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Review on Technical and Non Technical Education using Regression Technique

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Abstract: Data mining, the extraction of hidden predictive information from large databases, is a powerful new technology with great potential to help companies focus on the most important information in their data warehouses. Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that traditionally were too time consuming to resolve. They scour databases for hidden patterns, finding predictive information that experts may miss because it lies outside their expectations. Most companies already collect and refine massive quantities of data. Data mining techniques can be implemented rapidly on existing software and hardware platforms to enhance the value of existing information resources, and can be integrated with new products and systems as they are brought on-line. When implemented on high performance client/server or parallel processing computers, data mining tools can analyze massive databases to deliver answers to questions such as, "Which clients are most likely to respond to my next promotional mailing, and why?" This white paper provides an introduction to the basic technologies of data mining. Examples of profitable applications illustrate its relevance to today's business environment as well as a basic description of how data warehouse architectures can evolve to deliver the value of data mining to end users.

Keywords: Data mining, MIS, Statistical tests, Regression technique.

1. INTRODUCTION

Data Mining, the extraction of hidden analytical information from large databases, is a powerful in their data warehouses. Data mining tools predict future trends and behaviors, allowing businesses to make practical, knowledge-driven decisions.

The automated, prospective analyses offered by data mining move beyond the analyses of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that conventionally were too time consuming to resolve.

1.1 Data, Information, and Knowledge

Data are any facts, numbers, or text that can be process by a computer. Today, organization are accumulating vast and growing amounts of data in different formats and different databases.
This includes: Operational or transactional data such as, sales, cost, inventory, payroll, and accounting, redundant data, such as industry sales, forecast data, and macro-economic data, Meta Data - data about the data itself, such as consistent database design or data dictionary definitions.

1.2 Information

The patterns, associations, or relationships among all this data can provide information For example, analysis of retail point of sale transaction data can yield information on which products are selling and when.

1.3 Knowledge

Information can be converted into knowledge about chronological patterns and future trends. For example, summary information on retail supermarket sales can be analyzed in light of promotional efforts to provide understanding of consumer buying performance. Thus, a producer or retailer could determine which items are most susceptible to promotional efforts.

1.4 Knowledge Discovery Process

The term Knowledge Discovery in Databases, or KDD for short, refers to the broad process of discovery knowledge in data, and emphasizes the "high-level" application of particular data mining methods. It is of interest to researchers in machine learning, pattern recognition, databases, statistics, artificial intelligence, knowledge achievement for expert systems, and data revelation.

The unifying goal of the KDD process is to extract knowledge from data in the context of large database. It does this by using data mining methods (algorithms) to extract (identify) what is deemed knowledge, according to the specifications of measures and thresholds, using a database along with any required preprocessing, sub sampling, and transformations of that database.

1.5 Data mining Process

1.5.1 Data cleaning: Used to remove noise and inconsistent data.

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1.5.2 Data Integration: It is used where the multiple data sources may be combined.

1.5.3 Data Selection: IN this the data relevant to the analysis task are retrieved.

1.5.4 Data Transformation: It is where the data are transformed or consolidated into forms appropriate for mining by performing summery and aggregate operation.

1.5.5 Data Mining: It is essential process where intelligent methods are applied in order to extract data patterns.

1.6 Pattern Evaluation: It is to identify the truly interesting patterns representing knowledge based on some interestingness measures.

1.7 Knowledge Presentation: It is where visualization and knowledge representation techniques are used to present the mined knowledge to the user.

DATA MINING MODEL

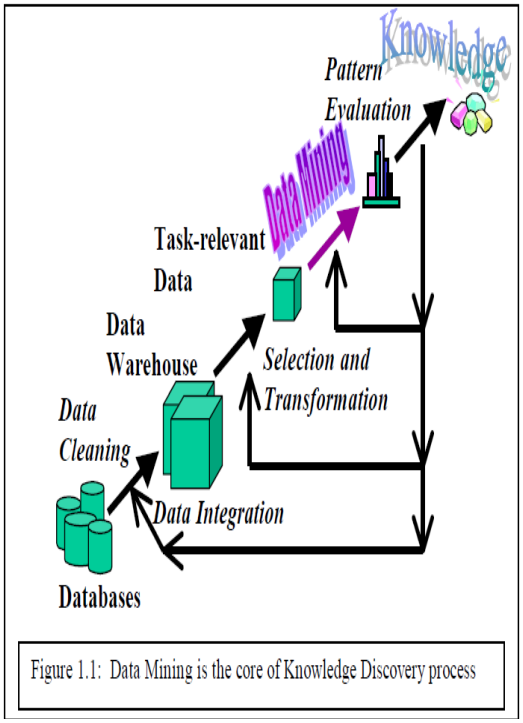

Figure 1.1: Data Mining is the core of Knowledge Discovery process

2. THE KNOWLEDGE DISCOVERY PROCESS STEPS

Identify business problem Data mining Action Evaluation and measurement Deployment and integration into businesses processes.

3. 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, regression, prediction and sequential patterns.

3.1Association Association analysis is the discovery of what are commonly called association rule. In association, a pattern is discovered based on a relationship of a particular item on other items in the same transaction. For example, the association technique is used in market basket analysis to identify what products that customers frequently purchase together. Based on this data businesses can have equivalent marketing campaign to sell more products to make more profit.

3.2 **Classification**: Classification is a process of finding set of models or functions. Basically classification is used to categorize each item in a set of data into one of predefined set of classes or groups. Classification method makes use of mathematical techniques such as decision trees, linear programming, neural network and statistics. In classification, we make the software that can learn how to classify the data items into groups. For example, we can apply classification in application that "given all past records of employees who left the company, predict which current employees are probably to leave in the future." In this case, we divide 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.

3.3Clustering Clustering is a data mining technique that makes meaningful or useful cluster of objects that have similar characteristic using automatic technique. It is the organization of data in classes. Different from classification, clustering technique also defines the classes and put objects in them, while in classification objects are assigned into predefined classes.

To make the concept clearer, we can take library as an example. In a library, books have a wide range of topics available. The challenge is how to keep those books in a way that readers can take several books in a specific topic without hassle. By using clustering technique, we can keep books that have some kind of similarities in one cluster or one shelf and label it with a meaningful name. If readers want to grab books in a topic, he or she would only go to that shelf instead of looking the whole in the whole library.

3.4 Regression and Prediction Regression analysis is widely used for prediction and forecasting. Regression technique can be adopted for prediction .For instance, prediction analysis technique can be used in sale to predict profit for the future if we consider sale is an independent variable, profit could be a dependent variable.

3.4.1Types of regression: A regression models the past relationship between variables to predict their future behavior.

3.4.1aSimple regression: When one independent variable is used in a regression, it is called a simple regression.

Graph A Graph B

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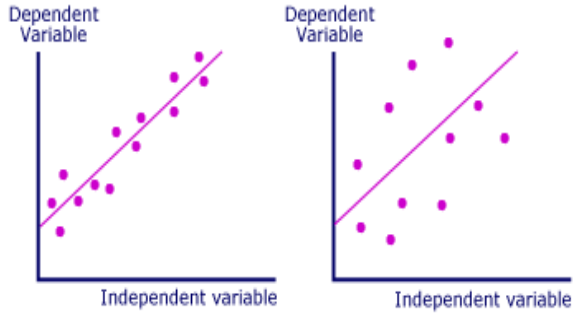

3.4.1b Multiple regression: when two or more independent variables are used, it is called a multiple regression.

Sequential Patterns Sequential patterns analysis in one of data mining technique that seeks to find out similar patterns in data transaction over a business period. The uncover patterns are used for further business analysis to distinguish relationships among data.

Data Mining Applications Sales/ Marketing Banking/ finance Hospitals and Insurance Transportation.

4. MANAGEMENT INFORMATION SYSTEM

The Management Information System (MIS) is a concept of the last decade or two. It has been information system, or MIS, broadly refers to a computer-based system that provides information needed to manage organizations effectively MIS are those systems that allow managers to make decisions for the successful operation of businesses. MIS IS -:

4.1.1MANAGEMENT

Management covers the planning, control, and administration of the operations of a concern. The top management handles planning; the middle management concentrates on controlling; and the lower management is concerned with actual administration.

4.1.2INFORMATION

Information, in MIS, means the processed data that helps the management in planning, controlling and operations. Data means all the facts arising out of the operations of the concern. Data is processed i.e. recorded, summarized, compared and finally presented to the management in the form of MIS report.

4.1.3SYSTEM

Data is processed into information with the help of a system. A system is made up of inputs, processing, output and feedback or control. Thus MIS means a system for processing data in order to give proper information to the management for performing its functions.

5. ROLE OF MANAGEMENT INFORMATION SYSTEM

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. The MIS plays exactly the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed, and sent further to all the needy destinations. The system is predictable to fulfill the information needs of an individual, a group of individuals, the management functionaries: the managers and the top management. The MIS helps the accounting personnel in the transaction processing and answers their queries on the data pertaining to the transaction, the position of a particular record and references on a variety of documents.

5.1MANAGEMENT INFORMATION SYSTEM MANAGERS

The role of the management information system (MIS) manager is to focus on the organization's information and technology systems. The MIS administrator typically analyzes business problems and then designs and maintains computer applications to solve the organization's problems.

6. TECHNICAL VERSUS NON-TECHNICAL EDUCATION IN COLLEGE

This paper used for predicting the performance of students in technical and non technical colleges. A technical college, also known as a vocational college or a trade school, is an educational institution that prepares students for a career in a particular field. Students are taught skills for their career of choice only. For example, if students attend a technical college in hopes to be an engineer they will focus on engineering only. Education systems in developing countries struggle with many issues like grade repetition, leaving colleges, teacher absenteeism, and less learning than the curriculum standards suggest. There is a common belief that non technical offer a lower quality education than technical. Non technical quality is not as great in terms of resources and infrastructure which then inhibits the learning experience for students in technical colleges. Performance of students in technical is higher than students attending non technical colleges. Non technical colleges in developing countries face the issue of teacher absenteeism. Teacher absence rates are higher in non technical colleges as compared to technical colleges. Non technical colleges' teachers make less money than technical colleges.

7. METHODOLOGY

The primary goal is to inspect the comparison among students & teachers in technical and non technical education industry… Following will be the steps involved during the research:- Selection of a study sample on educational culture differences among technical and non-technical organizational performance. To Measuring the teachers needs and expectations; involve teaching in quality improvement; determine teachers' satisfaction. The moderating role of students feel valued, colleges can better drive education results through their human capital. To develop a questionnaire consisting of various questions/parameters. To interact with the students &

teachers in acquiring their views based on questionnaire. To analyze the collected response by using various statically test & data mining techniques.

8. CONCLUSION

This paper provides the comparison between technical and non technical education in terms of methods of teaching skills ,students skills, area of interest they choose and in decision about whether they should go to technical & non technical colleges by using regression technique and compare the skills of teachers and students. According to teachers and students perception technical education is favored in comparison to non technical that indicates them it may be good for them. In this paper regression models are used to check the weightage of significant and highly significant values .To check that which is most important and which is least important in all significant and highly significant values.

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