

CHAPTER 4

RESEARCH FINDINGS

4.1 Introduction

This chapter is divided into three main parts of the study where the findings of research are reported. From the analysis conducted, this chapter answers all the research questions in this study. Section 4.2 explains the forms of document forgery in Syariah court cases. Next, section 4.3 describes the principles involved in forensic document examination that can be applied in Syariah court and section 4.4 elaborates on the application of forensic document examination in Syariah court.

4.2 Forms of document forgery in Syariah court cases

In order to identify the forms of document forgery that happened in Syariah courts, this study analysed legal cases reported from various sources. In this section, the researcher went through several selected cases which were found throughout the study by using the library online databases from the Jurnal Hukum, Current Law Journal, Syariah Law Reports and Malayan Law Journal. During the analysis, the researcher has found 14 cases which represent the forms of forgery which happen in Syariah courts. The data captured from all 14 cases was subjected to analysis according to the research question posed earlier in this study and presented in the form of table to make the data presentation meaningful. These cases were chosen based on their association with forgery activities or relating to falsified document. From these cases, the researcher has divided them into several themes or fields to identify the forms of forgery.

Table 4.1: Cases involving forgery in Syariah court

Cases Citation	Field
Kholed bin Dinyati <i>lwn.</i> Ketua Pendakwa Syarie Melaka [2009] JH 29 Bhg. 2 275	Marriage
Syarie Prosecutor v Azlan Daniels bin Abdullah [2008] 2 ShLR 158	Polygamy
AHMG v AGMG & Ors [2019] 3 ShLR 1	Distribution of property (<i>hibah</i>)
Mohd Salim bin Said & Ors v Tang Pheng Kee & Anor and another appeal [2014] 3 MLJ 504	Distribution of property (<i>faraid</i>)
Sulaiman bin Ahmad & Ors (beneficiaries for the estate of the deceased, Jemain bin Mohamed ½ portion and beneficiaries for the estate of the deceased, Kechot bin Mohamed ½ portion held by Zabidah bt Sembob as administratrix and trustee) v Jemain bin Mohamed & Ors [2020] 11 MLJ 616	Distribution of property (<i>faraid</i>)
Shariffa Zainab bt Syed Wadzid Ali v Ismail Fekri bin Ishak [2009] 2 ShLR 101	Distribution of property (<i>harta sepencarian</i>)
Ahmad bin Abd Majeed <i>lwn.</i> Habibah bte Abdul Majid dan satu lagi [2007] 3 MLJ 418	Distribution of property (<i>faraid</i>)
Pendakwa Syarie Kelantan <i>lwn.</i> Mat Rahim Saman dan satu lagi [2004] CLJ (Sya) 2004 513	Marriage
Zainuddin bin Annuar v. Khadijah bte A Hijazi [2012] MLJU 101	Distribution of property (<i>faraid</i>)
Mst Kulsoom Bibi and Anor. v. Muhammad Arif & Ors [2006] 1 CLJ (Sya) 262	Distribution of property (<i>hibah</i>)
Abd Halim bin Md Hashim v Azila bt Ramli @ Ismail [2017] 2 ShLR 57	Marriage
Rosniza bt Mustaffa y Abu Bakar bin Dawam [2013] 4 ShLR 28	Marriage
Norazimah bt Man v Mohd Hamdan bin Ismail [2013] 3 ShLR 45	Marriage
Majlis Agama Islam Negeri Pulau Pinang v Abdul Latiff bin Hassan (as executor of the estate of Hj Mohammad bin Hj Abdul Rashid, deceased) & Anor [2018] 2 ShLR 15	Distribution of property (<i>waqf</i>)

The above table illustrated that the cases involving document forgery can be divided into certain fields namely marriage, polygamy and distribution of property. For the cases relating to the distribution of property, they consist of several categories including *hibah*, *faraid*, *harta sepencarian* and *waqf*.

In this section, detailed descriptions on the form of forgery that happened in those cases are provided below followed by several excerpts from article in news highlighting the issue of forged signature in documents related to polygamy application. In the case of **Kholed bin Dinyati lwn. Ketua Pendakwa Syarie Melaka [2009] JH 29 BHG. 2 275**, the appellant has been brought before the court for obtaining a marriage certificate through a false declaration using the identity card of another person. For that purpose, he had been lying to the future wife, in-laws, the imam and the doctor to obtain the marriage certificate and HIV-free confirmation. The appellant has been charged under section 38 of Islamic Family Law Enactment (Malacca State) 2002 on 16th July 2007. The fine of RM1000.00 was retained and the imprisonment was dismissed since it is appellant's first offence and there is no previous criminal record.

In the case of **Syarie Prosecutor v Azlan Daniels bin Abdullah [2008] 2 ShLR 158**, the accused was married to Noraini bte Alias on 27 January 1985 in Penang and the said marriage is still legal till to date. He had contracted a second marriage with Che Zaipah bte Ab Mutalib on 8 March 2000 at the Office of Islamic Religious Department in Klang. When requesting permission to contract the second marriage, the accused had made a false declaration that he was still single and was not previously married. This declaration was made in the application form for males who were seeking permission to marry. Convicting the accused as charged, the court held that the act of the accused making a false declaration, thereby deceiving the Islamic Religious Office, Klang was a serious offence which could not be condoned by the court. The effect of his action had

not only affected his wives and their families but also the religious officers and further, has tarnished the good image of the religious departments and had ridiculed the laws and hukum syarak.

The next case is **AHMG v AGMG & Ors [2019] 3 ShLR 1** where the appellant challenged the validity of Form 14A to question whether or not a gift transaction existed. The court did not find any evidence showing that the appellant had lodged a police report on the alleged forgery of the deceased's fingerprints in the document and that the appellant had not taken any action to challenge the validity of Form 14A. Therefore, the court held that the appellant's claim of the invalidity of the document was groundless.

In the case of **Mohd Salim bin Said & Ors v Tang Pheng Kee & Anor and another appeal [2014] 3 MLJ 504**, where it concerned the fraudulent transfer of three pieces of land owned jointly by Sahid, Mah and Yam to the respondents. The appellants (beneficiaries of the original registered proprietors) alleged that the power of attorney (PA) and the memorandums of transfer were forged and applied to the High Court to set aside all the transfers and reinstate the names of the original owners in the register. According to the appellants, the donors to the PA had passed away in 1964 and 1981 respectively and could not have created the PA in favour of Sahid. In fact, Sahid had passed away in 1938/1939 and could not be the vendor who sold the properties to the respondents. The High Court dismissed the appeal holding that the appellants had failed to prove fraud and forgery because they had failed to establish their relationship to the original registered owners of the three lots and failed to prove that the original owners were dead when the PA was executed. However, the Court of Appeal allowed the appeals and set aside the High Court's verdict holding that the faraid certificates were the best evidence in proving that the appellants were the rightful beneficiaries of the

deceased. Besides, possession of the original deed was strong corroboration of evidence of Halimah as Mah's daughter.

The death certificates showed without doubt that Mah and Yam died in 1964 and 1981 respectively. The PA that was used to transfer the lots was a forged document as the donors and donee were no longer alive when the PA was created. The instrument of transfer purportedly signed by the deceased was a void instrument being a document of transfer that bore a forged signature. The title over the properties were set aside.

In the case of Sulaiman bin Ahmad & Ors (beneficiaries for the estate of the deceased, Jemain bin Mohamed ½ portion and beneficiaries for the estate of the deceased, Kechot bin Mohamed ½ portion held by Zabidah bt Sembob as administratrix and trustee) v Jemain bin Mohamed & Ors [2020] 11 MLJ 616, the plaintiff sought for a declaration as to the status of the transfer of the land to the third defendant to be declared as null and void on account that the title of the land was acquired through fraud or forgery by the defendants and/or through a void instrument.

The court held that the third defendant was not the first registered owner of the land but the immediate purchaser of the land. The third defendant had acquired the title through fraud and/or forgery of the first and second defendants and/or by means of a void instrument of transfers on grounds of forgery. The deceased (the original registered owner of the land) could not have executed the sale and purchase agreement and the instrument nor could they have applied for an order for sale since they were long dead before 2013. The first defendant had admitted that he was not the real registered owner of the land and had unlawfully admitted to the particulars of fraud and forgery in executing the sale and purchase agreement and the instrument of transfer and as co-vendor. The title acquired and now registered in the third defendant's name under the land could be defeated under section 340(2)(b) of the NLC for forgery and/or void

instrument. The plaintiff had succeeded in proving that the ex parte order was obtained through fraud and/or forgery by the first and second defendants. The third defendant need not be a party or privy to the forgery where forgery existed.

In the case of **Shariffa Zainab bt Syed Wadzid Ali v Ismail Fekri bin Ishak [2009] 2 ShLR 101**, the court stated that forgery of content of document or any pleadings brought before the court could be deemed as contempt of court and is liable for further penalty or action. Based on section 229(1) of the Syariah Court Civil Procedure (Selangor) Enactment 2003, the Court shall have the jurisdiction to commence proceedings against any person for contempt of Court and may, in such proceedings, make an order of committal for a period not exceeding six months or may impose a fine not exceeding two thousand ringgit. The contract offer document tendered by the respondent is found to have been forged after an inspection conducted by Jabatan Pentadbiran Bahagian Pengurusan Perolehan, Dewan Bandaraya Kuala Lumpur.

Ahmad bin Abd Majeed lwn. Habibah bte Abdul Majid dan satu lagi [2007] 3 MLJ 418 is a case where the plaintiff/appellant applied to set aside the order for the division of land issued by the Land Administrator, Pejabat Tanah Daerah Gombak because it was improperly obtained. The court held that since the defendant named the brother of the deceased as the heir and not the plaintiff (son of the deceased), this was fraud deliberately committed by the defendant over the rights of the plaintiff on the deceased estate.

According to hukum syarak (Islamic rulings), when a deceased leaves a son, the brother of the deceased has no rights over the estate of the deceased. In the instance case, not only the defendant who has committed fraud but also the brother of the deceased who has made a declaration that the deceased has no son, that he is the heir and that he disclaimed his rights as the heir. The Land Administrator has given the order

based on false documents. Therefore, the order made based on such false documents is void and invalid.

Pendakwa Syarie Kelantan lwn. Mat Rahim Saman dan satu lagi [2004] CLJ (Sya) 2004 513 is a criminal case where the two accused in this case were charged with an offence under section 9(1) and (2) of the Syariah Criminal Code 1985 for committing *khalwat*. The accused raised a defence that they were legally married at the material time and they had produced certain nikah documents which indicated that they had solemnized their marriage in Thailand. The prosecution did not seek to challenge the authenticity of the documents, but applied for an adjournment to enable it to carry out an investigation over the nikah documents. However, the prosecution failed to provide the court with the outcome of its investigation. The prosecution had failed to show that the nikah documents as produced by the accused were tainted with forgery or obtained through forgery or improper means. The nikah documents in question were sufficiently convincing to the court by which the first and second accused were lawfully married.

Zainuddin bin Annuar v. Khadijah bte A Hijazi [2012] MLJU 101, In this case, the plaintiff applied for the private caveats entered over the properties held under GM 1848 (previously EMR 1800) and GM 1918 (formerly EMR 1852) to be retained until the originating summons are heard and finally disposed of and until the properties are divided among the entitled heirs according to the faraid certificate. However, the validity of the faraid certificate is disputed due to the absence of seal from Syariah courts. Besides, there is no verification from the authorities of the Syariah Court that the copy submitted is a valid one. The court found that the plaintiff has failed to prove that he is the legitimate grandson of the deceased and then, dismissed the application as he does not have any interest to enter a caveat for the properties.

In the case of **Mst Kulsoom Bibi and Anor. v. Muhammad Arif & Ors [2006] 1 CLJ (Sya) 262**, the lower courts ruled that the gift-deed executed by the deceased in favour of his brothers (the defendants) was forged and fictitious thus, invalid and unenforceable as against the plaintiffs. On appeal, the High Court quashed the decisions of lower court on the grounds that fraud could not be an issue because it had not been alleged in the plaint, and secondly, the gift-deed was valid since *maradh al-maut* had not been proved by the plaintiffs. The plaintiffs appealed against the High Court's decision. The Supreme Court held that the gift in this case was fraudulent and the very transaction of gift in original has not been proved by the so-called donees. Therefore, the gift becomes non-existent and nullified, regardless of whether it is made during *maradh al-maut*.

Abd Halim bin Md Hashim v Azila bt Ramli @ Ismail [2017] 2 ShLR 57, the first applicant and the second applicant were married on 27th March 2005 in Gopeng, Perak and were blessed with three children. Before the marriage, the first applicant already had a wife and the second applicant still had a father who lived in Tumpat, Kelantan, who was also the *wali mujbir* for the second applicant. The applicants later received a letter from the Administration of Islam Office, Kampung Gajah, Perak, stating that the applicants' certificate of marriage were false and was never issued by any deputy registrar of the *kariah* in the area. The applicants then filed an application to affirm the marriage and legitimize the children resulting from the marriage. One of the important issues tried in the court is whether the applicants' marriage was lawful under hukum syarak. The court held that one of the requirements of marriage, which was *wali*, was not fulfilled thus, the marriage was found to be invalid. The court found that there was no utterance of the representative of the *wali* (*wakālah wali*) from the *wali mujbir* to the marriage official (*jurunikah*) because the *wali* in his evidence clearly

stated that he did not know about the marriage until he was told by the applicant. The officer in charge is unaccredited and this statement is supported by a marriage confirmation letter issued by the Kampong Gajah Islamic Religious Office dated 23 October 2012 confirming that the marriage certificate obtained by the applicants was false and the marriage was conducted by syndicate by submitting to the court a certificate of marriage dated 23 October 2012. The marriage certificate has never been issued by any Assistant Registrar in such area.

In the case of **Rosniza bt Mustaffa v Abu Bakar bin Dawam [2013] 4 ShLR 28**, the applicant and respondent were married on 1st March 1996. The marriage was solemnized by an assistant *imam* at Masjid Ubaidah al-Jarrah, Setapak, Kuala Lumpur and was witnessed by two male witnesses. The applicant contested that she had not authorized the said *imam* to solemnize the marriage. The applicant discovered that her marriage certificate was fake and there were no record of her marriage to the respondent through a search at Federal Territory Islamic Religious Department (JAWI). The court held that the marriage was voidable and could not be registered since one of the five essential conditions of a valid marriage which is *wali* (guardian) had not been established. During the solemnization of the marriage, the applicant still had her father as her guardian. However, the applicant had never made any application for permission to marry nor application for *wali hakim/raja* from the Federal Territory Islamic Religious Department (JAWI). Therefore, the solemnization was invalid and could not be registered.

Similarly, in the case of **Norazimah bt Man v Mohd Hamdan bin Ismail [2013] 3 ShLR 45**, the court declared that the applicant's marriage to the respondent as voidable, it can neither be recognized nor registered since the applicant has failed to fulfill the fifth pillar of marriage namely, the presence of *wali*. The applicant stated that

she doubted the status of her marriage and thus made an inquiry with the Federal Territory Islamic Religious Department in Kuala Lumpur. It was then disclosed that there were no record of registration of the marriage and further, the existing marriage certificates was confirmed fake.

In another case of *Majlis Agama Islam Negeri Pulau Pinang v Abdul Latiff bin Hassan* (as executor of the estate of *Hj Mohammad bin Hj Abdul Rashid*, deceased) & Anor [2018] 2 ShLR 15, *Hj Driss* granted his land to *Hj Abdul Rasheed* by a deed poll and indenture to hold it on trust for the purpose of using the land for a mosque and a Muslim burial ground. The Penang State Fatwa Committee issued a fatwa decreeing the land as *waqf*. The plaintiff is declared under section 9 of the Administration of the Religion of Islam (State of Penang) to be the sole trustee of all *waqf* property in the State of Penang. The first defendant had the land transferred to his name qua administrator and, after obtaining the court's sanction, sold the land to the second defendant.

The plaintiff contended that the sale contravened Islamic law relating to *waqf* and later, file the instant suit to set aside all dealings with the land by the defendants or any other party. The defendants failed to satisfy the court that the deed poll and indenture were not genuine documents. The plaintiff on the other hand had successfully proved that the said documents were validly made under and executed by the late *Hj Driss*. The court held that any order that granted the title of the land to the other party other than the plaintiff was invalid, null and void and had to be set aside. The full-text version of these cases can be found in the appendices.

Apart from that, in the recent past few months, the news of polygamous scam or polygamous syndicate has been a real eye-opener for many. As stated by the chief director of Department of Syariah Judiciary Malaysia (JKSM), Yang Amat Arif Dato'

Setia Dr. Hj. Mohd Na'im Bin Hj. Mokhtar, it is important that all parties including the husband, the Syarie lawyer's and those who are within the Syariah judicial institutions to end the forgery activities or polygamous scam. The statement was released following the increasing number of cases involving forgery of documents relating to application of polygamy which threaten the Muslims' family and Syariah judicial institution in Malaysia. Apart from that, the chief director admitted that JKSM had received complaints on polygamous scams and investigations are conducted accordingly (Mohd Khalid, 2021).

On 2nd January 2021, the Minister in the Prime Minister's Department stated that JKSM does not deny the existence of fraud or scam in polygamy. The fraud occurred might involve Syarie lawyer or the officers in Syariah court itself. It is possible that the fraudulent act is committed by forging the documents tendered in court such as falsifying the signature of the first wife in the declaration of receipt of court documents in polygamous marriage (Dolah Aling, 2021; Sheikh Rahim, 2021).

From the abovementioned findings, the forms of document forgery identified from these data are set out in Figure 4.2.

Marriage and Polygamy	Distribution of Property
• Acquiring forged marriage certificate using another person's identity • False declaration as single in application of polygamy • Forged marriage certificate due to non-fulfillment of pillars in marriage • Forged signature in polygamy document	• Forged fingerprints • Forged power of attorney (PA) and memorandum of transfers (MOT) • Ex parte order over the title of the land obtained through fraud/forgery • Forged document of contract offer • Fraudulent application for the order of division of property • Invalid faraid certificate • Forged gift-deed transaction

Figure 4.1: Forms of document forgery

The form of forgery that happened during the process of marriage or polygamy can be seen in the case of **Kholed bin Dinyati lwn. Ketua Pendakwa Syarie Melaka [2009] JH 29 BHG. 2 275** where the appellant obtained a marriage certificate by making a false declaration using the identity card of another person. In the case of **Syarie Prosecutor v Azlan Daniels bin Abdullah [2008] 2 ShLR 158**, the accused had made a false declaration that he was still single and was not previously married when requesting permission to contract the second marriage. **Pendakwa Syarie Kelantan lwn. Mat Rahim Saman dan satu lagi [2004] CLJ (Sya) 2004 513** is another case involving questioned documents where the prosecution had failed to show that the nikah documents as produced by the accused were tainted with forgery or obtained through forgery or improper means.

The cases of **Abd Halim bin Md Hashim v Azila bt Ramli @ Ismail [2017] 2 ShLR 57**, **Rosniza bt Mustaffa v Abu Bakar bin Dawam [2013] 4 ShLR 28** and **Norazimah bt Man v Mohd Hamdan bin Ismail [2013] 3 ShLR 45**, showed how the non-fulfillment of conditions in marriage can render a marriage certificate fake and invalid. These cases show that the act of forgery or falsification of document is committed due to the failure to comply with procedural rules and law during marriage or polygamy process.

Other than that, forgery of documents can be found in the cases involving distribution or division of property. For instance, in the case of **AHMG v AGMG & Ors [2019] 3 ShLR 1**, the validity of Form 14A in a gift or *hibah* transaction was challenged due to the alleged forgery of the deceased's fingerprints in the document. Meanwhile, the case of **Mohd Salim bin Said & Ors v Tang Pheng Kee & Anor and another appeal [2014] 3 MLJ 504** involved the fraudulent transfer of three pieces of land owned due to the allegation that the power of attorney (PA) and the memorandums

of transfer were forged. In the case of **Sulaiman bin Ahmad & Ors (beneficiaries for the estate of the deceased, Jemain bin Mohamed ½ portion and beneficiaries for the estate of the deceased, Kechot bin Mohamed ½ portion held by Zabidah bt Sembob as administratrix and trustee) v Jemain bin Mohamed & Ors [2020] 11 MLJ 616**, the plaintiff applied to the court to declare that the transfer of the land to the third defendant is null and void on account that the title of the land was acquired through fraud or forgery and/or through a void instrument.

In the case of **Shariffa Zainab bt Syed Wadzid Ali v Ismail Fekri bin Ishak [2009] 2 ShLR 101**, the contract offer document tendered by the respondent is found to have been forged after inspected by Jabatan Pentadbiran Bahagian Pengurusan Perolehan, Dewan Bandaraya Kuala Lumpur. Next, in the case of **Ahmad bin Abd Majeed lwn. Habibah bte Abdul Majid dan satu lagi [2007] 3 MLJ 418**, the court held that since defendant named the brother of the deceased as the heir instead of the plaintiff, this was fraud deliberately committed by the defendant over the rights of the plaintiff on the deceased estate. The prosecution in the case of **Pendakwa Syarie Kelantan lwn. Mat Rahim Saman dan satu lagi [2004] CLJ (Sya) 2004 513**, had applied for an adjournment to enable it to carry out an investigation over the nikah documents produced by the accused showing that they had solemnized their marriage in Thailand.

The case of **Zainuddin bin Annuar v. Khadijah bte A Hijazi [2012] MLJU 101** showed how the validity of the faraid certificate is disputed due to the absence of seal from Syariah courts. In the case of **Mst Kulsoom Bibi and Anor. v. Muhammad Arif & Ors [2006] 1 CLJ (Sya) 262**, the Supreme Court held that the gift-deed executed by the deceased in favour of his brothers (the defendants) was forged and fictitious and the very transaction of gift in original has not been proved by the so-called donees.

Therefore, the gift becomes non-existent and nullified, regardless of whether it is made during *maradh al-maut*.

In general, there are two themes emerged which are the cases involving marriage and polygamy application and those relating to the distribution of property. Overall, the various forms of forgery found in these cases indicated the importance to authenticate the documents which are suspected to have been forged or altered. It is essential for the justice institution to ensure the impartiality of its system and this can be achieved through the optimal use of scientific examination available whenever necessary. Moreover, the rapid growth of technology in this era has resulted in the availability and wider range of forms of document which provide more ways and methods to commit forgery. Hence, the application of forensic document examination is required to tackle the problems of questioned document and improve the administration of justice.

4.3 Principles involved in forensic document examination

In order to understand the principles and process involved in the field of forensic document examination, relevant data have been discovered and collected from various sources throughout the study. The results showed that there many principles relating to forensic document examination which built the fundamentals of the field. The researcher had classified this principles according to the types of examination carried out by the forensic document examiner. The results of this study also suggested that the most common and prevalent types of examination conducted by the document examiners is handwriting or signature examination and for that, this section provides a more lengthy results on this compared to the other types of examination. Other examinations that are also performed by the forensic document examiners include identification of printing process, ink analysis, paper analysis, and etc. While each of

the examination has its own techniques, procedure and equipments, they also have different principles that must be adhered to in order to obtain the best result according to the purpose of the test conducted.

Document examination, similar to the other fields of forensic science, is the application of scientific methodologies and procedures to problems that are relevant to the situation. The field of questioned document examination is a recognised science, and in order to practice it properly, one needs to have not only training and expertise, but also precision equipment, proper instruments, and apparatus (Lacy, 1953). Questioned document examination involve a comparison of the document, or aspects of the document to a set of known standards i.e., authentic specimen (Hammond, 2013; Houck & Siegel, 2015).

In this sense, a document is a tangible communication, such as a writing, drawing, or stamped impression on paper or another physical medium, whereas a questioned document is one whose legitimacy, source of origin, or method of creation is being investigated. The composition of paper, ink, or other materials can be investigated. Furthermore, several characteristics of the marks reveal evidence regarding the document's possible author when the communication is handwritten (Taylor et al., 2020).

The primary goal of a forensic document examiner is to carefully evaluate the attributes and characteristics of a document in order to determine how it was created or may have been altered (Baxter, 1980). In other words, the goal of document examination is to determine whether a particular document is genuine or not and if not, by what methods it has been mistreated or fabricated.

George J. Lacy has grouped six classes of questions that may arise regarding the authenticity of a document (Lacy, 1953; Osborn, 1910).

1. Documents where the signature or other handwriting may be questioned.
2. Documents questioned as to the alleged or purported date or age.
3. Documents where fraudulent alterations are suspected.
4. Documents questioned as to the material used in their composition such as paper, ink, pen, pencil etc.
5. Typewritten documents questioned as to the alleged date, source and fraudulent substitutions or alterations.
6. Where genuine or authentic documents are attacked.

These are among the questions that may be asked to a qualified forensic document examiner in cases of suspicious, questioned or disputed documents.

There are various types of analysis or examination in the field of forensic document examination. Among the types of examination are stated as follows:

1. Examination of handwriting
2. Examination of signature
3. Examination of alteration
4. Examination of typewriting
5. Identification of printing process
6. Decipherment of indentation
7. Analysis of ink
8. Analysis of paper
9. Examination of charred document

These examinations require different tools and techniques to analyse the documents in question. Through rigorous visual examination and/or advanced chemical analysis of inks and paper in a forensic laboratory, forensic experts can examine and

verify all sorts of handwriting, signatures, and all printed or typed content involving counterfeiting, obliterations, erasures, and other issues (Gaensslen et al., 2008).

It has been agreed by forensic document examiners that some procedures produce better outcomes than others. This issue should be treated with caution. In any examination, the techniques necessary to achieve the optimum result are likely to overlap significantly. For instance, if a signature scribbled across a passport photograph needs to be authenticated. Although handwriting and other examinations can be done independently, there is a lot to be gained from a thorough examination of a document (Ellen et al., 2018). Following that, forensic experts provide a complete report that includes a detailed description of the evidence presented for analysis, the inspections that the evidence has undergone, and the examination results. They also provide expert testimony as needed (Hammond, 2013).

The results showed that the principles relating to forensic document examination are varied according to the types of examination carried out by the forensic document examiner. There are several most common questioned document examinations namely, handwriting examination and its principles, signature examination, identification of printing process, ink and paper analysis and other examinations performed by forensic document examiners. This study found that the most common and prevalent types of examination conducted by the document examiners is handwriting or signature examination. While each of the examination has its own techniques, procedure and special equipment, they also have different principles that must be adhered to in order to obtain the best result. The figure below presents an overview of the types of examinations conducted by the examiners that were found throughout this study.

FORENSIC DOCUMENT EXAMINATION	Handwriting/Signature Examination
	Identification of Printing Process
	Ink Analysis
	Paper Analysis
	Other Examinations Performed By Forensic Document Examiners

Figure 4.2: Overview of the Types of Examinations Conducted by Forensic Document Examiners

Overall, the techniques and tools used in forensic document examinations utilize well-established principles of physics and chemistry. Further explanation of these examinations is as follows.

4.3.1 Handwriting/Signature Examination

Handwriting is the production of letters, characters, or symbols with a writing implement in an identifiable pattern that is intended to communicate with another person. Handwriting examination refers to examination or comparison between the questioned or disputed handwriting, hand printing and signatures with genuine or authentic material. It is the most common form of examination encountered, accounting for 80 percent or more of the case load in many modern forensic laboratories on a daily basis (Hammond, 2013). It is worth noting that handwriting identification evidence arose from a judicial need rather than an academic subject of study (Bird, Found, & Rogers, 2010).

Expert testimony on handwriting is commonly offered in courts of law, and the giver of such evidence is frequently referred to as a handwriting expert. This title is appropriate in most cases. It does not, however, do credit to the wide range of examinations and comparisons that belong within the ambit of forensic document examination (Ellen et al., 2018; Hammond, 2013).

A handwriting examination involves human perceptions and interpretation of the similarities and differences among the questioned writing and standards or exemplars from unknown individuals. While physical measurements may be used in some elements of handwriting examinations, forensic document examiners prefer to use relative measurements which is the assessment of features proportionally to one another. Size, spacing, and tilt of features are examples of relative measurements. The comparison and examination of writing by forensic document examiners can lead to conclusions ranging from ruling out a certain individual as the author of questioned writing to positively identifying the individual (Taylor et al., 2020).

Previous studies indicated that forensic document examiners do have a higher level of skill in assessing questioned handwriting and signature samples than laypeople (Bird et al., 2010; Pervouchine & Leedham, 2007). The techniques used in forensic document examination indeed explained the difference in accuracy between experts and laypeople. The following table set out the results of analysis conducted on the principles in handwriting examination.

Table 4.2: Findings of Analysis on the Principles in Handwriting Examination

Statement of findings	Category
In the examination (analysis) of handwriting one must be ever aware of two essential axioms: i. That no two writer ever exactly replicates a previous writing-thus each writing is unique; ii. That each writing is produced by one person at one time and thus is again unique (Baxter, 1980).	Individuality
According to Thompson, Vuille, Taroni, and Bidermann (2018), everyone's handwriting was presumed to be unique, and hence a sample of handwriting from a given individual (if sufficiently extensive) was presumed to be distinguished from the handwriting of any other individual.	Individuality
Fundamental principles of forensic document examination included: 1. Handwriting is individual 2. Each person has natural variation in his or her handwriting 3. Each person has a skill level that he or she generally cannot surpass 4. It is not possible to determine the age or sex from handwriting (J. A. Lewis, 2014).	Individuality Variation Writing skill
To prove that two writings were made by one person, it is necessary to show that no other explanation is possible. The hypothesis that two writings are by one person must be tested by observation of the writings and by reference to the resemblances and variations found within and between those of members of the relevant population (Ellen et al., 2018). It has already been made clear that no two writings will be exactly the same; so it is necessary to decide whether the variations are typical of those of one writer or two.	Individuality Variation
A direct comparison is made by the examination of writing on the questioned document and of writing on one or more samples of known authorship (control documents). This comparison is based on set of features present in the handwriting that the examiner believes to be relevant to differences between individuals. At the same time the features chosen should not be likely to display variation from occasion to occasion within the writing of any one individual. To be practical, the features chosen must also be easily identified and measured (Ansell, 1979).	Individuality Variation
The ability of questioned document examiner to identify the author of the a handwritten document by comparison of unknown with exemplars (known, authentic writing samples) depends upon two factors; first, there must be sufficient individual characteristics present in the unknown sample and second, there must be sufficient samples of the purported writer's authentic handwriting. If both of these conditions are met, then questioned document examiners believe that it is possible to individualize an	Individuality

unknown handwriting exhibit to a particular person (Houck & Siegel, 2015).	
The identification of handwriting goes beyond the general appearance. Identification is based on writings having a sufficient number of unique, identifying, individual features or characteristics in the handwriting that are in agreement with no unexplainable differences. The identity of a person's handwriting is not based on one or two characteristics, but rather on a sufficient combination of significant characteristics in agreement between questioned and known writing (Leaver, 2006)	Individuality
The principles of handwriting identification are based on basic scientific truths about handwriting. The first and foremost of these scientific truths is that no two people write exactly alike in an extended handwriting sample. The second basic scientific truth about handwriting is all handwriting contains natural variation so that no two writing samples by the same writer will be exactly the same (Koppenhaver, 2007)	Individuality Variation

Briefly, handwriting identification is based on the following three principles i.e.;

1) individuality, 2) variation and 3) writing skill. The first principle is individuality in the sense that no two people write exactly alike in an extended handwriting sample given sufficient quantity and quality of writing. The next principle is that all writing contains natural variation so that no two writing samples by the same writer will be exactly the same. The third principle is writing skill where no writer can immediately exceed his or her skill level of writing.

Writing is a complex act that requires a high level of skill. It is a skill that must be practised until it becomes a habit. The regular writing style of a person is based on mental images of learned letter designs. It is noteworthy that our handwriting evolves with time. However, by the time we complete our formal education, our major qualities are usually established (Gaensslen et al., 2008). Many writing habits become internalised, and the process of writing becomes unconscious as a result. Even if writing becomes an unconscious habit, it is not permanent and will alter over time. However, a

general statement about overall style is usually not enough to discriminate between the writing of different people.

A handwriting examination can be conducted using a variety of approaches and processes. The steps outlined below are general procedure of handwriting examination for all approaches. In practice, however, the order of processes may change, and numerous procedures or inspections may be carried out simultaneously.

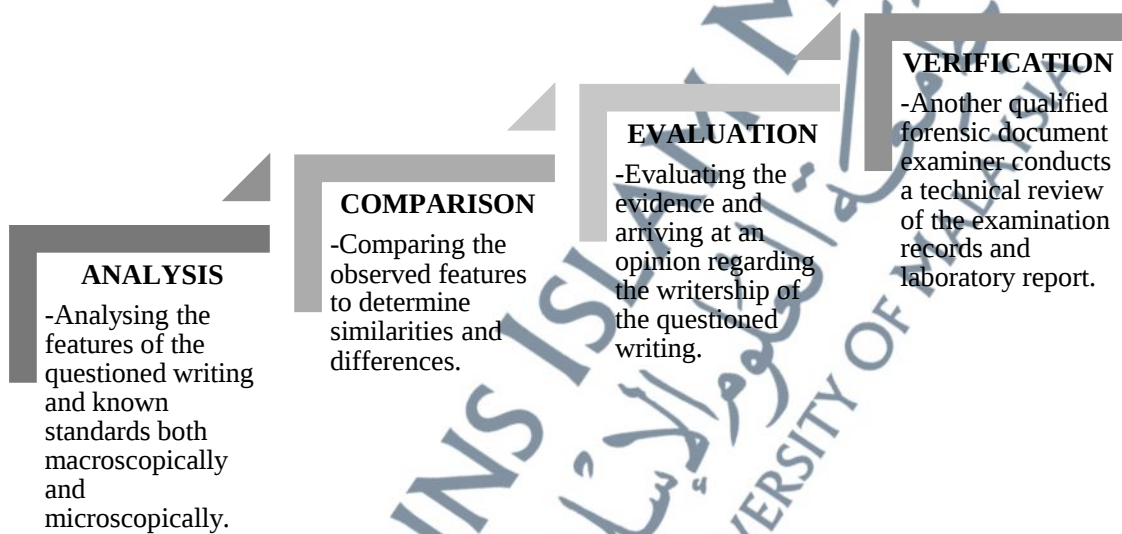


Figure 4.3: General Procedure of Handwriting Examination (Adapted from Taylor et al. (2020))

Handwriting examination is done in several steps. Each study starts with a thorough examination of the questioned and known writings under adequate lighting and magnification to see if the writing is genuine and exhibits the characteristics of freely and spontaneously made writing. The forensic document examiner performs a side-by-side comparison after the analysis is completed and the questioned and known writings are found to be eligible for comparison. Then, the forensic document examiner observes the features in the body of the writing to see if there are any noteworthy similarities or differences.

The relevance of the nature and combination of handwriting traits will be assessed by the forensic document examiners. The writing characteristics are large in numbers and they can be classified into class characteristics and individual or nearly individual characteristics (Gaensslen et al., 2008). Among the common characteristics determined are as follows.

1. Spacing between letters
2. Spacing between words
3. Relative proportions between letters and within letters
4. Individual letter formations
5. Formations of letter combinations
6. The overall slant of the writing
7. Connecting strokes
8. Pen lifts
9. Beginning and ending strokes
10. Unusual flourishes
11. Pen pressure (Houck & Siegel, 2015)

The identification of a person's handwriting is based on a sufficient combination of major characteristics in agreement between a questioned and known writing, rather than on one or two traits (Leaver, 2006). In other words, no single characteristics can by itself be the sole basis of identification. Instead, a combination of all characteristics in a document is required to form basis of identification. There are no guidelines for the minimum number of handwriting traits that must be present in known and unknown handwriting samples in order to establish a conclusion of individuality, similar to other types of comparison evidence such as shoeprints, bullets, fingerprints, and so on. The

minimum number is determined by the size of the questioned and exemplar samples, the characteristics' nature, and the examiner's experience (Houck & Siegel, 2015).

Based on the forensic document examiner's training, knowledge and experience, evaluation is conducted by assessing whether the features found to be either in agreement or disagreement between two samples of handwriting. Then, the examiners will form an opinion regarding the authorship of the questioned writing (Taylor et al., 2020). The examiner's ability to ascertain whether known and questioned writings are written by the same or different individuals depends on his ability to fully appreciate the subtle differences in the way writers write (Gaensslen et al., 2008). 'Identification,' 'Probably did write,' 'Inconclusive,' 'Probably did not write,' and 'Elimination' are among the general opinion scales used in forensic document examiner's proficiency tests (Taylor et al., 2020). During this stage, if no further investigation is required, the examiner documents all of the facts and produces a preliminary report.

Verification is the final step in the examination process. In this step, another expert or trained forensic document examiner conducts a technical evaluation of the examination records and laboratory report to ensure that the technical procedures are followed. The forensic document examination laboratories also need to adhere to certain policies and procedures to achieve quality control.

A crime laboratory may be needed to achieve accreditation in order to verify that it satisfies the established quality standards, depending on the state in which it operates. In Malaysia, the laboratories under the Forensic Science Analysis Centre, Department of Chemistry Malaysia have been accredited to the ASCLD/LAB (American Society of Crime Laboratory Directors/Laboratory Accreditation Board) since 19th October 2005. This accreditation demonstrates that the Department's forensic services meet the ASCLD/LAB's international standards and requirements. Accredited laboratories are

necessary to develop and maintain appropriate methods and procedures for the examinations performed.

In 1997, the National Institute of Justice (NIJ) and the FBI began developing forensic document inspection examination guidelines. The Scientific Working Group for Forensic Document Examination (SWGDOC) was established to set quality guidelines for document examinations. Besides, an additional quality assurance measure is carried out through blind verification. This process involves an expert or peer reviewing the test data, methodology, and results in order to validate or refute the result. It is an independent examination by another trained examiner with minimal knowledge of the case's circumstances and no knowledge of the original examiner's decision. All of the examiners either from public or private institution should employ similar quality assurance techniques in handling forensic document examination.

4.3.2 Identification of Printing Process

In the event the entire document is suspected of being counterfeit, a forensic document examiner must determine how it was made and what other documents were required for its production. It is also possible to determine the printing method utilised to prepare documents. To extract the right evidence from the document in question, some understanding of the printing process is required (Ellen et al., 2018). The method used to manufacture printed material can be identified by examining it under a microscope. When the observations are appropriately interpreted, the document itself, as well as the expert's scientific assessment of it will provide adequate evidence. In essence, a printing technologist is the only person who can answer some queries. In the current study, it has been found that there are several methods of printing which can be identified through forensic document examination.

Ellen, Day and Davies in their work has listed several types of printing that can be identified (Ellen et al., 2018). One of them is letterpress printing or relief printing. This type of printing relies on raised type transferring ink to the paper. This necessitates a significant amount of pressure. The image is raised above the background, inked and then pressed onto the paper. The paper surface is not smooth, but rather is indented by the printing, which may be seen with oblique lighting or by touch. Next, lithographic processes rely on the deposition of ink from a flat surface, with the plate containing the design to be printed in reverse. There are no indentations found since there is no difference in pressure between the image and non-image portions.

In gravure or intaglio printing, an image carrier was used where the design to be printed is beneath the surrounding surface. The plate is inked and the excess ink is scraped off using a blade. Only the ink in the depressions will remain, and when the plate is pressed onto paper, the ink will transfer in the shape of the picture. Gravure printing is used to print high-quality materials and is capable of half-tone printing, which allows for the creation of different colour shades. As a result, a change in the thickness of the ink on the paper indicates this printing method. Jagged edges are also produced via laser printing and other matrix processes, particularly on diagonals. Because the dots in the image are laid out in a grid pattern, only vertical and horizontal lines appear continuous, while diagonals are stepped. The appearance of toner or ink differs depending on the matrix ink. Liquid ink printing resembles lithographic printing, but laser printing relies on the fusing of small particles of solid toner by heat, pressure, or both (Ellen et al., 2018).

Corzo (2018) in his work stated among the printing processes available include inkjet printing, toner printing and intaglio printing. Droplets or particles are directed in rapid succession towards the substrate, such as paper, in inkjet printing. Toner printing

systems generate a latent image that attracts the toner ink using optical or electrical processes. Afterwards, the ink is transferred to the substrate. Electrophotography, ion deposition, electrostatic, magnetographic, and electrographic toner printing methods have been the most prevalent types of toner printing systems. Intaglio printing, which is commonly used for banknotes, is the process of printing from an engraved plate or cylinder. The identification of printing process is possible since each of the process applied different principles in each methods of printing. The printed image is either directly or indirectly transferred to the substrate, depending on the method used.

Blayo and Pineaux (2005) conducted a study on the fundamentals of a range of printing processes, including offset lithography, gravure, flexography, ink jet, electrophotography, and screen printing. Offset lithography is an accurate, fast and economical process of printing. It is a flat printing process based on the antagonism (friction) between water and ink. An aluminium-based plate is covered with a thin photopolymer layer, the latter being 'the image area'. Flexography is a direct printing method that use a relief flexible plate to apply fluid ink to a substrate. The ink is normally dispensed from an ink chamber, which is in contact with metering roller called "anilox" and closed by two doctor blades. Gravure is an intaglio process in which a liquid ink stored in the cells of an engraved cylinder is transferred to the substrate under extreme pressure. Screen printing is a stencil process in which ink is transmitted to a substrate using a stencil covering a fine fabric mesh of threads.

Blayo and Pineaux (2005) in the same study explained ink jet as a digital, nonimpact printing process where it can print directly from computer data onto virtually any substrate of any size. There are two types of ink jet process; (1) continuous ink jet and (2) "drop on demand" (DOD) ink jet. The droplet generator in a continuous ink jet process is made up of a reservoir filled with ink that is under pressure and undergoing

vibration. The vibration raises the pressure inside the reservoir, causing a nozzle to expel a spray of fine droplets. The droplets are deflected in two directions by two perpendicular fields after passing through a charged electrode. On the other hand, when the pressure within the reservoir rises, one single ink droplet can be jetted from the reservoir through the nozzle in the DOD ink jet process. The second most used digital printing method is electrophotography, often known as xerography or laser printing. In electrophotography, the toner used as the ink to be printed must be charged and transferred electrostatically. Then, the transferred toner is fused onto the substrate (Blayo & Pineaux, 2005). Laser printers and photocopiers that used xerography do not utilise ink to print characters on the paper. Instead, a toner comprised of finely divided carbon powder and binders, as well as a laser, are used to create the characters (Houck & Siegel, 2015).

These days, facsimile machine or fax produces documents that can be the subject of investigation and litigation. Fax machines are similar to the printing machines mentioned previously in terms of ink or toner and the possible presence of extraneous, individual markings on the paper. Forensic document examiner may determine the origins of the sending machine or the receiving machine of a disputed fax. In addition, whether the fax is the first copy or a fax of a fax may be significant for the examiner to identify. Facsimiles possess a special header that describes some of the information about the sender including the name, telephone number or other material as well as the time and date on which the fax was sent. This header is known as a transmitting terminal identifier or TTI. It will usually be in a special font that is different from the text font. Any attempt to forge TTIs is usually detectable by document examiners.

4.3.3 Ink Analysis

In an investigation where a document is believed to have been tampered with, ink analysis or examination can give crucial forensic evidence. An examination of the ink on a check, for example, may reveal that the amount of money it is for has been altered. It might even be possible to provide the police with the name of the ink's possible brand. Ink analysis is used to determine whether writing has been tampered with, whether a document has been backdated, the relative ages of ledger entries, and the document's estimated age (Jones & McClelland, 2013). Among the tasks of a forensic document examiner is to understand the composition of an ink sample and the chemical changes that it undergoes when it dries (Houck & Siegel, 2015).

Document examiner may use both chemical and non-destructive techniques to establish the similarity or dissimilarity of inks. It should be pointed out that, wherever possible, the integrity of the acquired evidence should be protected during forensic document inspections (Silva, Talhavini, Zacca, Trindade, & Braga, 2014). Thus, under most circumstances, non-destructive methods of analysis are initially performed prior to chemical analysis to prevent further harm to the contested documents, which are already exhibited as evidence in court (Teo, Mohamad Noor, & Wong, 2017). This is because chemical analysis process would alter the document when the ink sample is removed for analysis.

For more than a century, spot chemical (colour or crystal) tests have been used to detect both inorganic and organic components in inks and paper. These tests are used to distinguish ink formulations, to presumptively identify an ink formula's constituents, or to select a solvent suitable for the following extraction of the ink. Spot colour and solubility tests have been conducted to identify the sequence of crossing strokes of

various inks, as well as to assess the relative age of inks of the same formula and on the same paper (Aginsky, 2000).

There are considerable differences between the inks used in printing and those employed for writing (Ellen et al., 2018). As the beginning, the researcher observes the manufacture and examination of the inks used in held-hand writing instruments. Generally, there are five basic types of pen available in the world today. Each with their own specific type of ink. Firstly, there is fountain pen that contains a water-based fluid typing delivered to the paper with the nib. For more than a century, the fountain pen has been a favorite writing utensil. It was the preferred writing tool for signing official documents in our social lives. Fountain pen inks are made up of a complicated mix of chemicals, including colourants and other additives (Wang, Yu, Xie, Yao, & Han, 2008).

At the end of the World War II in 1945, the first ballpoint pen was invented. Ballpoint inks are based on a quick-drying paste which delivered to the paper via a small rolling metal ball at the tip of the pen. Ink for ballpoint pens is made up of a complex combination of colours, pigments, solvents, resins, viscosity adjustors, and ball lubricants (D. Ismail, Austad, & Desa, 2008).

Later, two new types of pen were introduced namely porous tip or felt tip pen and rollerball pen. Both of these pen contain water-based fluid ink. Each of these pens has one thing in common; they all use dyes to give the ink colour. These dyes are powders that dissolve in solvents and hence, called soluble dyes. These inks can be evaluated using the chromatography technique because of their solubility. Chromatography is the most common utilized forensic methods for comparing and identifying inks from documents. There is no scientific way to tell the age of ink on a document. Nevertheless, the examiners may determine the combinations of dyes or pigments contained in each

ink formulation using the chromatography techniques where a sample of ink can be separated into its different dye components.

Forensic scientists have developed various tests so that they are able to tell those with different chemical ingredients apart from one another. These tests start by observing the ink on a document through a microscope to study its colour and general appearances which may give a clue as to the type of pen used. The eye itself is a powerful scientific instrument and capable of extracting a great deal of information from a simple observation of ink on paper. For example, under a magnification of around 20-50x, the appearance of a ball-point ink line provides clear evidence of its origin. Ball-point inks have a characteristic of glossy appearance as they are only partially absorbed into the paper and their pastry texture is very distinctive.

The next test would be to place the ink on the document under infrared and ultraviolet light using a special piece of equipment known as a video spectral comparator (VSC). The inks may fluoresce or glow under these special lights. Chemical compounds in inks can cause them to glow in different ways or show different levels of brightness. This allows the examiner to tell if distinct regions of writing on the same document were written with different inks, indicating that the document has been manipulated.

Ultraviolet and infrared radiation are absorbed in the same way as visible light is although not detected by the eye. Since most blue and black ink absorb ultraviolet light, measuring its absorption and reflectance yields little information. The presence of chromophors in the dye molecules determines whether or not an ink absorbs infrared energy (Ellen et al., 2018). Such visual and spectrometric methods are only useful for determining whether two or more papers are from the same source, but they are frequently insufficient to identify the inks (Wang et al., 2008). Hence, further chemical

analysis is necessary to obtain more detailed information on whether the inks being compared really have the same formula. This is when the destructive techniques may be used.

Chemical procedures that require the removal of parts of ink or other elements can be used to further investigate the components of writing inks. Chromatographic techniques are commonly used to determine the combinations of dyes or pigments included in an ink formulation. Chromatography works on the principle of separating specific components of a mixture so that they may be identified or compared. Thin-layer chromatography (TLC) and high-performance liquid chromatography (HPLC) are the two procedures used to examine inks (HPLC). Chromatographic techniques are used extensively in document analysis for the characterization, comparison, source determination and dating of ink (Aginsky, 2000).

TLC is a separation process that uses capillary action to move a solvent up to a plate with a small layer of absorbent. Nonvolatile organic and inorganic compounds are separated using this method. Ink samples are taken from the document and dissolved in a chemical solvent before being transferred to a flat TLC plate. The different dye components contained in different ink samples can be sorted out and examined by placing this plate upright in a glass tank with a little amount of a specifically designed solvent mixture to see if the components from different areas of ink on a paper are the same or different. If the components are the same, then the ink maybe from the same pen. If they are not the same, then the inks must have come from a different pen, hence, providing evidence that a document has been written with more than one ink. TLC has been the technique most favoured by many for its high sensitivity, short development time and small amount of material required.

Another option is HPLC, which is a separation method that uses high pressure to drive a solvent down a tube packed with an absorbent (Gaensslen et al., 2008). The advantage that HPLC has over TLC is its ability to determine the proportion of the major components of the mixture of dyes. Nonetheless, the apparatus required a higher cost compared to TLC (Ellen et al., 2018). For the past 30 to 40 years, this combination of testing has proven to be effective in forensic cases.

Gel pens are more recent than any other types of pen in market. The ink vehicle of this pen is a water-based gel. The gel pens utilize a rolling ball mechanism to transfer ink from the ink reservoir to the paper substrate similar to that used in the ball-point and rollerball pen (Florence, Harralson, & Barabe, 2005). Ink inside the barrel is a solid gel when the pen is not in used, however, friction from the metal ball turns the solid gel into a liquid as soon as the pen is used which then smoothly flows over the metal ball onto the paper. It is difficult to test gel pens using the TLC method since they use pigments that do not dissolve in solvents.

Alternatively, Raman spectroscopy (RS) may be used for ink analysis. RS is an increasingly popular choice for ink analysis due to its non-destructive nature and ease of sample preparation (Bell, Stewart, Ho, Craythorne, & Speers, 2013; Braz, López-López, & García-Ruiz, 2013). Ink analysis can be performed directly on the paper surface without the need to remove the ink through extraction or physical methods (Florence et al., 2005). Raman spectroscopy is a scientific technique that uses a microscope to direct a laser light of a certain wavelength onto ink on a page. The laser reacts with the ink's various chemical components in such a way that light is scattered back at different frequencies that are unique to the chemical structures present. This Raman scattered radiation is collected and sent to a spectrometer, which converts the various frequencies into a spectrum (Claybourn & Ansell, 2000). Chemicals in different

brands of ink may differ. As a result, the Raman spectra generated should be unique. This technique will provide a fingerprint or chemical signature that can be used to compare inks and allow their identification (Braz et al., 2013).

Printing inks differ from those used in pens in the sense that they are oil based and have high inorganic content. The first tests to be performed, just like other forensic science methods, are those that do not cause damage. If these do not provide an answer, there is little damage being done to the document to perform modern analytical techniques. There are two purposes of testing the composition of printing inks. The first goal is to determine whether the ink on a questioned document matches the ink on the genuine document. Often, this is unnecessary because the appearance of the printing will reveal clear differences through visual inspection. The second goal of the examination is to compare them to other counterfeits or inks discovered at the suspected source of their production (Ellen et al., 2018).

It is important to note that document examination makes progress by the development of new techniques. Aside from the methods for testing inks described above, document examiners, universities, and other institutions conduct research into various techniques. There are many other new methods and techniques of ink examination which are not discussed in this study.

4.3.4 Paper Analysis

Most documents are based on paper. Undeniably, electronically stored information plays an increasingly important part in administrative and financial activities. However, the traditional (paper) document has a place, and thousands of different types are used for documentation purpose. Analysis of paper is just as important as the ink itself. In particular, examinations of papers provides very important

data in the field of forensic document examination. Not only the physical properties of the paper and pigments are examined, but also their chemical composition (Metzinger, Rajkó, & Galbács, 2014).

Paper is made up of a raw material called pulp and this comes from cellulose and hemicellulose of the wood, mixed with cotton and other fibers. Physical properties such as strength, thickness, color, fiber content, fluorescence or mass/area can be measured to compare different sheets of paper. Comparisons of paper according to physical properties are inexpensive and easy to perform. Moreover, physical test are sometimes destructive in nature. Nonetheless, by understanding the composition of the document papers, the forensic document examiner is capable of characterizing the papers through their trace elements, which can be different from one manufacturer to another. For this purpose, x-ray techniques have been used.

Energy-dispersive X-ray fluorescence (EDXRF) spectrometry is a technique that can be used to determine the elemental composition of paper. Compared to other elemental detection methods, it is a non-destructive, rapid, multi-element, highly accurate, and environmentally friendly analysis. (Ferrero et al., 2004; Yao, Wang, & Zhao, 2015). Furthermore, research has proven that a combination of EDXRF and mass spectrometry (MS) technique would allow the examiners to distinguish the components of paper significantly better (Van Es, De Koeijer, & Van Der Peijl, 2009). Checks and banknotes have received less attention. Spectrometry techniques such as infrared and Raman spectroscopy are used to characterise them (Calcerrada & García-Ruiz, 2015).

Other than that, Fourier transform infrared (FTIR) analysis is also a non-destructive technique using infrared spectroscopy. The procedure in this technique is relatively simple and quick, allowing the components of mixtures to be identified without the use of a physical sample (Udriștioiu, Tănase, Bunaciu, & Aboul-Enein,

2012). Raman spectroscopy is a complementary technique used in many types of document examination including paper analysis (Calcerrada & García-Ruiz, 2015). Raman spectroscopy and FTIR analysis often used hand-in-hand to improve the tests (Calcerrada & García-Ruiz, 2015; Udriștioiu et al., 2012).

In the last decade, the examiners have employed the technique of inductively coupled plasma mass spectrometry (ICP-MS) for the characterisation of document paper. Even though this technique is destructive in nature, it has several advantages in term of its speed, quantitative and multi-elemental analysis, high sensitivity and precision. A study conducted by Spence et al. shows that ICP-MS provides an effective and robust technique for the discrimination of document paper. In a case where a page in a document may have been substituted, such technique offers an effective method to show the dissimilarity of the pages conclusively (Spence, Baker, & Byrne, 2000; Van Es et al., 2009).

For examination of the security features of the paper, for example; currency notes, the examiners look for watermark, sensitizing, visible colored fibers, invisible fluorescent fibers and security threads. Watermark is considered as the safest security feature since a watermark can only be created during paper making. Sensitizing is destructive in nature where the chemicals added into the paper to give a chemical reaction showing coloration and often non-reversible. The invisible colored fibers are rather similar to visible colored fibers except that these can only be view under ultra-violet light source. Security threads can be incorporated into the paper providing a very high degree of protection against counterfeiting.

4.3.5 Other Examinations Performed By Forensic Document Examiner

Aside from the abovementioned document examinations, forensic document examiners may use their expertise in many other areas. For instances, 1) the detection and decipherment of charred documents and indented writing, 2) age determination or dating of documents, and 3) the detection and decipherment of document alterations.

There are cases where the perpetrator tries to destroy incriminating documentary evidences by burning them. If the documents are recovered before being completely destroyed, chances are that some of the writing can be identified (Houck & Siegel, 2015). A charred document is one that has been partially burned or heated to the point where it has turned a very dark colour and is no longer easily readable. A burnt document is extremely fragile and must be handled and processed with extreme caution. (Doud, 1952). This problem can be solved in several ways through careful examination using transmitted light or using nonvisible light photography to extend the examiner's vision.

The writing on a charred document can be recovered most easily with a spectral comparator. The forensic document examiners soften the fragile charred paper with chemicals that can be lightly sprayed on it to make it much easier to handle (Gaensslen et al., 2008). The key to analysing a burnt document is preserving the ink or toner, and providing as much contrast as possible between the darker, charred paper and the ink or toner (Houck & Siegel, 2015).

In a number of situations, indented writing can provide valuable information. Deciphering indented writing is possible because when a person writes on a sheet of paper, particularly if firm pressure is used, the sheet underneath will have an impression of what was written on the sheet above (Gaensslen et al., 2008). Forensic laboratories

usually used the low-angle lighting method known as oblique lighting to visualize indented writing until the development of an electrostatic method (Harris & Lee, 2019).

The use of an Electrostatic Detection Device (EDD) such as the Electrostatic Detection Apparatus (ESDA) machine, can visualise documents that may include indented impressions that are not visible to the naked eye. (Houck & Siegel, 2015). An EDD visualises areas of indented writing using applied charges and toner, making them visible to the naked eye. The ESDA utilises the principle that indented areas of the document carry lesser negative charge than surrounding areas. As a result, the toner in the device will be drawn to these locations, disclosing any indentations that may exist. In most cases, the indented writing can be clearly read. To preserve the information, the results might be photographed. Using this technique, it is sometimes possible to see indented writing on a pad six or more sheets down (Gaensslen et al., 2008; Harris & Lee, 2019).

Forensic document examiners are frequently asked whether a document was authored at the time it was dated or if it was forged or altered afterwards. Context and technology are two powerful aides that will help the forensic document examiner to estimate the age of a document (Gaensslen et al., 2008). Examining the paper's composition, a watermark on the paper, and the inks used in the document can all provide significant information for determining the date of a document. The task of forensic document examiners is to look for any signs that show a document was created at a different time other than claimed (Purdy, 2000).

Document examiners are also asked to determine whether a document is the authentic original or it has been tampered with. People alter documents in their favor for economic and personal gain. One of the ways to identify if a document has been altered is through a careful examination using good lighting and a stereomicroscope

(Gaensslen et al., 2008; Harris & Lee, 2019). If this fails to disclose any alterations, several other examinations are possible. With the current state of technology, there are many ways to alter documents. For examples, through obliterations and erasures.

Obliteration is the overwriting of a sample of writing or printing with another writing instrument such as pen, pencil and marker. This action may be accidental or deliberate. The method for determining what is written beneath an obliteration depends on the original writing and the means employed. Infrared examination may be the best way to examine obliterations made by ink .

Erasures can occur in number of ways such as abrasive erasure and chemical erasure. Abrasive erasure involves removing writing with an abrasive eraser material while chemical erasure involves dissolving or bleaching ink so that it is no longer visible (Houck & Siegel, 2015). The typical approach for deciphering erasures and determining the content of the erasure is through oblique lighting and infrared analysis. Visualizing the deleted text has been made easier by using computer picture enhancement. When writing that has been totally erased or is no longer visible to the human eye is scanned into a computer, it can sometimes be seen on the scanned image (Leaver, 2006). Besides, forensic document examiners can look for erasures mechanically by using a very fine powder such as lycopodium or fingerprint powder (Gaensslen et al., 2008). Even though it may be fairly easy to notice an erasure, determining what was wiped is frequently more complex.

4.3.6 Guideline for the Submission of Document Examination Cases

Department of Chemistry Malaysia produced a guideline for the submission of document examination cases at Forensic Science Analysis Centre. The guideline served only as a recommendation for the submission of documents for examination. In any

case where the samples does not meet the recommendation, cases may still be accepted and examined but, in some ways may affect the final opinion in the final report. The first step is to submit an application letter to Director General of the Department of Chemistry Malaysia in accordance to the guideline. Document examination fees are being charged to individuals and the private sector. Applicants are required to enclose a cheque or bank draft according to the payment rate. The documents submitted must be original documents. Copies of the documents will be accepted only if the original documents are not available or attainable.

Guidelines for the submission of document examination cases according to types of cases are as follows:

1. Examination of Handwriting and Signatures

The required documents are:

- a) Disputed document
 - Disputed documents are prohibited from being disclosed to the writer.
- b) Set of handwriting/signature specimens for comparison purposes, as follows;
 - a. Collected Contemporaneous Specimen
 - b. Requested Specimens
 - 5 examples of signature/handwriting on a blank piece of paper if the writer is still alive. The number of signature/handwriting on a piece of paper can be increased or decreased according to the suitability, size and space for the signature/handwriting. The estimated number of requested specimens are 20.

2. Typewriting Examination

10 examples of typewriting from the suspected typewriters are required. Typewriting should be in accordance with the text of the disputed typewriting including punctuation, spacing between letters, lines and paragraphs.

3. Examination of Alteration

Only original disputed documents are required.

4. Authentication of “Official Documents”

Examples of the same type of official documents and contemporary documents are required.

5. Analysis of Ink and Paper

Samples of suitable ink and paper are required.

6. Identification of Printing Process

Only original disputed documents are required.

7. Examination of Indentation

Only original disputed documents are required.

8. Examination of Charred Documents

The document examiner should be contacted for advice on how to handle the burnt documents before it is sent for examination

4.4 Forensic Document Examination from Syariah Courts Perspective

It could be safely alluded that this part is perhaps the most important part of this study. The third research question represents the overall aim of this research which is to examine the application of forensic document examination in Syariah courts. The

data from various credible sources as mentioned in Chapter 3 are analysed and presented in this section.

Based on the previous studies, there is no doubt that forensic document examination is advantageous to the justice system. Problems of identification in cases such as forgery, fraudulent signature and other questioned documents can be solved by conducting the scientific examination. Forensic evidence implies an expert's scientific opinion which assists the court of law in many ways to implement justice. Interestingly, the grounds of admissibility of forensic evidence can be found in the Prophet's tradition (Sunnah), the companions' consensus (*ijmā'*) and interpretation of jurists (*ijtihad*) (Baharuddin, 2017; Haneef, 2006).

Being one of the branches in forensic science, it has been found that forensic document examination is significantly applicable and admissible as an expert opinion (*ra'y al-khabīr*) in court of trial. Expert opinion helps the court in making the right decision on matters beyond the judges' knowledge. In Islamic law of evidence, evidence is known as '*al-bayyinah*', a comprehensive term which refers to anything which may help clarify, elucidate or explain any right, matter or interest in a dispute (al-Qayyim, 1953) while *qarīnah* means anything which may be used as proof or evidence to establish the existence or non-existence of a thing. Evidence derived from the forensic expert would also fall under the subject of *qarīnah* (Haneef, 2006; Nawī, 2002). Therefore, examination conducted and its explanation could serve as corroborative evidence in court of justice.

This subsection is divided into three parts. In the beginning, the findings on the admissibility of expert opinion is elaborated. The second part describes legal provision and other rules on expert opinion including decided cases to understand the application

in courts. Last but not least is the third part which explains the expert opinion from civil court perspectives.

4.4.1 The Islamic Legal Position of Expert Opinion (*ra'y al-khabīr*)

Shariah law recognizes expert opinion as one of the methods of proof in courts (Anwarullah, 2004; Othman & Hisam, 1996). As mentioned earlier, any analysis or examination conducted by forensic document examiners will be reported in order to be exhibited in court. Such report is admissible in Syariah courts as an expert opinion provided that all the requirements are fulfilled.

Since the time of Khulafa' Ar-Rasyidin, expert opinion has been adopted in Islamic judiciary (W. A. F. W. Ismail et al., 2015). It is indeed one of the means of proof accepted in Islamic law of evidence. To determine the authenticity, or genuineness of document, the court subjects it to the process of authentication. In the event where the authenticity of documentary evidence presented is questioned, the court may ask the opinion of those who are proficient or are experts in the chosen field. Syariah evidential principles does give great importance to the opinion of an expert (Shariff et al., 2019). Their opinions are rendered admissible on the basis of high standard of a specialized knowledge (Othman & Hisam, 1996).

As stated by Ibn al-Qayyim in *Turuq al-Hukmiyyah*, *ra'y al-khabīr* or expert opinion refers to the testimony of a person skilled in a certain field (al-Qayyim, 1953). In Arabic, the word *ra'y* means opinion and *al-khabīr* is derived from the root word *khibr* and *khibar* which means experienced, skilled, acquainted with and expert. Therefore, expert opinion means the opinion, evidence or testimony given by someone who is skillful in a field or issue (Bahnasi, 1989). According to article 1689 of The

Mejelle, the reports furnished by skilled persons or experts are admissible in court even though the word ‘evidence’ is not mentioned (Hooper, 1990).

The expert opinions are used to assist the judges in making decision provided that the court satisfied with the competency of the expert. Scholars agreed on the admissibility of expert opinion based on the verse of the Qur’an which mentioned:

﴿وَمَا أَرْسَلْنَا مِنْ قَبْلِكَ إِلَّا رِجَالًا نُوْحِيْ اِلَيْهِمْۖ فَسَلُّوْا اَهْلَ الذِّكْرِ اِنْ كُنْتُمْ لَا تَعْلَمُوْنَ﴾

“We did not send (messengers) before you (O Prophet) except mere men inspired by Us. If you (polytheists) do not know (this already), then ask those who have knowledge (of the Scriptures)”.

(Surah al-Nahl 16:43)

The phrase ‘those who possess the Message (Wisdom)’ could well be interpreted as "those who are knowledgeable in their disciplines." (Anwarullah, 2004; Shariff et al., 2019). Some of the Muslim jurists even agree to the extent that expert opinions bind the courts (Othman & Hisam, 1996).

In accordance with the *ijtihad* of the jurists, the validity of expert opinion is derived from the story of the Prophet Yusuf apart from the Sunnah and the practice of the companions. In this story, the Prophet Yusuf struggled to escape from the grip of the wife of al-Aziz resulting in his shirt got torn from the back. In such situation, a wise man from the woman’s kinsfolk said that the shirt’s being torn from the back was a sign of the truthfulness of Prophet Yusuf’s claim. The man’s skill is similar to that of a forensic expert today. This incident constitutes as an authority to the admissibility of the expert opinion in Islamic law of evidence. Based on this story, it can be inferred that the opinion of a skilled person is highly recognised during that time (Baharuddin, 2017; Haneef, 2007).

Based on the Qur'an's injunction, genetics plays a vital role in paternity. If there were multiple claimants to a child's paternity and no clear proof in favour of any of them, the matter was settled by consulting expert physiognomists, who established who the child's father was. They used their abilities to compare the physical traits of the child's physical body to the claimants (Banu az-Zubair, 2007). This is documented in the narrative of Usamah, in which the Prophet SAW determined Usamah's paternity based on the assessment of a lineage expert who based his analysis only on a comparison between resembling bodily features (al-Daraqutni, 1988; Haneef, 2006).

It has also been said that Prophet Muhammad SAW once decided on a boy's paternity based on his parents' bedding (*firāsh*). Based on the study by Banu az-Zubair (2007), one of the four basic principles in Islamic bioethics and law by which paternity may be established is by attribution. The principle of attribution is that "the child belongs to the bed (where he or she was born)," also known as *al-walad li'l-firāsh*, or "the infant belongs to the ostensible father." He is also said to have ordered a woman to be flogged after discovering she was pregnant while still unmarried (al-Daraqutni, 1988; Haneef, 2007).

Other than that, during the time of the companions of Prophet Muhammad SAW, there was a situation where Caliph 'Umar admitted to the clever finding of Caliph 'Ali in using experimental technique to solve a case. In this case, a woman went to 'Umar and lodged a complaint that she had been raped and there were stains of semen on her body and dress. 'Umar consulted 'Ali to determine whether it was semen as claimed by the woman. 'Ali then soaked the traces of the stains in boiled hot water and they all realized that it was egg white rather than semen (Haneef, 2007; Nawī, 2002). Among the examples listed by Ibn Qayyim where expert opinion is applicable include determining types of wounds from medical doctor's opinion and seeking for a

veterinarian's view to determine animal's medicine (al-Qayyim, 1953; Othman & Hisam, 1996).

Since expert opinion is admissible in Syariah court as *qarīnah*, it is only right to dive into the discussion of Muslim jurists on the acceptance of *qarīnah* in Islamic law. The term *al-qarīnah* is an Arabic word originates from the word *al-muqāranah* which literally means together, connected, related and befriended (Mutalib et al., 2018; Mutalib et al., 2020). The word *qarīnah* is also said to come from the word *qarana* which means 'connecting something' (Muhamad et al., 2015). Similarly, Ahmad Fathi Bahansi describes *qarīnah* as together, accompany or related. Anwarullah (2004) defined *qarīnah* as connection, conjunction, relation, union, affiliation, linkage, association or indication. *Qarīnah* is also pronounced as 'amārah or 'alāmat which means signs (Mutalib et al., 2018).

According to Wahbah al-Zuhayli, *qarīnah* is anything which points to a certain meaning either in the form of words, circumstances, acts or omissions (al-Zuhayli, 1997). It can be construed as any sign, proof or evidence which is circumstantial in nature which may corroboratively give a definitive impression of an occurrence of any relevant fact or any fact in issue in a case (Muhamad et al., 2015; Othman & Hisam, 1996; Zaydān, 2007). In simple words, *qarīnah* is deemed as a proof by related facts. A logical inference to be derived from anything done or from circumstances by virtue of which the matter becomes definite, a sign that makes the matter certain is another definition of *qarīnah* (Anwarullah, 2004).

Majority of the *ulama'* from the four scholars have accepted and recognized *al-qarīnah* as a means of proof. Most authorities, particularly modern legal scholars, see expert opinion and forensic evidence as a form of *qarīnah* and express their evidential value in accordance with the rules that govern *qarīnah* (Haneef, 2006; Nasri & Md Noor,

2020b). The grounds for admitting *qarīnah* is based on sources in the Qur'an, hadith of the Prophet SAW and through the practice of the companion.

Allah SWT says in the holy Qur'an;

﴿وَجَاءُوا عَلَى قَمِيصِهِ بِدَمٍ كَذِبٍ ۚ قَالَ بَلْ سَوَّلَتْ لَكُمْ أَنْفُسُكُمْ أَمْرًا فَصَبْرٌ جَمِيلٌ ۖ وَاللَّهُ الْمُسْتَعَانُ عَلَى مَا تَصِفُونَ﴾

“And they brought his shirt, stained with false blood. He responded, “No! Your souls must have tempted you to do something ‘evil’. So ‘I can only endure with ‘beautiful patience! It is Allah’s help that I seek to bear your claims”.

(Surah Yusuf 12:18)

Imam al-Qurtubi in his tafsir mentioned that the *fuqaha*’ have employed this verse as justification to rely on *qarīnah* in solving *fiqh* related problems. Prophet Yusuf’s brothers made a grave mistake when they forgot to rip the shirt as they stained it with blood, as if a wolf could ravage a person to death without leaving any teeth or claw marks on his clothes. The jurists are unanimous in their view that the Prophet Ya’qub AS has treated the bloodstained shirt as evidence that Prophet Yusuf AS is still alive (Zaydān, 2007). The incident of Prophet Yusuf’s shirt was torn from the back resulting from his struggle to escape shows that it is a *qarīnah* leading to the conclusion that Yusuf AS did not try to molest the wife of al-Aziz as recorded in the verses 25 to 28 of Surah Yusuf (Othman & Hisam, 1996).

Muslim jurists agreed that there is ample evidence from the Sunnah of the Prophet Muhammad SAW to justify the use of *qarīnah* as a mean of proof. It has been established that *qiyāfah* is accepted by the majority of the *ulama*’ to prove *nasab*. One of the reasons is based on the story where Prophet Muhammad SAW at one time met Aishah RA with his face beaming (indicating obvious pleasure) and said to the effect, “Madjaz al-Madlaji have just been observing Zaid and Usamah, after covering their

heads while examining their feet. After making the observation he said, “Their feet have similarities with each other.” The Prophet SAW became sure about Usamah’s paternity when the expert (Madjaz al-Madlaji) found a resemblance between Zayd and Usamah (al-Daraqutni, 1988; Othman & Hisam, 1996). This event indicated that such judgment was made based on *qarīnah* since *qiyāfah* relies on circumstantial evidence to establish someone’s paternity. The righteous caliphs have followed the footsteps of the Prophet SAW by applying *qiyāfah* as a method of proving *nasab*. Imam Malik, Ahmad, Shafi’i and others have accepted applying *qiyāfah* amounts to applying *qarīnah* as well (Othman & Hisam, 1996; Zaydān, 2007).

The Prophet SAW had once given an order that lost and found articles should be given to the person who claims and able to describe the attributes of the articles which he had lost. This method is clearly based on *qarīnah* since the articles lost were returned to the rightful owner on the basis of matching description. The companions of the Prophet SAW had also given their judgment on the basis of *qarīnah*. For instance, based on *qarīnah* which is self-evident, Caliph Umar RA had once imposed the *ḥad* of *zinā* on a lady who became pregnant without a husband. This is the opinion of Imam Malik and opinion of Imam Ahmad Ibn Hanbal. Other than that, Caliph Umar RA and Abdullah bin Mas’ud RA had convicted a person on the basis of the odor of the wine being emitted from his mouth. This is also the opinion of Imam Malik and his followers (Haneef, 2006; Othman & Hisam, 1996; Zaydān, 2007).

To emphasis, the majority of the *ulama’* have accepted *qarīnah* as one of the means of proof while there are also other *ulama’* who have rejected *qarīnah*. Their proof for admitting *qarīnah* as a type of evidence is based on the authorities from the Qur’an, Sunnah and the practice of the Companions as stated previously. By looking at the present day forensic evidence, it can be deduced that forensic evidence can be adopted

by Islamic law on the grounds that expert opinion (*ra'y al-khabir*) is admissible in Islamic law of evidence and ultimately serve as evidence in the form of *qarinah* or circumstantial evidence.

4.4.2 Legal Provisions and Other Rules

The legal provision on expert opinion is specifically mentioned under section 33 of Syariah Court Evidence (Federal Territories) Act 1997 [Act 561]. The section stated that when the court has to form an opinion upon a point of foreign law or of science or art, or as to identity or genuineness of handwriting or finger impressions or relating to determination of *nasab*, the opinions upon that point of persons specially skilled in that foreign law, science or art, or in questions as to identity or genuineness of handwriting or finger impressions or relating to determination of *nasab*, are *qarinah*. This section provides opportunities to the parties to present expert opinion based on the result of scientific examination. In order for the expert's opinion to be relevant and admissible in court, it must fall within the category of expert opinion stipulated by this provision. From the wording, it is also clear that evidences in the form of expert opinion are admissible in Syariah court as a form of *qarinah*.

Based on the findings, the meaning of expert opinion may also include various explanation and meaning. For instance, in the case of **Mohd Alias bin Ibrahim v RHB Bank Bhd & Anor [2012] 1 ShLR 23**, one of the issues before the High Court is whether Shariah Advisory Council (SAC) was usurping the court's jurisdiction in determining legal issues that are within the court's jurisdiction. The High Court further stated that the SAC's ruling is an expert opinion in Islamic finance matters and it derives its binding legal effect from the impugned provisions enacted pursuant to the jurisdiction provided under the Federal Constitution.

Besides, the application of expert opinion is demonstrated in the case of Sulaiman bin Takrib v Kerajaan Negeri Terengganu (Kerajaan Malaysia, intervener) and other applications [2010] 2 ShLR. The main issue in this case is whether the Fatwa Committee was empowered to create offences and whether the term ‘the precepts of Islam’ was to be confined to the five pillars of Islam. The court stated that the fatwa published in the Gazette is made on the direction of DYMM Sultan and therefore, it is made by DYMM Sultan who is the head of the religion of Islam on the advice of Fatwa Committee. It cannot be said that it is the Fatwa Committee which creates the criminal offences.

The court further held that based on the evidence of the three expert witnesses, it would not be correct to conclude that only the five pillars of Islam form the precepts of Islam. The expert witnesses include the Director General of the Syariah Judicial Department Malaysia, the Rector of the International Islamic University of Malaysia and the Dean of the International Institute of Islamic Thought and Civilisation. The court decided that they are worthy expert witnesses on Islam.

The decision in the case of Sulaiman bin Takrib was reaffirmed by the Federal Court in the case of **Fathul Bari Mat Jahya & Anor v. Majlis Agama Islam Negeri Sembilan & Ors** [2012] 4 CLJ 717. Both parties in this case have also filed their respective expert opinions by way of affidavits. Among the expert witnesses include the Syariah Legal Adviser at the Attorney General’s Chambers, the Mufti of Negeri Sembilan and the Chairman for ‘*Aqidah* (Belief), Islamic Religious Council of Negeri Sembilan. The court agreed that all of them are all worthy expert witnesses on Islam. The judges believe that the term ‘precepts of Islam’ must be given a broad and liberal interpretation in line with the authorities on the interpretation of the heads or fields of the legislation.

In the case of *Shahnaz bt Majid v Dato' Seri Mahmud Abu Bekir Taib* [2018] 3 ShLR, the plaintiff in this case claimed for the payment of *muta'ah* from the defendant for the sum of RM 100m. The plaintiff had produced an expert witness before the court, a registered chartered accountant to give statements on the valuation of the assets owned by the defendant. The court satisfied that the expert witness in this case was competent and the statements given are acceptable and relevant since the witness was expertise on the related field and experienced in handling the valuation made and allowed the claim for *mut'ah*.

Besides, one of the early cases in Syariah court which applied scientific evidence is the case of **Pendakwa Syarie Negeri Sabah lwn. Rosli bin Abdul Japar** [2007] JH 23/2 237 where the accused has been charged for an offence under section 80 of the Syariah Criminal Offences Enactment 1995 for committing illegal intercourse. The court convicted the accused based on the evidences in the form of DNA analysis which has been tendered by the prosecution in proving the offence.

In the case of *Indastri bin Saion v Sharifalaili bt Hussin @ Mukhtar* [2018] 2 ShLR 70, the plaintiff filed an action, seeking for the court to order the defendant to commit and in the alternative, the court to convict the defendant as a disobedient wife (*nusyūz*) and not entitled to maintenance. The plaintiff submitted that the defendant left their matrimonial home of the parties without his consent and refused to return despite being told by the plaintiff to commit without any valid reason under the Hukum Syarak. Therefore, the defendant must be declared as a disobedient wife. The defendant argued that the plaintiff failed to satisfy the requirements of the actions that must be taken by a husband before a conviction of *nusyūz* could be made on a wife.

The defendant submitted that that she had distanced herself from the plaintiff and left the matrimonial home without the plaintiff's consent on the ground that the plaintiff

did not discuss with the defendant, as his wife accordingly, to the extent that the defendant felt abused emotionally and mentally. The defendant did not call upon any witness to support her evidence but adduced some documents which established her case, namely, the note left by her to the plaintiff before she left the matrimonial home, a letter of attendance of counseling, a police report on why the defendant left the matrimonial home and a medical report. The court could not accept medical report as documentary evidence which supported the defendant's claim because the defendant did not call the document maker and/or the expert in the field to verify it. Therefore, the defendant failed to prove her claim that she had distanced herself from the plaintiff and left the house provided by the plaintiff, against the plaintiff's wishes, as a legitimate husband, was for reasons recognised by Hukum Syarak and the law. Therefore, the plaintiff failed to satisfy the requirements of the procedure of conviction of *nusyūz*.

The above decided cases implied the crucial role of expert witness in giving relevant opinions in court which eventually affect the decision given by the judges. Interestingly, Department of Syariah Judiciary Malaysia (JKSM) recently has issued a practice direction regarding the acceptance of forensic evidence in Syariah courts' proceeding namely Arahan Amalan No. 4 Tahun 2020 (Pengemukaan Bukti Forensik Dalam Prosiding di Mahkamah Syariah). Under this protocol, it has been agreed and confirmed that forensic evidences can be heard, considered, evaluated and accepted as one of the methods of proving in Syariah courts' proceeding.

4.4.3 Expert opinion in civil court perspectives

It is important to note that the current Syariah Court Evidence (Federal Territories) Act and evidence enactments of the states were adapted from the Evidence Act 1950.

In fact, prior to the existence of laws on evidence in Syariah courts, the Evidence Act

used in civil courts has been referred as guideline to the extent allowed by hukum syarak (Saifuddin, Markom, & Muhamad, 2019). The reception of expert opinion evidence in the law of Malaysia is regulated by section 45 of the Evidence Act 1950. It falls under exception to the general rule that a witness may not give his opinion.

The rule permitting the reception of the opinion of experts is relevant for several reasons. One of them is because expert opinions are necessary to point out to laymen the inferences they cannot themselves draw (Zafrullah, 2018). Section 45(1) of the Evidence Act 1950 allows the reception of expert's opinion in the following terms.

“When the court has to form an opinion upon a point of foreign law or of science or art, or as to identity or genuineness of handwriting or finger impressions, the opinions upon that point of persons specially skilled in that matter are relevant facts”.

Subsection (2) goes on to say that “such persons are called experts”. The opinion of an expert is relevant under section 45 of the Evidence Act when the court has to form an opinion in respect of the following matters:

- i) Foreign Law,
- ii) Science or Art, and
- iii) Identity or genuineness of handwriting or finger impressions.

It was decided in the case of **Syed Abu Bakar Bin Ahmad v PP [1948] 2 MLJ 19** as follows;

“The scope of section 45 can be found in the commentary in Sarkar on Evidence 12th Ed at page 488 (S Augustine Paul, 2010) where, while recognizing that opinion in so far as it may be founded on legal evidence shall be the function of the tribunal whose province alone it is to draw conclusions of law or fact-

“There are however cases in which the court is not in a position to form a correct judgment without help of persons who have acquired special skill or experience on a particular subject, for instance when the question involved is beyond the range of common experience or common knowledge or when special study of a subject or special training or special experience therein is necessary. In such cases, the help of experts is required. In these cases, the rule is relaxed and expert evidence is admitted to enable the court to come to a proper decision...”.”

Expert opinion assists the court in the matter of science, art, law or any other technical field by giving opinion for the matter after assessing it. It must be demonstrated that an expert witness has undertaken a special study of the subject or has special experience with it in order to present his testimony. Such opinion however is not binding on the court. An expert is not a fact witness, and his testimony is merely advisory in nature. The duty of an expert witness is to provide the judge with the scientific criteria he or she will need to assess the veracity of the conclusions, allowing the judge to make an impartial decision based on those criteria (Parakh, 2011).

It is of interest to note here that judges use science in a wide variety of legal contexts, both as procedural and substantive matters. Perhaps the correlation between law and science is especially obvious in the evidentiary context as illustrated in the case of **Daubert v Merrell Dow Pharmaceuticals, Inc. [1993] U.S. 579**. In this case, the court held that the judges are gatekeepers who must evaluate the methodological bases of proffered scientific evidence. This mandate requires judges to have some understanding of research design and statistics, since they are required to examine the methods and principles underlying the expert opinion (Faigman, 2006; Haneef, 2007).

The principle duties of an expert witness have been set out by Cresswell J. in **National Justice Compania Naviera SA v Prudential Assurance Company Limited (No.1) [1993] F.S.R. 563**, also known as the “**Ikarian Reefer**” case (Sutherland, 2009).

The duties and responsibilities of expert witnesses in civil cases include the following:

1. Expert evidence presented to the court should be, and should be seen to be, the independent product of the expert uninfluenced as to form or content by the exigencies of litigation.
2. An expert witness should provide independent assistance to the court by way of objective unbiased opinion in relation to matters within his expertise.
3. An expert witness should state the facts or assumptions upon which his opinion is based. He should not omit to consider material facts which could detract from his concluded opinion.
4. An expert witness should make it clear when a particular question or issue falls outside his expertise.
5. If an expert's opinion is not properly researched because he considers that insufficient data is available, then this must be stated with an indication that the opinion is no more than a provisional one. In cases where an expert witness who has prepared a report could not assert that the report contained the truth, the whole truth and nothing but the truth without some qualification, that qualification should be stated in the report.
6. If, after exchange of reports, an expert witness changes his view on a material matter having read the other side's expert's report or for any other reason, such change of view should be communicated (through legal representatives) to the other side without delay and when appropriate to the court.

7. Where expert evidence refers to photographs, plans, calculations, analyses, measurements, survey reports, or other similar documents, these must be provided to the opposite party at the same time as the exchange of reports.

In this study, references have been made to court cases in order to understand further the category of expert evidence on handwriting under section 45 of the Evidence Act 1950. The case of **State (Delhi Administration) v Pali Ram AIR [1979] SC 14** showed that the judge should not decide in the matter of handwriting comparison. A prudent course is to obtain the opinion and assistance of an expert. In the case of **Syed Abu Bakar Bin Ahmad v PP [1948] 2 MLJ 19**, the court held that while it is true that a judge who sits alone has the authority to weigh all the evidence, to apply his own magnifying glass to determine the probabilities so to speak and form his own opinion or judgment, it would be erroneous for him to form a conclusion on a matter that could only be properly resolved with the aid of expert evidence. In this case, since the document was not examined by a handwriting expert, it was incorrect for the judge to come to a conclusion that the writing on the receipt appeared to come from the same pen used by the appellant to sign his name and write the receipt number.

The evidentiary value of the evidence of a handwriting expert can be seen in the case of **Public Prosecutor v Mohamed Kasim bin Yatim [1997] 1 MLJ 64**. The court held that it is settled law that evidence by a handwriting expert can never be conclusive. In the case of **Dr Shanmuganathan v Periasamy s/o Sithambaram Pillai [1997] 3 MLJ 61**, the court held that there is no rule of law, nor any rule of prudence which has crystallized into a rule of law, that the opinion of a handwriting expert must never be relied upon, until it is substantially corroborated. In the case of **United Asian Bank Bhd v Tai Soon Heng Construction Sdn Bhd [1993] 1 MLJ 182**, the court held that in a civil case, and especially in a criminal case, expert testimony on handwriting that

is not backed up by cogent data showing the process by which he arrived at his conclusion is not worth the paper it is written on, and that any reliance on such evidence would, in our judgment, constitute a serious misdirection warranting appellate court's intervention.

To have some insights in regards to the qualifications of an expert, the following decided cases are discussed in this study. In the case of **Junaidi bin Abdullah v PP [1993] 3 MLJ 217**, the scientific nature and complexity of the evidence sought to be proven would determine the specialty of the skill required of an expert under section 45. The court will be obliged to investigate more extensively and deeply into the ascertainment of his qualification or expertise in the particular field of art, trade, or profession when the subject matter is more scientific and complicated. In the case of **PP v Muhamed bin Sulaiman [1982] 2 MLJ 320**, it was held that while the expert must be 'skilled', he need not be so by special study, he may be so by experience. The court held in this case that a government chemist was qualified by training and practical experience to be a ballistics expert. The case of **Dato Mokhtar bin Hashim v PP [1983] 2 MLJ** held that even though the expertise is gained through experience rather than formal training, one might acquire expert knowledge in a particular sphere via regular contact with it in the course of one's work. The court also ruled that an expert's competency is a preliminary question on which considerable laxity prevails in practice. Though the expert must be "skilled" through special study or experience, the fact that he has not acquired his knowledge professionally goes merely to weight and not to admissibility.

In the recent case of **PP v Dato' Sri Mohd Najib Hj Abd Razak [2020] 8 CLJ 319**, the admissibility of documents tendered by the prosecution has been questioned by the defence. Since the documents tendered were in the form of secondary evidence,

there are evidentiary requirements that need to be fulfilled. One of these documents has not fulfilled the evidentiary requirements to be admitted as secondary evidence. This is due to the fact that there is no evidence of whether an original of the said document even exists and that there has been no investigation to authenticate the said document. The court refused to admit the documents since the truth of the contents have not been proved by way of primary evidence, or acceptable secondary evidence. Generally, these documents came into the possession of the relevant witnesses without the originals. The witnesses too have no personal knowledge of the contents of most of the documents. Thus, the court found that the documents were not properly proved under the Evidence Act 1950.

Initially, the defence brought in the expert document examiner to demonstrate the alleged several disputed documents. Nevertheless, the expert report was never adduced before the court. Eventually, the court decided that the failure of the defence to rebut the admissibility with the non-production of their expert report has confirmed the genuineness of the said documents.

The case of **Mohamed Nor v PP [1949] MLJ 231** concerned a charge of cheating. The accused entered the firm of Doshi and Company and induced the firm to give him five parker fountain pens on the strength of a purchase form purporting to be on behalf of a government department. In order to prove that the purchase form was in fact forged by the accused, the prosecution sought to put in evidence a report made by the Acting Director of Chemistry, Malaya. In this report, the Director stated that in his opinion the purchase form was in the handwriting of the accused. The judge ruled that the report cannot be admitted on the ground that it is incumbent on the prosecution to call the Director of Chemistry to give evidence. The court conceded that the Director of Chemistry could be considered a handwriting expert within the meaning of section 45

of the Evidence Ordinance. This excerpt of the case implied that when the opinion of an expert is sought under section 45 of the Evidence Act, the expert should give direct oral evidence. Mere submission of a report expressing himself cannot be admitted.

4.5 Summary

This chapter has explained on the findings of all three objectives of this study. The forms of forgery that happened in Syariah court cases are clarified. This principles in forensic document examination have been elucidated according to the types of examination or analysis conducted by the examiners. The application of forensic document examination in Syariah court including the comparison between legal provisions on documentary evidence existing in civil court with those existing in Syariah court.