Understanding Capital Structure in Flower Farms, Varanasi, Uttar Pradesh, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

A study on 120 flower farmers was made in the district Varanasi to analyze the farm structure and investment patterns of the selected farms. A multistage stratified purposive cum random sampling procedure was adopted for the study. Findings reveal that the overall average cropping intensity on sample farms was found 213.04%. Among the overall cropping pattern of the crops in the study

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area, the percentage of rose was 8.57 and marigold was found 11.12 percent. Per farm investment on farm, structure was highest on small size group of farms i.e., Rs. 750644.34 followed by marginal size group of farms which found the money value of Rs. 463367.02 respectively showing the direct relation to farm size.

Keywords: Marigold; rose; cropping pattern; investment.

1. INTRODUCTION

Floriculture has established itself as a viable business. It has also been recognized for its potential as a profitable agriculture. Floriculture was once only done on tiny farms, but it has since spread to a few larger ones. The National Commission on Agriculture has advised that by the year 2000 A.D., 5 lakh hectares of land be planted in floriculture to increase productivity. Floriculture continues to provide rural residents with employment opportunities. A family of 5 to 6 people can live in a region where flowers are grown. Roses, carnations, gladioli, marigolds, and orchids are among the most highly prized flowers growing here. India is ranked 18th, with a 0.6 percent share of the worldwide floriculture market. It shows growing trend and reveals a scope further. Although, conventional farming is largely being adopted on every farm. But flowers are also now being trending to be included in the cropping pattern of the farmers, however large farms on flowers can be seen on very area specific only. Farm size is a major factor in influencing the cropping pattern. A change in cropping pattern implies a change in the proportionate area under different crops. An increase in the area under high-value crops is likely to result in an increase in total return even if there is no increase in the yield rate or price provided there is simultaneous decrease in the proportionate area under equally or more valuable crops [1]. Marginal farmers can be more attentive about better utilization of their tinny land holding [2]. Agricultural sectors, including flower farming, play a crucial role in the economic development of rural areas [3,4]. The study can shed light on the capital structure of flower farms, analyzing the proportion of debt and equity used to finance operations [5,6].

Identifying the optimal capital structure for flower farms can lead to improved financial performance and increased profitability [7]. Understanding the sources of capital can help farmers make informed decisions regarding investment and expansion. The study can also highlight the challenges farmers face in accessing financial resources, which can inform policymakers and financial institutions about the need for targeted support to boost the agricultural sector [8].

Investigating the investment patterns of flower farms can provide insights into the factors influencing investment decisions, such as technological upgrades, infrastructure development, or expansion to new markets. Understanding these factors can assist farmers in making prudent investment choices [9]. It can help identify the barriers to investment and entrepreneurship in the flower farming industry, potentially leading to policy recommendations aimed at fostering a conducive business environment.

The study's findings can have direct implications for District Varanasi's economy, as it can contribute to the sustainable growth of the flower farming industry, generate employment, and boost income levels. Improved economic conditions in the region can lead to enhanced living standards, better access to education and healthcare, and overall socio-economic development.

A comparison with tropical agricultural territories in Latin America allows for a broader understanding of agricultural practices and economic dynamics in different regions [10,11]. It can reveal similarities and differences in the capital structure, investment patterns, and overall financial performance of flower farms in Varanasi and Latin America [12,13,14]. The insights drawn from this comparative analysis can provide valuable lessons and best practices that can be adapted and applied in both regions, promoting cross-learning and knowledge exchange [15,16].

The study can contribute to the existing body of knowledge on agricultural economics, capital structure, and investment decisions, both in the specific context of flower farms in Varanasi and in a comparative context with Latin American territories. It can serve as a reference for future research on similar topics, inspiring scholars to explore related issues in different agricultural sectors and geographical regions. Overall, the

study on capital structure and investment in flower farms in District Varanasi, coupled with a comparison with socioeconomic studies in tropical agricultural territories of Latin America, holds immense potential for generating valuable insights, facilitating economic growth, and informing policy decisions for the agricultural sector in both regions.

Therefore, flower cultivation can be a better option to utilize their every inch of holding as well as can be a return generating on daily basis. Therefore, to analyze the status of flower cultivation and investment pattern on it the study has been performed.

2. METHODOLOGY

Multistage stratified purposive cum random sampling procedure has been adopted for the present investigation to select the ultimate unit of the sample. Out of 75 District and 18 Divisions in Uttar Pradesh state, the Varanasi division of Uttar Pradesh was been selected purposively to avoid the investigator's operational inconvenience. A list of all 8 blocks of Varanasi district of Uttar Pradesh along with acreage in field flowers cultivation were prepared and arranged in descending order. Out of 8 blocks, two blocks namely Chiraigaon and Arazi Line having highest area under field flowers were selected purposively for this study. Five villages from each block and a total of 120 respondents were selected for the study at random. Tabular analysis was made to compare different aspects of analysis of costs and returns on different categories of the sample farms. The simplest and the most important measures of average mean and weighted mean were applied. Simple comparisons have been made on the basis of percentage.

3. RESULTS AND DISCUSSION

3.1 The Structure of Sample Farms

This section deals with the size of farms, farm assets structure, irrigational structure, cropping pattern and cropping intensity.

3.2 Average Holding Size on Sample Farms

The average size of land holding of marginal and small farms were found 0.88 and 1.61 hectares, respectively with an overall average size of land holding were obtained as 1.15 hectare.

Distribution of cultivated land owned by different size group of sample farms revealed that 47.64 % of cultivated land was owned by 75.00 of marginal size of farms. Table 1 also revealed that 52.36 % of area (land) were owned by 45 of small size group of farms.

The result is also showing in the Fig. 1.

3.3 Cropping Pattern

Cropping pattern represents the area attached to the various crop during the given period, customarily (conventionally) in a single year. It indicated the yearly sequence and arrangement of crops grown by farmer in a particular area. The cropping patterns follow by the sample farms are presented in Table 2. It reveals that on an average the highest area was covered under in paddy and Wheat 13.42, followed by Marigold 11.17 % in kharif season, rose 9.57 %, maize 4.26 %, Mustard 6.38%, Pea 4.26%, Gram 3.19%, Urd 2.13 % and Vegetable 1.60 %. Rose and Marigold have popular flower occupied 9.57% and 11.17%, 6.58 in kharif and of gross cropped area which was distributed as 1.88 ha. on marginal farms followed by small 3.35 ha. respectively of their total cultivated area.

3.4 Cropping Intensity

The details of cropping intensity depicted in the Table 3.

Intensity of cropping refers to the number of crops raised on a field during an agriculture year 2021-22. This can be computed by dividing gross sown area by the net cultivated area. Cropping intensity expressed in %.

$$\text{Cropping intensity} = \frac{\text{Gross sown area}}{\text{Net cultivated area}} \times 100$$

Table 3 reveals that the overall average cropping intensity on sample farms having 213.04% which was found highest on marginal farms 213.64 % followed by small 208.07 %, respectively, also showed in the Fig. 2. Cropping intensity was inversely related to size of farms.

3.5 Farm Asset Structure on Sample Farms

3.5.1 Per farm investment on sample farms

Table 4 depicted the per- farm asset structure on sample farms. Table 4 revealed that major

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components of farm asset structure are buildings, machinery & implements and livestock which constituted 70.42 %, 17.09 % and 12.49 % of total asset value, respectively on the basis of overall average. Per farm buildings, machinery & implements and livestock came to Rs. 407394.41, Rs. 94800.18 and Rs. 68901.43 respectively on the basis of basis. Table 4 revealed that per farm investment on

farm structure was highest on small size group of farms i.e., Rs. 750644.34 followed by marginal size group of farms which found the money value of Rs. 463367.02 respectively. It was concluded that per farm investment on sample farm were showed the direct relationship with size of holding, whereas component wise investment on marginal and small farm did not show any definite trend.

Table 1. Average size of holding on different size of sample farms

S. No.	Size groups of farms	No. of Farmers	Net Cultivated land(ha.)	Average size of holding
1	Marginal	75	66.23 (47.64)	0.88
2	Small	45	72.78 (52.36)	1.61
Grand Total		120	139.01 (100.00)	1.15

Figure in parenthesis indicate percentage to the total cost
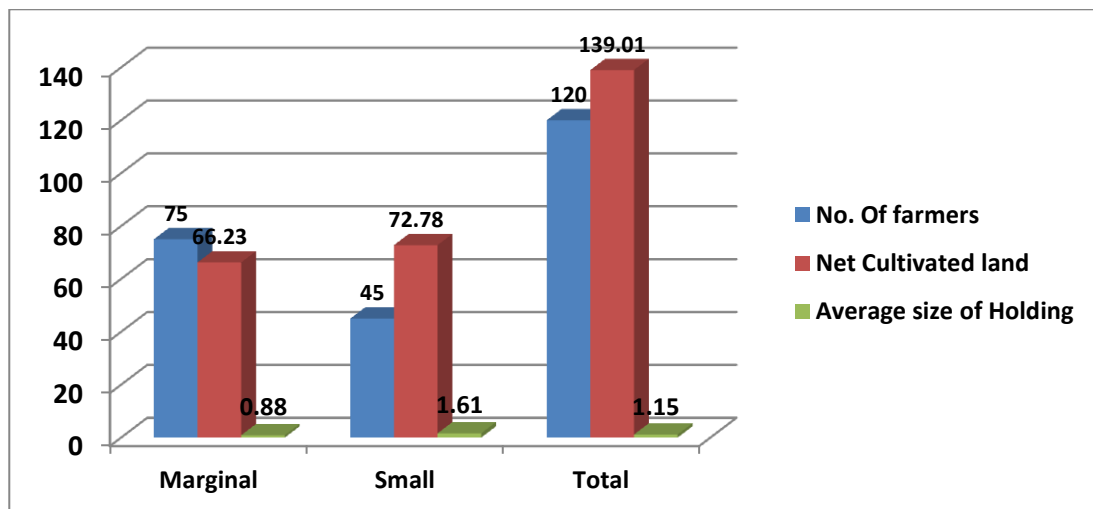
Fig. 1. Average size of holding on different size of sample farms
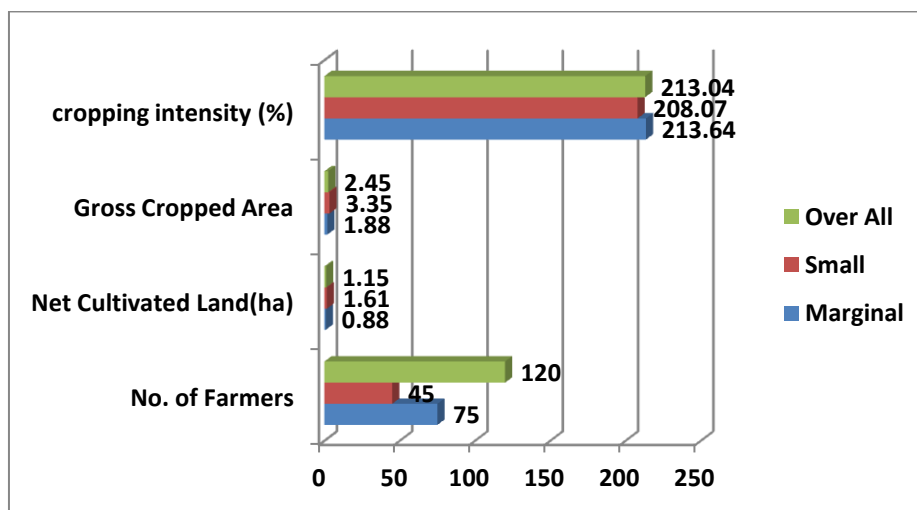
Fig. 2. Cropping intensity of different size group of samples

Table 2. Cropping pattern

S.No.	Crop	Marginal	Small	Overall Average
A.	Kharif	0.88 (46.81)	1.61 (48.06)	1.16 (47.35)
1	Paddy	0.26 (13.83)	0.41 (12.24)	0.33 (13.42)
2	Maize	0.08 (4.26)	0.23 (6.87)	0.15 (6.07)
3	P. Pea	0.08 (4.26)	0.12 (3.58)	0.10 (3.88)
4	Urd	0.04 (2.13)	0.10 (2.99)	0.06 (2.55)
5	Rose	0.18 (9.57)	0.29 (8.66)	0.21 (8.57)
6	Merigold	0.21 (11.17)	0.41 (12.24)	0.27 (11.12)
7	Vegetable	0.03 (1.60)	0.05 (1.49)	0.04 (1.53)
B	Rabi	0.64 (34.04)	1.20 (35.82)	0.85 (34.69)
1	Wheat	0.28 (14.89)	0.41 (12.24)	0.33 (13.42)
2	Mustard	0.12 (6.38)	0.21 (6.27)	0.14 (5.77)
3	Vegatable	0.07 (3.72)	0.09 (2.69)	0.07 (2.65)
4	Gram	0.06 (3.19)	0.14 (4.18)	0.09 (3.67)
5	Lentil	0.03 (1.60)	0.12 (3.58)	0.06 (2.60)
6	Potato	0.08 (4.26)	0.23 (6.87)	0.16 (6.58)
C	Zaid	0.36 (19.15)	0.54 (16.12)	0.44 (17.96)
1	Urd	0.19 (10.11)	0.23 (6.87)	0.21 (8.37)
2	Moong	0.08 (4.26)	0.12 (3.58)	0.10 (3.88)
3	Chari	0.05 (2.66)	0.09 (2.69)	0.07 (2.65)
4	Vegetable	0.04 (2.13)	0.10 (2.99)	0.06 (2.55)
Gross Cropped Area (A+B+C)		1.88 (100.00)	3.35 (100.00)	2.45 (100.00)

Figure in parenthesis indicate percentage

Table 3. Cropping intensity of different size group of samples

S. No.	Size groups of farms	No. of Farmers	Net Cultivated land (ha.)	Gross Cropped Area (ha.)	Cropping Intensity (%)
1	Marginal	75	0.88	1.88	213.64
2	Small	45	1.61	3.35	208.07
Over All		120	1.15	2.45	213.04

Table 4. Per farm investment on different size group of sample farms (Rs.)

Sl. No.	Particulars	Size of Farms		Overall Average
		Marginal	**Small**	
1	Buildings	316178.69 (68.24)	559420.60 (74.53)	407394.41 (70.42)
I.	Residential	261366.24 (56.41)	520406.00 (69.33)	358506.15 (60.89)
a.	Kachcha	10872.53 (2.35)	19268.23 (2.57)	14020.92 (2.42)
b.	Pucca	250493.71 (54.06)	501137.77 (66.76)	344485.23 (58.47)
II.	Cattle shed	54812.45 (11.83)	39014.60 (5.20)	48888.26 (9.53)
a.	Kaccha	14642.24 (3.16)	10327.41 (1.38)	13024.18 (2.54)
b.	Pacca	40170.21 (8.67)	28687.19 (3.82)	35864.08 (6.99)
2	Live stock	62569.76 (13.50)	79454.20 (10.58)	68901.43 (12.49)
I.	Milch Animals	62569.76 (13.50)	79454.20 (10.58)	68901.43 (12.49)
a.	Cow	20942.37 (4.52)	29832.57 (3.97)	24276.20 (4.33)
b.	Buffalo	41627.39 (8.98)	49621.63 (6.61)	44625.23 (8.16)
3	Machinery and implements	84618.57 (18.26)	111769.54 (14.89)	94800.18 (17.09)
I.	Minor Implements	989.61 (0.21)	1987.92 (0.26)	1363.98 (0.23)
II.	Major Implements	83628.96 (18.05)	109781.62 (14.62)	93436.21 (16.86)
	Grand Total	463367.02 (100.00)	750644.34 (100.00)	571096.02(100.00)

3.5.2 Per hectare investment on different size group of farms

Investment on different size groups of farms on per hectare basis depicted in Table 5. On an overall average per hectare investment was found Rs. 5039353.42, which was recorded higher marginal farms Rs. 526553.43, followed by small Rs. 466238.72 and respectively. It concluded that per hectare investment on farm assets at different size group of farms had inverse relationship with holding size.

Agricultural sectors, including flower farming, play a crucial role in the economic development of rural areas [3,4]. The study can shed light on the capital structure of flower farms, analyzing the proportion of debt and equity used to finance operations [5,6].

Identifying the optimal capital structure for flower farms can lead to improved financial performance and increased profitability [7]. Understanding the sources of capital can help farmers make informed decisions regarding investment and expansion. The study can also highlight the challenges farmers face in accessing financial resources, which can inform policymakers and financial institutions about the need for targeted support to boost the agricultural sector [8].

Investigating the investment patterns of flower farms can provide insights into the factors influencing investment decisions, such as technological upgrades, infrastructure development, or expansion to new markets. Understanding these factors can assist farmers in making prudent investment choices [9]. It can help identify the barriers to investment and entrepreneurship in the flower farming industry, potentially leading to policy recommendations aimed at fostering a conducive business environment.

The study's findings can have direct implications for District Varanasi's economy, as it can contribute to the sustainable growth of the flower farming industry, generate employment, and boost income levels. Improved economic conditions in the region can lead to enhanced living standards, better access to education and healthcare, and overall socio-economic development.

A comparison with tropical agricultural territories in Latin America allows for a broader understanding of agricultural practices and economic dynamics in different regions [10,11]. It can reveal similarities and differences in the capital structure, investment patterns, and overall financial performance of flower farms in Varanasi and Latin America [12,13,14]. The insights drawn from this comparative analysis can provide valuable lessons and best practices that can be adapted and applied in both regions, promoting cross-learning and knowledge exchange [15,16].

Table 5. Per hectare Investment (Rs. /ha.)

| Sl. No. | Particulars | Size of Farms | | Overall Average |
		Marginal	Small	
1	Buildings	359293.97 (68.24)	347466.21 (74.53)	354858.56 (70.42)
I.	Residential	297007.09 (56.41)	323233.54 (69.33)	306842.01 (60.89)
a.	Kachcha	12355.15 (2.35)	11967.84 (2.57)	12209.91 (2.42)
b.	Pucca	284651.94 (54.06)	311265.70 (66.76)	294632.10 (58.47)
II.	Cattle shed	62286.88 (11.83)	24232.67 (5.20)	48016.55 (9.53)
a.	Kachcha	16638.91 (3.16)	6414.54 (1.38)	12804.77 (2.54)
b.	Pucca	45647.97 (8.67)	17818.13 (3.82)	35211.78 (6.99)
2	Live stock	71102.00 (13.50)	49350.43 (10.58)	62945.16 (12.49)
I.	Milch Animals	71102.00 (13.50)	49350.43 (10.58)	62945.16 (12.49)
a.	Cow	23798.15 (4.52)	18529.55 (3.97)	21822.42 (4.33)
b.	Buffalo	47303.85 (8.98)	30820.89 (6.61)	41122.74 (8.16)
3	Machinery and implements	96157.47 (18.26)	69422.07 (14.89)	86131.69 (17.09)
I.	Minor Implements	1124.56 (0.21)	1234.73 (0.26)	1165.87 (0.23)
II.	Major Implements	95032.91 (18.05)	68187.34 (14.62)	84965.82 (16.86)
	Grand Total	526553.43(100.00)	466238.72 (100.00)	503935.42 (100.00)

The study can contribute to the existing body of knowledge on agricultural economics, capital structure, and investment decisions, both in the specific context of flower farms in Varanasi and in a comparative context with Latin American territories. It can serve as a reference for future research on similar topics, inspiring scholars to explore related issues in different agricultural sectors and geographical regions. Overall, the study on capital structure and investment in flower farms in District Varanasi, coupled with a comparison with socioeconomic studies in tropical agricultural territories of Latin America, holds immense potential for generating valuable insights, facilitating economic growth, and informing policy decisions for the agricultural sector in both regions [17-21].

4. CONCLUSION

From the study of flower (rose and marigold) growers in district Varanasi it was be concluded that, overall average size of land holding was obtained as 1.15 hectare and flower cultivation was found included in the cropping pattern of the farmers for their day-to-day business and livelihood along with other conventional crops. On studying the investment pattern of the flower farmers, it was concluded that per farm investment showed the direct relationship with size of holding, whereas component wise investment on marginal and small farm did not show any definite trend. Similarly, on per hectare it was found that investment on farm assets at different size group of farms had inverse relationship with holding size.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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