

ASSOCIATION OF PROFILE CHARACTERISTICS ON LIVELIHOOD SECURITY OF DAIRY FARMERS

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ABSTRACT

An attempt has been made in this paper to investigate the socio-personal, socio-economic, and socio-psychological profile of dairy farmers in aspirational districts of Bihar during the year 2022. Total 320 farmers were selected from eight blocks namely from selected districts as respondents by using random sampling method. Data were collected through a well-structured interview schedule and data were subjected to appropriate statistical analysis. In this investigation it was found that out of 320 respondents' majority (41.57%) were in old age group, (28.75%) of them belonged to high school level of education, (35.94%) had 5 to 8 members in their Family, more than half (51.56%) of respondents had low number of livestock holding, (39.06%) dairy farmer had high level of dairy farming experiences, and most (46.88%) of them had medium level of mass media exposure. The majority of milk producers had extension contact with veterinarians followed by para veterinarians and had mass media exposure with television and radio to get information about dairying. It was also found that dairy experience, livestock holding, and land holding were positively and significantly correlated with livelihood security.

Keywords : livelihood security, farmers, diversification, garrett score, constraints, sustainable

INTRODUCTION

Livelihood, in its simplest terms, stands for “making a living”. The development of this concept dates back to the 1940s when the term was used to describe how people make a living, primarily from an economic perspective. (Patnaik and Prasad, 2014). ‘The Livelihood of Man’ was among the primary works with a holistic and human-centered concept (Kaag, *et al.* 2003; Polanyi, 1977). Since then, it has been defined and discussed in many ways. When it comes to achieving development goals, previously the focus was solely on income and consumption levels, but now it is shifting to livelihood basic need shortages (Patnaik and Prasad, 2014; Vinaya *et al.*, 2019). Livestock is often the only livelihood option available to the landless as common property resources are being increasingly captured by individuals for private gain (Patel, 2004). Livestock production provides opportunities for risk coping, farm diversification and intensification, and livelihood benefits to the people and society (Bossio, 2009). Dairy farming has been an important part of the agricultural scenario for thousands of years (Mahammad *et al.*, 2022). Agriculture plays a key role in employment for a major proportion of the population in developing states like Bihar. ‘Livelihood Diversification’ i.e. dependence on more than one source of livelihood generation can become one of the very important options for improving the livelihood condition of

people. This needs location-specific interventions which are pre-requisite for policy implementation to enhance farmer’s income through proper agri-livestock system and extension interventions.

OBJECTIVE

To know the association of profile characteristics on livelihood security of dairy farmers

METHODOLOGY

The study was carried out in aspirational districts of Bihar. The set of four districts Gaya, Khagaria, Sitamarhi and Sheikhpura representing different types of agro-climatic, socio-economic conditions, and having lowest per capita agricultural income of the state were selected from different agro-climatic zones. Two blocks from each district and two villages from each block were selected randomly. Twenty households of dairy farmers in each village were randomly selected to constitute a total sample size of 320. The constraints in this study refer to economic, communication, infrastructural, technical, and all other factors or forces that may enable, individually or in combination, to prevent farmers from diversifying their livelihoods. Based on the available literature, surveys, and discussions with various stakeholders, a complete list of barriers to diversification

was developed and grouped into broad groups based on their nature. These limitations can be broadly classified into: (i) infrastructural, (ii) economical (iii) marketing(iv) technical and (v) communication constraints. A semi-structured

questionnaire was developed based upon the information acquired during the explorative research phase, and pre-tested prior to the survey.

RESULTS AND DISCUSSION

Profile characteristics

Table 1: Distribution of respondents according to their age & education

(n=320)

Age (in years)	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Young age (upto 35)	19(23.75)	20(25)	16(20)	13(16.25)	68(21.25)
Middle age (36-50)	25(31.25)	33(41.25)	23(28.75)	38(47.5)	119(37.18)
Old age (above 50)	36(45)	27(33.75)	41(51.25)	29(36.25)	133(41.57)
Mean±SE =47.20±0.67					
Education					
Illiterate	05(6.25)	03(3.75)	05(6.25)	02(2.50)	15(4.68)
Primary	11(13.75)	03(3.75)	07(8.75)	09(11.25)	30(9.37)
Middle School	19(23.75)	09(11.25)	17(21.25)	22(27.50)	67(20.94)
High School	18(22.50)	22(27.50)	28(35)	24(30)	92(28.75)
Higher Secondary	21(26.25)	31(38.75)	18(22.5)	15(18.75)	85(26.56)
Graduate & above	06(7.50)	12(15.00)	05(6.25)	08(10.00)	31(9.68)

Age

It refers to the chronological age of the dairy farmers in years, expressed in whole number, at the time of investigation. It is evident from the Table-1 that most of the respondents (45.00%) in Khagaria districts and nearly half (51.25 %) of the respondents in Sitamarhi district belonged to the old age group (> 50 yrs), whereas both in Gaya and Sheikhpura districts respondents were found mostly to be in middle age (36-50 yrs) that was (41.25%) and (47.50%) respectively. The results showed that most of dairy farmers were categorized under old and middle aged that might be due to the reason that young were more enrolled for studies and white-collar job. The results of the present study are in line with Arya (2018) and Preeti (2018) who also reported that majority of respondents belonged to old age group.

Education

With respect to the education of the respondent’s data in Table -1 indicates that, maximum number of dairy farmers (28.75%) were educated up to high school, followed by higher secondary level of education by (26.56%), primary level of education (9.37 %), and graduate & above level of education by (9.68 %) of respondents respectively.

Here, we can see that in the study area, only few respondents were found illiterate and all the respondents were found to have above primary level of education, which indicates the sound educational conditions of the respondents in the study area. These finding are almost similar with the finding of Kumar *et al.*, (2011) and Chaturvedi *et al.*, (2021).

Family size

A close analysis of Table 2, it was found that maximum of the respondents (35.94 %) was having more than five to eight members in their respective families, while nearly one-third of the respondents (33.75%) were having upto five members, and (30.31%) were having more than eight members in their respective families.

Operational land holding

It is evident from the Table 2 that most of respondents (35.31%) had small size of land holding, followed by marginal size of land holding possessed by (23.44 %) of respondents. The findings of the present study are in line with study conducted by Gulkari *et al.*, (2014) who also reported that majority of the respondents were having marginal to medium level of operational land holding.

Dairy animals

The data in Table 2 indicates that, majority (51.56 %) of the respondents were having low number of dairy animals (only upto 6); (41.88 %) of respondents were in the medium level of category (7 to 10 dairy animals unit). This might be because most of the respondents have small to marginal land holding and to have animal husbandry was a most common occupation to supplement their family income in order to reduce the risk and improve livelihood security. The results of the study were in consonance with the finding of Naseri *et al.* (2013), Sabapara *et al.* (2014) and Rai (2015).

Table 2: Distribution of respondents according to different profile characteristics

(n=320)

Family size (no. of family members)	Khagaria	Gaya	itamarhi	Sheikhpura	Pooled
Small (<5) Members	21(26.25)	19(23.75)	45(56.25)	23(28.75)	108(33.75)
Medium (5-8) Members	30(37.50)	26(32.50)	19(23.75)	40(50.00)	115(35.94)
Large (>8) Members	29(36.25)	35(43.75)	16(20.00)	17(21.25)	97(30.31)
Land-holding (ha)					
Marginal (up to 1)	21(26.25)	19(23.75)	12(15.00)	23(28.75)	75(23.44)
Small (1.1 to 2)	17(21.25)	25(31.25)	18(22.50)	21(26.25)	81(25.31)
Semi medium(2.1 to 4)	27(33.75)	8(10.00)	11(13.75)	19(23.75)	65(20.32)
Medium (4.1-10)	9(11.25)	16(20.00)	24(30.00)	10(12.50)	59(18.43)
Large (>10)	6(7.50)	12(15.00)	15(18.75)	7(8.75)	40(12.50)
Mean±SE =1.82±0.31					
Dairy animals					
Low (upto 6)	49(61.25)	35(43.75)	48(60)	33(41.25)	165(51.56)
Medium (7-10)	24(30)	35(43.75)	30(37.50)	45(56.25)	134(41.88)
High (>10)	7(8.75)	10(12.50)	2(2.50)	2(2.50)	21(6.56)
Experience in dairy farming					
Experience in Dairy farming (in years)	Khagaria	Gaya	itamarhi	Sheikhpura	Pooled
Low (<30.35)	23(28.75)	20(25.00)	31(38.75)	30(37.50)	104 (32.50)
Medium (30.35-45.5)	21(26.25)	27(33.75)	16(20.00)	27(33.75)	91(28.44)
High (>45.5)	36(45.00)	33(41.25)	33(41.25)	23(28.75)	125(39.06)
Social participation					
No participation	14(17.50)	14(17.50)	15(18.75)	31(38.75)	74(23.12)
Membership of one organization	20(25.00)	14(17.50)	26(32.50)	20(25.00)	80(25.00)
Membership of two organizations	25(31.25)	18(22.5)	17(21.25)	20(25.00)	80(25.00)
Membership of three organizations	14(17.50)	19(23.75)	11(13.75)	6(7.50)	50(15.63)
As an office – bearer	7(8.75)	15(18.75)	11(13.75)	3(3.75)	36(11.25)

Experience in dairy farming

A perusal of Table 2 referred that (39.06 %) of the respondents had high level of experience in dairy farming, followed by medium and low level of experience in dairy farming which accounts (28.44%) and (32.50%), respectively.

Social participation

From the Table 2, it is evident that about (23.12 %) of the respondents were having no participation in social organization; while, about equal per cent (25.00 %) of the respondents were having membership in one and two social organizations. From the results, we can interpret that more than 70 percent of respondents from the study area were socially aware and having the social participation in at least one of the social organizations like, panchayat samitis, farmers' organization, dairy samiti, etc. The study was also

in line with Sachan (2013) who found that majority (65.00%) of the respondents had low and medium level of social participation.

Mass media exposure

A perusal of the figures in Table 3 indicates that the maximum percentage of the respondents (46.88%) had a medium level of mass media exposure, whereas high level and low level of mass media exposure was reported by (29.37%) and (23.75%) of the respondents, respectively. From the results, it was also found that (Table 3) dairy farmers in the study area were getting the information from the mass media such as newspapers, radio, TV, mela, mobile, and internet. However, findings by (Nirosha & Balamurugan,2020) reported that, majority of the farmers possessed various media sources like newspaper, television and radio sets, but they were not frequently using these media sources for gathering agricultural information.

Table 3: Distribution of respondents based on mass media contact and extension contact (n=320)

Mass Media Exposure	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Low (upto 7)	17(21.25)	4(5.00)	40(50.00)	15(18.75)	76(23.75)
Medium(8 to 18)	47(58.75)	57(71.25)	16(20.00)	30(37.50)	150(46.88)
High (>18)	16(20.00)	19(23.75)	24(30.00)	35(43.75)	94(29.37)
Mean±SE =14.35±0.33					
Extension contact					
Low (< 7)	27(33.75)	21(26.25)	38(47.50)	15(18.75)	101(31.56)
Medium (7 to 10)	35(43.75)	45(56.25)	32 (40.00)	42(52.50)	154(48.12)
High (>10)	18(22.50)	14(17.50)	10(12.50)	23(28.75)	65(20.31)
Mean±SE =9.35±0.33					

Extension contacts

A critical look on Table 3 depicts that in study area 31.56 percent of the dairy farmers had low (<7 score) level of extension contact, 48.12 percent had medium (7 to 10 score) and 20.31 percent had high (>10) level of extension contact. It was found that, on a daily basis, farmers were mainly getting the information only from neighbours/friends. At the same time, it was also found that, farmers had very little contact with the extension officers, as 50.94 per cent of the respondents said that they were never getting any information from the extension officers of the locality. Similarly, results of the present study are found in line with (Raut, 2005, Papani, 2011) who summarized that majority of respondents belonged to medium category followed by low category.

Material possession

Table 4 indicates the details about material possession with the respondents in the study area. A total of 7 items were selected for finding out the material possession with the respondents. Distribution of different items among the respondents happened to be: Bullock cart by 28 respondents (8.75 %), motor cycle by 121 respondents (50.42%), cycle by 276 respondents (86.25 %), TV by 255 respondents (79.69%), radio by 77 respondents (24.06 %). The result hence indicates that radio, television, and mobile was possessed by more than (70%) of the respondents.

Risk orientation

Table 5: Respondents based on their perception towards livelihood activities (n=320)

Perception towards livelihood diversification	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Low (<17.5)	18(22.5)	16(20)	9(11.25)	13(16.25)	56(17.5)
Medium (17.6 to 22.5)	53(66.25)	28(35)	52(65)	38(47.5)	171(53.44)
High (>22.5)	9(11.25)	36(45)	19(23.75)	29(36.25)	93(29.06)
Mean±SE =18.04±0.32					
Risk orientation					
Low (<24)	25(31.25)	32(40)	25(31.25)	28(35)	110(34.37)
Medium (24 to 32)	32(40)	34(42.5)	35(43.75)	32(40.00)	133(41.56)
High (>32)	23(28.75)	14(17.5)	20(25)	20(37.5)	77(24.06)
Mean±SE =27.44±0.29					

Table 4: Distribution of respondents on the basis of material possession (n=320)

Material Possession	Possessed	
	Frequency	Percentage
Bullock cart	28	8.75
Motor Cycle	121	50.42
Cycle	276	86.25
Radio	77	24.06
Television	255	79.69
Tractor	52	16.25
Pumpset	90	28.13
Improved machineries	47	14.69
Mobile	310	96.88

Perception towards livelihood diversification

In finding out the perception of the dairy farmers towards livelihood activities, it was found out that more than fifty percent of the respondents (53.44%) were having medium level of perception towards livelihood diversification, while only 17.5 percent of the respondents were in the category of low level of perception towards livelihood diversification. That means, very less respondents in the study area were interested in trying out new livelihood activities as an innovation to increase their income level. The findings are confirmatory with the finding of Gupta *et al.* (2015) and Dhananjaya *et al.* (2020) mentioned that about fifty percent of respondents were having medium level of perception towards livelihood activities.

Data regarding risk orientation of respondents is presented in Table- 5 which indicates that most (41.56 %) of the respondents had medium level of risk orientation, while about (34.37%) of respondents had low level of risk orientation. The above Table reflects that maximum respondent had medium to low level of risk orientation. This might be due to less support and exposure provided through government personnel resulted in low-risk orientation and less support enabled them to take less risk and had low capability to take risk in starting any new enterprise for their livelihood generation. The findings of the study are in line with the study conducted by Parmanand (2012) who also observed

that respondents had low to medium level of risk orientation. According to Gulkari *et al.* (2014) nearly (63.75%) of dairy farmers were moderately risk-oriented as they could adopt new techniques and technology by taking as slight level of risk orientation.

Livelihood activities pursued by respondents

In the research area, there were 5 main livelihood activities pursued by the dairy farmers for their livelihood generation. The livelihood activities performed by the respondents were: crop farming, livestock farming, wage labourer, business and services (govt. or private).

Table 6: Distribution of respondents based on different livelihood activities

(n=320)

Livelihood Activities	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Crop farming	58(72.50)	46(57.50)	32(40.00)	40(50.00)	176(55.00)
Livestock farming	80(100)	80(100)	80(100)	80(100)	320(100)
Wage Labourer	19(23.75)	17(21.25)	32(40.00)	28(35.00)	96(30.00)
Business	18(22.5)	20(25.00)	17(21.25)	22(27.50)	77(24.06)
Service (Govt. or Private)	20(25)	16(20)	12(15)	13(16.25)	61(19.06)
Respondents based on possession of different livestock with the farmers					
Types of livestock	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Buffaloes	55(72.37)	43(78.18)	62(82.66)	32(65.30)	192(60)
Cows	46(60.53)	30(54.54)	40(53.33)	40(81.63)	156(48.75)
Oxen / bulls	10(13.16)	6(10.90)	06(8)	17(34.69)	39(12.18)
Goat	20(26.31)	28(50.90)	24(32)	18(36.73)	90(28.12)
Poultry	13(17.10)	6(10.90)	09(12)	15(30.61)	43(13.43)
Sheep	02(2.63)	10(18.18)	0 (0)	0(0)	12(3.75)

From the Table 6, it was found that all the respondents (100 %) were engaged in livestock farming, followed those engaged in crop farming (55.00%), wage labourer (30.00 %), business activities (24.06 %) and govt. or private services (19.06 %), respectively. From the Table 6, we can infer that, still the crop farming was the major source of the livelihood generation for the people in the rural area after dairy farming which was the main source of livelihood for respondents. The second most important livelihood activity in the study area was 'crop farming as half of the respondents in the study area were also found to be dependent on crop farming for their livelihood generation. Working as a 'wage labourer' was the third most important livelihood activity upon which farmers were dependent for their livelihood generation. Most of the

respondents reported that they preferred to work as a wage labourer because they were getting good and regular wages in working as a wage labourer. Nearly one-fourth of the respondents were engaged in some kind of business activities, in the study area; while only (19.06%) of the respondents were found to be engaged in service sector along with crop farming. The reasons for such findings may be due to very small land holdings and very low productivity of the land, most of the families earn a living by maintaining a diversified pattern of occupation, as single activity does not provide sufficient resources to ensure livelihood. Today, the situation seems to have changed. The data shows diverse occupational activities of the families.

Table 7: Respondents on the basis of possession of different livestock with the farmers

(n=320)

Types of livestock	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
Buffaloes	55(72.37)	43(78.18)	62(82.66)	32(65.30)	192(60)
Cows	46(60.53)	30(54.54)	40(53.33)	40(81.63)	156(48.75)
Oxen / bulls	10(13.16)	06(10.90)	06(8)	17(34.69)	39(12.18)
Goat	20(26.31)	28(50.90)	24(32)	18(36.73)	90(28.12)
Poultry	13(17.10)	06(10.90)	09(12)	15(30.61)	43(13.43)
Sheep	02(2.63)	10(18.18)	0 (0)	0(0)	12(3.75)

Prevalence of different off-farm livelihood activities as pursued by the respondents						
A.	Business activities	Khagaria n=18	Gaya (n=20)	Sitamarhi (n=17)	Sheikhpura (n= 22)	Pooled (n=77)
1	Construction	1(5.55)	1(5.00)	1(5.88)	1(4.54)	04(5.19)
2	Carpenter	0(0)	1(5.00)	0(0)	1(4.54)	02(2.59)
3	Vegetable sell.	4(22.22)	6(30.00)	3(17.64)	5(22.72)	18(23.37)
4	Sweet's shop	2(11.11)	4(20.00)	3(17.64)	2(9.09)	11(14.28)
5	Pan shop	2(11.11)	1(5.00)	2(11.76)	3(13.63)	08(10.38)
6	Kirana shop	3(16.66)	2(10.00)	3(17.64)	5(22.72)	13(16.88)
7	Tailoring	2(11.11)	3(15.00)	1(5.88)	2(9.09)	08(10.38)
8	Tea stall	3(16.66)	2(10.00)	3(17.64)	4(18.18)	12(15.58)
9	Auto -rickshaw	1(5.55)	0(0.0)	0(0)	1(4.54)	02(2.59)
10	Tyre shop	0(0)	1(5.00)	0(0)	1(4.54)	02(2.59)
Sr.No	Livelihood activities	Khagaria	Gaya	Sitamarhi	Sheikhpura	Pooled
B	Service sector	(n=20)	(n=16)	(n=12)	(n=13)	(n=61)
1	Teacher	3(15)	4(25)	2(16.66)	5(38.46)	14(22.95)
2	Company/ Factory workers	4(20)	2(12.5)	5(41.66)	3(23.07)	14(22.95)
3	Anganwadi workers	5(25)	3(18.75)	3(25)	2(15.38)	13(21.31)
4	Homeguard	2(10)	1(6.25)	0(0)	0(0)	03(4.91)
5	Peon /Attendant	2(10)	1(6.25)	0(0)	1(7.69)	04(6.55)
6	Others	4(20)	5(31.25)	2(16.66)	2(15.38)	13(21.31)

Possession of different livestock with the livestock rearing farmer

It is evident from the data in Table 7 that in the study area, out of 320 respondents who possessed different kind of livestock holding with them, more than half of respondents (i.e., 60.00 %) were possessing buffaloes. Cows were possessed by (48.75 %) of the respondents. Oxen/ bulls were possessed by only few (12.18 %) of the respondents. Poultry were possessed by 13.43 percent of the respondents and only 3.75 percent of the respondents were possessing sheep with them in the study area.

A meticulously look to the data in Table 7 revealed that, the respondents in the study area were engaged in two different kinds of off-farm livelihood activities i.e., in business activities and in service sector.

In Business sector total ten activities were pursued by the respondents among that vegetable selling was most (23.37%) preferred by respondents in all the selected districts. While it was also found that respondents were also engaged in kirana

shop, sweet shop, and tea stall i.e (16.88 %), (14.28%) and (15.58%) respectively. Out of the total respondents engaged in business activities, few were also engaged in businesses like; 2.59 percent of the respondents were working as carpenter; 5.19 percent of each was engaged in constructions; 2.59 percent each were found to be engaged in running both tyre shop and auto rickshaw. Tailoring, and pan shop were the business activities undertaken by 10.38 per cent each of the respondents. In the service sector, out of 61 respondents in the study area, 14 respondents (22.95%) were engaged in both teaching as well as company / factory work; 13 respondents (21.31%) were doing the job in aganwadi; 3 respondents (4.91 %) were engaged in working as a home guard; 4 respondents (6.55 %) were the peon/ attendant. Whereas 13 respondent (21.31 %) were also working in different sectors like as others like (krishisevak, PWD workers and NGOs) etc. The result of the findings is in conformity of Shittu *et al.* (2006) who summarized that “the individuals performing off-farming activities, such as traders, farmers, artisans (tailors, hairdressers, mechanics etc) tend to generate more in off-farm activities and contribute more to their household income than an average individual that have taken farming as their main occupation”.

Correlation analysis between various factors and livelihood security**Table 8: Correlation analysis between various factors affecting Livelihood security and overall livelihood security (n=320)**

Sr. No.	Factors	Correlation coefficient(r)
X ₁	Age	0.045
X ₂	Family size	0.004
X ₃	Education	0.067
X ₄	Dairy experience	0.156*
X ₅	Livestock holding	0.396**
X ₆	Social participation	0.096
X ₇	Land holding	0.120*
X ₈	Annual income	0.153**
X ₉	Extension contact	0.128*
X ₁₀	Risk orientation	0.123*
X ₁₁	Mass Media Exposure	0.155**
X ₁₂	Material possession	0.424**
X ₁₃	No. of enterprises in which household members are engaged	0.145*

**Significant at 1% level of significance,
*Significant at 5% level of significance

In this section, 'r' values have been worked out between variables, i.e., livelihood security of farmers and various factors affecting it. From the Table 8, it is evident that dairy experience, livestock holding, and land holding was positively and significantly correlated with livelihood security. That means, when these variable increases the value of livelihood security associated with it increases and vice-versa. So, to increases the livelihood security of the respondents, the livestock holding, and land holding should be kept higher. Other factors, such as annual household income, extension contact, risk orientation, mass media exposure, material possession and no. of enterprises in which household members are engaged, were found to be positively and significantly related with the livelihood security of the farmers. That means, by increasing the values of all these factors livelihood security values of the farmers will also increase. However, age, family size, education and social participation were not found to be correlated with the livelihood security of the dairy farmers. Meanwhile in contrary, land hold size, livestock holding size in tropical livestock unit, extension contact, cooperative member and total household income couldn't have any association with household livelihood security (Ayana *et al.*2022). These findings have been supported by Patel and Pandya (2016), Kemekar *et al.* (2024), Madhuprasad *et al.* (2024), Chuadhari

et al. (2024), Naik *et al.* (2024), Swami *et al.* (2024) and Ghasura *et al.* (2024).

CONCLUSION

It can be concluded that overwhelming majority of the respondents (41.57%) were in old age group, (28.75%) of them belonged to high school level of education, (35.94%) of them had 5 to 8 members in their family. The results showed that majority (51.56 %) of the respondents were having low number of dairy animals (only upto 6); (41.88 %) of respondents were in the medium level of category (7 to 10 dairy animals). The data also reveals that maximum percentage of the respondents (46.88%) had a medium level of mass media exposure, whereas high level and low level of mass media exposure was reported by (29.37%) and (23.75%) of the respondents, respectively. In this section, 'r' values have been worked out between variables, i.e., livelihood security of farmers and various factors affecting it. From the research it is evident that dairy experience, livestock holding, and land holding was positively and significantly correlated with livelihood security. Other factors, such as annual household income, extension contact, risk orientation, mass media exposure, material possession and no. of enterprises in which household members are engaged, were found to be positively and significantly related with the livelihood security of the farmers. However, age, family size, education and social participation were not found to be correlated with the livelihood security of the dairy farmers. Meanwhile in contrary, land hold size, livestock holding size in tropical livestock unit, extension contact, cooperative member and total household income couldn't have any association with household livelihood security (Ayana *et al.*2022).

CONFLCT OF INTEREST

The authors of the paper declare no conflict of interest.

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