M., Farooq J., Sheikh G.G., Haq Z. Socio-economic status of Equine Owners, Shelter Management Practices and Morphology of Equines in District of

Anantnag of Kashmir Valley. International journal of current Microbiology and Applied Sciences (2018), 7, 2873-2881.

4. Bhat, A.H., Rasool, S., Hamdani, S.A., Ayman, N., Akand, A. and 9 others. The Impact of Natural Disasters on Livestock Sector: A Review (2021). DOI: [10.37871/jbres1295](https://doi.org/10.37871/jbres1295).
5. Brains G.S. and Franks I. Prospects for Developments in the Use of Equines for Crop Production. Fourth International Conference on Working Equines, Hama, Syria (2002).
6. Chauhan S.K. Socio-economic Dimensions of Equine-rearing in Himachal Pradesh. Agricultural Economics Research Review. (2008), 211-220.
7. Economic survey Haryana- 2020-21.
8. Fazili M.R and Kirmani M.A. Equine: The ignored working animal of Kashmir; Status, Constrains, Research Areas and Ways for Improvement. Asian Journal of Animal Sciences (2011). 5, 91-101.
9. Hassan M.R., Steenstra F.A. and Udo H.M.J. Benefit of Donkeys in Rural and Urban Areas in Northwest Nigeria. African Journal of Agricultural Research (2013). 48, 602-612.
10. Hassan S., Ganai A.M., Beigh Y.A., Shiekh G.G. and Ahmad H.A. A study on socio-economic status of equine owners, shelter pattern and morphometric of horses in district Baramulla of Kashmir valley (2016). In: Proceedings of X Biennial Animal Nutrition Association Conference on "Newer perspectives in Animal Nutrition research for augmenting animal productivity" held at Tirupati, India. <https://www.researchgate.net/publication/343499769>.
11. Inderjeet. Economic Status of Farmers: A Case Study of Haryana State. International Journal of Applied Research (2015). 1(7) 215-218.
12. Priyanthi F. and Paul S. Donkey and Development: Socio-economic Aspects of Donkey Use in Africa, International Forum for Rural Transport and Development. IFRTD, 2 Spitfire Studios (2004). 63-71.

13. Pal Y. and Legha R.A. Socio-economic status of mule producers and management practices of mule production in rural areas. *Indian Journal of Animal Sciences* (2008). 78 1281-84.
14. Pal, Y., Legha, R.A., Dader, R.K., Bala, P.A. Socio-Economic Status of Horse Owner's vis-à-vis, Horse Feeding and Management in Rajasthan, *Veterinary world* (2013). 6, 470-475.
15. Sudhakar GR, Anuradha T, Kamraju M and Vani M. *International Journal of Engineering Research-Online A Peer Reviewed International Journal*. 5, 4 (2015). doi-<http://www.ijoer.in>;
16. Singh, A., Kumar, R., Kumar, S and Pal Y. Socio-Economic Contribution of Donkey and Mule Rearing in Haryana (India). *Asian Journal of Agricultural Extension, Economics and Sociology*. 39 (9) (2021) 198-203. DOI: [10.9734/ajaees/2021/v39i930657](https://doi.org/10.9734/ajaees/2021/v39i930657).
17. Singh, A., Pal, Y., Kumar, R., Kumar, S., Rani, K., & Prasad, J. Working Equids: Their Conditions, Invisible Earning and Challenges- A Review. *Asian Journal of Agricultural Extension, Economics & Sociology*. 39(11) (2021)357-364. <https://doi.org/10.9734/ajaees/2021/v39i113076>.
18. Upjohn M.M., Pfeiffer D.U. and Verheyen K.L. Helping working Equid and their Owners in developing countries: Monitoring and evaluation of evidence-based interventions. *Veterinary. Journal* (2014). 199. 210–216. doi: 10.1016/j.tvjl.2013.09.065.
19. Qingbin, W., Yang, Z. China's Equine Industries in a Traditional Economy: Development, Trends, Challenges, and Opportunities. *Sustainability* (2020) 12125135.
20. Upjohn, M.M., Pfeiffer, D.U. and Verheyen, K.L. Helping working Equid and their Owners in developing countries: Monitoring and evaluation of evidence-based interventions. *Veterinary. Journal*. (2014). 199. 210–216. doi: 10.1016/j.tvjl.2013.09.065..
21. William S.J. Improving the Welfare of working equine animals in developing countries. *Applied Animal Behavior Science* 100 (2006) 148-151. doi www.sciencedirect.com.
22. Zakarias, T. and Tasfaye, S The Welfare of Working Equines in Ethiopia. *European Journal of Biological Sciences* (2019). 11 (3) 82-90 Doi:10.5829/iodosi.ejbs.2019.82.90.

23. www.thebrooke.org. Invisible Worker. October-2015.

UNDER PEER REVIEW