

Effectiveness of Information and Communication Technology in Traditional Banking Sector: A Study of Rural Area

Aleem Khan

Assistant Professor
S.S. Jain Subodh P.G. College
Jaipur, India

Dr. Yogendar Verma

Assistant Professor
S.S. Jain Subodh P.G. College
Jaipur, India

ABSTRACT - In this paper of research proposed the case study of rural areas for the usage of ICT. In the earlier decades, the major financial transformation and banking had tremendous changes. The public finds a lot of difficulty in using the traditional banking. Now a day, India is marching towards the digitalized assisted technology, so it is important to give a proper knowledge to the public. One of the major factors in the traditional banking system is to wait in the queue and must deposit/withdraw the money. This is the tedious job for the public if the bank timing is closed the people have to come again for the deposit / withdraw on the next day. In this paper, it gives a lot of specification for ICT to the rural area people and conducted a survey on ICT utilization in banking for them. In this research find how much this ICT reached to the public in a positive way.

KEYWORDS - Traditional Banking, ATM, Internet banking, Mobile Banking, ICT

1. INTRODUCTION

The financial inclusion of the rural community for India's development and the important role that the ICT can play this endeavour. Without ICT usage the banking is stop their fund transferring and other works .In this paper we apply some techniques (Clustering) using of weka tool and some basic data getting from rural area survey. Now a day's ICT performing vital role in baking. Because Banking not only used for transaction it will also use for agriculture, Education and all other filed too.

a) Data Mining

Data mining is an important component of every CRM framework that facilitates analysis of business problems, prepare data requirements, and build, validate and evaluate models for business problems [1]. The data mining process and algorithms enable firms to search, discover hidden patterns and correlations among data, and to extract relevant knowledge buried in corporate data warehouses, in order to gain broader understanding of business. Data mining uses sophisticated statistical data search algorithms to find, discover hidden patterns and relationships, and extracts knowledge buried in corporate data warehouses, or information that visitors have dropped about their experience, most of which can lead to improvements in the understanding and use of the data in order to detect significant patterns and rules underlying consumer's behaviours.

Data mining involves four tasks; classification, clustering, regression and association learning; which are classified into two types of data mining; verification-oriented (where the system verifies the user's hypothesis) and discovery-oriented (where the system finds new rules and patterns autonomously). Data mining process compliment other data analysis techniques such as statistics, on-line analytical processing (OLAP), spread sheet and basic data access.

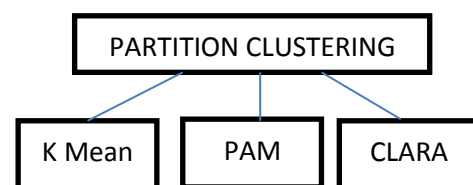
b) Data Mining Techniques

There are several major data mining techniques have been developing and using in data mining projects recently including association, classification, clustering, prediction, sequential patterns and decision tree.

In this survey paper we are using clustering method because it will easy to identify the problem and solution of this too. Here two types of clustering algorithm used for this survey.

2. MODE OF RESEARCH

PC are clustering methods which is used to classify observations, into a data set, in multiple groups based on their similarity. The algorithms require the analyst to specify the number of clusters to be generated.



- In K-means clustering each cluster is denoted by center of data point which is part of cluster. This method is very sensitive to anomalous data points.
- In K-medoids clustering Partitioning Around Medoids, Kaufman & Rousseeuw, each cluster is denoted by one of the objects in the cluster. This is less sensitive to outliers in comparison to k-means.
- In Clustering Large Applications is an extension to PAM adapted for large data sets.

3. DATA ACQUISITION

The dataset used for this study for customer details prediction was acquired from a major of ICT usage. The raw data was extracted from the bank's customer relationship management database and transactional data warehouse which contained more than 768 customer records described with over attributes. Attributes such as customer name, account number, saving account, current account, ICT usage and so on.

Attribute	Data Type
Age	Numeric
Gender	Male or Female
name of the bank	Char { BOI , IB, CB, BOB, VB, PGB }
income numeric	Numeric
Profession	Char { Former, SE, Business, PE, GE, HW, Student }
Saving Account	Char Yes or No
Current Account	Char Yes or No
Mortgage	Char Yes or No
ICT usage	Char Yes or No

Table1 Customer Survey Attributes

The customer records had different account types like saving account and current account types. The According to [3] customer demographics have been widely used to differential how a segment of customers.

4. WEKA TOOL

The 2 clustering algorithms were tested in WEKA Tool software of version 3.9.2.WEKA This Software is a collection of open source of many data mining and ML algorithms this include pre-processing on data , clustering classification and association rule extraction. The performance of EM and Hierarchical were evaluated based on execution time. The execution time is measured for different number of instances on Customer data set. We have analysed both algorithms for Customers data set. This dataset contain 768 records and 8 attributes. For our experiment we have imported the dataset in ARFF format..

5. RESULT AND DISCUSSION

In this section, we present a performance comparison of clustering algorithms. The following table 2 present the test results of EM and Hierarchical for different number of instances. As a result, when the number of instances decreased, the execution time of both Algorithm is decreased. For the 768 instances of diabetes dataset EM requires 3.23seconds But Hierarchical requires only 1.2 seconds for clustering.

Number of Instance	Execution time (in sec)	
	EM	Hierarchical
768	3.23	2.2
400	1.2	0.55

Table 2

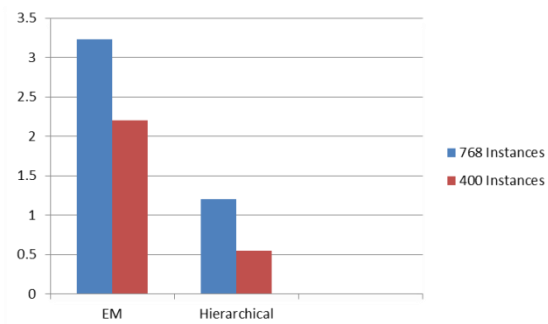


Fig 1

The above Figure 1, the performance of EM is compared with Hierarchical based on time. For Each algorithm, two different size of data set were considered which sizes of 768 and 400.

6. CONCLUSION

Clustering is a descriptive technique. The solution is not unique and it strongly depends upon the analyst's choices. We described how it is possible to combine different results in order to obtain stable clusters, not depending too much on the criteria selected to analyse data. Clustering always provides groups, even if there is no group structure. When applying a cluster analysis we are hypothesizing that the groups exist. But this assumption may be false or weak. Clustering results should not be generalized. Cases in the same cluster are similar only with respect to the information cluster analysis was based on i.e., dimensions/variables inducing the dissimilarities.

7. REFERENCE

- [1] Xu, S., & Qiu, M. (2008). A Privacy Preserved Data Mining Framework for Customer Relationship Management. *Journal of Relationship Marketing*, 7(3), 309-321.
- [2] <http://www.sthda.com/english/articles/27-partitioning-clustering-essentials/>
- [3] Ndung'u, A. W. (2013). Modeling of Churn Behavior of Bank Customers Using Logistic Regression. *Kenyatta University of Agriculture and Technology*.
- [4] Vaithyanathan, V., K. Rajeswari, Kapil Tajane, and Rahul Pitale. "Comparison of Different Classification Techniques Using Different Datasets." Vol.6, no. 2 (2013).
- [5] Salvithal, Nikhil N., and R. B. Kulkarni. "Evaluating Performance of Data Mining Classification Algorithm in Weka." Vol 2., no. 10 (2013).
- [6] Tiwari, Mahendra, Manu Bhai Jha, and OmPrakash Yadav. "Performance analysis of Data Mining algorithms in

Weka." *IOSR Journal of Computer Engineering (IOSRJCE)*
ISSN (2012): 2278-0661, Vol.6, Iss.3.

[7] Kaushik H. Raviya, Biren Gajjar "Performance Evaluation of Different Data Mining Classification Algorithm Using WEKA" Vol. 2, Issue. 1. (2013).