

Perception among Students in Private and Government Education Industry

Kanav Sadawarti¹, Abhilash Sharma²

¹RIMT--Institute of Engineering and Technology, Punjab Technical University, Sirhind Side, Punjab, India

kanavsadawarti@gmail.com

²Assistant Professor at RIMT- Institute of Engineering and Technology, PTU, Sirhind Side, Punjab, India

abhilash.583@yahoo.com

Abstract

Data mining is needed to extract valuable information from seemingly meaningless data. Data mining techniques have revolutionized the way we interpret data and is becoming the backbone of every major decision support system in a MIS. Recent advances in IT Technologies and increasing access to the internet with the help of mobile computing devices has increased general awareness to a large extent. In this paper, we discuss the various applications of data mining and need for knowledge discovery, required for understanding and awareness of people regarding the various aspects of education industry.

Key Words: Data Mining, Knowledge Discovery, Management Information System, Education Industry.

1) INTRODUCTION:

Data Mining, the removal of hidden prognostic information from large databases, is an effective new technology with great possibility which helps companies target on the most necessary information in their data warehouses. Data mining tools forecast future trends and actions, allowing businesses to make dedicated, knowledge-driven decisions. The mechanized, recommended analyses offered by data mining move beyond the analyses of past events provided by reflective tools exemplary of decision support systems. Data mining

tools can explain business questions that consistently took a lot of time to resolve.

A. Knowledge Discovery Process

The term Knowledge Discovery in Databases, or KDD for short, refers to the wide process of finding knowledge in data, and stress upon the "high-level" application of particular data mining methods. It is of concern to researchers in machine learning, pattern recognition, databases, statistics, artificial intelligence, knowledge gain for expert systems, and data visualization. The consolidating goal of the KDD process is to identify knowledge from data in the context of large databases.

Data Mining Model

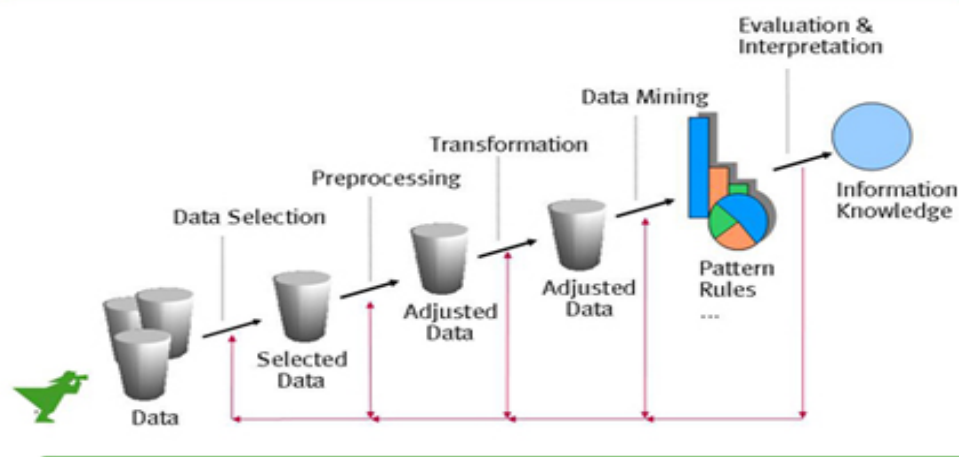


Figure 1:

B. The Knowledge Discovery Process Steps:

- 1) Identify business problem
- 2) Data mining
- 3) Action
- 4) Evaluation and measurement
- 5) Deployment and integration into businesses processes

C. Techniques of Data Mining:

There are several major data mining techniques have been developed and used in data mining projects recently including association, classification, clustering, prediction and sequential patterns.

1) Association: Association is one of the best known data mining method. In association, a pattern is invented based on a connection of a particular item on other items in the same undertaking. For example, the association technique is used in market basket analysis to identify what products that customers often purchase together. Based on this data businesses can have equivalent marketing drive to sell more products to earn more profit.

2) Classification: Classification is a classic data mining technique based on machine research. Basically classification is used to allocate each item in a set of data into one of described set of groups or classes. Classification method makes use of mathematical approaches such as linear programming, neural network, statistics, and decision trees. In classification, we make the software that learns to classify the data items into groups. For example, we apply classification in application that provides all past history of employees who left the company, conclude which current employees are likely to leave in the future. In this case, we separate the employee's records into two groups that are "leave" and "stay". And then we can ask our data mining software to classify the employees into each group.

3) Clustering: Clustering is a data mining technique that makes essential or useful cluster of objects that have identical characteristic using automatic technique. Clustering technique also defines the classes and put objects in them, while in classification, the objects are assigned into predefined classes. To make the perception clearer, we can take library as an example. In a library, books have a wide extent of topics available. The question is how to keep those books in a way that readers can take several books in a particular topic without any problem. By using clustering technique, we can keep books that have some kind of sameness in one cluster or one shelf and mark it with a meaningful name. If readers want to fetch books in a topic, he or she would

only prefer that shelf instead of looking the whole in the entire library.

4) Prediction: The prediction as it name implied is one of a data mining techniques that determines relationship between independent variables and relationship between dependent and independent variables. For instance, prediction analysis technique can be used in sale to forecast profit for the future if we consider sale is an independent variable, profit could be a dependent variable. Then based on the previous sale and profit data, we can draw a fitted backsliding curve that is used for profit prediction.

5) Sequential Patterns: Sequential patterns analysis in one of data mining technique that looks for to discover similar patterns in data transaction over a business span. The uncover patterns are used for further business analysis to identify relationships among data.

D. Data Mining Applications

Data mining is a process that examines the large amount of data to find the new and hidden information that promotes business efficiency. Various industries have been choosing data mining to their mission-critical business processes to gain competitive advantages and help business grows. This tutorial explains some data mining applications in health care and insurance, transportation, sale/marketing, banking/finance and medicine.

The growth of the insurance industry completely depends on the ability of modifying data into the knowledge, information or understanding about customers, competitors and its markets.

Data Mining Applications in Medicine

- Data mining enables to distinguish activities of patients to see coming office visits.
- Data mining help recognize the patterns of successful medical analysis for different illnesses.

6) MANAGEMENT INFORMATION SYSTEM:

The Management Information System (MIS) is an approach of the last decade or two. It has been described in a number of ways. It is also known as the Decision System, Information System, and the Computer-based information System. Management information system, or MIS, refers to a computer-based system that provides managers with the tools to organize evaluate and efficiently manage departments within an organization. In order to provide past, present and future information, a management information system can include software that helps in decision making, data resources such as decision support systems, databases, the hardware assets of a system, people management and project management applications, and any computerized

methods that helps the department to run smoothly. MIS IS -:

Information

Data that has been put into an essential and beneficial context. Usually to help make a decision.

Management Information System

A combo of computers and people that is used to provide information to assist in making decisions and directing a firm.

Information Technology (IT)

A. Role of Management Information System

The role of the MIS in an organization can be related to the role of heart in the body. The information is the blood and MIS is the heart. The MIS performs exactly the same role in the organization. The system assures that a suitable data is gathered from the various sources, processed, and then sent further to all the required destinations. The system is supposed to accomplish the information needs of an individual, a group of individuals, the management handlers: the top management and the managers. The MIS benefits the clerical personnel in the transaction processing and answers their doubts on the data belonging to the transaction, the position of a specific record and citations on a range of documents.

7) GOVERNMENT VERSUS PRIVATE EDUCATION INDUSTRY:

The ability of any society to work and prosper is the result of many factors, the most important of which are education, food, and health. Education is one of the most significant tools that devote directly to the achievement of growth and development for a nation, to the accomplishment of new generations, and to the abilities and skills of a country's human resources. It also assists the individual with social needs at different stages in their lifetime.

The most important phase of education in any country is the primary stage. Alongside other things related to this stage, it focuses not just on formal education, but on bringing up a new generation, and on building knowledge in children and the ability to think for themselves. In addition, this stage involves building knowledge through scientific and educational curricula that is the basis for moving forward and will direct and develop the thoughts, the skills, and the abilities of pupils. It also qualifies them to reach subsequent educational levels based on curricula related to the primary stage. For these reasons, countries pay careful attention to this stage of education and provide all the pre-requisites, from institutional and administrative aspects, to educational management, curricula, and teachers. They do so because this is a crucial time in a child's schooling. It is observed that

many countries have an educational management system that consists of two sectors that contribute to the provision of education. Most countries depend on contributions from the private sector to provide some educational services, especially in terms of the primary level.

While the focus of education policy in developing countries such as India has largely centered on increasing the resource base and the number of government-run schools, the role of private fee-charging schools in the primary education sector has not been appreciated as much by academics and policy makers. However, as several recent papers point out, private fee-charging schools increasingly cater to a substantial fraction of the primary-school going population in India. The increasing prevalence of private schools is due to the poor performance of public schools, it has not been easy to systematically disentangle the extent to which the creation of private schools is reflecting demand due to poor public school performance as opposed to rising incomes. Private-school teacher salaries in rural India are typically *less than one-fifth* the salary of regular public-school teachers (and are often as low as *one-tenth* as much). This enables the private schools to hire more teachers, have much lower pupil-teacher ratios, and reduce multi-grade teaching.

8) LITERATURE SURVEY:

The purpose of this study is to identify and compare the causal attributions made by students, teachers and parents for perceived limited parental participation in specific parental involvement activities to support their children's schooling or involvement of low-educated versus highly-educated parents.

A survey helps the researcher to build background on the survey problem. This type of research is required when the research problem is new or when the information available about the problem is limited.

A literature review on educational data mining topics such as student retention and attrition, absenteeism, lack of interest, teacher's skill, parent's view within education, and how data mining can be used to analyze and differentiate between government and private education. Gaps in the current literature and opportunities for further research are presented.

Different number of audiences has been surveyed. The basis of survey was questionnaire cum interviews. I was conducted on a sample of teachers and educational and administrative staff at public and private schools. This was to obtain feedback on the problem.

Kotor Asare (2015) described exploring the Kindergarten Teachers' Assessment Practices in Ghana. The study

aimed at investigating kindergarten teachers’ assessment practices based on two subscales: (a) teachers’ modes of assessment frequently used, and (b) their reasons for selecting a particular mode of assessment. The sequential mixed methods research design was employed. The quantitative data were gathered through questionnaires administered to 192 teachers in public and private kindergartens in six regions of Ghana.

The qualitative data were gathered through interviews with three participants selected from the 192 sampled teachers. Independent samples t-test was employed to test the quantitative data. The results of the study indicated that paper- and- pencil test mode of assessment is used frequently by the teachers. In addition teachers also appeared to be using a particular mode of assessment just to meet the expectations of the parents and educational leaders without meeting the curriculum assessment prescription. Results further showed no significant difference between the public and private kindergarten teachers on almost all the items in the two subscales used in this study but differed significantly on four reasons for selecting a particular mode of assessment. Teachers’ assessment practices are therefore not supported by any known developmentally assessment theory for children.

Andy Green, Angela W. Little, Sangeeta G. Kamat, Moses Oketch and Edward Vickers (2007): Education and Development in a Global Era: Strategies for ‘Successful Globalisation’ As our research progressed we arrived at a broad operational definition of ‘successful globalisation’ as growth with relative income equality and social peace. The post-1980 phase of globalisation promoted by the West has been characterised by the introduction of policies designed to forge a greater integration of economies with global markets and the growth of information technology. The goal of economic growth, entailed by these polices, nationally and globally, appears to have overshadowed equally important goals of development – equality and peace. Our concern has been to assess national performance in relation to all three

aspects of development, and the role of education in contributing to this.

9) METHODOLOGY:

The primary goal is to observe the perception among students in private and government education industry.

Following will be the steps involved during the research:-

1. Selection of a study sample on educational culture differences private and government education industry.
2. To Measuring the teachers skills, expectations, and attributes of the methods of Teaching.
3. To involve teaching in quality improvement; determine teachers’ satisfaction.
4. The moderating role of students feel valued, schools can better drive education results through their human capital.
5. To develop a questionnaire consisting of various questions/parameters.
6. To interact with the students, parents & teachers in acquiring their views based on questionnaire.
7. To analyse the collected response by using various statically test & data mining techniques.

10) RESULTS AND DISCUSSIONS:

Various responses from teachers, students and parents have been collected according the questionnaire framed. The response collected is mined using clustering and analysed that is presented below.

Demographic Profile

The distribution of respondents according to various socio-economic characteristics is described below: -

Age

A perusal of Table 4-1 below shows that highest proportion of teachers belongs to age group of 20-40 years, followed by 40-60 years. The lowest proportion was of age greater than 60 years. The highest proportion of students belongs to age group of less than 10 years and lowest proportion was has age group 10-20 years. The highest proportion of parents belongs to age group of 20-40 years and lowest proportion was of age group 40-60 years.

It is also is shown in Figure 4-1 below.

Table 4-1 Age Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Age (years)	Frequency	Frequency	Frequency
<10	0	29	0
10-20	0	21	0
20-40	24	0	32
40-60	19	0	18
>60	7	0	0
Mean	21.04	4.60	18.6

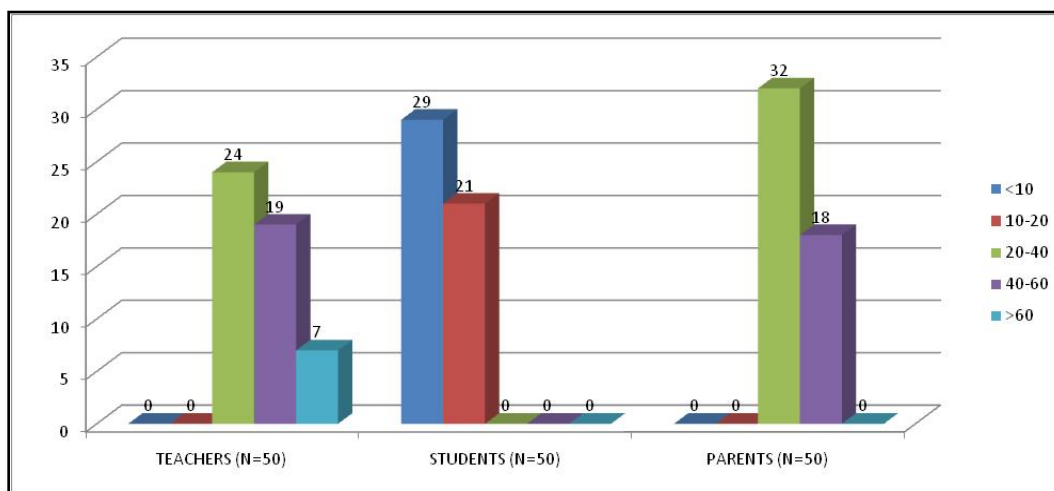


Figure 4-1 Age Demographic Profile

Gender

As listed in the Table 4-2 below, majority of teachers are females whereas it was found reverse in case of students. It is also shown in Figure 4-2 below.

Table 4-2 Gender Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Gender	Frequency	Frequency	Frequency
Male	20	31	22
Female	30	19	28

Locale

As illustrated in the Table 4-3 below, majority of teachers and students are living in urban areas. It is also shown in Figure 4-2 below.

Table 4-3 Locale Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Gender	Frequency	Frequency	Frequency
Urban	29	28	24
Rural	21	22	26

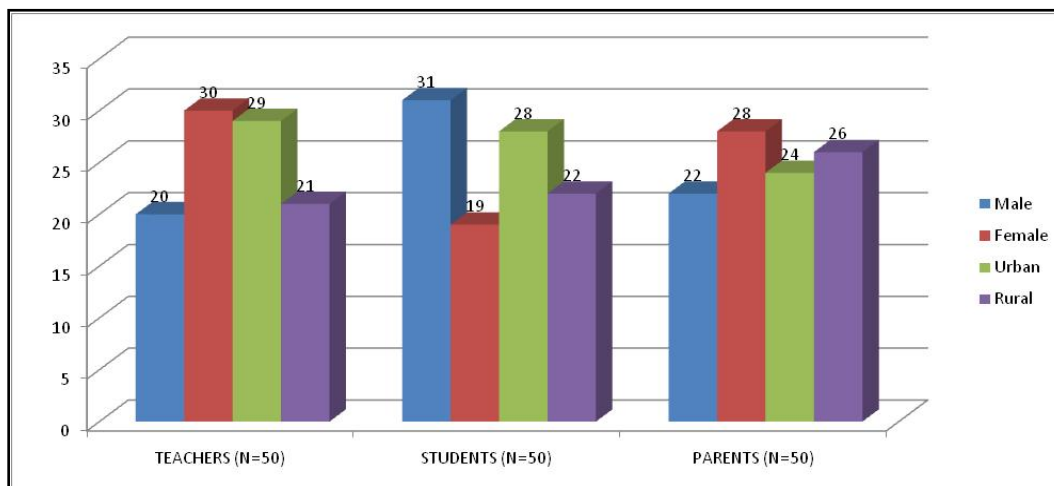


Figure 4-2 Demographic Profile (Gender, Locale)

Occupation

The examination of Table 4-4 below shows that majority of parents were either in some service or business, followed by agriculturist. Only few parents were unemployed or retired or do any other activity.

Table 4-4 Occupation Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Occupation	Frequency	Frequency	Frequency
Service/Business	50	0	24
Agriculturist	0	0	13
Unemployed	0	50	3
Retired	0	0	4
Any Other	0	0	6

Annual Income

As depicted in the Table 4-5 below, the highest proportion of teachers and parents belong of group 3-5 lacs whereas lowest is greater than 7 lacs.

It is also shown in Figure 4-3 below.

Table 4-5 Annual Income Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Annual Income	Frequency	Frequency	Frequency
<1 lac	0	0	9
1-3 lacs	15	0	14
3-5 lacs	19	0	18
5-7 lacs	10	0	6
>7 lacs	6	0	3
Mean	2.17	0	1.66

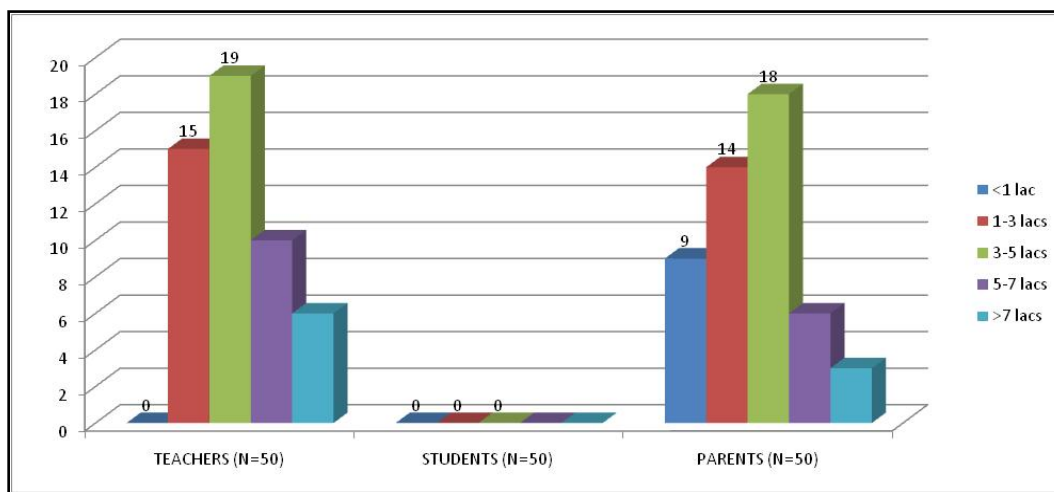


Figure 4-3 Annual Income Demographic Profile

Education Type

Out of each of 50 teachers, students and parents, perception has been collected from government and private sector (50% each) as shown in Table 4-6 below.

Table 4-6 Education Type Demographic Profile

Demographic Profile	Teachers (N=50)	Students (N=50)	Parents (N=50)
Gender	Frequency	Frequency	Frequency
Government	25	25	25
Private	25	25	25

Perception of Students

All the significant values have been represented in Figure 4-4. The values that were non-significant have been removed from the figure. It gives the clear picture of the perception of teachers.

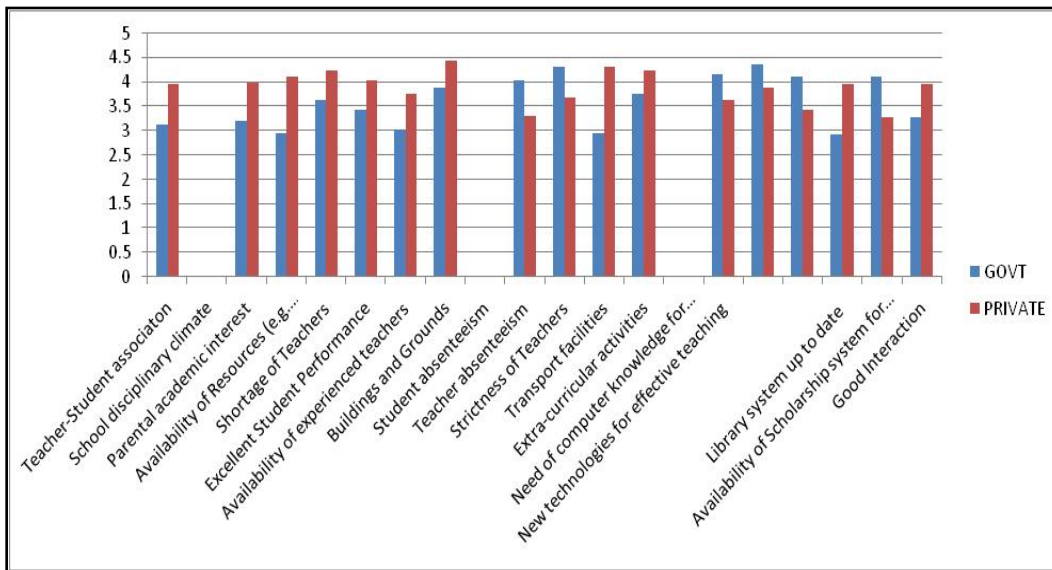


Figure 4-4 Perception of Students

According to the students private education is good for students as it provides as majority of the parameters are favouring towards private education. This indicates that private education may be good for the students.

Perception of Teachers

All the significant values have been represented in Figure 4-5. The values that were non-significant have been removed from the figure. It gives the clear picture of the perception of teachers.

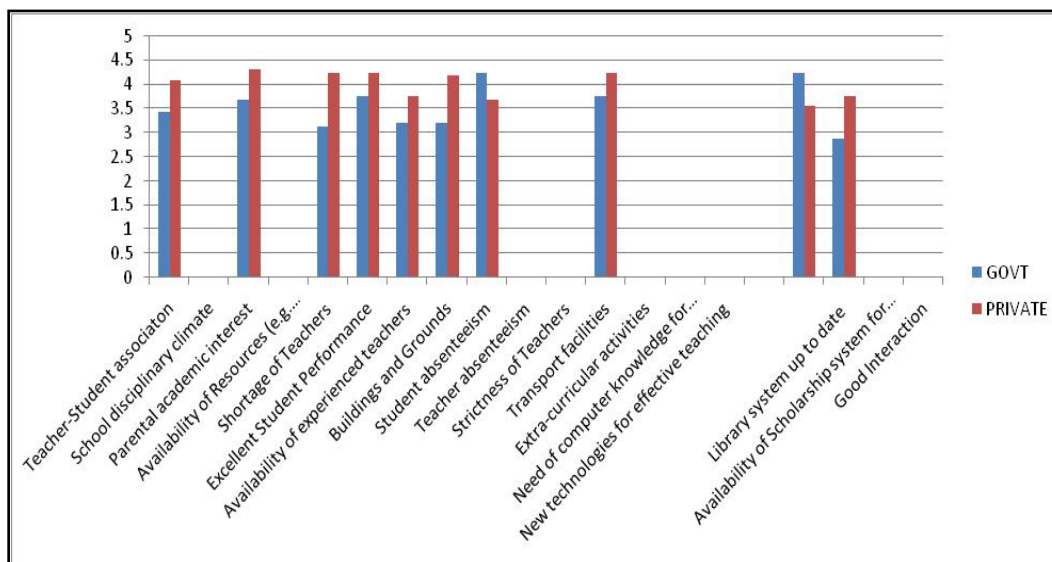


Figure 4-5 Perception of Teachers

According to the teachers private education is good for students as it provides as majority of the parameters are favouring towards private education. This indicates that private education may be good for the students as they get all types of resources, infrastructure, transport facilities, teacher knowledge etc. They may be short of teachers but it can be compensated by giving extra load to the teachers.

Perception of Parents

All the significant values have been represented in Figure 4-6. The values that were non-significant have been removed from the figure. It gives the clear picture of the perception of teachers.

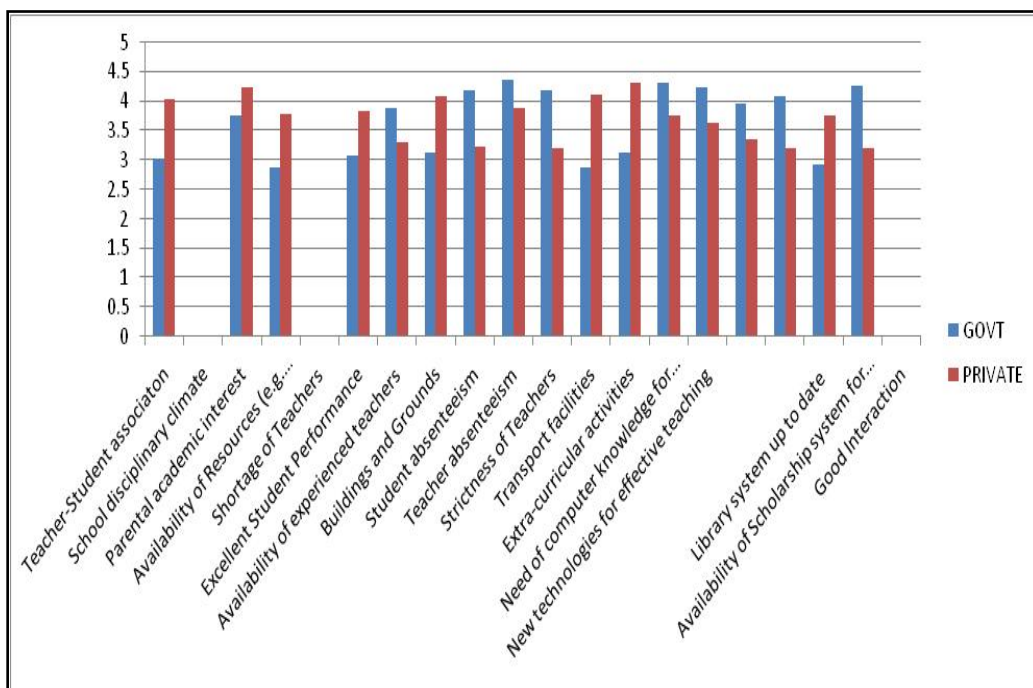


Figure 4-6 Perception of Parents

According to the parents also private education is good for students as it provides as majority of the parameters are favoring towards private education. This indicates that private education may be good for the students.

Clustering

Clustering is a data mining technique that makes meaningful or useful cluster of objects that have similar characteristic using automatic technique. Different from classification, clustering technique also defines the classes and put objects in them, while in classification objects are assigned into predefined classes.

Clustering can be considered the most important unsupervised learning problem; so, as every other problem of this kind, it deals with finding a structure in a collection of unlabeled data. A loose definition of clustering could be “the process of organizing objects into groups whose members are similar in some way”. A cluster is therefore a collection of objects which are “similar” between them and are “dissimilar” to the objects belonging to other clusters.

Two or more objects belong to the same cluster if they are “close” according to a given distance. This is called

distance-based clustering. Another kind of clustering is conceptual clustering: two or more objects belong to the same cluster if this one defines a concept common to all that objects. In other words, objects are grouped according to their fit to descriptive concepts, not according to simple similarity measures. So, the goal of clustering is to determine the intrinsic grouping in a set of unlabeled data. But how to decide what constitutes a good clustering? It can be shown that there is no absolute “best” criterion which would be independent of the final aim of the clustering. It is the user which must supply this criterion, in such a way that the result of the clustering will suit their needs. Clustering is a challenging field of research in which its potential applications pose their own special requirements.

The following Figure 4-7 illustrates that for the given response there are 4 clusters. The size of each cluster is also shown. It shows that cluster 4 is largest sized followed by cluster 1. Cluster 2 and cluster 3 are of same size.

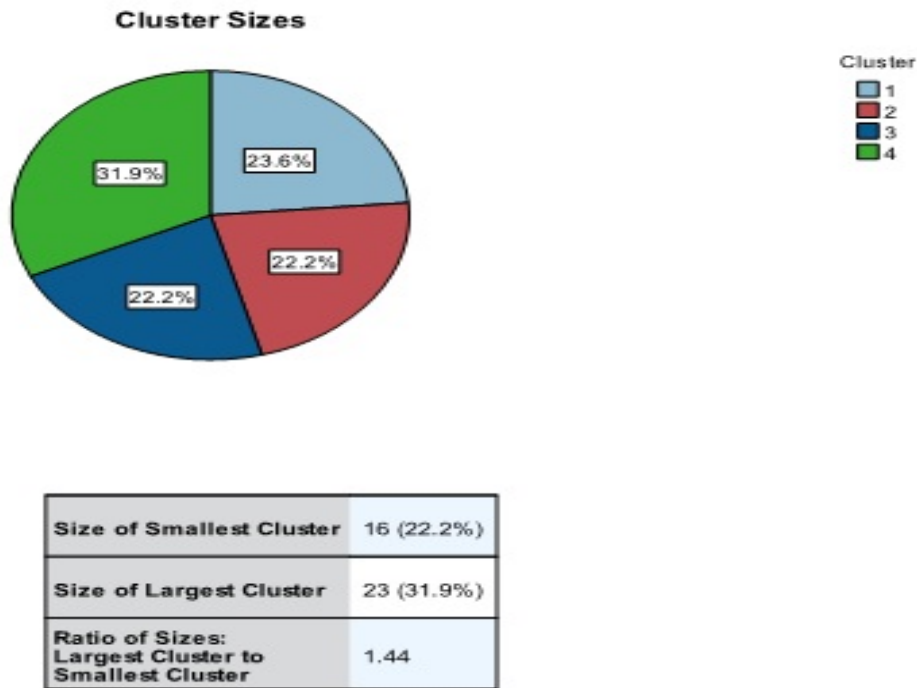


Figure 4-7 Clusters and their Sizes

Predictor Importance

The predictor importance is used to predict which field is important and has more impact in education industry. As shown in Figure 4-8 below, Role is the most important, followed by Occupation, Gender, Age, Annual Income and Locale. This predictor importance helps the education industry in understanding the behaviour and to act accordingly.

Predictor Importance

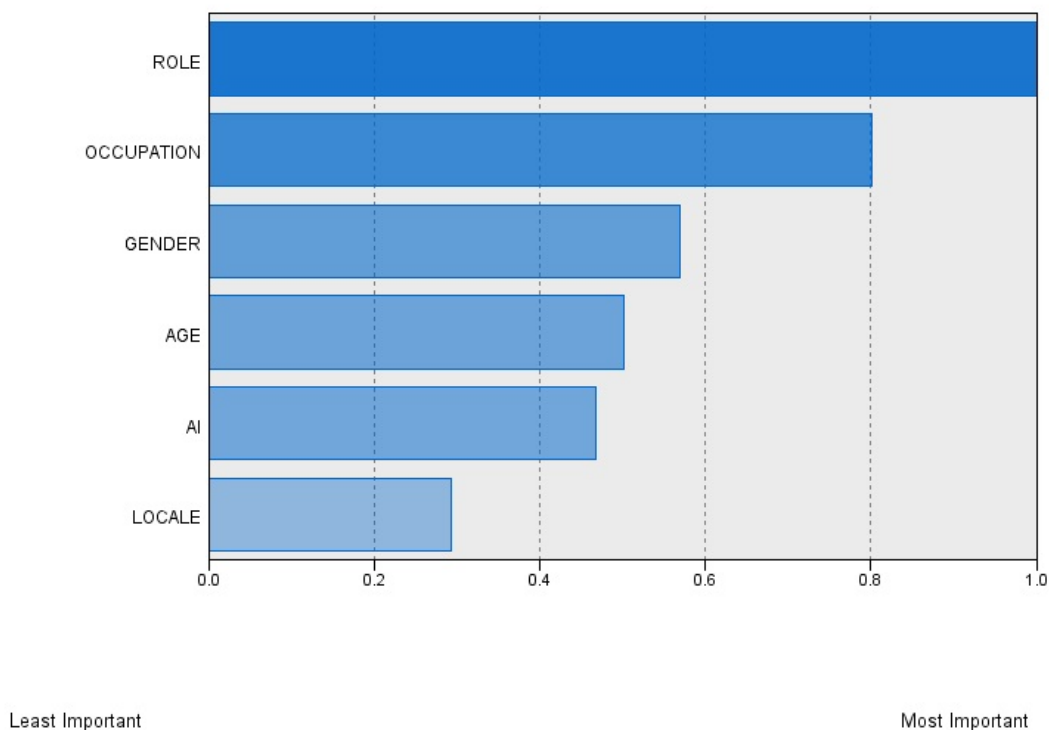


Figure 4-8 Predictor Importance

The education industry is greatly influenced by the role i.e. students, teachers, parents as they decide where to get admission. Occupation and gender also greatly affects education industry. They choose which industry to prefer. Rest of classifiers such as locale, annual income and age does not affect or may affect education industry to a little extent.

8. PROBLEM FORMULATION:

This research problem relates to the extent of the difference between public and private schools in terms of methods of teaching.

The Confusion and indecision of parents about whether their children should go to public or private schools.

The lack of clear criteria for comparison between both types of education.

The absence of any clear reasons why some parents prefer public schools while others prefer private schools based on teaching and students' achievement.

As comparative Private-school teacher salaries in rural India are typically *less than* the salary of regular public-school teachers.

Skills of teachers are less than the private teachers.

9. CONCLUSION:

For job perspective teachers prefer public/government education. Parents and students needs to be convinced by the schools for taking admission. Gender may also influence the admission due to the fact of co-ed facility. Teacher-Student association is high in private as comparison to public sector. Structure of building, ground and availability of resources is more in private in contrast to public. School climate and interaction are at par in public and private education sector according to the response. These factors are less bothered.

10. REFERENCES:

1. 2014. Teaching and Learning: Achieving Quality for All. Education for All Global Monitoring Report 2013/4. Paris: UNESCO.
2. Kotor Asare (2015) Exploring the Kindergarten Teachers' Assessment Practices in Ghana
3. S Avram and Jaap Dronkers" (2010) School sector variation on non-cognitive dimensions: are denominational schools different?"
4. Geeta Kingdon and Francis Teal, "Does performance related pay for teachers improve student performance. Some evidence from India," Economics

of Education Review, Elsevier, vol. 26(4), August 2007, p. 473-486.

5. Eric A. Hanushek and Ludger Wößmann (2007)The Role of Education Quality in Economic Growth.
6. S Avram and Jaap Dronkers (2011) SCHOOL SECTOR VARIATION ON NON-COGNITIVE DIMENSIONS: are non-public but publicly supported schools more effective?
7. Abdourahmane Barry and D'Youville College, Buffalo(2009)The Education of Africa South of the Sahara: A Comparative Analysis of Private and Public Education.
8. Andy Green, Angela W. Little, Sangeeta G. Kamat, Moses Oketch and Edward Vickers(2007)Education and Development in a Global Era: Strategies for 'Successful Globalisation'
9. Dronkers, J. and Robert.p (2003). "the Effectiveness of Private and Public Schools from a comparative perspective"
10. Rob French and Geeta Kingdon (2010) The relative effectiveness of private and government schools in Rural India: Evidence from ASER data
11. Ambrish Dongre(ASER 2014) "Do private tuitions improve learning outcomes?"Abdulrahman Al-Duwaila (2012) A comparative study between Kuwait's Government and Private Sector Primary Schools in methods of teaching and pupils' achievement in mathematics
12. Karthik Muralidharan and Michael Kremer(2007) Public and Private Schools in Rural India
13. Sonalde Desai, Amaresh Dubey, Reeve Vanneman, Rukmini Banerji (2008) Private Schooling in India: A New Educational Landscape
14. Dr Lance Emerson, Josh Fear, Dr Stacey Fox, Emma Sanders.(2012) "A report by the Australian Research Alliance for Children & Youth for the Family-School and Community Partnerships Bureau. Parental engagement in learning and schooling: Lessons from research."
15. Becker, H. & Epstein, J. L. (1982). Parent involvement: A survey of teacher practices. Elementary School Journal, 83,85-102.
16. Drummond, K. V., & Stipek, D. (2004). Low-income parents' beliefs about their role in children are academic learning. The Elementary School Journal, 104,197-213