

Roles, Benefits and Challenges of Forensic Facial Image Comparison and the Nigerian Criminal Justice System

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ABSTRACT

Globalization has not only ushered in tremendous changes in the global economic and political arena, it has turned the world into a global village. This is to the extent that event in one part of the world replicates itself in other parts. Of note is the introduction and use of forensics in criminal justice system which has taken roots in some nations of the world while its advantages are yet to be fully utilized in some developing nations of Africa, particularly in Nigeria. This study therefore argued that forensic science, particularly forensic facial image comparison or identification, is now a common method of technology adopted in the administration of criminal justice as well as in the detection of crimes that would have been ordinarily difficult to unravel. The study, thus, situated the challenges or failures of unravelling some of the crimes, murders and assassinations committed in Nigeria in recent years to underutilization of forensics by the law enforcement agency, i.e., the police, in its investigations. The study sees this as one of the factors that rendered the country's criminal justice system ineffective in prosecuting an alleged offender and exonerating the innocent. This study adopted the historical and explorative research designs in its methodological component. This means that the study relied on secondary sources of data via textbooks, journal articles, official documents and internet sources for relevant literatures. The study proffered some strategies that would improve forensic techniques, particularly forensic facial image comparison identification, which can be used to boost the criminal justice system in Nigeria.

KEYWORDS: *Forensic Technology, Forensic Science, Forensic Evidence, Facial Image Comparison, Person Identification, Criminal Justice System, Nigeria*

1.1. INTRODUCTION

The science of *forensic* analysis, which has become a culture in many world countries today, entails the use of technology to locate criminals involved in one form of a crime or another, or in the resolution of a crime in the scene of crime or which may sometime help to exonerate the innocent who has been accused of committing a crime in a law court. In the United States specifically, the National Research Council (NRC) recommends a massive overhaul of the entire US forensic system, to standardize forensic disciplines with cohesive tightening of laboratories and individuals. As well, it recommends boosting forensic scientific research through increased funding. This has strengthened the criminal justice system in America. Forensic evidences are also now admissible in law courts in Europe, Asia and Latin America (Custer, 2006).

In recent years, the demand for *forensic evidence* in resolving crimes is in the increase all over the world, especially in the Developed Countries of Europe and America. Several technological trends and methods have been adopted to improve on forensic evidence in the court of law of several countries. On the contrary, in the case of Nigeria, forensic evidence is underutilized. From this stand point, it is evidently clear that modern day policing has advanced

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beyond reliance on evidences obtained from *eye witnesses* alone. It has progressed to more sophisticated and reliable evidences obtained with modern technologies along line *forensics*. When crimes have already been committed, this technological advancement in forensic science helps the police in fishing out suspects while the innocent is exonerated. Automated Fingerprints Identification System (AFIS) and Live Scan Fingerprint Capture Devices, as well as forensic facial image identification devices (often obtained from digital cameras, smart phones and footage from CCTVs) are of pertinence in the investigation of crime in our modern society (see Anyanabia et al., 2019: 44).

Constitutionally, the Nigerian Police is charged with the responsibility of maintaining law and order, as well as putting in place the provisions for internal security in order to protect lives and properties across the country. The constitution also authorizes criminal justice to begin with the police. Unfortunately, the forensic technology, including the facial image comparison or identification, which is like every other method used in crime investigation to enhance the criminal justice system, is underutilized in Nigeria. This is in spite of the growth in forensic science services in criminal justice system in contemporary societies. In short,

little success has been recorded in its development in the Nigerian criminal justice system. It is on this basis that this study is posed to examine the role, benefit and challenges of forensic science in general and facial image comparison or identification in the Nigerian criminal justice system in particular. This has become important because of the underutilization of forensics in our criminal justice system so as to contribute to policing of crime and the elimination of the challenges of resolving obnoxious crimes in Nigeria, and help to exonerate the innocent.

1.2. Aims and Objectives of the Study

The aim of this study is to examine the role, benefit and challenges of forensic facial image comparison in crime investigation and detection in Nigeria. While the specific objectives are:

- A. To examine the general role and benefit of forensic science, particularly forensic facial image comparison in crime investigation, detection and management in Nigeria,
- B. To identify the challenges of forensic facial image comparison or identification in the criminal justice system of Nigeria, and
- C. To proffer useful strategies that could improve forensic technology and forensic facial image comparison in criminal justice system in Nigeria.

1.3. Research Questions

The following questions are raised to provide directions to this study:

- A. What are the roles and benefits of forensic technology and forensic facial image comparison in crime detection, investigation and management in Nigeria?
- B. What are the challenges of forensic facial image comparison or identification in criminal justice system in Nigeria?
- C. What are the strategies to improve forensic technology and facial image comparison or identification in criminal justice system in the country?

1.4. Research Method

The study adopts historical and explorative research as its methodology. This means that the study relies solely on secondary sources to derive data through relevant literatures. Secondary sources constitute information gleaned from already existing literature or the opinions or perceptions of scholars on a particular subject area. In other words, data for the study were derived from textbooks, magazines, newspapers, and official bulletin, as well as library and internet sources.

2.1. Forensic Facial Image Comparison: Conceptual Explanation

As noted earlier, technology has infiltrated every facet of man's life on earth, and in the criminal justice system of virtually all the developed nations of the world. Forensic science, in particular, has taken diverse forms in the investigation of crimes in developed nations since its development and adoption. Resolving crime through forensics has become almost futuristic in some of the developing countries of the world. It is so advanced that it has resolved seemingly difficult situations and has exonerated the innocent in advanced countries. It is no doubt one of the fastest growing technologies of crime resolution in the world in recent times. Undoubtedly, its contributions in resolving

crimes have been acknowledged in civilized societies and have subsequently led to a plethora of definitions of the concept as observed lately. This notion was complimented by Ribaux et al. (2006) when they argued that forensic science has grown wide with lots of sub fields in the areas of *medical sciences, security, law, jurisprudence and in the engineering world*. Further to this notion, they identified three major roles of forensic science to include *investigation, evaluation and intelligence gathering* (Ribaux et al., 2006). In the same manner, Solomon and Iheanyi (2007) cited in Anyanabia et al. (2019: 48) noted that the term forensic technology is the application of a broad spectrum of sciences to answer question of interest in legal system in relation to crime, and in civil actions. These authors also see it as a technology used in the detection and prosecution of crimes or the application of scientific skills, to examine and to evaluate social and legal issues in order to resolve them. It is as well the application of science, and the law in resolving crime or managing it. In a broad manner, they see it as the adoption of scientific methods in establishing facts or in corroborating pieces of evidences gathered from other sources by detectives in relation to a given case under investigation (Solomon & Iheanyi, 2007). McCartney (2006), also in Anyanabia et al. (2019: 48), defined forensic technology as the *identification, collection and processing of evidence* gathered from crime scene and other sources by a detective, which may be useful in the investigation and unravelling of a crime.

The **United Kingdom Public Service (2009)** report provided a broader perspective to the definition of forensic technology when it relates forensic science to the application of science and technology in the collection of evidence at all stages of investigation in order to locate, recover, analyze and interpret the purpose of a crime on the one hand, and on the other hand, to support effective administration of justice and to inspire public confidence in the criminal justice system. For Saferstein (2010), forensic technology is the application of science to criminal and civil laws enforced by the police and other security agencies in a criminal justice system.

The terms **forensic facial image comparison** and **facial image identification** are often used interchangeably to define the use of human face in a photographic template (also known as photographs or videos). Thus, the forensic facial image comparison or identification is used to study and identify suspects or victims and other persons involved in crime scenes, to establish evidence or proof in the court of law. Its importance in criminal justice system therefore cannot be neglected. This is evident in the perception of Ribaux et al. (2006) of the utility in forensic image in the field of law. To them, the adoption of forensic facial image identification in the criminal justice system is not a new development. But the collective efforts of forensic anthropologists in other fields of learning like mathematics and engineering, forensic technology became popular in the criminal justice system in the developed nations of the world.

Davis et al. (2012) noted that the use of facial image comparison as a **biometric marker** or method in identifying persons involves capturing and storing individual's face, voice and iris, as a photographic forensic evidence which has become a part of the digital tool-kit of forensics. They argued

that this is completely a new forensic area that has been developed, and now widely used by expert witnesses in providing opinion testimony to ascertain whether or not two images could depict same person. With the quest of the **American Society for Testing and Material (ASTM)** in collaboration with the Forensic Institute Scientific Working Group (ASTM, 2018) perceived facial image comparison as a method that involves the ability to acquire rightful evidence especially at the scene of crime. To these organizations, facial comparison method in biometric analysis and in forensic science involves the development of facial components and some morphological comparison methods. It also uses the combination of traditional fingerprints and DNA as markers in either apprehending a criminal or in exonerating a wrongly accused victim of a crime (cf. ASTM, 2018).

The above method was illustrated in Captain Kelvin L. Weise's (2009) report on how photographs proved positive in collecting evidence regarding a detainee for the court of law in Iraq. This shows that in forensics, in the course of investigation for evidence for the courts, a photograph enhancement and comparison illustration including video images obtained in a crime scene has been beneficial in admitting evidence by security experts or persons who specialize in the technique in advanced countries. In other words, forensic analytical evidence in gathering intelligence in this 21st Century cannot be underestimated because of its proven utility in criminal justice administration across the world. However, from the plethora of definitions of forensic technology above, it is obvious that the primary objective of the adoption of forensic technology in all its forms in the criminal justice system is to bring offenders to justice, exonerate the innocent, to detect crime, and ensure that there is an efficient as well as an effective criminal investigation, to gain better understanding on criminality. Indisputably, forensic technology, in all its forms, including *facial image comparison or identification*, has not only expanded criminal investigation but has also yielded positive impact tantamount to digital forensic, though it is doubtless to say that modest recognition has been given to forensic technology in Less Developed Countries (LDCs), particularly in Nigeria.

Suffice it to state, therefore, that forensic investigation is not only a search for the truth of what has happened in a crime scene but also it establishes who and who were involved in a crime, in order to exonerate the innocent and prosecute probable offenders. This notion was complimented by Lambrechts (2002) who suggested that forensic investigators, for the purpose of fairness and admissibility of facts of a crime in a court of law, should not rely on presumptions only, but that a proven expertise of the scientific fact of a crime must compliment their evidences. Furthermore, he argued that the effectiveness of accurate forensic evidence is often linked to its appropriateness. Thus, investigators need to prove a crime before any court of law with unbiased facts orchestrated by investigating agents. The researcher, thus, perceived the concept of forensic science/technology as a whole in relation to criminal justice system. It is considered as the adoption of scientific tool, instrument or devices in criminal investigation or other sundry issues relating to crime in order to charge, try or prosecute the actual offender in a court of competent jurisdiction, and to discharge or exonerate the innocent who may have been alleged to commit a crime.

3.1. Empirical Review

3.1.1. Benefits of Forensics in the Nigerian Justice System

Recent literatures, generally, reveal significant roles which forensic has played in the criminal justice systems of the nations of the world. Although, the introduction and use of forensics is not a very recent invention, however, in the advanced countries of the world and in some developing countries as well, the use of forensics and its proven reliability has made it a reliable method of gathering intelligent information appertaining to crime by security agencies, and evidences obtained in the cause of investigation are also tenable in law courts to prosecute offenders and exonerate the innocent (see National Institute of Justice, **NIJ** Report 2017). In other words, forensic technology plays a vital role in the criminal justice system of a country by providing scientifically based information through the analysis of physical evidences obtained in a crime scene and in other sundry places in the cause of investigation by experts or by a state police department. During investigation, evidences are collected at a crime scene or from a person or group of persons and analyzed in a crime laboratory and the results are presented in a law court to prove the involvement of an accused or his innocence of the crime. Forensic investigation is increasingly reliable in assisting law enforcement agencies, especially the police department, in resolving crimes and to gain convictions in the court of law. It also assists the judiciary in adjudication of certain criminal cases (see Roberta et al., 2011; National Institute of Justice, **NIJ** Report, 2017).

As the application of sciences in crime management and investigation, forensic science has been effective in physics, chemistry, biology, computer science, and engineering, as well as in matters that appertain to law. This is evident in the broad spectrum of the U.S NIJ's forensic science research and development program which emphasizes basic and applied scientific research with the intent to: firstly, direct the findings of basic scientific research in broader scientific fields applicable to forensic science; and secondly, emphasize the application of forensic science research to developing highly discriminating, accurate, reliable and cost-effective evidences; and thirdly, apply rapid methods for the identification, analysis and interpretation of physical evidences in processes of criminal justice. In essence, forensic investigation has been adopted to resolve incidences of aggravated assaults, burglary, homicide, rape, and robbery (see Peterson et al., 2010: 11-14; U. S. NIJ Report, 2017).

Fisher (2004) cited in McEwen (2011: 10) argued that the collection of forensic evidence and the application of forensic science have become essential to criminal investigations and prosecutions, and have also fulfilled several roles in criminal investigations such as establishing the key elements of a crime, placing a suspect in contact with a crime victim or bringing the suspect or victim to a crime scene, establishing the identity of persons associated with a crime, exonerating the innocent, corroborating a victim's testimony, and assisting to establish the facts of what happened or occurred. McEwen (2011: 11) on the other hand, noted that the emergence of forensic database systems containing forensic information in located areas at the local, state and national levels has assisted the police in the United States of America and in other developed countries to collect forensic evidence

effortlessly. McEwen also stated that the introduction of Automated Fingerprint Identification System (AFIS) and the installation of 10-print card readers for computerized print matching in police departments by the Federal Bureau of Investigation Department (FBI) in the United States has also made forensic investigation very easy. The establishment of the FBI Laboratory which combines DNA Index System (CODIS) at all levels in the State has also complimented forensic investigation (see McEwen, 2011: 11). This implies that the effectiveness of forensic evidence depends on the reliability of the typologies or variety of forensic evidences collected at crime scenes, such as fingerprints, impression evidence, hair, fiber, firearms, and biological evidences such as semen and bloodstains, drug evidence, and morphological evidence. These are used not only in the jurisprudence in the United States of America but also in other parts of the world where forensic science and technology are accorded high regards in criminal justice system. Thus, forensic science report or the testimony of a crime has its importance or impact at the time of sentencing an accused person or exonerating the innocent in law courts (see Peterson et al., 1987).

In recent years, there has been lots of breakthrough in forensic science as a valuable tool in criminal justice. Even so, significant gains will be realized since new technologies are invented in obtaining accurate and reliable evidences in serious criminal cases. In law courts, such evidences are characterized by the presence of a reliable laboratory analysis and an expert's prepared interpretation and testimony of the scientific result obtained in the cause of investigation. Such is the role of forensics in criminal justice systems across the continent of American, Europe, Asia and Africa. To this effect, Peterson et al. (1987) identified three roles which forensic evidence play in judicial processes. These include the establishment of the element of a crime, associating defendants with crimes or dissociating them, and finally, it helps in reconstructing the crime or the crime scene.

Unfortunately, despite the roles and benefits of forensic technology in criminal justice in our modern world, a good number of the LDCs, including Nigeria, are yet to fully embrace forensic science in their justice system. The consequence of underutilization of forensics (especially forensic facial image comparison or identification) in resolving crime is obvious in the case of Nigeria in which several cases of murder and assassination over the years are

yet to be resolved up to the present time. Specifically, the role and benefit of forensics, especially forensic facial image comparison or identification, have eluded the country in this era of globalization and scientific advancement in science and technology particularly in the areas of crime investigation, crime control and crime management. This singular factor (i.e., the underutilization of forensics) has been the focus of researchers as one of the challenges faced by the security agencies in resolving some critical issues which ordinarily, would have been resolved by forensic experts in the country. Examples of unresolved high profile murder include such cases as the gruesome assassination of Chief James Ajibola Idowu Adegoke Ige, popularly known as Chief Bola Ige. He was a chieftain of the Alliance for Democracy in Osun State and a former Governor of the old Oyo State and former Minister of Justice of the Federation. He was murdered on 23 December 2001 (see Ojo, 2018; Komolafe, 2019). Other sensitive cases where forensic science was underutilized in Nigeria include the assassination of Dele Giwa, a veteran news magazine editor who was murdered through a letter-bomb in 1986, as well as the murder in 1995 of Alfred Rewane, a top-notch politician and businessman; Mrs. Kudirat Abiola, wife of an international business mogul and frontline politician, who was murdered in 1996, and whose husband, Chief Moshood Kashimawo Olawale Abiola, the Social Democratic Party (SDP) Presidential flag bearer and acclaimed winner of the annulled 1993 presidential election in Nigeria, who was suspected to be murdered in detention in 1998 over the insistence of his electoral mandate; and Marshall Harry, a PDP chieftain who was murdered in Abuja in 2003. Furthermore, forensic evidence was also underutilized in the following randomly picked incidents which occurred among some of the more common cases include the case of Aminasari Dikibo, a PDP Deputy National Chairman, who was murdered in Asaba, Delta State in 2004; Funsho Williams, a Lagos State governorship hopeful who was murdered in Lagos in 2006; Dipo Dina, Ogun State governorship candidate of the Action Congress of Nigeria (ACN) murdered in 2010; and Funke Olakunrin, daughter of Reuben Fasoranti, erstwhile leader of Afenifere, the Pan-Yoruba socio-cultural group, who was murdered in Ore town, Ondo State, in 2019 (see Komolafe, 2019). Other cases of high profile murder which occurred in the regions of the South-East, South-West, South-South and a few from the Northern part of Nigeria and randomly selected are illustrated in the table below.

S/N	NAME OF VICTIM	ASSOCIATION TO WHICH VICTIM BELONGED	PLACE OF ASSASSINATION	DATE OF ASSASSINATION	STATUS OF ASSASSINATION
1	Sunday Ugwu	Member, Enugu State House of Assembly	Enugu State	9 September 1999	Unresolved
2	Lai Balogun	Frontline Politician	Lagos State	December 2000	Unresolved
3	Dan Kemibagha	Counsel to Odi Youths, Bayelsa State	---	December 2001	Unresolved
4	Odunayo Olagbaju	Member, Osun State House of Assembly	Ife, Osun State	21 December 2001	Unresolved
5	Monday Ndor Tambari	Minority Leader, Rivers State House of Assembly	Port-Harcourt Rivers State	18 December 2001	Unresolved
6	John Agatutu	PDP Central Senatorial District Aspirant	---	December 2002	Unresolved
7	Ishayaku Mohammed	UPP Party Chieftain	---	December 2002	Unresolved
8	Janet Olapade	PDP Leader in Ondo State	---	December 2002	Unresolved

9	Ade Awonusi	Confidential Secretary to the Chief Justice of the Federation	---	7 January 2002	Unresolved
10	Chimere Ikoku	PDP Leader and Former Vice Chancellor of the University of Nigeria, Nsukka	Enugu State	12 October 2003	Unresolved
11	Ajibola Olanipekun	PDP Chieftain in Oyo State	Ibadan, Oyo State	20 June 2003	Unresolved
12	Joyce M. Fatai	---	---	3 May 2003	Unresolved
13	Young Dimegwu	ANPP Member, Imo State House of Assembly	Imo State	20 April 2005	Unresolved
14	Onyewuchi Iwuchukwu	ANPP Party Chieftain	Ikeduru Local Gov't Area of Imo State	19 April 2003	Unresolved
15	Yemi Oni	AD Chieftain, Ekiti State	Ekiti State	March 2003	Unresolved
16	Anthony Nwodo	Secretary to ANPP Ebonyi State	Ebonyi State	21 March 2003	Unresolved
17	Rasaki Ibrahim	---	---	5 March 2003	Unresolved
18	Theodore Agbatu	---	Imo State	22 February 2003	Unresolved
19	Ogbonanya Uche	ANPP Senatorial Candidate	Owerri, Imo State	8 February 2003	Unresolved
20	Ayo Daramola	Ekiti State PDP Guber Candidate	Ekiti State	14 August 2004	Unresolved
21	Philip Olorinpa	Kogi State Electoral Commissioner	Kogi State	7 March 2004	Unresolved
22	Luke Shingaba	---	Kogi State	4 March 2004	Unresolved
23	Obi Wali	Senator, Federal Republic of Nigeria	Rivers State	25 April 1993	Unresolved
24	Suliat Adedeji	Prominent South West Politician & a frontline politician in Oyo State	Ibadan, Oyo State	14 November 1996	Unresolved
25	Babatunde Elegbede	Rear Admiral	Gbagada, Lagos State	19 June 1994	Unresolved
26	Tunde Ashafa	Navy Captain	Lagos State	11 June 1995	Unresolved
27	Obatou Mumbo	---	Onitsha, Anambra State	17 October 2000	Unresolved
28	Idowu Braimoh	---	Ondo State	5 November 2000	Unresolved
29	Lateef Olaniyan	Acolyte of the Ibadan Strongman of Politics, Lamidi Adedibu	Ibadan, Oyo State	16 July 2005	Unresolved
30	Ifeanyi Nnaji	PDP Youth Wing	Nkalagu, Ebonyi State	23 August 2001	Unresolved
31	Ogbonna Odimbaiwe	---	Ebonyi State	23 August 2001	Unresolved
32	Chibueze Idah	---	Ebonyi State	23 August 2001	Unresolved
33	Onyebuchi Ede	---	Ebonyi State	23 August 2001	Unresolved
34	Joseph Osayande	Transport Magnate, Big Joe Motors	Benin City, Edo State	4 December 2000	Unresolved
35	Chief Layi Balogun	Frontline Politician and Businessman	Lagos State	10 December 2000	Unresolved
36	Monday Ndor	---	Port-Harcourt, Rivers State	19 August 2001	Unresolved
37	Maria-Theresa Nsa	---	Cross-River State	11 June 2002	Unresolved
38	Alabi Okoju	Leading Financier, Oronmiyan Group, a Socio-political Organization	Gbongan, Osun State	15 May 2005	Unresolved
39	Emily Omope	---	Ibadan, Oyo State	3 March 2003	Unresolved
40	Theodore Agwatu	Principal Secretary to Imo State Gov't	Owerri, Imo State	22 February 2003	Unresolved
41	E. Emenike	---	Imo State	13 February 2003	Unresolved

42	Ogbonnaya Uche	ANPP Senatorial Candidate and former Commissioner	Owerri, Imo State	8 February 2003	Unresolved
43	Barnabas Igwe (& wife, Abigail Igwe)	Chairman, the Nigerian Bar Association (NBA)	Onitsha, Anambra State	1 September 2002	Unresolved
44	Godwin Agbroko	Chairman, <i>ThisDay</i> Newspaper Editorial Board	Delta State	22 December 2006	Unresolved
45	Abayomi Ogundeji	<i>ThisDay</i> Newspaper Journalist	---	17 August 2008	Unresolved
46	Nicholas Okhuakhua	A Journalist	Lagos State	June 2000	Unresolved
47	Aminasaori Dikibo	PDP National Vice Chairman	Port-Harcourt, Rivers State	6 February 2004	Unresolved
48	Igwe Francis Nwankwo	Nwafia Monarch	Anambra State	15 February 2000	Unresolved
49	Bayo Ohu	Reporter, <i>Guardian</i> Newspapers	Egbeda, Lagos State	20 September 2009	Unresolved
50	Mohammed Shuaibu	---	Lagos State	September 2000	Unresolved
51	Idowu Braimoh	---	Ondo State	5 November 2000	Unresolved
52	Olu Omotehinwa	Naval Admiral	Lagos State	22 May 1996	Unresolved
53	Sunday A. Awoniyi	Top-notch Politician	Stabbed in Abuja	7 January 2002	Unresolved
54	Bayo Ohu	Journalist with <i>The Guardian</i> Newspapers	Egbeda, Lagos State	20 September 2009	Unresolved
55	Victor Nwankwo	Founder, Eastern Mandate Union	---	29 August 2001	Unresolved
56	Peter Eboigbe	PDP Aspirant of Oredo Local Government Chair	Benin City, Edo State	11 August 2005	Unresolved
57	Chief Ogbonnaya Uche	All Nigerian Peoples Party (ANPP) Senatorial Candidate	Imo State	February 2003	Unresolved
58	Eyo Eyo	Information Officer to Cross-River State Commissioner for Agriculture	Calabar, Cross-River State	April 2002	Unresolved
59	Dipo Dina	2007 Governorship Candidate of the Action Congress of Nigeria (ACN)	Ota, Ogun State	25 January 2010	Unresolved

Many of these cases are yet to be resolved to this day whereas, the suspected perpetrators of the crimes have since been arrested and are awaiting prosecution. Thus, the challenges of forensics, especially forensic facial image comparison in the country, are provided in details below.

3.1.2. Challenges of Forensics and forensic facial Image Comparison in Nigeria

The importance of forensic science in criminal justice system all over the world cannot be underestimated, even though, it is underutilized in Nigeria by the security agencies constitutionally responsible for the investigation of crimes committed within their jurisdiction. Much as it has contributed tremendously in resolving critical issues in courts of law, it has its challenges not only in developed nations like the United States of America, United Kingdom, Germany, etc., but also in undeveloped nations of the world such as Nigeria. In corroborating this view, Wright and Barrie (2010: 21) argued that the only way to control criminality by resolving murder and assassination cases in any modern society is to embrace modern technologies (such as forensic investigations) into criminal investigation since technology plays an essential role in modern day

policing as it provides the police investigator with a lot of opportunities to detect and resolve crimes.

According to Arbab-Zavar et al. (2015: 11) of the many crime-scene collectible forensic evidences for purposes of the prosecution or exoneration of alleged offenders, the photographic image or face photo collection has been identified as one of the most common and most familiar biometric trait in our daily lives. With the use of digital cameras, smart phones, CCTVs, etc., face image has become easily generated and transmitted, and it is shared through the highly developed social media networks such as Facebook, WhatsApp, YouTube, etc. Face images of people of questionable characters or suspects, as well as those of victims and witnesses have been obtained through these media for the purposes of investigation. The application of the facial image devices is not to be exonerated from

unforeseen setbacks that are likely to impede its application in investigating crimes in particular or in the criminal justice system of a country like Nigeria.

Much as a number of contemporary studies have proved that forensic facial image is one of the very convenient biometric characteristic used in recognition of people and is one of the most common biometric trait authenticated in criminal investigation, it is still very much underutilized in some LDCs, especially in Africa, and Nigeria in particular. It is easy to recognize a suspect or an alleged offender through facial image or photo because this makes the evidence reliable and admissible in the cause of crime investigation, especially when it is captured in the scene of crime. Unlike the fingerprint or iris recognition system, face image does not necessarily require the services of a forensic expert or an expert with professional skills to provide reliable and admissible evidence (see Nte, 2012; Arbab-Zavar, et al., 2015).

According to Arbab-Zavar et al. (2015: 5), unlike fingerprint and iris collections, *facial images* can be acquired easily from a distance without physical contact which makes people feel more comfortable to use. This factor also makes facial image very easy to be obtained in a friendly manner and also acceptable by the public. But compared to fingerprint and iris, face recognition system has a lower requirement for users' cooperation since it doesn't necessarily require contact. The simplicity in obtaining facial image makes it prone to challenges. The result of this comparison with other biometric traits is that facial image in some circumstances is not perfect since it can easily be affected by a factor like applied facial cosmetics. This line of argument was supported by Arbab-Zavar et al. (2015) who criticized the facial image for being less accurate than other forms of biometrics such as fingerprint since it is likely to be affected by cosmetics applied on to the face. Nevertheless, it also has its own advantage which makes it one of the most preferred biometric traits for human recognition and a reliable source of evidence in the justice system of the nations that accede to its usefulness in the investigation and resolution of crimes. In Nigeria today, the rise in the rate of crimes committed by individuals or group of individuals is on the increase, and this has affected Nigerian citizens in several ways especially the youth. Apart from crimes orchestrated by terrorist groups and criminal gangs, other forms of crimes such as armed robbery, kidnapping, etc. are being committed on a daily basis without a common trace. This trend has placed the country in the position of being considered to be one of anti-social vices in the eyes of the international community. Nte (2012) was of the view that this ugly trend could be mitigated in the country through efficient utilization of forensics in criminal justice processes, especially in resolving cases such as murder, kidnapping, armed robbery, and sexual assault, among others. He, thus, identified the following as the challenges of forensics in the country: bias and nepotism; ethno-political and religious sentiments; poor forensic training; lack of forensic tools and functional facilities or surveillance systems; absence of forensic monitoring bodies or organizations; lack of standardization of forensic science; political instability and poor institutional framework; inter-agency rifts especially among the military and intelligence agencies. Others are digital terrorism and internet fraud; diversity problem resulting from ever-

increasing ethnicity data volume; and absence of human data volume (citizens' data base) caused by excess in-flow of immigrants (see Nte, 2012).

We therefore align ourselves with these challenges in forensic administration which should be prevented in the country and we urge the government to mitigate these challenges stated by Nte (2012) by fully incorporating forensics, especially the facial image identification, into the country's criminal justice system. We, thus, urge the government to equip the security agencies, especially the police force, with state-of-art forensic devices in order to mitigate the challenges to criminal investigation in the country. Epileptic power generation across the country is a challenge also because CCTV cameras in some public places, particularly, in the cities are hardly functional. Functional power generation will likely contribute a lot to capturing of many incidences which are likely to occur in public places. These factors no doubt will go a long way to improve criminal investigation and resolving cases that require forensic evidence. The government, in essence, should embrace modern strategies that are likely to promote effective and efficient application of forensics in the country's justice system as stated below.

3.1.3. Strategies to Improve Forensics in Nigeria

To effectively incorporate forensics, especially the facial image comparison, into Nigeria's criminal justice system, there is the need to:

- A. Create a synergy among the intelligence units in order to promote a centre/unit for intelligence gathering and a centre for analyzing forensic evidences,
- B. Re-equipping the intelligence unit of the police with state-of-art forensic facilities purposely to enable the police resolve crimes that require forensic evidences,
- C. Enacting appropriate laws towards integrating forensic science, specifically the use of facial image in intelligence-led policing of crimes in the country,
- D. Embrace forensic standards conformance with international best practices in the country's criminal justice system,
- E. A regular or re-training of police personnel or officers in forensic capabilities for ease of law enforcement and apprehension of criminal elements who have committed crime in the country, and
- F. There is the need for the federal government to establish effective and reliable partnership with Nigerian universities offering intelligence studies to serve the needs of training of law enforcement agents in intelligence gathering, forensic science, and other sundry modern trends in intelligence techniques.

4.1. Summary/Conclusion

Following from the emphases on the importance of forensics in criminal investigation system all over the world, it is doubtless that forensics in general have been helpful in combating highly intelligent and adaptive enemies of the state found in organized criminal gangs and terrorist organizations. Its capabilities have been expanded to play many integral roles across the world against criminal elements and terrorists which includes issues like intelligence functions, operational activities, force protection, personnel recovery, host national legal storage system support, and identity recognition functions.

The role played by the use of forensic science in advanced countries reveals that there can be no excuse for omitting a broad range of crimes in the process of gathering intelligence from the examination and comparisons of biological sources available. Such evidences as fingerprints, footwear impressions, facial image comparison, car-tyre impressions, and ballistic or firearms and ammunition examinations, as well as forensic DNA analysis are quite common in many jurisdictions and they are admissible as reliable evidences in law courts. In spite of the usefulness of the processes in resolving crime in our modern day societies, it is unfortunate that the Nigerian government is yet to fully inculcate forensics into its criminal justice system. The fact that the police department in the country is ill-equipped with this state-of-the-art technology, including its own laboratory which is deficient in its capacity to carrying out a DNA analysis, it has become a challenge to which a solution must be found. In support of this view, Anyanabia et al. (2019: 45) argued that the state of forensic investigations in the country is very poor at the moment. Besides, it is nothing to be proud of like it is found in developed countries of the USA, UK, France, Germany, among others. The complete absence of digital forensics or its underutilization even when it is available in some of the police divisions in the country is indeed regrettable since the facilities are affordable and the technology is user-friendly with proper training. With adequate training of police personnel, the digital data base will be effective in gathering and recovering data concerning an individual citizen, a suspect and a convict when the need arises. In this context, there is the need for the adoption of the use of forensics, especially forensic facial image identification, in criminal investigation in Nigeria. Considering the importance of forensic science and the ease with which it has been used to resolve crimes and assassination cases in developed countries, there is very little doubt that its adoption in the Nigerian criminal justice system will be highly beneficial to the agencies responsible for justice administration in the country.

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