*International Journal of Social Science and Economic Research*

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

# SPATIAL PATTERNS OF ECONOMIC DEVELOPMENT OF SCHEDULED CASTE IN JAMMU PROVINCE (2011)

Gaggan Kumar[1], Gurleen Kour[2]

[1]Ph.D Research Scholar (Senior Research Fellow), Department of Geography, University of Jammu-180006, (J&K), India

[2]Post Graduate in Geography, Department of Geography, University of Jammu-180006, (J&K), India

## ABSTRACT

**Objectives**: The main objective is to assess the spatial patterns of economic development of the most marginalised community that is scheduled caste in Jammu province. This is a census based study based on census of 2011 where tehsil constitute a unit of study.

**Methods/Statistical Analysis**: To achieve the above objectives secondary data from Primary Census Abstract SC, Jammu and Kashmir and Agriculture Census Division, DAC, 2011 has been used. The software of ArcGIS 10.5 has been used to prepare choropleth maps to present the spatial pattern of workforce among scheduled caste. Five indicators have been selected for assessing the spatial patterns of levels of economic development like Main Work Participation Rate, Other Workers, Non-Agricultural Population, Net Cultivated Area and Agricultural Intensity. Standard Scores and Composite Standard Score have been obtained by normalising the values to gauge economic development.

**Findings:** High economic development is found in the tehsils of Jammu and samba districts including tehsil Banihal. These tehsils have high composite score of economic indicators due to high social development, urbanization, industrial development because of industrial complexes found in Samba and Jammu district, developed agriculture, better means of employment opportunities etc. Only five tehsils from the entire Jammu province have low economic development namely Bhaderwah, Rajouri, Kathua, Nowshehra and Udhampur. Geographically they are located within the periphery of tehsils of the first category.

**Application:** The tehsils with low economic development may be declared as backward regions for scheduled caste. But the role of the government does not finish just by declaring various

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

tehsils as backward, rather more effective, comprehensive and timely policies need to be framed. The state may make provision for sub-quota to these backward tehsils from the existing quota.

**Keywords: Economic Development, Spatial Pattern, Scheduled Caste**, Jammu Province.

## 1. INTRODUCTION

Since the study of economic development of a social group or of a region holds immense significance irrespective of its being agricultural, industrial or semi industrial. Therefore it is in the light of this significance that the spatial patterns of economic development of scheduled caste population of Jammu province have been examined in detail. Black in his book has properly conceptualized the term development as the attainment of a number ideals such as "a rise in productivity, social-economic equalization, modern knowledge, improved institutions and attitudes and a rationally co-ordinated system of policy measures that can remove the host of undesirable conditions in the social system that have perpetuated a state of underdevelopment[1]. It is now well known that India has transformed itself from a low-income developing economy to the middle-income developing economy but persistently excluded groups remain outside the trajectory of economic growth. As noticed by the Government of India in Economic Survey of 2012 that in making the development process inclusive, the challenge is to formulate policies and programmes to bridge regional socio-economic disparities in an effective and sustainable a manner as feasible among developed and under-developed regions. The identification of regional disparities at micro level and measuring regional growth patterns is an important factor affecting policy formulation for balanced economic growth[2]. In an economy the economic activities performed by an individual are meant for his/her existence and survival and vary in space. The economic structure of any society is always in a process of change owing to growth of science and technology, functional specialization and division of labour[3]. In present research paper the work participation rate indicates to a great extent the overall economic scenario of an area and it is defined as proportion of total workers to the total population. The working population and the work participation rate highlight the occupational distribution and prevailing disparities in it.

### 1.1 Objectives

[1] Black, C. E. (1966). *The dynamic of modernization: A study in comparative history*, New York: Harper & Row.

[2] Ohlan, R (2013). Pattern of Regional Disparities in Socio-economic Development in India: District Level Analysis. *Springer*, Vol. 114, No. 3 (December 2013), pp. 841-873.

[3] Sannashiddannanavar, S. S. (2001). *Patterns and Characteristics of Population in Haveri District: A Diagnostic Geographical Study*. An unpublished doctoral thesis, Karnatak University, Dharwad.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

- To present the descriptive analysis of 'main workers', 'and 'other workers' among scheduled caste population
- To highlight the agricultural profile in term of net cultivated area, non-agricultural population and agricultural intensity
- To assess the spatial patterns of economic development scheduled caste population

### 1.2 Methodology, Choice of Indicators & Index Construction

This is primarily a census based study covering the entire Jammu province of the state of Jammu and Kashmir conducted at tehsil level. To achieve the above objectives secondary data from Primary Census Abstract SC, Jammu and Kashmir and Agriculture Census Division, DAC, 2011 has been used.

*Software used for preparing choropleth maps:* The software used for data pre-processing and preparation, data analysis, editing and output generation was ArcGIS 10.5.

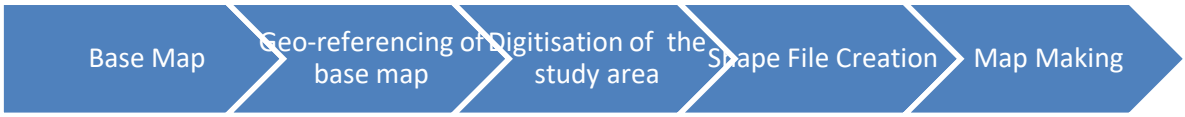



**Figure 1: Flow Chart, Showing Steps in Map Making Using ArcGIS 10.**

Choice of Indicators: Five indicators have been selected for assessing the spatial patterns of levels of economic development of scheduled caste population as:

- Main Work Participation Rate
- Other Workers
- Non-Agricultural Population
- Net Cultivated Area and
- Agricultural Intensity

**Index Construction: Standard Score:** Standard scores have been obtained by normalising the values with the help of following technique, explained as follows:

$$\mathbf{Z_{ij}} = \frac{\mathbf{X_{ij}} - \bar{\mathbf{X}}}{\boldsymbol{\sigma}}$$

Where:

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

$\mathbf{Z_{ij}}$= Standard Score of $i^{th}$ indicator in $j^{th}$ tehsil
$\mathbf{X_{ij}}$ = Original Value of $i^{th}$ indicator in $j^{th}$ tehsil
$\bar{\mathbf{X}}$ = Mean Value for all the Values of X
$\boldsymbol{\sigma}$ = Standard Deviation of X.

**Composite Standard Score (CSS) or Standard Index:** Further in order to gauge economic development CSS has been calculated. It is expressed as:

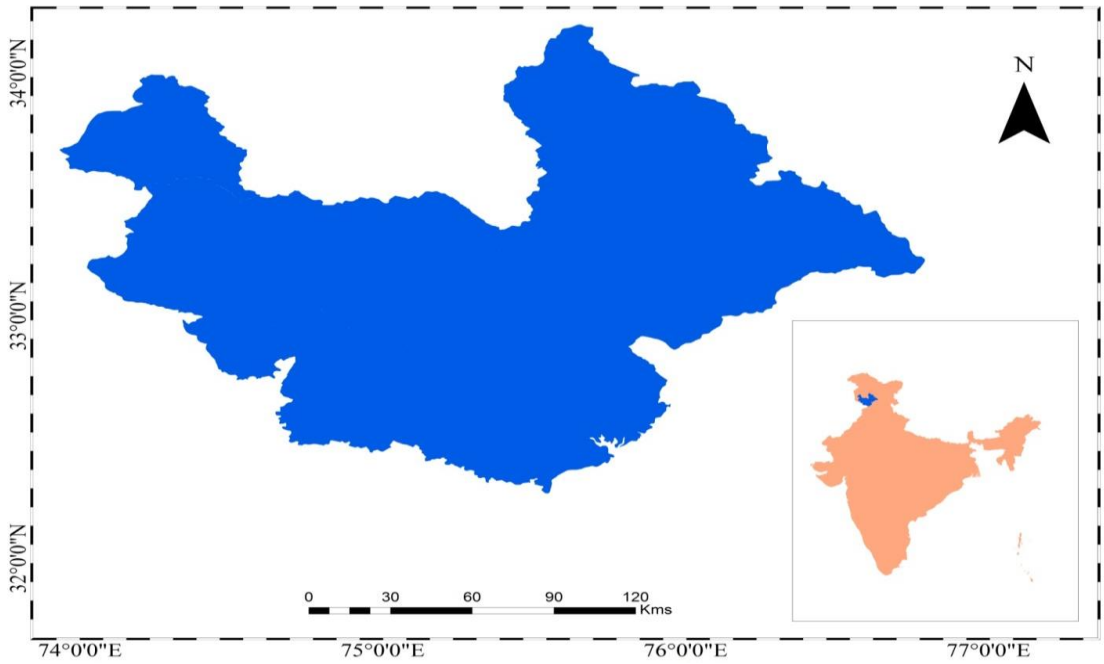
$$\mathbf{CSS} = \frac{\mathbf{\Sigma Z_{ij}}}{\boldsymbol{N}}$$

Where:

'$\mathbf{Z_{ij}}$'= standard score and **N** is the number of variable.

**Location of the Study Area**: The Jammu province is one of the three divisions of the state extending between 32˚ 20' N to 33˚10' N latitude and 74˚ 45' E to 75˚ 55' E longitude. Nestled against the backdrop of the Pir Panjal Mountains, the region of Jammu constitutes the southernmost unit of the state of Jammu and Kashmir, comprised of 37 tehsils and 10 districts.

**Map No. 1: Location of the Study Area (Jammu Province)**




**Source: Generated by the Author using ArcGIS 10.5**

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

## 2. MAIN WORK PARTICIPATION RATE AND OTHER WORKERS (TERTIARY SECTOR)

This is important measure to determine the economically active population and it is the actual work participation rate because it takes into account only those workers (main workers) who work for the major part of the year[4]. Main Work Participation Rates can be calculated as:

$$\textbf{MWPR} = \frac{\textbf{Main Workers}}{\textbf{Total population}} \times \textbf{100}$$

On the other hand all those who had worked in any field of economic activity other than cultivation, agricultural labourers or workers in the household industry are classified as other workers. Thus other workers are the workers who are engaged in tertiary sector of the economy[5].

**Table 1: Main Work Participation Rate and 'Other workers', 2011**

| Tehsils | MWPR | OW | Tehsils | MWPR | OW | Tehsils | MWPR | OW |
|---|---|---|---|---|---|---|---|---|
| Samba | 20.30 | 78.04 | Ramban | 16.02 | 44.66 | Thathri | 20.02 | 47.55 |
| R.S. Pura | 21.24 | 75.10 | Billawar | 18.39 | 37.62 | Bhaleesa | 17.48 | 57.46 |
| Jammu | 24.59 | 78.16 | Basholi | 15.84 | 57.72 | Surankote | 75.00 | 100.0 |
| Akhnoor | 18.07 | 54.58 | Kathua | 21.61 | 67.70 | Thanamandi | N.A | N.A |
| Bishnah | 21.96 | 64.07 | Hiranagar | 21.96 | 53.56 | Chhatroo | 6.96 | 68.42 |
| Ramnagar | 23.99 | 25.11 | Budhal | 18.82 | 47.34 | Majalta | 21.55 | 42.16 |
| Udhampur | 23.31 | 67.32 | Kalakote | 13.96 | 43.51 | Mandi | 100.00 | 96.49 |
| Reasi | 28.87 | 48.01 | Nowshehra | 14.68 | 63.21 | Bani | 30.48 | 15.58 |
| Gool | 25.82 | 16.13 | Rajouri | 19.51 | 59.52 | Paddar | 29.35 | 12.40 |
| Chenani | 29.13 | 30.73 | Sundarbani | 11.63 | 53.78 | Marwah | N.A | N.A |
| Kishtwar | 16.81 | 52.82 | Haveli | 47.70 | 100.0 | Darhal | N.A | N.A |
| Bhaderwah | 18.76 | 65.58 | Mender | 84.89 | 98.31 | **Jammu** | | |
| Doda | 18.83 | 41.97 | Banihal | 100.00 | 100.0 | **Province** | **24.80** | **61.80** |

**Source: Computed on the Basis of Primary Census Abstract SC, Jammu and Kashmir, 2011. Note: OW: Other Workers (in Percentage to the Total Main Workers)**

From the Table 1 it is clear that the main work participation rate for Scheduled Caste population for the census year of 2011 is found to be high for the tehsils lying in north-west region of Jammu Province whereas it is average for the southern zone. Tehsils have been categorised as:

[4] Bhagat R.B. & Das K.C (2008). *Levels, Trends and Structure of Workforce in India: Census Based Study 1981-2001*. International Institute for Population Science, Mumbai

[5] Census of India, 1981.

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

*Tehsils having high main work participation rate (above 25.01 percent):-* Mandi, Mendhar, Banihal, Surankote, Bani, Paddar, Chenani, Reasi, Gool and Haveli are the tehsils having high main work participation rate. The low amount of population in these tehsils is responsible for this high rate and agrarian society also contributes to it. *Tehsils having medium main work participation rate (15.83-25.00 percent):-* Jammu, Ramnagar, Udhampur, Bishnah, Hiranagar, Kathua, Majalta, R.S. Pura, Thathri, Rajouri, Doda, Budhal, Bhaderwah, Billawar, Akhnoor, Bhalessa, Kishtwar, Ramban and Basholi are the tehsils having medium main work participation rate. These tehsils are semi-rural in character and have good agricultural output. *Tehsils having low main work participation rate (below 15.82 percent):-* Kalakote, Sundarbani, Nowshehra and Chhatroo lie in this category as the agricultural output is very low.

As far as 'other worker' category is concerned the tehsils of Banihal, Thanamandi, Mendhar and Haveli have high share due to very less population but Jammu, Rajouri, Samba, Kathua, Bishnah and R.S. Pura have actual share of other workers indulged in secondary and tertiary activities as there are a lot of industries and people get a lot of oppourtunities to show their capability in these sectors. Bhalessa, Ramnagar, Billawar and Gool have less share in this category due to less oppourtunities and low level of industrial development.

## 3. AGRICULTURAL INTENSITY, NET CULTIVATED AREA AND NON AGRICULTURAL POPULATION AMONG SCHEDULED CASTE POPULATION

These three indicators have been analysed to achieve the objective of assessing economic development. Agricultural intensity is also known as cropping intensity and has been defined as the ratio between the net sown area and the gross or total cropped area[6]. It is measured with the help of following formula:

$$\boldsymbol{Agricultural\ intensity} = \frac{\boldsymbol{Gross\ or\ total\ cropped\ area}}{\boldsymbol{Net\ cultivated\ area}} \times \mathbf{100}$$

On the other hand the Net Cultivated Area includes the net sown area and area sown more than once in an agricultural year. In case of study area it is almost same as net sown area with minor difference.

[6] Hussain, M. (2011). *Geography of India*. Tata McGraw Hills, P.10.8

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

**Table 2: Agricultural Intensity, Net Cultivated Area and Non-Agriculture Population among Scheduled Caste, 2011**

| Tehsils | A.I | NCA | Non- Agr | Tehsils | A.I | NCA | Non- Agr |
|---|---|---|---|---|---|---|---|
| Samba | 156.84 | 8256 | 79.94 | Kalakote | 198.77 | 172 | 45.81 |
| R.S. Pora | 181.53 | 6833 | 77.08 | Nowshehra | 187.68 | 1201 | 66.88 |
| Jammu | 187.98 | 8290 | 79.79 | Rajouri | 183.33 | 180 | 60.74 |
| Akhnoor | 188.75 | 6329 | 57.49 | Sundarbani | 178.23 | 375 | 54.54 |
| Bishnah | 190.90 | 3750 | 66.42 | Haveli | 200.00 | 12 | 100 |
| Ramnagar | 177.48 | 4043 | 26.1 | Mender | N.A | 0 | 98.31 |
| Udhampur | 175.71 | 3416 | 68.05 | Banihal | N.A | 0 | 100 |
| Reasi | 119.36 | 1973 | 48.25 | Thathri | 101.04 | 959 | 48.2 |
| Gool | 183.57 | 286 | 16.32 | Bhaleesa | 100.00 | 354 | 58.33 |
| Chenani | 145.30 | 1079 | 31.55 | Surankote | N.A | 0 | 100 |
| Kishtwar | 123.97 | 803 | 53.72 | Thanamandi | 176.07 | 2149 | N.A |
| Bhaderwah | 104.25 | 1259 | 66.17 | Chhatroo | 101.54 | 132 | 69.3 |
| Doda | 162.04 | 2546 | 42.52 | Majalta | 193.64 | 986 | 42.87 |
| Ramban | 189.28 | 1189 | 45.69 | Mandi | N.A | 0 | 96.49 |
| Billawar | 100.00 | 2712 | 38.5 | Bani | 132.84 | 553 | 15.63 |
| Basholi | 105.27 | 892 | 59.19 | Paddar | 117.93 | 195 | 13.85 |
| Kathua | 143.55 | 3231 | 69 | Marwah | N.A | N.A | N.A |
| Hiranagar | 100.00 | 2654 | 55.63 | Darhal | N.A | N.A | N.A |
| Budhal | 100.00 | 109 | 47.93 | **Jammu Province** | **162.93** | 66918 | **63.31** |

**Source: Primary Census Abstract SC, Jammu and Kashmir, 2011 and Agriculture Census Division, DAC (NIC). Note: A.I: Agricultural Intensity, NCA: Net Cultivated Area (in hectares), Non- Agr: Non Agricultural population (in Percentage).**

In terms of agricultural intensity the tehsils of the study area has been categorised into three categories as: *Tehsils having high agricultural intensity (162-200 percent):-* Haveli, Kalakote, Majalta, Bishnah, Ramban, Nowshehra, R.S. Pura, Akhnoor, Jammu, Gool, Rajouri, Sunderbani, Udhampur and Ramnagar are the tehsils having high agricultural intensity due to high fertilizer consumption, low intensity of manual work, better irrigation facility etc. *Tehsils having medium agricultural intensity (125-162 percent):-* Doda, Samba, Chenani, Kathua and Bani lie in this category as the agriculture here is rainfed, poor facilities of irrigation, extreme climatic conditions and uneven topography. *Tehsils having low agricultural intensity (1.00-125 percent):-* Kishtwar, Reasi, Paddar, Basholi, Bhaderwah, Chattroo, Thathri, Billawar, Hiranagar, Budhal

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

and Bhalessa have very low agricultural intensity. The major factors behind low agricultural intensity are more or less same as that of the above category.

*Net Cultivated Area:* It includes the net sown area and area sown more than once in an agricultural year. In case of study area it is almost same as net sown area with minor difference. The total net cultivated area that sc population possesses in the Jammu province according to 2011 census is 64918 hectares. About 50 percent of the total net cultivated area in Jammu province is held by the four tehsils of district Jammu and Samba due to even topography, abundant rainfall, and irrigation facilities through wide network of canals. The other tehsils lie in north, north-eastern and north-western part have remaining 50 percent of the net sown area due to uneven topography and extreme climatic variations that make agriculture unsuitable.

As far total agricultural population is concerned, it was 50.36 percent in 2001 which declines to 36.69 percent in 2011 due to increase in employment opportunities and advencement of secondary and tertiary sector whereas in case of non- agricultural population it rose from 49.63 percent in 2001 to 63.31 in 2011. Its share is high in the tehsils namely Haveli and Mendhar but in true sense Kathua, Rajouri, Jammu and Hiranagar have high non- agricultural population as people here are engaged in secondary and tertiary sectors. Also the population is less in the tehsils namely Chenani followed by Ramnagar, Doda, Gool, Sunderbani and Billawar due to its rural economy.

## 4. SPATIAL PATTERNS OF ECONOMIC DEVELOPMENT AMONG SCHEDULED CASTE, 2011

After making a critical analysis of all the indicators used above, the spatial patterns of economic development at tehsil level has been assessed as under:

**Table 3: Composite Standard Score and Levels of Economic Development, 2011**

| Tehsils | Composite Standard Score | Levels of Economic Development |
|---|---|---|
| Paddar, Bani, Gool, Budhal, Chenani, Billawar, Thathri, Bhaleesa, Kishtwar, Kalakote, Basholi, Chhatroo, Ramnagar, Majalta, Majalta, Sundarbani, Ramban, Doda, Reasi and Hiranagar | Below 0.0 | Low |

ISSN: 2455-8834

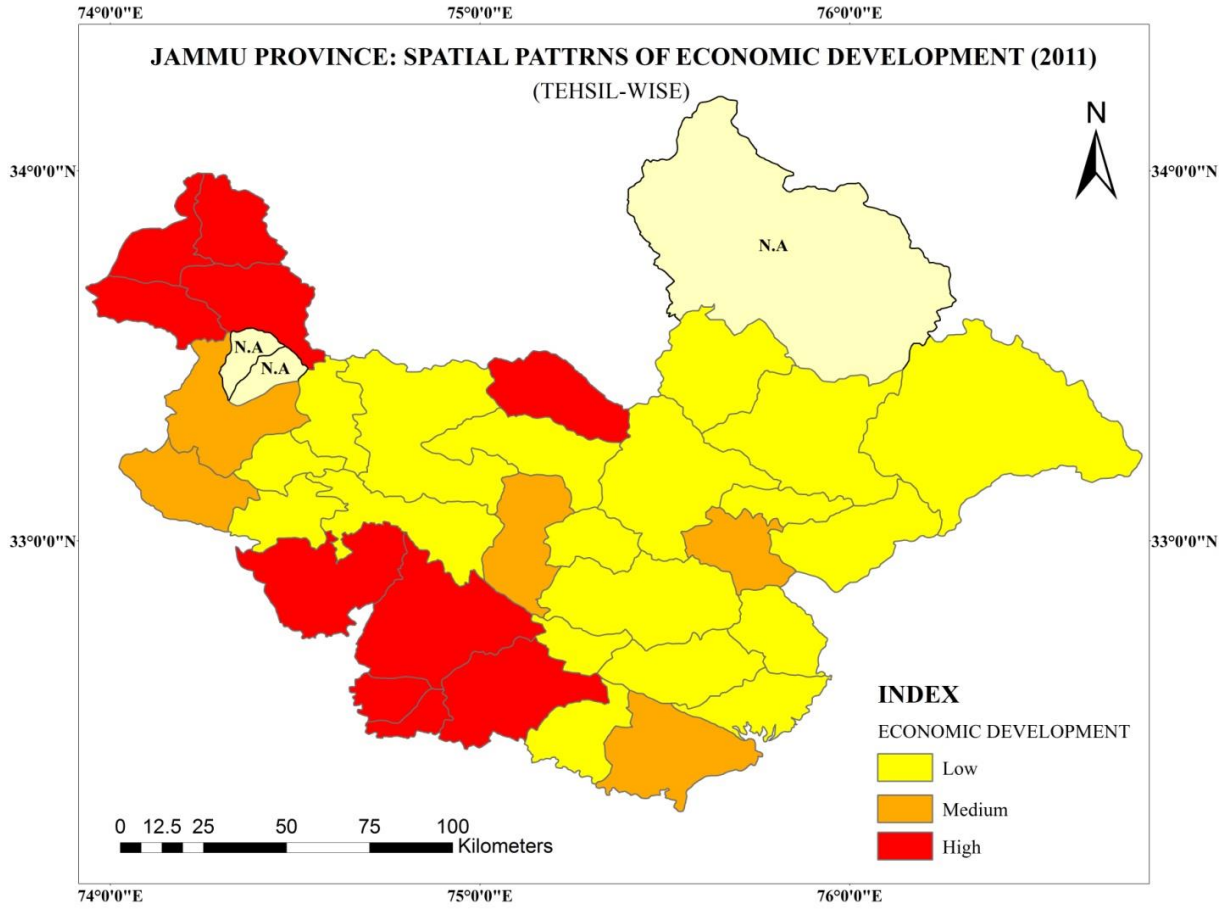
Volume: 04, Issue: 05 "May 2019"

| | | |
|---|---|---|
| Bhaderwah, Rajouri, Kathua, Nowshehra and Udhampur | 0.0 - 0.50 | Medium |
| Bishnah, Akhnoor, Surankote, Mendhar, Mandi, Banihal, R.S Pora, Haveli, Samba and Jammu, | 0.51 - 1.25 | High |

**Source: Computed on the basis of PCA SC, J&K, Agriculture Census Division, DAC, 2011**

It is apparent from the Table 3 that the tehsils are economically more developed as we move from north-east to south-west. On the basis of computed composite standard score, the entire Jammu province has been categorised into three category of economic development and depicted more conveniently with the help of the following choropleth map as shown below:

**Map No. 2**




**Source: Primary Census Abstract SC, J&K, Agriculture Census Division, DAC, 2011**

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

This choropleth map is showing that the most deprived tehsils in term of economic development are located in north-eastern part of the province.

*Tehsils with High Economic Development:* High economic development is found in the tehsils of Jammu and samba districts including tehsil Banihal. These tehsils have high composite score of economic indicators. The districts of Jammu and Samba have favourable geographical location located in southern plains. The high economic development is due to high social development, urbanization, industrial development because of industrial complexes found in Samba and Jammu district, developed agriculture, better means of employment opportunities etc.

*Tehsils with Medium Economic Development:* Only five tehsils from the entire Jammu province fall under this category namely Bhaderwah, Rajouri, Kathua, Nowshehra and Udhampur. Geographically they are located within the periphery of tehsils of the first category. Thus main reason behind their backwardness is also their unfavourable geographical location as well as poor performance of selected economic indicators.

*Tehsils with Low Economic Development:* Majority of the tehsils fall under low economic development category namely Paddar, Bani, Gool, Budhal, Chenani, Billawar, Thathri, Bhaleesa, Kishtwar, Kalakote, Basholi, Chhatroo, Ramnagar, Majalta, Majalta, Sundarbani, Ramban, Doda, Reasi and Hiranagar. All these tehsils are Sub- Himalayan except the tehsil of Hiranagar. These tehsils are the most deprived in term of major economic indicators development. In these tehsils the percentage of main workers, other workers who are engaged in secondary and tertiary sectors, net cultivated area etc is quite low. The geographical factors like uneven topography, poor agricultural facilities and rain fed agriculture; poor means of transport and communication are also contributing factors.

## CONCLUSION AND SUGGESTIONS

The tehsils of districts Jammu, Samba and Poonch have favourable geographical factorsbeing located in southern plains. The high economic development is due to high literacy, social development, urbanization, industrial development because of industrial complexes found in Samba and Jammu district.

The major challenge in front of Jammu and Kashmir State is how to strike a balance between tehsils with low and high development respectively to fulfill the objective of economic efficiency and social justice among them. The barrier against the development of backward north-eastern and northern tehsils needs an integrated approach for overall development and social well being. One of the measure that can be adopted by the state government that these tehsils may be declared as backward regions for scheduled caste. But the role of the government does not finish just by declaring various tehsils as backward, rather more effective, comprehensive and timely

ISSN: 2455-8834

Volume: 04, Issue: 05 "May 2019"

policies need to be framed for these tehsils. The state may make provision for sub-quota to these backward tehsils from the already existing quota.

**REFERENCES**

1) Bhagat R.B. & Das K.C (2008). *Levels, Trends and Structure of Workforce in India: Census Based Study 1981-2001*. International Institute for Population Science, Mumbai
2) Black, C. E. (1966). *The dynamic of modernization: A study in comparative history*, New York: Harper & Row.
3) Directorate of Economics & Statistics Government of Jammu & Kashmir, Digest Of Statistics, 2015-16
4) Hussain, M. (2011). *Geography of India*. Tata McGraw Hills, P.10.8
5) Karunakaran, K.R. An Analysis of Impact of Irrigation on Cropping Intensity in Tamil Nadu. *Indian Economic Review, New Series*, Vol. 33, No. 2 (July-December 1998), pp. 207- 220
6) Ohlan, R (2013). Pattern of Regional Disparities in Socio-economic Development in India: District Level Analysis. *Springer*, Vol. 114, No. 3 (December 2013), pp. 841-873.
7) Sannashiddannanavar, S. S. (2001). *Patterns and Characteristics of Population in Haveri District: A Diagnostic Geographical Study*. An unpublished doctoral thesis, Karnatak University, Dharwad.