

**AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND
ENTREPRENEURIAL DEVELOPMENT (AAMUSTED)**

AN EXPLORATION OF FORENSIC ACCOUNTING EDUCATION IN GHANA

GLORIA KWARTEMAA FORKUO

AUGUST, 2023

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A thesis submitted to the Department of Accounting Education of the Faculty of
Business Education, Akenten Appiah-Menka University of Skills Training and
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of MASTER OF PHILOSOPHY IN (ACCOUNTING)

AUGUST, 2023

DECLARATION

CANDIDATE’S DECLARATION

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree at this university or elsewhere.

Signature: Date:

(GLORIA KWARTEMAA FORKUO)

SUPERVISORS’ DECLARATION

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development.

Principal Supervisor’s Name:

Signature: *[Handwritten Signature]* Date:

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DEDICATION

This work is dedicated to my lovely father, mother, husband, children and my entire family for their support and encouragement throughout my life.

TABLE OF CONTENTS

CONTENTS	PAGES
DECLARATION	ii
ACKNOWLEDGEMENT	iii
DEDICATION	iv
LIST OF TABLES	x
LIST OF FIGURES	xiii
ABSTRACT	xiv
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background to the study.....	1
1.2 Problem Statement	4
1.3 Research Objectives	6
1.4 Research Questions:	6
1.5 Significance of the study:.....	7
1.6 Scope and Limitation of the study.....	8
1.7 Organization of the Study	8
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Conceptual Review	9
2.2.1 Definition of Forensic Accounting.....	9
2.2.2 Historical Background of Forensic Accounting	10

2.3 Theoretical Review	14
2.3.1 Hierarchy of effect model	14
2.3.2 Health Belief Model (HBM)	19
2.3.3 Theory of Demand and Supply	22
2.3.4 Behaviourist Model	24
2.4 Empirical Review	26
2.4.1 Level of Awareness of Forensic Accounting	26
2.4.2 Demands of Forensic Accounting Education	28
2.4.3 Challenges against the Introduction of Forensic Accounting Education	29
2.4.4 Integration of Forensic Accounting Education as a Curriculum	31
2.5 Research Gap.....	32
2.6 Conceptual Framework	33
2.7 Development of Research Hypotheses	34
2.7.1 Exploration of the perceived level of cognizance of forensic accounting among practitioners, students and academicians in Ghana.....	34
2.7.2 To ascertain the main issues that could militate against the introduction/ application of forensic accounting in Ghana.	35
CHAPTER THREE	37
RESEARCH METHODOLOGY.....	37
3.1 Introduction	37
3.2. Research Approach	37
3.3 Research Design	38
3.3.1 Weakness for Using Cross Sectional Survey Research Design	38
3.3.2 Strength for Using Cross Sectional Survey Research Design.....	39

3.4 Population.....	39
3.5 Sampling Procedure/ Technique	42
3.6 Sampling Size.....	43
3.6.1 Sampling of Practitioners:	43
3.6.2 Sampling of students	44
3.6.3 Sampling of Academics	45
3.7 Data Collection.....	46
3.7.1 Data Source	46
3.7.2 Collection tools/ Procedures.....	46
3.8 Data analysis and Procedures	48
3.9 Validity & Reliability of the research	48
3.10 Ethical Consideration	49
 CHAPTER FOUR.....	 50
ANALYSIS OF RESULTS AND FINDINGS	50
4.1 Introduction:	50
4.2 Demographics of Accounting Practitioners	51
4.3 Analysis of students' data:	54
4.3.1 Data validation of students' responses	54
4.2.2 Bio data of Students	56
4.3 Perceived Level of Cognizance of Forensic Accounting among Students in Ghana.....	60
4.6.1 Universities offering forensic accounting (students' responses).....	63
4.6.2 Availability of forensic accounting academicians.....	65

4.7 Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions	69
4.7.2 Chi-square test statistics	74
4.8 Analysis of Accounting Practitioners' data:.....	76
4.8.1 Data validation of Accounting Practitioners	76
4.8.2 Awareness of Forensic Accounting.....	78
4.9 Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions	84
4.10 Analysis of Academics' data:.....	92
4.10.1 Data validation of Academicians' questionnaire	92
4.11.1 Level of cognizance of forensic accounting among practitioners, students and academicians in Ghana	97
4.11.2 To ascertain the main issues that could militate against the introduction/ application of forensic accounting in Ghana.	102
4.11.3 Integration of forensic accounting education in the national curriculum in tertiary institutions.....	103
CHAPTER FIVE.....	106
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	106
5.1 Introduction	106
5.2 Summary of Results	106
5.3 Conclusion.....	107
5.4 Implications for Policy Implementation.....	108
5.5 Limitations of the Study	108

5.6 Proposed Areas for Further Research.....	108
REFERENCE	110
APPENDICE 1.....	123
APPENDICE 2.....	124
APPENDICE 3.....	127
APPENDICE 4.....	130

LIST OF TABLES

TABLES	PAGES
Table 2.1: Place of Forensic Accounting Application from the Prehistorical Era	12
Table 2.2. A summary of popular hierarchy models (Source: Barry and Howard, 1990).....	15
Table 2.3: Hierarchy of Effect Model	18
Table 2.4: Health Belief Model.....	21
Table 3. 1: List of Accredited Tertiary Institutions as At December 31, 2023 and Those Offering Accounting Programmes/ Courses.....	41
Table 3.2: Samples of accounting practitioners from the various firms in Ghana.....	44
Table 3.3: Sample Size for the Selected University for the Study.....	45
Table 3.4: Sample Size with the Number of Academicians.....	46
Table 4.1: Demography of accounting practitioners	51
Table 4.2: Data validation of students' questionnaire.....	55
Table 4.3: Name of university for students	56
Table 4.4: Age and Year of study of Students	58
Table 4.12: Validation of Accounting Practitioners.....	77
Table 4. 13: level of awareness of forensic accounting (Practitioners)	78
Table 4.14: Mean response on level of awareness of respondents (accounting practitioners).....	79
Table 4.15: Chi- Square result on knowledge of the existence of forensic accounting	81
Table 4.16: Chi – Square result on the awareness of the aims of forensic accounting as fraud detection and prevention	81

Table 4.17: Chi- Square result awareness of forensic accounting as one of the most powerful mechanisms in fraud detection and prevention.....	82
Table 4.18: Chi- Square test result on the awareness of forensic accounting	83
Table 4.19: Chi- Square result on the insufficient response of accounting curriculum to society's demand for forensic accounting education and practice	84
Table 4. 20 Chi-square result on accounting curriculum provision of forensic accounting coverage	85
Table 4.21: Chi- Square on (Colleges and universities should encourage and advise students on career opportunities in forensic accounting)	85
Table 4.22: Chi- Square on high-profile financial statement fraud cases that galvanize more interest in and demand for forensic accounting (Practitioners).	86
Table 4.23: Chi- Square result on numerous employment opportunities in forensic accounting.	87
Table 4.24: Chi-Square result on Forensic fieldwork auditing integration into auditing textbooks and audit engagements.	88
Table 4.25: Chi-square Test Statistics on the Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions	89
Table 4.26: How do you suggest the introduction of forensic accounting education be in your university curriculum?	90
Table 4.27: At what level do you suggest forensic accounting be introduced.....	91
Table 4.28: Demography of academicians	92
Table 4.29: Level of awareness of forensic accounting (Academicians).....	96

Table 4.30: Level of cognizance of forensic accounting among Students, Accounting practitioners and Academicians	97
Table 4.31: One- way ANOVA analysis in the variation among Students, Accounting practitioners and Academicians	98
Table 4.32: Descriptive Statistics of One-way ANOVA Analysis	99
Table 4.33: Results of Scheffe’s post hoc tests of multiple Comparisons	101
Table 4.34: Chi- Square results and Friedman test on the factors that could hinder the introduction of Forensic Accounting in Ghana.	102
Table 4.35: Friedman Test Statistics Results	103
Table 4. 36 Chi-square result of how forensic accounting be introduced in Ghana. ...	104
Table 4.37: Chi- square test statistics	104
Table 4.38: Crosstab of level at which forensic accounting be introduced in Ghana& population	105

LIST OF FIGURES

FIGURES	PAGES
Figure 2.1: Various Approaches in Forensic Accounting; Source: Rezaee, Crumbley and Elmore (ibid) (Johnson-rokosu, 2015)	32
Figure 2.2: Conceptual Framework Source: Efiong, (2022)	34
Figure 4.1: Name of university for students.....	57
Figure 4.2: Age of Respondents	59
Figure 4.3: level of study.....	60
Figure 4.8: level of awareness of forensic accounting (Practitioners)	79
Figure 4.9: Mean plot of level of cognisance of forensic accounting among students, accounting practitioners and academics.	100

ABSTRACT

The study explores the introduction of forensic accounting in Ghana through a cross-sectional survey design, utilizing multi-stage sampling. Data is primarily collected from accounting practitioners, students, and academicians from selected public and private universities. Two methods were used in gathering data with regards to forensic accounting education. An online search (through the various universities' websites) was conducted to make a content analysis of existing forensic accounting courses in the various business schools among the public universities in Ghana. This search was the only convenient way to actually know whether a university is actually offering forensic accounting in Ghana.

In addition, the researcher conducted a survey by administering questionnaires consisting of close ended questions. The statistical technique was both descriptive as well as inferential.

The findings reveal that while students and academicians share similar awareness levels of forensic accounting, accounting practitioners exhibit higher awareness. Perceived severity, susceptibility, and risk influence academicians' inclination to introduce forensic accounting, with age and academic rank as control variables.

The study highlights the alertness in addressing fraud before implementing forensic accounting. Financial and human resource challenges pose significant obstacles, with a shortage of forensic accounting academics in Ghana. Integrating forensic accounting into accounting and auditing courses is recommended for swift implementation. This approach can equip students to combat fraud effectively.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Fraud is a subject that has always gained attention in both academia and general public. The media constantly bombards our visual and aural senses with stories of fraud, corruption, and theft of public resources. (t&f online 2018) What should raise concern is not just the frequency of newscasts, but also the level and type of individuals participating in such a horrible and impolite behaviour. Veteran corporate executives engage in financial misconduct at the expense of their careers, the risk to trusting shareholders, and their own reputations. Continents all around the world still encounter this threat. The enormous threat of corporate fraud and corporate governance problems, which lead to a loss of trust in investing in enterprises, threaten to undermine the advent of globalisation, for which some proponents of globalisation argue for the necessity of Global Citizens (Aracı & Cevik, 2019). Corporate stakeholders are generally aware that accounting fraud or corporate fraud, which are used interchangeably for the sake of this study, obstructs the openness of the global capital (Bahceci, 2018; Bilen & Akatak, 2019; Bozdogan & Simsek, 2018).

Numerous incidents of financial statement fraud have been documented throughout time in multinational corporations, which has led the general public to question the usefulness of using financial reports from firms to make financial decisions (Erdogan, 2020). The WorldCom scandal also cost the company as much as \$11 billion due to the overvalued assets of the company, 30,000 jobs were lost, and investors lost \$180 billion (Redondo & Gaye, 2020). Enron, for example, caused a loss to shareholders of \$74 billion and the layoff of thousands of employees.

On the other side, Lehman Brothers' infamous \$50 billion in loans that were reported as sales. According to (Kızıl *et al.*, 2019), the controversy was connected to Ernest and Young, one of the major four auditing companies, following the report's release. The Olympus Corporation in Asia and other international organisations have harmed investor confidence in corporate financial statements (Kurt, 2020). It would appear that the roles of internal and external auditors of major firms, who are by definition expected to provide their unbiased opinion on the fair presentation, and compilation of financial reports (Kireenko *et al.*, 2019), barely protect organisations from fraud acts. The conventional audit process used by different auditing firms tends to encourage the pervasive fraudulent threats, which necessitates the urgent need or demand for qualified non-traditional investigators such as accountants and legal experts to expose these corporate threats in the business world.

According to a 2016 survey by the Association of Certified Fraud Examiners (ACFE) based on Certified Forensic Examiners who took part in the study, the median estimate of revenue loss through fraud represents 5% of business turnover annually and is estimated to be 3.5 trillion dollars when compared to the Gross World Product of 74.16 trillion in 2014 (ACFE Global Fraud Study, 2016). To put it more plainly, the overall amount of money lost through fraudulent operations much exceeds the whole Gross Domestic Product of Africa. The worst aspect of the tale is that the funds that were stolen were contributions from people from all walks of life, from stockholders to floor cleaners, from legislators to tax payers, from the wealthy to the impoverished. Money lost to fraud and corruption in the public and commercial sectors, particularly in Sub-Saharan economies, has a significant negative impact on the growth of these nations (EYGM Limited, 2016). However, Ghana's place in the area is the same. Forensic accountants' quick assistance is urgently required due to the level of fraud in Ghana. for the years,

Ghana's numerous transition procedures after a change of leadership have never been carried out without a rigorous witch hunt of previous government officials for budget padding (financial mismanagement, misappropriation of public funds, corruption, and fraud). On the other hand, the private sector is still susceptible to the same issues the country as a whole is dealing with. It's a good start for the president Nana Adu Donkor to inform those responsible for financial crimes about the office of an independent special prosecutor. This therefore creates a need for forensic accountants as well. As long as company and government fraud are a problem, the demand for forensic accountants will increase (James *et al.*, 2019; Ayas, 2021). Therefore, it is imperative that the supply of professionals of this level does not stagnate in order to reduce the threats that fraud poses to the Ghanaian economy.

A number of researchers (Erdogan, 2020; Erdogdu & Geyik 2020; James *et al.*, 2019; Kurt, 2020; Kireenko *et al.*, 2019) have testified the emergence of forensic accounting as a profession and a mechanism that has evolved in the field of the accounting profession for adequate prevention and detection of fraudulent activities. However, the knowledge of forensic accounting goes far beyond the conventional knowledge of accounting and auditing to investigative and legal knowledge, necessitating a well-structured institution that will work to efficiently and gradually impart this knowledge to students in order to help them find a niche in the increasingly competitive workplace. In order to discover a remedy for the present fraud situation, education is one of the finest areas that might successfully impart forensic accounting information to students (Efiong, 2022). Efiong (2022) proposes in her research that education, as a training ground, includes moulding procedures that have a tendency to influence people's psyches, attitudes, and physical selves through the transmission of information.

1.2 Problem Statement

In prosperous and moneyless times, criminals steal. The status of an economy when things are poor is when decent people steal (Bilen A.& Akatak, A. 2019). The infamous financial scandal and the bankruptcies of large multinational corporations like Enron, WorldCom, and Olympus have unintentionally and compulsorily taken on the role of memory devices for studies relating to fraud. According to several studies (Bahceci, 2018; Bozdogan & Simsek, 2018), fraud and economic development have an indirect association. At the pace that fraud is harming the Ghanaian economy, its effects will not only worsen the nation's financial situation but would also scare away international investors. Without a doubt, fraud has been a worldwide phenomenon that is not exclusive to any one industry or to Ghana alone as a nation (Erdogan, 2020). But according to Anas (as cited in Femi, 2016), those who commit fraud in ways that endanger the public should be openly Named, Shamed, and Jailed.

Financial institutions in Ghana are exposed to fraudulent cyber-attacks, according to a 2017 cyber security warning report by 3T Solutions Consulting. The survey also highlighted how equipped and ready the financial institutions in West Africa were to defend against cyber-attacks (Larbi, 2017). The Central Bank of Ghana's information suggests that if all cyber fraud attempts had been successful, the case would have resulted in a loss of 70 million Ghana Cedi's. The study of forensic accounting, meanwhile, equips students with current understanding of cyber and computer fraud (Peksen, 2019; Wijerathna & Purer 2020; Margono *et al.*, 2020).

According to (Adogla-Bessa, 2017), financial institutions reported a total of 244.32 million Ghana cedis in 2016 in respect to fraud charges. At least 1000 fraud incidents from financial institutions, including universal banks and non-bank financial institutions

(NBFIs), were reported to the Bank of Ghana in that year. In addition, the Bank of Ghana reported in its 2016 Ghana Annual Payment Systems Oversight Report that there were over 1500 recorded public complaints of fraud. The considerable sum of money lost to simbox scammers might be mentioned. As of October 2010, according to the Minister of Communications, Dr. Edward Kofi Omane Boamah, \$50 million has been lost to simbox fraud. (Citifmonline.com)

The level of fraud in the Ghanaian economy calls for effective intervention. The educational system that would enable business students to recognise and avoid fraud in the corporate world is currently being negotiated by Ghana's tertiary institutions. Despite the fact that corporate governance classes are required of business students during their academic careers, forensic accounting requires some innate abilities that go beyond internal company interactions to include external stakeholders. A forensic accountant's duties may include providing expert witness, fraud audits, and investigative accounting.

Researchers such as (Kurt, 2020; Ayas, 2021; Kızıl *et al.*, 2019; James *et al.*, 2019) have stated the extensive efforts and attention the industrialised nations have devoted to the curriculum development of forensic accounting. However, the majority of poor countries, including Ghana, are responding negatively to this initiative by affluent countries. With the exception of South Africa's North-West University, the data from the previous researchers suggests that universities in Africa do not provide forensic accounting. The Institute of Chartered Accountants Ghana did not begin offering short courses until 2015, nonetheless. Because this suggests that experts and students who want to learn forensic accounting travel abroad to do it. It may be argued that if forensic accounting programmes were available in Ghana, fewer people would fly overseas to study them than would be willing to do so.

It is clear that no credit-bearing forensic accounting-related subject is provided at Ghanaian institutions starting at the undergraduate level. This raises the critical question of whether policymakers are sincere in their efforts to eliminate fraud and other corruption-related activities that have plagued Ghana since its democratic independence. The decline in confidence brought on by financial information's failure to accurately depict the genuine and fair image of an entity and forecast what it aims to do with that company. In order to gradually battle fraud and corruption, this study contends that forensic accounting instruction should be a part of Ghanaian classrooms. Because of this, forensic accounting education in Ghana is a topic that needs further study.

1.3 Research Objectives

Based on the facts above, the general objective of the study is to explore the introduction of forensic accounting education in Ghana. The specific objectives of the research are to:

1. identify the perceived level of cognizance of forensic accounting among practitioners, students and academicians in Ghana.
2. find out academicians' view/ intention on the application of forensic accounting techniques in Ghana.
3. ascertain the main issues that could militate against the introduction/ application of forensic accounting in Ghana.
4. comprehend the integration of forensic accounting education in the national curriculum in tertiary institutions.

1.4 Research Questions:

1. How do practitioners, students and academicians conceptualize forensic Accounting?

2. What are the academicians' view intention on the application of forensic accounting techniques in Ghana?
3. What are the issues or factors that could hinder the application of forensic accounting in tertiary institutions in Ghana?
4. How should forensic accounting education be integrated in the national curriculum in tertiary institutions?

1.5 Significance of the study:

First and foremost, the research ought to be able to urge university administrators into introducing forensic accounting courses at the undergraduate or graduate levels. The teaching of forensic accounting is being advanced at several colleges in industrialised nations like America, South Africa and Europe. As this study's findings will demonstrate Ghana's urgent need for forensic accounting, they should be able to inspire interest in university administration.

This study would undoubtedly help the government and non-governmental organisations develop beneficial policies for the introduction and oversight of pertinent business programmes at the nation's institutions. It will assist in subsequent decision-making about pertinent programmes that address the present economic challenges.

Thirdly, this study will also significantly contribute to the literature because it will be the first study on forensic accounting education ever conducted in Ghana. As such, it will be a valuable resource for future forensic accounting scholars.

This study has relevance for practitioners as well. The results of this study will prompt practitioners to focus on the abilities and knowledge that students should possess in order to be employable.

1.6 Scope and Limitation of the study

The study examines how forensic accounting has been included into Ghanaian curricula. The researcher would collect information from a variety of stakeholders, including accounting professionals, students, and university professors from a few example schools. But research is only as good as its constraints. The study would be restricted to topics like forensic accounting awareness, difficulties, and advantages that arise with its use. Due to the specialised nature of the research, only a small number of Ghana's public and private institutions as well as audit companies will be the focus of the study.

1.7 Organization of the Study

The study is organized into five main chapters. Chapter one presents the research introduction together with details on the background of the study, problem statement, research objectives, research questions, significance, methodology, scope, and organization of the study. The Chapter Two focuses on literature review on the exploration of forensic accounting education in Ghana, and sets hypothesis. Chapter Three follows with explanation of the research methodology and data. Chapter Four presents the data analysis and discussion of findings. The last chapter discusses the implications of the study findings and offers recommendations for policy makers and further research studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents relevant literature review on the topic “exploration of forensic accounting education in Ghana”. The chapter is organized in five (5) main sections as follow: The section 2.2 presents the conceptual literature review, discussing concepts such as definition of Forensic Accounting and historical Background of Forensic Accounting while section 2.3 presents the theoretical review. Section 2.4 presents the empirical reviews while the research gap is presented in section 2.5, conceptual framework is presented in section 2.6. Section 2.7 presents the hypothesis development.

2.2 Conceptual Review

2.2.1 Definition of Forensic Accounting

Most frequently used in place of fraud investigation or inspection is the phrase "forensic accounting." A forensic accountant's work is more like a combination of financial sleuthing, fraud detection, and financial advice services, according to PWC. Unbelievably diverse tasks might be assigned to forensic accountants. In order to validate forensic accountants' role as financial investigators, (Wijerathna & Perera, 2020) carried out study in America. Ibid. goes on to define forensic accounting as a strategy to investigation in financial transactions and corporate settings with the aim of ascertaining the reality of fraudulent acts through expert opinion. In addition, Kurt (2020) described forensic accounting as the "practise of rigorous data collection and analysis in the areas of litigation support consulting, expert witnessing, and fraud examination." Although the

subject of forensic accounting education is still developing, not much study has been conducted on this topic.

In addition, the Association Certified Fraud Examiners (ACFE) defined forensic accounting as the use of specialised accounting knowledge in cases involving legitimate domestic or criminal court proceedings, including but not limited to fraud, GAAP and audit principles, and accounting disputes that could be resolved through the legal system. According to the aforementioned definitions, forensic accounting is a sophisticated, wide-ranging discipline that requires professional and expert understanding. Researchers' extensive studies have shown how important it is for accountants to master forensic accounting (Kireenko *et al.*, 2019). How the field of forensic accounting should be categorised varies across authors. While other supporters, including (Ehioghiren & Atu, 2016; Rezaee *et al.*, 2016) contend that the fields of forensic accounting are expert witnessing, litigation assistance consultation, and fraud investigation. On the other hand, some supporters, including (Kızıl *et al.*, 2019; James *et al.*, 2019), contend that expert witnesses and litigation support services are under the purview of forensic accounting. Regardless of disagreements, it is clear that forensic accounting services include looking into fraud and embezzlement cases, among other things. As was already indicated, relatively little research has been done on forensic accounting instruction in higher education. The same is true for Ghana, where no study has been done to empirically examine forensic accounting teaching in Ghanaian higher institutions.

2.2.2 Historical Background of Forensic Accounting

It has been asserted throughout history that forensic accounting is a practise that dates back to Methuselah. It first appeared in the ancient Egyptian era, between 3300 and 3500 BC, when the scribes, who served as the Pharaoh's accountants, were in charge of

managing his assets, including gold grains and animals. They were also involved in sleuthing. In more recent years, the practise of forensic accounting might be linked to Meyer v. Sefton, a Canadian case that employed an "expert witness" to testify in court (Erdogan, 2020).

Later, in the 1930s, in America, Elmer Irey, an IRS accountant, toiled assiduously for the conviction of the notorious Al Capone (one of the well-known American criminals), for tax evasion amounting to \$100 million (2017). Without a doubt, Elmer Irey was the nation's first well-known forensic accountant. However, it is acceptable that the early professionals' roles were not referred to as "forensic accounting" at the time. The phrase "forensic accounting" wasn't first used until Maurice E. Peloubet wrote "Forensic Accounting- Its Place in Today's Economy" in 1946. In his writing, he emphasised how the Second World War had prompted many public and industrial accountants to adopt forensic accounting (Bozdogan & Simsek, 2018). Since then, several academics have expressed the opinion that Peloubet's work paved the way for investigative accounting as forensic accounting gained popularity in the early 20th century in both England and the United States.

As was already said, forensic accounting combines forensic sciences with the accounting field. Forensic is derived from the Latin term *forensis*, which means to be a member of the forum (Ayas, 2021). Prehistoric Romans used to hold public meetings at this forum. The use of science and technology to assemble and establish facts or evidence in a court case is known as forensic science. As a result, every profession in forensics supports the lawyer in resolving legal disputes. It might be argued that the lack of expert testimony in legal disputes involving accounting led to the development of forensic accounting. The unique discipline known as forensic accounting was created by combining auditing,

accounting, and investigative abilities. The modern field of forensic accounting applies auditing, accounting, and investigative accounting methods to support legal proceedings (Bahceci, 2018).

Despite the historical roots of forensic accounting mentioned above, there are additional examples of forensic accounting techniques being used on other continents. The events are listed chronologically and are categorised by country below:

Table 2.1: Place of Forensic Accounting Application from the Prehistorical Era

Date	Place	Events
B.C 3500-3300	Egyptians Period	During the writing of commercial events to the tablets by recording, it is seen that the investigation has been placed in accounting records (Buyukipekci, 2016).
B.C 321-184	India	History showed that at least 40 “malversation crimes” has been revealed in the records of accounting information (<i>ibid.</i>).
B.C 330-27	Roman Empire	Forensic accounting has helped in the control of the resources on the financial events, mismanagement of the treasury, inflation and liquidations (<i>ibid.</i>).
B.C 2-15	Middle Age	Intense societal stratification and effective church management. Accountants took charge by adhering to legal developments and controls. At court proceedings accounting processes played a central role in terms of control at the administration level. This adherence has led to investigate accounting information as well as the caliber of the investigation (<i>ibid.</i>).
1494		Luca Pacioli: the father of accounting, “Most closely meaning of today, forensic accountancy is specified in section of establishing the internal control system for commercial activities in the double recording system of Paciola” [<i>sic</i>] (<i>ibid.</i>).
1824	Scotland	In Glasgow, an advert in a newsprint revealed that forensic accountants were made to investigate fraudulent issues on behalf of arbiters, courts, and counsels (Nunn et al., 2006).

1930	USA	The infamous Al Capone's arrest for tax evasion amounting to \$100 million was detected and investigated by the Internal Revenue Services and Federal bureau of Information using forensic accounting. Buyukipekci (<i>op. cit.</i>).
1946	USA	The renowned accountant Maurice Peloubet, published an article entitled "Forensic Accounting: Its Place in Today's Economy." He was the first to coin the term 'Forensic Accounting' in his essay stating that the aftermath of the second world war called for the industrial accountants to express interest in forensic accounting(Mohd, Sharif Ibrahim and Mazni, 2008).
1960	Canada	Atlantic Acceptance Company, formerly one of largest financial institutions in Canada, went insolvent costing a sum of \$150 Million. This saga was the first event that tested the service of the forensic accountancy. This has also contributed to emergence of accountants as well as consultancy firms.
1980-2003	ABD	The overwhelming increase in corporate scandal gave much importance to forensic accounting since it was the only field that could salvage the emergency plans of action. These scandals; 1986 - ZZZZ Best; 1992 - Phar-Mar; 1998 – Cendant; 1998 - Waste Management; 2001 – Enron; 2002 - Sunbeam, WorldCom, Adelphia; 2003 – Parmalat. Buyukipekci (<i>op.cit</i>)
1986	America	The American Institute of Certified Public Accountants (AICPA) issued Practice Aid, which outlined six areas of litigation services including: damages, antitrust, accounting, valuation, general consulting, and analyses.
1988	America	Association of Certified Fraud examiners established.
1988		A new type of detective novels where the forensic accountant was the star.
1992		The American College of Forensic Examiners was founded.
1996	California	Orinda-Moraga Disposal Services was under investigation when they wanted to raise their rates. The suspicion arose when California's Contra Costa County had to give their approval for the

		increment whilst the company had recently asked to lower rates. After Forensic Accountants got involved it became known from Orinda-Moraga's records that the company had been sending checks to fake companies at fake locations (Freeman, n.d.).
1997	America	Due to the growth of the profession, the American Board of Forensic Accountants was founded in March(Nunn et al., 2006).
2000	America	The Journal of Forensic Accounting, Auditing, Fraud and Taxation was founded(Johnson-Rokoso, 2015).
2009	Nigeria	Institute of Chartered Accountants of Nigeria (ICAN) introduced the first real training for forensic accountants in Nigeria (<i>ibid</i>).
2015	Ghana	The Institute of Chartered Accountants of Ghana (ICAG) introduced its first training in forensic accounting courses in Ghana

Source: Compiled by Author (2023)

2.3 Theoretical Review

2.3.1 Hierarchy of effect model

According to Rehman *et al.*, (2018), the hierarchy of effect model (HOE) is a marketing-based theory that aims to forecast the many buying behaviours that consumers engage in prior to completing a purchase. Lewis is credited with developing the hierarchy of effect paradigm, which was first presented in 1898. Rehman (*ibid.*) adds that one benefit of the model in advertising is its capacity to rank the hierarchy of advertising effectiveness. Since its creation, the theory of the hierarchy of effects has gone through a number of transitional periods where academics have tended to improve upon the initial model to increase the theory's applicability. Early development and modern development are those two things. The hierarchy of effect model has evolved historically, as seen in the table below.

Table 2.2. A summary of popular hierarchy models (Source: Barry and Howard, 1990)

Year	Model	Developer	Comment
EARLY DEVELOPMENT PHASE			
1898	AID: Attention, Interest, Desire	E. St Elmo Lewis	Developed as a sales guide for salesmen to be successful in moving a prospect to buy.
Circa 1900	AIDA: Attention, Interest, Desire, <i>Action*</i>	E. St Elmo Lewis	Added the action stage as necessary to convince salesmen to move buyer prospects through complete selling process.
1910	AICA: Attention, Interest, <i>Conviction,</i>	Printers Ink Editorial	The first mention of the hierarchy model for advertising use; a complete advertisement Action
1911	AIDAS: Attention, Interest, Desire, Action, <i>Satisfaction</i>	Arthur F. Sheldon	Added 'permanent satisfaction' as a necessary part of the persuasive and long-run selling process: this final stage not carried through to contemporary literature.
1915	AICCA: Attention, Interest, <i>Confidence,</i> Conviction, Action	Samuel R. Hall	The necessary steps in writing a good, persuasive advertisement.
1921	AIDCA: Attention, Interest, Desire, <i>Caution,</i> Action	Robert E. Ramsay	Mentioned this model at the beginning of his book on how to write effective direct advertising although the model is not developed in the book.
1921	AIDCA: Attention, Interest, Desire, Conviction, Action	Harry D. Kitson	Used this model in writing about how the mind of the buyer works.

1922	AIIA: Attention, Interest, <i>Judgment</i> , Action	Alexander Osborn	Writing about the creative /persuasive process in advertising.
1940	AIDCA: Attention, Interest, Desire, Conviction, Action	Clyde Bedell	For advertising to sell it, it must follow these 'proved selling stratagems' as formulated by Kitson in 1921.
1956	AIDMA: Attention, Interest, Desire, <i>Memory</i> , Action	Merrill Devoe	Referred to the importance of different psychological sequences in constructing advertisements (AIDCA and AIDMA) but does not develop these in his book.
MODERN DEVELOPMENT PHASE			
1961	ACCA: Awareness, <i>Comprehension</i> . Conviction, Action	Russell H. Colley	Proposed this model as important to the development of specified advertising goals and measuring advertising effectiveness.
1961	EPCCA: <i>Exposure</i> , <i>Perception</i> , <i>Communication</i> (<i>Knowledge</i>), Communication (Attitude), Action	Advertising Research Foundation	The model supported by the foundation of advertising practitioners and researchers to be used for developing more effective advertising campaigns.
1962	AAPIS: Awareness, <i>Acceptance</i> , Preference, <i>Intention</i> , <i>Sale</i> , <i>Provocation</i>	Harry D. Wolfe James K. Brown C. Clark Thompson	Illustrated how business used the hierarchy concept as a guideline to develop advertising strategy

1962	AIETA: Awareness, Interest, <i>Evaluation,</i> <i>Trial, Adoption</i>	Everett M. Rogers	Proposed the first application of a hierarchy-type model to the process of new product adoption.
1969	PACYRB: <i>Presentation,</i> Attention, Comprehension, <i>Yielding,</i> <i>Retention,</i> Behavior	William J. McGuire	The first to suggest that probabilities could be associated with the stages of the hierarchy models to show ultimate behavioral impact of advertising.
1971	ACALTA: Awareness, Comprehension, Attitude, <i>Legitimation,</i>	Thomas S. Robertson	Expanded on the adoption hierarchy of Rogers, this model more based on Howard and Sheth buyer behavior model (attention, comprehension, attitude, intention, purchase).
1982	<i>Trial, Adoption</i>	Ivan L. Preston	Proposed more comprehensive hierarchy model that pre- served the traditional order: distribution, vehicle exposure, advertising exposure, advertising, awareness, advertising elements awareness, association evaluation, product perception, integrated perception, products evaluation, prior evaluation. integrated evaluation, product stimulation, prior stimulation, integrated stimulation, search, search perception, search evaluation, search simulation, trial, trial perception, trial stimulation, adoption, adoption perception, adoption evaluation, adoption stimulation.
1983	The Association model	Esther Thorson	
1984	And the explained Association model		

* **Italics indicate change in stage/nomenclature from previous model(s).**

According to (Rehman *et al.*, 2018), the hierarchy of impact model's early development phase lasted from the model's inception until 1956, while the contemporary development period, lasting from 1961 to the present, and began in 1961. Due to the model's linking of the human psychology side of intelligence to the hierarchy of effects model, the 1961 model created by Lavidge and Steiner was seen as the beginning of the current development phase. Customers should take into account a few factors when thinking about the four processes in the HOE model (Attention, Interest, Desire, and Action), according to Lavidge and Steiner. He claims that these are the stages that clients may go through during the purchasing process, including 1) ignorance, 2) awareness 3) knowledge, 4) like, 5) preference, and 6) conviction as well as 7) purchase. Stating that ignorance is not a requirement for any of the phases in the process, and that some customers may actually complete one or more of the processes at once. On the point of having to delete certain stages due to potential negative client reactions, Lavidge and Steiner. The four phases of the modified HOE model were divided into three categories: cognition (awareness and knowledge), affective (feeling, interest, or preference), and behaviour (action) (Muthusamy *et al.*, 2018b).

Table 2.3: Hierarchy of Effect Model

EARLY DEVELOPMENT AIDA Components by: E. St Elmo Lewis (circa 1900)	MODERN DEVELOPMENT Lavidge and Steiner (1961)	BEHAVIOURAL
Attention	Awareness and Knowledge	Cognition
Interest & Desire	Liking and Preference	Affect
Action	Conviction and Purchase	Connation

In order to encourage stakeholders (practitioners, academics, and students) to consider the implementation of forensic accounting education in Ghana prior to the cognitive

stage, the researcher attempts to extract concepts from the aforementioned theoretical model (HOE). The cognitive component is known as the establishment and identification of awareness and understanding of forensic accounting education (FAE). According to this study, the experience and information that the different stakeholders have accumulated over their life determines their degree of awareness and knowledge of forensic accounting education (FAE). Some of these include gaining knowledge through formal education, work experience, participation in public forums, media exposure, attending conferences and seminars, etc. Since FAE is unique and its implementation would significantly benefit the stakeholders in terms of knowledge acquisition, the awareness stage is vital to the study. An emotional stage will be established by this information gain. The stakeholders start to form attitudes, preferences, and desires towards the study of forensic accounting at this emotional phase. If there is a favourable attitude, preference, or desire for forensic accounting education, stakeholders at Ghana's higher institutions start taking the behavioural step of accepting and adopting forensic accounting (Muthusamy *et al.*, 2018).

Even though it is a marketing-based model, the hierarchy of impact theory tends to fit within the investigation of forensic accounting education. In summary, the study shows that some external influences exist before the cognitive stage that impact the introduction of FAE. Additionally, it is acknowledged that this cognitive level develops forensic accounting awareness and understanding. The level of consciousness and knowledge creation could not measure up to other ideas.

2.3.2 Health Belief Model (HBM)

The health belief model is one of several ideas that have difficultly traceable historical origins, according to (Rosenstock, 2019). In order to support his argument, he points out

that between 1950 and 1960, a group of researchers from the Public Health Service encountered a variety of unique action research issues that led to the model's emergence. The construction of a health belief model was necessitated by two factors: first, the study demanded a solution; and second, the calibre and area of expertise of the researchers participating in the model's development (Rosenstock, *ibid*). The health belief model (HBM) was developed by a group of psychologists who worked for the U.S. Public Health Service. The paradigm presupposes that people take specific steps to be healthy, particularly when they believe they are susceptible to illness (Rosenstock, 2019). Humans do not want to get sick, therefore they will make the required efforts based on their level of fear (perceived susceptibility) and the likelihood that they will be able to take preventative measures (perceived benefit).

The HBM is made up of four constructs: perceived vulnerability, perceived severity, perceived rewards, and perceived obstacles. According to Rosenstock *op. cit.*, all of these structures serve as the foundation for human "readiness to act". The idea that a certain underlying variable—internal or external—provokes the essential action to be conducted, however, was crucial. Rosenstock characterised the component as "cues" as a result, *ibid*. In his opinion, these indications are crucial to achieving the highest level of intensity necessary to elicit a clear action.

Table 2.4: Health Belief Model

Constructs	Brief Description	Application
Perceived Susceptibility	An individual's notice or examination of his ability to be easily affected by a certain condition (ailment).	Define a group of people at threat,
Perceived Severity	An individual's view of the degree of his conditions and its ramification.	State the likely consequences of the risk as well as the condition
Perceived Barriers	An individual's examination of the effect that enable or hinder the acceptance of a certain condition.	Identify and reduce barriers through reassurance, incentives, assistance.
Perceived Benefits	An individual's belief of a positive outcome of a behaviour or reduction I the severity of a behaviour.	Design an action plan; how, where, when; clarify the positive outcomes to be expected.

Source: ((University of Twente, n.d.) (Rosenstock, 2019))

Long, (2021) state in their paper "Health belief Model: Evaluating commercial promotion in a public vaccination programme" that "The necessity for immunisation is increasingly critical, particularly when they guard against illnesses that pose considerable health risks to the population. To promote these programmes and increase immunisation rates within the public health system, extensive research and challenging system-wide implementation are necessary. These marketing initiatives might become useless if poorly handled. Despite the HBM's focus on health education, other studies have used it in various areas of effort, as seen in (Long, 2021; Muthusamy *et al.*, 2018b; University of Twente, n.d.). According to Long, (2021), each component in the HBM may accurately predict a large amount of preventive health behaviour. Muthusamy *et al.*,

(2018b) argue that substituting the conduct to avoid fraud in the HBM may be compared to the behaviour to avoid and screen for an illness when put side by side. The implementation of forensic accounting is a fraud prevention strategy from the HBM perspective. People, organisations, governments, and other stakeholders will think about taking precautions (forensic accounting) to prevent or avoid fraud, especially when they feel susceptible to the situation of fraud (perceived susceptibility), when they anticipate serious consequences (perceived severity), when they believe the precautions will reduce their vulnerability to a favourable outcome, and when they believe that the precautions will reduce their vulnerability to an adverse outcome. As a result, (Muthusamy *et al.*, 2018b) confirm that the adoption of HBM has a favourable effect on the intention to use forensic accounting to prevent fraud.

2.3.3 Theory of Demand and Supply

One of the most well-known theories in economics history is the theory of supply and demand. This economic theory is more influenced by how prices are set on the market level. A commodity's price in a free market economy depends on how much buyers want that particular good or service (Mollel, 2020). Alfred Marshal, a British economist, originally proposed the theory of supply and demand in 1890 when he released "Principles of Economics," a book on the subject of economics. Alfred Marshall was regarded as the founder of the demand and supply model due to this accomplishment. Soon after he published his work on the demand and supply model, academicians embraced it, making it one of the most popular economics topics taught in schools.

According to the theory of demand and supply, a competitive market has an equilibrium stage. It continues by explaining that the equilibrium stage will occur when the price of a certain good varies over time until it reaches a point where the quantity of good

customers want and the quantity of good suppliers can offer over time are equal. When all of the underlying presumptions are kept constant, this theory holds. The entire amount of products and services that a person, a customer, or a business is willing and able to purchase at one time is referred to as demand.

Contrarily, supply refers to the complete amount of goods and services a corporation is willing and able to create at a specific time. As a result, market equilibrium occurs when supply and demand are equal (Mollel, 2020). The economic and political mess that both public and commercial organisations in Sub-Saharan Africa, including Ghana, are currently in necessitates a high demand for forensic accounting services that Ghana's universities are unable to meet. In contrast, numerous public and private colleges in the United States of America offer forensic accounting courses. Although the need for forensic accounting services has increased in the United States of America, institutions are still having trouble keeping up with the demand. According to the Wall Street Journal, "forensic accounting is a particularly hot field"[sic] (Margono *et al.*, 2020). Forensic accounting has emerged as one of the trendiest careers of the new millennium, according to (Catherine, 2010) from ABC news. Additionally, the Association of Certified Forensic Examiners (ACFE) said on their website that in the next few years, there would be a 50000–75000 person surplus of forensic accounting professionals compared to supply.

One goal of the study is to determine if the availability and urgent need for forensic accounting services can be explained by the demand and supply theories. The theory of demand and supply should be used to explain the discrepancy between the demand for and supply of forensic accounting services, according to studies by scholar such as Peksen (2019) and Efiog (2022). While Peksen (*op. cit.*) warned against the US's slow response in creating courses that will give students the knowledge of frauds and the skills

to spot them, Efiang (op. cit.) also acknowledged Nigeria's lax response to the demand for forensic accounting services despite the economy's horrifying financial indiscipline. As a result of the increased need for forensic accounting, several US universities—both public and private—have updated their curricula to include forensic accounting. This provides strong evidence that developed nations are working to narrow the forensic accounting supply-demand imbalance. Contrarily, Sub-Saharan Africa is the second region in the world in terms of the number of companies that fall victim to fraud, according to the Association of Certified Fraud Examiners' (ACFE) Global Fraud Study from 2016. By implication, according to the theory of demand and supply, Ghana's universities replace the businesses that would offer forensic accounting education to the nation as a whole and the sub-region as a whole. Finding out if Ghanaian colleges are prepared to close this gap between the supply and demand of forensic accountants is the sticking point, though. Thus, the theoretical foundation of supply and demand is required by this conundrum.

2.3.4 Behaviourist Model

The research takes a behaviourist and information processing approach to curriculum design in an effort to integrate forensic accounting into Ghanaian tertiary education. According to Weberian-Habermasian's perspective on Finnish curriculum design, a behavioural approach is crucial to the development of contemporary rationalism (Jeram, 2018). The Behaviourist model is a theory of learning and curriculum development that implies that knowledge is finite rather than continuous. Learning happens on a public platform and may be seen and evaluated using real-world techniques. This model lays out the curriculum's objectives in advance. Students are exposed to simulated behaviours in a "controlled environment" in order to release the proper learning aim and help them

reach the curriculum's predetermined goals. The facilitator controls the simulation process that is implemented in the learning environment and decides what objective should be met. In contrast to internal motivation, the behaviourist model of learning places more emphasis on external influences. To promote good performance, rewards are given to students who follow the suggested learning procedures. Exam and quiz passing prizes are examples of extrinsic and tangible incentives. Rejecting undesirable behaviours helps people avoid engaging in them. The behaviourist approach, in particular, makes use of quantifiable, observable behaviour. Imaginations are not included in the model's scope.

The model incorporates criminology, sociology, anthropology, and psychology. Robert Gagné (1916–2002), a more recent contributor to the area of behavioural psychology, is regarded as having more of an instructional than a learning-related theory since it outlines the conditions under which a set of learning-specific stimuli might be used. Focusing on how the behaviourist paradigm may be used to the goal of this study. The model is more of a serial approach, where learning is done in a linear yet incremental fashion. While using concepts from other disciplines, teachers gradually move students through the curriculum from subjects they are familiar with to those they are not. Inferring from this, the study of forensic accounting should be imparted gradually, starting with a foundation in accounting and auditing and ending with an understanding of fraud investigation and other topics.

(Ramamoorti, 2018) defined fraud as "intentional acts and is perpetrated by human beings using deception, trickery, and cunning that can be broadly classified as comprising two types of misrepresentation: *suggestio falsi* (suggestion of falsehood) or *suppressio veri* (suppression of truth)". According to (Ramamoorti, 2018) argument, fraud is

committed by people using deception, perjury, forgery, the danger of being discovered, treachery, etc. Since the behavioural approach to learning combine's psychology, sociology, and criminology, it will be crucial for students to understand the causes of fraud, the characters involved in the act, the justification for its commission, and the necessary precautions to lessen their propensity for becoming vulnerable to fraudulent acts (Ramamoorti, op. cit.). To carry this out, a lot of forensic accounting education supporters have argued about how best to establish forensic accounting education at institutions. Regarding how forensic accounting should be included in higher education—specifically universities—there are two main schools of thought. Whilst some proponents like (Efiong, 2022; Jeram, 2018) argue for forensic accounting in tertiary education but support its integration into the existing accounting curriculum. Accordingly, several significant forensic accounting courses or subjects will be included into the present accounting curriculum. According to Kurt (2020), modern organisations are subject to three forensic accounting practises: litigation consultation, expert testimony, and fraud examination. Others are in favour of a stand-alone forensic accounting course so that students may learn all the forensic accounting techniques needed to stop and identify fraud.

2.4 Empirical Review

2.4.1 Level of Awareness of Forensic Accounting

The financial scandals of the twenty-first century have raised public awareness of fraud and the auditor's responsibility to spot it. Since the Sarbanes-Oxley Act was implemented in July 2002, financial statement fraud may not have decreased or remained constant at the same rate. Since a falsified financial statement might have a negative effect on a company's ability to continue operating, the prevalence of fraud on a worldwide scale

poses a severe threat to investors. Taking into consideration that the original market values of these firms were likely inflated due to this same financial statement fraud, the financial market damage caused by the 30 infamous financial scandals committed by fraud between the years of 1997 and 2004 exceeded \$900 billion, representing a deficit of 77% of the total market value of these firms (Bhasin, 2011).

Recent studies conducted in Africa, and particularly in Nigeria, found that undergraduate students had very little knowledge of forensic accounting (Johnson-rokosu, 2015; Sorunke, 2016). That the level of awareness among the many stakeholders, including students, practitioners, and academicians, varies. Given the widespread knowledge of corporate financial scandals and the low level of awareness of forensic accounting, it is clear that developing nations have not established the necessary framework for the provision of forensic accounting services, which will help Africa indirectly fight fraud. However, alternative methods of raising awareness exist, including the internet, conferences, the media, and through friends and family, according to (Hidayat, S. E. & Al-Sadiq, 2014). On the other hand, (Efiong, 2022) disputes the notion that educational activities are the best method for raising awareness. Additionally, he claims that because it helps children develop their moral and intellectual compass, "school has a formative" influence on their lives.

While several studies have supported the inclusion of forensic accounting instruction in postsecondary education. This suggests that raising people's understanding of forensic accounting through educational efforts will be essential to reducing the local threat of fraud. To address the increasingly cunning behaviours involved in financial statement frauds, forensic accounting education provides advanced skills and competencies (Efiong, op. cit.). Additionally, the exposure of business students to forensic accounting

instruction in schools will effectively equip them to understand the dynamics of criminal activity in the real world. Students' and other stakeholders' increased knowledge of forensic accounting will raise the standard of justice in situations involving divorce, corporate value, and expert witnesses. This is due to the fact that prior to making well-informed decisions about financial-related matters in court, knowledge of accounting, auditing, and investigative techniques is necessary. A forensic accountant is the only person who can do the job perfectly. According to the findings of a study conducted in China, forensic accounting education should be incorporated into the accounting curriculum if schools want their business students to become future business leaders with higher ethical values and competencies.

2.4.2 Demands of Forensic Accounting Education

The need for forensic accounting's involvement in the current state of the world economy is an established fact. As a result, the availability of some forensic accounting courses at universities in first-world countries is a strong indication of the significant demand for the expertise and services needed to meet the ever-increasing activities of businesses frightened by the development of fraud (Carpenter et al., 2011).

Consequently, notwithstanding how important accounting education is to the general public, it should still be able to serve the interests of society by recognising and resolving its problems. Particularly in the field of business, where aspiring graduates may wish to get employment (Efiong, 2022). Alarming fraudulent incidents in commercial and governmental entities are also a result of the present accounting curricula's incapacity to place enough emphasis on fraud prevention measures. Academicians and other stakeholders have a responsibility to confront fraud concerns and implications in every

company and governmental entity. As a result, accountants might also share some of the blame for playing a crucial part in saving a trustworthy financial reporting system.

A number of regulatory statements made by international standard-setters and regulatory bodies on the need for private and state-owned institutions to strengthen corporate governance have sped up the rise in demand for forensic accounting firms on a global scale (Eda & Kramer, 2008). Boards of directors are choosing to use forensic accountants in order to ensure strong corporate governance in institutions and to prevent and identify fraud, therefore looking out for the interests of the institutions' constituents. Additionally, these statutory declarations strengthen the auditor's obligations and responsibilities to be diligent in their audits of financial statements in relation to the risks of fraud. This demonstrates an advancement from the conventional approach of auditing to a more sophisticated and objective method as it holds corporations and organisations accountable for financial misdeeds. These numerous methods are intended to get things moving for companies and institutions to function in a stable and tranquil atmosphere free of any financial decadence and to rekindle investor confidence in the core and improving features of financial statements.

The need for forensic accounting will grow over the next ten years, according to (Mcmullen & Sanchez, 2008). This demonstrates Ghana's lax preparedness for the implementation of forensic accounting education in light of international trends and practises aimed at "arresting" and preventing the notorious business and institutional fraudster.

2.4.3 Challenges against the Introduction of Forensic Accounting Education

Recognising that changes to incorporate forensic accounting education in Ghana's postsecondary institutions would undoubtedly present obstacles. It's also essential to

recognise or predict these difficulties beforehand in order to bring about their negative effects or effects during the program's debut. Since there is widespread agreement that forensic accounting is in demand, satisfying the existing demand will be a mammoth challenge to meet the need for forensic accounting education. A 2016 research by Ehioghiren & Atu on fraud management and forensic accounting in Nigeria. They noticed certain issues that might endanger forensic accounting in Nigeria. They note that the high cost of the forensic accountant service may have a significant impact on its use since firms would prefer to avoid expensive litigation by resolving fraud-related disputes out of court. (Okoye, & Cletus Akenbor, 2009) further demonstrates that forensic accounting receives less attention since some firms and educational institutions view it superficially as being comparable to auditing. Furthermore, according to Okoye (ibid), forensic accountants have difficulties while trying to compile evidence that would support their case in court.

Additionally, Ehioghiren op. cit. asserts that a danger to a forensic accountant's job is posed by the internationalisation of organisations and the propensity for fraud to be committed in many geographical jurisdictions. The aforementioned proponents have placed greater emphasis on the forensic accountant as a person, and the problem is one of knowledge that can obviously be resolved via public education and regulation. Therefore, Interpol's involvement, which has a network of around 190 nations worldwide, makes cooperation flexible. In addition, Interpol's primary function is to assist law enforcement agencies across the world in resolving crimes that fall outside of national borders (Interpol, 2012).

Researchers like Al-Hadrami and Hidayat (2014) and Sorunke (2016) have discovered that the administrative and academic issues that the implementation of forensic accounting faces are more significant. These include a lack of human and financial resources, unsuitable learning environments, administrative zeal, few educational resources, etc. These scholars have thoughtfully considered the key obstacles that would probably hamper the development of forensic accounting courses in colleges. Despite the geographical difference across the numerous research done, these difficulties appear to be comparable.

2.4.4 Integration of Forensic Accounting Education as a Curriculum

There has been a great deal of debate among various literary scholars over how to include forensic accounting education into the curricula of higher institutions. It is difficult to construct a forensic accounting curriculum using a consensus-based pedagogy because of this. Despite this, Bagley, Blake, and Lunt (1996, p. 100) say that the creation of the curriculum in accounting education comprises and follows 4 basic aspects. (1) Curriculum development, which deals with course design, required resources, and other elements that might support teaching and learning, instills what is pertinent to potential programme stakeholders; (2) Employer involvement, which also emphasises the design, availability, and organisation of the syllabus in the evaluation of the students; (3) Student involvement, which assesses students' interest in and capacity for appreciating the programme during assimilation (learning); and (4) Staff development, which lastly aims to increase the capacity of course facilitators in order to achieve teaching objectives. The aforementioned curriculum creation procedures should serve as the foundation, according to Bagley et al. (ibid). Rezaee *et al.*, (2016) outlined instructional strategies for fostering the development of forensic accounting at postsecondary institutions. As an

alternative, they claimed that the creation of forensic accounting curricula might be carried out using: "(1) The Traditional auditing approach (2) the classical fraud examination approach and (3) the Modern forensic approach" (Johnson-rokosu, 2015). The many methods used to produce forensic accounting are summarised in the table below.

TRADITIONAL AUDITING APPROACH	CLASSICAL FRAUD EXAMINATION APPROACH	MODERN FORENSICS APPROACH
<ul style="list-style-type: none"> -Incorporate FFA via accounting/ auditing courses -offer a stand-alone forensic accounting course. <p>APPROACH: Course developers may introduce completely new fraud examination or forensic accounting courses into the existing accounting curriculum.</p> <p>IMPEDIMENTS: -Adding FFA to accounting curriculum can overburden faculty & students. -None willingness of faculty to add FFA topics because of lack of expertise -Some courses may be drop to accommodate FFA topics.</p>	<ul style="list-style-type: none"> -Incorporate FFA by placing much emphasis on fraud -offer FFA modules into a second auditing course. <p>APPROACH: Course developers may adopt the WVU model (see Table 1) and Association of Fraud Examiners (ACFE) curriculum.</p> <p>IMPEDIMENTS: -much concentration is based on fraud detection, deterrence and prevention -</p>	<ul style="list-style-type: none"> -Incorporate FFA as a direct courses -offer a distinct FFA courses at either the undergraduate or graduate level. <p>APPROACH: Course developers may adopt a broader approach with intersecting discipline areas and skill sets. The discipline basis include Criminology, Accounting, Investigative Auditing, Litigation service, Accounting/ Computer Forensics etc.</p> <p>IMPEDIMENTS: -lack of financial resources, instructional materials -lack of administrative support -lack of interest from faculty</p>

Figure 2.1: Various Approaches in Forensic Accounting; Source: Rezaee, Crumbley and Elmore (ibid) (Johnson-rokosu, 2015)

2.5 Research Gap

The researcher found that the works of earlier authors in the field of the introduction of forensic accounting education had a number of methodological, analytical, and contextual flaws, as well as delimitations and sample size obstacles. These were all evident from the thorough review of early literature. Research done on the integration and introduction of forensic accounting education specifically by researchers like Rezaee *et al.*, 2018; Madan Lal and Utara, 2017; Gorgulu, Elitas and Mehtap, 2015; whereas Efiong, 2022; Johnson-rokosu, 2015; and Sorunke, 2016 in third world countries were somehow economical in their sampling size or soft or lenient in their data analysis. More specifically, Efiong completed her PhD research in a more rigorous manner and with a

bigger sample size. To systematically analyse academics' behavioural intentions about the use of forensic accounting education, the researcher (Efiong) remained silent. This study will close any gaps in the existing literature in this area. There is a paucity of comprehensive literature on forensic accounting integration and introduction in Ghana, and there are gaps in the examination of academics' perspectives on the use of structural equation modelling in forensic accounting. Problems integrating forensic accounting courses in emerging markets.

2.6 Conceptual Framework

The way the research objectives would be handled is shown in this section using diagrams. The theories used in the theoretical review (Health Belief Model, Hierarchy of Effect Model) served as the conceptual basis for this study's forensic accounting methodology.

In a study titled "Organisational intentions to use forensic accounting services for fraud prevention and detection by large Malaysian companies," (Muthusamy *et al.*, 2018) adopted a number of theories including the hierarchy of effect model, the health belief model, as well as the theory of reasoned action. Their conceptual framework created an original and motivating perspective on the side of organisations. The focus of Muthusamy *et al.*'s study was on commercial organisations. Efiong, *op cit.*, completed a PhD study that also looked at forensic accounting training and usage for fraud detection and prevention in Nigeria. However, because fraud is ingrained and ubiquitous in Nigeria's economy, Efiong's research made a significant contribution to the field of public sector. A number of scholars have adopted the hierarchy of impact model in their work, including Bauman *et al.* (2008), Eme (2013), and Muthusamy *et al.* (2010). They believe that complete knowledge lays the path for positive behavioural transformation.

Since it is the best and fully addresses the aims of this research's promotion of the study of forensic accounting in Ghana, the conceptual model used for this study would be that of Efiang (ibid).

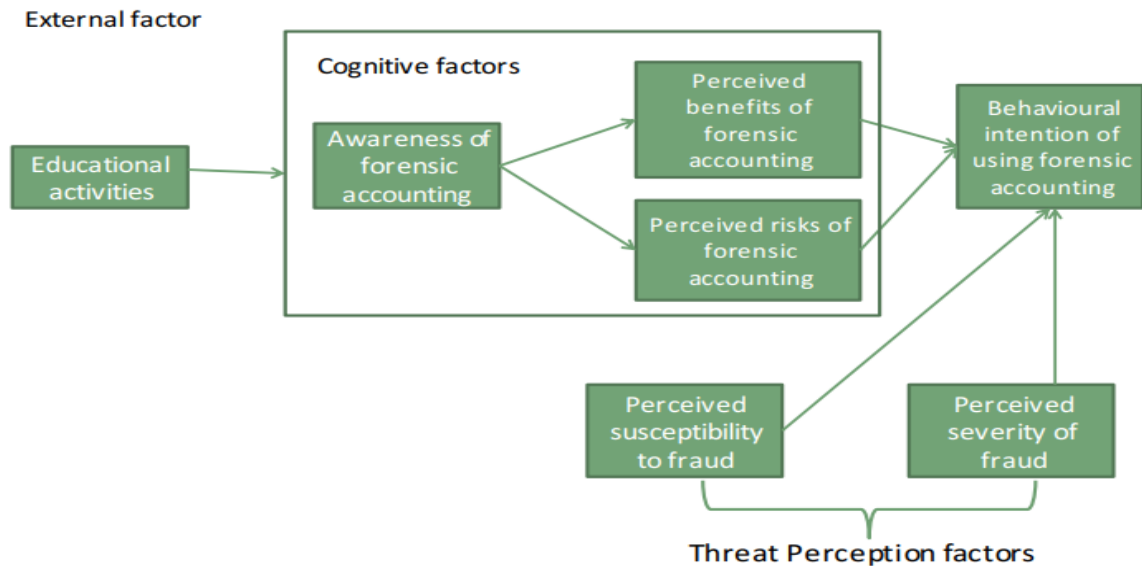


Figure 2.2: Conceptual Framework Source: Efiang, (2022)

2.7 Development of Research Hypotheses

Based on the three elements of the conceptual framework—educational activities, cognitive variables, and threat perception factors—the researcher formulated four hypotheses. The interrelatedness of the elements and the behavioural aim associated with them are the reasons for this categorization. The justification for these assumptions is presented in the section below.

2.7.1 Exploration of the perceived level of cognizance of forensic accounting among practitioners, students and academicians in Ghana

It is necessary to really develop strategies, techniques, or procedures to prevent or identify fraud given the extent to which it is pervasive in Ghana. The prevalence of malaria and its effects in Ghana have caused the general populace to feel more vulnerable

and concerned about how the plasmodium infection can influence their health. Due of the perceived benefit of improved health, the public works to stop or slow the spread of malaria. This campaign to raise public awareness of the harmful effects of malaria is mostly supported and championed by external entities including hospitals, the media, universities (via research), and NGOs. Fraud is a cancer that affects many people. The public will put measures in place they believe will help them in fighting fraud if they start to feel sensitive to the effects of fraud and regard it as a danger to their business, economy, and jobs. There are several other media that may be used to further emphasise the necessity of "arresting" fraud. NGOs, pressure organisations, conferences, schools (educational activities), public sensitization campaigns, and mainstream and social media are a few of those avenues. However, educational efforts are the most productive and efficient way to raise knowledge about the threat of fraud (Efiong, 2022).

Additionally, there have been conflicting views expressed in the literature on the degree of familiarity that the three main stakeholders—practitioners, students, and academicians—have with forensic accounting. While some researchers came to the conclusion that there is a significant difference in the overall level of awareness among the three major stakeholders (Johnson-rokosu, 2015; Madan Lal & Utara, 2017), others disagreed (Anjom & Karim, 2016; Hidayat, & Al-sadiq, 2014). The researcher wishes to examine this hypothesis to validate or disprove the level of relevance on forensic accounting awareness.

2.7.2 To ascertain the main issues that could militate against the introduction/application of forensic accounting in Ghana.

It goes without saying that before creating academic programmes in a nation, universities go through a number of procedures. It is not difficult to carry out these developmental

processes. Even though forensic accounting has been hailed as one of today's most promising professions (Catherine, 2010), this does not guarantee that universities and other stakeholders would welcome its adoption. To help tackle the fraud threat, forensic accounting services are highly sought after in Ghana. In the event that the curriculum is created, universities in Ghana would presumably be regarded as the providers of forensic accounting instruction. The successful implementation of forensic accounting programmes and courses at developed nations' institutions has been essential in tackling the problem of fraud. The current conflict is over whether Ghana's public institutions are capable of mounting the plan. Here is the basis for hypothesis 3.

Objective 3: To ascertain the main issues that could militate against the introduction/application of forensic accounting in Ghana.

Question 3: What are the issues or factors that could hinder the application of forensic accounting in tertiary institutions in Ghana?

Based on this it is hypothesised that:

Hypothesis 3:

H₀: Universities are not ready to take up forensic accounting education in Ghana.

H_a: Universities are ready to take up forensic accounting education in Ghana.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section of the study brings to fore the detail of the entire research process. First in this study is the research framework that highlights and brings together each aspect of the study (research design); second is the targeted population that will form the basis for the sampling; third is the determination of the sampling unit based on statistical computation and empirical evidence; fourth, followed by the data collection procedures and the nature and sources of data that will be used in the study; fifth, an overview of the various analytical tools that would be used in the analysis of data; the reliability and validation of data to prove the study's internal and external validity and its ability to be replicated by a competent independent party. Subsequently, the ethical compliance would also be deliberated.

3.2. Research Approach

The study adopted a qualitative and quantitative research approach. The Quantitative research approach is a method or a process that is systematic and objective in its ways of using numerical data from only a selected subgroup of a universe (or population) to generalize the findings to the universe that is being studied (Ary et al., 2010). Qualitative research approach uses several techniques including interviews, focus groups and observation. Interviews may be unstructured, with open-ended questions on a topic and the interviewer adapts to the responses. The approach was used to capture the knowledge of participants on the practice of the effect of induction programs on the performance of newly appointed teachers.

3.3 Research Design

This study adopts a cross sectional survey research design. In a cross sectional survey research design data is collected for the purpose of making inferences about a particular universe (population) within a stated period (Hall, 2011). Hall further states that a cross sectional research is an appendage of an entire population under study. A cross sectional survey was used purposely for data analysis for the data obtained all the universities suitable for the research. In essence, it will also help the researcher to infer about the awareness of forensic accounting among students, practitioners and academicians across universities in Ghana. As it is evidenced in (Econ et al., 2017; Hidayat, S. E. & Al-sadiq, 2014; Rezaee et al., 2004). The design would aid in establishing useful preliminary evidence in planning a future advanced study. This method is however less expensive and less resource consuming as compared to the longitudinal and panel research design (Smith, 2003). Because the outcome and exposure variables would be measured at the same time, it would be relatively difficult to establish casual relationships from a cross sectional survey.

3.3.1 Weakness for Using Cross Sectional Survey Research Design

Researchers should be cognizant of the inherent shortcomings of cross-sectional survey research designs. In cross-sectional survey research design, it is difficult to determine the cause-and-effect correlations between variables in cross-sectional studies since they only record data at one particular moment in time. Since there isn't a chronological order of occurrences, researchers are unable to identify the cause and effect. Cross-sectional surveys only gather data at one particular moment in time, making it impossible to track or examine trends over time. It's possible to ignore changes, trends, or shifts over time in the variables under study. Moreover, researchers are unable to examine the dynamics of

change over time within individuals or groups when using cross-sectional approaches. For a better understanding of how factors change over time, longitudinal research would be more appropriate. Recall bias could arise from participants' inability to accurately recall previous experiences or occurrences. This may have an impact on the authenticity and dependability of the data gathered.

3.3.2 Strength for Using Cross Sectional Survey Research Design

When compared to longitudinal investigations, cross-sectional surveys are typically less time-consuming and more economical. They offer a rapid and effective means of gathering information on a variety of characteristics without requiring long-term follow-up. Researchers can measure the prevalence of illnesses, behaviors, or characteristics by using cross-sectional surveys, which provide a picture of the population at a particular point in time. This can be helpful in figuring out how a population is currently doing. Descriptive analyses benefit greatly from cross-sectional research, which offer insightful data on the distribution of variables within a population. This is very useful for coming up with theories or seeing trends. Cross-sectional surveys are a useful tool for gathering data from a wide range of people and groups, even in vast and diverse populations. This may improve the findings' external validity. Researchers can compare several groups or subpopulations at a given point in time by using cross-sectional designs. This can assist in determining variances and disparities in the frequency of specific variables across diverse demographic or socio-economic categories.

3.4 Population

This current research majorly concerns tertiary institutions in Ghana, especially tertiary institutions offering accounting (business) programmes in Ghana. These sets of

populations in this study are students (from tertiary institutions), Academicians and Accounting practitioners. Those sets of population were identified and selected due to similar practices conducted by earlier researchers like (Efiong, 2022; Johnson-rokosu, 2015). Subsequently, the intended sets of population identified and selected for the study is as a result of the questions the researcher seeks to proffer answers to.

Based on research questions 1 and 4 representing the awareness of students, academicians & Accounting practitioners about forensic accounting and the approach to be adopted in integrating forensic accounting in the national curriculum would be responded by all the three groups of stakeholders identified as population. This question suits all the population because they all have stakes in the introduction of forensic accounting directly or indirectly. Furthermore, answers to research question 2 and 3 which focuses of academician's behavioural intention to apply forensic accounting techniques in Ghana and the issues or factors that could hinder the application of forensic accounting in tertiary institutions in Ghana would be responded by academicians only who are directly involved in research and academic affairs.

The rationale for the variations in the allocation of research questions to the three sets of population was to avoid the tendency of uninformed responses from respondents. Saunders, Lewis and Thornhill (2009, p. 363) posit that there is a high tendency of "uninformed responses" from respondents when they are confronted with questions, they have no knowledge about. There are fifteen (15) public universities as at (2023) and 65 private universities in Ghana (NAB) and the country is made up of ten regions, so the universities were segregated according to their regional locations hence seven regions were identified. Below is the presentation of the public universities and their regional locations in figure 3.2.

Table 3. 1: List of Accredited Tertiary Institutions as At December 31, 2023 and Those Offering Accounting Programmes/ Courses.

Regional Locations	Institutions	Availability of accounting programme
1. Ashanti Region	1. Kwame Nkrumah University of Science and Technology	Yes
2. Brong-Ahafo region	1. University of Energy and Natural Resources	No
3. Central region	1. University of Cape Coast	Yes
	2. University of Education, Winneba.	Yes
4. Greater Accra Region	1. Ghana Institute of Management and Public Administration, Achimota	Yes
	2. University of Ghana	Yes
	3. University of Professional Studies	Yes
	4. Webster university Ghana	Yes
	5. All Nations University	Yes
	6. Ashesi University	Yes
	7. Ensign Global College	Yes
5. Northern Region	1. University for Development Studies (Tamale Campus), School of Business located in Wa	Yes
6. Volta Region	1. University of Health and Allied Science	No
7. Western Region	1. University of Mines and Technology	No
8. Eastern Region		No
9. Upper East		No
10. Upper West		NO
11. Savannah		No
13. Bono East		No
14. Oti		No
15. Ahafo		NO
16. Western North		NO

Source: National Accreditation Board for tertiary Education Programme (NABTEP),

Ghana.

3.5 Sampling Procedure/ Technique

In this research, the multi stage sampling technique is applied in view of the geographical dispersion of the population involving students, accounting practitioners and academicians as well as the requirement for a face-to-face contact with the respondents. First, the tertiary institutions were categorized into the various institutions such as Public universities, Private universities, Polytechnic and Technical universities according to the (National Accreditation Board for Tertiary Education Programme- NABTEP). In contrast, purposive sampling which is a type of non-probability sampling was adopted to prioritize the public and private universities in Ghana. (Neuman 2005) alludes to the fact that purposive sampling technique may be an option in cases where by the researcher selects informed responses.

Public and private universities were prioritized, polytechnics and technical universities to try as much as possible to improve upon the validity and reliability of the study's data. More to it is that the technical universities were recently inaugurated into their current state of "Technical University", hence there is a higher tendency of reconstruction and adaptation challenges to be faced. Again, (Efiong, 2012) whose research was conducted in Nigeria opined that government owned universities possess more resources than their counterpart, hence there is higher chance that the former will be ready to mount and teach forensic accounting. In addition to the aforementioned is that since all the technical universities do not award their own certificates (National Board for Professional and Technician Examinations), there is higher chance of facing accreditation challenges despite their resource independence compared to autonomous public universities

Each region which represents a cluster numbered from one to seven which forms the beginning stage of the sampling procedure. However, among the ten (10) universities

categorised at regional levels, seven (7) universities from four (4) regions offer accounting courses whilst three (3) universities from three regions do not. Through purposive sampling, seven universities were selected for the study. They are: Kwame Nkrumah University of Science and Technology, University of Cape Coast, University of Education, Winneba, Ghana Institute of Management and Public Administration, University of Ghana, University of Professional Studies and University for Development Studies (Tamale Campus). With regards to private universities, purposive sampling was used to choose among those universities.

For easy comparison during analysis in the study; making efficient use of the research time frame and very limited financial resources available, the researcher relied on similar regions where the universities are located in order to take the sample size of practitioners.

3.6 Sampling Size

With reference to the section above, sampling is done on three populations that is undergraduate students and accounting practitioners in Ghana. Below are the steps in executing the sampling of the population.

3.6.1 Sampling of Practitioners:

The need to involve the views of accounting practitioners in the study is supported by early authors like (Muthusamy et al., 2010b) who studied the organisational intention to use forensic accounting to detect and prevent financial fraud, which indeed reveals the substantive role by practitioners in forensic accounting application. On this basis, private audit firms, audit officials at the internal audit in public services (MMDAs) is selected for sampling at the regional level. The choice for private audit firms is because the private audit firm is one of the institutions with the most up-to-date information on financial

scandals. Out of the 296 audit firms in Ghana, 244 audit firm are located in Greater Accra, 14 in Ashanti region, 4 in Central Region and only one in the upper west region (ICA, 2017). Below are the samples of accounting practitioners from the various firms in Ghana in Table 3.2.

Table 3.2: Samples of accounting practitioners from the various firms in Ghana

REGIONS	Audit Firms	Sample no: of Audit Firms (10%)	Sample no: of Personnel (5)
Ashanti	14	2	10
Greater Accra	244	24	120
Central	4	1	5
Upper West	1	1	5
Total	263	28	140

Source: authors construct, (2023)

3.6.2 Sampling of students

Considering the fact that forensic accounting is new discipline and its prospect in becoming one of the hottest profession in the millennium. In order to attain this objective, there is higher likelihood that forensic accounting would be introduced as an academic programme at the university. In order to bring quality to the responses (validity), focus is much placed on students at the third and fourth year of the university (Efiong *et al.*, 2017).

Information about the number of students (third and fourth year) currently registered for the academic year was collected from the various institutions understudy. This information was relevant in determining the actual sampling size that would be perfect

for the research, so as to facilitate generalisation. Whilst some of the information were received by hand, others were received through instant messages systems.

The statistical determination of the sample size unit was done using Yamane’s formula for sample size computation. The formula is as follows:

$$n = \frac{N}{(1+Ne^2)} \quad n = \text{Sample size}, N = \text{The Population},$$

$e = \text{Confidence Level (5\% error margin)}, 1 = \text{Constant}$

Yamane’s formula for sample size computation

Table 3.3: Sample Size for the Selected University for the Study

University Name	3rd Year Students	Final Year Students	Total	Sample Size
UDS	345	388	733	259
KNUST	91	125	216	140
LEGON	150	250	400	200
UEW	240	250	490	220
UCC	300	285	585	238
GIMPA	70	65	135	101
UPS	65	64	129	98

Source: authors construct, (2023)

3.6.3 Sampling of Academics

The sampling size of academics were based on the total and available number of lecturers in department of Accounting and Finance of the various university understudy. Administrators were conjoined with the academics because this set of population have extent knowledge on the infrastructural and financial stand of their university. A sample of 50% of the entire population is chosen since the total number of lecturers and

administrators available in the Accounting department of the two universities is small. Using a sampling formula will result in an insignificant sampling size.

Table 3.4: Sample Size with the Number of Academicians

University Name	Number of Academicians	Sample size
UDS	20	20
KNUST	15	15
LEGON	30	30
UEW	15	15
UCC	15	15
GIMPA	15	15
UPS	15	15
Total	175	175

Source: authors construct, (2023)

3.7 Data Collection

3.7.1 Data Source

The nature of a research determines the kind of data needed for the research. In this research, the exploratory nature of the study calls for the researcher to extract data from its original source, since the views and knowledge about forensic accounting is being assessed. The main source of data collection is primary and it is collected from three main stakeholders thus, Accounting Practitioners, Students and Academicians (Lectures) all from some selected public and private universities.

3.7.2 Collection tools/ Procedures

The research adopts a cross sectional survey research design and many literatures like (Saunders *et al.*, 2009; Walliman, 2011) affirm that questionnaire is one of the most

appropriate ways of conducting a survey research. The questionnaires are administered in three distinct dimensions, they are questionnaires for students (Q1), Academics (Qs2) and Accounting Practitioners (Qs3). The first questionnaire is dedicated to students (Qs1), it will be dissected into three section which highlights the demographic features of the respondent in Section A, Section B consist of questions on the awareness of students concerning forensic accounting, Section C talks about the method of integrating forensic accounting in the Ghanaian curriculum.

The following questionnaires for academicians is in five sections. The Section A has to also do with the demographic features of the respondents, followed by Section B which measures questions on the awareness of practitioners on forensic accounting. Section C is on academicians' behavior towards the application of forensic accounting technique in Ghana. Section D on the other hand consist of questions on issues that could militate against the application of forensic accounting in tertiary institutions in Ghana. Section E finally measures academicians' responses on how forensic accounting should be integrated in the Ghanaian curriculum.

The last set of questionnaire is that of accounting practitioners. It is in three sections. Section A is about the demographic characteristics of respondents. Section B measures the awareness of practitioners on forensic accounting in Ghana and finally Section C measures the method of integrating forensic accounting in Ghana.

The preparation of the questionnaires is designed using closed ended questions so as to minimize the level of randomness. The respondents were restricted to tick from the already proposed answers. The scaling types used in the study vary with the nature of the questions posed. Aside question like "Have you heard of forensic accounting?" that require a "Yes or No" answer that is nominal scale, other scales such as Ordinal and

interval scales are used for Likert scaled questions or answers and other questions like “What is your academic qualification”. The study uses the five point Likert scale following the works of (Efiong, 2022) which also adopted a scale of five by assigning zero (0) to “No opinion”. By implication, the Likert-scale of five point adopted for the survey is as follows: 4= Strongly Agree, 3= Agree, 2= Disagree, 1= Strongly Disagree, 0= Indifferent or neither agree nor disagree.

3.8 Data analysis and Procedures

To examine the study's data, a descriptive survey was used. Quantitative data was coded and input into the computer programs SPSS (version 23) to allow research analysis. Chi-square test analysis used to examine quantitative data. This section also outlines the procedures used to prepare the statistics for analysis and justifies the usage of data analysis techniques to address the research objectives. Data entry variables had been named and defined before the data have been entered into the Statistical Package for the Social Sciences (IBM SPSS 23) data editor. Data cleaning was done since values entered into the SPSS data report had been transcribed, and the records had been cleaned to make sure that the values are within the boundaries of what could be fairly predicted. Following the suggestions of Meyer et al. (2013), consistency assessments had been finished to confirm the reliability of the facts gathered. Erroneous data have been proven and corrected the usage of the raw rankings from the responses to the authentic objects on the questionnaires.

3.9 Validity & Reliability of the research

The reliability of a research is about how research can be repeated following the methodologies of the earlier researcher. The appropriateness of the researcher’s measures

and instruments was ensured. One way of ensuring reliability, the researcher tested for homogeneity or internal consistency of the pretested results. The researcher used Cronbach's Alpha to test if the items under each construct were actually homogenous.

3.10 Ethical Consideration

Ethics in research regards norms of conduct distinguishing between what is right and what is not in research. Ethical clearance was sought from all relevant stakeholders before the commencement of data collection. Moreover, authors of all consulted documents were duly acknowledged through proper citation. Data collected from the sample was kept confidential. In order to protect the identity of stakeholders in this research, the anonymity of the respondents was assured by the refraining from collecting information that would reveal respondents' identity. All protocols pertaining to organisational culture and bureaucracy were observed.

CHAPTER FOUR

ANALYSIS OF RESULTS AND FINDINGS

4.1 Introduction:

This chapter concerns the analysis results accrued from the data collection process. It is sectioned into two different parts. Descriptive statistics which describes the summary of the data using numerical measures such as percentages, means, and standard deviations as well as graphical measures such as pie charts and bar charts. The inferential statistical tools helped the researcher to apply rigorous analysis to come out with more scientifically cogent results. Since there were three sets of populations for the study, the researcher analyzed the data chronologically based on the objectives. The first and fourth objectives are analyzed concerning data students, accounting practitioners, and academics. The second and third objectives are analyzed with concerns from academicians.

1. To identify the perceived level of cognizance of forensic accounting among practitioners, students, and academicians in Ghana.
2. To find out academicians' views/ intentions on the application of forensic accounting techniques in Ghana.
3. To ascertain the main issues that could militate against the introduction/ application of forensic accounting in Ghana.
4. To comprehend the integration of forensic accounting education in the national curriculum in tertiary institutions.

The subpart of the descriptive statistics of all the respondents is about basic information of all the respondents such as name of institution, Age, Gender, etc. followed by a confirmatory factor analysis adopted to identify some of the factors that hinder the introduction of forensic accounting education in Ghana. The structural equation model

was used to analyze the interrelationship among variables that sought to find out the academicians' view or intention on the introduction of forensic accounting education in Ghana. Below are the result and interpretations of these analyses.

4.2 Demographics of Accounting Practitioners

Table 4.1: Demography of accounting practitioners

	Frequency	Percent
GENDER		
Male	55	69.6
Female	24	30.4
Total	79	100.0
AGE (YEARS):		
18 – 30	33	41.8
31 – 40	45	57.0
41 – 50	1	1.3
Total	79	100.0
EDUCATION (HIGHEST QUALIFICATION)		
Missing Data	1	1.3
SHS	1	1.3
DEGREE	45	57.0
MASTER	32	40.5
Total	79	100.0
PROFESSIONAL QUALIFICATION		
No Qualification	21	26.6
ACCA	14	17.7
ICAG	35	44.3
Others	9	11.4
Total	79	100.0
NUMBER OF YEARS OF BEING IN THE PRESENT ESTABLISHMENT		
1-3	23	29.1
4-6	22	27.8

7-10	18	22.8
11-13	4	5.1
14-16	5	6.3
17 and above	7	8.9
Total	79	100.0
YOUR JOB DESCRIPTION		
Auditor	44	55.7
General Accountant	20	25.3
Others	15	19.0
Total	79	100.0

Source: Field Survey, (2023).

Table 4.1 highlights the demographic results of accounting practitioners from the various audit firms sampled in Ghana. The first table shows the age of respondents. The result revealed that 55 (69.6%) accounting practitioners were Males whilst 24 (30.4%) respondents were Females. From the result, it is evident that the males in the study outnumber the total number of female. This is an indication there was no gender balance among respondents during the study. Arguably, the nature of some professions dictates a certain level of gender bias. This result is likely to affect the awareness of forensic accounting among gender.

Also, the age distribution of the respondents from the various audit firms were recorded. As table 4.23 showed, 33 respondents representing 41.8% were between 18 to 30 years. On the other hand 45 (57.0%) respondents were in the age bracket of 31 to 40 years constituting the majority and the least range of age was 41 to 50 years. The age distribution of the respondents has also revealed a higher working force among audit firms in Ghana. This result agrees with (Odelabu, 2016) who studied forensic accountants' competences relationship with audit expectation gap in Nigeria. His

findings revealed that majority of the respondents who were in the working force were between the age of 26 to 35 and 36 to 45. It also worthy to note that the high labour force rate of respondents is likely to have an implication on their awareness of forensic accounting.

Respondents' educational qualification was categorised into Senior High School (SHS), Degree and Masters. Only 1 (1.3%) respondent out of the 79 respondents has SHS qualification, 45 (57.0%) respondents had Degree qualifications and 32 (40.5%) respondents had the highest qualification. Only 1 missing cases was observed. The result is a true reflection of a professional firm since the nature of the sector requires skills and a higher level of know-how in order to deliver accordingly. The level of educational qualification has an implication on the contribution of this study.

Table 4.1 also depicts the professional qualifications of the respondents. Out of the entire respondent 21 (26.6%) respondents had no professional qualification. Association Certified Chartered Accountants (ACCA) certified respondents were 14 (17.7%), respondents chartered with the Institute of Chartered Accountants Ghana (ICAG) where 35 (44.3%) forming the majority. Others consisted of other professional qualifications such as Certified Public Accountants (CPA), Chartered Institute of Management Accountants (CIMA), Chartered Institute of Certified Tax Accountants (CICTA) and Chartered Final Analyst (CFA). The result reveals a variety of professional discipline which could have a positive implication of the research's outcome.

Data on respondents' experience was also gathered to ensure respondents with experience contribute adequately to the research. 23 (29.1%) respondents have been in their various structure for a period in the range of 1-3 years. There were 22 (27.8%) respondents who had been with their auditing firm for a period between 4 to 6 years. 4

(5.1%) and 5 (6.3%) respondents claimed to have gotten an experience of 11 to 13 years and 14 to 16 years respectively. On the other side 7 (8.9%) respondents claimed to have worked in the auditing industry for more than 17 years. Interestingly, more experienced respondents could contribute immensely on the outcome of the research since these experience official could encounter issues that necessitates the need for forensic accounting.

The last part of the demographic characteristics of accounting practitioners depicts respondents with various job descriptions. Among the respondents, 44 (55.7%) were auditors, 20 were (25.3%) were general accountants, while 15 (19%) were others which consisted of tax experts as well as forensic accounting practitioners. The category of respondents' job descriptions would positively affect the result of this study.

4.3 Analysis of students' data:

This section represents the analysis of students' results which forms part of the entire set of population analysis. It includes both descriptive analyses and the inferential analyses.

4.3.1 Data validation of students' responses

This section is an overview of all the variables used in gathering data from student respondents. It gives an overview of the number of students who responded to each question as well as the missing cases during the data collection. Below is the explanation of the table 4.2.

Table 4.2: Data validation of students' questionnaire

VARIABLES	Valid	Missing
1. University Name	967	0
2. Gender	967	0
3. Age (Years)	966	1
4. Years Of Study	967	0
5. Are you aware of the existence of forensic accounting?	967	0
6. If yes in question (1) above, how did you first get the information	967	0
7. Please indicate by marking (X) your level of awareness of forensic accounting	901	66
8. My university offers forensic accounting courses.	964	3
9. There are lecturers teaching forensic accounting in my university.	965	2
10. Knowledge of forensic accounting will make positive impact on the training of accounting undergraduates in Ghana	963	4
11. Knowledge of Forensic accounting by accountants and auditors will make positive impact on the fight against fraud in Ghana.	964	3
12. How do you suggest the introduction of forensic accounting education be in your university curriculum	967	0
13. The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice	959	8
14. The accounting curriculum should provide forensic accounting coverage	957	10
15. Colleges and universities should encourage and advise students on career opportunities in forensic accounting	956	11
16. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination	956	11
17. There are numerous employment opportunities in forensic accounting.	958	9
18. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	957	10

Source: Field Survey, (2023).

Table 4.2 above is the validation table which highlight the various question completed by student in the data collection process. A total of 967 questionnaires were finally used after the screening. Upon the screening some items were not fully completed. Items 3

had a 966 (99.9%) valid cases with 1(0.1%) missing cases. Item 7 had 901 (93.2%) completed cases whilst 66 (6.8%) were missing. Followed by item 8 and 11 with 964 (99.7%) completed and 3 (0.310%) missing or uncompleted cases. Item 9, 10 and 13 had 2(0.2%), 4(0.4%) and 8(0.8%) non responses respectively. Item 14 and 18 presented a 10(1%) non response. Also, item 15 and 16 had 11(1.1%) non responses. From the above description of data, it was evident that the missing cases proportions were substantially insignificant, hence the researcher did not conduct any missing value analysis. (Graham, 2009) posits that missing data analysis (MDA) is not required when incomplete cases are not substantial significant.

4.2.2 Bio data of Students

Table 4.3: Name of university for students

	Frequency	Percent	Valid Percent
KNUST	88	9.1	9.1
UDS	169	17.5	17.5
UCC	193	20.0	20.0
UG	244	25.2	25.2
UEW	176	18.2	18.2
GIMPA	49	5.1	5.1
UPS	48	5.0	5.0
Total	967	100.0	100.0

Source: Field Survey, (2023).

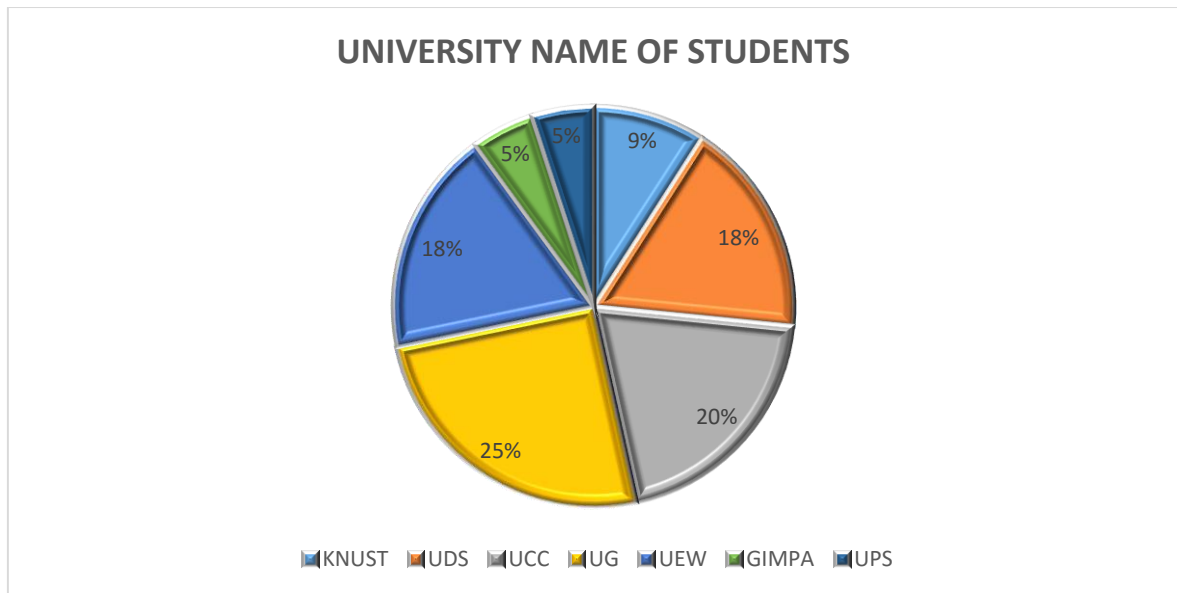


Figure 4.1: Name of university for students

Table 4.3 and figure 4.1 above show the distribution of the various universities and the number of students sampled. These schools represent public universities offering accounting related courses in Ghana. 88(9.1%) students were sampled from Kwame Nkrumah University of Science and Technology (KNUST), 169 (17.5%) were also sampled from University for Development Studies (UDS). On the other hand, 193 (20%) students were from University of Cape Coast (UCC). With regards to University of Ghana (UG) 244 (25.2%) students responded to the questionnaires. For University of Education Winneba (UEW), a total number of 176 (18.2) students were finally sampled to complete the questionnaires. 49 (5.1%) students from Ghana Institute of Management and Public Administration (GIMPA) whilst 48 (5%) students were from university of Professional Studies. Universities with larger numbers (beyond 150) had more than one accounting class, hence the result of the larger sample size. Additionally, the data collection comprised of third and final students at various universities. These factors accounted for the disparity among universities.

Table 4.4: Age and Year of study of Students

AGE	Frequency	Percent
15-24	669	69.18
25-30	266	27.51
31-35	22	2.28
35 AND ABOVE	10	1.03
Total	967	100.00
YEARS OF STUDY		
YEAR 3	413	42.7
YEAR 4	554	57.3
Total	967	100.0

Source: Field Survey, (2023).

The Ages of student respondents were categorized into four from table 4.3 above. Students between 15-24 years of ages were 669 (69.18%). 266 (27.51) students were between the ages of 25-30. Students who were between the ages of 31-35 were 22 representing 2.28%. Finally students above 35 years were 10 representing 1.03. The result of the distribution is a true picture of students' ages at an undergraduate university. Conventionally students complete their university education at an average of 24 to 26 years. The researches further concludes that the age distribution of respondents were the true range of ages of students at the various public university of Ghana.

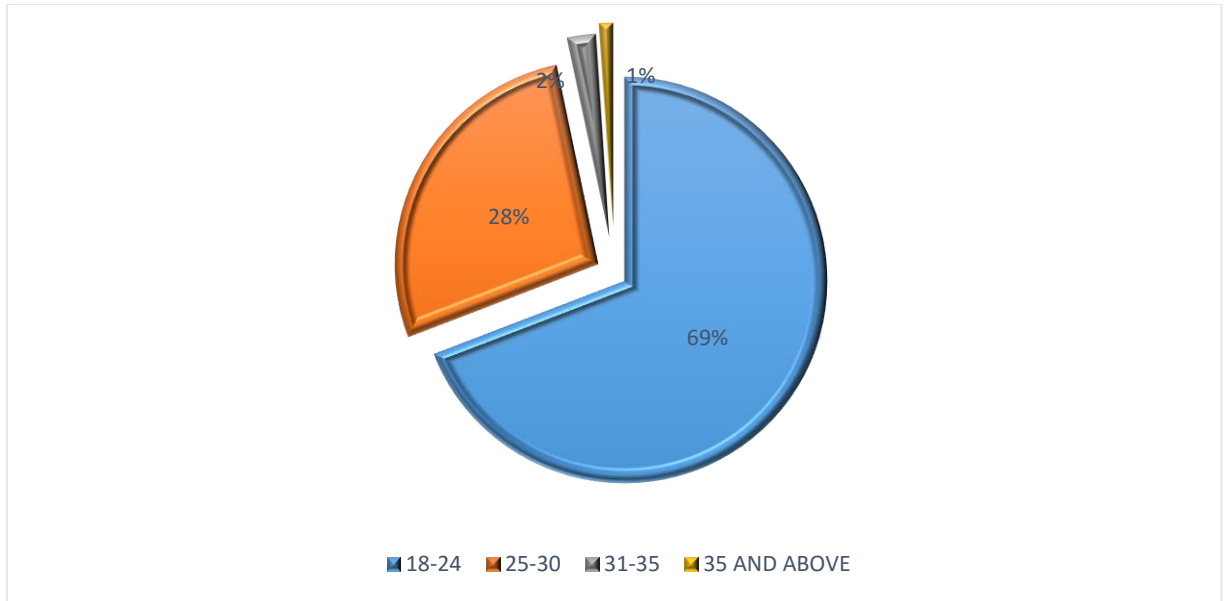


Figure 4.2: Age of Respondents

The researches further concludes that the age distribution of respondents were the true range of ages of students at the various public university of Ghana.

Secondly, the students were categorized into two, which is those in the third year as well as those in their final years. The data distribution revealed that third year students were 413(42.7) in number whilst final year students were 554 (57.3%), forming majority of students' respondents. The percentage differences are arguably not wide. the larger of final years over third years' students is likely to give the research a positive outcome and true picture of students' level of awareness on forensic accounting since final students are in their last years of the undergraduate degree ready to face real-world.

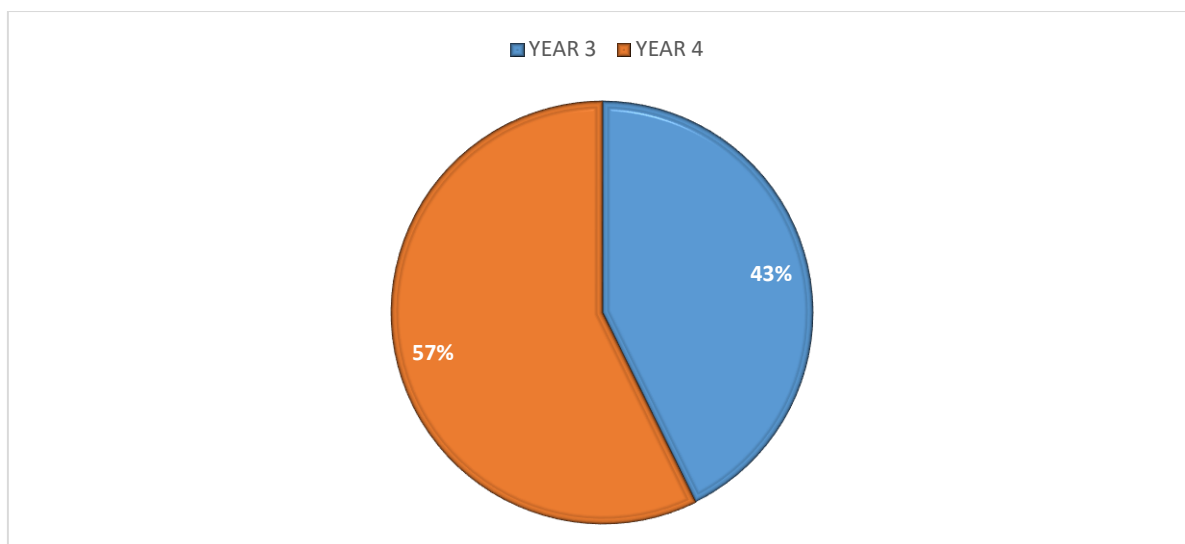


Figure 4.3: level of study

4.3 Perceived Level of Cognizance of Forensic Accounting among Students in Ghana.

The result and findings on students' awareness on forensic accounting education in Ghana is presented in table 4.4 to table 4.

Table 4.5: Are you aware of the existence of forensic accounting?

	Frequency	Percent
YES	662	68.5
NO	305	31.5
Total	967	100.0

Source: Field Survey, (2023).

Table 4.5 above showed 662 (68.5) students respondents claiming the knowledge in forensic accounting whilst 301 students claimed their lack of knowledge in forensic accounting. The result showed that about 68.5% of the respondents were having knowledge about forensic accounting as opposed to 31.1% who do not have any clue to

forensic accounting knowledge as a discipline in accounting. Based on the (662) 68.5% of students who are aware of forensic accounting, the research concludes on this size as the basis for the analysis of the study since they fall as the part of informed responses. Hence forth, the students' analysis is based on the 666 (68.9%) (Including the missing case) but not 967. The study conducted by (Eme, 2013) on forensic accounting recorded 341 (69.2%) out of 497 to have knowledge in forensic accounting. the percentages of informed responses are quite similar to this current study.

Table 4.6: Sources of awareness on forensic accounting

	Frequency	Percent
Classroom	131	13.5
Textbook/journal	176	18.2
Internet	197	20.4
Print media	123	12.7
Radio/TV	184	19.0
Others	156	16.0
Total	967	100.0

Source: Field Survey, (2023).

The table 4.6 above represents the distribution of students' various sources of information on forensic accounting. Out of the 967 students, 131 (13.5%) students declared to know forensic accounting from the classroom, 176 (18.2%) students claimed to know forensic accounting through test books and journals. Also 197 (20.4%) students averred that their source of knowledge about forensic accounting was through the internet. With regards to print media 123 (12.7%) students selected it as their source of awareness. 184 (19.0%) students declared radio/TV to be their reference source for the awareness of forensic accounting knowledge. 156 (16.0%) student declared others

(friends, family, extracurricular activities and mentors) as source of information on forensic accounting awareness. Of all the sources of information on forensic accounting knowledge, classroom and internet were the sources the most used by students to increase their awareness. The findings from (Eme, 2013) revealed that print/media (162) and internet (70) were the most source of information for students. The findings from this current research has a relation with Eme’s result since both result found internet to be the most popular source of information on forensic accounting awareness.

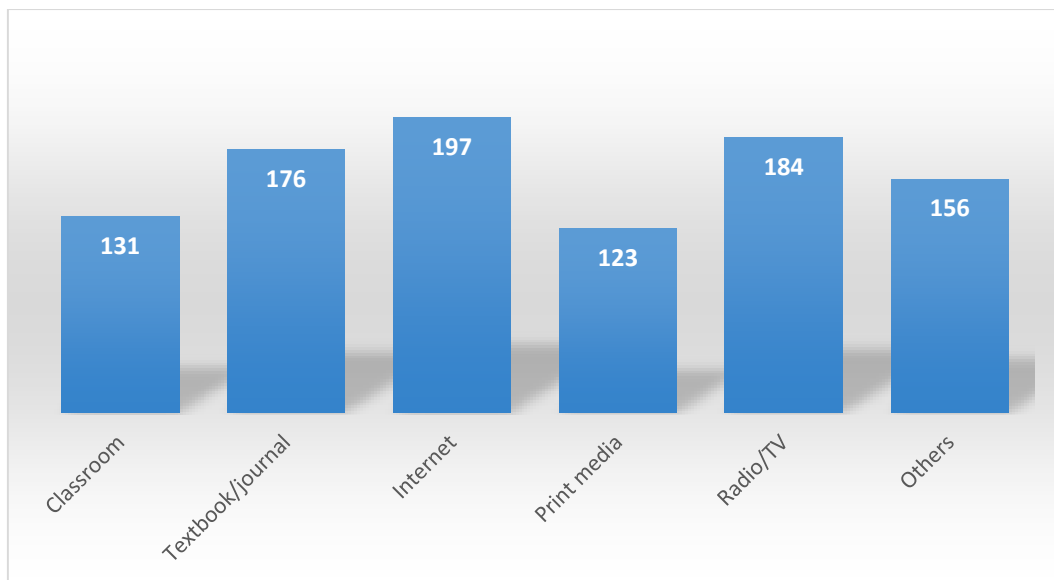


Figure 4.4: Sources of awareness on forensic accounting

Table 4.7: Level of awareness of forensic accounting

	Frequency	Percent
Very Low	158	16.3
Low	145	15.0
Moderate	306	31.6
High)	237	24.5
Very high	121	12.6
Total	967	100.0

Source: Field Survey, (2023).

The level of awareness on forensic accounting was categories into Very Low to Very High. Out of the 967 respondents, 158 (16.3%) students declared their level of awareness to be very low. 145 (15%) students claimed they have a low level of awareness of forensic accounting. Students with moderate awareness were 306 (31.6%). With regards to high level of awareness, 237 (24.5%) students declared. Finally, 121 (12.6%) students claimed a Very High level of awareness whilst 33 (5%) were missing cases. At least majority of the respondent fall between a moderate and high level of awareness of forensic accounting which will aid the reliability of the analysis in terms of inferential statistics.

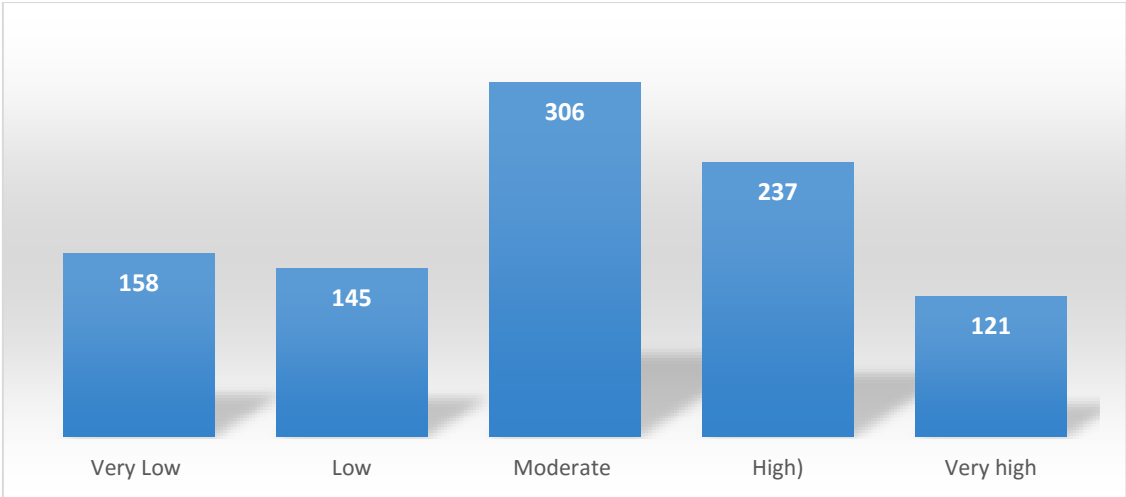


Figure 4.5: Level of awareness of forensic accounting

4.6.1 Universities offering forensic accounting (students’ responses)

Table 4.8: My University offers forensic accounting courses

	Frequency	Percent
No opinion	163	16.8
Strongly disagree	132	13.7
Disagree	240	24.8
Agree	155	16.0
Strongly Agree	277	28.7
Total	967	100.0

Source: Field Survey, (2023).

In order to ascertain whether universities in Ghana offer forensic accounting courses, the researcher ask respondents on the subject matter. 163 (16.8%) students have no opinion as to the question, 132 (13.7%) strongly disagreed, 240 (24.8%) students disagreed. 155 (16.0%) students Agreed that forensic accounting is being offered as a course in their university. 277 (28.7%) students also strongly agreed whilst there were two missing cases. Majority of the respondent strongly disagreed whilst others disagreed to the question that forensic accounting courses are offered in the universities. (Ihlas, 2017) who also studied universities who offer forensic accounting across five countries also found out that some countries offer forensic accounting courses both at the undergraduate level as well as the postgraduate level whilst other countries only offered forensic accounting at the postgraduate level.

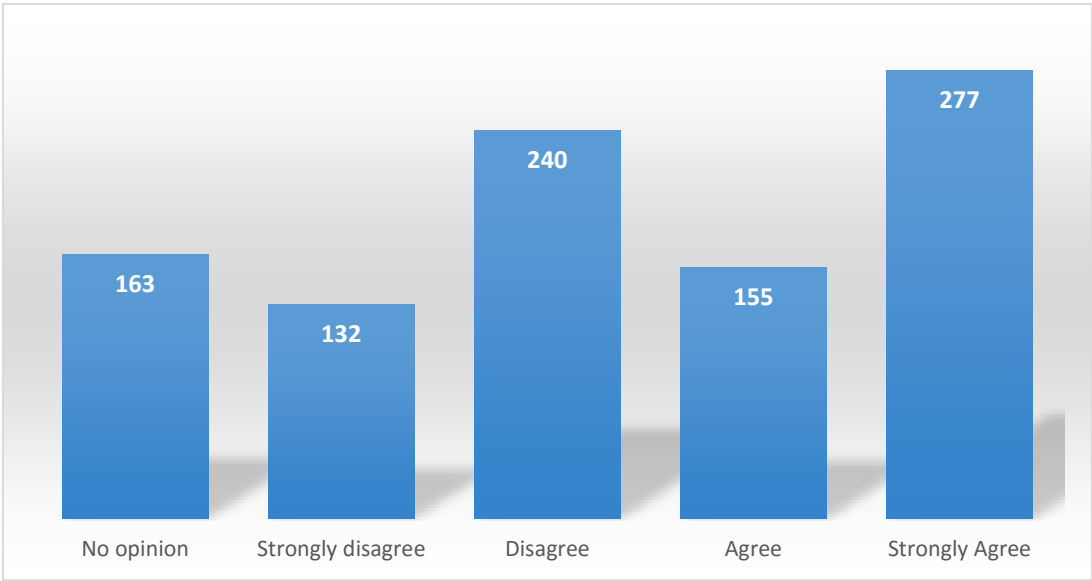


Figure 4.6: My university offers forensic accounting courses

4.6.2 Availability of forensic accounting academicians

Table 4.9: Availability of forensic accounting academicians.

	Frequency	Percent
No opinion	291	30.0
Strongly disagree	217	22.4
Disagree	127	13.0
Agree	148	15.3
Strongly Agree	184	19.3
Total	967	100.0

Source: Field Survey, (2023).

Students also responded on the availability of lecturers who can teach forensic accounting related courses. Out of the total of 967 students, 291 (30.0%) were indifferent, that is do not agree or disagree. 217 (22.4%) students strongly disagreed, 127 (13.0%) students disagreed, 148 (22.2%) students Agreed, 148 (15.3%) students strongly. Majority of the students' responses are skewed towards no opinion, strongly disagree and disagree (figure 4.7). This is an indication that, whilst some students do not know the course 65 specialization of their lecturers or professors, others do not know that their lecturers' areas of 65 specialization do not cut across forensic accounting.

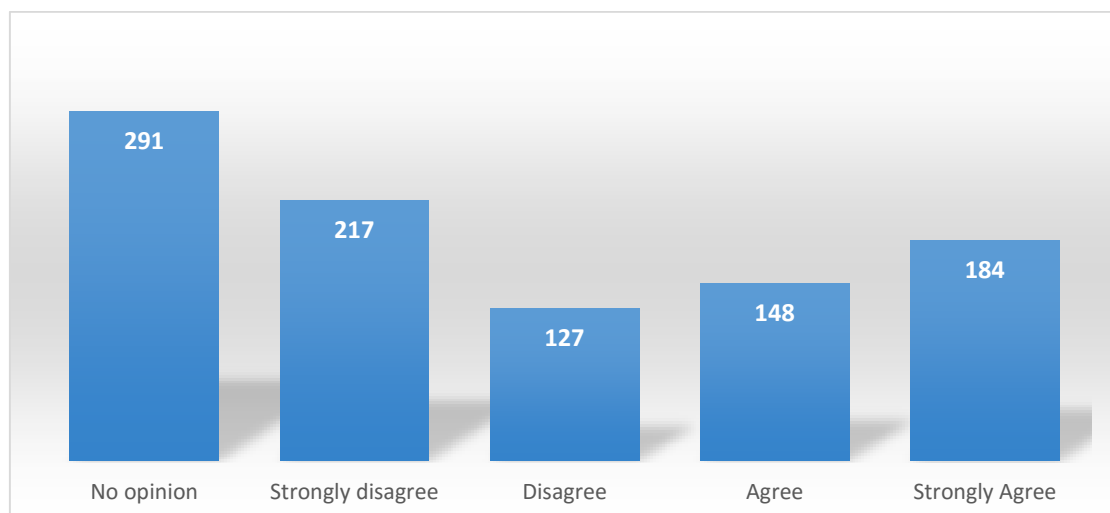


Figure 4.7: Availability of forensic accounting academicians.

Table 4.10: Knowledge of Forensic accounting by accountants and auditors will make positive impact on the fight against fraud in Ghana.

	Frequency	Percent
No opinion	153	15.8
Strongly disagree	118	12.2
Disagree	119	12.3
Agree	264	27.3
Strongly Agree	313	32.4
Total	967	100.0

Source: Field Survey, (2023).

Table 4.10 shows another response of students of the various public universities (offering accounting) towards the positive impact knowledge of forensic accounting would make on auditors and accountants in against fraud in Ghana. As supported that the training pf forensic accounting will aid undergraduate students, so it is from students' responses on the impact of forensic accounting knowledge on auditors and accountants. More than 60% of the entire sampled students from various public universities support the notion that the knowledge of forensic accounting will impact positively on auditors and accountants in fighting against fraud and corruption in Ghana.

The result is further analyzed using a one sampled chi-square test in table 4.11 below.

Table 4.1: Chi-square test result of perceived effect of knowledge of forensic accounting on students

	Observed N	Expected N	Residual
No opinion	112	132.8	-81.8
Strongly disagree	91	132.8	-123.8
Disagree	211	132.8	-111.8
Agree	311	132.8	178.2
Strongly Agree	242	132.8	139.2
Total	967		

Source: Field Survey, (2023).

Table 4.11 above highlights the observed, expected and residuals frequencies of students' responses on the impact of forensic accounting knowledge on their training. The residuals show the frequency of over and under responses of each scale. The highest positive residual shows that respondents overly 'Agree' to the proposition by 178.2 (as against the expected 132.8). This result further supports that students agreed that there will be positive impact of forensic accounting knowledge on the training of accounting students in public universities in Ghana.

Table 4.2: Chi-square test result of perceived effect of knowledge of forensic accounting on accountants and auditors.

	Observed N	Expected N	Residual
No opinion	153	133.0	-80.0
Strongly disagree	118	133.0	-115.0
Disagree	117	133.0	-116.0
Agree	264	133.0	131.0
Strongly Agree	315	133.0	180.0
Total	967		

Source: Field Survey, (2023).

Table 4.12 above highlights the observed, expected and residuals frequencies of students' responses on the impact of forensic accounting knowledge on accountants and auditors in fighting fraud in Ghana. The residuals show the frequency of over and under responses of each scale. The highest positive residual shows that respondents 'Strongly Agree' to the proposition by 180.0 (as against the expected 133.0). This result further supports that students strongly agreed that there will be positive impact of forensic accounting knowledge on accountants and auditors in fighting fraud in Ghana.

Table 4.3: Chi-square test statistics

	Chi-Square	df	Asymp. Sig.
Knowledge of Forensic accounting by accountants and auditors will make positive impact on the fight against fraud in Ghana.	644.946 ^a	4	.000
Knowledge of forensic accounting will make positive impact on the training of accounting undergraduates in Ghana	621.368 ^b	4	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 132.8.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 133.0.

The table 4.13 above points out the level of significance of the propositions of perceived effect of forensic accounting knowledge using chi-square test. The p-values of the two propositions shows that "Knowledge of Forensic accounting by accountants and auditors will make positive impact on the fight against fraud in Ghana" is significant at 99% level of confidence ($X^2(df=4) = 644.946, P < 0.01$). Also, the P-value of the proposition

“Knowledge of forensic accounting will make positive impact on the training of accounting undergraduates in Ghana” is significant at 99% confidence level ($X^2(df=4) = 621.368, P < 0.01$). The researcher accepts the proposition that forensic accounting knowledge will make a positive impact on training accounting student in Ghana and assisting auditors and accountants in fighting against fraud in Ghana. In other words, there is a variation in the level of responses among students concerning the effect knowledge of forensic accounting training will have on them. In the same vein, there is also a distinction on the impact of forensic accounting knowledge on auditors and accountants in fighting fraud in Ghana.

4.7 Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions

Table 4.4: Chi-square test result on the responsiveness of forensic accounting to society’s demand and practice.

	Observed N	Expected N	Residual
No opinion	211	132.8	-51.8
Strongly disagree	132	132.8	-93.8
Disagree	184	132.8	-48.8
Agree	306	132.8	173.2
Strongly Agree	134	132.8	21.2
Total	967		

Source: Field Survey, (2023).

Table 4.14 depicts the opinions of students of various public universities offering accounting courses about the inability of the existing accounting curriculum to respond to the society’s demand for forensic accounting education and practice. The table shows in columns observed, expected and residual values at each scale. The negative residuals

highlight the possible number of respondents who did not select or opt for the corresponding scale. The positive residuals are associated to the excess number of respondents who opted for a specific response. Hence the highest residual of 173 which relates to (Agree) hints that majority of the respondents agreed that the current accounting curriculum is not sufficiently responsive to society’s demand for forensic accounting education and practice.

Table 4.5: Chi-square test result on the coverage of forensic accounting in the current accounting curriculum

	Observed N	Expected N	Residual
No opinion	127	132.8	-105.8
Strongly disagree	124	132.8	-111.8
Disagree	149	132.8	-83.8
Agree	353	132.8	220.2
Strongly Agree	214	132.8	81.2
Total	967		

Source: Field Survey, (2023).

Table 4.15 shows observed, expected and residual values of the chi-square result on the coverage of forensic accounting in the current accounting curriculum. The residual with the highest positive 220.2 denoting “Agree”. The result indicates that students agree that the current accounting curriculum should provide forensic accounting. This study also corroborate the findings of (Rezaee et al., 2016) who studied forensic accounting among students in China. The results of the findings showed that students agreed that the Chinese accounting curriculum should cover forensic accounting education.

Table 4.6: Chi-square test result on career opportunities of forensic accounting and universities' encouragement on students.

	Observed N	Expected N	Residual
No opinion	193	132.4	-113.4
Strongly Disagree	118	132.4	-124.4
Disagree	281	132.4	-114.4
Agree	154	132.4	171.6
Strongly Agree	221	132.4	180.6
Total	967		

Source: Field Survey, (2023).

Table 4.16 above also represents the chi-square result of observed and expected values on career opportunities of forensic accounting and universities' encouragement on students. Respondent "strongly agreed" with the concern (proposition) that colleges and universities should encourage and advice students on career opportunities in forensic accounting. This was evident with residual with the highest positive value (180.6).

Table 4.7: Chi-square result on high-profile financial statement fraud cases that galvanize more interest in and demand for forensic accounting (students).

	Observed N	Expected N	Residual
No opinion	246	132.4	13.6
Strongly disagree	116	132.4	-114.4
Disagree	159	132.4	-90.4
Agree	258	132.4	135.6
Strongly Agree	188	132.4	55.6
Total	967		

Source: Field Survey, (2023).

Again, the researcher enquired from respondents their views on the interest in and demand for forensic accounting as a result of high- profile financial statement fraud cases. Respondent claimed they Agree to that high profile financial statement fraud cases call for more public interest forensic accounting. The highest residual of 135.6 connotes to “Agree”.

Table 4.8: Chi-square result on the numerous employment opportunities in forensic accounting.

	Observed N	Expected N	Residual
No opinion	113	132.8	-19.8
Strongly disagree	212	132.8	-120.8
Disagree	149	132.8	-83.8
Agree	250	132.8	117.2
Strongly Agree	243	132.8	107.2
Total	967		

Source: Field Survey, (2023).

Table 4.18 reveals the responses of students on their perception of the employment opportunities in forensic accounting. Majority of the students admitted (Agree) that there are numerous employment opportunities for those who do forensic accounting as a programme. The highest residual of 117.2 connoting to “Agree” confirms respondents’ response on the proposition.

Table 4.9: Chi- Square result on integration of Forensic fieldwork auditing into auditing textbooks and audit engagements.

	Observed N	Expected N	Residual
No opinion	147	132.6	-85.6
Strongly disagree	114	132.6	-118.6
Disagree	144	132.6	-88.6
Agree	297	132.6	164.4
Strongly Agree	265	132.6	128.4
Total	967		

Source: Field Survey, (2023).

Another table 4.19 depicting the views of students on the integration of forensic fieldwork auditing into textbooks and audit engagements. Respondents tend to “agree” with the proposition that forensic fieldwork auditing be integrated into auditing textbooks. The residual value in table 4.19 confirms the proposition since it is the positive residual with the highest value (164.4).

4.7.2 Chi-square test statistics

Table 4.10: Chi-square test statistics

	Chi-Square	df	Asymp. Sig.
The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice	333.666 ^a	4	.000
The accounting curriculum should provide forensic accounting coverage	646.060 ^a	4	.000
Colleges and universities should encourage and advise students on career opportunities in forensic accounting	781.610 ^b	4	.000
Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination	324.193 ^b	4	.000
There are numerous employment opportunities in forensic accounting.	355.684 ^a	4	.000
Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	548.697 ^c	4	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 132.8.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 132.4.

c. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 132.6.

Table 4.20 above is the summary chi-square test statistics of the six most recent propositions on the integration of forensic accounting in the national curriculum in tertiary institutions. The Asymptotic level of significant of the chi-square test statistics

for the propositions indicates P-values less than the critical value of 5%. The interpretation of the result is that there is a statistically significant difference in the sampled population with regards to each of the propositions.

How do you suggest the introduction of forensic accounting education be in your university curriculum?

Table 4.11: Method of integration of forensic accounting

	Frequency	Percent
a. Introduce forensic accounting as a stand-alone programme	274	28.3
b. Integrate forensic accounting through accounting courses	244	25.2
c. Integrate forensic accounting through auditing courses	225	23.3
d. Integrate forensic accounting through both accounting and auditing courses	224	23.2
Total	967	100.0

Source: Field Survey, (2023).

Table 4.21 shows result on the opinions of students towards the introduction of forensic accounting. 274 (28.3%) students opined that forensic accounting should be introduced as a stand-alone programmer. There were 244 (25.2%) respondents who were of the view that forensic accounting should be fused into the accounting courses such as purely accounting programmers. On the other hand, 225 (23.3%) students claimed the infusion of forensic accounting through purely courses will be of advantage. Whilst 224 (23.2%) students who constituted majority of the respondents opined that integrating forensic accounting into both auditing and accounting courses will be of advantage to both business students. The integration of forensic accounting into both fields (Accounting

and auditing) will ensure students who offer specialized accounting or auditing to have forensic accounting knowledge since their discipline is a perfect match for forensic accounting knowledge. This result is in one way or the other contrary to the study of (Rezaee, Ha *et al.*, 2014) whose findings revealed that majority of the students opined that forensic accounting will be beneficial when integrated into the accounting curriculum in China. The researcher's findings however suggests that forensic accounting knowledge will not only be beneficial to accounting students but also students who offer specialized auditing programmes. The contradictory argument of researchers like (Elmore, 2004; Rezaee, Crumbley and Elmore, 2004; Rezaee, Wall, 2016, Madan Lal and Utara, 2017) argue that forensic accounting as a stand-alone program is associated with a series of courses that students with certain skills and competences which might not be required in admission of students offering accounting courses.

4.8 Analysis of Accounting Practitioners' data:

This section represents the analysis of accounting practitioners' results which forms part of the entire set of population's analysis. The data collection also represents the responses of audit firms across the regions where all the public universities are located. There are Ashanti Region, Greater Accra Region, Central Region and Upper West Region.

4.8.1 Data validation of Accounting Practitioners

This section is an overview of all the variables used in gathering data from accounting practitioner's respondents. It gives an overview of the number of accounting practitioners who responded to each question as well as the missing cases during the data collection. Below is the explanation of the table.

Table 4.12: Validation of Accounting Practitioners

VARIABLES	N	
	Valid	Missing
1. Gender:	79	0
2. Age (years):	79	0
3. Education (highest qualification)	79	1
4. Professional qualification	79	21
5. Number of years of being in the present establishment	79	0
6. Your job description	79	0
7. What is the level of your awareness of forensic accounting	79	0
8. I know of the existence of forensic accounting	79	0
9. I am aware that one of the aims of forensic accounting is fraud detection and prevention	79	0
10. I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention	79	0
11. The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice	79	0
12. The accounting curriculum should provide forensic accounting coverage	79	0
13. Colleges and universities should encourage and advise students on career opportunities in forensic accounting	79	0
14. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination	79	0
15. There are numerous employment opportunities in forensic accounting.	79	0
16. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	79	0
17. How do you suggest the introduction of forensic accounting education be in your university curriculum?	79	0
18. At what level do you suggest forensic accounting be introduced?	79	0

Source: Field Survey, (2023).

Table 4.21 above is the validation table which highlight the various question completed by accounting practitioners during the data collection process. A total of 79 questionnaires were finally used after the screening. All the items in the questionnaires were completely validated with the exception of item 3 which had 1 (1.3%) missing case and item 4 with 21 (26.6%) missing cases. From the above description of data, it was evident that the missing cases proportions were substantially insignificant, hence the researcher did not conduct any missing value analysis. (Graham, 2009) posits that missing data analysis (MDA) is not required when incomplete cases are not substantial significant.

4.8.2 Awareness of Forensic Accounting

This section discusses the level of awareness of accounting practitioners among audit firms in Ghana.

Table 4. 13: level of awareness of forensic accounting (Practitioners)

	Frequency	Percent
Low	13	16.5
Moderate	29	36.7
High	28	35.4
High Very	9	11.4
Total	79	100.0

Source: Field Survey, (2023).

The level of awareness on forensic accounting was categories into Very Low to Very High with a scale ranging from 1 to 5. Out of the 79, 13 (16.5%) respondents declared their level of awareness to be low. 29 (36.7%) accounting practitioners claimed they have a moderate level of awareness of forensic accounting. Respondents with high

awareness were 28 (45.9%). Finally regards to very high level of awareness, 9 (11.4%) students declared same. This findings among accounting practitioners did not record any case of “very low” awareness which is contrary to the findings of Eme, (2013) who recorded a “very low” level of awareness 14% among accounting practitioners in Nigeria. However, in this findings majority of the responses are skewed towards “moderate and high” level of awareness of forensic accounting (see figure 4.9 below) which will aid the reliability of the analysis in terms of inferential statistics.

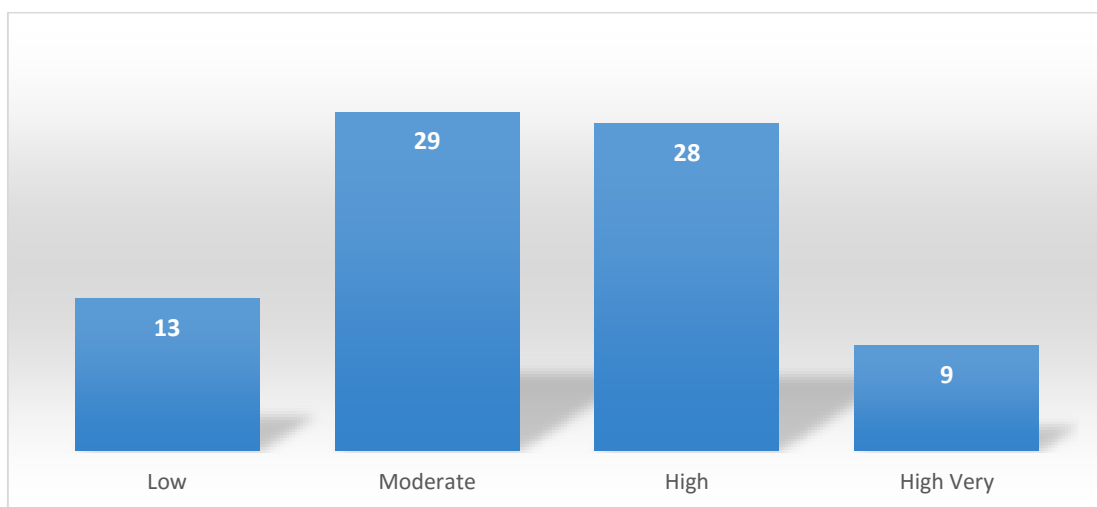


Figure 4.8: level of awareness of forensic accounting (Practitioners)

Table 4.14: Mean response on level of awareness of respondents (accounting practitioners)

	N	Mean	Std. Dev.	Min.	Max.
I know of the existence of forensic accounting	79	3.2785	.78343	0.00	4.00
I am aware that one of the aims of forensic accounting is fraud detection and prevention	79	3.4177	.56857	2.00	4.00
I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention	79	1.8734	1.43551	0.00	4.00

Source: Field Survey, (2023).

Table 4.25 measures represents the mean responses of accounting practitioners on their awareness of forensic accounting in Ghana. The indicators were measured using a Likert scale of 0 to 4 denoting disagree to strongly agree. The mean score represents the average score of responses in connection to the scales.

With an average of 3.28 corresponding to “Agree”, respondents agreed to the existence of forensic accounting. The standard deviation of 0.783 which signifies the level at which other respondents deviated the mean is either less or above (+/- 0.783). The standard deviation which equally shows a lesser deviation still denotes respondents’ agreeableness to the rubric ($3.28-0.78=2.5$). The awareness of accounting practitioners’ to the existence of forensic accounting indicates a positive sign for its introduction in Ghana.

With concerns to the indicator “I am aware that one of the aims of forensic accounting is fraud detection and prevention”, respondents also agreed that forensic accounting is aimed at detecting and mitigating fraud actions. Again the deviation from the mean is also confirming the responses since it shows a lower or small standard deviation of 0.57. Since respondents are aware of the objectives of forensic accounting, the enthusiasm to pursue forensic accounting would be satisfied if it is introduced in Ghana’s university curriculum.

A negative statement was still used to examine the level of accounting practitioners’ awareness about forensic accounting. The mean response of the item “I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention” is 1.87 denoting (disagree). This means that respondents are not unaware that forensic is one of the most powerful mechanism in fraud prevention and detection. Arguably, if accounting practitioners are not oblivious of the strong mechanism of forensic accounting in fraud detection and prevention, they would able to welcome its introduction.

Table 4.15: Chi- Square result on knowledge of the existence of forensic accounting

	Observed N	Expected N	Residual
Neutral	2	15.8	-13.8
Strongly disagree	1	15.8	-14.8
Disagree	1	15.8	-14.8
Agree	44	15.8	28.2
Strongly Agree	31	15.8	15.2
Total	79		

Source: Field Survey, (2023).

Table 4.26 above highlights the observed, expected and residuals frequencies of accounting practitioners responses on the impact of forensic accounting knowledge on their training. The residuals show the frequency of over and under responses of each scale. The highest positive residual shows that respondents overly ‘Agree’ to the proposition by 28.2 (as against the expected 15.8). This result further supports that accounting practitioners agreed that there will be positive impact of forensic accounting knowledge on the training of accounting practitioners in public universities in Ghana.

Table 4.16: Chi – Square result on the awareness of the aims of forensic accounting as fraud detection and prevention

	Observed N	Expected N	Residual
Disagree	3	26.3	-23.3
Agree	40	26.3	13.7
Strongly Agree	36	26.3	9.7
Total	79		

Source: Field Survey, (2023).

Table 4.27 above highlights the observed, expected and residuals frequencies of accounting practitioners’ responses on the awareness of that the aims of forensic accounting is fraud detection and prevention. The residuals show the frequency of over and under responses of each scale. The highest positive residual shows that respondents overly ‘Agree’ to the proposition by 13.7 (as against the expected 26.3). This result further supports that accounting practitioners agreed that they are aware of the aims of forensic accounting as fraud detection and prevention.

Table 4.17: Chi- Square result awareness of forensic accounting as one of the most powerful mechanisms in fraud detection and prevention

	Observed N	Expected N	Residual
Neutral	19	15.8	3.2
Strongly disagree	14	15.8	-1.8
Disagree	19	15.8	3.2
Agree	12	15.8	-3.8
Strongly Agree	15	15.8	-.8
Total	79		

Source: Field Survey, (2023).

Table 4.28 above highlights the observed, expected and residuals frequencies of accounting practitioners’ responses on awareness of forensic accounting as one of the most powerful mechanisms in fraud detection. The residuals show the frequency of over and under responses of each scale. The highest positive residual shows two equal residuals that respondents overly ‘disagree’ whilst another set were “neutral” to the proposition by 3.2 (as against the expected 15.8). This results state exhibits the dilemma of respondents since majority of the respondents do not practice forensic accounting, it is possible this could lead to a party to being neutral (residual=3.2) whilst others

disagreeing (residual=3.2). This result is in contradiction with that of (Gorgulu et al., 2015; Johnson-Rokoso, 2015) who proclaimed that the specialty of forensic accounting has the possibility of settling legal issues confronting firms through the application of financial information.

Table 4.18: Chi- Square test result on the awareness of forensic accounting

	Chi-Square	df	Asymp. Sig.
1. I know of the existence of forensic accounting	104.734 ^a	4	.000
2. I am aware that one of the aims of forensic accounting is fraud detection and prevention	31.316 ^b	2	.000
3. I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention	2.456 ^a	4	.653
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 15.8.			
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 26.3.			

The table (table 4.29) above points out the level of significance of the awareness of forensic accounting knowledge using chi-square test among accounting practitioners. The chi-square of goodness-of-fit was then performed to determine the tendency of the results occurring by chance. The p-values of the first two items show a p-value less 0.05 at various degrees of freedom. This implies that their significant difference in the mean of the responses from the average mean. The chi-square of the two items further reinforces the results of both the observed and expected values which showed a higher residual value in favour of “Agree”. Hence, the responses of accounting practitioners on

the knowledge of forensic accounting and the awareness of the aims of forensic accounting as fraud prevention and detection technique is statistically significant.

On the other hand, the chi-square result of the third items with a p-value of 0.653 greater than 0.05 at 4 degrees of freedom. Implying a statistically insignificant result, that responses of the population did not differ significantly. Whilst some respondents varied in their responses, the researcher can argue that these variations occurred by chance. Hence the tem “I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention” is rejected.

4.9 Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions

Table 4.19: Chi- Square result on the insufficient response of accounting curriculum to society's demand for forensic accounting education and practice

	Observed N	Expected N	Residual
Neutral	5	15.8	-10.8
Strongly disagree	5	15.8	-10.8
Disagree	2	15.8	-13.8
Agree	48	15.8	32.2
Strongly Agree	19	15.8	3.2
Total	79		

Source: Field Survey, (2023).

The table (table 4.30) above points out the chi-square result on the insufficiency of response of accounting curriculum to society’s demand for forensic accounting education and practice. Based on the result, majority of respondents agreed that the current accounting curriculum has not been able to meet the demand for forensic accounting in the society. This can be proven from table above with the highest residual showing 32.2.

This signifies that majority of the respondents claimed that society’s demand for forensic accounting has not and cannot to satisfied by the current accounting curriculum unless amendments are to put in place. This result is also in line with that students’ in table 4.14

Table 4. 20 Chi-square result on accounting curriculum provision of forensic accounting coverage

	Observed N	Expected N	Residual
Neutral	2	19.8	-17.8
Disagree	3	19.8	-16.8
Agree	44	19.8	24.3
Strongly Agree	30	19.8	10.3
Total	79		

Source: Field Survey, (2023).

Practitioners were required to respond to the item whether the accounting curriculum should provide forensic accounting. With the highest residual of 24.3, Majority of the respondents agreed to the rubric that the current accounting curriculum should provide forensic accounting. This means that 24 respondents additionally agreed to the rubric over the expected number of 19.8.

Table 4.21: Chi- Square on (Colleges and universities should encourage and advise students on career opportunities in forensic accounting)

	Observed N	Expected N	Residual
Neutral	3	19.8	-16.8
Strongly disagree	2	19.8	-17.8
Agree	41	19.8	21.3
Strongly Agree	33	19.8	13.3
Total	79		

Source: Field Survey, (2023).

Table 4.32 shows observed, expected and residual values of the chi-square result of colleges and universities' encouragement and counseling of students on career opportunities in forensic accounting. The residual with the highest value of 21.3 denoting "Agree" indicates that accounting practitioners agree that the colleges and universities should motivate students on career path of forensic accounting. This finding from respondents is vital for policy implication since accounting practitioners are professionals who are aware of the major challenges on current accounting practice hence any input suggested would yield a positive result.

Table 4.22: Chi- Square on high-profile financial statement fraud cases that galvanize more interest in and demand for forensic accounting (Practitioners).

	Observed N	Expected N	Residual
Neutral	7	19.8	-12.8
Disagree	5	19.8	-14.8
Agree	48	19.8	28.3
Strongly Agree	19	19.8	-.8
Total	79		

Source: Field Survey, (2023).

To assess the need for forensic accounting viewing the current state of the economy, the researcher intended to find out whether current financial statement fraud necessitates a lot interest in the demand for forensic accounting. The residual with the highest value of 28.3 denoting "Agree" indicates that accounting practitioners agreed that financial statement fraud is casing more firms to demand for forensic accounting services. This finding is line with (Elmore, 2004; Rezaee, Ha et al., 2014) claimed in their research that by and large, demand for forensic accounting is becoming more keen as more universities

are now introducing forensic accounting education. Forensic accounting services will proliferate in as much as white collar crime perpetrators continue improve in their wits.

Table 4.23: Chi- Square result on numerous employment opportunities in forensic accounting.

	Observed N	Expected N	Residual
Neutral	11	15.8	-4.8
Strongly disagree	4	15.8	-11.8
Disagree	13	15.8	-2.8
Agree	39	15.8	23.2
Strongly Agree	12	15.8	-3.8
Total	79		

Source: Field Survey, (2023).

Table 4.34 reveals the responses of accounting practitioners on their perception of the employment opportunities in forensic accounting. Majority of the accounting practitioners admitted (Agree) that there are numerous employment opportunities for those who do forensic accounting as a programme. The highest residual of 23.2 connoting to “Agree” confirms respondents’ response on the proposition. This finding from respondents gives an assurance about the availability job for those who would like to pursue forensic accounting profession. Imoniana, (2013) affirmed the rise of job opportunity in expert witnessing for forensic accountants in America. In Ghana to be precise, the recapitalisation of banks ‘reserves which has called for a multitude of consolidation and mergers will demand for more for asset valuations, and financial investigative services which are amongst the cores of forensic accounting profession.

Table 4.24: Chi-Square result on Forensic fieldwork auditing integration into auditing textbooks and audit engagements.

	Observed N	Expected N	Residual
Neutral	4	15.8	-11.8
Strongly disagree	1	15.8	-14.8
Disagree	3	15.8	-12.8
Agree	45	15.8	29.2
Strongly Agree	26	15.8	10.2
Total	79		

Source: Field Survey, (2023).

Another table (table 4.35) depicting the views of accounting practitioners on the integration of forensic fieldwork auditing into auditing textbooks and audit engagements. Respondents tend to “agree” with the proposition that forensic fieldwork auditing be integrated into auditing textbooks. The residual value in table 4.35 confirms the proposition since it is the positive residual with the highest value (29.2). Generally, forensic field work entail more practical activity to the theoretical knowledge of auditing acquired at the university. Integrating forensic fieldwork auditing into textbook will better be meaningful if students are required to undergo attachment programs in accounting and auditing firms so as to grasp green knowledge and experience.

Table 4.25: Chi-square Test Statistics on the Integration of Forensic Accounting in the National Curriculum in Tertiary Institutions

	Chi-Square	df	Asymp. Sig.
1. The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice	93.089 ^a	4	.000
2. The accounting curriculum should provide forensic accounting coverage	65.253 ^b	3	.000
3. Colleges and universities should encourage and advise students on career opportunities in forensic accounting	61.911 ^b	3	.000
4. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination	59.684 ^b	3	.000
5. There are numerous employment opportunities in forensic accounting.	45.747 ^a	4	.000
6. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	93.595 ^a	4	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 15.8.			
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 19.8.			

Table 4.36 above is the summary chi-square test statistics of the six most recent propositions on the integration of forensic accounting in the national curriculum in tertiary institutions. The chi-square of goodness-of-fit was then performed to determine the tendency of the results occurring by chance. The Asymptotic level of significant of the chi-square test statistics for the propositions indicates P-values less than the critical value of 5%. The interpretation of the result is that there is a statistically significant

difference in the sampled population with regards to each of the items measured. The chi-square of the six items further reinforce the results of both observed and expected values which showed higher residual value in favour of “Agree”. Hence, the responses of accounting practitioners on the integration of forensic accounting education in the national curriculum among tertiary institutions in Ghana has been agreed upon by majority of respondents. Researchers like (Rezaee *et al.*, 2016; Sui, 2013) supported the integration of forensic accounting education in the Ghanaian education.

Table 4.26: How do you suggest the introduction of forensic accounting education be in your university curriculum?

	Frequency	Percent
a. Introduce forensic accounting as a stand-alone programme	17	21.5
b. Integrate forensic accounting through accounting courses	34	43.0
c. Integrate forensic accounting through auditing courses	28	35.4
Total	79	100.0

Source: Field Survey, (2023).

Table 4.37 shows result on the views of accounting practitioners towards the introduction of forensic accounting. 17 (21.5%) respondents opined that forensic accounting should be introduced as a stand-alone programme. There were 34 (43.0%) respondents who were of the view that forensic accounting should be fused into the accounting courses such as purely accounting programmes. On the other hand, 28 (35.4%) respondents claimed the infusion of forensic accounting through purely courses will be of advantage. This result is in one way or the other contrary to the views of students in this research (table 4.21) but in line with the studies of (Rezaee, Ha *et al.*, 2014) whose findings revealed that

majority of the students opined that forensic accounting will be beneficial when integrated into the accounting curriculum in China. The researcher's findings however suggests that forensic accounting knowledge will not only be beneficial to accounting students but also students who offer specialized auditing programmes. The contradictory argument of researchers like (Elmore, 2004; Rezaee, Crumbley and Elmore, 2004; Rezaee, Wall, 2016, Madan Lal and Utara, 2017) argue that forensic accounting as a stand-alone program is associated with a series of courses that students with certain skills and competences which might not be required in admission of students offering accounting courses.

Table 4.27: At what level do you suggest forensic accounting be introduced

	Frequency	Percent
Undergraduate level	18	22.8
Post graduate level	4	5.1
Both levels	57	72.2
Total	79	100.0

Source: Field Survey, (2023).

This section represents respondents' opinion on the various way forensic accounting can be introduced in the national curriculum. Out of the 79 respondents from some sampled audit firms in Ghana, 18 (22.8%) respondents claimed that forensic accounting should be introduced at the Undergraduate level. 4 (5.1) respondents affirmed the introduction of forensic accounting at the post graduate level. On the other hand, 57 (72%) respondents supported the view that forensic accounting be offered at both levels (both undergraduate and postgraduate). Majority of the accounting practitioners supported the introduction of forensic accounting at both undergraduate and postgraduate level.

4.10 Analysis of Academics' data:

4.10.1 Data validation of Academicians' questionnaire

These variables used in gathering data from academicians showed that there no missing cases among all the 51 variables. The validation table (see appendix) which highlights the various question completed by academicians in the data collection process. A total of 122 questionnaires were retrieved. The researcher can further proceed with the analysis since the data are free from missing cases which could enhance the analysis of the data.

Table 4.28: Demography of academicians

	Frequency	Percent
NAME OF UNIVERSITY		
KNUST	12	9.8
UDS	17	13.9
UCC	10	8.2
UG	18	14.8
UEW	10	8.2
GIMPA	9	7.4
UPS	13	10.7
PRIVATE UNIVERSITY	33	27.0
TOTAL	122	100.0
GENDER		
Male	102	83.6
Female	20	16.4
Total	122	100.0
AGE (YEARS):		
18 – 30	7	5.7
31 – 40	95	77.9
41 – 50	18	14.8
51 – 60	1	.8
60 +	1	.8
TOTAL	122	100.0
EDUCATION (HIGHEST QUALIFICATION)		
Masters	85	69.7
PhD	37	30.3
TOTAL	122	100.0

PRESENT STATUS/ RANK IN THE UNIVERSITY		
Assistant Lecturer	25	20.5
Lecturer	67	54.9
Senior Lecturer	26	21.3
Assoc. Professor	2	1.6
Professor	2	1.6
TOTAL	122	100.0
YEARS OF TEACHING OR EXPERIENCE IN THE UNIVERSITY		
1- 3	27	22.1
4-7	58	47.5
8-11	35	28.7
12-15	1	.8
16 and above	1	.8
Total	122	100.0
YOUR JOB DESCRIPTION		
Auditing	24	9.2%
Forensic accounting	5	1.9%
Corporate governance & social responsibility	29	11.1%
Corporate Finance	40	15.3%
Financial Accounting	53	20.3%
Management Accounting	38	14.6%
Taxation	21	8.0%
Others	51	19.5%
Total	261	100.0%

Source: Field Survey, (2023).

Table 4.39 highlights the demographic results of lecturers from all the public universities offering accounting and finance related programs and some selected private universities in Ghana. The first table shows the distribution of lecturers from various universities. The result revealed that 12 (9.8%) respondents were lecturers from Kwame Nkrumah University of Science and Technology (KNUT). 17 (13.9%) respondents were academicians from the University for Development Studies (UDS). 10 (8.2%) were respondents (lecturers) from the University of Cape Coast (UCC). 18 (14.8) respondents from University of Ghana (UG), 10 (8.2%) lecturers from the University of Education Winneba (UEW). Also, 9 (7.4%) lecturers were respondents from Ghana Institute of

Management and Public Administration (GIMPA), 13 (10.7%) respondents from university of professional Studies (UPS) and 33 (27%) lecturers. Lecturers from private universities constituted the majority since they were selected from diverse private universities. The names of the private universities selected for the researcher were Valley View University (VVU), Christ Apostolic University College (CAUC), Garden City University, KNUSTFORD University and Christian Service University. The researcher combined private universities across the region in order to get representative samples. Out of a total number 175 questionnaires distributed across the universities, 122 questionnaires were recovered, constituting a recovery rate of 69.7%. this recovery far outnumbers that of (Rezaee et al., 2004) who had a recovery rate of 15.4% from the 1000 questionnaires distributed to accounting lecturers nationwide. This low recovery rate of questionnaires among academic argued to be a general challenge that has to be dealt with overtime.

The gender distribution of lecturers across universities were also recorded. 102 (83.6%) males were recorded to have participated in the completion of the questionnaires whilst only 20 (16.4%) female lecturers participated in the study. The cause of the wide disparity could be as a result of the disproportionate gap of Female to Male lecturer ratio in Ghana in particular the world at large. A similar research conducted on lecturers in Nigeria by (Eme, 2013) indicated a gender disparity of 68% (84% Male and 16% Females).

Also, the age distribution of the respondents from the various universities was recorded. As table 4.39 showed, 7 (5.7) respondents representing 5.7% were between 18 to 30 years. On the other hand, 95 (77.9%) respondents were in the age bracket of 31 to 40 years constituting the majority, 18 respondents representing 14.8% in the age bracket of 41-50. Only one respondent was recorded to be in the age bracket of 51-60 and 60 and

above. Majority of the respondents fall with the labour force, which likely to have an implication on the awareness of respondents about forensic accounting.

On the side of educational qualifications, all the respondents were holding a minimum qualification of masters. This is because the minimum qualification for lecturing at a university is considerably a master qualification. In effect, 85 representing 69.7% whilst PhD holders were 27 representing 30.3%. Majority of the respondents were master holders. Some of the lecturers with the master qualification are however undergoing PhD programmes viewing the recent global standard which is requiring individual lecturing at a university a terminal degree. Despite the lower proportion of PhD holders in the study, respondents with master qualifications are however engulfed with longer working and research experience as it can be noticed in the academic rank of respondents below.

Respondents' academic rank represents their various level of promotion in terms of research publication, hours of teaching as well as other community roles played by a lecturer. 25 (20.5%) respondents were assistant lecturer, 67 (54.9%) respondents were lecturers. 26 (21.3%) respondents claimed they were senior lecturers, 2 (1.6%) associate professors and full professors.

The job description of respondents revealed that lecturers had more one specialisation or area of interest. Only 5 (1.9%) respondents were having forensic accounting as their research area. Majority of the respondents claimed to be interested in areas of financial accounting, whilst others were corporate finance, Corporate Social Responsibility and etc.

Table 4.29: Level of awareness of forensic accounting (Academicians)

	Frequency	Percent
No Knowledge (0)	14	11.5
Very Low (1)	4	3.3
Low (2)	17	13.9
Moderate (3)	42	34.4
High (4)	25	20.5
Very high (5)	20	16.4
Total	122	100.0

Source: Field Survey, (2023).

The level of awareness on forensic accounting was categories with a scale ranging from 0 to 5. Out of the 122 respondents, 14 (11.5%) respondents declared to have no knowledge on forensic in Ghana. 4 (3.3%) academicians claimed they had very low level of awareness of forensic accounting. 17 (13.9%) declared low level of awareness. Respondents with moderate awareness were 42 (34.4%). Respondents with level of awareness were 25 (20.5%). Finally regards to very high level of awareness, 20 (16.4%) lecturers declared same. Whilst the finding among accounting practitioners did not record any case of “No knowledge” or “very low” awareness, it can be argued that practitioners are more aware of forensic accounting compared to lecturers. With the findings of Eme, (2013) who recorded a comparatively lower rate of 3.2% on the level of awareness which indicates “very low” among academics in Nigeria. Agreeably both studies reordered majority of the responses are skewed towards “moderate and high” level of awareness of forensic accounting.

4.11.1 Level of cognizance of forensic accounting among practitioners, students and academicians in Ghana

In this section, the researcher attempted to investigate the level of variation in the awareness of the three sets of respondents. This will further aid at testing the second hypothesis. The various level of awareness has analysed earlier in table 4.6, 4.8 and 4.40). One- ANOVA is used to test level of variation and descriptive mean is presented whilst Scheffe's post hoc test is conducted to test the significance of the multiple comparison among the samples. The table is a summary of each sample's level of awareness.

Table 4.30: Level of cognizance of forensic accounting among Students, Accounting practitioners and Academicians

	Students	Accounting Practitioners	Academicians
No Knowledge	0	0	14
Very Low	58	0	4
Low	141	13	17
Moderate	306	29	42
High)	107	28	25
Very high	21	9	20
Missing System	33	0	0
Total	666	79	122

Source: Field Survey, (2023).

Table 4.31: One- way ANOVA analysis in the variation among Students, Accounting practitioners and Academicians

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25.135	2	12.568	11.966	.000
Within Groups	872.756	831	1.050		
Total	897.891	833			

H0: There is no significant variation in the level of awareness of forensic accounting among practitioners, students and academicians in Ghana.

H1: There is a level of variation in the awareness of forensic accounting among practitioners, students and academicians in Ghana.

Table 4.47 above represent the ANOVA analysis of the three samples on the variations in their level of cognizance of forensic accounting. The mean square between groups and within groups were 12.57 and 1.05 respectively. The F-statistics of the ANOVA result was 11.97 whilst the P-value is 0.00 which is less than the less than the Alpha value of 5%. This result of the p-value signifies that there is significant variation among the means of the three sample of respondents (Student, Accounting Practitioners and Lecturers). Hence, the researcher rejects the null hypothesis in favour of the Alternative hypothesis and therefore argues that there is a significant variation in the level of cognizance among students, Accounting practitioners and academicians. This result is consistent with (Eme, 2013) who also conducted similar study.

Table 4.32: Descriptive Statistics of One-way ANOVA Analysis

Type	Mean	Std. Deviation	N
Students	2.8294	.92911	633
Accounting Practitioners	3.4177	.90025	79
Academics	2.9836	1.47701	122
Total	2.9077	1.03822	834

Source: Field Survey, (2023).

The table shows the descriptive statistics of the ANOVA result hypothesized earlier in the table above. Table 4.48 shows the individual means of the samples as well as their standard deviations. The result shows that the means level of cognisance of students (2.83) as well as academics (2.98) are almost related whilst that of accounting practitioners (3.42) is relatively higher. Academics' mean level of cognisance hints an upper level of cognisance of forensic accounting as compared to students and academics. The numerical presentation may not help reveal the level of closeness in the means. The figure below graphical reveals that gap in terms of awareness of the sample population.

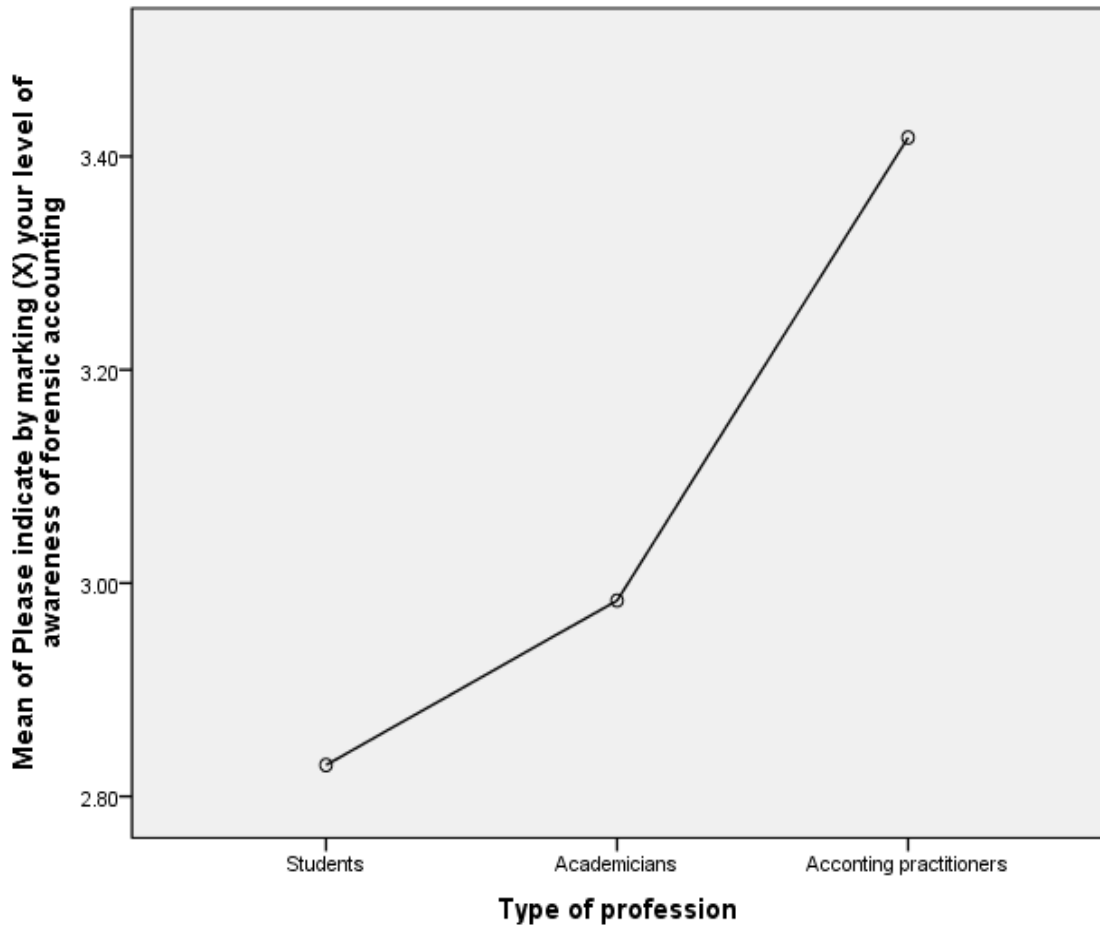


Figure 4.9: Mean plot of level of cognisance of forensic accounting among students, accounting practitioners and academics.

Figure 4.10 highlights the graphical presentation of various samples' mean level of cognisance of forensic accounting. The figure shows that the mean level of awareness of students as well as academicians are relatively closer, hence there might not be a significant variation between their levels of cognisance on forensic accounting. However, accounting practitioners' mean cognisance level largely varies from the other two sets of populations. A more rigorous analysis is needed to test the significance in the levels of variation among the three sample means level of cognisance.

Table 4.33: Results of Scheffe's post hoc tests of multiple Comparisons

(I) Variables		Mean		
		Difference (I-J)	Std. Error	Sig.
Students	Academics	-.1542	.10133	.315
	Accounting Practitioners	-.5883*	.12228	.000
Academics	Students	.1542	.10133	.315
	Accounting Practitioners	-.4341*	.14800	.014
Accounting Practitioners	Students	.5883*	.12228	.000
	Academics	.4341*	.14800	.014

The mean difference is significant at 5%

Table 4.49 points out Scheffe's post hoc test of significance of multiple comparisons on the significance in the level of cognizance of forensic accounting among the sample population in study. The results show that the mean of students happened to be insignificantly different from academics (p-value >5%) in terms of mean. The variation between students and accounting practitioners (vice versa) was statistically significant (p-value <5%). Academics on the other hand significantly differed from accounting practitioners account of means (p-value <5%). From this, the researcher can infer that whilst there were no significant differences in the level of students and academics, accounting practitioners were however more aware of forensic accounting. Daily corporate life, corporates' financial scandals as well corporate restructuring could have caused practitioners to know more about forensic accounting. Motivating academics to further studies and research in forensic accounting would enhance their cognizance.

4.11.2 To ascertain the main issues that could militate against the introduction/ application of forensic accounting in Ghana.

Table 4.34: Chi- Square results and Friedman test on the factors that could hinder the introduction of Forensic Accounting in Ghana.

	Chi-Square	df	Asymp. Sig.	Friedman Test	Decision
lack of financial and human resources	78.738 ^a	4	.000	4.14	1st
lack of administration interest and support	49.607 ^b	3	.000	3.98	2nd
lack of flexibility in curriculum content	62.672 ^a	4	.000	3.67	3rd
Lack or inadequate instructional materials including textbooks to mount the programme.	56.770 ^a	4	.000	3.50	4th
Lack of faculty interest in the programme.	33.246 ^a	4	.000	2.85	5th
lack of authoritative standards and guidelines as somewhat severe obstacles	28.410 ^a	4	.000	2.86	6th

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 24.4.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 30.5.

Table 4.50 above illustrates two sets of statistics. The first is the one sample chi-square statistics result and a Friedman ranking test result on the factors that could affect the introduction of forensic accounting education in Ghana. The observed and expected chi-square values (see Appendix C) showed that majority of the respondents agreed that the above items were the likely challenges that could hinder the introduction of forensic accounting in Ghana. Friedman test was further adopted to rank the likely challenges in pressing order. The Friedman test results were the median response of each item. The test revealed the highest median response to be lack financial and human resources since

it is having the highest median response of 4.14. Hence among all the challenges that could affect the introduction of forensic accounting, financial and human resources were the most issue that impede the introduction of forensic accounting in Ghana. Below is the statistical significance of the rankings

Table 4.35: Friedman Test Statistics Results

N	122
Chi-Square	75.313
df	5
Asymp. Sig.	.000

Source: Field Survey, (2023).

Table 4.51 above shows chi-square (5) 75.313, p-value<5%. The p-value is significant since it is less than 5%. The researcher can therefore conclude that the differences between the medians are statistically significant and the most ranked hindering factor was the most perceived challenge. Other hindering factors could equally undermine the introduction of forensic accounting, however respondents believe that when there is availability of resources, subsequent hindering factor would be overcome.

4.11.3 Integration of forensic accounting education in the national curriculum in tertiary institutions.

This section represents the results of the three sample populations on their responses about the method of integration of forensic accounting in Ghana. The table below reveals the results of the respondents

Table 4. 36 Chi-square result of how forensic accounting be introduced in Ghana.

	Observed N	Expected N	Residual
Introduce forensic accounting as a stand-alone programme	251	216.8	34.3
Integrate forensic accounting through accounting courses	207	216.8	-9.8
Integrate forensic accounting through auditing courses	142	216.8	-74.8
Integrate forensic accounting through both accounting and auditing courses	267	216.8	50.3
Total	867		

Source: Field Survey, (2023).

Table 4.52 above shows the chi square result of students, accounting practitioners and academicians about how forensic accounting be introduce in Ghana. The residual with the highest value shows majority of the population’s opinion on the introduction of forensic accounting. The residual with the highest value of 50.3 shows that forensic accounting be introduce through both accounting and auditing courses. Since there are a number of accounting and auditing programmes offered by students in Ghana, this will serve as an advantage to upcoming graduates. The finding is consistent with (Enofe et al., 2013) who opined that forensic accounting be integrated into the accounting curriculum. However, this study’s finding contradicts (Bhasin, 2016).

Table 4.37: Chi- square test statistics

	INTEGRATION
Chi-Square	43.279 ^a
df	3
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 216.8.

Table 4.53 is the chi square results of the test statistics of table 4.47. The chi-square (3) 43.27, p-value <5% met the assumption of minimum expected frequency being less 5. The p-value is significant since it is less than the critical value of 5%. The researcher further concludes that there is different on the responses of the population. Hence the various responses of the populations are not the same therefore did not occur by chance.

Table 4.38: Crosstab of level at which forensic accounting be introduced in Ghana& population

	Academicians	Accounting Practitioners	Total
Undergraduate level	25	18	43
Post graduate level	48	4	52
Both levels	49	57	106
Total	122	79	201

Source: Field Survey, (2023).

43 respondents of which 25 academician and 18 accounting practitioners claimed the introduction of forensic accounting at the undergraduate level. On the side of post graduate level, there were 52 respondents who averred of which 48 academicians and 4 accounting practitioners. 106 respondents which constituted the majority asserted that forensic accounting be introduced at both the undergraduate and the postgraduate level. Researchers like (Herbert, 2017; Tawfeeq *et al.*, 2014) also concord to this findings.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section provides an overview of the results obtained after extensive data analysis. It focuses on summarizing the outcomes of the research, which aimed to investigate the introduction of forensic accounting in Ghana. The section is organized into sub-sections, including a summary of findings, conclusions drawn from the results, implications for policy implementation, limitations of the study, and suggestions for future research.

5.2 Summary of Results

The research findings are outlined below in alignment with their respective objectives. The study's outcomes reveal that there is no statistically significant difference in the awareness of forensic accounting between students and academicians. However, accounting practitioners exhibit a notable variance in awareness compared to students and academicians. This divergence could be attributed to practitioners' exposure to real-life fraud issues and the demand for forensic accounting services. Academicians might need to enhance their awareness through conferences and workshops, while students could benefit from introductory education on forensic accounting in their curriculum. Academicians' inclinations toward incorporating forensic accounting education in Ghana are influenced by their perception of its positive societal impact, their assessment of fraud vulnerability, potential adverse effects of fraud, as well as societal and corporate fraud levels. The study indicates a direct relationship between perceived benefits of forensic accounting and academicians' intention to introduce it. However, this relationship lacks statistical significance, possibly due to limited direct exposure to the benefits.

Academicians' decisions regarding forensic accounting integration are influenced by perceived severity, risk, and susceptibility to fraud.

The study identifies several factors that could hinder the integration of forensic accounting in Ghana. Among these, the lack of financial and human resources, administration support, and curriculum flexibility emerge as significant internal obstacles. Addressing these challenges, particularly the financial and human resource constraints, would require long-term planning and preparation. The integration of forensic accounting education sparks debates between stand-alone programs and integration into existing accounting and auditing courses. The research suggests that integration through both accounting and auditing courses is beneficial, equipping students with essential skills. However, a comprehensive skill set might not be fully achieved through integration alone. A balanced approach involving integration at multiple academic levels is recommended to facilitate continued knowledge acquisition beyond the initial degree.

5.3 Conclusion

The researcher's investigation into the introduction of forensic accounting in Ghana underscores the similarity in awareness levels between students and academicians, with accounting practitioners exhibiting higher awareness. The study emphasizes that academicians should grasp the gravity of fraud before introducing forensic accounting, as indicated by their perceptions of severity, risk, and susceptibility.

The study concludes that the primary obstacle to introducing forensic accounting in Ghana lies in financial and human resource challenges, which can be controlled to some extent. The presence of few academicians in the field necessitates significant investment by universities to establish forensic accounting programs.

In light of these findings, the research advocates for the integration of forensic accounting in both accounting and auditing courses as an efficient and cost-effective approach for its introduction.

5.4 Implications for Policy Implementation

The research outcomes highlight lower awareness of forensic accounting among academicians compared to accounting practitioners. To address this, stakeholders in forensic accounting education are encouraged to incorporate forensic accounting into undergraduate and postgraduate programs. Integration into existing accounting and auditing courses will equip students with skills to detect and prevent fraud. Leveraging media and technology can effectively raise awareness of forensic accounting in Ghana. The introduction of forensic accounting could also attract students from abroad, reducing the need for studying abroad and fostering cross-border academic exchanges.

5.5 Limitations of the Study

A major limitation of this research is its limited scope to Ghana, preventing generalization across Africa. Conducting a comparative study across sub-Saharan Africa could enhance broader applicability.

5.6 Proposed Areas for Further Research

Future studies should expand the research scope to encompass technical universities across the nation. Collaboration among departments, faculties, academic boards, and national accreditation bodies is vital for the introduction of forensic accounting. The research recommends exploring the course content for forensic accounting and adapting existing syllabi to suit the country's needs.

Enhancing the reliability of constructs, such as addressing low Cronbach's Alpha scores due to heterogeneous items, should be considered. Additionally, conducting specialized studies focusing on insights from auditing and accounting firms nationwide could provide deeper insights into the field.

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APPENDICE 1

FAC1				FAC2			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Neutral	1	24.4	-23.4	Neutral	10	30.5	-20.5
Strongly disagree	2	24.4	-22.4	Disagree	18	30.5	-12.5
Disagree	29	24.4	4.6	Agree	61	30.5	30.5
Agree	46	24.4	21.6	Strongly Agree	33	30.5	2.5
Strongly Agree	44	24.4	19.6	Total	122		
Total	122						
FAC3				FAC4			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Neutral	9	24.4	-15.4	Neutral	10	24.4	-14.4
Strongly disagree	1	24.4	-23.4	Strongly disagree	5	24.4	-19.4
Disagree	32	24.4	7.6	Disagree	36	24.4	11.6
Agree	50	24.4	25.6	Agree	50	24.4	25.6
Strongly Agree	30	24.4	5.6	Strongly Agree	21	24.4	-3.4
Total	122			Total	122		
FAC4				FAC6			
	Observed N	Expected N	Residual		Observed N	Expected N	Residual
Neutral	10	24.4	-14.4	Neutral	25	24.4	.6
Strongly disagree	5	24.4	-19.4	Strongly disagree	7	24.4	-17.4
Disagree	36	24.4	11.6	Disagree	36	24.4	11.6
Agree	50	24.4	25.6	Agree	38	24.4	13.6
Strongly Agree	21	24.4	-3.4	Strongly Agree	16	24.4	-8.4
Total	122			Total	122		

APPENDICE 2

STUDENTS QUESTIONNAIRE

This questionnaire is designed to collect data on the topic: “AN EXPLORATION OF FORENSIC ACCOUNTING EDUCATION IN GHANA” Please answer all the questions to the best of your ability. It is guaranteed that your responses will remain confidential and shall be used for research purposes only.

Please tick

Section A: Bio data of Students

1. Name of university	KNUST <input type="checkbox"/>	UDS <input type="checkbox"/>	UCC <input type="checkbox"/>	UG <input type="checkbox"/>	UEW <input type="checkbox"/>	GIMPA <input type="checkbox"/>	UPS <input type="checkbox"/>
2. Age	15-24 years <input type="checkbox"/>	25-30 years <input type="checkbox"/>	31-35 years <input type="checkbox"/>	35 and Above years <input type="checkbox"/>			
3. Years of Study	Year 3 <input type="checkbox"/>	Year 4 <input type="checkbox"/>					
4. Are you aware of the existence of forensic accounting?	Yes <input type="checkbox"/>	No <input type="checkbox"/>					
5. Sources of awareness on forensic accounting	Classroom <input type="checkbox"/>	Textbook /Journal <input type="checkbox"/>	Internet <input type="checkbox"/>	Print Media <input type="checkbox"/>	Radio/T V <input type="checkbox"/>	Others <input type="checkbox"/>	
6. Level of awareness of forensic accounting	Very Low <input type="checkbox"/>	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>	Very High <input type="checkbox"/>		

On a scale of 1 to 5 with 1 signifying “Strongly Disagree”; 2 signifying “Disagree”; 3 signifying “Agree”; 4 signifying “Strongly Agree”, 5 signifying “Undecided/No Opinion”, please indicate your perceptions of the following statements.

Perception Statements (Sections B & C)	Strongly Disagree Strongly Agree				
Section B: Awareness of Students on Forensic Accounting					
7. My University offers forensic accounting courses.	1	2	3	4	5
8. Availability of forensic accounting academician.	1	2	3	4	5
9. Knowledge of forensic accounting will make a positive impact on the training of accounting undergraduates in Ghana.	1	2	3	4	5
Section C: Integration of Forensic Accounting Education					
10. Knowledge of Forensic accounting by accountants and auditors will positively impact the fight against fraud in Ghana.	1	2	3	4	5
11. The current accounting curriculum is not sufficiently responsive to society’s demand for forensic accounting education and practice.	1	2	3	4	5
12. The accounting curriculum should provide forensic accounting coverage.	1	2	3	4	5
13. Colleges and universities should encourage and advise students on career opportunities in forensic accounting.	1	2	3	4	5
14. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination.	1	2	3	4	5

15. There are numerous employment opportunities in forensic accounting.	1	2	3	4	5
16. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	1	2	3	4	5
17. How do you suggest the introduction of forensic accounting education be in your university curriculum? a. Introduce forensic accounting as a stand-alone programme. b. Integrate forensic accounting through accounting courses. c. Integrate forensic accounting through auditing courses. d. Integrate forensic accounting through both accounting and auditing courses.	1	2	3	4	5

THANK YOU!!!

APPENDICE 3

ACCOUNTING PRACTITIONERS QUESTIONNAIRE

This questionnaire is designed to collect data on the topic: “AN EXPLORATION OF FORENSIC ACCOUNTING EDUCATION IN GHANA” Please answer all the questions to the best of your ability. It is guaranteed that your responses will remain confidential and shall be used for research purposes only.

Please tick

Section A: Bio data of Accounting Practitioners

1. Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>				
2. Age	18-30 years <input type="checkbox"/>	31-40 years <input type="checkbox"/>	41-50 years <input type="checkbox"/>	50 and Above years <input type="checkbox"/>		
3. Education	SHS <input type="checkbox"/>	DEGREE <input type="checkbox"/>	MASTER <input type="checkbox"/>			
4. Professional Qualification	NO QU. <input type="checkbox"/>	ACCA <input type="checkbox"/>	ICAG <input type="checkbox"/>	OTHER <input type="checkbox"/>		
5. Number of Years of Service	1-3 years <input type="checkbox"/>	4-6 years <input type="checkbox"/>	7-10 years <input type="checkbox"/>	11-13 years <input type="checkbox"/>	14-16 years <input type="checkbox"/>	17 and above <input type="checkbox"/>
6. Jobs Descriptions	Auditor <input type="checkbox"/>	Accountant <input type="checkbox"/>	Others <input type="checkbox"/>			
7. Level of awareness of forensic accounting	Very Low <input type="checkbox"/>	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>	Very High <input type="checkbox"/>	
8. At what level do you suggest forensic accounting be introduced	Undergraduate level <input type="checkbox"/>	Postgraduate level <input type="checkbox"/>	Both levels <input type="checkbox"/>			

On a scale of 1 to 5 with 1 signifying “Strongly Disagree”; 2 signifying “Disagree”; 3 signifying “Agree”; 4 signifying “Strongly Agree”, 5 signifying “Undecided/No Opinion”, please indicate your perceptions of the following statements.

Perception Statements (Sections B & C)	Strongly Disagree Strongly Agree				
Section B: Awareness of forensic accounting					
9. I know of the existence of forensic accounting	1	2	3	4	5
10. I am aware that one of the aims of forensic accounting is fraud detection and prevention	1	2	3	4	5
11. I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention	1	2	3	4	5
Section C: Integration of Forensic Accounting Education					
12. The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice.	1	2	3	4	5
13. The accounting curriculum should provide forensic accounting coverage.	1	2	3	4	5
14. Knowledge of Forensic accounting by accountants and auditors will positively impact the fight against fraud in Ghana.	1	2	3	4	5
15. The accounting curriculum should provide forensic accounting coverage.	1	2	3	4	5
16. Colleges and universities should encourage and advise students on career opportunities in forensic accounting.	1	2	3	4	5
17. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination.	1	2	3	4	5

18. There are numerous employment opportunities in forensic accounting.	1	2	3	4	5
19. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	1	2	3	4	5
20. How do you suggest the introduction of forensic accounting education be in your university curriculum? a. Introduce forensic accounting as a stand-alone programme. b. Integrate forensic accounting through accounting courses. c. Integrate forensic accounting through auditing courses. d. Integrate forensic accounting through both accounting and auditing courses.	1	2	3	4	5

THANK YOU!!!

APPENDICE 4

ACADEMICIANS QUESTIONNAIRE

This questionnaire is designed to collect data on the topic: **“AN EXPLORATION OF FORENSIC ACCOUNTING EDUCATION IN GHANA”** Please answer all the questions to the best of your ability. It is guaranteed that your responses will remain confidential and shall be used for research purposes only.

Please tick

Section A: Bio data of Academicians

1. Name of university	KNUST <input type="checkbox"/>	UDS <input type="checkbox"/>	UCC <input type="checkbox"/>	UG <input type="checkbox"/>	UEW <input type="checkbox"/>	GIMPA <input type="checkbox"/>	UPS <input type="checkbox"/>	
2. Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>						
3. Age	18-30 years <input type="checkbox"/>	31-40 years <input type="checkbox"/>	41-50 years <input type="checkbox"/>	51-60 years <input type="checkbox"/>	61 and Above years <input type="checkbox"/>			
4. Education	MASTER <input type="checkbox"/>	PHD <input type="checkbox"/>						
5. Present Status/ Rank	Assistant Lecturer <input type="checkbox"/>	Lecturer <input type="checkbox"/>	Senior Lecturer <input type="checkbox"/>	Assoc. Professor <input type="checkbox"/>	Professor <input type="checkbox"/>			
6. Years of Teaching Experience	1-3 years <input type="checkbox"/>	4-7 years <input type="checkbox"/>	8-11 years <input type="checkbox"/>	12-15 years <input type="checkbox"/>	16 and above <input type="checkbox"/>			

7. Jobs Descriptions	Auditing []	Forensic accounting []	CSR []	Corporate Finance []	Financial Accounting []	Management Accounting []	Taxation []	Others []
8. Level of awareness of forensic accounting	No Knowledge []	Very Low []	Low []	Moderate []	High []	Very High []		
8. At what level do you suggest forensic accounting be introduced	Undergraduate level []	Postgraduate level []	Both levels []					

On a scale of 1 to 5 with 1 signifying “Strongly Disagree”; 2 signifying “Disagree”; 3 signifying “Agree”; 4 signifying “Strongly Agree”, 5 signifying “Undecided/No Opinion”, please indicate your perceptions of the following statements.

Perception Statements (Sections B, C, D &E)	Strongly Disagree					Strongly Agree				
Section B: Awareness of forensic accounting										
9. I know of the existence of forensic accounting.	1	2	3	4	5					
10. I am aware that one of the aims of forensic accounting is fraud detection and prevention.	1	2	3	4	5					

11. I am not aware that forensic accounting is one of the most powerful mechanisms in fraud detection and prevention.	1	2	3	4	5
Section C: Academicians' Behavior (Intentions) Towards the Application of Forensic Accounting.					
12. Perceived benefit	1	2	3	4	5
13. Perceived susceptibility	1	2	3	4	5
14. Perceived severity	1	2	3	4	5
15. Perceived risks	1	2	3	4	5
16. Academicians' experience	1	2	3	4	5
17. Academic ranking	1	2	3	4	5
Section D: Main issues that could militate against the introduction of forensic accounting					
18. Lack of financial and human resources	1	2	3	4	5
19. Lack of administration interest and support	1	2	3	4	5
20. Lack of flexibility in curriculum content	1	2	3	4	5
21. Lack or inadequate instructional materials including textbooks to mount the programme	1	2	3	4	5
22. Lack of faculty interest in the programme.	1	2	3	4	5
23. lack of authoritative standards and guidelines as somewhat severe obstacles	1	2	3	4	5
Section E: Integration of Forensic Accounting Education					
24. The current accounting curriculum is not sufficiently responsive to society's demand for forensic accounting education and practice.	1	2	3	4	5
25. The accounting curriculum should provide forensic accounting coverage.	1	2	3	4	5
26. Knowledge of Forensic accounting by accountants and auditors will positively impact the fight against fraud in Ghana.	1	2	3	4	5

27. The accounting curriculum should provide forensic accounting coverage.	1	2	3	4	5
28. Colleges and universities should encourage and advise students on career opportunities in forensic accounting.	1	2	3	4	5
29. Current high-profile financial statement fraud cases, including Enron and WorldCom, galvanize more interest in and demand for forensic accounting, including fraud examination.	1	2	3	4	5
30. There are numerous employment opportunities in forensic accounting.	1	2	3	4	5
31. Forensic fieldwork auditing should be integrated into auditing textbooks and audit engagements.	1	2	3	4	5
32. How do you suggest the introduction of forensic accounting education be in your university curriculum? a. Introduce forensic accounting as a stand-alone programme. b. Integrate forensic accounting through accounting courses. c. Integrate forensic accounting through auditing courses. d. Integrate forensic accounting through both accounting and auditing courses.	1	2	3	4	5

THANK YOU!!!

