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Sway of Selected Factors on Cropping Intensity of Farmers of Progressive and Less Progressive Districts

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INTRODUCTION

A higher level of cropping intensity probably enables an individual to adopt more improved practices in his farming and to increase the production. It also increaes the efficiency in person as well as in farming. Thus, it is said that high cropping intensity is an index of efficiency in farming and according to Shah *et al.* (1974), one of the dimensions of entrepreneurial effectiveness is the efficiency index, classified under operations management. It is in fact a general sense of efficiency in a person and it influences his general orientation towards becoming effective in a goal oriented situation. Cropping intensity is therefore, indeed an essential quality of an entrepreneur who has confidence and a sense of efficiency to take to a venture and go through it. It appears that if a farmer has acquired this quality, chances are very high that he will make an effort to adopt more improved practices to diversify his agriculture in a way that promises better economic return.

Considering the above facts, it was worthwhile to delineate the relationship between cropping intensity and socio-personal and economic characteris- tics of farmers of progressive and less progressive districts.

METHODOLOGY

The study was conducted in Marathwada region of Maharashtra state, which was purposively selected because the researcher had an access to farmers in this region. Two districts namely, Aurangabad and Jalna were selected by applying scale developed for measuring the progressiveness of the district.

After identification of district for their progressiveness, one taluka from progressive and one taluka from less progressive districts were selected on the basis of having maximum area under jowar crop in kharif season. Aurangabad and Jalna talukas were selected for the present study. From the talukas, five villages from each taluka viz., Harsul, Sawangi, Phulambri, Choka and Chitegaon from Aurangabad taluka and Borkhedi, Jamwadi, Nava, Vilhadi and Dabhadi villages from Jalna taluka were purposively selected. Based on the proportionate random sampling technique, 20.00 per cent jowar cultivators from each of the village were selected randomly for the study, thus, sample comprised of 220 respondents. The heads of selected farm families were personally interviewed with the help of specially designed interview schedule. The statistical tests like correlation coefficient, multiple regression and path analysis were used to analyse the data.

RESULTS AND DISCUSSION

Information pertaining to the relationship between cropping intensity and socio-personal and economic characteristics of farmers has been presented in Table 1.

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Table 1. Relationship between independent variables and cropping intensity of farmers.

N = 220

Sr. No.	Independent variables	Simple correlation coefficient ('r' value)	
		Croppoing intensity of farmers of progressive district (N=110)	Cropping intensity of farmers of less progressive district (N=110)
X_1	Age	-0.066	-0.183
X_2	Education	-0.263**	0.379**
X_3	Land holding	-0.326**	-0.240*
X_4	Knowledge about technology of jowar	-0.144	0.179
X_5	Entrepreneurial behaviour	-0.089	0.219*

* Significant at 5 per cent level of probability
** Significant at 1 per cent level of probability

Age and cropping intensity

Age could not exhibit significant relationship with cropping intensity of farmers in progressive and less progressive districts. It may be due to the fact that majority of the respondents from both the categories are old. The farmers having old age are rather reluctant to take more risk, or to adopt new practices in farming. Therefore, study might have given non-significant relation with cropping intensity.

Education and cropping intensity

It is very interesting to note that farmers having comparatively more education were significantly and negatively differed in cropping intensity. This may be due to that diversified nature. An educated farmer does not only depend on cropping intensity but seek new avenues to make more profit. Secondly, progresive district provides better opportunities to engage the farmers in small scale agro-based industries than less progressive district.

Land holding and cropping intensity

Land holding had shown significant but negative relationship with cropping intensity of farmers in both the districts. This may be due to the fact that, he farmers of progressive and less progressive districts had shallow type of soils and these soils have low water holding capacity and again both the districts have lack of irrigation facilities. Thus, land holding had shown negative significant relationship with cropping intensity of both the districts.

Knowledge about technology of jowar and cropping intensity

Respondents having the knowledge regarding jowar technology could not establish any relationship with cropping intensity. It may be due to lack of knowledge regarding other crops which are taken in

rotation one after another throughout the year. Secondly, it is also controlled by the other factors such as type of soil, rainfall and climate and lack of irrigation facilities which might have resulted in taking mono crop system.

Entrepreneurial behaviour and cropping intensity

Entrepreneurial behaviour was found to be positively and significantly related to the cropping intensity of farmers of less progressive district, whereas, it could not establish any relationship with progressive district. In most of the previous research studies, entrepreneurial behaviour has given negative or positive relationship with cropping intensity. Basically cropping intensity is based upon the efforts made by the farmers to achieve maximum yield potential with available land holding by taking various crops on same piece of land. Whereas, entrepreneurial behaviour being multi-dimensional concept does not only depend on cropping intensity but has diversified interest in making profit from other sources than land. Therefore, present study might have given contradictory result. This finding was contradictory to the findings reported by Nandapurkar (1982).

Multiple regression analysis

Farmers of progressive district : When the multiple regression coefficient (R^2) was estimated on the data (Table 2), it was found that 19.46 per cent of the variation in the cropping intensity was explained by the set of five independent variables. The 'F' test of statistic showed that this was significant at 1 per cent level. It was revealed from the data that, out of five variables, three variables namely, age, education and land holding had negative significant effect on the cropping intensity.

Table 2. Multiple regression analysis of cropping intensity of farmers in progressive and less progressive districts.

Sr. No.	Independent variables	Cropping intensity of farmers of progressive district (N=110)			Cropping intensity of farmers of less progressive district (N=110)		
		Regression coefficient b(i)	S.E. b(i)	't' value	Regression coefficient b(i)	S.E. b(i)	't' value
X_1	Age	-0.009	0.003	-2.759**	-0.003	0.002	-1.327
X_2	Education	-0.077	0.031	-2.446*	0.096	0.027	3.516**
X_3	Land holding	-0.025	0.009	-2.864**	-0.042	0.011	-3.643**
X_4	Knowledge about technology of jowar	-0.000	0.009	- 0.072	-0.001	0.011	-0.102
X_5	Entrepreneurial behaviour	0.004	0.002	1.420	0.003	0.004	0.739

R-square = 0.1942 'F' value = 5.025** R-square = 0.2619 'F' value = 7.379**

* Significant at 5 per cent level of probability

** Significant at 1 per cent level of probability

Farmers of less progressive district: In case of farmers of less progressive district, the multiple regression analysis showed (Table 2) that only 26.19 per cent variation was explained by the five variables. 'F' value was found significant at 1 per cent level. The cropping intensity was affected significantly by only two variables namely, education and land holding. This may be due to the fact that, cropping intensity does not only depend on education and land holding but it also depends on other factors. Therefore, study might have given such type of result.

Path analysis

The results of path analysis are presented in Tabel 3.

Farmers of progressive district

Direct effect

The Table 3 makes it clear that, the highest negative influence on cropping intensity was exerted by education (-0.352) followed by land holding (-0.309) and age (-0.278). While entrepreneurial behaviour (0.213) exerted the positive direct effect on it. Remaining variable namely, knowledge about technology of jowar (- 0.011) had trivial negative effect on cropping intensity.

Total indirect effect

It is interesting to note that age exerted negative highest total indirect effect (-0.212) on cropping intensity. The knowledge about technology of jowar (0.132) had positive effect on cropping intensity. Next negative total indirect effect was exerted by entrepreneurial behaviour (-0.124). The impact of other variables like education and land holding was comparatively negligible.

Substantial indirect effect

The substantial indirect effect of independent variables is also presented in Table 3. It is evident from the table that the first and second largest negative indirect effect was exercised by education and land holding in order of sequence, while entrepreneurial behaviour and age exerted the positive indirect effect. The impact of knowledge about technology of jowar was comparatively negligible. It was also interesting to note that majority of the substantial indirect effects were routed through education and knowledge about technology of jowar.

Farmers of less progressive district

Direct effect

Education exerted the highest direct positive effect on cropping intensity, the path coefficient being 0.380. Land holding was the next important variable having direct negative impact (-0.317). The other variables having direct effect on cropping intensity were in the following sequence : age (-0.119), entrepreneurial behaviour (0.101) and knowledge about technology of jowar (-0.015).

Total indirect effect

Knowledge about technology of jowar had the highest positive total indirect effefct (0.164) on cropping intensity followed by entrepreneurial behaviour (0.117). The variable, land holding exerted negative effect (-0.077). The impact of other variables like age and education was comparatively negligible.

Substantial indirect effect

The first and second substantial indirect effect of all the variables except education (0.216) were too meagre to draw any inference of their impact on cropping intensity. Majority of the substantial indirect effects were channelised through education and knowledge about technology of jowar.

Table 3. Path coefficients showing the effects of independent variables on cropping intensity of farmers in progressive and less progressive districts.

N =220

Sr. No.	Independent variables	Cropping intensity of farmers of progressive district (N=110)				Cropping intensity of farmers of less progressive district (N=110)			
		Direct effect	Total indirect effect	Substantial indirect effect		Direct effect	Total indirect effect	Subsstantial indirect effect	
				Ist	2nd			Ist	2nd
X_1	Age	-0.278	-0.212	0.135 (X_2)	0.091 (X_4)	-0.119	0.063	-0.024 (X_4)	0.015 (X_2)
X_2	Education	-0.352	-0.089	-0.250 (X_4)	- 0.225 (X_5)	0.380	-0.001	0.216 (X_4)	0.198 (X_5)
X_3	Land holding	-0.309	0.016	-0.174 (X_2)	- 0.145 (X_4)	-0.317	-0.077	-0.078 (X_4)	- 0.061 (X_2)
X_4	Knowledge about technology of jowar	-0.011	0.132	- 0.009 (X_5)	-0.008 (X_2)	-0.015	0.163	- 0.01 (X_5)	-0.009 (X_2)
X_5	Entrepreneurial behaviour	0.213	-0.124	0.171 (X_4)	0.137 (X_2)	0.101	0.117	0.080 (X_4)	0.053 (X_2)

(Figures in parentheses indicate number of independent variables through which it effect).

CONCLUSION

The study indicated that land holding was found to be negatively and significantly related to cropping intensity of farmers of progressive and less progressive districts. It is therefore, suggested that the cropping intensity of farmers of less progressive district can be increased by using watershed development technologies and specially of water harvesting.

REFERENCES

Nandapurkar, G.G. 1982. Small farmers : A study on their entrepreneurial behaviour. New Delhi: Metropolitan Book Co. Pvt. Ltd.

Shaha, B.G., Gaikwad, U.R., Rao, T.V. and Pareek, U. 1974. An interview schedule to measure entrepreneurial behaviour. Ahmedabad : I.I.M.

A Committee is usually made up of five persons - one does the work, three give him moral support and the fifth calls the story in the News paper.

— Max Well Droke