

Forensic Science Enabled Crime Fighting Mechanism in Nigeria

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Abstract: Forensic science is one of the best ways to fight and resolve almost all manners of crime. The need to know the preparedness of the institutions saddled with the responsibilities of combating crime in our societies becomes extremely important to the enthronement of forensics in Nigeria. Without forensic science in criminal trials justice will continue to elude us as nation. The study relies on the Locard Exchange Theory. The article examines the Oyo State Police Command and three other sister agencies' (NSCDC, EFCC and NDLEA) preparedness in using four major forensic methods in combating crime in the state in line with their constitutional mandates. Four key informants were interviewed and three focus group discussions were conducted. Data were analyzed using content analysis. Results indicated that the facilities on ground are grossly inadequate and there are not enough qualified personnel to carry out forensic investigation services. The study concluded that 21st century crime combating using methods of forensic science is still very poor in Oyo State, and Nigeria as a whole. It therefore suggests government, private organizations, researchers and scholars should synergize with law enforcement agencies to make forensic science an effective technique in detecting and combating crime in Nigeria.

Keywords: Forensic science, Preparedness, Crime fighting mechanism, Law enforcement, Fingerprint

I. INTRODUCTION

Forensic science is one of the most effective tools useful in criminal investigation. It is capable of providing scientific information especially in judicial matters within the criminal justice system. This is evident in the definition of Kalayci, Özbek-Yazici, & Küpeli, (2014), which says it is a service to justice by evaluating judicial events with trauma within the principle of science. Anderson (2013), defines it as the application of sciences to civil and criminal laws being enforced by the police agency in the criminal justice system, while Roncacè & Nicosia (2016) say it is any branch of science which applies scientific methods and techniques to the investigation of crime. Forensics have shown to be the required help that the criminal justice system needs in order to achieve its set goals and objectives in the avoidance of wrongful/misarraige of justice since forensics do not lie.

Crime fighting mechanism is contextualized to include crime prevention and control which is the overall goal of the security agencies and thus in line with that of the study. It requires accurate prediction of criminogenic factors that predispose an environment or individuals to commit crime. Crime control mechanism on the other hand has to do with adequate measures put in place to prevent escalation of crime

in the society (Robert 2003; Siegel, 2008; Adebayo, 2013, Ladapo, 2012; Unam, Okogwu & Adinde, 2018). In light of these definitions, it is pertinent to find out in actual sense, if the security agencies that have the responsibilities of prosecution on behalf of the state have the capability to make use of forensic methods in crime management (NRE, 2017). Therefore, the research examined two basic objectives. The first is to find out the type of facilities available for forensics investigation; and secondly if there are qualified personnel available to carry out five major forensic services (crime scene investigation, fingerprint, DNA, ballistics and computer forensic) within the investigation/forensic units of the commands.

The study relies on the Locard Exchange Principle which says that "every contact leaves a trace". The idea of Locard is that there is no such clean crime scene where trace evidence will not be left behind by perpetrators. This trace can be very useful in combating crime such that it can be used to link suspects to the crime. In the same vein, it is expected that personnel of these security agencies should have knowledge and capability of using the techniques of forensics required to discover latent evidence. However, these skills will be meaningless and useless if there are no facilities on ground where personnel can put their forensic skills into practice.

II. LITERATURE REVIEW

Literature were reviewed along five major methods of forensic science namely; crime scene investigation, fingerprint, DNA, ballistics and computer forensic, and also in line with the mandate of each of the agencies under study. Since the objectives of the study is to find out how prepared personnel are, and also to know if there are facilities available for the application forensics to crime combating.

Crime Scene Investigation

The development of crime scene investigation has a strong linkage to the field of archaeology. Research has shown that forensic science originated from the prehistoric (Bartol, 1999). For instance, archaeological records have shown the early man fingerprint impressions on clay and patterns of hands on drawings. Study also has it that the Chinese, since about 700 BC have adopted clay sculptures to record and store fingerprints (Bell, 2012). The development of crime scene investigation (CSI) is important to crime combating, viewing from the perspective of the Locard theory of exchange principle. Every security agency is expected to be

grounded in the mechanism of CSI if at all they will be relevant in the course of duty. The task of the crime scene investigator starts with identifying evidence present at crime scene, since there is no such clean contact. The evidence collected is what other forensic methods will then need to work with. Without a qualitative trace of the evidence, further investigation and prosecution becomes shabby. As important as this role is, little is known sociologically about how such evidence needs to be investigated and preserved (Wyatt, 2014). Crime television shows, the “CSI Effect” have portray the field of crime scene investigation as a very easy one, but it is not so (Vicary & Zaikman, 2017). A crime scene investigator must be on top of his game. It is important to note that personnel of the agencies have a good understanding of the art of crime scene investigation but facilities are not grossly inadequate

III. FINGERPRINT

Fingerprints began to form since early stages of fetal development. It is genetically determined and environmentally influenced by exposure to Rubella and Thalidomide. The discovery of the unique nature of fingerprint signaled the end and downfall of the use of anthropometric measurements in favor of criminal identification. Fingerprinting is concerned with developing latent prints found at crime scene and comparing it with known fingerprints of suspects as the case may be. This science is key to criminal investigations and research has shown that it is the most commonly used form of evidence worldwide because of its individual uniqueness even in the case of identical twins (Sapse, 2007; Ali, 2016). Research has also shown that fingerprints of individuals cannot change throughout the life of such a person, but in a very scarcely situation (Sapse, 2007). Fingerprints come in form of complicated patterns of friction ridges called loops, arches, and whorls. The usefulness of forensic fingerprinting cannot be downplayed especially in the 21st-century criminal trials. However, fingerprints must be correctly obtained, stored and analyzed for better identification and court proceedings (Mnookin et al, 2016). The police command seems to be better at this method. However, the old method of powder dusting is still prominent in the force.

Deoxyribonuclea Acid (DNA)

Genetic Identification Technology or “DNA fingerprinting” began to be useful in the British Legal System where a landmark justice was given in two trials (a British young boy of Ghanaian descent and an investigation into a double murder which took up to four years of investigation for it to have a scientific breakthrough) (Pinkerton, 2011; Wambaugh, 1989). Research has shown that DNA analysis has the capability of identifying a person with at least a 99.9% accuracy (Lincoln, 2003; Patel, Gautaman, and Jangir, 2013; Ingles, 2012). DNA is highly sophisticated scientific equipment where the DNA molecule of a suspect is usually disassembled for the double helix to be shown then a selected segment is being isolated and measured. The same is done to the DNA profile of the sample of the physical evidence

collected at the crime scene. A possible match is looked for in the two samples in order to eliminate or make a match of the samples. After the match has been established, a comprehensive statistical analysis is carried out to ascertain the probability of the owner of the sample to have been at the crime scene at a particular point in time (Lincoln, 2001, Patel et al 2013; Wechsler, Cramer, Kehn, Wosje, Boccaccini, & Varela, 2016). The DNA center in Lagos, Nigeria, now has the capacity to do such analysis and support prosecutions at all levels of crime that has to do with DNA. None of the agencies have the capacity to do DNA analysis. Those that uses it the most have to depend on the University College Hospital and other private hospitals.

Ballistics

Forensic ballistics is the scientific analysis or interpretation of all guns and firearms related evidence with the purpose of interpreting and establishing the facts in a shooting related crime. Evidence that are involved in ballistics forensic includes firearms or guns, bullets and cartridge cases, bullet holes, bullet damage on various mediums, bullet trajectories and gunshot wounds. Forensics investigator in the area of ballistics should be able to identify the process that occurs inside the gun or the firearm after it had been shot, the mechanisms and barrel manufacturing techniques; factors influencing internal gas pressure; and firearm recoil. Forensic investigator of firearm is meant to examine causes of accidental, microscopic examination and comparison of fired bullets and cartridge cases to determine whether a particular firearm was used, study of the projectile’s flight from the moment it leaves the muzzle of the barrel until it strikes the target. Externally, the investigator should also be able to examine, calculate and reconstruct the trajectories of the bullet, its effect on the target, type of projectile that can cause such damage, and be able to establish the maximum range of a given bullet. At the level of facility and the personnel, none of the agencies have is capable.

Computer and digital forensic

The saying within the criminology parlance is that “each betrayal begins with trust”. This betrayal can as well begin with your computer and other digital devices which you have trusted so well. Frempong & Hiran (2014) say that every time you log into this device you are leaving a trail behind in form of binary numbers of 0s and 1s or residual representation of data. Most criminals fail to cover their tracks when using technology to implement their crimes. They fail to realize that computer files and data remain on their hard drive even when deleted, allowing investigators to track their criminal activity. File deletion merely renames the file and hides it from the user; the original file can still be recovered (Olayiwola, 2016; Frempong & Hiran 2014; US-CERT, 2008).

Computer forensics combines elements of law and computer science in order to collect and analyze data from computer systems, networks, wireless communications, and storage devices in a way that is admissible as evidence in a court of

law (Olayiwola, 2016; Frempong & Hiran 2014; US-CERT, 2008). It is interdisciplinary and includes topics and tools from computer engineering, computer science, information technology, network engineering, telecommunications, law, and ethics. It has the ability and capability in supporting both criminal and civil prosecutions through searching, discovery and analyzing potential information or evidence that is of great importance to enforcement of the law. Computer forensic has continue to evolve, thus making it more useful in the 21st century crime combating mechanism. An investigator must therefore be in tune with such developments. Few of the agencies have few facilities and personnel that have ideas in ICT. However, ideas in ICT is not the same as computer or digital forensic. The EFCC seems to have a robust resources in this manner, followed by the police and then the civil defence corps in that order.

Methodology

This study is explorative and cross-sectional. The design also enables a qualitative explanation of how participating agencies make use of available forensic methods at their disposal and within the context of their job's mandate. Ibadan was chosen for housing the state commands of the security agencies, while particular focus was on personnel of the forensic/investigative units who are usually few in number. A purposive sampling procedure was adopted and the instruments for data collection were in-depth interviews and focus group discussions. The sample size ranges from three to seven depending on the number of officers available to the units. In all, a total of eighteen personnel were engaged in all of the commands. Investigators interviewed in the police service were from the rank of Sergeant to that of Assistant Superintendent of Police (ASP), and its equivalent ranks in other sister agencies. Data collected were content analyzed and approval was sought via formal letters.

Presentation and discussion of findings

Data is presented in line with the objectives of the study and within the core mandates of each of the agency as regard some specific forensic methods.

Availability of forensic facility for combating crime in Oyo State

In the course of this study, data collected from participants that represented the agencies were presented below verbatim. To start with, all respondents were asked if they have heard of crime scene investigation in the course of their job before. The respondents' answers were in the affirmative. This shows that the awareness among security agencies concerning crime scene investigation is not a problem. For instance, a participant expresses himself said:

When we talk of crime scene investigation it has to do with professionalism and must be handled very carefully if you don't want to place yourself in the scene. In most situations, you need to cordon off the place from intruder by putting your men at the perimeter fully armed. You can

then go into the place where the crime was committed to look for evidence that can help in getting the criminal.

(FGD/Police SCID Iyaganku Command/10/09/2021)

Another participant from another security agency said;

It is the physical presence of the security agents at a scene of a crime for the purpose of identifying and collecting possible evidence that would be helpful to them in identifying who the perpetrator is and help in prosecution. You can cordon off the place using the yellow tape so as to prevent people from tampering with the remaining evidence. What I can relate to crime scene investigation is the usual SOS we do receive from the NNPC, communities and our command situated around pipeline sites. Whenever we get there, we usually cordon off the place, do searches of the scene, collect whatever evidence available and make use of the NNPC laboratory to do confirmatory test of the adulterated petroleum products seized or found from what the culprits might have siphoned. Although, in so many situations the culprit do escape but for the ones we have been able to get, we are trying to build a database for them now so we will be able to use it against them if they are first offenders or not.

(IDI/NSCDC Ibadan Command/09/08/2021)

Generally, the responses showed that there is a very high level of awareness among security agencies on the awareness of CSI. The striking information in the interviews is the perspectives through which each of the agency representatives explained crime scene investigation within the mandate they have in doing their job. The peculiarity of their job determines the scene of crime they are meant to investigate, except the police that has wider-power to investigate all forms of crime. Furthermore, the intricacies of CSI can best be explained as differs in context since each crime has its peculiarities. A crime committed on a laptop is quite different from the one committed in a night club. The nature of a crime makes its investigation differs. However, none of the participants said anything on opening a register to note attendance in situation where someone that is not a member of the investigating team needs to come into the scene of the crime.

Participants were further asked prescriptive questions on the facilities that are available for them to employ crime scene investigation. For instance, they were asked if they have simple CSI tools like tape, brush, scissors, ultraviolet lights, early evidence tool kit etc. The answers were in the affirmatives but slightly different because of the nature and mandate that is given to each agency. In the same vein, participants were asked specific forensic equipment they usually go along with whenever they need to do a crime scene investigation. From this point response began to differ. For instant, the participant from the NDLEA sighs and said;

Hmm, forensic facilities? Actually we do our investigation by following the rules of engagement. On getting to a

scene of crime our men guide the perimeters, our drug experts go into the place to arrest and collect the drugs with gloves on their hands. In most of the situations, we usually get information through tip off or raid of hide out of criminals. Although, on many occasions the culprits would have runaway so we don't really use to have face-off with them like that. We equally do prepare for any form of eventuality in case they want to attack us.

(IDI/NDLEA Ibadan Command/13/08/2021)

The researcher further asked that if in the situation of chemical drugs, how differently the officers would have handled it. The participants said "we have our personal protective equipment that we can put on not to inhale such chemical drug, although, we don't usually have such situations around here".

The EFCC participants were unanimous in their opinions concerning crime scene investigation and digital forensic. Information from the representative of the agency shows that it is the only commission, apart from the police, that has the capability to employ this forensic. Except;

Our own crime scene is the device the suspect used in committing the crime. So, we usually confiscate the device mostly phones. In this command we can only do phone forensic for now. Our capacity does not include digital and computer forensic for now. Whenever we have such case to deal with, we usually send it to the Lagos office for further investigation. For us here, we can monitor the IP address of the person committing the crime even if he/she changes address often. Once a fraud is committed via the internet using phones we can get the person who is behind the fraud. However, we are expecting that the federal government will deem it fit to enlarge our capacity to do digital and computer forensic in this command too.

(FGD/EFCC Ibadan Command/25/08/2021)

Participants were further asked about the type of equipment they use in carrying out their investigations. The NDLEA officer said;

We have our own equipment that we use for the testing of confiscated drugs. It was given to the commission by the United Nations Office of Drug and Crime. We call it UNDT kit. It basically shows colour difference in the type of drug that the exhibit is. However, in situation where we need to do a confirmatory test, we send the sample to our laboratory, at Oshodi in Lagos State.

(IDI/NDLEA Ibadan Command/13/08/2021)

Indications show that the United Nations of Drug and Crime have been very helpful in the fight against drug in Nigeria. This is not surprising because Nigeria is a signatory to its policies and agreements. However, it is expected that this agency should do more than sending kits to us because Nigeria is becoming a transit for illegal drug in the sub-Saharan Africa. Therefore, an international sophisticated laboratory

would not be too much to build in Ibadan, the Oyo State capital because the state has many international borders around it.

In the same vein, participants at the EFCC responded by saying;

We have our own equipment that we use for our investigation. This is called the Cellebrite UFED Touch. It has the capacity to mirror the data that is available in the phone even when the security detail is not released to us by the suspect. Since digital evidence can stay longer than any other type of forensic evidence, we can then send it to Lagos for further investigation. In situation where the crime/fraud was committed on other devices other than phone, we have the backing of our Lagos office to do the investigation for us.

(FGD/EFCC Ibadan Command/25/08/2021)

Still on the facility on forensic methods available to carry out forensic services in Ibadan. In a focus group discussion with some police personnel, the participants said;

As far as the Oyo State Police Command is concerned we are trying our best. Although, we don't have capacity to do so much, most especially those of Ballistics, DNA, Computer or Digital forensic, however, we are trying in the area of fingerprint analysis because we have a unit in this command that can handle that. We have specialists in fingerprint analysis, we have software that was given to us by the police headquarters in Abuja and they have also trained our personnel to be able to use it. Also in the area of crime scene investigation we are trying. We usually do that whenever we went to investigate any crime scene. We collect relevant evidence and present them as exhibits during prosecution. Whenever we have any reason to make use of forensic service that we do not have here in our investigation, we usually send such evidence to our Forensic Laboratory in Alagbon, Lagos.

(FGD/Police SCID Iyaganku Command/10/09/2021)

In the responses of the Civil Defence Corps, the command can only boast of a particular method of forensic service which is in the area of fingerprinting. There is no equipment to do any other type such as Ballistics, DNA, Computer or Digital Forensic. For example it was garnered from participants that;

We have equipment for fingerprint analysis like brush, tapes, camera, fingerprint card etc. right inside our store here in the state command. For instance, we have the capacity to make use of different techniques using powder dusting, iodine crystals experiment and super glue fuming techniques. We have practiced it here for our members of staff a couple of times, the organization has mandated it for some of us to go and do trainings about it, which we have done and so many of us have mastered it. We are presently working on the fingerprint application software

that will enable us collect and store fingerprint of suspects. For now we are still using the ink to paper method where we compare fingerprints manually and this could be very laborious. Any other forensic related matter are been transferred to the national headquarters in Abuja where they have better equipment or relate with the police command here in Ibadan. But for us here in Ibadan we can only do fingerprint analysis.

(IDI/NSCDC Ibadan Command/11/08/2021)

On the DNA analysis involved in crime matters, participants were asked based on the mandates they have in doing their jobs. The police participants said;

Yes we have the capacity and we make use of public hospitals like the UCH at times to help us confirm the DNA of the person in question. Although, we have not had situation where we need to have to confirm if the blood belong to human being or not, or whether the suspect was the source of the DNA or not, we mostly made use of DNA in paternity dispute which is outside of our own purview. However, when it is a murder case, the homicide section is the one that takes over and not our own job.

(FGD/Police SCID Iyaganku Command/10/09/2021)

From the perspective of the Civil Defence, participant made the researcher to understand that;

For us at the Civil Defence Corps since our major mandate is pipeline protection we collect evidence of vandalism from crime scene when we go out for investigation and we use this evidence whenever we have to prosecute. One of our units is this organization; the gender based department is saddled with such responsibility of making use of DNA analysis in prosecution especially in child abuse, rape and paternity dispute cases. For us at the forensic unit we don't usually do cases that have to do with DNA analysis but the organization has a working relationship with the Nigeria Institute of Science Laboratory Technology, (NISLT) Samonda, Ibadan, they have come to train us on several occasions.

(IDI/NSCDC Ibadan Command/11/08/2021)

Information from other security agencies also shows that none of them have the capacity to make use of DNA in the course of criminal adjudication but only in civil matter of paternity dispute. It was also discovered that there is no effort whatsoever geared towards having the facility for DNA analysis in their commands. Therefore, the dream of making use of DNA in criminal proceedings among security agencies in Ibadan is still a mirage.

Availability of qualified personnel for forensics investigation service

The research took a further step by trying to find out the level of education and training in forensics and allied courses that personnel of the organization and specifically of

the forensic units had or have had since join the organization or the unit. Therefore, specific questions on their qualifications were asked and the following was reviewed. For instance, the police personnel were asked if any of them has any degree in forensic science and responses were;

(sighs), I don't think so but officers may have such degree and not be able to bring it out because they might not have taken permission to do it. But to my knowledge we don't have any officer here in this unit that has a degree in forensic science for now. Having said that, I am also sure that all police officers were trained in the art of investigation while on training, so we can all do investigation, however I also know that we need specific training especially in the art of forensics for us to be able to handle forensic related matters very well. I will also like to add that whenever an officer is deplored to this unit, they start to undergo specific trainings especially in the type of forensic that we are doing here.

(FGD/Police SCID Iyaganku Command/Ibadan/10/09/2021)

The participant at the Civil Defence was of the opinion that;

The number of personnel in the forensic department of the Civil Defence, Ibadan command is few and not encouraging. The command can boast of 4 trained personnel who had their master degree from the University of Ibadan coupled with in house trainings. Although, we have others personnel working with us in this department but their work is a kind of general duty work. But because we need to be focused in our area of specialization I think the organization needs to be recruiting candidates that are specialist from the onset. This will give a face lift to the forensic science as a whole and even our organization will be able to come to terms with modern way of combating crime in our society

(IDI/NSCDC Ibadan Command/11/08/2021)

The participant also buttresses his point by saying;

For you to know that we are serious with training in the Civil Defence Corps, we will be going for forensic psychology training in Abuja before the end of the year. We have another one to attend in Lagos in a couple of weeks from now. In fact we have paid for that one already. We also have other personnel that are trained in different aspect of forensics such as Sample Size Analysis, Fraud Investigation and so on because we have units in these areas here in our command. For instance, I have had about 10 different trainings since I got here some fifteen years ago. Police also used to invite us for their trainings, and our national headquarters do send us too. When you are trained it is expected you train other personnel immediately you are back so that they can carry on when you are not around or transferred to other department.

(IDI/NSCDC Ibadan Command/11/08/2021)

The personnel of the anti-corruption graft agency were also unanimous in their opinions and requested that the governments, international and corporate organizations should support in sponsoring their trainings. Except;

We need to be doing training often if one will be useful in this commission and in this unit to be specific. Since our own job is mainly to follow the money and the money is moving with the speed of the internet we also need to be equipped with requisite skills. Criminal that do financial fraud always want to be a step ahead, so for us at the anti-graft agency we also need to be ahead of them but that can only be done through the number of training and qualification that we have. For instance the companies making phones that criminal are using are always coming up with new products with sophisticated applications on it. So for you as a fraud examiner if you are not updated in the knowledge of phone you may not be able to trace the money so you have to keep abreast of the technology. For instance, Apple just launched its iPhone13 pro max now with more sophisticated apps and the boys are already in possession of it. So for you if you wait for the commission to come and train you it may not come until another product with latest technology will be out. So we do train ourselves most of the time simply for us to be in tune with the reality of our job.

(FGD/ EFCC Ibadan Command/11/08/2021)

In furtherance to understanding the challenges of personnel in qualification and training, it was noticed from the responses of the participants that some of them do not know where they can obtain academic qualification in forensic science in Nigeria universities. Some claimed that private universities do collect exorbitant fees, thus they could not afford it. It was also discovered that officers were skeptical in pursuing academic degree since the commission do not usually give them the permission.

To reiterate, this work aims at examining the preparedness for a forensic science enabled crime fighting mechanism among major security agencies that are available in Ibadan. It was rather unfortunate to discover that the traditional modus operandi of forcing information out of the accused/suspect for the purpose of investigation is what is still obtainable among the agencies, especially the police force in Oyo state (Ladapo, 2012). When the tenets of forensic investigation have not been seen in all of the investigations that the security agencies have been carrying out, then there is possibility that all security agencies in Oyo state have been making errors in such trials (NRE, 2017). We can further opine that there would have been more enlightenment had it been that there is a connection between the Ivory Tower and the agencies.

IV. CONCLUSION

The convenient point to conclude on this work should be a basis for further study especially in the field of criminology and forensic science. The conclusion here should

be a new approach or an alternative to fight crime in our contemporary world. The work has been able to identify the weaknesses in the way and manner our security agencies fight crime and has not shy away from the needed paradigm shift. The work concludes that the facility needed for forensic science to be useful in the fight against crime is grossly inadequate. It is also safe to conclude that there are not enough qualified personnel to carry out the forensic service in all the commands visited. This paper also concludes that lack of adequate training in forensic methods, especially for personnel in the forensic and investigation units is a major issue that should be addressed as soon as possible. Training should be made available and accessible. In order words, the level of preparedness to use forensic science in the fight against crime and criminal activities is still very low and poor in Oyo State, Nigeria. Therefore, the paper concludes that the 21st century crime combating in the absence of forensic methods will continue to leave out culprits, have shoddy prosecution and put the innocent in prison.

V. RECOMMENDATION

The following recommendations have been suggested for stakeholders within the security sector.

- That all security personnel should have orientation in the general methods of forensic science. Such orientation would go a long way in conceptualizing what forensic investigation is all about
- The need for special training for security personnel cannot be overemphasized. Training and retraining of personnel in special forensic method would help in speedy dispensation of justice.
- The research also suggests that there is the need for a forensic expert to be part of the first responder team of all the security agencies in the country. This is expected to help the team collect reliable evidence that could help in the finality of events that took place at the scene of crime when such case gets to the trial court.
- There is also the need for an aggressive campaign for forensic science and criminology graduates uptake in all of the security outfits in Nigeria. This will help the graduates put into practice all they have learnt in the ivory tower.
- There is the need for a standard and functioning forensic laboratory in the city of Ibadan. Government, international and private organizations can come to the rescue by building such laboratory or sponsor some aspects of it.
- The disconnection between the Ivory Towers and the security agencies is not helping any of the two. Translational researches from universities offering security courses and cooperation for further studies by security personnel is needed at this time.

CONTRIBUTION TO KNOWLEDGE

The challenges of security agencies in using forensic science are structural. The structure allows for impunity against civilian/citizen. The structure of the agencies which allows for corruption will continue to be a bane to its development let alone the use of forensics in their operations. In order to move forward in the fight against crime in Nigeria and Oyo state in particular, the sincerity of purpose from the governments and the leadership of the agencies cannot be overemphasized.

REFERENCE

- [1] Kalayci, I, Özbek-Yazici, S, & Küpeli, A. 2014. Assesment of the knowledge level of nursing students on forensic nursing . Procedia - Social and Behavioral Sciences Vol 131 pg 130 – 134
- [2] Kiely, T. F. 2001. Forensic evidence: science and the criminal law. CRC Publication Press, London.
- [3] Roncace, S. & Nicosia, U. 2016. "... Every contact leaves a trace..." Locard 1920. Rend. Online soc. Geol, it., suppl. N. 1. al vol. 40 (2016 societa geologica italiana, roma 2016. Geoscience on a changing planet: learning from the past, exploring the future 88. Societa geologica italiana at Napoli.
- [4] Robert, W. (2003). Situating crime prevention: Models, methods and political perspectives. *Crime Prevention Studies*, 15, 1-23
- [5] Siegel, L. J. (2008). *Criminology: The core* (3rd ed.). Belmont, California: Thomas Higher Education.
- [6] Adebayo, A. A. (2013). Social factors affecting effective crime prevention and control in Nigeria. *International Journal of Applied Sociology*, 3(4), 71-75
- [7] Ladapo, O.A. 2012. Effective investigations: a pivot to efficient criminal justice administration: challenges in Nigeria. *African Journal of Criminology and Justice Studies*, Vol.5, No 1&2, Pg 79-94. ISSN 1554-3897
- [8] National Registry Exoneration 2017
- [9] Akumba, B. O., Iorliam, A., Agber, S., Emmanuel Odeh Okube, E. O., & Kwaghtyo, K. D. (2021). Authentication of Video Evidence for Forensic Investigation: A Case of Nigeria DOI: 10.4236/jis.2021.122008.
- [10] Alisigwe, O. J & Oluwafemi, O. M. (2019). The State of Forensic Science in Crime Investigation and Administration of Justice in Nigeria. *International Journal of Scientific & Engineering Research Volume 10, Issue 7, ISSN 2229-5518*
- [11] Anyebe, P.A. (2019) Appraisal of Admissibility of Electronic Evidence in Legal Proceedings in Nigeria. *Journal of Law, Policy and Globalization*, 92, 1-12.
- [12] Byrne, J and Marx, G. (2011). Technological Innovations in Crime Prevention and Policing. A Review of the Research on Implementation and Impact. *Cahiers Politie Studies Jaargang* pg 17 – 40. ISBN 978-90-466-0412-0
- [13] Malkoc, E. (2017). Forensic Science and Situational Crime Prevention: Is there a connection?
- [14] McDonald, K. M. (2015). DNA Forensic Testing and Use of DNA Rape Kits in Cases of Rape and Sexual Assault
- [15] National Institute of Justice, (2014). Extending the Time to Collect DNA in Sexual Assault Cases. National Institute of Justice. Available at: <http://www.nij.gov/journals/267/Pages/extending.aspx>. Accessed 15/10/2019
- [16] Nguyen, X.H. and Hu, Y. (2020) VIFFD—A Dataset for Detecting Video Inter-Frame Forgeries. *Vision 6*, Mendeley Data.
- [17] Oji, I. S. (2019). Offence of murder: a critical appraisal. *Justice Journal*, 2nd edition
- [18] Suresh, R. (2017). Forensic investigation of unusual firearms, ballistics and medico-legal evidence. *Journal of Forensic Research and Criminology Int J* 5(4): 00160. DOI: [10.15406/frcij.2017.05.00160](https://doi.org/10.15406/frcij.2017.05.00160)
- [19] Sitara, K. and Mehtre, B.M. (2018) Detection of Inter-Frame Forgeries in Digital Videos. *Forensic Science International*, 289, 186-206. <https://doi.org/10.1016/j.forsciint.2018.04.056>
- [20] The Royal Society. (2021). *Understanding ballistics: a primer for courts*. London. ISBN: 978-1-78252-485-4
- [21] Wyatt, (2014) *Practising Crime Scene Investigation: Trace and Contamination in Routine Work Policing, Policing and Society*