

## “PRODUCTIVITY RATIO’S PERFORMANCE OF DOLOMITE MINERAL INDUSTRIES OF GUJARAT”

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### ABSTRACT:

*For this study purpose tribal area is taken i.e. eastern part of Gujarat state (special Chhota-Udaipur district). only This area is very rich with dolomite mines in eastern Gujarat. Dolomite is one kind of mineral. In this district more than 124 dolomite industries working on making various products from dolomite minerals. Research would like to focus on dolomite industries various problem and prospectus from its stake holder like Factory holders, Industrialist, worker, local community, lease holder and society at large. It is mainly focus on Assets turnover of dolomite industries. This paper contains points like Introduction About Dolomite and About Chhota-Udaipur District, The Problem Area, Significant the Study, Objectives of the study, Uses of Dolomite Mineral, Universe of the Study and Sample Design, Research Instrument, Data Analysis and Presentation, Limitations of Study, Testing of Hypothesis, Interpretations and Conclusion followed by references.*

**Key Words:** Dolomite Mineral, Productivity ratio and Tribal Area

### **1 Introduction:**

Introduction contain about two major points of this research paper i.e. about dolomite and about Chhota-Udaipur district of Gujarat state which is selected for study purpose. Details is given here in this regards. About Chhota-Udaipur District: Chhota-Udaipur district is a district in the state of eastern Gujarat in India. It was carved out of the Vadodara district on 26 January 2013 with its headquarters at Chhota-Udaipur town and is the 28th district of Gujarat. Chhota-Udaipur was the capital of the erstwhile Princely State of Chhota-Udaipur, founded in 1743 by Rawal Udeysinhji, a descendant of Patai Rawal of Champaner. This state was a second class state under Rewa Kantha Agency and merged with the Union of India. Aishwarya Pratap sikh Chauhan is the last son of Maharaja Virendra Pratap sikh Chauhan. He is at present the Maharaja of Chhota-udaipur. Dolomite mineral is mainly available in Chhota- Udaipur District in Gujarat. In chhota- Udaipur more than 124 industries presently working of dolomite. Now, About Dolomite industries: Most probably the mineral dolomite was first described by Carl Linnaeus. It was described as a rock by the French naturalist and geologist Deodat Gratet de dolomieu. Dolomite, and marble -the



carbonate rocks - are the principal karst-forming rocks. Karst is a type of topography that is formed on limestone, gypsum, and other rocks by dissolution that is characterized by sinkholes, caves, and underground drainage regions. Karst areas constitute about 10 percent of the land surface of the world. Dolomite is commonly used in a variety of products such as Antacids, base for face creams, baby powders, toothpaste, calcium/magnesium nutritional supplements for animals and humans, ceramic glazes on china and other dinnerware, fertilizers, glass, gypsum impressions from which dental plates are made, mortar and cement, plastics, rubbers, and adhesives Etc. Construction aggregate, cement manufacture, dimension stone, calcined to produce lime, sometimes an oil and gas reservoir, a source of magnesia for the chemical industry, agricultural soil treatments and metallurgical flux. Dolomite mineral Mainly Producer states in India are Gujarat, Madhya Pradesh, Rajasthan, Karnataka Etc.

## 2 The study Area:

In this study research has followed scientific approach to design the research methodology for investigation. For this study, the researcher has collected primary data from selected dolomite industries in Chhota-udaipur district, Gujarat. And also collected some secondary data as a source of information for the study purpose. The collected data & information are suitably classified & Tabulated as per requirement. For sampling, the convenient sampling Technique is used. The number of dolomite factory is very large around 124 numbers in Chhota-Udaipur district so, it is beyond the capacity of individual researcher to conduct the study with census. Hence, researcher has taken into consideration the survey conducted by geology & mining department Chhota- Udaipur for selection Group. From that ten dolomite industries considered for the work. Primary data collected by personal interview of managers of selected industries with structured questionnaires.

Dolomite is an essential product nowadays. It is useful in many things or product as raw material. it is used as a content. It is mainly available in powder form from white stone. It is normally found in Chhota-udaipur district especially in Chhota-udaipur taluka in Gujarat. This product is very cheap so, everyone can use it easily. The uses of this powder in glass, oil paints, chemical product, cosmetic products, cattle field, steel product, Rangoli, ceramic products, tiles, white cement & many more.

## 3 Objectives of the study

1. To study the role and various problem faced by the dolomite industry.
2. To study various accounting aspect of Productivity of the selected industry.

## 4 Research Methodology:

Research Methodology is nothing but a blue print of any study or work following is given relevant points of it.



#### 4.1 Universe of the Study and Sample Design:

As per Govt. Record total 124 dolomite industries registered under Chhota-Udaipur district as universe of the study

- **Sampling Method:** Through convenient sampling method:
- **Sample size:** out of 124 industries researcher has selected 10 dolomite industry selected and the List of the Industries for the study are as under.

**Table No. 1. List of the selected dolomite Industries for study purpose.**

Sr. No.	Dolomite Industry Name	Short Name	Place
1	Khodiyaar Mineral	KYM	Chhota-udaipur, Gujarat
2	Mahavir Mineral	MHM	Chhota-udaipur, Gujarat
3	Kohinoor Mineral	KNM	Chhota-udaipur, Gujarat
4	Bhakti Mineral	BHM	Chhota-udaipur, Gujarat
5	Shital Mineral	STM	Chhota-udaipur, Gujarat
6	Krishna Mineral	KRM	Chhota-udaipur, Gujarat
7	Patel Minerals	PTM	Chhota-udaipur, Gujarat
8	Shreeji Mineral	SHM	Chhota-udaipur, Gujarat
9	Vallabh Chips Industries	VCI	Chhota-udaipur, Gujarat
10	Shivam Mineral	SVM	Chhota-udaipur, Gujarat

#### 4.2 Research Instrument:

A structured questionnaire is used for data collection from the selected 10 dolomite Industries from Chhota-udaipur district. The details of questionnaire and response from respondent is given in the fourth chapter followed by this chapter.

- **Time period:** Financial and Accounting Data collected for Last Ten Years i.e. 2007-08 to 2016-17 from the selected industries.
- **Area/ location of Study:** Chhota-Udaipur district of Eastern Gujarat (Tribal Area)
- **Study Year:** Last 10 years i.e. 2007-08 to 2016-17

#### 4.3 Collection of Data:

##### Primary Data

- The Primary data is collected through structured close ended questionnaires.



## Secondary Data

- Published work and on-line information obtained for basic information and for review of Literature work.

### 4.4 Hypotheses:

- $H_0$  =Dolomite industries do not have significant difference in the performance of Productivity Ratios of last ten years.
- $H_1$  = Dolomite industries do have significant difference in the performance of Productivity ratio of last ten years.

### 4.5 Data Analysis and Presentation:

- For hypotheses testing relevant statistical test is used here i.e. student t test. Here, t test is calculated on manual basis
- Data are presented through using tables, charts, interpretations selected industries and hypothesis formulating, calculation test, testing of hypotheses and Interpretation of Result. Hypotheses tested at significant level of 5% And Applicable Require Degree of Freedom.
- As par suitability of collected data for this study the student  $t$  test is applicable. Its calculation, formula and other details of specification is given in this paper.

### 4.6 Limitations of Study:

1. The study based on mainly on primary data hence the respondent has not given required all information.
2. The selected industries fall under tiny industries so; they were normally not publishing annual reports or any secondary publications. The office of the various industries had rough data or rough calculations of various activities and they had not maintained fair book in this regard.
3. The accounting technique & statistical techniques have their own limitation, so, they are also applied to this study. And study is only focuses on productivity.

### 4.7 Data Collection:

The productivity ratio's calculated here Output (worth of sales per year/ Net sales per year) and **Input (Employees Contributions)** relation was concerned. For Productivity ratio higher ratio considers as good performance. It is normally majored in Rs. Per hour Productivity below table is given which contain 10 industries data of last 10 years is given all these data are manually collected and table prepared.

$$\text{Productivity Ratio Formula} = \frac{\text{Output (worth of sales per year/ Net sales per year)}}{\text{Input (Employees Contributions)}}$$



**Table No. 2: Last 10 years Productivity Ratios data of Selected 10 Dolomite industries**

Dolomite Industries (1 to 10)										
	1	2	3	4	5	6	7	8	9	10
Year	KYM	MHM	KNM	BHM	STM	KRM	PTM	SHM	VCI	SVM
2007-08	242.35	22.36	180.28	188.97	201.45	219.37	138.95	258.35	365.24	256.38
2008-09	231.87	214.03	176.29	194.87	185.66	222.07	132.71	251.14	327.38	248.99
2009-10	220.36	209.87	169.34	176.35	186.35	230.14	126.35	238.24	319.84	241.25
2010-11	224.54	211.24	170.28	195.24	198.35	220.14	130.25	265.35	324.24	246.35
2011-12	201.35	188.35	155.34	178.38	181.24	205.68	108.65	222.35	274.24	221.45
2012-13	214.36	194.24	158.34	201.24	205.24	209.34	110.24	205.36	289.35	228.36
2013-14	208.36	198.35	161.24	198.35	206.24	211.35	114.25	239.24	301.24	234.24
2014-15	217.35	204.35	168.24	187.24	198.24	235.64	121.38	241.25	310.25	239.65
2015-16	180.24	175.35	145.24	185.64	187.34	201.45	105.36	189.65	245.87	214.35
2016-17	198.27	179.35	149.25	189.35	191.27	203.62	107.24	201.45	268.34	219.68
<b>Total</b>	2139.0	1797.4	1633.8	1895.6	1941.3	2158.8	1195.3	2312.3	3025.9	2350.7
<b>Avg.</b>	213.90	179.74	163.38	189.56	194.13	215.88	119.53	231.23	302.59	235.07

Source: Primarily Data Collected

### Hypothesis Testing

Mean X = 204.50

Median N (n+1/2= 6<sup>th</sup> years observations) = 215.88

Mode Z (Highest or maximum time repeated value) = 302.59

Mode Z is considering the value of  $\mu = 302.59$

$$H_0 = \mu = 302.59$$

$$H_1 = \mu \neq 302.59$$

$$\sum xi = 2045.06$$

$$\sum di = 0.064$$

$$\sum di^2 = 21342.98$$

For, t -test Standard Deviation is S = 46.19

### Calculation of t test formula

Result obtained from the calculation of t test formula = 78.75

degree of freedom (d.f.) = n-1 = 10-1 = 9

5% level of significant st 9 d.f. = 2.262

t-Calculatation > t- table

78.75 > 2.262

t-Calculatation value is higher than t- table value

Hence,  $H_0$  = is Rejected

$H_1 = \mu \neq 302.59$

$H_1$  = is Accepted

(t- table value is taken from statistic table of t -Distribution)

**Interpretation:** Here null hypothesis ( $H_0$ ) rejected so, alternate hypothesis is accepted i.e. ( $H_1$ ) Dolomite industries do have significant difference in the performance of Productivity ratio of last ten years. It shows that all the selected dolomite industry had different combination and composition every year as far as **Output** (worth of sales per year/ Net sales per year) **and Input (Employees Contributions)** relation was concerned. It was very with every year. Industries should try to increase the proposition of ratios and try to increase the distance between two variables i.e. output and input. Try to increase output performance in comparison of input.

## Conclusion:

Researcher had found that the Average Productivity ratios of selected dolomite industries of last ten years was between 163.3 to 302.5 percentage. Productivity simply refers to the measurement of how efficient a company's production process is. Managers use these productivity measurements so they can determine which departments, plants or workers are most efficient and how to maximize usage of the company's resources to attain an optimum level of production and higher sales or revenue. This measurement takes into consideration the input and the output involved in the production process. Here, for this study output (Net sales per year) and **Input (Employees Contributions) relation is assessed**. This ratio shows good performance for the industries. Moreover, from the result of hypothesis testing indicates that Dolomite industries do have significant difference in the performance of Productivity ratio of last ten years. It shows that all the selected dolomite industry had different mixture and structure of **Output** (worth of sales per year/ Net sales per year) **and Input (Employees Contributions)** relation every year. Industries should try to increase the proposition of ratios and try to increase the gap between two variables i.e. output and input. Try to increase output performance in comparison of input.

## References:

- ✎ Mansfield, Charles F. (1980). "A urolith of biogenic dolomite – another clue in the dolomite mystery". *Geochimica et Cosmochimica Acta* 44 (6):829839. Bibcode:1980GeCoA..44. 829M. doi:10.1016/0016-7037(80)90264-1.
- ✎ Kothari, C. R. (2014.) *Research Mythology*. New Delhi: New Age International Publishers, pp44-67

- ✎ Rathva Mahesh, (2017) Associate Professor, Arts and Commerce College, Kankanpur, Gujarat “Minor research project on Dolomite Industries”

**Websites:**

- ✎ [www.shodhganga.org](http://www.shodhganga.org).
- ✎ [www.mpbcwwb.org](http://www.mpbcwwb.org)
- ✎ [www.wikipediafree](http://www.wikipediafree)
- ✎ [www.oman.labour.in.indi.com](http://www.oman.labour.in.indi.com)
- ✎ [www.alirajpur.nic.in](http://www.alirajpur.nic.in)
- ✎ [www.labourebeuro.com](http://www.labourebeuro.com)
- ✎ [www.dolomiot.milesindustries.com](http://www.dolomiot.milesindustries.com)