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## DIMENSIONS OF TECHNICAL INSTITUTIONS IN MADHYA PRADESH

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In the modern era, more and more emphasis has been laid on technical education in every country and state because it is evident that economic development of any country or state depends upon its higher education, research, information-technology and technical-managerial expertise. At present, everyone has accepted the importance of higher education not only at the national or state but also at global levels. Economists, Planners and Educationalists have a common point of view that “The basis of overall development, prosperity and strength of any country or state is technical education. If it is available in country along with its successful and adequate implementation and it is continuously striving towards development, then the progress of that country is quintessential.”

The Madhya Pradesh Government has set-up a separate vocational teaching and training unit for development of higher education in the state. The activities such as development and expansion of technical education are carried out under Directorate of Technical Education – DTE. Along with this an exclusive university “Rajiv Gandhi Technical University” has been established more than two decades ago. The main thrusts of RGPV are regarding planned intermediations on these four issues i.e. :-

- Augment chances for education after graduate degree and studies in places that are of extraordinary significance to science and technology competences of India.
- Endorse application of Information Technology in the field of technical education by preferment of e-Learning along with the web enabled education procedures.
- Transmuting the culture of university into a information initiative by laying emphasis on on more and more research & development, entrepreneurial accesses and also by forming competent and active contrivances for dealing with the modernizations, technology development, technology relocation and organizing of information.
- Relishing active contrivances and aid requirements for the development of talent and knowledge mediums for its allied centers. It comprises of formation of University Teaching

Departments, Education Colleges which also include a Innovation and Technology center associated with the Management, along with a Staff College for Personnel Development in technical education. Focussing and strengthening the overall system of Rajeev Gandhi Technical University is an activity that is ever ongoing.

Keeping track of above mission, keeping in mind the technical education, the DTE has following objectives for its growth and expansion in Madhya Pradesh – Provide enhanced technology curriculum, Constant analyzing and modernization of employment oriented and self employment oriented programs, Provide infrastructure for development according to demand-centric needs, Adapting the role of coordinator between industrial and technical institutions in the dynamic industrial environment, Skill Development through curriculums according to the industry needs and Development of technical capabilities.

### **Review of Literature**

**Achintya & Prabha M. (2007)** in their “**Technical Education for Quality Manpower**” admit that The new challenge before the country is to become a progressive country up to the second decade of the millennium, and the essentials are not just the knowledge-driven economic atmosphere but human values as well to be equally important. Besides this, questions in technical education sector are no way concerned with the country itself. Volatile development of information in the 20<sup>th</sup> century along with the growth of knowledge and communication technologies in addition to specific technical revolutions, higher education lead to global dimensions and the competition has turned into a sign of development across the globe. Actually, information is just not the driving force of the Indian economy but it definitely will plunge within the layers of Nation's social structure for attaining the objectives of better life quality and living atmosphere. Hence, the nation must upsurge towards the opportunity wasting no time and reposition its vocational education structure to be extremely competitive, purposeful, expressive as well as vibrant.

**Dash U.N. (2007)** in his article "**Attainment of Excellence Through Higher Education**"

presented his views that the education system should be employment-oriented, while passing out from universities, graduates should also have in their positions a diploma in a professional course beside a degree. Every student must be taught some craft or occupation needed for earning his livelihood. One must also be educated about the social work, the nature of the society one lives in,

the laws that guide it and the culture it has evolved. There is tremendous explosion of knowledge in all spheres of life. So, it is essential to learn such knowledge, as will help us understand the surrounding society and live in harmony with it.

### **Research Methodology**

This paper includes analysis of the number of technical institutions of Madhya Pradesh. Number of technical educations in the state have been analyzed and a study has been conducted related results have been quantified. The analysis has been done as per secondary data according to the courses i.e. the colleges conducting a particular course have been taken in consideration. Colleges conducting more than one course have not been counted separately i.e. If a college is conducting BE course and MCA is also running there, the number has been added in both categories. The colleges opened before the year 2010 have been considered for the analysis. Statistical method Anova has been used for the analysis.

### **Objective**

The objective of the paper can be termed as follows -

- To study ever changing dimensions of the technical education sector in the state.

### **Hypothesis**

The expected outcome of the research in the form of main hypothesis of the research-study is as follows:-

H0 There is no significant difference between number of technical colleges and Districts of Madhya Pradesh.

H1 There is a significant difference between number of technical colleges and Districts of Madhya Pradesh.

Hence the analysis of the technical institutions under Rajiv Gandhi Prodyogiki Vishwavidyalaya is given as below –

**Table**

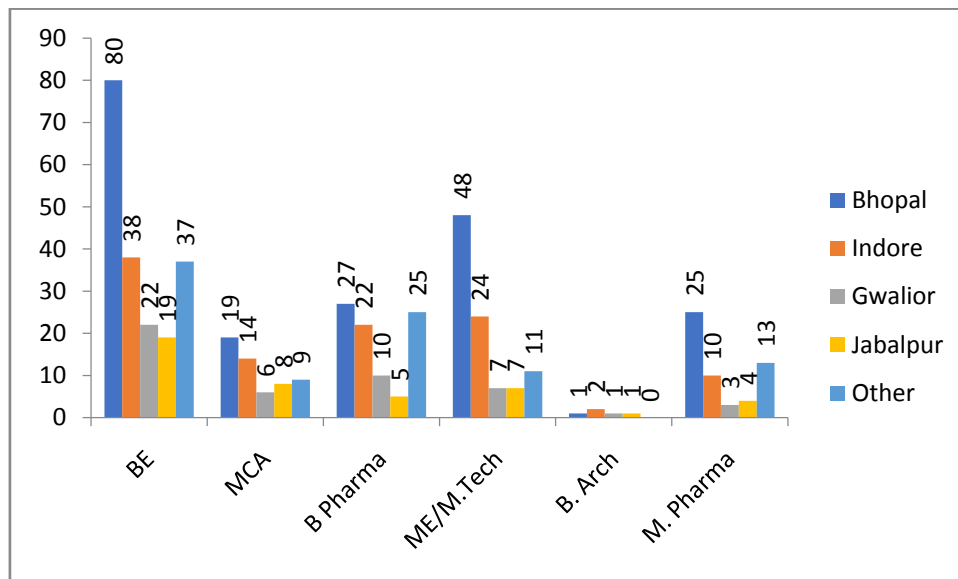
**No. of Colleges Conducting Technical Course in Madhya Pradesh**

Districts	BE	MCA	B Pharma	ME/M Tech	B. Arch	M. Pharma
Bhopal	80	19	27	48	1	25
Indore	38	14	22	24	2	10
Gwalior	22	6	10	7	1	3
Jabalpur	19	8	5	7	1	4
Other	37	9	25	11	0	13

**Source:** RGPV Bhopal

**Graph**

**No. of Colleges Conducting Technical Courses in Madhya Pradesh**



## Statistical Analysis

### Calculation of Arithmetic Means

Districts	BE	MCA	B Pharma	ME/M Tech	B. Arch	M. Pharma
Bhopal	80	19	27	48	1	25
Indore	38	14	22	24	2	10
Gwalior	22	6	10	7	1	3
Jabalpur	19	8	5	7	1	4
Other	37	9	25	11	0	13
<b>Total (<math>\Sigma x</math>)</b>						
<b>N = 5</b>	<b>196</b>	<b>56</b>	<b>89</b>	<b>97</b>	<b>5</b>	<b>55</b>
<b>Mean (<math>\bar{X}</math>) = <math>\frac{\Sigma x}{N}</math></b>	39.2	11.2	17.8	19.4	1	11

### Collective Mean

$$(\bar{X}_c) = \frac{(\bar{X}_1) + (\bar{X}_2) + (\bar{X}_3) + (\bar{X}_4) + (\bar{X}_5) + (\bar{X}_6)}{6} = \frac{39.2 + 11.2 + 17.8 + 19.4 + 1 + 11}{6} = 16.6$$

$$\text{Sum of Squares of Variance} = \left[ \sum \{nk(\bar{X}_k - \bar{X}_c)^2\} \right]$$

$$\begin{aligned} &= n_1(\bar{X}_1 - \bar{X}_c)^2 + n_2(\bar{X}_2 - \bar{X}_c)^2 + n_3(\bar{X}_3 - \bar{X}_c)^2 \\ &+ n_4(\bar{X}_4 - \bar{X}_c)^2 + n_5(\bar{X}_5 - \bar{X}_c)^2 + n_6(\bar{X}_6 - \bar{X}_c)^2 \\ &= 5(39.2 - 16.6)^2 + 5(11.2 - 16.6)^2 + 5(17.8 - 16.6)^2 \\ &+ 5(19.4 - 16.6)^2 + 5(1 - 16.6)^2 + 5(11 - 16.6)^2 \\ &= 5(22.6)^2 + 5(-5.4)^2 + 5(1.2)^2 + 5(2.8)^2 + 5(-15.6)^2 + 5(-5.6)^2 \\ &= 5(510.76) + 5(29.16) + 5(1.44) + 5(7.84) + 5(243.36) + 5(31.36) \\ &= 2553.8 + 145.8 + 7.2 + 39.2 + 1216.8 + 156.8 \\ &= 4119.6 \end{aligned}$$

$$\text{Degree of Freedom } (df_1) = k - 1 = 6 - 1 = 5$$

$$\text{Variance amongst samples} = \frac{\left[ \sum \{nk(\bar{X}_k - \bar{X}_c)^2\} \right]}{k - 1} = \frac{4119.6}{5} = 823.92$$

**Calculation of sum of squares of the Variance****BE**

Districts	$X_1$	$(X_1 - \bar{X}_1)$	$(X_1 - \bar{X}_1)^2$
Bhopal	80	40.8	1664.64
Indore	38	-1.2	1.44
Gwalior	22	-17.2	295.84
Jabalpur	19	-20.2	408.04
Other	37	-2.2	4.84
			$\Sigma(X_1 - \bar{X}_1)^2 = 2374.8$

**MCA**

Districts	$X_2$	$(X_2 - \bar{X}_2)$	$(X_2 - \bar{X}_2)^2$
Bhopal	19	7.8	60.84
Indore	14	2.8	7.84
Gwalior	6	-5.2	27.04
Jabalpur	8	-3.2	10.24
Other	9	-2.2	4.84
			$\Sigma(X_2 - \bar{X}_2)^2 = 110.8$

**B. Pharma**

Districts	$X_3$	$(X_3 - \bar{X}_3)$	$(X_3 - \bar{X}_3)^2$
Bhopal	27	9.2	84.64
Indore	22	4.2	17.64
Gwalior	10	-7.8	60.84
Jabalpur	5	-12.8	163.84
Other	25	7.2	51.84
			$\Sigma(X_3 - \bar{X}_3)^2 = 378.8$

**M.E./M.Tech**

Districts	$X_4$	$(X_4 - \bar{X}_4)$	$(X_4 - \bar{X}_4)^2$
Bhopal	48	28.6	817.96
Indore	24	4.6	21.16
Gwalior	7	-12.4	153.76
Jabalpur	7	-12.4	153.76
Other	11	-8.4	70.56
			$\Sigma(X_4 - \bar{X}_4)^2 = 1217.2$

**B.Arch**

Districts	$X_5$	$(X_5 - \bar{X}_5)$	$(X_5 - \bar{X}_5)^2$
Bhopal	1	0	0
Indore	2	1	1
Gwalior	1	0	0
Jabalpur	1	0	0
Other	0	-1	1
			$\Sigma(X_5 - \bar{X}_5)^2 = 2$

**M.Pharma**

Districts	$X_6$	$(X_6 - \bar{X}_6)$	$(X_6 - \bar{X}_6)^2$
Bhopal	25	14	196
Indore	10	-1	1
Gwalior	3	-8	64
Jabalpur	4	-7	49
Other	13	2	4
			$\Sigma(X_6 - \bar{X}_6)^2 = 314$

$$\begin{aligned} \text{Sum of squares of the Variance} &= \left[ \sum \left\{ (\bar{X} - \bar{X}_k)^2 \right\} \right] \\ &= \sum \left[ (X_1 - \bar{X}_1)^2 + (X_2 - \bar{X}_2)^2 + (X_3 - \bar{X}_3)^2 + (X_4 - \bar{X}_4)^2 + (X_5 - \bar{X}_5)^2 + (X_6 - \bar{X}_6)^2 \right] \\ &= 2374.8 + 110.8 + 378.8 + 1217.2 + 2 + 314 \\ &= 4397.6 \end{aligned}$$

$$\text{Degree of Freedom } (df_2) = n - k = 30 - 6 = 24$$

$$\text{Variance within samples} = \frac{\left[ \sum \left\{ (\bar{X} - \bar{X}_k)^2 \right\} \right]}{n - k} = \frac{4397.6}{24} = 183.233$$

**F Ratio** = Variance amongst samples/Variance within samples

$$\text{F Ratio} = \frac{823.92}{183.233}$$

$$= 4.50$$

$$\text{Total Degree of Freedom} = 24 + 5 = 29$$

**Table Value** = 2.62

### Validation of the Hypothesis

The above statistical analysis is showing that the calculated value of F Ratio stands more as compared to the table value, hence null hypothesis of the study is rejected and alternative hypothesis of the study is accepted that there is a significant difference between number of technical colleges and Districts of Madhya Pradesh.

### Conclusion

The subject matter of the Research Paper, Data of the Colleges in Madhya Pradesh along with Analysis is clearly indicating that referred to the various dimensions of the technical education sector, the major issues of contemplation are number of colleges as well as imbalance in the courses of the colleges in various cities. The number of colleges cannot be said stable in the state because the institutions conducting BE courses are too much. It is true that many students opt this course but on the other hand these colleges are reducing also due to various reasons such as other courses gaining popularity, reducing employment for engineering, need for higher studies to avail a job and quality of education in most of the colleges. So a balance must be maintained so that the institutions are as per need of the students. No one should be forced to be an engineer and if the candidate has



the degree, he should be able to get a job. Other courses should also be promoted. It is notable that some of the other courses are post graduate degrees of the bachelor courses taken for analysis but the scenario is completely different for them.

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