

# Application of Geographical Information System in Analyzing Employment opportunities of Diploma Technicians at Chennai District

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*Abstract*— Geographic Information Systems (GIS) can be used to display spatial data and to answer queries that involve spatial factors. GIS is particularly useful for relating, integrating, and analyzing information from different stake holders.

The main objective of study is to use the Geographical Information system (GIS) to analyze the use GIS for the Human Resources Department people for recruiting diploma technicians who had studied Mechanical and Mechanical Allied programme offered by the Directorate of Technical Education, Tamilnadu

**Keywords**—Geographical Information System, Spatial Data, Non Spatial Data

## I. INTRODUCTION

The major requirements of any curriculum are

- The Curriculum should fulfill needs of the industries
- The curriculum should revised frequently to keep it relevant to the scientific and technological development from time to time
- There should be some flexibility in curriculum so that students acquire latest skills rather than learning by rote <sup>(1)</sup>.

The interaction between industry and Technical education is so crucial and grave that the relevant quality and cost effectiveness are to be affected under increasing pressure of global competition. We are today surrounded with fast emerging technological innovations and therefore without industry – Technical Education interaction research and development activities would be quite irrelevant.

Curriculum for various courses of Technical Institutions has been developed purely teachers of subject concerned. Industries and other research organizations have to be involved in the curriculum development. Other points, “students – Staff industrial visit”: experts from industries should be called to deliver and discuss the relevance of their technology and managerial process

The industry expects that fresh engineering graduates should have proud engineering background with competency in problem solving. Many students do not updating their knowledge. To update their skill and knowledge continuing education programmes must be conducted at the institutes <sup>(2)</sup>. There are 4804 colleges in India offering BTech, MTech and PhD degrees in multiple specializations like CSE, Electronics,

Mechanical, Civil, Electrical, Biotech, etc. These include 3982 private and 822 government engineering colleges. At this stage, it is essential to find out, the employment opportunities of diploma technicians so that effectiveness curriculum can be assessed

## II. MAPPING OF EMPLOYMENT OPPORTUNITIES USING GIS

A Geographical Information system (GIS) is a computer system designed to capture, store, manipulate, analyze, manage, and present a variety of spatial and geographical data. GIS is very useful and important especially when it comes to planning. It has been used in a variety of industries to help in planning and monitoring.

In this paper an attempt is being made to find whether GIS for is an efficient tool for HRD people of industries to select diploma technicians for employment

GIS used to find out the availability of important school and teacher resources for schools located in the St. Louis city school district was compared with those compared with schools located in St. Charles and Jefferson counties<sup>(3)</sup>.

The ministry of education, Chile developed an ArcSDE solution to administer unique and shared data base information of all schools so that this information can be shared with other sectors on a click of mouse <sup>(4)</sup>.

### A. DATA Used

The data needed for this creation of the customized GIS data base consists of spatial and non spatial -data.

#### i. SPATIAL DATA:

The spatial data needed for the creation of the data are the base map of Chennai, Thiruvellore and Kanchepuram districts and the following layers.

- a) Administrative boundary: District, block and panchayat village boundaries.
- b) Transport network: Highways, state highways, metalled and non metalled roads
- c) Land use: Type of land use will be indicated.

The base map and the spatial layers needed such as administrative boundaries, transport network etc, were obtained from Survey of India (SOI) toposheets of scale 1:50,000. The various spatial layers needed for the analyses are digitized using Arc Info 7.2.1. The geographical data needed for the creation of data base is made available in the digital format.

Figure 2

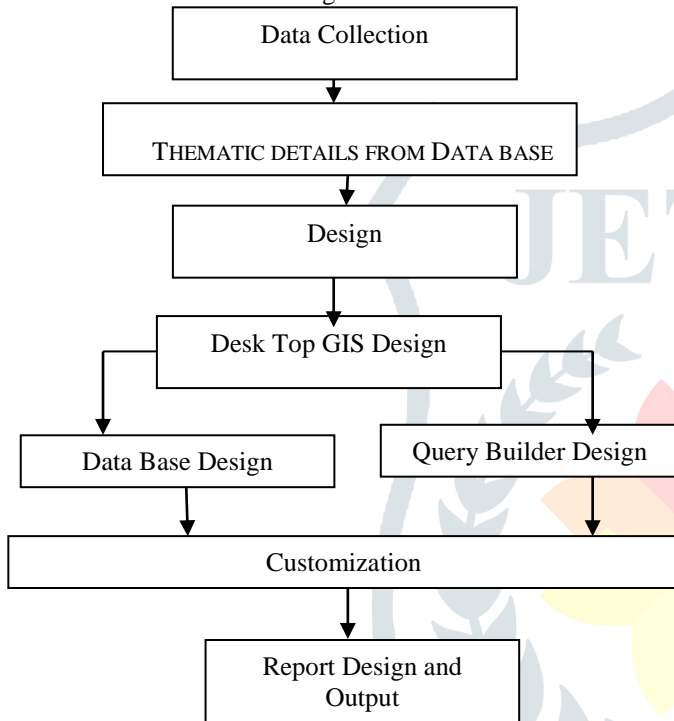
ii. NON SPATIAL DATA

Demographic data consisting of following details were obtained were from Principal and placement officers of selected polytechnics.

- i. Institution code number assigned by DTE
- ii. Branches in Mechanical/ Mechanical Ailed in the polytechnics
- iii. Number of teaching staff in the Mechanical/ Mechanical Ailed Branches.
- iv. Number of non teaching staff in the Mechanical/ Mechanical Ailed Branches.
- v. Sanctioned strength by the DTE in the Mechanical/ Mechanical Ailed Branches
- vi. Percentage of infrastructure facilities like equipments available in the laboratories

The flow chart for the usage of GIS is shown below

Figure 1



B. General Employment scenario of Diploma technicians

Number of attempts taken by the technicians to acquire diploma qualification:

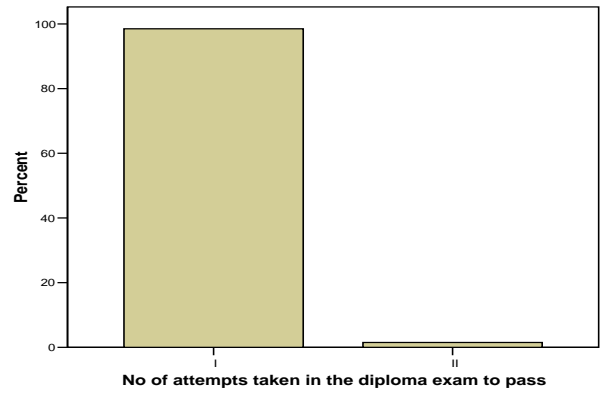
The number of attempts taken by the technicians to acquire diploma qualification is furnished in the Table 1 and Figure 2

Table 1

No of attempts taken in the diploma exam to pass

Number of attempts	Frequency	Percent
I	131	98.5
II	2	1.5
Total	133	100.0

No of attempts taken in the diploma exam to pass



It can be seen that a majority of 98.5% who got employment have obtained in their first attempt. Very meager of 1.5% have obtained diploma in their second attempt.

Time taken to get employment after completion of the diploma course:

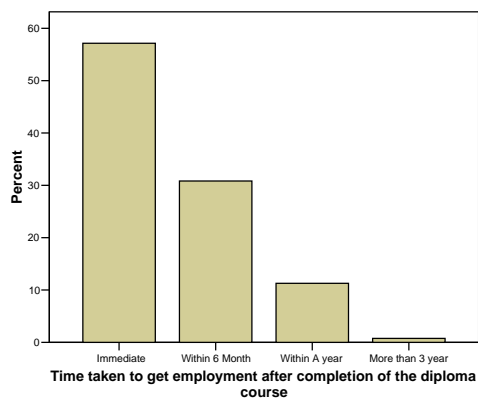
The time taken by the technicians to get employment after obtaining diploma qualification is furnished in the Table 2 and Figure 3

Table 2

Time Taken	Frequency	Percent
Immediate	76	57.1
Within 6 Month	41	30.8
Within A year	15	11.3
More than 3 year	1	.8
Total	133	100.0

Figure 3

Time taken to get employment after completion of the diploma course



C. Method of getting employment:

The Table 3 and Figure 4 explain the mode by which the technicians got their first employment.

Table 3  
Method of getting employment

Method	Frequency	Percent
Campus Interview	34	25.6
Paper Advertisement	41	30.8
Direct Approach To Industry	41	30.8
Due to Recommendation	17	12.8
Total	133	100.0

Figure 4

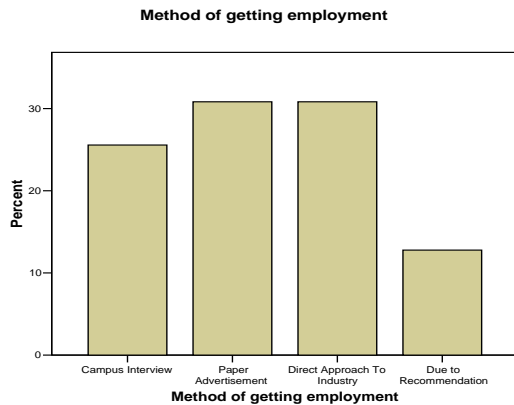


Figure 4

It can be seen that paper advertisement and direct approach by the students to the industries are playing equal role in getting employment. 30.8% of technicians got their employment by this method. Campus interviews arranged by the respective polytechnics are playing an important role for placement. 25.6% of the students are getting employment by campus interviews. 12.8% of the successful candidates are getting their employment due to recommendation.

Industries recruit candidates by the following methods.

- Campus interview
- Paper advertisement
- With the assistance of human resources consultancies

GIS can play a vital in the selection process. If the data are placed in the institution website, these can be used for the selection process

Suppose an automobile industry wishes to recruit candidates for it production.

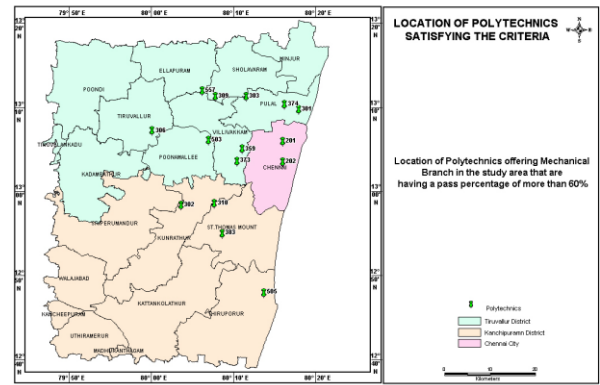
The industry can raise the following query in the GIS

**“The institution must have automobile branch”**

**&**

**“The institution must have a pass percentage of 60% for the year 2019-20”**

Figure 5



The output can be views as shown figure 5

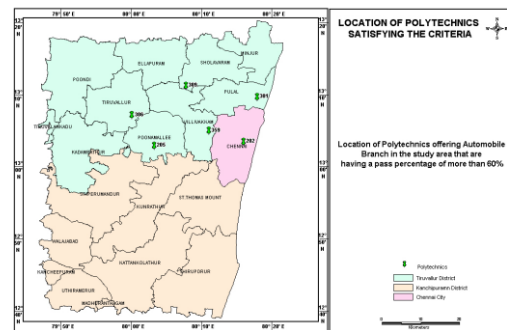
Suppose an industry wishes to select candidates by campus interview, it can raise the query in the following way

**“The institution must have Mechanical branch”**

**&**

**“The institution must have a pass percentage of 60% for the year 2019-20”**

Figure 6



The figure 6 shows the output of GIS for the above query.

**3. Conclusion:**

In this corona era, it is mandatory for maintain social distance. Hence if the data like institution pass percentage uploaded in the Directorate of Technical education web site, the GIS minimize the personal visit of HR people to institutions to select the candidates. They can have their work done by a click of mouse in selecting institution for campus interview

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