International Journal of Contemporary Research in Computer Science and Technology (IJCRCST) e-ISSN: 2395-5325
Volume3, Issue 2 (February '2017)

ANALYSING THE USAGE OF ATM CARD AMONG COLLEGE STUDENTS IN THENI DISTRICT: A DISTRICT WIDE CASE STUDY

S. Ancy,
Assistant Professor,
Department of Computer Science,
Jayaraj Annapackiam College for Women (Autonomous),
Periyakulam, TamilNadu, India.

V. Archana,
PG Student,
Department of Computer Science,
Jayaraj Annapackiam College for Women (Autonomous),
Periyakulam, TamilNadu, India

V. Raja Priya,
PG Student,
Department of Computer Science,
Jayaraj Annapackiam College for Women (Autonomous),
Periyakulam, TamilNadu, India

Abstract: An Automated Teller Machine is a computerized telecommunication device that provides the access to financial transactions in a public space without the need for a human clerk or bank teller. Over time students have come to depend on and trust the Automatic Teller Machine to conveniently meet their banking needs. This paper investigated the adoption and usage of e-banking and determined the categories of using ATM, how often they use them and for what transaction. It also addressed the problems and challenges of students have with ATM. At first, the goal is to enhance an explorative analysis that can be expected, is to give insight of the data in order to reveal or extract the relevant structure of and patterns in the data. An increase in debit card among college students continues to create emotional stress, anxiety and academic turmoil for students nationwide. Purchases made without thought about accumulation of debit have limited the employment options for some college graduates. Others had to file for bankruptcy before they had their first job. There is a need to find solutions for students who can no longer bear the emotional strain caused by debit card. This process is done by using Apriory Algorithm in data mining and we select with the R- Tool.

Keywords: ATM card, students, e-banking, Apriori Algorithm, R- Tool

I.INTRODUCTION

In recent years, there has been a dramatic growth in debit card usage among college students. A growing number of colleges and universities have entered into agreements with financial firms to provide debit and prepaid card services for students. As the number of agreements has grown, questions have arisen over fees and issues such as student choice. This report examines the functions of debit cards and the characteristics of college and card providers offering the cards and benefits and concerns regarding these cards. This paper is an exploratory research conducted among the people in Theni District.

The first stage involved gathering of secondary information from people. The second stage involved identifying the age group among them and structuring a comparative analysis of the five identified parameters under each category. A summary of interpretations was also given. In the third stage, analysis was carried out by making specific assumptions in a hypothetical situation. In the last and the fourth stage, on the basis of the results and interpretations, specific postulates were framed, and on each postulate hypotheses were framed that can be tested through quantitative research in the future. The above-mentioned stages have been described as objectives in the preceding paragraph.

II.ALGORITHM USED

Data mining is the core process of knowledge discovery in database. It is the process of extraction of useful patterns from the large database. To analyze the large amount of collected information, the area of Knowledge Discovery in Database (KDD) provides techniques which extract interesting patterns in a reasonable amount of time .data mining is the application of efficient algorithms to detect the desired patterns contained within the given data. Data mining is the extraction of hidden descriptive or predictive information from large databases.

Association Rule Mining: Association rules mining is one of the major technique in data mining. The purpose of association analysis is to figure out the hidden association and some useful rules of data base, and uses these rules to speculate and judge the unknown matter from the already known information. Association rule mining has many important applications in our life. An association rule has two basic needs: support and confidence. Things that occur often together can be associated to each other. These together occurring things form a frequent item set. Conclusions based on the frequent item sets make association rules.

Apriori Algorithm : Apriori algorithm is a significant algorithm for mining frequent item sets for Boolean association rules. Apriori algorithm is formed by Agrawal and Srikantin 1994. It is the most fundamental and important algorithm for mining frequent item sets. The keynote of Apriori algorithm is to form multiple passes over the database. It employs a repetitive approach called as a breadth-first search (level-wise search).

III.THE R ENVIRONMENT

R is a free software environment for statistical computing and graphics. It provides a wide variety of statistical and graphics techniques. R can be extended easily via packages. R is an integrated suite of software facilities for data manipulation, calculation and graphics display. Among other things it has

- An effective data handling and storage facility,
- A suite of operators for calculations on arrays, in particular matrices,
- A large, coherent, integrated collection of intermediate tools for data analysis.
- Graphical facilities for data analysis and display either directly at the computer or on hardcopy

A well-developed, simple and effective programming language which includes conditionals, loops, user defined recursive functions and input and output facilities. The term "environment" is intended to characterize it as a fully planned and coherent system, rather than an incremental accretion of very specific and inflexible tools, as is frequently the case with other data analysis software. R is very much a vehicle for newly developing methods of interactive data analysis.

IV. ANALYSIS OF DATA

For this case study we collect more than 500 responses from samples all over Theni. After collecting the information, all the details are fed into the Excel sheet and checked for outlier. The cleaned data was analyzed using single attribute and multiple attributes as Name, Age, and Gender. To process the data, I have installed the libraries such as arules, arulesViz from cloud storage. Then the dataset was inserted into the R- tool for processing.

library(arules)
> summary(patterns)
set of 2000 itemsets
most frequent items:
item117 item3 item15 item101 item66 (Other)
263 245 239 218 210 6797
element (itemset/transaction) length distribution: sizes
1 2 3 4 5 6 7 8 9 10 11 12
108 282 460 460 327 193 105 41 19 3 1 Min. 1st Qu.
Median Mean 3rd Qu. Max.
1.000 3.000 4.000 3.986 5.000 12.000

Summary of Quality Measures:
pWeights pCorrupts
Min. :1.600e-08 Min. :0.0000
1st Qu.:1.405e-04 1st Qu.:0.2824
Median :3.392e-04 Median :0.4902
Mean :5.000e-04 Mean :0.4966
3rd Qu.:6.660e-04 3rd Qu.:0.7125
Max. :4.901e-03 Max. :1.0000
includes transaction ID lists: FALSE
> fsets=eclat(trans, parameter= list(support=0.05), control=list(verbose=FALSE));
> singleItems=fsets[size(items(fsets))==1];
> fsets=eclat(trans, parameter= list(support=0.05), control=list(verbose=FALSE));
> singleItems=fsets[size(items(fsets))==1];
> library(utils)
> library(methods)
> library(datasets)
> library(base) singleSupport=quality(singleItems)$ Support
>names(singleSupport)=unlist(LIST (items(singleItems),decode=FALSE));
> head(singleSupport, n=5);
117 121 66 15 92 0.3333333 0.2400000 0.2466667 0.2466667 0.2266667
>itemsetList=LIST(items(fsets),decode= FALSE);
>allConfidence=quality(fsets)$support/sapply(itemsetList,function(x)+max(singleSupport[as.character(x)]));
>quality(fsets)=cbind(quality(fsets),allConfidence);
Summary of Quality Measures:
support allConfidence
Min. :0.05333 Min. :0.1600
1st Qu.:0.06000 1st Qu.:0.2432
Median :0.07333 Median :1.0000
Mean :0.09177 Mean :0.6456
3rd Qu.:0.10667 3rd Qu.:1.0000
Max. :0.33333 Max. :1.0000
includes transaction ID lists: FALSE
Mining Info:
data ntransactions support
trans 150 0.05
> local({pkg < select.list(sort(.packages(all.available = TRUE)),graphics=TRUE)+ if(nchar(pkg)) library(pkg, character.only=TRUE)})
> rules<-apriori(tr)

Parameter Specification:
confidence minval smax arem aval originalSupport support minlen maxlen target
0.8 0.1 1 none FALSE TRUE 0.1 1 10 rules

Algorithmic control:
filter tree heap memopt load sort verbose
0.1 TRUE TRUE FALSE TRUE 2 TRUE
apriori - find association rules with the apriori algorithm
set item appearances ...[0 item(s)] done [0.00s].
set transactions ...[284 item(s), 501 transaction(s)] done [0.00s].
sorting and recoding items ... [14 item(s)] done [0.00s].
creating transaction tree ... done [0.00s].
checking subsets of size 1 2 3 4 done [0.00s].
writing ... [76 rule(s)] done [0.00s].
creating S4 object ... done [0.00s].
> tr<- read.transactions("Div.csv", format = "basket", sep=',', rm.duplicates=TRUE)
> head(singleSupport, n=5);
117 121 66 15 92
0.3333333 0.2400000 0.2466667 0.2466667 0.2266667
> image(tr)
> plot(rules)
> plot(rules,shading="order", control=list(main="Two-keyplot"));
>set.seed(492)
> y <- rnorm(2000)
>x1<- sample(letters[1:2], 2000,T)
>x2<- sample(letters[1:2], 2000,T)
>lab_y<- sample(letters[1:4], 2000,T)

>ipcp(mtcars[c("mpg", "wt", "qsec", "disp", "hp")])
ID:6 Name: "Parallel coord. plot (default)"
>print(rf)

V.FINDINGS AND INTERPRETATIONS

The gathering of relevant and up-to-date information is a key business process. Information consists of organized facts and figures that have meaning within the context that the information is intended to be interpreted by people. Information is thus a valuable business commodity, and frequently businesses pay money for up-to-date and relevant information.

Gender based: It is evident to find out that boys show more interest to take money in ATM machines rather than banks.

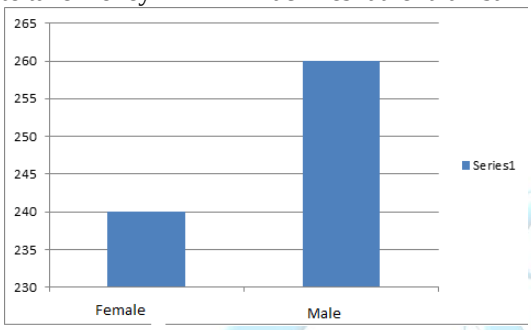

Figure 5(a) Gender based interest using ATM

Age Based: Barplot(table(tab$age))

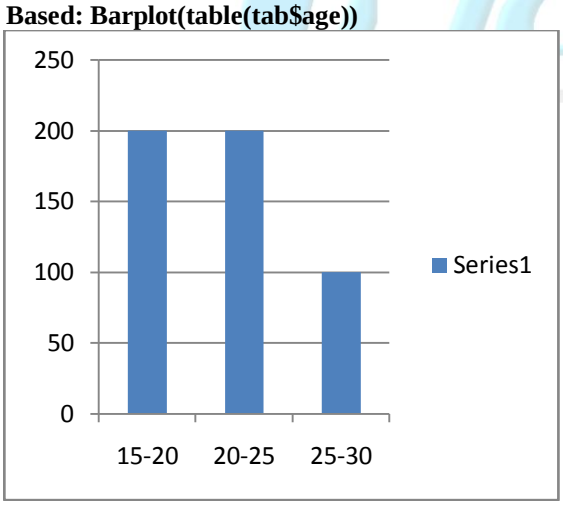

Figure 5(b) Age based interest in ATM

Hostel/Day scholar:

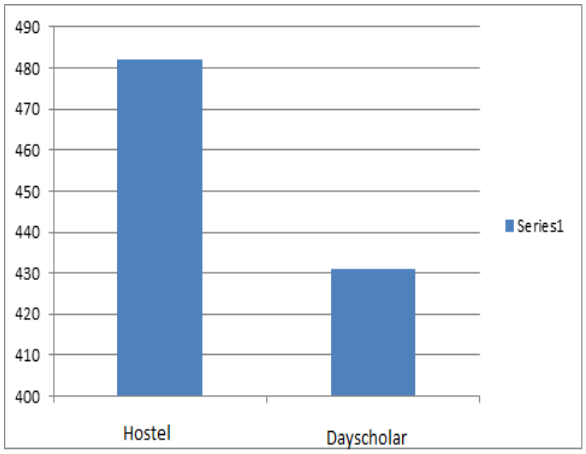

Figure 5(c) Hostel Vs Day scholar

testPred<- predict(mytree, newdata = tab1)
>table(predict(mytree), tab1$X1)

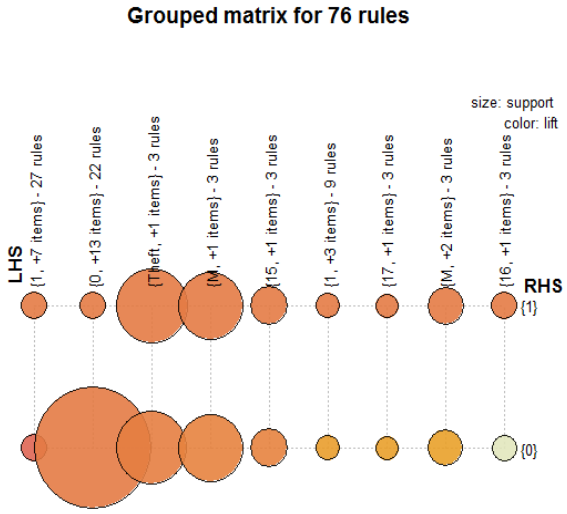

Figure 5(d) Group Matrix

>abline(a = 0, b = 1)

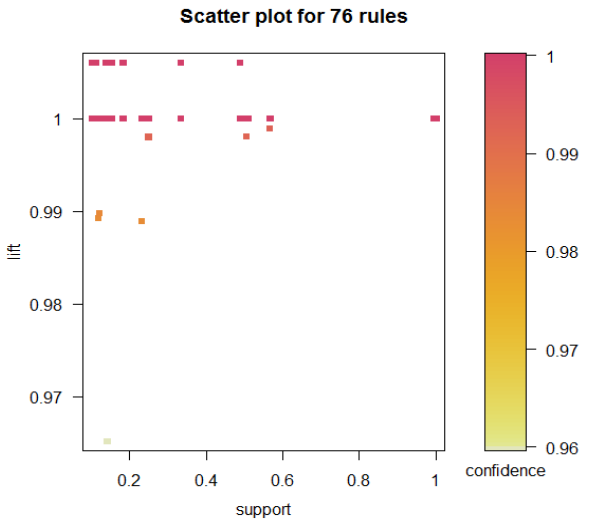

Figure 5(e)Scatter Plot

.>plot(rules,shading="order",control=list(main="two-key plot"));

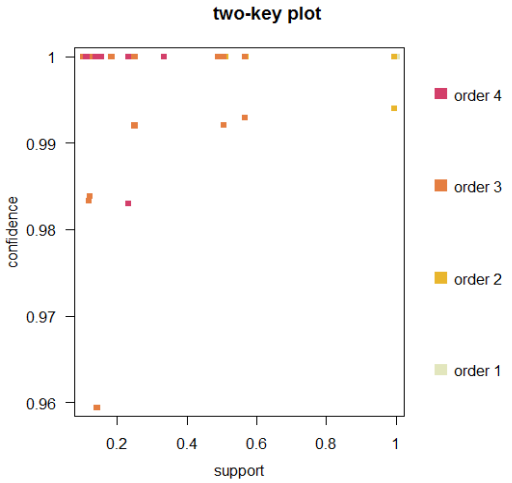

Figure 5(f) Two- Key Plot

> **plot(rules,method="graph")**

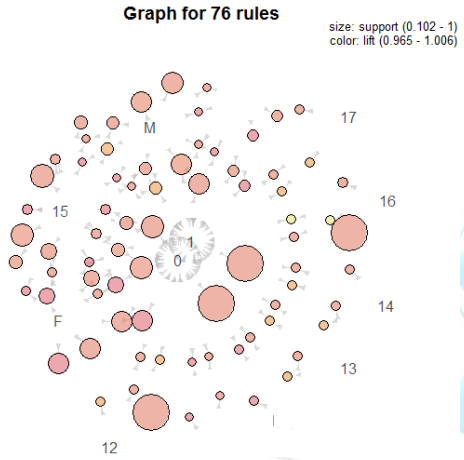

Figure 5(g) Graph

>plot(rules,method="paracoord",control=list(reorder=TRUE))

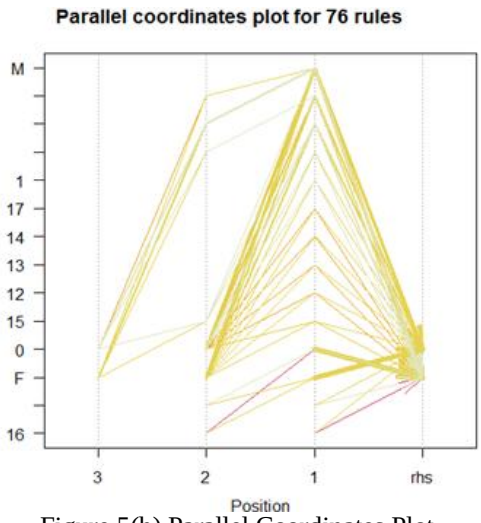

Figure 5(h) Parallel Coordinates Plot

VI.CONCLUSION

Information collected for this research was analyzed using R tool of Data mining. The ATM card has a prosperous growth in Theni district. As analyzed, boys show more interest to take money from ATM machine rather than from a bank to pay the fees and other expenses. While comparing hostel students and day scholars, hostel students were used more than day students. Because hostel students depends their ATM cards for their money needs. When it is moved to age, adults from 15 to 20 years show more interest in using ATM when comparing to 20 to 35 years of age groups. In India we are still using the older magnetic strip cards (MSD). Students are able to do various other transactions also and it has proved to be very helpful to the students. The effects of image variables, value perception, trust perception and satisfaction on ATM loyalty were examined. However, this investigation is suggested to be carried out in different cities and regions where geographical and demographical variables are considered to affect the variables that determine the students loyalty.

VII. REFERENCES

[1]. Ameriks, J., A. Caplin, and J. Leahy. "The Absent-Minded Consumer", National Bureau of Economic Research Working Paper No. 10216, 2004.

[2]. Ashraf, N., D. Karlan, and W. Yin. "*Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines*", The Quarterly Journal of Economics, 121(2), 2006, 635-72.

[3]. Ausubel, L. M. "*The Failure of Competition in the Credit Card Market*", American Economic Review, 81(1), 1991, 50-81.

[4]. Bertaut, C. C., and M. Haliassos. "*Debt Revolvers for Self Control*", Working Papers in Economics No. 0208, University of Cyprus, 2002.

[5]. M. S. Meena. R, "*Automated Teller Machine- Its Benefits and Challenges*", IRACST- International Journal of Commerce, Business and Management (IJCBM), ISSN: 2319-2828 Vol. 4, No. 6, December 2015.

[6]. http://www.researchgate.net

[7]. http://www.ecb.europa.eu/ecbwp1389

[8]. http://ijsetr.org/upload/2015/06/IJSETR

[9]. www.atmsecurityassociation.com/atm

[10]. www.sbi.co.in/portal/documents