Bridging Methodological Divides: A Review of Survey and Experimental Methods in Socio-Criminological Studies

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Abstract- ***This review paper was centered on bridging the divides associated with survey and experimental research methods. The content was founded on secondary information from journals, periodicals, newspapers, research reports, and public documents, which were subjected to systematic content analysis and a framework grounded on triangulation theory. The thesis of this paper is that strategically integrating survey and experimental methods would help researchers leverage the benefits of both techniques, leading to more robust and insightful findings. The study recommended bridging the gap by recognizing the strong points of both methods and combining them through survey-embedded experiments, mixed methods design, and complementary strengths and synergistic potential to produce theoretically and empirically coherent findings and help policymakers address complex socio-criminological problems more effectively.***

Indexed Terms- ***Bridging, Experimental Research, Socio-criminological, and Survey Research.***

I. INTRODUCTION

Crime has reached unprecedented levels in the last six decades, manifested in the frequency, sophistication, and complex context under which white collar, organized, cyber-enabled, violent, and victimless crimes are perpetrated across the six geo-political zones in Nigeria (Aderounmu, 2021; Osawe, 2015). The complex trend is inextricably linked to internationalization of capitalism, breakthroughs in ICT, unchecked individualistic proclivities, worldwide prevalence of deadly ailments, and globalization of violence (Trahan and Stewart, 2013; Lanier and Henry, 2010). The endemic nature of the crimes and their devastating impact on lives, property, and national life have raised public concerns about the efficacy and appropriateness of current socio-criminological research methods in providing effective counter policies. Approaches to investigating socio-criminal behaviors must align with the reality of crime in the present industrial age.

Despite abundance of many methods for socio-criminological researchers such as longitudinal techniques, observation/case studies, life stories, experimental design, statistical methods, ecological methods, cohort study, and analysis of records (NOUN, 2010), most works in criminology tend to be deeply enmeshed in survey research given its successful application in the development of National Crime Victimization Survey (NCVS) across many countries (Lee, 2025). This paper makes a case for bridging methodological divides in socio-criminological studies through the integration of survey and experimental methods to gain a more comprehensive understanding of crime, criminal behavior, and criminal justice administration.

Survey and experimental methods differ in approach, instruments, and procedures for generating outcomes. Nonetheless, both research methods have long been applied separately as key research tools in the social sciences, including criminology, each addressing different types of research questions and contributing uniquely to the understanding of human behavior, institutions, and social dynamics. Each has its distinct strong points and limitations, with implications for use in conceptualizing social phenomena. A critical review of both methods offers insights into how they

might bridge methodological divides and improve the validity and reliability of socio-criminological research outcomes. Bridging the methodological divide between survey and experimental research involves understanding their distinct strengths and weaknesses and strategically combining them to achieve a more comprehensive understanding of a research problem. While survey research stands tall in exploring relationships between variables in a real-world situation, experimental research is reputed to have an edge in establishing causal relationships under controlled conditions. By strategically integrating these methods, researchers can leverage the benefits of both, leading to more robust and insightful findings.

II. UNDERSTANDING SURVEY METHODS

Survey research is the systematic collection of data from a sample of individuals to describe or explain a larger population's attitudes, behaviors, characteristics, or experiences. This method commonly uses structured questionnaires or face-to-face interviews, by telephone, online, or through postal systems, and excels at gathering broad descriptive data (Jackson, 2024; Bryman, 2016; NOUN, 2010; Ogionwo, 2004). Applied to socio-criminological studies, survey research involves systematically collecting data from individuals through standardized questionnaires or interviews to understand their opinions, experiences, behaviors, and knowledge related to crime, victimization, and the criminal justice system. This method is widely used to explore various aspects of crime, such as the incidence, distribution, and interrelationships of variables within a population.

Survey research facilitates understanding of criminal behavior and justice provision, offering insights into the prevalence and profile of offenders, and patterns of victimization and roles of offenders. For example, A survey on the impact of neighborhood safety on residents' perceptions of crime might use structured questions to measure fear of crime, satisfaction with police, and perceived crime rates. Open-ended questions could explore residents' experiences with crime and safety concerns in a more detailed manner. By obtaining information from a representative sample of a population, survey research could assist in identifying trends and patterns of victimization, shape crime prevention and management policies, assess effectiveness of justice system service delivery, public perception of crime policing, and provide a more objective and accurate understanding surrounding criminality and justice provision (Lee, 2025).

Table 1: Summary of Survey Research Method
Purpose FunctionExample

Purpose	Function	Example
Describe population characteristics	Provides a snapshot of vital demographic or social traits	NDHS survey on maternal and child health in Nigeria
Explore relationships between variables	Test correlations or associations between social factors	Relationship between income and health care access
Track changes	Monitors trends or the impact of events and interventions	Afrobarometer surveys over election cycles
Provide evidence for policy/theory	Informs policy-making and tests theoretical	Using a voter survey to test theories of political behavior

III. SURVEYS IN SOCIO-CRIMINOLOGICAL STUDIES

Socio-criminological application of survey enables scholars, decision makers, and security practitioners to systematically collect data that can be analyzed to achieve a wide range of objectives

First, surveys are particularly effective in describing the demographic, social, economic, or behavioral characteristics of a population at a specific point in time. This includes variables such as age, gender, income, education, religion, employment status, and political affiliation. In other words, survey research answers the “what,” “who,” and “how many” questions and also shows a photograph of societal

conditions or public opinions. For example, CLEEN Foundation conducts national crime victimization surveys to understand the extent, trends, and patterns of crime victimization, as well as citizens' perceptions of security, policing, and governance, informing policy and strategy development in Nigeria (Adeyemo, 2022; CLEEN Foundation, 2018).

Second, surveys are used in the determination of associations or correlations between two or more variables, thereby helping to explain factors that influence human behavior or social outcomes. Apart from descriptive potential, surveys could be applied to test hypotheses about relationships among variables and help identify real patterns or predictors despite their deficit in validating causation (Jackson, 2024; Fowler, 2014). For instance, eco-criminologist may use survey data to determine a connection between demographic variables and armed robbery, discovering that the frequency and prevalence of crime within societies are tied to joblessness, urbanization, and the effectiveness of policing.

Furthermore, surveys could be utilized to capture changes in criminal behavior of persons or groups, or crime patterns through longitudinal surveys. By comparing data over time, researchers can assess trends, identify risk factors, cycles, or the impact of events on socio-criminal behavior, thereby facilitating the assessment of intervention effectiveness (Nguyen and Loughran, 2014; De Vaus, 2013). Ybarra, et al, (2023) and Huesmann et al. (2003), revealed high arrest rates among certain populations and the continuity of criminal careers; exposure to terror related media content during children early development may be a significant driver of felonious behavior at adolescent stage and early adulthood despite existence of other risk variables.

Third, survey research is a vital source of empirical evidence that shapes the direction of policy instruments, determines social interventions, and validates theoretical postulations. Many public administrators, including policing policy designers, non-governmental movements, and global developmental agencies, depend on survey data to design, execute, and evaluate policies. Socio-criminological scholars deploy surveys to operationalize abstract theoretical concepts (community policing, surveillance, physical security, probation, recidivism, etc) and test them empirically. For example, an international rights movement may use survey data on human trafficking to develop targeted enlightenment programs. Furthermore, criminologists might test rational choice theory by analyzing prison inmate surveys to ascertain if criminal behavior is based on evaluation of costs and benefits or impulse. Surveys have been rated as a highly effective method in the behavioral sciences for testing theoretical assumptions in a large population (Taherdoost, 2021; Babbie, 2020).

Although survey methods stand tall in the social sciences due to their breadth and generalizability, descriptive power, anonymity of respondents, and amenability to statistical and multivariate analysis (Fowler, 2014; NOUN, 2010), survey methods are accompanied by significant limitations that may affect the credibility and interpretability of findings. These weaknesses relate particularly to issues of causality, standardization, response rate and validity, limited control, ethical concerns, and instrument design (Goodfellow, 2023; NOUN, 2010).

First, surveys by design do not entail experiments, which reduces their capacity to establish causal relationships between variables. Most surveys utilize cross-sectional designs that obtain data at a single point in time, thereby creating room for alternative explanations and rendering the observed relationship between variables spurious. For instance, a survey may reveal a positive correlation between drug addiction and crime participation, but without experimental manipulation or longitudinal data, it is impossible to determine whether drug addiction leads to crime participation or whether both are influenced by other socio-economic and political factors such as poverty, family background, psychological defects or unemployment (Bryman, 2016). Simpson (2024), Kim and Steiner (2016), argue that drawing causal conclusions, or causal inference, requires specific methodological controls that are typically absent in survey designs. These controls include randomization, manipulation of the independent variable, and the presence of a control group. Absence of these elements makes it difficult to isolate the effect of a specific intervention or

variable, making it harder to confidently establish a cause-and-effect. Hence, while surveys are effective for hypothesis generation, they are limited in testing causal hypotheses.

Second, a key weakness of surveys is their reliance on self-reported data, which is prone to various forms of response bias. They are simply an indirect measure of people's attitudes and beliefs since the researcher learns what people say they do, not what they do. Respondents may provide incorrect or misleading responses due to various forms of biases such as social desirability bias, recall bias, acquiescence bias, and deliberate misreporting. For example, surveys on secret confraternities or sexual commerce may yield underestimation or poor reporting of data due to cultural norms or fear of stigmatization, thus diminishing the accuracy of outcomes (Kothari, 2011; NOUN, 2010; Tourangeau & Yan, 2007). These biases introduce systematic error into the dataset, which can distort findings and reduce the overall internal validity of the research (McCombes, 2023; Steiner, 2016; Fowler, 2014).

Third, the quality and interpretability of survey data are reliant on the design of the research instrument. A poorly crafted questionnaire instrument may result in invalid or unreliable data. Furthermore, vaguely worded questions that confuse respondents, double-edged items that ask about more than one issue simultaneously, leading questions that suggest a preferred answer, and a lack of cultural or contextual sensitivity, especially in cross-national or multiethnic studies, are common with surveys (NOUN, 2010). For example, the question "Do you agree that the government should raise taxes on tobacco companies to finance education and medical care? taxes to fund education and medical care?" subsumes two distinct policies in one, presenting a headache in the interpretation of responses. De Vaus (2013) noted that rigorous pretesting, piloting, and psychometric evaluation are essential to ensuring the reliability (consistency) and validity (accuracy) of survey instruments. Failure to do so may compromise the generalizability and credibility of research conclusions.

Last, when surveys are conducted by third parties, such as through online platforms or by telephone interviewers, researchers may have limited control over how the survey is administered (Goodfellow, 2023). For example, online surveys may suffer from issues like respondent fatigue or incomplete answers. In telephone surveys, interviewers may inadvertently influence responses through tone of voice or leading questions. These factors may skew the data and make it difficult to arrive at a meaningful conclusion.

IV. EXPERIMENTAL RESEARCH METHODS

Experimental techniques have long dominated the process of scientific enquiry, particularly the physical sciences; however, experiments are now sophisticated and applied diversely in different contexts, extending to the behavioral science, including the study of crime and justice provision (Simpson, 2024). Rather than testing the impact of salt on raw iron, researchers can now assess the effect of a policing tool on crime prevalence (Braga et al., 2019).

The diversity of experimental methods is reflected in the forms as applied in socio-criminological investigations, such as laboratory experiments, field experiments, and quasi-experiments, each distinctly presenting strong points, deficits, and implications. In the behavioral sciences, particularly studies of crime and justice administration, experimental method entails systematic manipulation of one or multiple independent variables under carefully controlled situations to determine their causal effect on dependent variables (Simpson, 2024; Blomberg et al., 2013). Through random assignment and control over experimental conditions, this design enhances internal validity and allows for robust inferences about cause-and-effect relationships, making it particularly valuable in testing theoretical propositions and evaluating policy interventions (Shadish, Cook, & Campbell, 2002). Causality is established by the researcher's rigorous pursuit of three principles, namely empirical relationship, temporal order, and absence of falsity, which are not easy to attain in socio-criminological studies due to strict conditions for demonstrating these principles (Simpson, 2024).

Demonstrating the use of laboratory experiments in socio-criminological studies, Simpson (2020),

examined the impacts of law enforcement personnel's outlook on participants' perception of police under the guise of a memory investigation. To experiment, the researcher offered respondents with carefully controlled representation of police personnel, of different sex and color, in different styles and fashion in a randomized sequence, and demanded participants to score such personnel based on some dependent factors, like aggressiveness, approachability, and friendliness. Not only did all participants experience the same research procedures in the same physical space, as confirmed by the attending research assistant, but randomization and mild deception were both embedded within the study design to help rule out spuriousness. Causality is established by the researcher's rigorous pursuit of three principles, namely empirical relationship, temporal order, and absence of falsity, which are not easy to attain in socio-criminological studies due to strict conditions for demonstrating these principles (Simpson, 2024).

A captivating alternative to laboratory tests that is popular in criminology is a field experiment conducted in a natural environment, enabling experimentation and hypothesis testing of social phenomena (Dezember et al., 2021). Field experiments are often carried out in conjunction with security experts, like police units, particularly in crime and justice studies. This synergy is important because the type of topics that could be subjected to field experiments requires third-party involvement in manipulating the variables of interest, be it police reaction, judicial processes, or prison management. In a related development, Wheeler and Phillips (2018) examined the impacts of deploying digital license plate readers at traffic checkpoints on crime, calls for service, and road accidents in several crime epicenters identified by the police. Included in the design is the authors' propensity score matching to match each "treated" epicenter (i.e., experimental) with an equivalent "untreated" location (i.e., control) before then comparing variation in the result.

Table 2: Survey vs Experiment Methods

Survey	Experiment
"To see"	"To attempt" or "to experience"
Data derived from informants	Information derived from the change in behaviour as influenced by the independent variable
Often deals with secondary data	Concerned with primary data
Deployed in descriptive studies	Used in experimental studies
Obtains data from large samples	Often obtains data from small samples
Do not need laboratory equipment	Requires laboratory equipment
Associated with social sciences	Associated with natural and physical sciences
Employed in laboratory research	Conducted field research
Important in correlational analysis	Vital in causal analysis
May have difficulty regarding respondents' genuine answers	Faces the challenge of verifying whether the change is indeed induced by the independent variable
Expensive	Less expensive
Can cover a wider range of topics	Covers more specific topics
Randomization is very important	May not entail randomization

Notwithstanding numerous advantages, such as replicability, causal inference, high internal validity, statistical accuracy, and potential for hypothesis testing and theory development (Simpson, 2024; Open Science Collaboration, 2015; Shadish, Cook, & Campbell, 2002), experimental methods have inherent weaknesses, particularly about application in complex socio-criminological contexts.

First, laboratory experiments may include an artificial environment that may not reflect naturalistic settings. This compromises ecological validity, limiting the ability to generalize findings to real-world contexts (Banaji & Crowder, 1989). For example, experiments

on group conflict conducted in laboratory simulations may not fully capture the intricacies of ethnic tensions or political violence in real societies.

Second, experimental manipulation of variables, particularly in sensitive areas like drug abuse, commercial sex, health, or inequality, may present ethical confusion or be logistically infeasible. Ethical procedures like informed consent, deception, and harm reduction must be strictly followed (Israel & Hay, 2006). An investigator may find it ethically difficult to control a variable like childhood molestation or drug abuse to observe its impact on adult criminal behavior.

Third, experiments often reduce complex human and social phenomena into narrowly defined variables, which may remove important contextual nuances. This reductionist approach often results in simplistic conclusions. For instance, measuring the cost of victimization solely by property loss ignores other components such as psychological trauma, medical bills, and the cost of seeking justice. In addition, most experiments are conducted over short durations, making them inappropriate for longitudinal investigations or generational processes. Unlike longitudinal surveys or ethnographic research, experiments may miss delayed or cumulative outcomes.

Fourthly, experimental studies often use non-probability samples such as security personnel or volunteer police officers, and court judges. This convenience sampling makes it difficult to apply outcomes to larger populations (Henrich, Heine, & Norenzayan, 2010).

V. TRIANGULATION THEORY

This paper adopted the triangulation theory, which in the behavioral sciences is associated with Webb, Campbell, Schwartz, and Sechrest (1966). The theory is hinged on the idea that multiple approaches to a research problem can help researchers zero in on the responses or data sought. Triangulation theory assumes that using many sources, methods, or perspectives to investigate research questions would enhance the credibility and validity of results (Machum, 2022).

Triangulation could take four forms, namely data triangulation, methodological triangulation, investigator triangulation, and theory triangulation (Denzin, 2015). Data Triangulation entails using data from different sources to examine a problem. This could include data from interviews, observations, documents, surveys, or historical records. Methodological triangulation utilizes various research methods, such as qualitative and quantitative methods, to study the same phenomenon. Investigator triangulation encapsulates multiple observers, coders, or data analysts to help increase the credibility of observations. Investigator triangulation encapsulates multiple observers, coders, or data analysts to help increase the credibility of observations. Theory triangulation uses multiple theoretical perspectives or frameworks to interpret the data, providing a more sound and holistic understanding of the research question (Vivek, Nanthagopan, and Piriyatharshan, 2023; Machum, 2022).

Proponents maintain that using triangulation in research would increase credibility and validity of findings, comprehensive understanding, cross-check findings, and improve generalizability. Applied to the current study, the triangulation of surveys and experimental methods in socio-criminological research has the potential of producing theoretically and empirically coherent findings and helping policymakers address complex socio-criminological problems more effectively.

VI. BRIDGING THE METHODOLOGICAL DIVIDES BETWEEN SURVEY AND EXPERIMENT

The history of socio-criminological research indicates a preponderance of qualitative and quantitative approaches, with many investigators methodologically pigeonholing themselves by limiting themselves to a single approach. However, the landscape of crime and justice research has been bridged by the progressive gravitation towards a combined rather than a mono-research framework (Gil, 2019). Some research problems require the application of a mono-method research technique. In these contexts, using a combined approach is unlikely to contribute value to research beyond what a single

method may offer. As fact of fact, most research questions are better addressed using a combination of methods (Trehan and Stewart, 2013). This paper advocates bridging the divide between survey and experiment in socio-criminological research.

By bridging the divides through integrative approach that draws on the strong points of each methodology while mitigating their separate weaknesses, researchers may be able to generate theoretically and empirically coherent findings, and help policy makers address complex socio-criminological concerns with greater validity and reliability.

Table 3: Similarities and Differences between Survey and Experimental Design

Features	Survey design	Experimental design
Similarities		
Quantifiable	Yes	Yes
Scales used	Nominal, interval, ratio	Nominal, interval, ratio
subjects	People and animals	People and animals
DV	Measured	Measured
IV	Measured	Manipulated
Confounders	Measured or controlled	Measured, controlled, or randomized
Average	Mean, median, mode, and percent	Mean, median, mode, and percent
Dispersion	Std Dev, range	Std, Dev, range
Association	Correlation, odds ratio	Effect size
inferential	T-test, Mann-Whitney, Chi Squared, Fisher	T-test, Mann-Whitney, Chi Squared, Fisher
Inference	May be spurious	causal
Ethical standards	Apply	Apply
Data form	Field archive, field and trace	Field archive, field and trace
Differences		
Purpose	Describe characteristics, opinions, or behaviors	Establish causal and effect relationships
Manipulation of variables	No manipulation	Manipulation of the independent variable
Focus	Descriptive	Inferential
Data collection	Questionnaire, interviews,	Controlled manipulation of variables
Example	Public opinion pool	Clinical trials

Table 3 above shows the points of unity and departure between the survey and experimental methods.

Some of the ways to bridge the divides in socio-criminological are explained below.

First, there are survey-embedded experiments, also called survey experiments, entailing randomized treatments within large-scale survey instruments to test causal hypotheses within representative populations. This hybrid strategy combines the causal leverage of experiments with the generalizability of surveys, thereby enhancing external validity while retaining experimental control (Mutz, 2011). For example, political scientists have used survey experiments to test framing effects on public support for immigration policies by randomly varying the wording of policy questions (Sniderman & Grob, 1996).

Second, is mixed method design, particularly through sequential (e.g., survey followed by experiment) or concurrent designs, that permits the triangulation use of multiple data sources or methods to examine a research question from various perspectives (Creswell & Plano Clark, 2017). This enhances both construct validity and reliability by corroborating findings across methodological paradigms. For instance, research on the effectiveness of neighborhood watch programs, the impact of police

interventions on crime rates, or the effects of specific criminal justice policies could benefit from combining survey and experimental methods.

Third, surveys and experiments offer complementary epistemological contributions. surveys capture population-level patterns, attitudes, and demographic associations, while experiments isolate causal mechanisms in controlled conditions. Their integration supports methodological pluralism and the development of more holistic models of social phenomena (Johnson & Onwuegbuzie, 2004). In development studies, combining household surveys with randomized trials of cash transfer programs provides both macro-level insights and micro-level causal evidence on poverty alleviation strategies (Banerjee & Duflo, 2011).

VII. ADDRESSING POTENTIAL CONFLICTS

This paper advocates for bridging the methodological divide between survey and experiment, however, socio-criminological researchers need to carefully consider the ethical implications of using experimental methods, ensure the validity and reliability of their data, and address potential biases that may arise from using mixed methods.

In addition, researchers should give attention to how sample selection for surveys and experiments might impact the generalizability of findings. They should ensure that the sample for both methods is representative of the population of interest.

Finally, researchers should analyze data with the most appropriate statistical techniques for both survey and experimental data, and consider how to integrate the results from both methods.

CONCLUSION

In conclusion, both survey and experimental while distinct in design and epistemology, serve as empirically reinforcing pillars for empirical studies in the social sciences, including criminology and criminal justice administration. Surveys provide insights into the prevalence, characteristics, and societal impact of crime, while experiments allow researchers to test the effectiveness of interventions and policies, ultimately contributing to a more comprehensive understanding of crime and its causes. In addition, bridging the methodological divide in socio-criminological research involves recognizing the strengths of both survey and experimental methods, avoiding methodological rigidity, and using a combination of approaches to address complex research questions with greater validity and reliability

REFERENCES

[1] Aderounmu, B. (2021, December 16). Factors responsible for the increasing crime rate in Nigeria. Business day. http//www.businessday.ng

[2] Adeyemo, D.D. (2022). Recognizing the rights of victims in the criminal justice system. International journal of comparative law and legal philosophy, 3 (3): 64 -72.

[3] Babbie, E. R. (2020). The practice of social research (15th ed.). Cengage Learning.

[4] Banaji, M. R., & Crowder, R. G. (1989). The bankruptcy of everyday memory. American Psychologist, 44 (9): 1185–1193. https://doi.org/10.1037/0003-066X.44.9.1185

[5] Banerjee, A. V., & Duflo, E. (2011). Poor economics: A radical rethinking of the way to fight global poverty. Public Affairs.

[6] Blomberg, T. G., Mestre, J., & Mann, K. (2013). Seeking causality in a world of contingency: Criminology, research, and public policy. Criminology & Public Policy, 12(4): 571–584.

[7] Braga, A. A., Welsh, B. C., Papachristos, A. V., Schnell, C., & Grossman, L. (2014). The growth of randomized experiments in policing: The vital few and the salience of mentoring. Journal of Experimental Criminology, 10 (1): 1–28.

[8] Bryman, A. (2016). Social research methods (5th ed.). Oxford University Press.

[9] CLEEN Foundation. (2018, May 28). National Survey. https://www.cleen.org Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed methods research (3rd ed.). SAGE Publications.

[10] Dezember, A., Stoltz, M., Marmolejo, L., Kanewske, L. C., Feingold, K. D., Wire, S.,

Duhaime, L., & Maupin, C. (2021). The lack of experimental research in criminology—Evidence from Criminology and Justice Quarterly. Journal of Experimental Criminology, 17(4), 677–712.

[11] Denzin, N. K. (2015). Triangulation. Ritzer, G. (ed). Blackwell Encyclopedia of Sociology. Hobken: John Wiley & Sons De Vaus, D. A. (2013). Surveys in social research (6th ed.). Routledge.

[12] Fowler, F. J. (2014). Survey research methods (5th ed.). SAGE Publications.

[13] PROGRESA's control randomized experiment. American Economic Review, 94(2), 336–341. https://doi.org/10.1257/0002828041302101

[14] Gil, D. B. (2019). Small area estimation in criminological research: theory, methods, and applications. PhD thesis submitted to the University of Manchester. https://www.researchgate.net

[15] Goodfellow, L. T. (2023). An overview of survey research. Respir Care, 68 (9):1309-1313Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? Behavioral and Brain Sciences, 33(2–3): 61–135. https://doi.org/10.1017/S0140525X0999152X

[16] Huesmann, L. R., Moise-Titus, J., Podolski, C., & Ero, L. D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977–1992. Developmental psychology,39 (2): 201 -2021.

[17] Israel, M., & Hay, I. (2006). Research ethics for social scientists. SAGE Publications.

[18] Jackson, O. R. (2024). Basic research and methods, Nasarawa: Olumole printing press Evaluation of 37 AIDS prevention programs: A critical review. Journal of Consulting and Clinical Psychology, 69(4), 648–660. https://doi.org/10.1037/0022-006X.69.4.648

[19] Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher, 33(7): 14–26. https://doi.org/10.3102/0013189X033007014

[20] Kim Y, Steiner P. (2016). Quasi-experimental designs for causal inference. Educ Psychol, 51 (3-4):395-405. doi: 10.1080/00461520.2016.1207177.

[21] Kothari, C.R. (2011). Research Methodology, New Age International Publishers Kunnuji, M. (2016). Population density and armed robbery in Nigeria: An analysis of variation across states. African Journal of Criminology and Justice Studies: 9(1), 62-73.

[22] Lee, S. (2025, May 25). Survey research in criminology: A comprehensive guide to methods and applications. https://www.numberanalytics.com/blog/survey-research-in-criminology

[23] Machum, S. (2022). Triangulation. https://www.ecampusontario.pressbooks.pub/showingtheory

[24] McCombes, S. (2023, June 22). Sampling methods/types, techniques, and examples. Scribbr. https//www.scribbr.com

[25] Mutz, D. C. (2011). Population-based survey experiments. Princeton University Press

[26] Nguyen, H., Loughran, T.A. (2014). Longitudinal Studies in Criminology. In: Bruinsma, G., Weisburd, D. (eds) Encyclopedia of Criminology and Criminal Justice. Springer, New York, NY NOUN. (2010). Contemporary issues in criminology and security studies. Course guide CSS 775. Lagos: National Open University of Nigeria

[27] Ogionwo, W. (2004). Aid to Classroom Notes on Social Research: Port Harcourt: Atata and Sons Enterprises.

[28] Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. Science, 349 (6251), aac4716. https://doi.org/10.1126/science.aac4716

[29] Osawe, C. O. (2015). Increase Wave of Violent Crime and Insecurity: A Threat to Socio-Economic Development in Nigeria. Journal of humanities and social sciences, 20 (1): 123-133.

[30] Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Experimental and quasi-experimental designs for generalized causal inference. Houghton Mifflin.

[31] Sniderman, P. M., & Grob, D. B. (1996). Innovations in experimental design in attitude surveys.

[32] Annual Review of Sociology, 22, 377–399. https://doi.org/10.1146/annurev.soc.22.1.377

[33] Taherdost, H. (2021). Data Collection Methods and Tools for Research: A Step-by-Step Guide to Choosing Data Collection Techniques for Academic and Business Research Projects. International Journal of Academic Management Research, 10 (10): 10 -38.

[34] Simpson, R. (2024). Experimental Methods in Criminology. Fraser University https://doi.org/10.1093/acrefore/9780190264079.013.841

[35] Simpson, R. (2020). Officer appearance and perceptions of police: Accoutrements as signals of intent. Policing: A Journal of Policy and Practice, 14(1), 243–257

[36] Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. Psychological Bulletin, 133(5): 859–883. https://doi.org/10.1037/0033-2909.133.5.859

[37] Trahan, A., & Stewart, D. N. (2023). Towards a pragmatic framework for mixed-methods research in criminal justice and criminology. Applied psychology in criminal justice, 9 (1): 59-74.

[38] Vivek, R., Nanthagopan, Y., and Piriyatharshan, S. (2023). Beyond methods: theoretical underpinnings of triangulation in quantitative and multi-method studies. SEEU Review, 18 (2): 105 – 122

[39] Wheeler, A. P., & Phillips, S. W. (2018). A quasi-experimental evaluation using roadblocks and automatic license plate readers to reduce crime in Buffalo, NY. Security Journal, 31(1), 190–207