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RESEARCH ARTICLE

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## INDUSTRIAL DEVELOPMENT IN HILLY AREAS OF MIZORAM

Hmingsangzuala, C<sup>\*1</sup>, Rinawma, P<sup>2</sup>. and Jacinta Vanlalrinzuali<sup>3</sup>

<sup>1</sup>Asst. Professor, Government Hnahthial College

<sup>2</sup>Professor, Mizoram University

<sup>3</sup>Asst. Professor, Lunglei Government College

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#### \*Corresponding author:

Hmingsangzuala, C,

### ABSTRACT

The industrial development is an important parameter and essential key to socio-economic development of a country. The industrialist countries are more progress and its complexes promoting the growth centers and act as an agent of development not only in the core region but also periphery of rural, hilly and inaccessible region as technological advancement extends the degree of social, economic and political powers of the state. However, imbalances and unequal expansion of industrial growth leads to social and political problems of the country. The present paper analyzed the level of disparity in terms of industry in the selected eight districts of the hilly region in Mizoram by using nine variable indicators with the help of Z-Score techniques in Statistical Package for Social Sciences (SPSS). It finds that there is a high degree of disparity in industrial sectors which may lead to inequality and social disharmony in the study area.

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## INTRODUCTION

Industry is of great importance for socio-economic development of a country. The countries with strong industrial sector have showed more economic growth and improvement of national income promoting living standard of population (Rizwan, 2018). Kuznets (1966) described long term development patterns of countries based on empirical analyses of national accounts and argued that industrialization or increases in the share manufacturing in GDP is a key feature of modern economic growth, which is markedly different from the much lower growth rates observed in the world before the onset of the industrial revolution (Haraguchi, 2016). The industrialist countries are more progress in contemporary world as technological advancement extend the degree of social, economic and political powers of the state.

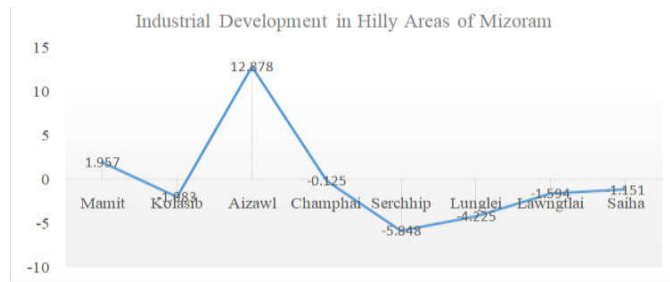
The industry provide the opportunity to sustain and reliable activity of individual, community, government and non-governmental sectors of economy. It has played an important role to growth and inequality of any region which is mainly depends on the availability of productivity, modernization of agriculture equipment, emboldens the development of science and technology, number of growth centers and

industrial based services with huge man power, large and varied resources.

It is also very significant to set up industries to absorb surplus skill and unskilled labour in agricultural fields, solve the problem of rapid increasing unemployment, poverty alleviation and enhance export quality. In the hilly areas, setting up of industry is a huge task which is expensive in capital investment, scarcity of resources, high cost of labour force and shortage of transport and communication facilities. However, the industrial region are much advantage in development while the lacking region are behind the growth. This kind of distribution provoke the threats of sustainable economic growth and become the seeds of inequality. Therefore, the country's development disparity may be tackle effectively and make concrete effort with the help of an in-depth analysis of industrial development.

Due to locational disadvantages of remote, hilly and rugged terrain, retrograde of technological knowhow and nature of occupation hinders the flourishing of industry in the hilly areas of Mizoram. Cottage industry plays a vital role in the economic life of rural and early Mizo society which include cotton weaving, basket works, pottery, brass work, iron work, manufacturing of musical instrument etc., Cotton weaving of every kind was exclusively the work of the

women folk. They were expected to make cloths for all the family members by spanning the raw cotton which they grow in their jhums (Mate, 2014). However, the small-scale industry begun to extend after colonial period and expand it streams in the 21<sup>st</sup> century.



Sl No	District	Score	Rank	Level	Score	District
1	Mamit	1.957	2			
2	Kolasib	-1.983	6	Very high	Above 5	Aizawl
3	Aizawl	12.878	1	High	1 to 4.9	Mamit
4	Champhai	-0.125	3	Medium	-0.9 to 0.9	Champhai
5	Serchhip	-5.848	8	Low	-4.9 to -1	Saiha, Lawngtlai, Kolasib, Lunglei
6	Lunglei	-4.225	7	Very low	Below -5	Serchhip
7	Lawngtlai	-1.594	5			
8	Saiha	-1.151	4			

But, the development in the fields of industry is an infantile stage in Mizoram (Pachua, 2009), lying one of the most industrially backward states of the country and is defined as ‘Non Industries District’ under category ‘A’ (Sen, 1989). Therefore, the main objective of the study is to find out the district level of industrial development in Mizoram.

**DATA BASED AND METHODOLOGY**

The industrial development of eight districts in Mizoram has been analyzed using Z-score techniques with the help of Statistical Package for Social Sciences (SPSS). The secondary sources of industrial development data were obtained from Statistical Abstract of 2014-15 & 2016-17 were transformed into variables used as indicators. The datamatrix were transformed into scale free matrix and standardized by subtracting the mean from each individual variables and divided by their standard deviation as the following formula:-

$$Z_i = (X_{ij} - X_j) / SD_j$$

Where,  $Z_i$  is the Z-score for the  $i^{th}$  unit  
 $X_{ij}$  is the x variable in the  $i^{th}$  unit and  $j^{th}$  variable  
 $X_j$  is the mean of the  $j^{th}$  variable and  
 $SD$  is the standard deviation of the  $j^{th}$  variable

District										
1	Mamit	-0.77	-0.57	-0.53	1.98	0.39	1.98	-0.68	-0.62	0.77
2	Kolasib	0.06	-0.07	1.12	-0.87	-0.28	-0.87	-0.42	-0.13	-0.43
3	Aizawl	1.03	2.30	2.03	0.60	1.84	0.60	2.32	2.41	-0.23
4	Champhai	1.92	0.46	-0.49	-0.79	-0.26	-0.79	0.20	-0.21	-0.18
5	Serchhip	-0.92	-0.64	-0.50	-0.56	-1.71	-0.56	-0.20	-0.07	-0.69
6	Lunglei	-0.47	-0.57	-0.55	-0.64	-0.51	-0.64	0.12	-0.33	-0.65
7	Lawngtlai	-0.09	-0.34	-0.50	0.67	0.23	0.67	-0.75	-0.74	-0.75
8	Saiha	-0.77	-0.58	-0.57	-0.40	0.30	-0.40	-0.58	-0.30	2.16

Standardization was done using statistical software called ‘SPSS’ to get the scores in each indicator. Z-scores may also be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean. Positive and negative scores also reveal the number of standard deviation that the score is either above or below the mean. After obtaining Z-score for every indicator, composite score was obtained by adding up all individual Z-score or standardized data:-  $C = \sum Z$ .

Where  $C_i$  is the composite score and  $\sum Z$  is the summation of Z-scores or standardized scores.

**Variable Indicators:** Based on the availability of reliable data in the study area, the present paper analyzed two main industries like – i) number of registered under directorate of industry and ii) industrial units under Khadi and Village Industries (KVI) (table-2). There are variable indicators like number of Small Scale Industry (SSI) units, number of person employed, total amount of investment and value of production. As per the report of Statistical Abstract of Mizoram, 2015, there are 540 industrial units registered in Mizoram under Directorate of Industry, Government of Mizoram and Khadi and Village Industries (KVI). Under Directorate of Industry, the largest number of SSI units registered in Champhai District followed by Aizawl. Kolasib and Lawngtlai districts which has recorded 16 and 14 units, 9 small scale units found in Lunglei district, another 5 units in Mamit and Saiha districts, and, only 3 units are there in Serchhip district. Under KVI, Mamit (78) district recorded the largest number of units registered followed by Lawngtlai (61) and Aizawl (60) districts. The rest of the districts registered a number of 47 (Saiha), 45 (Serchhip), 44 (Lunglei), and 42 (Champhai) SSI units. Industry contributes 4,376 employees and also invests more than 2,132 lakhs. The total value of these industries holds more than 2,017 lakhs during 2014-15. As per the report of Statistical Abstract of Mizoram, 2017, there are 2651 registered SSI units and employed 20,677 personnel in the state. The total amount investment also recorded 344.13 crores.

**RESULT AND DISCUSSION**

All districts have been categorized into five level of industrial development. Aizawl district scored the highest value of 12.878 among eight districts in Mizoram which is followed by Mamit district with a score value of 1.957. The difference between the highest value and second highest is more than 10 values which indicates the high level of disparity in industrial development of the study area. A score value of -0.125 found in the district of Champhai, falls under medium level of development. Four district like Saiha (-1.151), Lawngtlai (-1.594), Kolasib (-1.983) and Lunglei (-4.225) categorized under low level of development. Very low level of development found in Serchhip district with a score value of -5.848 (Table-1).

Sl No	District	Registered under Directorate of Industry (2014-15)			Industrial Units under Khadi and Village Industries (KVI) (2014-15)			2016-17 (Cumulative Registered of Industry)		
		No of SSI units	No of Persons employed	Amount of Investment (Rs. in lakhs)	No of units registered	Value of Production (Rs. in lakhs)	No of Persons employed	No of SSI units	No of Persons employed	Amount of investment (Rs. in Crore)
1	Mamit	5	35	22.16	78	269	624	90	595	86.02
2	Kolasib	16	118	777.36	41	240	328	181	2162	18.94
3	Aizawl	29	511	1193.38	60	332.20	480	1156	10258	29.97
4	Champhai	41	206	40.89	42	241	336	402	1930	33.18
5	Serchhip	3	23	36.79	45	178	360	259	2351	4.3
6	Lunglei	9	35	15.06	44	230	352	373	1535	6.71
7	Lawngtlai	14	72	39.96	61	262	488	66	218	1.16
8	Saiha	5	32	6.6	47	265	376	124	1628	163.85

Source: Statistical Abstract of Mizoram 2015 & 2017

## CONCLUSION

The industrial development is an important parameter to development and essential key to uplift the socio-economic development in the developing countries. The industrial and commercial complex which are mostly found in fertile and suitable area due to locational advantages, but, promoting the growth centers and act as an agent of development in rural, inaccessible and hilly region. However, imbalances of industrial growth and its expansion is a key elements to inequality which could bring social and political dilemma. The present papers finds that there is a high disparity of industrial development at the district level in the hilly state of Mizoram which needs tackle effectively.

If this seeds of inequality is not encounter fruitfully, regionalism and other problems could prevails in the state after the years to come.

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