

Table 6 Mean yield comparison of farmers by independent sample t-test

S. N	Categories	N	Mean (kg/ropani)	df	p-value	t-value
1	Training received	51	79.27	98	< 0.001	4.66***
2	Training not received	49	69.48	-	-	-
3	Cooperative member	64	76.62	98	0.006	2.80***
4	Non member	36	70.11	-	-	-
5	Male	73	75.05	98	0.270	1.11
6	Female	27	72.17	-	-	-
7	Literate	65	78.21	98	< 0.001	5.22***
8	Illiterate	35	66.97	-	-	-

Note: *** represents significance at 1%

Table 7 Summary statistics of the multiple regression model for bean production (N = 100)

Statistic	Value
Number of observations (N)	100
F-value	28.00***
R ²	0.758
Adjusted R ²	0.731
Root Mean Square Error	229.25
Significance level	$p < 0.001$

The regression results show that total cultivated area, irrigated land, training, and annual income had a significant positive effect on bean production, indicating the importance of resource availability and capacity building (Table 8). In contrast, education, cooperative membership, experience, gender, age, and family size did not significantly influence the total production of French beans in the study area. It was found that production was mainly driven by access to land, irrigation, financial resources, and training rather than by socio-demographic characteristics.

Table 8 Factors affecting production of French bean in the study area

S. N	Variable	Coefficient B	Standard error	t-value	p-value
1	Education	-5.94	33.43	-0.18	0.859
2	Total area	37.97	4.79	7.93	< 0.001***
3	Irrigated land	20.44	6.90	2.96	0.004***
4	Cooperative	-25.84	62.88	-0.41	0.682
5	Experience	-1.24	3.86	-0.32	0.749
6	Gender	-51.89	53.84	-0.96	0.338
7	Age	-2.70	3.91	-0.69	0.492
8	Family size	11.35	19.75	0.57	0.567
9	Training	129.11	57.37	2.25	0.027**
10	Annual income	19.37	6.03	3.21	0.002***
11	Constant	-288.52	309.16	-0.93	0.353

Note: ** and *** represents significance at 5% and 1% respectively

3.8 Level of satisfaction of farmers

It reveals that most farmers (40%) were moderately satisfied with their bean production, while 26% were not satisfied, 21% were neutral, and only 13% were strongly satisfied, indicating moderate overall satisfaction with room for improvement in addressing their concerns and enhancing overall satisfaction (Table 9).