

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 12; December 2024; Page No. 340-344

Received: 21-10-2024

Accepted: 27-11-2024

Indexed Journal

Peer Reviewed Journal

A study on determinants of land leasing in Mysore district, Karnataka state, India

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DOI: <https://doi.org/10.33545/26180723.2024.v7.i12e.1426>

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Abstract

The present study examines the determinants of land leasing in Mysore District, Karnataka, India. With agriculture being a key pillar of the Indian economy, the study explores the innovative practice of leasing land, where landowners lease their agricultural land to individuals or entities, thereby enabling efficient land utilization and stable income streams. The study collected primary data from 120 farmers engaged in allied enterprises, representing both pure tenants and landowners in the Mysore District of Karnataka, using a purposive stratified random sampling technique. Multiple linear regression analysis reveals that age, education level, farming experience, and farm size significantly impact net farm income. Additionally, transaction costs, tenure security, distance from home, and the size of the rented land influence farmers' participation in the land lease market. The research emphasizes the importance of well-structured policies to support the leasing system, including reasonable land rents, written agreements, and dispute resolution mechanisms. The findings suggest that promoting the leasing-in-land practice with government support and access to microcredit can enhance agricultural productivity and contribute to inclusive economic growth, job creation, and reduced food insecurity. Overall, this study provides valuable insights for policymakers to develop effective strategies for sustainable land management and equitable development in Mysore District, Karnataka.

Keywords: Leased-in-land, Agri-enterprise, Multiple linear regression analysis

Introduction

Agriculture has been the backbone of human civilization, providing sustenance, livelihoods, and economic prosperity for countless communities across the world. In an agricultural economy, labor and land are inextricably linked (Bardhan, 1984) ^[2], and in order to maximize productivity and make better use of resources, the choice between these two necessary choices has been strongly debated in the economic literature on agrarian economies (Basu, 1986) ^[3]. The Mysore District in Karnataka, India, is renowned for its rich cultural heritage, diverse landscapes, and agricultural productivity. Over the years, the region has witnessed significant urbanization and industrial growth, leading to increased demand for land resources. As demands on agricultural resources grow, so does the need for innovative solutions to optimize land utilization. In response to this evolving landscape, the practice of "leasing the land" has emerged as a transformative solution. Leasing-in-land involves the arrangement where landowners lease their agricultural land to individuals or entities, allowing them to use the land for cultivation without transferring complete ownership rights. This practice enables lessees to access valuable agricultural resources without the burden of purchasing land, while landowners benefit from stable income streams and efficient land utilization.

It is important to understand why agricultural land prices are rising due to the emergence of speculators and the dangers

of the rising cost of production. (Prochazka *et al.*, 2023) ^[11]

The variables thought to be responsible for the rising costs of agricultural land must be carefully examined. This research seeks to explore the factors that drive and influence the leasing-in-land phenomenon in the Mysore District of Karnataka State, recognizing its significance in promoting sustainable land management, economic growth, and equitable development. The results will provide the right information for policymakers to support Farmers and pave the way for better understanding and implementation of policies.

Methodology

Study area: The research concentrated in the Mysore district of Karnataka, which was purposefully selected due to its high number of tenant farmers, presence of small and marginal farmers, and landless labour, offering a suitable context for exploring land leasing and agri-entrepreneurship opportunities. Information about farmers and land-leasing agri-entrepreneurs was collected from the administrators of Mysore Raita Samparka Kendra, a department of agriculture in Karnataka.

Sampling technique and method of data collection: This research study employed a multi-stage random sampling technique to gather data from farmers and land-leasing agri-entrepreneurs in Four tehsils, namely, Mysore city,

Nanjangud, Krishnarajanagara, and Heggadadevanakote, which were purposefully chosen based on the highest number of tenant farmers identified through LEC (loan eligibility card) records and land leasing engagement. Primary data was collected between January to April 2024 using structured questionnaires. The questionnaires captured information on respondents' socio-economic characteristics, land tenure systems, land lease market structure, factors influencing the land lease market, impact on net farm income, and constraints faced by crop farmers participating in land leasing.

The purposive stratified random sampling technique was employed, resulting in a final sample size of 120 farmers who were actively engaged in allied enterprises across the four selected tahsils, 15-15 farmers of pure tenants and land owners were taken from all 4 selected districts for study, so 60 pure tenants and 60 landowners were selected accordingly. This division was instrumental in obtaining a comprehensive understanding of the factors influencing land leasing practices in the region.

Statistical analyses of data

For the analysis of the gathered data, descriptive statistics like frequencies, percentages, averages, and ranges were used. Advanced statistical methods were also used in addition to these measurements, keeping in mind the study's particular objectives.

Statistical methods for analyzing the factors influencing the decision to lease land by agri-entrepreneurs

Analytical technique: Multiple linear regression technique was used to examine the different factors namely age, education level, farming experience, and farm size, transaction costs, tenure security, distance from home, and the size of the rented land etc. The detail of the regression equation used in the study is as under.

Operational model

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + u$$

For the lease-inland market

Y = Lease-in land (acre)

β_0 = Constant Term

$\beta_1, \dots, \beta_n$ = Regression Estimates

X_1 = Age (in years)

X_2 = Education (Years of formal education)

X_3 = Farming experience (In years)

X_4 = Farm size (in hectare)

X_5 = Transaction cost (in ₹)

X_6 = Tenure security [Secure/Insecure] (Yes=1, No=0)

X_7 = Distance of farm from home (km)

X_8 = Area of land rented (in hectare)

X_9 = Share of output (%)

U_i = Random Error Term

Results and Discussion

1.1 Social and economic details of the respondent households

Age

Understanding the age demographics of farmers is crucial to developing effective strategies for promoting technological advancements and sustainable practices in farming. The findings reveal that a significant proportion of household heads (65.83%) fall within the early adult category, aged between 36 and 50 years. On the other hand, the percentage of respondents above 65 years of age was comparatively lower. This suggests that more than half of the farmers who were surveyed were in the middle-aged group, which includes active, dynamic, and active individuals who are more likely to embrace innovations readily.

Education

Our findings indicate that a significant majority of respondents (89.17%) possessed some form of formal education, making them literate. This suggests that a higher proportion of educated farmers are likely to be involved in the land lease market compared to those with no formal education. Moreover, the presence of education has shown a positive correlation with the adoption of new agricultural practices, leading to increased productivity on the farms, which is consistent with the research conducted by (Thomas, 2015) [5].

Table 1: Social and economic details of the respondent households

1. Age of the family head (Year)

S. No.	Variables	Farm size category						Total
		Pure tenant	Marginal	Small	Semi- Medium	Medium	Large	
1.	19-35	1	4	7	4	4	3	23(19.17)
2.	36-50	3	13	15	21	13	14	79(65.83)
3.	51-65	0	5	3	4	2	0	14(11.67)
4.	> 65	0	0	1	2	1	0	4(3.33)
Total		4(3.33)	22(18.34)	26(26.67)	31(25.84)	20(16.67)	17(14.17)	120(100)

(Figures in parentheses shows the percentage to total)

2. Education status of head of the family

S. No.	Variables	Farm size category						Total
		Pure tenant	Marginal	Small	Semi- Medium	Medium	Large	
1.	Illiterate	0	2	4	4	2	1	13(10.83)
2.	Primary	0	1	1	2	3	1	8(6.67)
3.	Middle	3	8	8	11	9	2	41(34.17)
4.	Matriculation	1	8	8	7	5	6	35(29.17)
5.	Plus two	0	3	3	7	4	1	18(15.00)
6.	Graduation	0	0	2	2	0	1	5(4.17)
Total		4(3.34)	22(18.34)	26(21.67)	33(27.5)	23(19.17)	12(10.00)	120(100)

(Figures in parentheses shows the percentage to total)

3. Farming Experience (years)

S. No.	Variables	Farm size category						Total
		Pure tenant	Marginal	Small	Semi- Medium	Medium	Large	
1.	1 to 5	2	3	3	2	1	4	15(12.5)
2.	6 to 10	1	4	5	6	7	1	24(20)
3.	10 to 15	3	8	4	9	6	5	35(29.17)
4.	16 and above	9	5	7	8	9	8	46(38.34)
Total		15(12.5)	20(16.66)	19(15.83)	25(20.83)	23(19.16)	18(15.00)	120(100)

4. Nature of agreement of land transaction

S. No.	Variables	Farm size category						Total
		Pure tenant	Marginal	Small	Semi- Medium	Medium	Large	
1.	Oral	6	19	21	25	21	13	105(87.5)
2.	written	0	1	3	5	2	4	15(12.5)
Total		6(5.00)	20(16.66)	24(20.00)	30(25.00)	22(18.33)	17(14.17)	120(100)

(Figures in parentheses shows the percentage to total)

Farming experience

According to the statistical analysis in Table 1, the vast majority of the participants (about 88%) had farming experience of more than 5 years, with 38% of them having more than 16 years of experience. This considerable expertise among rural farmers significantly enhances their ability to diversify production across various enterprises, resulting in an increase in household income (Kaur, 2011) [6].

Nature of the agreement for the land transaction

As shown in Table oral agreement was a prevalent element of the tenancy system among the studied farmers. The vast majority of farmers surveyed (87.50 percent) claimed that the lease agreement was oral, meaning that land leasing operations were not subject to any formal restrictions or fixes. In reality, 12.50 percent of farmers had completed documented land transactions.

Table 2: Land Tenure Systems and Different Land Lease Forms Adopted in the Study Area

Variables	Frequency	Percentage (%)
Land tenure system		
Communal	85	70.84
Individual (private)	32	26.67
Public	3	2.50
Total	120	100
Land lease forms		
Gifts/borrowing	12	10.00
Fixed rental	48	40.00
Share cropping	19	15.84
No participation	41	34.17
Total	120	100
Farm size:(hectare)		
Owner	0.90	0.67
Owner cum tenant	0.80	0.33
Tenant	0.705	0.52

Land Tenure Systems Available to Respondents

The examination of land tenure systems among the respondents highlights a notable trend, with the majority (70.84%) of farmers choosing to operate on community land (Table 2). Community land preference stems from historical traditions, cultural ties, and communal farming practices, offering secure access, long-term tenure, and a sense of belonging among farmers. On the other hand, a smaller

proportion of participants (approximately 26.67%) cultivated individual (personal) land. Personal land preference may be driven by autonomy, control, and potential for full benefits without community involvement. Furthermore, a significantly lower percentage of farmers (2.5%) were found to be engaged in farming on government (public) land. Limited government land usage may be due to bureaucratic complexities, uncertainties, and strict regulations, making it less attractive for farming activities compared to community or personal land.

Land Lease Types in the research area

The results presented in Table 2 show the different kinds of land lease agreements that exist in the research area. The vast majority who responded (40.%) opted for the fixed rental form, where they made cash payments in advance to landlords, allowing them to have complete personal control over their farm operations, reap all benefits, and bear all production risks. Meanwhile, 15% of respondents engaged in sharecropping, while 10% acquired land through gifts or borrowing. In addition, 34% of respondents said they were not involved in the market for land leases. Recognizing the causes behind farmers' choices in land lease types can provide valuable insights into their motivations and inform policy decisions aimed at promoting equitable and sustainable land use practices in the region.

Farm size

In assessing the profitability of crop cultivation, farm size was a critical factor taken into account. The classification of farm size based on operating land allowed for a more accurate evaluation of its impact. The study area predominantly comprised small and medium-sized farms, with owners' farm sizes averaging 0.90 hectares, while tenant farmers operated on an average farm size of 0.705 hectares. These findings highlight the prevalence of smaller farms in the region and underscore the significance of considering farm size in understanding the dynamics of agricultural profitability and land utilization.

1.2 Factors Influencing the extent of Leasing-in-land

The research findings indicate that there was an increase in 0.209hac of leasing-in-land for every 1-year increase in age (X_1). Age positively impacts gross revenues. As farmers grow older, they gain a deeper understanding of local

practices, resource management, and decision-making capabilities, leading to increased productivity and higher gross revenues.

The influence of education on net farm income was positive and significant (at 1%), with each additional year of education (X_2) leading to an increase in 0.348hac of leasing-in-land. The positive influence of education on gross revenues can be attributed to the valuable knowledge and skills acquired by educated farmers, which enable them to adopt modern agricultural techniques, make informed decisions, and effectively navigate market opportunities, resulting in higher productivity, increased yields, and

improved financial performance.

Farm size(X_4) and farming experience(X_3) demonstrated statistical significance at 10% and 5%, respectively. The positive coefficients of these variables imply that as these factors increase, there is a greater likelihood of farmers participating in the land lease market. This may be attributed to the fact that as farmers acquire more knowledge about farming practices that enhance production levels, they gain confidence in engaging in lease agreements, aligning with the conclusions of (Onofri *et al.*, 2023)^[9] study.

Table 3: Multiple Regression Analysis of Factors Influencing the extent of Leasing-in-land

Variables	Measurement unit	Coefficients	P-value
Intercept		-4.06	0.530
Age of the farmer (X_1)	Year	0.209***	0.0031
Education level (X_2)	Year of formal education	0.348***	0.040
Farming experience (X_3)	Year	0.068**	0.512
Farm size (X_4)	Hectare	0.8594*	0.081
Transaction cost (X_5)	Rupees	-0.009***	0.0103
Tenure security (X_6)	Secure/Insecure.	-0.031	0.0621
Distance of farm from home(X_7)	Kilometer	-0.0846	0.0145
Area of land rented (X_8)	Hectare	1.55	0.114
Share of output(X_9)	Percentage	0.216	0.210
R^2	0.850		

***, **and * represent the significance at 1, 5 and 10percent respectively

The research results reveal that transaction costs(X_5) have a negative and highly significant impact at 1%, indicating that as land lease costs increase, farmers' participation in the land lease market decreases, which negatively impacts farmers' income and their overall economic well-being.

The negative influence of these variables, tenure security and distance from home, in the land leasing market could be attributed to the extra expenses and uncertainties they introduce. Tenure security(X_6) may not directly impact land productivity or management, as sharecropping arrangements involve short-term agreements and uncertainties.(Adenuga *et al.*, 2021)^[1] Low tenure security may discourage farmers from making long-term investments in the land, leading to potentially suboptimal management practices. The distance of the farm from home(X_7) may not have significantly impacted gross revenues, possibly due to modern transportation and communication systems mitigating the challenges of managing farms at a distance, but it could still result in increased transportation costs, reduced monitoring of farming activities, and difficulties in responding promptly to unforeseen situations.

The size of the rented land(X_8) and the share of crop output(X_9) have a significant, positive impact on the lessee's net farm income. Larger rented land offers more agricultural resources and production opportunities for lessees. Higher crop output shares imply greater ownership, allowing lessees to retain profits and improve net farm income.

According to the study's findings, the coefficient of multiple determination (R) is 0.850, meaning that the combined influence of the independent variables taken into account in the model can explain 85% of the variation in farmers' involvement in the land lease market. This high R -value suggests that the selected socioeconomic variables, such the size of the farm, farming experience, level of educational,

transaction cost, and tenure security, collectively play a significant role in influencing farmers' gross farm income.

Conclusion

As per the regression analysis results, socioeconomic factors (age, education, employment, farm size, and off-farm income) had a substantial beneficial influence on gross income for tenant farmers. Encouraging larger land holdings and secure ownership structures can incentivise farmers to make long-term investments and adopt sustainable land management practices. Overall, the research emphasizes the importance of well-structured policies to support the leasing system, including reasonable land rents, written agreements, and dispute resolution mechanisms. With government support and access to micro credit, promoting the leasing-in-land practice can significantly enhance agricultural productivity, foster inclusive economic growth, create jobs, and reduce food insecurity in the Mysore District.

In general, leased-in land has a high rental value., according to the report. The state government may regulate the land lease market, taking into account the present rate of rental value, by establishing acceptable land rents, placing restrictions on the size of land that may be leased, and taking other actions that will help tenants and land owners feel safe. The study discovered that in the tested communities, oral agreements were a typical element of the land lease market. As a result, regulatory limits on land leasing markets may be seen as a way to give renters security. This obstacle can be removed with a policy on legally binding written agreements and a dispute resolution process.

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