

# Virtual Banking With Data Mining Technology Deployment Method

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## Abstract

Since the today's economy tends towards E-banks and online transactions, the term E-banks gained extended importance internationally as internet and information technology is in emerging stage and most of the transactions are performed manually. Thus, implementing of e-banks platform in the global is optimistic investment opportunity. In order to grab the attention of the customers and public, several requirements need to be fulfilled by the E-banks portal: it should be competitive with existing physical markets in service and price concepts, it should be abstractive and easy to use in such way every category of customers will be provided with their interested items. In order to make this possible in E-banks platform, big data need to be gathered and analyzed in order to make proposer decision.

**Keywords:** E-banks, ANN, Big Data, Information Technology, Data Analysis.

## 1 INTRODUCTION

Today, the world has witnessed a wave of rapid changes and developments, which have added its effects on all levels of the economy, whether partial or total, and at various levels. Specialists have agreed to call it globalization, or inclusivity, and if we reflect on this phenomenon that is in continuous development, especially starting from the half second of the twentieth century, we find that the most important component of making this privacy and excellence in it: information and communications technology.

Although this term is made up of two broad concepts: information and communication, and despite their vastness and depth, they are closely related and interconnected, and without the information and its technologies, there would be no communication, and there would be no development of the means of communication, and without communication and its technologies, the information could not reach the importance it is now.

Also, their cohesion has the greatest impact on the phenomenon that the universe lives today, and one of its most important features is the elimination of spatial and temporal barriers thanks to the Internet, the fruit of information technology, which enabled the whole world to communicate and exchange information everywhere and at any time with the whole world, as it had great credit in changing the style and management of institutions. It enabled information technology, especially the Internet, to impose new rules in the field of business.

The most important one is betting on the customer as the only way to excel. The institutions have worked for creating value for him, in a manner that ensures that his needs and renewable needs are constantly met and his tendencies are known even before they are revealed, something that will not be achieved of course unless these institutions are able to make optimal use of technology Information, by establishing e-banks in its organization as the most cliental job in the organization, and the most closely aligned and most appropriate to adapt to information technology, in order to achieve this institution efficiently and effectively, as information technology is a link between the institution and its environment, and because the via the Internet in particular, and information technology in general requires the availability of certain physical and knowledge infrastructures.

## 2 RESEARCH PROBLEM

Generally, banks strategies can be established by understand the customer ways of thinking. Each category of customers is having different requirements and hence, banks planers need

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to address out each factor associated with customer's needs. Customer needs and ways of thinking are understandable by analyzing data related to customer behaviors. Many ways are available for gathering the data such as web logging information, surveys on the web networks, personal interviews in public places, etc. Eventually, large amounts of data are witnessed for analysis prior making any banks plans. The amount of this data is seemed not possible to be analyzed in the conventional methods and normal computer programs. Extraction of knowledge from the big data is one of the important challenges facing the banks professionals. Data mining technology can help for addressing this issue; but other considerations alike, cost, privacy, worthiness, etc. are came to the image.

### 3 RESEARCH QUESTION

In this research study, several factors which are vital for the success of data mining technology in E-banks platforms are available for discussion. The study is mainly aiming to understand the impact of integration the data mining technology into the E-banks platform. Hence, this study is attempting to address the following questions:

Q: What is the impact of data mining technology on the customer behaviors prediction system in the E-banks platform?

Q: How does the biometrical data of the customers impact the his/her virtual banks tendency?

Q: With help of data mining technology; how dose E-banks platforms are capable to provide a good virtual banks experience for their customers?

### 4 RESEARCH METHODOLOGY

A survey study was established for gathering opinions from the data mining and E-banks technologies professionals on the influence of data mining technology on the e-marketing. A thirty (30) candidates were invited to participate this survey. A questionnaire list of 40 concerns was shared with the candidates using the Google form. The questionnaire is fabricated in such way that most of technical and social aspects associated in the E-banks context are covered. Each

question in the list was made as compulsory for ensuring full response for all prior to response submission. As responses were gathered, Statistical Package for the Social Sciences (SPSS) version 23 software were used to analysis the responses.

## 5 PILOT TEST

In this Table, thirty candidates are participated in the research survey, each of them was undergoing the questions of demographic and biometrical survey as show in the Table. The age of each candidate is obtained by asking each candidate to provide his/her age category among (23-30) years, (31-40) years, (41-50) years or above 50 years. However, most of the candidates participated in this survey are fallen in age of 31-40 years more likely, a 36.7 percent of total candidates are of this rage. Below that, a 30 percent of the candidates were the youngest of age (23-30) years. Whereas, 23.3 percent of the total candidates are realized fallen in range of (41-50) years old and eventually, the very old candidates are realized as those in age more than 50 years are only ten percent of the total candidates. See Tables 1 through 4.

Table 1: age statistical parameters obtained from the data analyzer.

		age		
		Frequency	Percent	Valid Percent
Valid	23-30	9	30.0	30.0
	31-40	11	36.7	36.7
	41-50	7	23.3	23.3
	>50	3	10.0	10.0
Total		30	100.0	100.0

Table 2: gender statistical parameters obtained from the data analyzer.

		gender		
		Frequency	Percent	Valid Percent
Valid	F	12	40.0	40.0
	M	18	60.0	60.0

Total	30	100.0	100.0
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Another factor that been asked in the survey is the gender; candidates are being asked to provide their answer between two options namely male (M) and female (F). However, it was realized that 60 percent of the total participants are males while the reset 40 percent are females. However, the variance between the total candidates are not very big in terms of gender, the same is illustrated in the Table ().

Table 3: education statistical parameters obtained from the data analyzer.

Education				
		Frequency	Percent	Valid Percent
Valid	dip	2	6.7	6.7
	br	16	53.3	53.3
	mr	11	36.7	36.7
	phd	1	3.3	3.3
	Total	30	100.0	100.0

Survey questions were concerned about academic qualifications of the candidates, however, candidates were asked to provide the answers about the same by selecting on of the herein options: diploma (dip), bachelor (br), master (mr) or doctoral (Ph.D). Table () reveals the results about the same as the following: the majority of the candidates were of adequate academic graduation (bachelor) degree, a 53.3 percent of the total participants were holding a bachelor degree more likely half of the total participants were found with this degree. However, only two candidates (6.7 percent) are seen with diploma degree which likely the lowest number of the participants. Only one candidate was of Ph. D degree (3.3 percent of total participants). Eventually, 36.7 percent of the total participants are master graduated.

Table 4: experience statistical parameters obtained from the data analyzer.

Experience				
		Frequency	Percent	Valid Percent
Valid	<5	4	13.3	13.3
	5-10	16	53.3	53.3
	>10	10	33.3	33.3
	Total	30	100.0	100.0

Another important factor that being asked in the survey is whether the candidate having adequate experience in data mining and e-marketing. Candidates are asked to select one of the following options: <5 years, (5-10) year and >10 year. The majority of the candidates are found of 5-10 years of the relevant experience in the data mining and e-banks (more than half of the total candidates (53.3 percent) are found with this experience). However, the least number of candidates were realized as fresher (less than five years in profession) of 13.3 percent from the total candidates. Eventually, a 33.3 percent of the total candidates are seen with experience of more than ten years. Generally, the majority of candidates are found with adequate experience in data mining and e-banks as well as in adequate ages and mixture of both males and females. From the other hand, all the candidates have filled the all the survey questions without any negligence, that makes the survey response more reliable and consistence. The demographic and biometrical questionnaire is playing as validation method of the study samples to find out their fitness to participate in this research study. Figure (1 through 4) demonstrates the distributions of the total candidates among the age, gender education and experience measures.

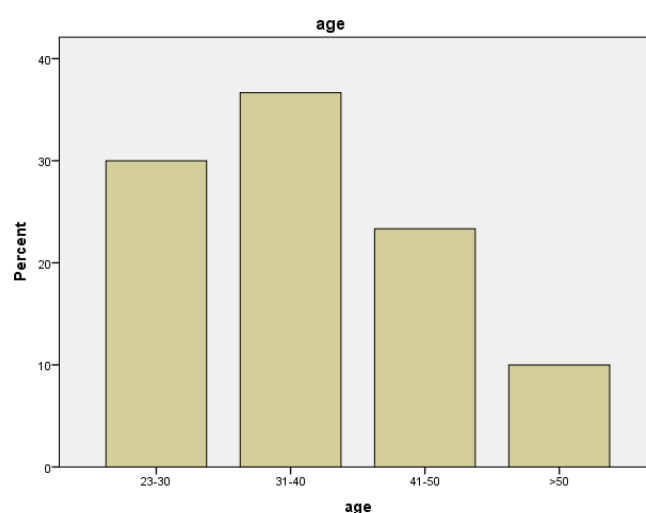


Figure 1: graphical representation of age statistical parameters obtained from the data analyzer.

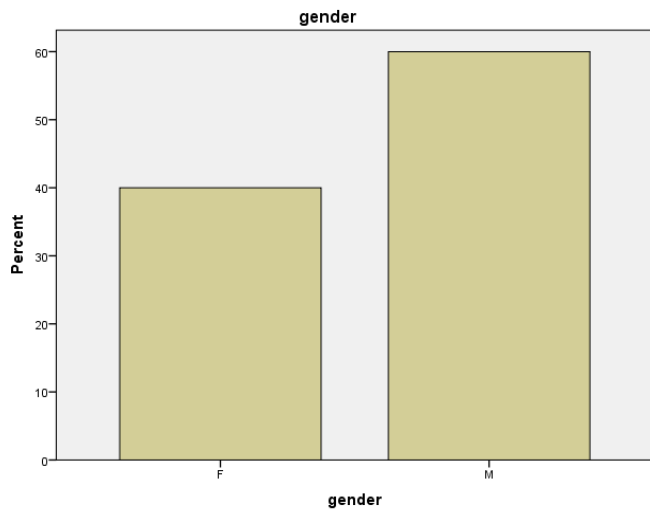


Figure 2: graphical representation of gender statistical parameters obtained from the data analyzer.

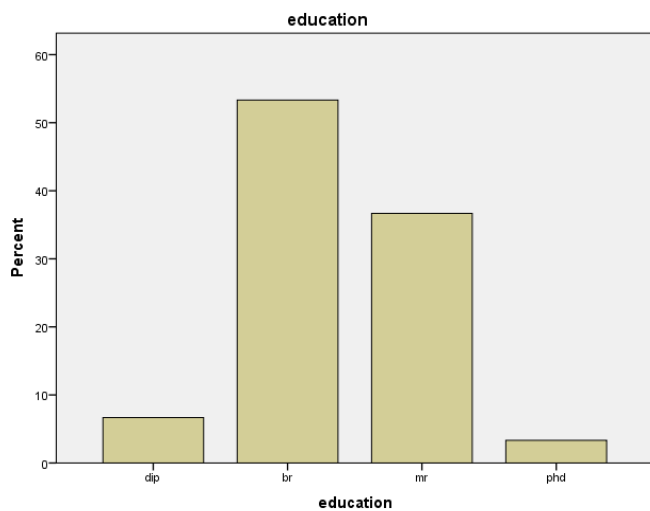


Figure 3: graphical representation of education statistical parameters obtained from the data analyzer.

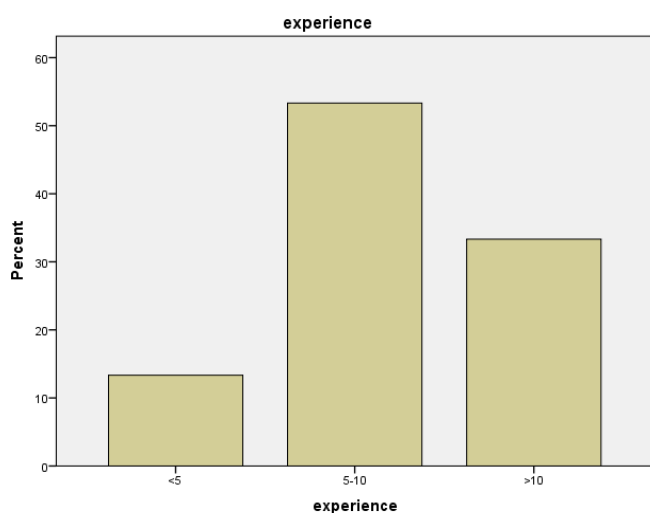


Figure 4: graphical representation of experience statistical parameters obtained from the data analyzer.

Central tendency is being measured using the mean of each response for the respected questions this represents the central or typical measure of the probability distribution. This statistical measure can be find using the mean value of the responses. Model is also another measure that represents the most repeated response within the total responses. Variance and standard deviation are more advance measures of the response analysis. It tells about the difference between the responses for each candidate from the mean value of mean the responses.

## 6 DISCUSSIONS & CONCLUSION

Data mining played vital role in today’s business as a result to communication and technology development. Mining of large amounts of data that being collected daily wise from the customers activities over the virtual banks (e-banks) portals is challengeable task. The conventional models and techniques for extraction a knowledge from this large amount of data is no longer useful. Using the data mining technologies i.e. (clustering, classification and prediction) as well as tools alike neural network will required completely understand of both technical and economical consideration. In this study, methodology and impact of datamining on the E-banks is been discussed.

A sample of thirty people from the industry of data mining and e-banks specialists are been invited to participate this study by providing their opinions about list of questionnaires that been shared with them using online form from Google. The questionnaire was consisted from four sections namely: General biometrical data, customer profiling data, event prediction data, technical aspects data and eventually some miscellaneous data. Responses of each section were collected and analyzed using the SPSS version 23 software.

Analysis of the responses were done in section wise where question from each section have been treated individually. Statistical alike, mean, median, variance, standard deviation, frequency, percentage, minimum value and maximum value are determined for each question in each section of the

questionnaire. Results revealed that candidates were agreeing to the questions that used in hypothesis formulation.

In other word, data mining technologies adaptation in E-banks context is likely preferred by the candidates, some restrictions might be considered while so alike the cost of computing as well as economical cost should be considered carefully. Some other concern alike customers behaviors data collection is suggested to be collected from the cookies used by the site pages. Cookies is cost efficient and highly trusted for behaviors prediction.

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