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Research Article

A study of Various Financial Frauds Occurring through Cheques and their Detecting Parameters

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Abstract

Fraud is the major component of operational risk in banking industry today. Frauds generally takes place in a financial system when safeguards and procedural checks are inadequate or when they are not scrupulously adhered to, thus, leaving the system vulnerable to the perpetrators. Most of the time, it is difficult to detect frauds well in time, and even more difficult to book the offenders because of intricate and lengthy legal requirements and processes. The present study is focused on the frauds occurring through cheques in banks of India. The fraudster can use the fake cheques (produced in a manner so as to give the appearance as original cheque), may steal the cheque/cheques from the genuine owner and can imitate the signatures, or can manipulate the ingredients of the cheque like amount, date, figures etc. The present study will be focusing towards the various kinds of cheque frauds and their detection parameters.

Keywords: Banking industry; Cheque frauds; Detection parameters

Introduction

Presently the banking industry around the world has become extremely competitive and introduced several new financial services. The phenomenal spread of branches, growth and diversification in business, and large-scale computerization and networking have collectively increased the operational risks manifold [1,2]. Fraud is a major component of operational risk today not only in India but other countries of the world as well.

Frauds generally takes place in a financial system when safeguards and procedural checks are inadequate, or when they are not scrupulously adhered to, thus, leaving the system vulnerable to the perpetrators. Most of the time, it is difficult to detect frauds well in time, and even more difficult to book the offenders because of intricate and lengthy legal requirements and processes. For fear of damaging the banks' reputation, such incidences are often not brought to light [3].

Cheque fraud refers to a category of criminal acts that involve making the unlawful use of cheques in order to illegally acquire or borrow funds that do not exist within the account balance or account-holder's legal ownership [4]. The fraudster can use the fake cheques (produced in a manner so as to give the appearance as original cheque), may steal the cheque/cheques from the genuine owner and can imitate the signatures, or can manipulate the ingredients of the cheque like amount, date, figures etc.

In India, the number of cheques that passed through the clearing houses during 2004-05 was 1124.6 million for a total sum of INR.1, 10, 47,052 cr. In one of the report recently Central Bureau of Investigation officials said that there had been a drastic increase in the number of bank frauds with 23,247 cases involving approximately INR 1,059 crore being registered in 2007-08. In 2001-02, there were just 2,035 such cases in the country involving approximately INR 556 crore. Further, majority of clearing houses and banks are using Magnetic Ink Character Recognition (MICR) cheques. They are clearing on an average about 10,157 lacs of cheques per year, and if we include the cheques used for drawing cash and for transfer of funds, we can safely assume that nearly ten billion cheques are being issued in a year.

Types of cheque frauds

Forging cheques: Forgery on cheques is an effective method for committing cheque fraud. With a quality printer and cheque printing software, cheques can be forged with basic computer knowledge. Once the investment is made in software and printer, there is no other cost except of ink and paper to forge cheques. The length of the cheque, its colour, texture, and numbers may indicate forgery. Generally, a particular branch or place may be under attack because of inadequate controls or its location.

Stealing of cheques: Generally cheques may be stolen from mail boxes or when they are blank or cancelled. Cheques are not useful directly to the thief; he/she may use their numbers for purchases through mail-order. Cheques stolen from the mail boxes are applied with a particular chemical solution to erase the ink on the cheque. The thief may fill whatever name and amount he wants. Sometimes, he may steal blank cheques on which customer information is already encoded.

Cheque stopping: The fraudster purchases an expensive item with cheque and then informs to bank to stop payment. Next, he informs the trader that the item was defective and files a suit in the court of law. In between the fraudster sells the item for small profit and pays fewer prices to the trader.

Raise the cheques: Raising refers to "changing the amount on a cheque to a larger money figure". Amateur raising is easy for banks to detect; thanks to today's technology, however, a raised cheque can look like a real thing. Cheques can be raised in two ways: by chemical

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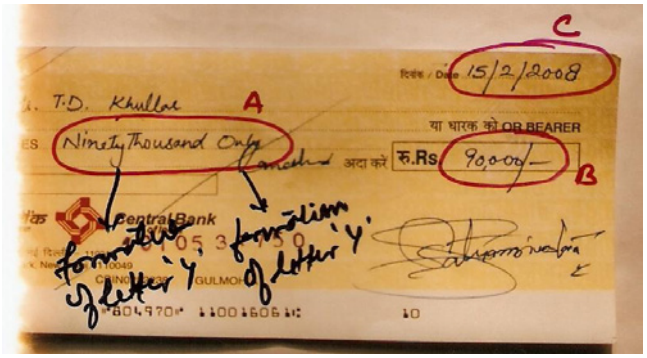

Figure 1: Disputed Document 4 (DD4).

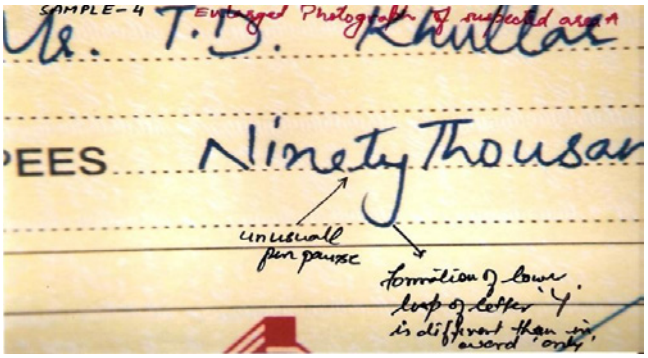

Figure 2: Enlarged Photograph of Suspected area A.

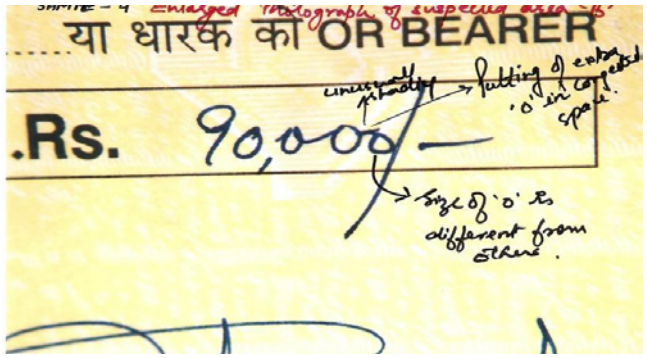

Figure 3: Enlarged Photograph of Suspected area 'B'.

washing or by erasure. Chemical washing to remove the printed ink is more difficult. Simple erasing can be done with common ink or pencil erasers. Once cheques are washed or erased, information can be printed on paper stock according to the fraudster's needs. In some cases, forensic document examiners have been able to determine the replacement type under microscope, by looking for subtle differences in font and ink, and paper.

Manipulation in the data: There can be any alteration (addition or deletion) in amount, account information or date in cheque issued.

Scanning of cheque: Duplicate cheques of a particular corporate entity are manufactured by scanning the company's logo. Employees of a company who know the internal procedures commit such fraud.

But whatever may be the type or cause of fraud there is a ray of hope to combat this problem that has been discussed in the present study.

Materials & Methods

25 disputed cheques were taken for the purpose of study which belongs to the different banks, personnel's and from few Questioned Document Experts. The cheques from the account holders of those particular banks were included.Only the cancelled disputed cheques were included in the study. No cheque without the permission of the concerned was included.

Sample analysis

The collected samples were analyzedas follows:

1. The cheques were analyzed for their genuineness and fakeness with the help of UV and IR radiation using Project in a Docustat Inspec 8.

2. The Texture of the paper was analyses by Ultra Violet light and Stereoscopic microscope.

3. The handwritten material including signatures were analyzed to prove genuine, disguised or forged body writings.

4. The suspected areas were subjected to photography and then their enlarged images were analyses and compared.

Results

In one of the case a Central Bank cheque (cheque no. 804970) dated 15 February, 2008 bears the disputed writing marked as A, disputed amount marked as B and disputed date marked as C (Figure 1-3).

Observations in Disputed Document

Class characteristics:

1) Hand Movement: The writing is produced with the wrist movement.

2) Speed: The writing speed is medium in the suspected A of given disputed document DD4.

3) Slant: The letters of the writing are slanted slightly forward in the suspected area A.

4) Alignment: The alignment of writing is even.

Figure 4: Suspected Document: No Chemical Watermarks visible under UV light.

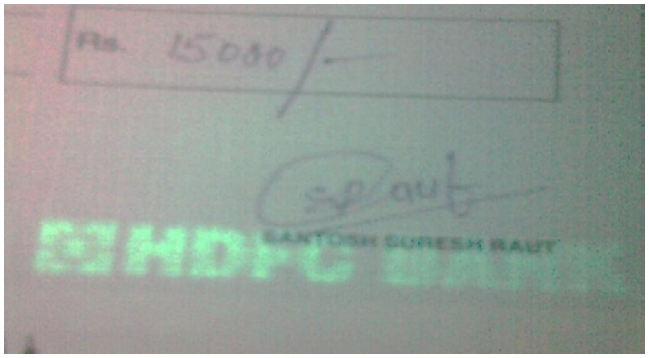

Figure 5: Specimen Cheque 1: Chemical watermarks visible under UV light.

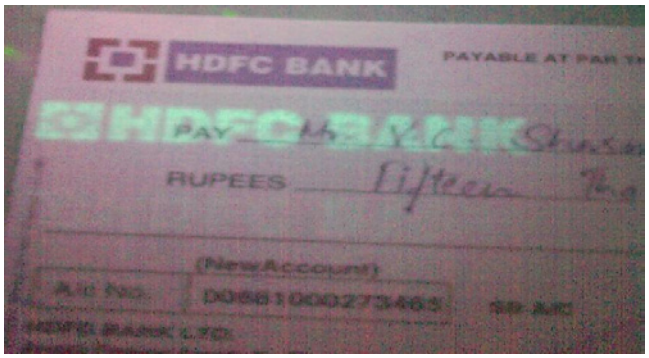

Figure 6: Specimen Cheque 2: Chemical Watermarks appear as "HDFC BANK" under UV light.

5) Line quality: The line quality is not perfect as unusual pen pause is present in the suspected area A.

6) Spacing: Even spacing between the letters is present.

7) Pen pause: Presence of unusual pen pause is present in the suspected area A.

Individual characteristics:

1) The formation of letter 'y' in word "Ninety" of suspected area is different in comparison with word "Only" where it is having a loop formation.

2) Presence of unusual pause between the letter 'e' &'t' of the word "Ninety".

Findings

On the basis of above observations, it can be said that there may be an addition of "ty" to the word "Nine" to make it "Ninety".

In suspected area B:

Class Characteristics:

1) Hand Movement: The numerals '9000' shows a faster speed & wrist movement whereas the speed in last numeral '0' of "90,000" is relatively slower and shows a finger movement.

2) Alignment: The alignment is even except the last numeral '0' in "90,000" in the suspected area B.

3) Slant: The numerals are slanted towards the right but the last numeral '0' is slanting vertically which makes it different from others.

4) Line quality: The line quality is not smooth as the last numeral i.e.'0' of the amount "90,000" is not spontaneous with the other numerals.

5) Speed: The speed is relatively faster but after thorough observations; it is observed that the speed in last numeral '0' of "90,000" is slower than rest of the numerals with heavy pressure.

6) Spacing: The last numeral '0' shows a narrow spacing.

7) Shading: Presence of unusual shading in last numeral '0' of suspected area B of disputed document DD4.

Individual Characteristics:

1) The connecting stroke of last numeral '0' of amount "90,000" is not spontaneous in comparison to rest of the numerals in the suspected area B.

2) The same numeral is written in a very congested space in the suspected area B of disputed document B.

3) The shading is more due to slower speed with vertical slant.

On the basis of above observations, it can be said that the amount as a whole is not filled by the same writer. The last numeral '0' of "90,000" is different from rest of the zeros in the suspected area B. The size of same numeral is smaller with heavy pressure and written in a congested space.

Conclusion

On the cumulative effect of above observations and forensic findings, it can be concluded that the disputed document DD4 is obliterated by the some other writer. The writing "Nine Thousand" is altered as "Ninety Thousand" and the amount "9000" is altered as "90,000" by the fraudster.

In other case it was to find out whether the cheque is genuine or fake (that seems to be a scanned copy) and to decipher any secret writing (watermark or any identification mark) present on the cheque (Figure 3-6).

The examination conducted was:

1. The disputed document/cheque was first of all photographed as such without any treatment so as to keep a record of original with the help of a 35 mm SLR camera and was the subjected to a ultra violet fluorescence inspection box to detect any watermarks and secret (invisible) writing which was followed by photography at each and every step.

2. The provided document was first examined under the long wavelength UV rays after that under the short wavelength UV rays which was followed by the filtered photography (using special filter).

Observations

1. No chemical watermarks were appeared on the disputed cheque DD8 under UV light whereas it was present as an appearance "HDFC BANK" in the other specimen cheque.

2. These watermarks were present at the upper left side and lower right side of the specimen cheque.

3. Presence of mechanical watermarks was confirmed in the specimen cheque when the cheque was viewed under transparent light. These mechanical watermarks were not present in the fake cheques.

4. When the texture of the paper was compared, it was found that one of them is having poor quality as compared to the other and it is the same cheque in which no watermark is encountered.

5. When the colour of the paper was compared, it was found that one of them is having light colour and blurred images as compared to the other.

Conclusion

On the basis of above examination and observation, it can be concluded that the one of the cheque marked as DD8 was found to be fake in comparison to the other provided as specimen. Therefore, the disputed document may be scanned or prepared by any other method.

Discussion

As the objective of this study was to detect the various types of financial frauds occurring through cheques and to determine various parameters using advanced technologies for the detection of cheque frauds, also to differentiate between a genuine and fake cheques and methods of their detection. It was concluded after a thorough examination of the samples that the fraudsters can be identified by determining various parameters of the fraud done by the fraudster as the handwriting of every mature writer is personal and individual to him alone. A person cannot produce in a mechanical manner exactly what has been written first. There must be some natural variations in the writing of the same person. The cheque frauds can be detected by various techniques such as carefully examining the handwriting of the writer for determining the genuineness, disguiseness and forgery, through Ultra Violet and Infra-Red Radiations to differentiate between the fake and original cheques, through Filtered Photography to decipher any secret writing present on the cheque.

On thorough and deep examination of the cheques, it was found that most of the frauds were in respect to the handwriting. The fraud was encountered mostly in the signatures, in the amount filled on the cheque, the amount filled in words on the cheque and in the date. Rarely, the fake cheque frauds were found.

Therefore in the Indian Banking Industry, the frauds taking place in the financial systems can be identified with the help of various techniques which lead to the detection of the fraudster.

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