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An Economic Study of Factors Influencing Emergence of Allied and Non-Farm Activities among Farm Households in Karnataka

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ABSTRACT

A study was undertaken to identify the factors influencing the emergence of Allied Activities (AA) and Non-Farm Activities (NFA) among farm households of Karnataka. The sample respondents were selected using a multistage random sampling technique from four districts of Karnataka representing four different agro-climatic zones. The Correspondence Analysis was employed to identify the principal factors influencing emergence of Allied Activities and Non-Farm Activities (AA & NFA). The primary factors contributing to emergence of AA & NFA among farm households were agricultural growth-driven in the case of Mandya and Hassan districts while in Kolar and Chitradurga districts agricultural resource constraint factors were conducive.

THE agriculture sector has served as a cynosure in achieving inclusiveness in economic growth in India. However, literature have shown that the overdependence on agriculture as a sole source of livelihood in rural areas has resulted in performance deficiency posing a threat to the rural livelihoods leading to the emergence of alternate sources of livelihood and employment strategies. Typical regional contrast is seen in the emergence of alternate sources of livelihood across all states. Contemplating these aspects, an attempt was made to identify factors responsible for the emergence of agricultural Allied Activities (AA) and rural Non-Farm Activities (NFA) in the agrarian economy of Karnataka.

The study was carried out in four districts of Karnataka *viz.*, Kolar, Mandya, Hassan and Chitradurga representing the four agro-climatic zones *i.e.*, Eastern Dry Zone, Southern Dry Zone, Southern Transition Zone and Central Dry Zone, respectively. A multi-random sampling procedure was adopted to select 75 sample farm households from each district engaged in different kinds of Allied Activities and Non-Farm Activities (AA & NFA) constituting a total of 300 sample respondents. Data were collected through interviews using a well-structured pretested schedule. The sample respondents were asked to score the various factors responsible for the emergence of AA and NFA, identified through preliminary survey and literature.

The factors were scored from one to four (4 - High, 3 - Medium, 2 - Low, 1 - No contribution) by the respondents based on the intensity of factors leading to the emergence of AA & NFA. The scores assigned were analysed using Simple Correspondence Analysis (Reddy, 2007 and Suneetha, 2004) to identify the region specific factors responsible for the emergence of the AA & NFA.

The proportion of respondents carrying out different activities in the four districts is revealed in Fig. 1. Mandya (49.33 %) had the highest proportion of farm households involved in both AA & NFA while the farm households with highest proportion of participation in NFA alone was in Chitradurga (69.33 %) followed by Hassan (54.66 %) and Kolar (40 %). Thus the factors influencing the emergence of AA & NFA in these districts may also vary.

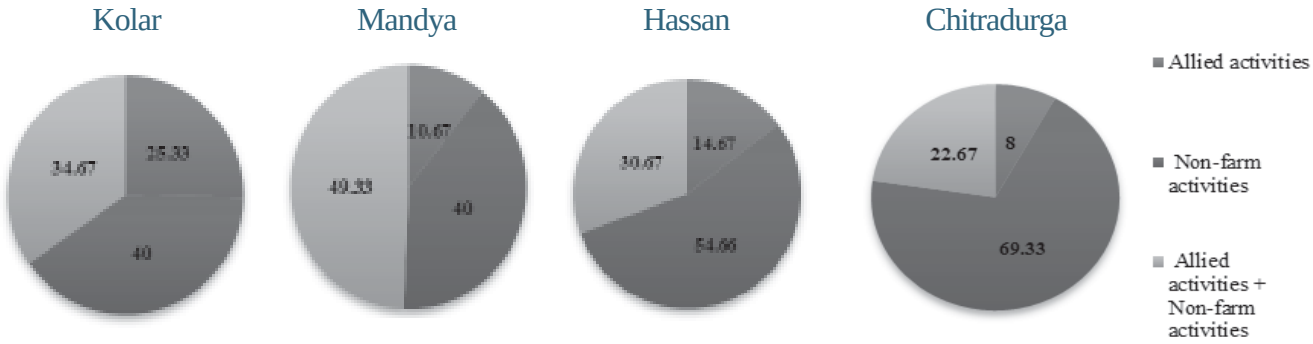
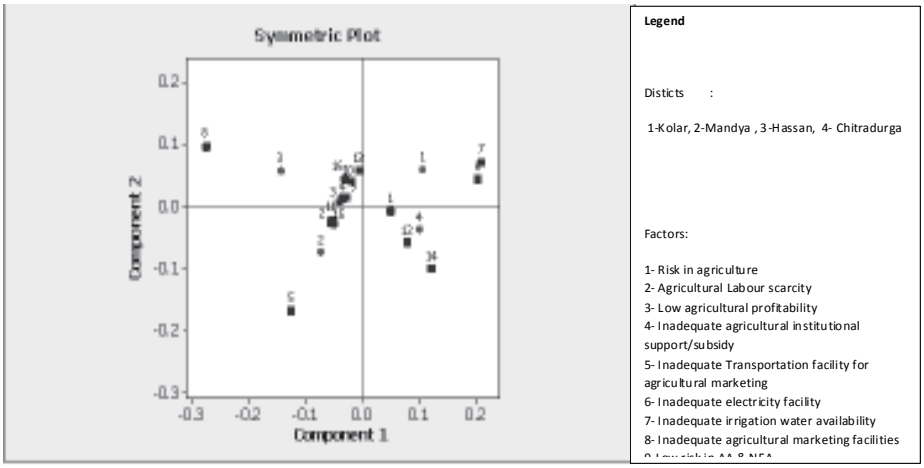


Fig. 1: District-wise percentage of households engaged in different activities

Note: Allied activities: dairy, goat and sheep rearing, poultry, piggery unit and sericulture
Non-farm activities: Trade and commerce, service and repair, processing and manufacturing and salaried and wage employment.

The graphical representation of the variability between the districts corresponding to different factors is displayed in Fig. 2. The inertia value gives an account of the percentage variation explained sby the different components (similar to the R^2 value in regression analysis). The number of components to be extracted for explaining the condition is decided based on the cumulative inertia value. In the present study, the cumulative inertia explained by the first two components is 89 per cent. The component 1 axis relates to availability of agricultural resource endowments while the component 2 axis displays the institutional and infrastructural related factors of the district like transportation facility for agricultural marketing, labour productivity in AA & NFA, food security through PDS and proximity to towns and urban hubs. Kolar displayed emergence of AA & NFA as agricultural resource constraint driven with inadequate irrigation water availability and inadequate electricity facility being the prime factors. In Mandya, other than agricultural labour scarcity, the AA & NFA pull factors predominated in the emergence of AA & NFA. More comprehensively it can be summarized that the emergence of AA and



Factors

Fig. 2. Classification or clustering of different districts based on the reasons identified for the emergence of allied and non farm activities

Note:
Analysis of Contingency Table

Axis	Inertia	Proportion	Cumulative	Histogram
1	0.0117	0.6908	0.6908	**********
2	0.0034	0.2010	0.8919	********
3	0.0018	0.1081	1.0000	****
Total	0.0170			

High AA & NFA profitability, low risk in AA & NFA, high AA & NFA labour productivity, adequate food security through PDS, proximity to towns and urban hubs were the reasons that contributed in Hassan. Chitradurga displayed risk in agriculture, AA & NFA promoting institutional support and younger labour force as the major factors contributing to emergence of AA & NFA activities.

The factors, low agricultural profitability and inadequate agricultural institutional support, were lying close to the centre, indicating not much contribution to the factor loading (Table I).

Thus it can be said that in Kolar and Chitradurga, which represent dry zone regions of Karnataka, resource crunch in the availability of irrigation water and electricity, thereby a higher risk in agriculture emerged as the main factors and can be categorized as agriculture constraint driven factors. In Mandya and Hassan, which represent relatively water abundant zones, agricultural development and allied and non-farm pull factors were the major reasons contributing to emergence of allied and non-farm activities. The results are in accordance with the studies of Rao and Chandrashekar (2012) and Udmale *et al* (2014). Kolar and Chitradurga have shown strong tendency towards AA & NFA due to constraints in agricultural development.

Further to analyse whether the investment made on AA & NFA is from surplus income generated from agriculture sector, the investment made across the four regions were tested using Chi-square test.

It was observed that investment in AA & NFA in Mandya and Hassan districts were more as they are bestowed with abundant water supply compared to Kolar and Chitradurga. The Chi-square test was used to analyse the hypothesis that investment made in AA & NFA are same irrespective of zonal water resource endowment. The results showed that there exists significant difference in the level of investment made across the districts (Table II and Table III).

Mandya and Hassan districts showed a higher level of investment in both AA & NFA indicating the agricultural income surplus contributed to higher investment supporting the findings in Table I. While in Kolar and Chitradurga the investment in AA & NFA was attributed to agricultural resource constraint as observed earlier.

The districts of Mandya and Hassan have a strong multiplier effect on the emergence of AA & NFA.

TABLE I

District-wise clustering of factors

District	Component1 (Resource Endowments)	Component 2 (Infrastructural and Institutional factors)
Kolar	Irrigation water and electricity availability	
Mandya	Agricultural labour scarcity, high AA & NFA profitability and better education level	
Hassan	High AA & NFA profitability	
Chitradurga	Risk in agriculture	Proximity to towns and urban hubs, AA & NFA Profitability, Adequate food security through PDS Age of labour force, AA & NFA promoting institutional support

TABLE II

District- wise investment made on allied activities

Investment (Rs.)	Kolar		Mandya		Hassan		Chitradurga	
	Number of house holds	Per cent	Number of house holds	Per cent	Number of house holds	Per cent	Number of house holds	Per cent
<25000		4	7.14	3	4.48	0	0.00	57.25
25000-50000	8	14.29	16	23.88	5	7.81	12	17.39
50000-100000	10	17.86	13	19.40	7	10.94	18	26.09
100000-200000	9	16.07	11	16.42	13	20.31	10	14.49
200000-500000	5	8.93	9	13.43	22	34.38	15	21.74
500000-1000000	16	28.57	9	13.43	14	21.88	7	10.14
>1000000	4	7.14	6	8.96	3	4.69	2	2.90
	56		67		64		69	
Mean Investment (Rs.)	97328		230449		126550		34807	

Chi square value = 0.034805; significant at 5%

TABLE III

District- wise investment made on non-farm activities

Investment (Rs.)	Kolar		Mandya		Hassan		Chitradurga	
	Number of house holds	Per cent	Number of house holds	Per cent	Number of house holds	Per cent	Number of house holds	Per cent
<25000	6	13.33	16	35.56	2	5.88	10	43.48
25000-50000	9	20.00	11	24.44	9	26.47	7	30.43
50000-100000	15	33.33	6	13.33	12	35.29	5	21.74
100000-200000	10	22.22	4	8.89	7	20.59	1	4.35
200000-500000	3	6.67	5	11.11	3	8.82	0	0.00
500000-1000000	2	4.44	2	4.44	1	2.94	0	0.00
>1000000	0	0.00	1	2.22	0	0.00	0	0.00
	45	100	45	100	34	100	23	100
Mean Investment (Rs)	389278		420027		432338		257636	

Chi square value = 0.006636; significant at 1%

This needs to be further strengthened by encouraging value addition in agriculture and promotion of farm machinery custom hiring activities which could further expand the AA & NFA. However, in Kolar and Chitradurga, emergence of AA & NFA is due to resource constraint in Agriculture. Therefore, to promote AA & NFA, assistance in the form of capital and incentives has to be provided, as it is not possible to address the resource constraint in agriculture within a short-term to sustain the rural livelihoods.

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