

FORENSIC ACCOUNTING SOFTWARE COMPETENCIES AND ACCOUNTING STUDENTS EFFECTIVE FRAUD DETENTION AND PREVENTION IN A TECHNOLOGICAL ADVANCED SOCIETY IN RIVERS STATE UNIVERSITIES

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Abstract

This study focused on determining the relationship between forensic accounting software competencies and accounting students' effective fraud detention and prevention in a technologically advanced society in Rivers State Universities. The study was guided by two specific objectives, two research questions and two hypotheses. The study adopted a correlational design. The population of the study encompassed 284 final year accounting students in Rivers State Universities in the 2024/2025 academic session. Given the relative manageability of the population, sampling was not required. Data collection was conducted using a researchers-developed questionnaire and it was validated by three experts from Rivers State University. The reliability of the instrument was determined using the Pearson Product Moment Correlation Coefficient (PPMCC), which yielded a coefficient of 0.88 for the forensic accounting software competencies Questionnaire (FASCQ) and 0.82 for the accounting students effective fraud detention and prevention in a technological advanced society Questionnaire (ASEFDPTASQ). Out of the 284 questionnaires administered, 266 copies were retrieved and used for data analysis. PPMCC was used to answer the research questions and test the hypotheses at 0.05 level of significance. The study found out that a positive relationship exists between ProDiscover, sleuth kit (+Autopsy) forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society. Based on the findings, the study recommended that higher institutions should integrate ProDiscover, sleuth kit (+Autopsy) forensic

accounting software training modules into their accounting and forensic auditing curricula. This should include practical, hands-on sessions and certification opportunities to ensure students not only understand the theoretical aspects but also gain real-world investigative experience using the software.

Keywords: Forensic Accounting Software Competencies, Accounting Students, Prodiscover, Sleuth kit (+Autopsy), Effective Fraud Detection and Prevention

Introduction

The concept of forensic accounting has emerged over the years. Forensic accounting software, like FraudFindr, prodiscover, sleuth utilizes powerful tools to help detect financial fraud and suspicious activity, making investigations faster and more accessible. This software can be used by both investigators and individuals to identify potential fraud and build custom reports, with the goal of efficiently investigating and resolving cases. Forensic Accounting Software is about specialized digital tools or programmes used by forensic accountants to investigate, analyze, and detect financial fraud, embezzlement, or other irregularities in financial data. According to Gupta, (2022) Kautaliya was the economist who had discovered the methods of detecting frauds known today as forensic accounting, that Forensic Accounting is basically the application of accounting knowledge, principles, methods, interpersonal skills and analytical skills to look beyond the numbers to detect the various offences and frauds in the books of accounts. Forensic accounting is the functional area of accountancy that analyze actual or anticipated disputes, fraudulent activities or litigation in an organization. Forensic means "suitable for use in a court of law", Forensic accountants, also referred to as forensic auditors or investigative auditors specialize in insurance claims, personal injury claims, and fraud, construction, or royalty audits. It resorts to accounting, auditing, and analytical skills to conduct an inspection into a company's financial statements (Gupta, 2022).

Forensic accounting blends auditing, accounting, and investigatory skills to assess financial documents of an organization or institution. Accountants often review accounting systems and practices related to criminal and legal investigations. The field is a branch of general accounting that deal with audit and investigation of fraudulent claims. It takes a holistic view of financial statements and traces the movement of money in order to understand a particular situation. Which involves meticulous record-keeping and often testimony in court as Accountants adjust their methods and goals for each case. Bolgna and Linquist in Gupta (2022) defined the Forensic Accounting as the application of financial skills and an investigative mentality to unresolved issues. Forensic Accountants assess a company's true worth during a merger and ensure that purchaser is acquainted with the target firm's financial position. Bassey and Ahonkhai (2017)

stated that forensic accounting takes into cognisance the principles of accounting, investigative and legal procedures for tackling fraud. As a fraud mitigating tool, forensic accounting can detect both internal and external fraud schemes.

Digital forensics is also known as forensic accounting software which is a process of preservation, identification, extraction, and documentation of computer evidence that can be used by the court of law. It is a science of finding evidence from digital media like a computer, mobile phone, server, or network. It helps the forensic team to analyze, inspect, identify, and preserve the digital evidence residing on various types of electronic devices. Forensic accounting software or Digital forensic is a process of preservation, identification, extraction, and documentation of computer evidence which can be used by the court of law. There are many tools that help to make this process simple and easy. These applications provide complete reports that can be used for legal procedures. Some of the best forensic accounting softwares are; Sleuth Kit (+Autopsy), ProDiscover, CAINE, Google takeout convertor, PALADIN, FTK Imager, X-Ways etc. (Williams, 2023).

ProDiscover forensic accounting software is a computer security app that allows you to locate all the data on a computer disk. It can protect evidence and create quality reports for the use of legal procedures. This tool allows you to extract EXIF (Exchangeable Image File Format). ProDiscover Forensics is a powerful computer security tool that enables law enforcement professionals to find all the data on a computer disk while protecting evidence and creating evidentiary quality reports for use in legal proceedings. ProDiscover is a disk forensics system which provides a host of features to capture and analyse disks. The product supports a wide variety of Windows, Linux and Mac file systems (Prajakta, 2018). ProDiscover helps in efficiently uncovering files and data of interest. Wizards, dashboards and timeline views help in speedily discovering vital information. Investigators are provided with a wide range of tools and integrated viewers to explore the evidence disks and extract artifacts relevant to the investigation. . The product suite is used in more than 70 countries in various high profile and complex investigations involving cybercrime (ProDiscover.com).

Sleuth Kit (+Autopsy) is a Windows based utility tool that makes forensic analysis of computer systems easier. This tool allows you to examine your hard drive, software and smartphone and it consist of features as follows: its allow you to identify activity using a graphical interface effectively, provides analysis for emails, group files by their type to find all documents or images, It displays a thumbnail of images to quick view pictures, can tag files with the arbitrary tag names, Sleuth Kit enables you to extract data from call logs, SMS, contacts, helps you to flag files and folders based on path and name (Akeke & Atah, 2023). Autopsy is a digital forensics platform and graphical interface to [The Sleuth Kit®](#) and other digital forensics tools. It is used by law enforcement, military, and corporate examiners to investigate what happened on a computer. Autopsy is a digital forensics platform and graphical interface to [The Sleuth Kit®](#) and other digital forensics tools. It is used by law enforcement, military, and corporate examiners to investigate

what happened on a computer. According to Carrier, (2014) The Sleuth Kit is an open source forensic toolkit for analysing Microsoft and UNIX file systems and disk images. The Sleuth Kit enables investigators to identify and recover evidence from images acquired during incident response or from live systems. Fraud is a scourge that has severely impacted Nigeria's banking industry and the economy as a whole.

Fraud can occur in various forms across different sectors, including finance, tertiary institutions, insurance, retail, and more. Fraud is a calculated act that involves deception, characterized by intentional dishonesty or willful misrepresentation of material facts to gain financial value or advantage from a position of authority or trust. A fraudulent behaviour leads to losses for the deceived individual or organization. With the global advancement of technology, the business landscape especially in institutions, organizations and banking has transformed significantly, increasing reliance on electronic mediums. This shift has altered the nature of fraud and fraudulent practices, necessitating timely and professional approaches to mitigate risks and losses associated with these activities. The nature of fraud and fraudulent practices has also changed and requires a timely and professional approach to avoid the inherent risk and losses associated with fraud. Fraud has become a big problem for individuals, corporations, and governments alike in today's quickly expanding technological ecosystem (Othman, Nordin & Sadiq, 2020).

Fraud is a significant threat that can have severe consequences for individuals and organizations alike. Understanding its nature, types, and potential impacts is essential for developing effective prevention and detection strategies, by fostering a culture of integrity and vigilance, organizations can better protect themselves against the risks associated with fraud. Fraud detection and prevention is the process of identifying suspicious transactions in the banking industry and preventing them from inflicting financial or reputational harm to the clients or other financial institutions (FI). As online and mobile banking grows, more prevalent and financial institutions continue to digitize, it will become even more critical to have a solid fraud protection plan. According to Abdulrahman (2019), fraud prevention is the process of recognizing and evaluating anomalous patterns, activities, or behaviors in financial transactions, systems, or processes to detect possible cases of fraud or unauthorized activity. In a similar vein, it is composed of internal controls related to rules, processes, and systems put in place within a company. to ensure accurate financial reporting, protect assets, and prevent fraud and misappropriation of resources (Kaur, Sood & Grima, 2022).

Fraud prevention is a continuing and dynamic process that necessitates ongoing surveillance, adaptation, and collaboration among various stakeholders in order to reduce the impact of fraudulent activities and protect reputation, resources, and customer trust (Tarjo, Vidyantaha, Anggono, Yuliana & Musyarofah, 2022). Fraud prevention employs theories and techniques from criminology, economics, psychology, risk management, and financial accounting. The theoretical foundation of fraud prevention investigates the elements that drive fraudulent conduct as well as

the tactics used to dissuade, identify, and reduce fraud episodes (Chen, 2022). According to Donald Cressy's fraud triangle, three major elements lead to fraudulent behavior: perceived pressure or financial necessity, perceived opportunity, and justification for the activity (Gupta, 2023). Hence, fraud prevention techniques target these elements by encouraging financial wellness, tightening controls, and fostering an ethical culture. Within the framework of rational choice theory, individuals are rational agents who assess costs and rewards before engaging in illicit behaviors such as fraud (Monteiro, Ribeiro, Viana, Moreira, Araújo & Rodrigues, 2023).

Accounting programmes prepares the recipient to be an accountant in any organization or self-reliant, the programme is meant to produce competent, skilful and dynamic individuals such as accountants, auditors, administrators and consultants. Graduates who do not acquire the adequate forensic accounting competencies required for gainful employment will keep roaming the streets in search of white collar jobs. Most industries, government and private organizations lament over the inability of Accounting graduates to perform efficiently especially in the use of forensic accounting software as a modern technology when employed, these challenges have made organizations to embark on management training programmes, which will engage the services of consultants to train the new accounting graduates on the practical application of forensic accounting software like prodiscovers and sleuth kit for a period of time of which selected few persons will only be taken out of many as a result of not meeting up with company's requirements for employment after the training. The inability of graduates to possess the practical skills in prodiscovers and sleuth kit may be attributed to the inability of higher institutions that are saddled with the responsibilities of preparing accounting graduates for the real world of work. In this vein the study sought to fill an existing gap through the investigation of forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities due to the mismatch of what the graduates learn in schools and the reality of what they will face when employed in industries or organizations.

The purpose of this study was to examine the relationship between forensic accounting software competencies and accounting students' effective fraud detection and prevention in a technologically advanced society in Rivers State Universities. Specifically, the study sought to:

1. determine the relationship between ProDiscover forensic accounting software competencies and accounting students' effective fraud detection and prevention in a technologically advanced society in Rivers State Universities.
2. determine the relationship between Sleuth Kit (+Autopsy) forensic accounting software and accounting students' effective fraud detection and prevention in a technologically advanced society in Rivers State Universities.

The following research questions were raised to guide the study:

- how does ProDiscover forensic accounting software competencies relate to accounting students effective fraud detection and prevention in a technologically advanced society in Rivers State Universities?
- how does Sleuth Kit (+Autopsy) forensic accounting software competencies relate to accounting students effective fraud detection and prevention in a technologically advanced Society in Rivers State Universities?

The following null hypotheses were formulated and tested at 0.05 level of significance:

- There is no significant relationship between ProDiscover forensic accounting software competencies and accounting students' effective fraud detection and prevention in a technological advanced Society in Rivers State Universities.
- There is no significant relationship between Sleuth Kit (+Autopsy) forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities.

Methodology

This study employed a correlational research design to investigate the relationship between Forensic Accounting Software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities. The study population consisted of 284 final year accounting students from Rivers State-owned Universities. Specifically, the population included 187 final year students at Rivers State University and 96 final year accounting students at Ignatius Ajuru University of Education for the 2024–2025 academic year, both located in Port Harcourt. The entire population was used due to its comfortable size, eliminating the need for a sampling technique. Data were collected using two researchers-developed questionnaires: 20-items on Forensic Accounting Software competencies (FASC) questionnaire and 10-items on Accounting students effective fraud Detection and Prevention in a technological Advanced Society (ASEFDPTAS) questionnaire. These instruments underwent face and content validation by three experts in Rivers State University, Port Harcourt. The validators reviewed and revised the instruments to ensure clarity, relevance, and appropriateness for the study, incorporating all their corrections and suggestions. A 4-point rating scale was utilized for responses: Strongly Agree (SA - 4 points), Agree (A - 3 points), Disagree (D - 2 points), and Strongly Disagree (SD - 1 point). Data collected were organized and analyzed based on the research questions and hypotheses formulated for the study. The Pearson Product Moment Correlation Coefficient (PPMCC) was used to analyze the data and determine the relationship between forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological Advanced Society (ASEFDPTAS). The decision rule

was to retain the null hypotheses if the critical r value was greater than the calculated r value; otherwise, the alternate hypotheses were accepted.

Results

Research Question 1: How does ProDiscover forensic accounting software competencies relate to Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities?

Table 1.1: Relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities

(N= 266)

		ProDiscover forensic accounting competencies	Accounting students effective fraud Detection and Prevention
	Pearson Correlation	1	.761**
ProDiscover forensic accounting competencies	Sig. (2-tailed)		.100
	N	266	266
Accounting students effective Detection and Prevention	Pearson Correlation	.761**	1
	Sig. (2-tailed)	.100	
	N	266	266

Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Field Survey (2025)

Table 1.1 shows the calculated coefficient (r) value of responses of accounting students to determine whether there is a relationship between prodiscover forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities.. The table shows that the calculated r was 0.761, with a table value of 0.179. This means that since the calculated r-value is higher than the table value, a positive relationship exists between prodiscover forensic accounting software

competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities.

Research Question 2: How does Sleuth Kit (+Autopsy) Forensic accounting software competencies relate to Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities?

Table 1.2: Relationship between Sleuth Kit (+Autopsy) Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities

(N= 266)

		Sleuth Kit (+Autopsy) Forensic accounting software competencies	Accounting students effective fraud Detection and Prevention
Sleuth Kit (+Autopsy) Forensic accounting software competencies	Pearson Correlation	1	.449**
	Sig. (2-tailed)		.100
	N	266	266
Accounting students effective fraud Detection and Prevention	Pearson Correlation	.449**	1
	Sig. (2-tailed)	.100	
	N	266	266

Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher’s Field Survey (2025)

Table 1.2 shows the calculated coefficient (r) value of responses from accountants to determine whether there is a relationship between sleuth kit (+Autopsy) forensic accounting software competencies and Accounting students effective fraud detection and prevention in a technological Advanced Society in Rivers State Universities. The table shows that the calculated r was 0.449, with a table value of 0.179. This means that since the calculated r-value is higher than the table value, a positive relationship exists sleuth kit (+Autopsy) forensic accounting software competencies and Accounting students effective fraud detection and prevention in a technological Advanced Society in Rivers State Universities.

Hypotheses Testing:

Hypothesis 1: There is no significant relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities.

Two variable were identified in this hypothesis as follows

- a. ProDiscover Forensic accounting software competencies
- b. Accounting students effective fraud Detection and Prevention

Table 1.3: Relationship between the ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities

(N= 266)

		ProDiscover forensic accounting competencies	Accounting students effective fraud Detection and Prevention
	Pearson Correlation	1	.761**
ProDiscover forensic accounting competencies	Sig. (2-tailed)		.100
	N	266	266
Accounting students effective fraud Detection and Prevention	Pearson Correlation	.761**	1
	Sig. (2-tailed)	.100	
	N	266	266

Correlation is significant at the 0.05 level (2-tailed)

Table 1.3 shows the calculated coefficient (r) value of the significant relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities. With N = 266, df = 264, P > 0.05, the calculated r-value was 0.761 with a critical value of 0.179 at the P > 0.05 level of significance, and since the calculated r value was statistically greater than the table value, the null hypotheses were therefore rejected, and the conclusion is that there is a

relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities.

Table 1.3 further shows a p-value of 0.100 with a level of significance of 0.05. This means that since the level of significance value is statistically greater than the table value, there is a strong relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities. The value of r was therefore accepted, which indicated that there is a significant relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities.

Hypothesis 2: There is no significant relationship between Sleuth Kit (+Autopsy) forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities.

Two variable were identified in this hypothesis as follows

- Sleuth Kit (+Autopsy) Forensic accounting software competencies
- Accounting students effective fraud Detection and Prevention

Table 1.4: Relationship between Sleuth Kit (+Autopsy) Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities

(N= 266)

	Sleuth Kit (+Autopsy) Forensic accounting software competencies	Accounting students effective fraud Detection and Prevention
Pearson Correlation	1	.449**
Sig. (2-tailed)		.100
N	266	266
Pearson Correlation	.449**	1

Accounting students effective fraud Detection and Prevention	Sig. (2-tailed)	.100	
	N	266	266

Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher's Field Survey (2025)

Table 1.4 shows the calculated coefficient (r) value of the significant relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities. With $N = 266$, $df = 264$, $P > 0.05$, the calculated r-value was 0.449 with a critical value of 0.179 at the $P > 0.05$ level of significance, and since the calculated r value was statistically greater than the table value, the null hypotheses were therefore rejected, and the conclusion is that there is a relationship between ProDiscover Forensic accounting software competencies and Accounting students effective fraud Detection and Prevention in a technological Advanced Society in Rivers State Universities.

Table 1.4 further shows a p-value of 0.100 with a level of significance of 0.05. This means that since the p-value is statistically greater than the table value, there is a strong relationship between ProDiscover forensic accounting software competencies and accounting students effective fraud Detection and Prevention in a technologically advanced society in Rivers State Universities. The value of r was therefore accepted, which revealed that there is a significant relationship between ProDiscover forensic accounting software competencies and accounting students effective fraud detection and prevention in a technological advanced society in Rivers State Universities.

Conclusion

This study has explored the critical role of forensic accounting software competencies in enhancing accounting students' effectiveness in fraud detection and prevention within technologically advanced societies. The findings reveal that proficiency in forensic accounting tools significantly improves students' analytical capabilities, enabling them to detect irregularities and implement preventive measures more effectively and efficiently. As financial crimes become increasingly sophisticated, integrating forensic accounting software into accounting curricula becomes imperative. Higher institutions must prioritize technological training to equip future accountants with the necessary skills to combat financial fraud. Strengthening such competencies will not only enhance academic outcomes but also contribute to broader efforts in safeguarding financial integrity in both public and private sectors.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were made:

1. It is recommended that higher institutions should integrate ProDiscover training modules into their accounting and forensic auditing curricula. This should include practical, hands-on sessions and certification opportunities to ensure students not only understand the theoretical aspects but also gain real-world investigative experience using the software
2. Given the positive relationship between Sleuth Kit (+Autopsy) competencies and accounting students' ability to detect and prevent fraud, it is recommended that higher institutions should establish dedicated digital forensics laboratories equipped with the Sleuth Kit and Autopsy software to enhance the competency of students.

References

- Abdullahi, R., Mansor, N., & Nuhu, M. S. (2015). Fraud triangle theory and fraud diamond theory: Understanding the convergent and divergent for future research. *European Journal of Business and Management*, 7(28), 30–37.
- Abdulrahman, S. (2019). Forensic accounting and fraud prevention in Nigerian public sector: A conceptual paper. *International Journal of Accounting & Finance Review*, 4(2), 13–21.
- Akeke, M. N. G., & Atah, C. A. (2023). Forensic accounting techniques on fraud prevention in tertiary institutions in Cross River State, Nigeria. *Mediterranean Journal of Social Sciences*, 14(1), 46–59.
- Bassey, B. E., & Ahonkhai, O. E. (2017). Effect of forensic accounting and litigation support on fraud detection of banks in Nigeria. *Journal of Business and Management*, 19(6), 56–60.
- Carrier, B. (2014). The Sleuth Kit and Autopsy project page. *The Sleuth Kit*. <http://www.sleuthkit.org>
- Chen, T. (2022). Blockchain and accounting fraud prevention: A case study on Luckin coffee. In *7th International Conference on Social Sciences and Economic Development* (pp. 44–49). Atlantis Press.
- Gupta, C. M. (2023). Models to study the new age financial crimes. In *Financial crimes: A guide to financial exploitation in a digital age* (pp. 191–213). Springer International Publishing.

- Gupta, S. (2022). Forensic accounting: Innovative tool for corporate sector. *Journal of Global Economy*, 18(1), 43–52.
- Kaur, B., Sood, K., & Grima, S. (2022). A systematic review on forensic accounting and its contribution towards fraud detection and prevention. *Journal of Financial Regulation and Compliance*, 31(1), 60–95. <https://doi.org/10.1108/JFRC-11-2020-0107>
- Monteiro, R. S., Ribeiro, M. C., Viana, C. A., Moreira, M. W., Araújo, G. S., & Rodrigues, J. J. (2023). Fish recognition model for fraud prevention using convolutional neural networks. *Advances in Computational Intelligence*, 3(1), 2.
- Othman, Z., Nordin, M. F. F., & Sadiq, M. (2020). GST fraud prevention to ensure business sustainability: A Malaysian case study. *Journal of Asian Business and Economic Studies*, 27(3), 245–265.
- Prajakta, M. D. R. (2018). Criminal story: Recover OPM deleted files using ProDiscover 2018–19. *Scribd*. <https://www.scribd.com/document/529696351/Prodiscover-Report#>
- Tarjo, T., Vidyantaha, H. V., Anggono, A., Yuliana, R., & Musyarofah, S. (2022). The effect of enterprise risk management on prevention and detection of fraud in Indonesia's local government. *Cogent Economics & Finance*, 10(1), 2101222. <https://doi.org/10.1080/23322039.2022.2101222>
- Williams, L. (2023). 15 best computer (digital) forensic tools & software in 2023. *Guru99*. <https://www.guru99.com/computer-forensics-tools.html>