## RESEARCH NOTE

# A Study on Technological Gap in Maize Production Among Tribal Farmers

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## INTRODUCTION

Tribal agriculture being tradition bound has undergone very few changes during the plan periods. The isolation of tribla area from the outside world has prevented the tribals from being exposed to new ideas and they are therefore, extremely tradition bound.

As a result, there exists a wide gap between what is achieved at the research station and what a tribal farmer gets at his field. Therefore, present study was planned to measure the technological gap prevailing among tribal farming systems. The specific objectives of study were : (i) to identify and study the technological gaps in maize production technology among the tirbal farmers, and (ii) to ascertain the relationship between the technological gap and selected characteristics of tribal farmers.

## METHODOLOGY

Khedbrahma taluka of Sabarkantha district was purposively selected for this study as 60 per cent population is of tribal community. Out of 137 villages of the taluka, ten villages were selected randomly. From each selected village, 10 per cent of maize growers were randomly selected, making a sample of 150 res- pondents.

The data were collected by personal interview method with the help of structured schedule.

## RESULTS AND DISCUSSION

### Technological gap

The average technological gaps in different components presented in Table 1 varied from component to component. The extent of gap in all the components was ranged between 7.33 per cent to 100 per cent. The minimum average gap was observed in seed rate (7.33 per cent), whereas maximum gap was observed in weed control by weedicide (cent per cent), followed by seed treatment (96.66 per cent), recommended variety (85.33 per cent), plant protection measures (82 per cent), chemical fertilizers (81.66 per cent), farm yard manure (66.66 per cent), irrigation (53.66 per cent), hand weeding (27.66 per cent), sowing distance (15.33 per cent), harvesting (11.33 per cent) and sowing time (9.33 per cent).

The overall gap against recommended technology was found 53.07 per cent.

### Relationship of Dependent Variable with Independent Variables

Relationship between technological gap and selected socio-personal characteristics was the another dimension of the

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**Table 1.    Average Technological Gaps in Different Components of Maize Technology.**

(n=150)

| Sr. No. | Different components of maize technology | Averagd technological gap (per cent) | Rank |
|---|---|---|---|
| 1. | Recommended variety | 85.33 | III |
| 2. | Seed rate | 7.33 | XII |
| 3. | Seed treatment | 96.66 | ·II |
| 4. | Sowing time | 9.33 | XI |
| 5. | Sowing distance | 15.33 | IX |
| 6. | Irrigation | 53.66 | VII |
| 7. | Farm yard manure | 66.66 | VI |
| 8. | Chemical fertilizers | 81.66 | V |
| 9. | Weed control : | | |
| | (i) Hand weeding | 27.66 | VIII |
| | (ii) Weed control by weedicide | 100.00 | I |
| 10. | Plant protection measures | 82.00 | IV |
| 11. | Harvesting | 11.33 | X |
| | Overall | 53.07 | |

**Table 2.    Relationship of Independent Variables with Technological Gap.**

study. The charateristics selected were age, education, annual income of the family, cosmopoliteness - localiteness, agricultural beliefs, perception about technology, perception about institutional credit, agricultural development aspiration, knowledge about technology, farm size, irrigation potential, degree of commercialization, indebtedness, use of mass media, extension participation and training received. These charateristics were measured either with the help of the devices available or by developing structured schedule. Data regarding relationship are depicted in Table 2.

The result of correlation analysis showed that independent variables namely, education, annual income of the family, cosmopoliteness-localiteness, perception about technolgoy, agricultural development aspiration, knowledge about technology, irrigation potential use of mass media, extension participation and training received were negatively and significantly related with technological gap at 0.01 level of significance.

On the other hand, the variables viz., age, agricultural beliefs, perception about institutional credit and indebtedness were found to be positively and significantly related with technological gap. The variables that failed to establish any significant relationship with technological gap were, farmsize and degree of commercialization.

(n=150)

| Sr.No. | Independent variables | Correlation co-efficient ('t' value) |
|--------|----------------------|--------------------------------------|
| I. | **Personal and socio-psychological** | |
| 1. | Age | 0.567** |
| 2. | Education | -0.810** |
| 3. | Annual income of the family | -0.370** |
| 4. | Cosmopoliteness-localiteness | -0.704** |
| 5. | Agricultural beliefs | 0.677** |
| 6. | Perception about technology | -0.696** |
| 7. | Perception about institutional credit | 0.303** |
| 8. | Agricultural development aspiration | -0.410** |
| 9. | Knowledge about technology | -0.679** |
| II | **Situational** | |
| 10. | Farm sizxe | -0.070 |
| 11. | Irrigation potential | -0.239** |
| 12. | Degree of commercialization | 0.010 |
| 13. | Indebtedness | 0.246** |
| III | **Communications** | |
| 14. | Use of mass media | -0.810** |
| 15. | Extension participation | -0.806** |
| 16. | Training received | -0.558** |

**Significant at 0.01 level probability.

### Table 3. Multiple Regression Analysis.

### Multiple regression analysis

In multiple regression analysis, 16 independent variables (characteristics) were fitted to explain the variation in technological gap existing in tribal farming communities. The data are depicted in Table 3.

It can be seen from Table 3 that 16 variables had explained to the extent of 81.90 per cent variation in the extent of technological gap among tribal farmers. the multiple correlation was 0.905 indicating that correlation between actual technological gap and gap calculated on the basis of independent variables was significant.

In order to increase the practical relevance of the results and considering the best predictive ability of the variables as well as to keep their number to a mini-

(n=150)

| Variables | Regression co-efficient | 't' value |
|---|---|---|
| **I. Personal and socio-psychological** | | |
| 1. Age | 0.621 | 7.141** |
| 2. Education | -2.863 | 2.392** |
| 3. Annual income | 1.822 | 0.038 |
| 4. Cosmopoliteness-localiteness | 0.536 | 1.180 |
| 5. Agricultural beliefs | 0.112 | 0.189 |
| 6. Perception about technology | 0.203 | 0.142 |
| 7. Perception about institutional credit | 0.560 | 0.697 |
| 8. Agricultural development aspiration | 0.614 | 1.426 |
| 9. Knowledge about technology | -0.241 | 1.944 |
| **II Situational** | | |
| 10. Farm size | -2.567 | 2.075 |
| 11. Irrigation potential | -0.094 | 4.348** |
| 12. Degree of commercialization | -0.053 | 1.121 |
| 13. Indebtedness | -9.082 | 0.545 |
| **III Communication** | | |
| 14. Use of mass media | -0.697 | 1.216 |
| 15. Extension participation | -0.141 | 2.153* |
| 16. Training received | -2.576 | 1.461 |

$R^2 = 0.8190$　'F' value = 37.607,　$R = 0.9050$;
* = Significant at 0.05 level of probability;
** = Significant at 0.01 level of probability.

Table 4. Significantly Contributing Variables to technogical Gap in Tribal Farmers.

(n=150)

| Sr. No. | Variables | Tribal Farmers | |
|---|---|---|---|
| | | Regression co-efficient | 't' value |
| 1. | Age | 0.58 | 7.82 |
| 2. | Education | -3.65 | 5.17 |
| 3. | Irrigation potential | -0.07 | 3.76 |
| 4. | Extension participation | -0.22 | 4.20 |

$R^2 = 0.7970$　$R = 0.8927$　'F' value = 142.32**

mum, the final prediction equation was fitted with those four variables at 't' values of which were significant atleast at 5 per cent level of probability. The results of which are depicted in Table 4.

The four variables mentioned in Table 4 explained as much as 79.70 per cent variation in the technological gap. Regression coefficients indicated that one unit change in these variables viz., age, education, irrigation potential and extension participation would effect 0.58 unit, -3.65 units, -0.07 units and -0.22 units change in the technological gap, respectively.

From the foregoing findings, it may further be concluded that variables like, age, education, irrigation potential and extension participation have assumed importance in explaining the variation in technological gap in order of merit among the tribals.

## CONCLUSIONS AND IMPLICATIONS

The present study clearly indicated that over all gaps against recommended technology was 53 per cent. The practices viz., weed control by weedicide, seed treatment, plant protection measures, use of chemical fertilizers, use of farm yard manure etc. are still not being adopted by more than 67 per cent farmers. Hence, extension agencies should concentrate their efforts in communicating and motivating the farmers to adopt the above practices.

The independent variables namely, education, income, cosmopoliteness-localiteness, agricultural development aspiration, knowledge about technology, use of mass media, extension participation and training received were found negatively and significantly related with technological gap. Hence, educating the farmers, changing their attitude toward technology, securing their participation in various extension activities etc. are the prime requirement. Training institution should also make their present training more practical oriented.