



Factors affecting technological gap of cotton growers in recommended cotton production technology

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ABSTRACT

The study was conducted in the Vadodara district of Gujarat which is well known district for the cotton cultivation in the state. The study has focused on factors affecting technological gap of cotton growers in adoption of cotton production technology. A sample of 120 farmers of 12 villages was included by random sampling and their responses were analyzed with relevant tools. Findings of the study revealed that independent variables viz., education, annual income, scientific orientation, risk preference, economic motivation and knowledge had negative and significant correlation with overall technological gap of cotton growers.

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INTRODUCTION

Cotton is one of the most important cash crops grown by the farmers of our country. Gujarat is one of the major cotton producing states of the country. Cotton is cultivated as a major commercial crop, in almost all the districts of Gujarat state. Amongst this, Vadodara, Surendranagar, Ahmadabad, Bhavnagar, Bharuch, Kheda, Surat, Rajkot, Junagadh and Kutch districts are the major cotton producing districts (Anonymous, 2008).

Main cotton research station Surat has recommended various recommended cotton production technologies and which are being communicated to the cotton growers through various extension agencies like transfer of technology centres of SAUs, State Department of Agriculture and non-government of organizations.

The adoption or acceptance of recommended agricultural technology is a unit that acts but a complex process is involving in the sequence and thought of action. The action of individual farmers is governed by personal, social, economic, psychological and cultural factors involved in situation. Some farmers adopt new agricultural technology more quickly

than others because of the difference in personal characteristics. Thus, in nutshell it may be stated that the adoption of recommended technology differs when there are difference in personal, socio-economic and psychological characteristics of respondents. Hence, considering the importance of these characteristics and review of past research studies, an attempt has been made in this investigation to ascertain the relationship if any, between personal, socio-economic and psychological characteristics of the cotton growers and their technological gap in adoption of cotton production technology.

METHODOLOGY

Vadodara district was purposively selected for the study because it has maximum area under cotton cultivation. Dabhoi and Karjan Talukas were selected purposively for study because it is productivity potential region of cotton crop and have maximum area under cotton cultivation due to favourable soil and climate condition. Six villages from each Taluka having the maximum area under cotton cultivation were selected randomly. A proportionate random sampling technique was followed for selection of respondents. Thus,

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total 120 cotton growing farmers were selected as respondents from twelve villages. The relationship between characteristics of the cotton growers and their technological gap in adoption of cotton cultivation was determined and tested with help of Karl Pearson's (1978) coefficient correlation test. In the light of the objectives, pre-tested well-structured interview schedule was prepared in Gujarati version. Required information was collected through personal interview technique.

OBSERVATION AND ANALYSIS

Considering the importance of characteristics of the respondents and review of past research studies, the relationship between personal, social, economic, communicational and psychological characteristics of the cotton growers and technological gap was calculated and presented in Table 1.

Age and technological gap:

It is clear from Table 1 that there was positive and non-significant relationship between age and technological gap ($r = 0.016147$). Thus, it can be concluded that age did not play any role in determining technological gap. The probable reason might be that majority of the respondents belonged to middle age group and having more experience in cotton cultivation.

Table 1: Relationship between the characteristics of cotton growers and their overall technological gap in recommended cotton production technology n= 120

Sr. No.	Independent variables	Coefficient of correlation ('r' value)
1.	Age	0.016147 ^{NS}
2.	Education	(-) 0.1901*
3.	Size of family	(-) 0.03907 ^{NS}
4.	Social participation	(-) 0.07442 ^{NS}
5.	Land holding	(-) 0.05297 ^{NS}
6.	Irrigation facility	(-) .00702 ^{NS}
7.	Occupation	(-) 0.09389 ^{NS}
8.	Annual income	(-) 0.1982*
9.	Scientific orientation	(-)0.2016*
10.	Risk preference	(-) 0.1954*
11.	Economic motivation	(-)0.2104*
12.	Knowledge	(-)0.2843**

*and ** indicate significance of values at $p=0.05$ and 0.01 , Respectively. N.S. = Non-significant

Education and technological gap:

The data presented in Table 1 made it clear that education had the negative and significant correlation ($r=-0.1901$) with overall technological gap in cotton production technology. From the above discussion, it is implied that as the education increases the technological gap decreases but not up to the level of significance. It can be concluded that technological gap decreased with the increasing of educational status of the farmers however non-significant relationship might be due to the high cost of farm inputs and lack of awareness about different technologies of cotton cultivation.

Size of family and technological gap:

It is clear from Table 1 that there was negative and non-significant relationship between size of family and overall technological gap ($r = -0.03907$). It was observed that the size of family did not affect on an overall technological gap. It is concluded from the above fact that big size of family helps in decision making for adoption of new farm technology.

Social participation and technological gap:

There was a negative and non-significant relationship between social participation and overall technological gap ($r = -0.07442$). It shows that social participation was independent of overall technological gap (Table 1).

Size of land holding and technological gap:

It is evident from Table 1 that size of land holding of farmers had negative and non-significant relationship with overall technological gap ($r = -0.05297$). From the aforesaid discussion, it can be concluded that the size of land holding had negative and non-significant correlation with technological gap in cotton production technology. It implies that the size of land holding did not affect on overall technological gap.

Irrigation facility and technological gap:

Data of Table 1 illustrate that irrigation facility of the cotton growers was found negative and non-significantly related with technological gap ($r = -0.00702$) in cotton cultivation. It shows that technological gap was independent of irrigation facility.

Occupation and technological gap:

It is clear from Table 1 that occupation of the cotton growers was found negative and non-significantly related with technological gap ($r = -0.09389$) in cotton cultivation. It implies that technological gap was independent of occupation.

Annual income and technological gap:

The data presented in Table 1 illustrate that annual income of the cotton growers was found negative and significantly related with technological gap ($r = -0.1982$) in cotton cultivation. It indicates that as the annual income increased, the overall technological gap was decreased. It can be concluded that higher income helps the farmers an optimum and timely procurement of inputs for the adoption of technology, which leads to reduce the technological gap.

Scientific orientation and technological gap:

It is also clear from Table 1 that scientific orientation of the cotton growers was found negative and significantly related with technological gap ($r = -0.2016$) in cotton cultivation. It indicates that as the scientific orientation increased, overall technological gap decreased. Scientifically oriented farmer have favourable attitude towards farm technology and more inclination to use scientific method in farming which lead them for higher adoption of cotton production technology.

Risk preference and technological gap:

Data in Table 1 illustrate that risk preference of the cotton growers was found negative and significantly related with technological gap ($r = -0.0.1954$) in cotton cultivation. It indicates that as risk preference of cotton growers was increased, overall technological gap was decreased. The possible reason might be that economic factors like annual income and sound economic position of the farmers which ensure them to bear the risk for adoption of cotton production technology.

Economic motivation and technological gap:

The data presented in Table1 clearly indicate that economic motivation of the cotton growers was found negative and significantly related with technological gap ($r = -0.2104$) in cotton cultivation. It shows that as economic motivation of cotton growers increased, overall technological gap was decreased. The probable reason for the above fact might be that better education and active participation in social and extension activities and higher annual income in this entire factors act to gather the information and motivated them to improve economic activities and economically motivated farmers are oriented

towards maximization of profit from farming enterprise through adoption of cotton production technology.

Knowledge and technological gap:

It is clear from Table 1 that knowledge of the cotton growers was found negative and highly-significantly related with technological gap ($r = -0.2843$) in cotton cultivation. It indicates that as the knowledge of cotton grower regarding cotton cultivation technology increased, overall technological gap decreased.

Conclusion:

It is concluded from the above discussion that independent variables like education, annual income scientific orientation, risk preference, economic motivation and knowledge had negative and significant correlation with overall technological gap of cotton growers, Rest traits viz., age, size of family, social participation, land holding, irrigation facility and occupation had no any influence on technological gap of cotton growers. More efforts should be made by the extension agencies to establish in-depth extension contact with the farmers and their background factors which influence the technological gap of the cotton growers in terms of change in behavioural components must be reckon within training programme. Training institutes in the district should concentrate their efforts in training particularly in the area of pest and disease management and fertilizer management in cotton cultivation for reducing technological gap.

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