

## **The use of forensic evidence in criminal investigations (A study of Nigeria police force)**

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### **Abstract**

This study was conducted to investigate the use of forensic evidence in criminal investigation among investigators of the Nigerian Police Force. Using a mix-method research design, the study was guided by four research questions and two null hypotheses. The study used criminal investigators and staff of forensic units as the population for the study, of which 225 were initially drawn as the sample for the study. However, from the returned instrument for data collection, 189 respondents were used for the final sample. Data was collected using a semi-structured questionnaire and key informant interview from senior serving and retired police officers. Using an interview schedule and statistical analysis technique, the data were critically analyzed. Results from the study showed that while police investigators reported usage of various forms of forensic evidence, significant challenges such as poor training, inadequate funding, political interference, and slow judicial process all contribute to limit the effective use of forensic investigation in the conduct of criminal investigations. On the basis of this result, it was recommended that specialize units be established for forensic investigations which should be adequately funded.

**Keywords:** forensic evidence, criminal investigation, Nigerian police force

### **Introduction**

The police as an institution is well acknowledged in the contemporary global society as indispensable in the coordination of peaceful coexistence. As such the police have been called upon to address, protect and promote human rights and the prevention of crime, as well as other sundry services aimed at keeping society on the path of progress and continued development. However, current realities in different societies including Nigeria has made it imperative that the function of the police need to be reviewed and upgraded. Factors such as growing poverty, wide income disparities, high level of unemployment, social dislocation which has led to massive rural-urban migration and the breakdown of societal values leading to business frauds, drug abuse, and community unrest and there is a growing concern about the level of uncertainty and security in different parts of the country. These challenges have made it essential that the police undertake various duties and obligations, but it still remains that the core responsibility of the police is the prevention and control of crime.

Crime control as a major function of policing, in the opinion of Kpae and Adishi (2017), is the totality of efforts and activities designed and executed to hold the volume of crime to the barest minimum possible, to curtail the spread to other environment and to protect the society from the inimical behaviour of habitual and abnormal offenders. Preventing crime is often achieved through an efficient mechanism whereby detective skills and abilities of officers are utilized in ascertaining the nature of a crime, the criminals involved, as well as the consequences of not addressing criminal proliferation. Also involved is the need for prompt apprehension of offenders, prosecution of offenders and the provision of valid evidence during the criminal prosecution process.

With the constitutional provision of the Nigerian state, the Nigerian police force is saddled with the responsibility

primary responsibility of fighting crime and enforce established law and other in collaboration with sister agencies including the courts and the correctional systems. Generally, these agencies are collectively referred to as the criminal judicial system. Citing the Police Act (1964), Adishi (2007) <sup>[4]</sup> identified the following as the functions and roles of the Nigerian Police Force:

- Prevention and detection of crime, Apprehension of offenders,
- Preservation of law and order, Protection of life and property.
- The due enforcement of all laws and regulations with which they are directly charged, and shall perform such military duties within and without Nigeria as may be required of them by, or under the authority of this or any other act (Police Act, Cap 336 1964).

While crime is a staple part of almost all societies globally, the rate of criminal activities in the Nigerian space has grown at an alarming rate. Beginning in the 1970s, the popular crime prevalent in Nigerian included armed robbery, stealing, assault, burglary, rape etc. This trend has changed to more complex criminal activities including terrorism, bomb blast, kidnapping, drug trafficking, money laundry, political assassinations and cybercrime (Utebor & Ekpimah, 2011). Despite stringent laws and regulatory policies against the upsurge of these crimes, there appears to be an increase which has made the police overwhelmed and seemingly helpless of salvaging the situation, especially in high profile cases. While these may be attributed to a wide array of factors, the multidimensional nature of Nigerian problems, her unique political and socio-economic history has further compounded this ugly situation as it is capable of undermining its corporate existence and her effort towards sustainable development (Ikuteyijo, 2009) <sup>[3]</sup>. Beyond this are the challenges of technology advances in

criminal activities, porous and ungoverned borders, lack of political will and massive corruption at all tiers of government. These challenges have called for the need for the Nigerian Police Force to extend beyond the use of traditional investigation, to the development and utilization of forensic investigations.

Understanding forensic investigation as used in this study requires a clear operationalization of the term investigation. An investigation, as defined by the Oxford Talking Dictionary (1994), refers to the process of systemic examination of a particular issue, item or object. On this basis of this definition, Bennet and Hess (2004) [1] defined criminal investigation as the process of discovering, collecting, preparing, identifying and presenting evidence to

determine what happened and who is responsible for a criminal act. Similarly, Schmallegger (2005:237) [7] defines criminal investigation as “the process of discovering, collecting, preparing, identifying and presenting evidence to determine what happened and who is responsible when a crime occurs.”

While criminal investigations have been a necessity in Nigeria, the inability of the Nigerian Police to unearth perpetrators of these crimes in spite of the availability of reliable technological tools has remained a question unanswered. This has become worrisome in the face of burgeoning murder cases, especially high profile one. As shown in the table below, there have been various high profile murder cases in Nigeria, with many unresolved.

**Table 1:** Sample of High Profile Murder Cases in Nigeria

S/N	Name of Victims	Mode of Killing	Where	Year
1.	Harry Marshall	Assassinated	His Abuja Residence	March, 5 <sup>th</sup> 2003
2.	Captain Jerry Agbeyebe	Assassinated	Lagos State	October 12 <sup>th</sup> , 2004
3.	Sunday Ugwu	Mistaken Identity (Murder)	Enugu State	September 9 <sup>th</sup> , 1999
4.	Momoh Lawal	Assassinated	Ekiti State	2001
5.	Commissioner of Police Chinwike Asadu	Assassinated	Enugu State	3 <sup>rd</sup> March 2013
6.	Ikechukwu Udendu	Assassinated	Anambra State	
7.	Alhaji Alabi Olajokum	Assassinated	Osun State	May 15 <sup>th</sup> 2005
8.	Hajiya Sa'adatu Rimi	Assassinated	Lagos State	January 14 <sup>th</sup> 2006
9.	Alhaji Mohammed Awoal Jibrim	Assassinated		June 19 <sup>th</sup> , 2007.
10.	Isiaka Adeleke	Assassinated		April 23 <sup>rd</sup> , 2017
11.	Dele Arijo	Assassinated	Lagos State	November 25 <sup>th</sup> , 2002
12.	Otunba Dipo Dina	Assassinated	Ogun State	2007
13.	Ayodeji Daramola	Assassinated	His house Ekiti State	2006
14.	Funshow Williams	Assassinated	His Residence Lagos State	July 27 <sup>th</sup> , 2006
15.	Isaac Adaka Boro	Assassinated		May 9 <sup>th</sup> , 1968
16.	Hon. Wahu Tiawo	Assassinated	Abeokuta	October 16 <sup>th</sup> , 2009
17.	Gbega Apolola, Ishola Iyanda, Zachus Olumide, Demola Adeturo, Akan Adebayo	Assassinated	Car Wash Abeokuta	March 10 <sup>th</sup> 2007
18.	Otuba Olumayowa Olukoya	Stage Car Accident		2007
19.	Momoh Lawal	Assassinated	Kogi State	March 5 <sup>th</sup> , 2001
20.	Odunayo Olagbaju	Assassinated	Osun State	December 21 <sup>st</sup> 2001
21.	Bola Ige	Assassinated	His Bed Room Ibadan Oyo State	2001
22.	Janet Oladapo	Assassinated	Odigbo Ondo State	August 13 <sup>th</sup> 2002
23.	Ahmed Pategi	Assassinated	Illorin	August 15 <sup>th</sup> 2002
24.	Victor Nwankwo	Assassinated	Enugu State	August 29 <sup>th</sup> , 2002
25.	Barnabas Igwe and Wife Abigail	Assassinated	Anambra State	September 1 <sup>st</sup> , 2002
26.	John Nunu	Assassinated	Bayelsa State	September 26 <sup>th</sup> 2002
27.	Chimere Ikoku	Assassinated	His Residence Enugu	October 20 <sup>th</sup> , 2002
28.	Dele Arojo	Assassinated	Lagos State	November 25 <sup>th</sup> 2002
29.	Alhaji Isyaku Muhammed	Assassinated		2002
30.	Theodore Agwatu	Assassinated	His residence Owerri	February 22 <sup>nd</sup> , 2003
31.	Emily Omope	Acid Attack	Unknown Person	March 3 <sup>rd</sup> , 2003

The inability of the Nigerian Police to resolve these cases using traditional investigative techniques has called for the need for forensic investigations. Forensic investigation is not new in the Nigerian context. There are three forensic units in Nigeria available to the Nigerian police, which still has not fully addressed the large cases of high profile murder cases. The researchers from personal experience, suspect that so far the importance and value of forensic evidence may have not been fully appreciated and utilized. An investigation of the use of forensic evidence in criminal investigations is based on the assumption that Police officers, who are at the forefront of crime prevention, control and investigating of criminals in our society; can use such evidence to prevent and control crime in the country. The way police officers perceive forensics will determine whether or not forensic evidence is seen as needed or

effectively used during criminal investigations. It is against this background that this study set out to ascertain the use of forensic evidence for criminal investigations by the Nigerian police force. The result of this study will be a pointer to the challenges to use of forensic evidence by the Nigeria police and probably why in particularly high profile murder cases remain unsolved.

### Research Questions

The study was guided by the following research questions

1. To what extent do the police investigators use forensic evidence for criminal investigation in Nigeria?
2. What are the challenges in the use of forensic evidence for criminal investigation in Nigeria?
3. How can the challenges inhibiting the use of forensic evidence for criminal investigations be overcome?

4. How can police performance in solving murders be improved especially high profile ones?

### Hypotheses

The following hypotheses were further tested to guide this study:

1. There is no significant difference in the extent of the use of forensic evidence based on years of experience.
2. There is no significant relationship between usage of forensic evidence and the challenges faced by police investigators during high profile murder investigations.

### Literature Review

**Criminal Investigation:** Criminal investigation is an applied science that involves the study of facts, used to identify, locate and prove the guilt of an accused criminal. Criminal investigation is concerned with activities that violate the law of the state legal system that regards such violation as serious enough to necessitate the need for investigations. A complete criminal investigation can include searching, interviews, interrogations, evidence collection and preservation and various methods of investigation. Modern-day criminal investigations commonly employ many modern scientific techniques known collectively as forensic science. Criminal investigation refers to the process of collecting information (or evidence) about a crime in order to:

1. Determine if a crime has been committed.
2. Identify the perpetrator.
3. Apprehend the perpetrator.
4. Provide evidence to support a conviction in court.

If the first three objectives are successfully attained, then the crime can be said to be solved. Several other outcomes such as recovering stolen property, deterring individuals from engaging in criminal behaviours, and satisfying crime victims have also been associated with the process.

Criminal investigation can be reactive or proactive. The reactive criminal investigation occurs when the police respond to a crime that has already occurred, while the proactive criminal investigation is where the investigation may go on before, during and after an offense is committed. The reactive criminal investigation process can be organized into several stages. The first stage is the initial discovery and response. Of course, before the criminal investigation process can be reactive criminal investigation process can be organized into several stages. The first stage is the initial discovery and response. Of course, before the criminal investigation process can begin, the police must discover that a crime occurred or the victim (or witness) must realize that a crime occurred and notify the police. In the vast majority of cases, it is the victim that first realizes a crime occurred and notifies the police. Then, most often, a patrol officer is dispatched to the crime scene or the location of the victim.

The second stage, the initial investigation, consists of the immediate post-crime activities of the patrol officer who arrives at the crime scene. The tasks of the patrol officer during the initial investigation are to arrest the culprit (if known and present), locate and interview witnesses, and collect and preserve other evidence. Criminal Investigation also involves the investigation of violations of Criminal Law. In a criminal investigation, the state is responsible for all the expense of investigating the case and presenting it in

court, with the exception of the accused's defense; however, if the accused is below a certain income level, the state will pay for a lawyer to defend him or her. This responsibility includes ensuring that all witnesses (prosecution and defense alike) appear at the trial. The victim of the criminal act is considered a witness and can be compelled to testify in almost all cases.

Criminal investigation is a search for witnesses and evidence to support the charge in court by proving beyond any reasonable doubt that the crime was committed and that it was the accused who committed it. It is critical to a successful investigation that the investigator(s) know the essential ingredients of the particular crime(s) they are investigating, otherwise, they do not know what evidence to look for to support each of those crime's essential ingredients.

On a general level, investigations can be classified into the following types:

- **Reactive investigators (overt):** Reactive investigation is an investigation initiated by a complaint registered by a victim of the crime or a client. A reactive investigation can be a preliminary investigation and follow up or latent investigation.
- **Proactive investigators (covert):** Proactive investigation is carried out by law enforcement agencies personnel based on their initiative. The idea of proactive investigation is to apprehend or stop a planned criminal operation rather than waiting for the crime to be committed.

**Forensic Science:** Forensic science can be generally considered as the application of science to criminal and civil laws, mainly on the criminal side during a criminal investigation, as governed by the legal standards of admissible evidence and criminal procedure. Forensic Science can also be defined as the science used in the detection and prosecution of crime; or as the application of scientific skills of examination and evaluation to the resolution of social and legal issues; or, in its broadest sense, the application of science to law. Forensic science should, therefore, serve as a supportive tool in our quest for justice.

Forensic scientists collect, preserve, and analyze scientific evidence during the course of an investigation. While some forensic scientists travel to the scene of the crime to collect the evidence themselves, others occupy a laboratory role, performing analysis on objects brought to them by other individuals.

### Application of Forensic Science to Criminal Investigation

Due to the wide application of forensic science, not all aspects are applied in criminal investigations at all times. Some of the aspects of forensic science applied to forensic investigations includes:

- **Forensic Accounting** is the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law. It should be noted that forensic accounting is not limited to the use of financial investigations that result in legal prosecution, however, if this is the purpose, the investigation and analysis must meet the standards required in the court of law that the jurisdiction.
- **Forensic Fingerprinting:** Throughout the twentieth century, fingerprints have become widely used in the

identified individuals. This is particularly so in forensic investigation and the compilation of criminal records. When a crime is committed, there is much in the way of evidence that may be left at the scene by the offender. For nearly 100 years, the application of powders, the impression of an individual's fingerprint has proven easily collected a sample of this physical evidence. In recent years, many it's have been made in the methods of visualizing fingerprint impressions with chemical reagents and a variety of high-intensity light sources, such as lasers available alternatives.

- **Forensic document analysis:** This is the examination or questioned document examination answers questions about a disputed document using a variety of scientific processes and methods. Many examinations involve a comparison of the questioned document, or components of the document, with a set of known standards. The most common type of examination involves handwriting, whereby the examiner tries to address concerns about potential authorship.
- **Forensic DNA analysis:** This involves the utilization of the uniqueness of an individual's DNA to answer forensic questions such as paternity/maternity testing and placing a suspect at a crime scene, e.g. in rape, murder investigation or physical assault.
- **Mobile device forensics** is the scientific examination and evaluation of evidence found in mobile phones, e.g. Call History and Deleted SMS, and includes SIM Card Forensics.
- **Forensic Ballistic:** Forensics Ballistics is the examination of evidence relating to firearms at a crime scene, including the effects and behaviour of projectiles and explosive devices. A forensic ballistics expert matches bullets, fragments, and other evidence with the weapons of alleged suspects or others involved in a case. Experts may be asked to explain their findings to a jury during criminal or civil trials.

**Forensic Investigation:** Morn (2000:77) suggests that forensic science investigation can be defined in two ways: Firstly, it involves the application of scientific theory, technology and technicians to crime and criminal investigation, and, secondly, and more specifically, it is divided into pathology and criminalities. Criminalities deals with physical evidence, while pathology deals specifically with death. Lambrechts (2001:7) <sup>[5]</sup> describes forensic investigation "as an investigation aimed at instituting court proceedings, criminal as well as civil, and where some other scientific knowledge is applied to a legal problem". Lambrechts (2001:93) <sup>[5]</sup> furthermore states that virtually all investigators today are referred to as "forensic investigators".

### Research Method

**Design:** The design for this study is a mixed method research design of the survey and key informant interview. In the present study the researcher will collect data from a sample of criminal investigators and staff of the three forensic units in order to ascertain the use of forensic evidence in criminal investigations by Nigerian Police Force.

**Study Area:** The setting of this research is Nigeria, which is located in West Africa on the Gulf of Guinea. Geographically, the area has a total of 923,768km<sup>2</sup>. It has

three major religions namely: Christianity, Islam and Indigenous beliefs, its major ethnic groups are Hausas, Yorubas, Ibos, and 240 smaller ethnic nationalities. The official language is English. The population is over 156million (July 2006 census estimate) with a population growth rate of 3%. It operates a presidential system of government and bicameralism as the legislative pattern. The legal system is based on English common law, Islamic and Tribal laws, administratively there are 36 states and a federal capital territory, Abuja. Nigeria got her independence on the 1st October 1960 from the British Colonial system, it operates a written constitution of 1999 and as amended in 2011. However, this study will be carried out in three locations Abuja, Lagos, and Enugu. Lagos state located in the south western geopolitical zone of Nigeria. Abuja is the Federal Capital Territory, commonly known as FCT the territory is located just north of the confluence of the Niger River and Benue River. Enugu State is one of the states in the eastern part of Nigeria. These three states were chosen because the three forensic units owned by the Nigeria police are located in them.

**Population of the Study:** The population of the study comprises of all Criminal Investigation units and Custodian of all Criminal Records in these commands and the staff of the forensic units in the three states and Retired senior police officers.

**Sample and Sampling Technique:** Various sampling technique was used in getting the number of respondents needed for the study. Simple random sampling by balloting without replacement was used to select three commands from all the commands in the country. Purposive sampling technique was used to select three forensic units in the country while snowballing technique was used to select staff of forensic units and retired senior police officers. Furthermore, a purposive sampling technique using snowball was used to select only investigative officers. Also, an attempt was made to use as many officers in the forensic units as possible. For key Informant Interview all Sectional Head of Criminal Investigation, sectional heads of forensic units and selected retired senior police officers were interviewed. The respondents' identity was protected as a condition for participation, due to the sensitivity of the issue under study.

**Instrumentation:** The researchers developed a semi-structured questionnaire to elicit responses from the sample. The questionnaire was divided into three sections labeled A-C. Section A consisted of demographic data such as gender, religion, marital status, educational qualification, years of service, section B Consist of open-ended Question and a 23-items Closed Ended Constructed Question of Yes or No, as well as *Regular, Often, I Cannot Remember* and key informant interviews was conducted. The validity of the instrument was done by an intelligence expert, one expert in criminal investigation and one specialist in forensic investigation. Their suggestions and recommendations given were integrated into the final draft of the instrument. Reliability of the instrument was done using the test-retest technique with 25 criminal investigators not part of the study. Using Pearson product Moment Correlation a coefficient of 0.81 was obtained indicating the suitability of the instrument.

**Data Collection and Analysis**

The instrument was administered directly on the respondents. Filled copies of the questionnaire were retrieved after one week of administration. Key informant interviews were done based on the arrangement with the

respondents. In all, data was collected over a two-month period. Data collected were analyzed using frequency count and percentage for the research questions, while the hypotheses were tested using ANOVA at 0.05 level of significance.

**Result**

**Table 2**

Demographic information		Frequency	Percentage
Gender	Male	161	85.19
	Female	28	14.81
Marital status	Married	182	96.30
	Single	7	3.70
Years in service	10 years	28	14.8
	20 years	28	14.8
	15 years	35	18.5
	25 years	98	51.9
Role	Sergeant	7	3.70
	Sergeant major inspector of police	21	11.11
	Assistant superintendent	91	48.15
	Deputy superintendent	42	22.22
	Superintendent	21	11.11
	Chief superintendent	7	3.70
Religion	Sergeant	7	3.70
	Christian	119	63.00
	Islam	50	26.5
	Others	20	10.6
Educational qualification	Secondary	40	20.6
	Bachelor	113	59.8
	Masters	35	18.5
	Doctoral	1	0.5
Professional affiliation	Ican	6	16.7
	Anan	28	77.8
	Others	2	5.6

**Research Question One:** To what extent do the police investigation in Nigeria? investigators use forensic evidence for criminal

**Table 3:** Used of Forensic Evidence by Police Investigators Used forensic evidence

	Frequency	Percent
No	35	18.5
Yes	153	81.0
I cannot remember	1	.5
Total	189	100.0

From the result presented in table 3, it is shown that the majority (81%) of the sample reported that they have used forensic evidence in the conduct of their responsibility.

**Table 4:** Types and frequency of forensic evidence used by police investigators

Types Of Forensic Evidence	Frequency				Total
	Regular	Often	Sometimes	Can't Remember	
Biological	21 (17.65%)	7 (5.88%)	84 (70.59%)	7 (5.88%)	119
Ballistics	42 (22.2%)	7 (3.7%)	84 (44.4%)	7 (3.7%)	140
Finger	49 (25.9%)	14 (7.4%)	63 (33.3%)	14 (7.4%)	140
Drug	41 (32.80%)	0	77 (61.60%)	7 (3.7%)	125
Trace	35 (18.5%)	0	63 (33.3%)	35 (18.5%)	133
Electronic	62 (32.8%)	14 (7.4%)	21 (11.1%)	42 (22.2%)	139
Impression	77 (40.7%)	14 (7.4%)	28 (14.8%)	28 (14.8%)	147

The result as shown in table 3 and 4 indicated that the majority of respondents indicated that they have used forensic evidence in their investigations. From table 4, it was further shown that the most used forensic evidence is

impression, while the least used is biological evidence.

**Research Question Two:** What are the challenges in the use of forensic evidence for criminal investigation in Nigeria?

**Table 5:** Challenges in the use of forensic investigations

S/N	Challenges	Yes (%)	No (%)	Total
1	Lack of power supply	171 (90.5)	18 (9.5)	189
2	Outdated Equipment	175 (92.6)	14 (7.4)	189
3	Lack of Government willpower	175 (92.6)	14 (7.4)	189
4	Inadequate training of officers	147 (77.8)	42 (22.2)	189
5	Low Enthusiasm among officers	147 (77.8)	42 (22.2)	189
6	Political, ethnic and religious interference	161 (85.2)	28 (14.8)	189
7	Inadequate incentives	166 (87.8)	23 (12.2)	189
9	Poor database system	161 (85.2)	28 (14.8)	189

On the basis of the result obtained, it can be stated that greatest challenges against effective usage of forensic investigation in Nigeria are outdated equipment and lack of governmental willpower, while the least challenges were inadequate training of officers and low enthusiasm among officers. This was further corroborated by the key informant interview

*All these materials you are seen I met them here 27 years ago they are outdated but we are still manually using them which is the wrong compared to what is happening in other developed countries no equipment to work. (O. C Latent Print)*

Another respondent posited that

*This is 9 am no light in the office because of no power supply (light). We are waiting for other officers come so we contribute to buy fuel every office has its own*

*generator as you can see outside there. They bought and fueled by themselves by so how can you work or these evidence without power. (Head of General Investigation).*

On the aspect of training, the result revealed that it was a significant challenge. From the key informant interview, a respondent indicated that:

*We are not trained in forensic skill and competencies so many officers don't even know what forensic evidence is or how to get it all most of the training we receive are all theoretically base no practical knowledge of forensics. However, when money is released for training these monies only exist in papers but are not used or disbursed for the purpose It was meant for that is what I call the Nigerians factor. (Sectional Head of Homicide Unit)*

**Research Question Four:** How can police performance in solving murders be improved especially high profile ones?

**Table 6:** Strategies for improving police performance in solving high profile murder cases.

S/N	Improving police performance in high profile cases	Yes (%)	No (%)	Total
1	Discourage political and ethnic interference	182 (96.3)	7 (3.7)	189
2	Expedited judicial process	189 (100)	0	189
3	Improve collaboration with other law enforcement agencies	182 (96.3)	7 (3.7)	189
4	Specialized training on murder	182 (96.3)	7 (3.7)	189
5	Protect witness in high profile cases	182 (96.3)	7 (3.7)	189
6	Use of expert witness on high profile cases	189 (100)	0	189
7	Provide special incentives for officers	182 (96.3)	7 (3.7)	189

The data indicate that a significant majority of respondents regards all the seven actions listed as capable of helping to improve police performance. From the informant interview, these actions were further explored and suggestion offered which include:

*We need to be adequately trained in the area of forensic especially in crime scene management to avoid destroying or contaminating the scene by officers themselves before forensic experts arrive some us don't even know what to look for at the crime scene. (OC Homicide Unit)*

*We need up to date DNA, blood, fingerprints database of all Nigerian which can be achieved by transferring INEC fingerprint database during the voter card registration exercise, and every year thousands of students are sent to NYSC they do thumb printing such database can equally be transferred to us while we can be building our own database on the cases we handle every day until we have a comprehensive database to match criminals as the need arises (Head of Forensic Unit).*

*Adequate fund in form of allowances should be made*

*available for investigator to avoid investigator leaving at the mercy of families, friends and even enemies of victims during investigation because in such situation where they are paying transporting and other logistics are provided by the families or friends of the victims or suspect from my 28 years of experience to a great extent the outcome of such investigation is influenced by those who funds it which does not reflect or reveal the actual criminal and so in many occasions defenseless Nigerians has be jailed wrongly for a crime they did not commit because the investigators will be acting in whatever the family or friends says or suggest but when there are adequate funds and logistics available for investigating officers such undue influence will be averted for optimum performance especially in murder cases. (Sectional Head General Investigation)*

*In Nigeria, investigations are not protected talk more of witness and the investigating officers or the evidence this has affected the public willingness to give information on what they know, saw or heard about the crime or even stand as a witness with fear of been attacked by the perpetrators such crime because their security is not guaranteed, there are cases were witness and officers*

are killed at the verge of testifying in court. Mostly when top echelons are involved in such case to make the evidence and suspects and their sponsors of such crime to ensure they are not prosecuted of such crimes; from my experience until investigations, witness and investigators identity are kept secret so many murder

cases will remain unsolved. (CSP Retired).

**Hypotheses**

**Hypothesis One:** There is no significant difference in the extent of the use of forensic evidence based on years of experience.

**Table 7:** ANOVA of forensic evidence usage based on years of experience

	N	Mean	Std. Deviation	Source of Variation	Sum of Squares	df	Mean Square	F	P
10 years	28	16.1786	3.99123	Between-Group	29.891	3	9.964	0.456	0.713
15 years	35	16.9714	5.90357						
20 years	28	17.6071	3.87145	Within Groups	4043.104	185	21.855		
25 years	98	17.0816	4.56719						
total	189	17.0053	4.65455	Total	4072.995	188			

As the result displayed in Table 7 indicates, it can be observed that those with a minimum of 10 years of experience reported that a mean of 16.17 (SD = 3.99), those with 15 years reported a mean of 16.97 (SD = 5.90), those with 20 years reported a mean of 17.60 (SD = 3.87), while those with 25 years of experience reported a mean of 17.08 (SD = 4.56). Furthermore, it is shown that when ANOVA analysis was conducted an F-value of 0.456 at 3 and 185 degrees of freedom with a corresponding p-value of 0.713.

Since the p-value obtained was greater than the chosen alpha of 0.05, it, therefore, indicates that years of experience does not significantly determine the usage of forensic evidence among police investigators in Nigeria.

**Hypothesis Two:** There is no significant relationship between usage of forensic evidence and the challenges faced by police investigators during high profile murder investigations.

**Table 8:** Relationship between forensic evidence usage and challenges of high profile investigation

Variables	Mean	SD	Df	r	p	Sig
Usage of Forensic Evidence	14.23	4.87	188	-0.672	0.003	0.05
Challenges of High Profile Murder investigations	18.72	3.21				

From the analysis done in table 8, it can be observed that when the mean values of usage of forensic evidence by police investigators (14.23) and that of the challenges faced (18.72) were correlated using Pearson Product Moment Correlation, an r-value of -0.672 was obtained with a corresponding p-value of 0.003 which was less than the chosen alpha of 0.05. This result, therefore, indicates that there is a significant negative relationship between usage of forensic evidence and the challenges faced in resolving high profile murder cases. This result means that an increase in the challenges faced by police officers leads to a corresponding decrease in the usage of forensic investigation.

**Discussion of Findings**

As the result showed, the majority of the respondents indicated that there have used forensic evidence. Among the various forensic evidence used are fingerprint, biological, drug, and impression. The result that other forms of forensic evidence such as biological trace, and ballistics might be attributed to the technical challenges involved in using them. The result that impression evidence is the most used among the forensic evidence might be attributed to the fact that most criminal investigation departments have access to biometric records that comes with the mandatory registration. The result obtained from this study is similar to that gotten by Omodeleola (2014) [6] who showed that despite the understanding of forensic investigation, Nigerian police officers do not efficiently use it for the resolution gruesome murder case across the country.

Regarding the challenges faced in the use of forensic evidence in criminal investigations, it was reported that outdated equipment, lack of government willpower and inefficient power supply were significant factors responsible

for the continued poor integration of forensic evidence in the process of criminal investigation. This result is not surprising but expected as the majority of criminal investigations which could have been resolved is often inhibited by political, ethnic and religious interference. This was a common theme highlighted in the key informant interview as most persons reported that in their attempt to resolve especially criminal problems, they are often prevented by their superiors from touching specific areas and redeployed without reason. Another reason advanced is the lack of adequate database for record keeping on crime reporting. Most of the respondents cited instance were criminal evidence was lost especially when they are most needed. This result is similar to that obtained by Chinwokwu (2013) [2] who found out that lack of modern investigative tools and facilities, as well as corruption stemming from interference, is a critical factor responsible for the poor utilization of forensic evidence within the Nigerian criminal investigation phase.

On the way forward for addressing the identified challenges, it can be seen that the respondents agreed that provision of adequate training, ensuring transparency, provision of standard equipment, the establishment of specialized units and collaboration with other law enforcement agents can greatly improve on the level of the use of forensic evidence among criminal investigators. While most of the respondents reported the use of forensic evidence, the absence of current skills and tools on crime detection and control. One other element that figured significantly in suggestions on how to solve murder cases was the need for the improved judicial process. During the course of the interview with key informants, it was reported that the delay in the judicial process and the challenge of using forensic evidence in the judicial process is a factor that prevents

many individuals from effectively using forensic evidence. Yilwa *et al* (2015) <sup>[9]</sup> indicated that delay in the justice process is a factor limiting effective implementation of forensic investigation in solving criminal murder cases.

### Recommendations

Based on the findings obtained and the discussion presented, the following recommendations are made:

1. The government, especially at the federal and state levels, should provide adequate funding forensic evidence training and the purchase of world-class facilities and equipment to meet up global best practices in the effective utilization of forensic evidence in criminal investigations.
2. Criminal investigators should be provided needed liberty and training for them to undertake their investigations, especially in high profile murder cases. This freedom should ensure that high-profile criminal cases are conducted speedily without political, religious or ethnic interference.
3. Furthermore, the judicial process should be made efficient and robust to ensure that cases in which forensic evidence are used are speedily executed. This should also include the protection of witnesses in cases where their safety can be compromised.
4. The Police Service Commission should ensure transparency in the recruitment, deployment, and training of officers with a special focus on forensic evidence gathering and utilization. Furthermore, experience, seniority, and gallantry should be adequately implemented as a criterion for promotion of officers.
5. An inter-agency framework for the collection and utilization of forensic evidence involving not only officers of the police officers but other sister agencies including the civil defense, custom, immigration, and the armed forces, so as to ensure information collection and sharing.
6. Training of officers in the area of forensic skills and competencies to meet up global best practices in the area of criminal investigation.
7. Extensive mass education should be carried out in order to sensitize them on the necessity of avoiding crime scene, in order not to contaminate vital forensic evidence that would facilitate improve and efficient criminal investigations.

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