

## **Agricultural Development and Literacy Level in Haryana**

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### **I. Introduction**

Haryana came into being on 1st November 1966, after the reorganization of the Punjab state on linguistic basis. As a separate state the Hindi speaking areas of the parent state were separated from the Punjabi speaking areas and were reconstituted as a new state of Haryana. The region comprising the present State of Haryana had lagged behind in terms of development when it was part of joint Punjab State (Nayar, 1966; Rai, 1987; Siwach, 1976). Haryana is a small state and has an area of just 0.44 lakh sq. kms. According to 2011 census; it has total population of about 2.53 crore. The State has literacy rate of 76.6 percent. It has sex ratio of 877 females per 1000 males. Haryana is mainly a rural state with 71 % of its population living in the villages. Haryana ranks 20th in terms of area and 16th in terms of population when compared to other Indian states in the country. Haryana has four Administrative Divisions, comprising of 21 districts. The economic growth of Haryana has been exemplary since its creation as a separate State. The State economy grew at a growth rate higher than the Indian economy during most of the period. Though, Haryana is geographically a small State, the contribution of the State in the National Gross Domestic Product at constant (2004-05) prices has been Estimated to be 3.5 percent as per the Quick Estimates of 2013-14. The Department of Economic & Statistical Analysis, Haryana (DESA) prepares the estimates of Gross State Domestic Product (GSDP) of the State. The GSDP of the State at current and constant (2004-05) prices is given ; As per the Quick Estimates, the GSDP of the State at current prices has been estimated as ` 3,88,916.63crore for 2013-14 as against the revised provisional estimate of ` 3,41,351.16 crore of 2012-13. The GSDP at constant (2004-05) prices for 2013-14 has been estimated as 1,99,656.83crore as against ` 1,86,642.83 crore for 2012-13.

### **II. Literature Review**

Studies for estimating the level of development at district level had so far been made for the states of Orissa (1992, 1993), Andhra Pradesh (1994), Kerala (1994, 2005), Uttar Pradesh (1995, 2001), Maharashtra (1996), Karnataka (1997, 2003), Tamil Nadu (2000), States of southern region (1999), Madhya Pradesh (2003), Assam (2004). It was found that the entire part of the low developed districts is not low development but some parts are high or middle level development. Dubey (2009) examined the intra-state disparities in five states in India; Gujarat, Haryana, Kerala, Orissa and Punjab have chosen three indicators, consumption, inequality and the incidence of poverty, to examine this issue. These indicators taken together reflect overall well-being of the population as they are the outcome of the interplay of a large set of economic and policy variables. The states chosen for the analysis of intra-state disparities had a relatively homogeneous initial level of poverty in 1973-74, the coefficient of variation (counting the headcount ratio (HCR) being about 20% in 15 major states). Thaker (2009) identified the levels of socio-economic development of the districts of Gujarat. The development was measured with the help of 57 indicators in the fields of agriculture, industry, human resources and infrastructure. The data considered for the study pertain to the two period's viz. the pre-reform period i.e. 1991 and post-reform period i.e. 2001, using factor analysis technique. This year, the study is conducted for evaluating the status of development at district level separately for agricultural sector, infrastructural sector and overall socio economic sector in the state of Haryana by analyzing the data on economic variables for the year 2011-12. It would be of interest to estimate the status of development at district level, since there has been growing consensus about the need of district level planning in the country.

### **III. Objectives**

Following are the main objective of the study

- To make a comparative analysis of district of Haryana on the basis of agricultural development and literacy level.
- To measure the agricultural development and literacy status by composite Index of the different district of Haryana.
- To identify the relationship between agricultural and literacy.

#### IV. Developmental Indicators:

Development is a multi -dimensional process and its impact cannot be fully captured by any single indicator. A number of indicators when analyzed individually do not provide an integrated picture of reality. Hence, there is a need for building up of a composite index of development based on optimum combination of various development indicators. Each district faces situational factors of development unique to it as well as common and financial factors. Indicator is common to all the districts have been included in the analysis for evaluating the level of development. Composite indices of development have been obtained for different districts by using the data on the following development indicators:-

- (a) **Literacy level**
- (b) **Agriculture sector development indicators :-**
  - (i) No. tub bells and pumping set
  - (ii) Percentage net area sown
  - (iii) Percentage of forest area
  - (iv) Fertilizer consumption
  - (v) (%) of gross area irrigated
  - (vi) Consumption of pesticides
  - (vii) No. of tractors
  - (viii) (%) in state production of rice
  - (ix) (%) in state production of wheat
  - (x) (%) of net area irrigated
  - (xi) Production of fruits and vegetables

A total of twelve development indicators have been included in the analysis. These indicators may not form an all-inclusive list but these are the major interacting components of development. Out of these eleven indicators are directly related with the agriculture sector.

#### V. Research Methodology

Current study is based on the secondary data derived from the statistical abstract of Haryana, haryanastat.com, economic survey reports of the state and official websites of the states. The secondary data has been collected for a year 2013-14 .The composite index for agricultural performance of the different district of Haryana state has been calculated on the basis of Narian (1991) method which has been explained in detail.

Narain et al. (1991) have developed a statistical method for calculating the Composite index which can include any number of indicators. Let  $[X_{ij}]$  be the data matrix,  $i = 1, 2, \dots, n$  (Number of unit) and  $j = 1, 2, \dots, k$  (number of indicators).  $[X_{ij}]$  are transformed to  $[Z_{ij}]$  as follows:

$$[Z_{ij}] = (X_{ij} - X_j) / S_j$$

$X_j$ = mean of the jth indicator,  $S_j$  = standard deviation of the jth indicator and  $[Z_{ij}]$  is the matrix of standardized indicators. From  $[Z_{ij}]$ , identify the best value of each indicator, maximum value or minimum value depending upon the direction of the impact of indicator on the development.

$$P_{ij} = (Z_{ij} - Z_{oj})^2 \text{ and } (C_i) = \left[ \sum_{j=1}^k P_{ij} / (C.V.)_j \right]^{1/2}$$

Where  $P_{ij}$ = pattern of development,  $Z_{oj}$ =Best value for indicator, and  $(C.V.)_j$  is the coefficient of variation of the jth indicator in  $X_{ij}$ .

$$D_i \text{ (Composite Index)} = C_i / C$$

Where  $C = (\text{Mean Value of } C_i + 3 * (\text{Standard deviation of } C_i))$

#### VI. Results And Discussion

##### (i)The development level:

The composite indices of agricultural development have been worked out for different districts in respect of agricultural sector and literacy level. The districts have been ranked on the basis of composite indices. The values of composite indices along with the rank of districts are given in table 1. It may be seen from table 1 that in case of agricultural development, the district of Sirsa was ranked first and the district of Mewat was ranked last. The composite indices varied from 0.165 to 0.819. and in case of literacy, the district of Punchkula was ranked first and the district of Mewat was ranked last. The literacy level indices varied from .00 to 1.0.

**Table 1**

Sr. No.	Districts	Agriculture Sector		Literacy level	
		C.I	Rank	C.I	Rank
1	Ambala	.457	11	.01	2
2	Punchkula	.698	19	.00	1
3	Yamunanagar	.376	9	.15	9
4	Kurukshetra	.274	3	.21	11
5	Kaithal	.307	6	.47	18

6	Karnal	.237	2	.27	14
7	Panipat	.432	10	.22	12
8	Sonipat	.286	4	.10	8
9	Rohtak	.530	14	.06	6
10	Jhajjar	.541	15	.05	5
11	Faridabad	.622	17	.01	3
12	Palwal	.482	11	.47	17
13	Gurgaon	.652	18	.10	7
14	Mewat	.819	21	1.0	21
15	Rewari	.590	16	.03	4
16	Mahendergarh	.779	20	.16	10
17	Bhiwani	.522	13	.25	13
18	Jind	.341	7	.39	16
19	Hisar	.292	5	.34	15
20	Fatehbad	.368	8	.52	20
21	Sirsa	.165	1	.49	19

**(ii) Different Stage of Development:**

For the relative comparison of districts with respect to level of development, it appears quite appropriate to assume that the districts having composite indices less than or equal to (Mean-S.D) are high level of development. These districts may be classified in category 1 of developed districts. Districts having composite indices greater than (Mean+S.D) are low developed districts. These districts might be classified as low developed and put in category 3.in the state. And remaining districts are fall under category 2.that shows middle level of development in the state. On the basis of above classification, the districts are put in three stages of development as high, middle and low. Table 2 presents the name of districts along with the stage of development.

**Table-2:**

Stage of Development	District
Agricultural Development	
High	Sirsa,Karnal,Kurukshetra.
Middle	Kaithal,Ambala,Yamunanagar,Panipat,Sonipat,Rohtak,Jhajjar,Faridabad,Palwal,Gurgaon,Rewari,Bhiwani,Jind,Hisar,Hisar
Low	Mewat,Mahendergarh,Punchkula
Literacy Level	
High	Punchkula,Ambala,Faridabad.
Middle	Bhiwani,Mahendergarh,Rewari,Palwal,Yamunanagar,Gurgaon,Kurukshetra,Karnal,Panipat,Sonipat,Rohtak,Jhajjar,Jind,Hisar.
Low	Mewat,Sirsa, Fatehabad.,Kaithal

It may be seen that in case of agricultural development, three districts are found to be highly developed. Fifteen districts are middle level development and three are less development. With respect to literacy level three districts are found to be better literacy with comparison to others and four districts are observed low literacy and remaining are having middle level of literacy.

**(iii) Inter-relationship among different sector of the economy:-**For proper development, it is essential that all the sectors of the economy should flourish together. The association between the level of development of agricultural sector of economy and literacy level is worked out and presented in table 3.It may be seen from the a below table

**Table-3 correlation coefficient**

Factors	Agricultural development	Literacy Level
Agricultural Development	1	<b>-.420</b>
Literacy Level	<b>-.420</b>	1

It may be seen from the above table the agricultural development is not associated with literacy.**Literacy is negatively associated with agricultural.**

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