

Accountants' Behavioural Intention to Use Forensic Accounting Techniques for Fraud Prevention and Detection in Nigeria

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Abstract: Fraud is a global problem. However, the rate and nature of fraud in Nigeria is quite alarming. The study therefore examined the behavioural intention of accounting practitioner to use forensic accounting techniques in fraud prevention and detection in Nigeria. Data were collected from accountants from 9 states and the Federal Capital Territory, Abuja. The Structural equation modelling was adopted in analyzing the data. Seven propositions were tested in the study. From the results, all the propositions were supported. It was concluded from this study that accountant's will accept use of forensic accounting in the prevention and detection of fraud if they understand the benefits, risk, fraud susceptibility and fraud severity in their establishment. It was recommended that educational activities of training institution should therefore be directed toward increasing awareness on forensic accounting.

Keywords: Forensic accounting, fraud prevention, fraud detection, behavioural intention, structural equation modelling

BACKGROUND OF THE STUDY

Literature is replete with various definitions of fraud. It varies between organisations and jurisdictions [1]. Although it is not the intention of this research to enter into the debate on definition of fraud as several studies [2-4] have done that, a proper understanding of fraud is necessary to situate the present study.

Hornby [5] defines fraud as a false representation by means of a statement or conduct, in order to gain a material advantage. The Association of Certified Fraud Examiners [6] defined fraud as the use of one's occupation for personal enrichment through deliberate misuse or misapplication of the employing organization's resources or assets. It is therefore any act of misappropriation, theft or embezzlement of corporate assets in a particular economic environment. It has been considered as is any act of deception performed by somebody to cheat or deceive another person to his detriment or the detriment of any other, or to cause injury or loss to another person while the perpetrator has a clear knowledge of his intention to deceive, falsify or take advantage over the unsuspecting and innocent victim [2] resulting to suffering loss or damage [3].

Fraud could be any deliberate actions taken by management at any level with the intention to deceive, con, swindle, or cheat investors or other stakeholder [7]. Fraud is committed in all works of life, public and financial sectors. It is a strategy to achieve a personal or organisational goal or to satisfy human needs. Fraud is any action, behaviour or oral expressions deliberately aimed at deception and /or misinformation. It is a

sequence of activities perpetrated to obtain money, property or services, to avoid payment or of services or to secure personal or business advantages. These acts are not dependent upon the application of threat of violence or of physical force (International Standards for Professional Practice of Internal Auditing, 2002).

It is difficult to quantify the magnitude of fraud losses since majority of fraud go undetected and unreported [8]. However, the available statistics offer useful information on the effect of fraud on organisations and the society. The Association of Certified Fraud Examiners' [9] in its Report to the Nations on Occupational Fraud and Abuse, found that financial statement fraud though less than 5 per cent of total fraud cases reported averaged about 1.7 million dollars per incident. This was by far the most costly of all types of fraud. By implication, the figure translated to an annual loss of more than 3.5 trillion dollars when applied to the 2011 Gross World Product.

The damage done by fraud can only be imagined than believed and when fraud is discovered it is always a surprise for the firm to believe because it is always so much that they may be forced to believe that such a lost did not occur. In most cases frauds are not always reported due to the negative impact or the risk of embarrassment and reduction in the level of confidence in customers or shareholders [10]. This may lead to inability to say emphatically how much has been lost to fraud. However, the estimated amount of fraud related losses reached \$650 billion in 2006 [11].

Empirical studies have shown that forensic accountants have the skill to detect and prevent fraud than auditors [12, 13]. As argued by Christensen, Byington, and Blalock [14], forensic accountants, by training have both the quantitative skills in researching on numbers to uncover fraud and qualitative skills to determine the weaknesses of internal control systems. Also, the mindset of a forensic accountant takes a more active, and skeptical approach towards fraud [15]. Hence, they are more interested in exposing fraud compared to financial auditors [14, 16].

Fraud is one of the most challenging issues faced by Nigeria as a country. The country is said to be 'broke' due to acts of frauds by successive governments in the Country. However, it is not clear if accounting practitioners are intending to apply this innovating technology in curbing the menace. Muthusamy, Quaddus & Evans [17] argued that the evidences in support of forensic accounting indicate that, forensic accounting services are imperative, effective, and crucial in fraud detection and prevention. One therefore wonders why such services are not utilized in Nigeria. However Efiog, Inyang & [18] discovered the underlying dimensions against to the application of forensic accounting in Nigeria to include legal, educational and political factors.

Bierstaker, Brody & Pacini [19] investigated accountants' perception regarding fraud detection and prevention methods. The findings revealed that organizational use of forensic accountants was the least often used of any anti-fraud method but had the highest effectiveness rating. A similar finding was obtained by Efiog, Inyang & Joshua [20]. There is therefore the need to discover why an essential service such as this could have a low usage.

In their study on organizational intention to use forensic accounting services for fraud detection and prevention by large Malaysian companies, Muthusamy *et al.* [21] using the multi-phased mixed-method research design Partial Least Square from Structural Equation Modelling confirmed the significant positive influence of attitude, stakeholder pressure, and perceived susceptibility to fraud on the organizational intention to use forensic accounting technique for fraud detection and prevention.

Hence, the focus of this research is to investigate the factors that influence the behavioral intention to use forensic accounting services in the detection and prevention of fraud in Nigeria. This paper first, attempts to review the relevant behavioral theories that lead up to the formation of an integrated conceptual model for the present study. This is followed by the

development of hypothesis and the research method. Subsequently, the results are presented and discussed.

THEORETICAL UNDERPINNING

There are several theories that are often being used in behavioural studies. However, three of those theories (Health Belief Model, Theory of Reasoned Action and Hierarchy of Effect) are being articulated in this study for a final conceptual model.

The Health Belief Model (HBM) was developed in the 1950s and first used in the study preventing and detecting diseases [22]. It is a health specific social cognition model with theories adapted from the behavioral sciences [23]. The main aim of this model was to allow for adequate comprehension and explanation that could result in increased use of preventive public health services such as vaccines and screening programs. The model has been extensively used and widely accepted to predict protective health behaviours and health services use [24]. There are four main constructs in the HBM. These include perceived susceptibility, perceived severity, perceived barriers and perceived benefits. Perceived susceptibility and perceived severity looks at the threat perceptions while barriers and benefits form part of the integral behavioral evaluation. Janz and Becker [25], Harrison, Mullen and Green [26] opined that each construct on HBM predicts preventive health behaviour. The behavior towards fraud prevention can be compared to the behaviour towards preventing illness, hence the use of HBM in this study.

The Theory of Reasoned Action (TRA) predicts the intention to perform some behaviours from two predictors; the attitude towards the behavior which measures the extent the individual favours or unfavours evaluation of the behaviour and the subjective norms. TRA therefore measures the influence of other people in respect of the behavior [27]. TRA is based on the fact that humans make use of information available to them with the aim of arriving at decision making process [28]. Sheppard, Hartwick and Warshaw [29] verified that attitude and subjective norms have predictive ability, which explains both intentions and behaviour. This predictive power can also be employed on situation and activities which may not necessarily fall with the boundaries of the original conditions. This theory is very important to this study as attitude and subjective norm may have a significant impact on behaviour.

Hierarchy of Effect Model (HOE) describes the process where one moves from the region of unawareness of a given product/service to being aware and at the end making use of the product by purchasing it. It has a sequence of steps whereby the individual

follows. According to Lavidge and Steiner [30], this model kicks off with unawareness, knowledge, attitude formation and the change of behaviour of that individual. This sequence has been grouped into cognitive stage, affective stage and finally behavior. Cognitive stage comprises of awareness and knowledge; affective stage involves liking, preference and conviction while the behavior stage has to do with the purchase of the product. It has been argued that the cognitive stage occurs as soon as the consumer becomes conscious of the product/service through the external factors [17]. In this model, education is the external factor in this study since awareness and knowledge is created through it. Again, the affective stage where the consumer develops a liking, preference for the product and conviction of the product, occurs overtime which

leads into the behavioural stage of the purchase. HOE is of importance to this study on the basis that the intention of the accountants to use forensic accounting technique is influenced by the cognitive stage which shows the need for the awareness and knowledge.

In the present study, educational activities serves as the external while awareness of forensic accounting, perceived benefits of forensic accounting and perceived risk of forensic accounting serve as cognitive factors. Both the perceived susceptibility to fraud and perceived severity of fraud serve as the threat perception factors. These are shown in the conceptual model as they relate to behavioural intention to use forensic accounting.

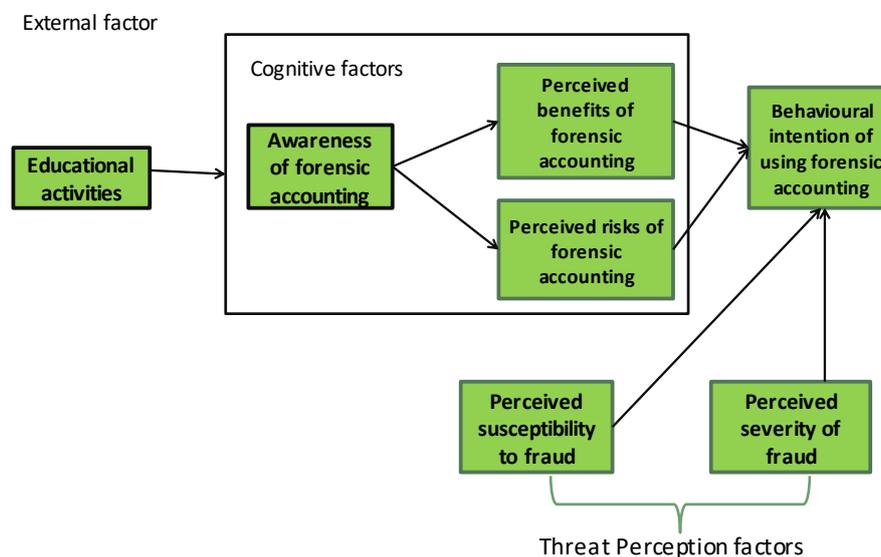


Fig-1: The research conceptual model

Development of propositions

Seven propositions are developed from the research model based on three factors; external factors, cognitive factors and threat perception factors, as they relate with one another and with behavioural intention. The logic of their development is therefore presented as follows.

Influence of external factors on awareness

The external factors create the awareness of forensic accounting techniques. This is very essential as most practitioners and students may not have gained enough information on this relatively new field of accounting, and of course, its implementation. Many authors [21, 31-33] confirm that the persuasive activities of the vendor significantly influence the likelihood that an innovation will be adopted. Similarly,

the role of educational institutions is equivalent to the role of the vendors because they are the suppliers of the intended professional who would practice forensic accounting.

Whereas previous studies considered factors like, professional bodies, accounting firms, media and government as external factors in examining organisational intention to use forensic accounting services in fraud prevention and detection [21], the present study however, made use of educational activities of universities. The choice of educational activities of universities found support in the fact that education plays a major role in constructing, interpreting and reinforcing societal values through knowledge dissemination and transfer that takes place within it [34]. It is therefore the belief of these

researchers that societal ills could be confronted through increasing education on the causes and possible remedies of such menace. In the same way, fraud as a societal problem could be confronted through educational activities such as curricula development. This may be done by the introduction of courses that could further clarify on the nature and dimensions of the problems which would be useful in proving possible solutions to it.

In view of the above discussions, the educational activities of universities have been seen as the external factor that is relevant for this study. The following proposition is therefore made:

Proposition 1: Educational activities of Nigerian universities will positively influence awareness in forensic accounting techniques.

Influence of cognitive factors on behavioural intention to use forensic accounting for fraud prevention and detection

Awareness has been seen as an important prerequisite to the formation of perception [35]. Hofmeyer [36] asserts that awareness is a pre-condition in forming belief about a perceived benefit. Such awareness, in the case of forensic accounting techniques will result to the perceptions of the benefits and risk of using forensic accounting techniques. Authors like Muthusamy *et al.* [17] statistically discovered a positive influence of awareness on both perceived benefits and perceived risks. This implies that the perceived susceptibility to fraud and the perceived severity of fraud may be relevant constructs which could determine the intention to use forensic accounting techniques and are therefore considered to be of importance in the application of forensic accounting techniques.

Proposition 2: Awareness of forensic accounting techniques will positively influence the perceived benefits of using it in fraud prevention and detection in Nigeria.

Proposition 3: Awareness of forensic accounting techniques will negatively influence the perceived risks of using it in fraud prevention and detection in Nigeria.

For the above to be assessed, the cost of evaluation on the potential gain and risk of acquiring forensic accounting techniques leads to the formation of attitude, and subsequent behavioural intention. Empirical studies have shown that both perceived benefits and the perceived risks have significant impact on attitude. Studies on the perceived benefits have been conducted [36, 37]. Also studies on the negative impact on attitude are available in literature [38-40]. For the

purpose of this study, the composite models of theory of reasoned action and health belief model have been used for either perceived benefits/risks or attitude [41, 42]. Due to the importance of both the perceived benefits and the risks, as antecedents of behavioural intention and to fill this theoretical research gap, they are hereby modeled as directly affecting behaviour towards forensic accounting methods. In view of this, two propositions have been stated as follows:

Proposition 4: The perceived benefits of using forensic accounting techniques will positively influence the intention to use it as a major fraud prevention and detection method in Nigeria.

Proposition 5: The perceived risks of using forensic accounting techniques will negatively influence the intention to use it as a major fraud prevention and detection method in Nigeria.

Influence of threat perception factors on behavioural intention to use forensic accounting for fraud prevention and detection

According to KPMG [43], fraud surveys have consistently reported that even though organisations believe that fraud consequences are always severe but there seems to be an illusion of safety for their own organisation. It is only when the organisation perceives that the cost of fraud is severe, which makes them susceptible to fraud, will they be mindful in taking measures to reduce the risk of fraud. Abraham and Sheeran [24] argue that threat perception plays a significant role in motivation, which is a psychological feature which enables one to engage in a behaviour in order to avoid adverse conditions. Perceived severity helps the organisation to know whether the cost of fraud is high or low while perceived susceptibility enables the organisation to accept their vulnerability to fraud and those who have not [17]. The ability to use forensic accounting techniques is one of the methods in which the organisation can check the menace of fraud. Accordingly, the influence of perceived susceptibility to fraud has been confirmed in literature [21, 41-45]. The influence of perceived severity of fraud on behavioural intention has also been confirmed in the literature [44-46]. Therefore, the present study also believes that threat perception is a key predictor for the use forensic accounting techniques and two propositions have been proposed.

Proposition 6: The perceived susceptibility to fraud will positively influence practitioners' intention to use forensic accounting techniques in fraud prevention and detection in Nigeria.

Proposition 7: The perceived severity of fraud will positively influence practitioners' intention to use

forensic accounting techniques in fraud prevention and detection in Nigeria.

METHOD OF STUDY

Population and sample

The population of study was made up of accounting practitioner and specifically focuses on the decision making process of the Chief Financial Officers (CFO's) in public offices (ministries and agencies) on the basis that these officers have become an integral member of the top management team involved in the organization's major decisions [21]. Also, the head of the internal audit units were selected for sampling as the audit unit is supposed to be in-charge of the internal control system of the organisation [47]. Hence, these officers were considered to be in the best position to provide the needed information. This was to enhance the reliability of the data to be obtained.

The choice of public officers was based on the fact that forensic accounting is relatively a very new discipline in the world over and even newer in Nigeria. Also, Nigeria as a developing economy is heavily dependent on government. The public sector therefore is the most developed strand of the economy and most fraud that is reported in the country are perpetrated in this sector [48]. The government coffers have become the 'pocket' for corruption, embezzlement and fraud. Hence, if there is any sector that should begin the use of forensic accounting techniques in fraud prevention and detection, it is the public sector, represented in this study by government ministries and agencies.

The number of government ministries and agencies in the different States and the Federal Capital Territory (FCT), Abuja are shown in Table 1. This information was obtained from the Ministry of Information of the different State Governments and the FCT.

Table 1: Number of Ministries and Agencies in the Selected States

State	Number of Ministries/Agencies	Number of Samples
Akwalbom	54	108
Cross River	48	96
Edo	51	102
Osun	39	78
Kwara	46	92
Lagos	67	134
Plateau	45	90
Rivers	56	112
FCT, Abuja	82	164
Total	488	976

Table 1 shows that the number of ministries and agencies of government in the various States and the FCT is 488. The total number of samples in each unit was therefore multiplied by 2 resulting to 976 for the entire practitioners.

Research instruments

This study adopted the survey strategy using a structured questionnaire. This questionnaire had 11 sections with 110 variables. Section A labeled 'demographic attributes' has 6 variables. Section B measured 'perceived susceptibility to fraud' with 3 items while section C has four statements which intended to measure 'perceived severity to fraud'. Additionally, section D with 5 statements measured 'perceived benefits of forensic accounting techniques' while section E has 3 items that measured 'perceived barriers/risks of using forensic accounting techniques in Nigeria'. Section F measured the 'behaviour towards forensic accounting' with 4 items. The last section G has 3 items that measured 'educational activities.'

Except for some demographic attributes which were on nominal scaling, all the other sections in the questionnaire employed the ordinal and interval scales of the Likert-scale type in measurement. The Likert-scale generally is in the following form and rank: strongly agree (5), agree (4), no opinion or undecided (3), disagree (2) and strongly disagree (1). Many researchers query the rational for assigning 3 points to the level of 'no opinion' or 'undecided' and advocate zero (0) for it [49]. Some other researchers argue that five levels of Likert-scale should be reduced to four, deleting the 'no opinion' or 'undecided' completely. This is typical in the work of Ayeni [50]. But, the present researchers joined in the advocacy for the assigning of zero (0) to 'no opinion', hence the five-point Likert-scale adopted for this study had the following ratings: strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1, indifferent or neither agree nor disagree = 0. All questions on the questionnaire were closed-ended. Also, the questions which the researchers used for the professional intention were commonly used question. This helped in two ways as the researcher is sure that the questions

asked were the right ones and the researcher needs not reinvent the wheels. Table 2 presents the dependents

and independents variables that were used in this study.

Table 2: Dependent and independent variables

Model	Independent variable(s)	Dependent variable
1	Educational Institutional activities (training)	Awareness
2	Awareness	Perceived benefits of using forensic accounting
3	Awareness	Perceived risks of using forensic accounting
4	Perceived benefits of using forensic accounting Perceived risks of using forensic accounting	Behaviour towards forensic accounting
5	Perceived susceptibility to fraud Perceived severity of fraud	Behaviour towards forensic accounting

Questionnaire administration and retrieval

Copies of the research questionnaire were administered on respondents by the researchers and trained assistants between the months of July and August 2011, and December 2011 and February, 2012. Part of the duties of the research assistants, aside administering and retrieving copies of the questionnaire, was to help clarify research questions where necessary and provide answers to queries on the research questions that may arise from respondents.

A total of 976 copies of questionnaire were administered practitioners of which 588 were retrieved. This gives a response rate of 60.25 per cent.

Techniques of data analysis

Data were basically analyzed using the structural equation modelling (SEM) to examine the relationships between the dependent and independent variables. The structural equation modelling is a multivariate statistical technique that is best described as a combination of both factor analysis and path analysis [51]. It allows the analyst to examine a series of dependence relationships between exogenous variables (dependent variables) and endogenous variables (independent or predictor variables).

The usefulness of SEM in this study follows from the fact that it provides a method of dealing with multiple relationships simultaneously. Unlike the normal multiple regression which can only analyse relationships between variables that can only be observed or measured directly, the SEM is able to represent unobserved (latent) concepts in the analysis of dependence relationships. In the present study, most of the variables used to examine the intention of practitioners to use forensic accounting techniques in fraud prevention and detection are latent variables (e.g. awareness, perceived benefits, perceived risks, perceived susceptibility, perceived severity, behavioural intention, etc.) and were therefore measured indirectly.

This made SEM the preferred statistical model at this point.

Moreover, the SEM was used in this study because it improves statistical estimation by accounting for measurement error in the estimation process. Most univariate and multivariate statistical techniques assume that there is no error associated with the measurement of variable [51]. This is an unrealistic assumption. The SEM uses scores on the measured variables to develop estimates of the individual's scores on the underlying construct or latent variables. Scores on the latent variables are not affected by random measurement error as the estimates are derived on the basis of the common or shared variance among the measured variable [51, 52].

The SEM in its most general form consists of two parts: The measurement model and the structural equation model. The measurement model specifies rules governing how the latent variables are measured in terms of the observed variables. It describes the measurement properties of the observed variable. The structural equation model on the other hand is a flexible, comprehensive model that specifies the pattern of relationships among dependent and independent variables. These variables could be observed or latent. But the structural equation model is of greater interest to any researcher because it offers a direct test of the theory of interest. On the other hand, the measurement model provides a test of reliability of the observed variables used in measuring the latent variables.

The structural equation modelling as used in the present study allowed for the examination of the intention of practitioners to use forensic accounting techniques following from the role educational activities can play in creating awareness of the product. Such awareness is expected to drive home the perceived benefits of using forensic accounting techniques against

any perceived risks or barriers, with the ultimate aim of influencing the behaviour.

All these were done in line with the research objectives, questions and propositions using the Statistical Product and Service Solutions (SPSS), formerly Statistical Package for the Social Sciences [51] Version 19 and Analysis of Moment Structures (AMOS) version 19 on Windows 7 in a computer.

RESULTS

Evaluation of measurement model

Table 3 presents the result of the reliability and convergent validity tests. Two items were excluded from the refined model since they have corrected item total correlation of less than 0.6. All other loadings are above the minimum point of 0.6.

Table 3: Reliability and convergent validity test

Construct	Item	Corrected item total correlation	Cronbach's Alpha, α	CR	AVE
Awareness of FA (aw)	aw1	0.836	0.906	0.769	0.610
	aw2	0.811			
	aw3	0.794			
Perceived benefits of using FA services (pb)	pb1	0.893	0.903	0.857	0.605
	pb2	0.777			
	pb3	0.715			
	pb4	0.755			
Perceived risks of using FA services (pr)	pr1	0.893	0.923	0.910	0.773
	pr2	0.855			
	pr3	0.792			
Perceived severity of fraud (pse)	pse1	0.953	0.953	0.926	0.758
	pse2	0.880			
	pse3	0.849			
	pse4	0.865			
Perceived susceptibility to fraud (psc)	psc1	0.853	0.912	0.852	0.662
	psc2	0.785			
	psc3	0.836			
Behavioural intention to apply FA (bh)	bh1	0.802	0.890	0.833	0.614
	bh2	0.784			
	bh3	0.789			
Educational activities (edu)	edu1	0.925	0.947	0.911	0.776
	edu2	0.904			
	edu3	0.839			

N/B=pb5 and bh1 were discarded because they had item loadings below 0.6.

The results of the reliability test show that all the variables have internal consistencies above the value 0.7 (Table 3).

In the present study, all the constructs had AVE > 0.5 (Table 3) as recommended by Fornell and Larcker [53]. Similarly, the composite reliability (CR) values were all above 0.6 as recommended by Fornell

and Larcker [53] for construct internal consistency to be evidenced. In view of these, the researchers were satisfied that convergent validity of the measurement properties or model was established. Similarly discriminant validity was also achieved for the 23 reflective variables in the model since the square roots of the AVEs are higher than the correlation between the constructs within the columns and rows (Table 4).

Table 4: Correlation matrix for the assessment of discriminant validity

	Edu	Aw	Pb	Pr	Pse	Psc	Bh
Edu	0.881						
Aw	0.339	0.781					
Pb	0.402	0.559	0.778				
Pr	-0.007	-0.096	-0.108	0.879			
Pse	0.256	0.367	0.479	-0.51	0.871		
Psc	0.176	0.382	0.539	-0.061	0.513	0.814	
Bh	0.468	0.651	0.727	-0.144	0.554	0.539	0.784

Figure 2 presents the input measurement model of the latent variables in this research. The output measurement model is figure 3. For this constructed measurement model, all factor loadings are freed (i.e.

estimated); items are allowed to load on only one construct (i.e., no cross loading); and latent constructs are allowed to correlate.

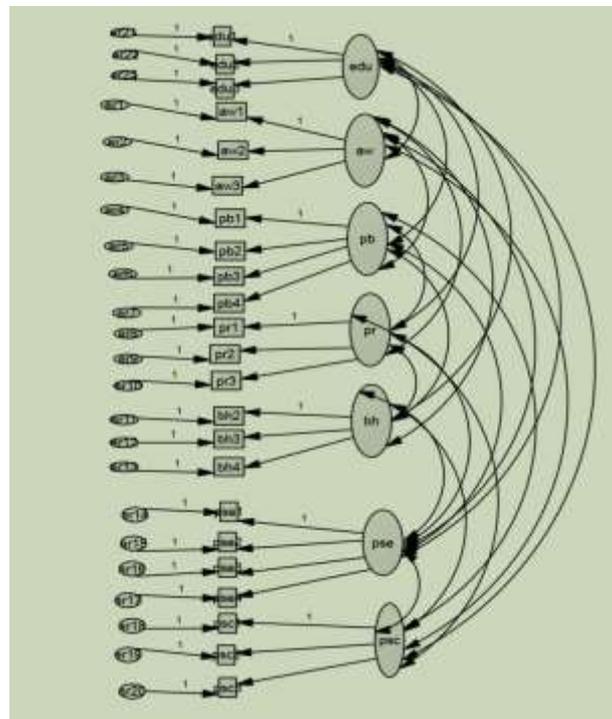


Fig-2: Input Measurement Model

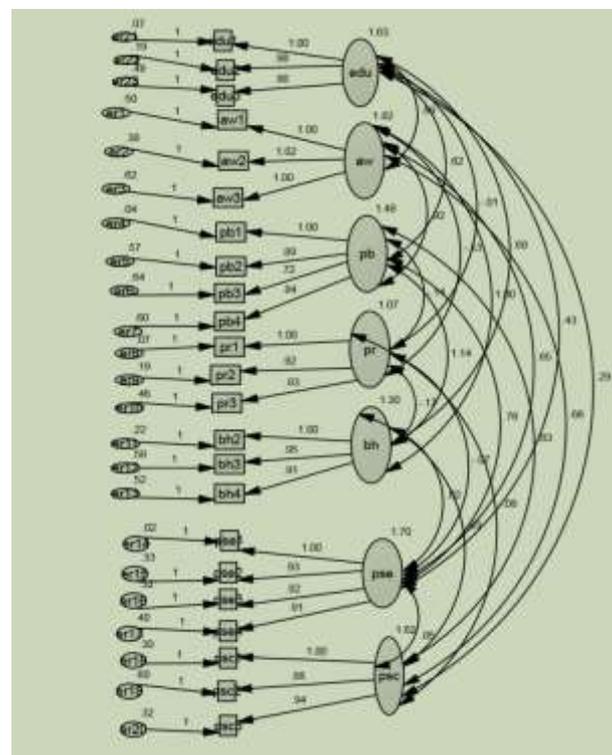


Fig-3: Output Measurement Model

The output model reveals the associated unstandardised regression weights between the observed and unobserved variables. It also shows the variances and covariances. For instance, the figure reveal an associated unstandardised regression weight of the influence of “edu2” on “edu” be $\beta = 0.98$ while that of “aw2” on “aw” is $\beta = 1.02$.

The Goodness-of-Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA) and baseline comparisons fit indices were used as the goodness-of-fit measures in this analysis. The GFI value for the present study is 0.905 (Table 5). The GFI is a measure of how much better the model fits compared with no model at all [51, 54]. It is a non-statistical measure and ranges from 0, indicating poor fit, to 1, indicating perfect fit.

Table 5: Goodness of Fit Index (GFI)

Model	RMR	GFI	AGFI	PGFI
Default model	.058	.905	.875	.685
Saturated model	.000	1.000		
Independence model	.677	.216	.145	.198

Although, no threshold levels for acceptability have been set, it is generally agreed that higher values indicates better fit [51]. Hence, the GFI value of 0.905 is an indication of a better fit. It is therefore concluded that the data in the present study fits the model well.

The Root Mean Error of Approximation (RMSEA), which takes into account the error of approximation in the population, is a measure of discrepancy per degree of freedom. Browne and Cudeck

[55] as cited by Ho [51] assert that RMSEA is used to find out, “how well would the model, with unknown but optically closer values, fit the population covariance matrix if it were measured?” Acceptable values range from 0.05 to 0.08, while values ranging from 0.08 to 0.10 indicate mediocre fit and those > 0.10 indicate poor fit [51]. In the present study the RMSEA value for the measurement model is 0.065 (Table 6). Hence, the model is deemed acceptable.

Table 6: Root Mean Square Error of Approximation (RMSEA)

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.065	.060	.071	.000
Independence model	.297	.293	.301	.000

Further, the baseline comparisons fit indices of Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI) and comparative Fit Index (CFI) were higher than 0.90 with the least being 0.934 (Table 7). Given the range of

the computed baseline comparison fit indices, the remaining possible improvement in the fit of the hypothesised model appears very small as to be of any practical significance [51].

Table 7: Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.945	.934	.960	.952	.960
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Again, all indicators loaded significantly by the critical ratio (Z-score) test ($< \pm 1.96$, $p < 0.05$)

(Table 8). The critical ratio tests the significance of the path coefficients [51].

Table 8: Unstandardised regression weights

			Estimate	S.E.	C.R.	P	Label
aw1	<---	Aw	1.000				
aw2	<---	Aw	1.020	.033	31.059	***	par_1
aw3	<---	Aw	1.000	.035	28.488	***	par_2
pb1	<---	Pb	1.000				
pb2	<---	Pb	.894	.028	31.841	***	par_3
pb3	<---	Pb	.723	.029	24.991	***	par_4
pb4	<---	Pb	.836	.029	29.306	***	par_5
pr1	<---	Pr	1.000				
pr2	<---	Pr	.919	.024	37.870	***	par_6
pr3	<---	Pr	.926	.032	29.372	***	par_7
bh2	<---	Bh	1.000				
bh3	<---	Bh	.951	.035	27.241	***	par_8
bh4	<---	Bh	.909	.033	27.624	***	par_9
pse1	<---	Pse	1.000				
pse2	<---	Pse	.933	.020	47.193	***	par_16
pse3	<---	Pse	.820	.019	43.294	***	par_17
pse4	<---	Pse	.908	.021	42.674	***	par_18
psc1	<---	Psc	1.000				
psc2	<---	Psc	.880	.032	27.334	***	par_19
psc3	<---	Psc	.940	.029	32.515	***	par_20
edu1	<---	Edu	1.000				
edu2	<---	Edu	.979	.019	51.609	***	par_30
edu3	<---	Edu	.902	.025	35.941	***	par_31

All indicators also loaded substantially on their respective constructs with the 23 measurement

variables having their standardised regression weights greater than 0.7 (Table 9).

Table 9: Standardised Regression Weights

			Estimate
aw1	<---	Aw	.885
aw2	<---	Aw	.912
aw3	<---	Aw	.864
pb1	<---	Pb	.987
pb2	<---	Pb	.822
pb3	<---	Pb	.738
pb4	<---	Pb	.795
pr1	<---	Pr	.969
pr2	<---	Pr	.909
pr3	<---	Pr	.817
bh2	<---	Bh	.923
bh3	<---	Bh	.816
bh4	<---	Bh	.821
pse1	<---	Pse	.993
pse2	<---	Pse	.903
pse3	<---	Pse	.886
pse4	<---	Pse	.882
psc1	<---	Psc	.919
psc2	<---	Psc	.823
psc3	<---	Psc	.904
edu1	<---	Edu	.979
edu2	<---	Edu	.944
edu3	<---	Edu	.856

These results provide enough evidence for the fact that the 23 measurement variables are significantly represented by their respective latent construct. Hence, the confirmatory factor analysis model fits the data well.

Evaluation of the structural model

Since the measurement model has been confirmed, the fit of the structural path model was then evaluated. Figure 4 presents output models. This was done to find out the explanatory power of the model and the significance of the path coefficients. The explanatory powers of the model were assessed using the coefficient of determination, R^2 (square multiple correlation) of the endogenous constructs [21, 51, 56].

Figure 4 is the graphical representation of the results of the structural model, indicating the associated unstandardised regression weights for each relationship and the corresponding variances and covariances. For example, the figure reveals an associated unstandardised regression weight of the influence of education “edu” on awareness “aw” to be $\beta = 0.38$ while that of “aw” on perceived risks, “pr” is $\beta = -0.08$. Similarly, the variance for variance for perceived severity of fraud, “psc” and perceived susceptibility to fraud “psc” are 1.70 and 1.63 respectively. Also, figure 4 further reveals the covariances for the correlations between “edu” and “psc”, “edu” and “psc”, and “psc” and “psc” to be 0.30, 0.43 and 0.85 accordingly.

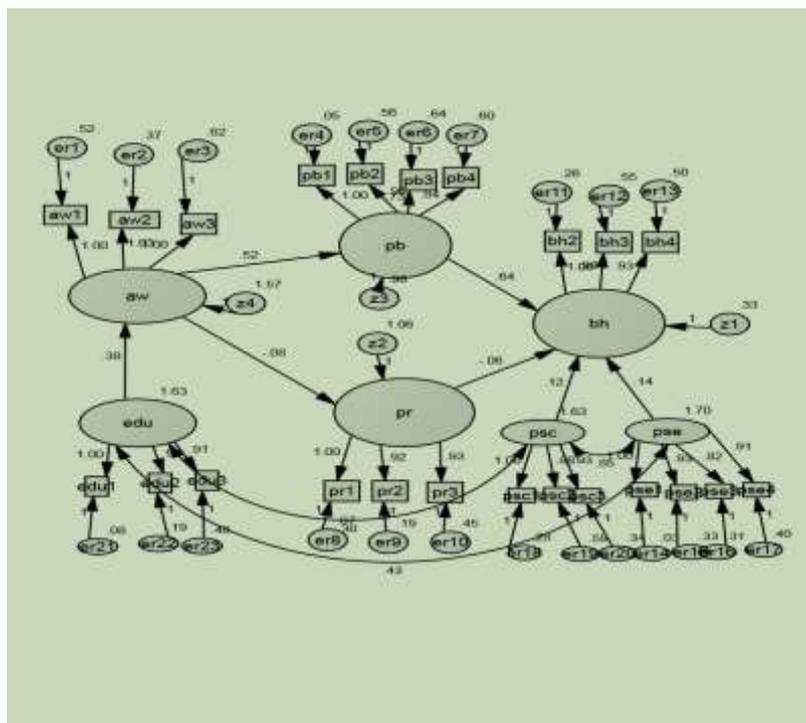


Fig-4: Output structural model

However, it is necessary to begin by assessing unstandardised regression weights and standardised regression weights generated from the maximum likelihood procedure (Tables 10 and 11). Associated with each estimated unstandardised regression coefficient (in the regression weights table) are the standard error (S.E) and critical ratio (C.R) value. The

standard error of the coefficients represents the expected variation of the estimated coefficient. It is an index of the efficiency of the predictor variables in predicting the endogenous variable [51]. The usefulness of S.E is that; the smaller it is, the more efficient the predictor variable is. In this present case, all the S.E scores are small. They range between 0.019 and 0.044.

Table 10: Unstandardised regression weights of structural model

			Estimate	S.E.	C.R.	P	Label
Aw	<---	edu	.373	.044	8.490	***	
Pb	<---	aw	.521	.035	14.825	***	
Pr	<---	aw	-.077	.034	-2.259	.024	
Bh	<---	pb	.637	.027	23.448	***	
Bh	<---	pr	-.057	.029	-2.002	.045	
Bh	<---	psc	.117	.028	4.190	***	
Bh	<---	pse	.135	.026	5.109	***	
aw1	<---	aw	1.000				
aw2	<---	aw	1.050	.033	31.485	***	
aw3	<---	aw	.996	.034	29.347	***	
pb1	<---	pb	1.000				
pb2	<---	pb	.901	.028	31.733	***	
pb3	<---	pb	.729	.029	24.969	***	
bh2	<---	bh	1.000				
bh3	<---	bh	.980	.041	24.084	***	
bh4	<---	bh	.930	.039	24.105	***	
pr1	<---	pr	1.000				
pr2	<---	pr	.921	.024	37.869	***	
pr3	<---	pr	.928	.032	29.410	***	
pb4	<---	pb	.841	.029	29.188	***	
psc1	<---	psc	1.000				
psc2	<---	psc	.878	.032	27.388	***	
psc3	<---	psc	.931	.029	31.972	***	
pse1	<---	pse	1.000				
pse2	<---	pse	.934	.020	47.212	***	
pse3	<---	pse	.821	.019	43.209	***	
pse4	<---	pse	.909	.021	42.640	***	
edu1	<---	edu	1.000				
edu2	<---	edu	.998	.019	53.314	***	
edu3	<---	edu	.937	.023	40.084	***	

The critical ratio (C.R) is the test of the significance of the path coefficient obtained by dividing the parameter estimate by its respective standard error. It is distributed approximately as z [51]. Hence, a critical ratio that is more extreme than ± 1.96 indicates a significant path ($p < 0.05$). Following this criterion, the results in Table 10 indicate that the unstandardised regression weights are all significant by the critical ratio test ($> \pm 1.96$, $p < 0.05$) (except for those parameters that were fixed to 1).

For the standardised regression weight in Table 11, the results indicate that educational activities is significantly and positively related to awareness in forensic accounting services ($\beta = 0.36$, $p < 0.001$). Hence, the more the involvement in educational activities that promotes forensic accounting, the higher the level of awareness in forensic accounting services. Also, awareness in forensic accounting techniques is significantly and positively related to the perceived benefits of using forensic accounting techniques ($\beta = 0.58$, $p < 0.001$).

Table 11: Standardised regression weights of structural model

			Estimate
Aw	<---	Edu	.358
Pb	<---	Aw	.575
Pr	<---	Aw	-.099
Bh	<---	Pb	.757
Bh	<---	Pr	-.058
Bh	<---	Psc	.146
Bh	<---	Pse	.173
aw1	<---	Aw	.882
aw2	<---	Aw	.915
aw3	<---	Aw	.863
pb1	<---	Pb	.982
pb2	<---	Pb	.825
pb3	<---	Pb	.741
bh2	<---	Bh	.894
bh3	<---	Bh	.802
bh4	<---	Bh	.802
pr1	<---	Pr	.968
pr2	<---	Pr	.910
pr3	<---	Pr	.818
pb4	<---	Pb	.797
psc1	<---	Psc	.923
psc2	<---	Psc	.824
psc3	<---	Psc	.899
pse1	<---	Pse	.992
pse2	<---	Pse	.904
pse3	<---	Pse	.886
pse4	<---	Pse	.883
edu1	<---	Edu	.977
edu2	<---	Edu	.946
edu3	<---	Edu	.857

This therefore implies that the greater the level of awareness in forensic accounting techniques/services, the higher the perceived benefits of using forensic accounting services. But, awareness in forensic accounting services is significantly and negatively related to perceived risk or barrier to using forensic accounting services ($\beta = -0.10, p < 0.05$). Hence, the higher the level of awareness the lower the perceived risks or barriers to the use of forensic accounting services. When practitioners perceive that there are less risks or barriers in using forensic accounting, they will go for it. The risks or barriers here may be in terms of the cost of acquiring the services of the expert forensic accountant and the infrastructure needed to drive this new technology. Awareness is therefore needed to lessen the perceived barriers and risks.

The standardised regression weights in Table 11 further reveals that perceived benefits of using forensic accounting techniques is significantly and positively related to behavioural intention to use the forensic accounting services ($\beta = 0.76, p < 0.001$).

Hence, the higher practitioners perceived the benefits of using forensic accounting techniques the more they intend to use it in their units/departments. On the other hand, perceived risks to using forensic accounting services is significantly and negatively related to the intention of using forensic accounting services ($\beta = -0.06, p < 0.05$). Therefore, the lower the perceived risks of forensic accounting, the higher the intention of using forensic accounting services.

Furthermore, the perceived susceptibility to fraud is significantly and positively related to the intention of using forensic accounting services ($\beta = 0.15, p < 0.001$). Hence, the higher the perceived susceptibility to fraud, the more practitioners would intend to use forensic accounting services. Similarly, the perceived severity of fraud is significantly and positively related to intention of using forensic accounting services ($\beta = 0.17, p < 0.001$). Practitioners will also intend to use forensic accounting services as perceived severity of fraud increases. The results also indicate that the twenty three observed measurement

variables are significantly represented by their respective latent constructs ($p < 0.001$).

Having assessed the regression weights and standardised regression weights, one can now examine the explanatory powers of the model. Falk and Miller [57] suggest that the minimum coefficient of

determination, R^2 should be 0.10 for a model to be considered to be powerful. Table 12 is the squared multiple correlations of the structural model.

Table 13 presents the coefficients of determination, R^2 of all the endogenous constructs from Table 12.

Table 12: Squared Multiple Correlations of the structural model

Variable /construct	Estimate
Aw	.128
Pr	.010
Pb	.331
Bh	.682
edu3	.735
edu2	.894
edu1	.954
pse4	.779
pse3	.784
pse2	.817
pse1	.985
psc3	.808
psc2	.679
psc1	.852
pb4	.635
pr3	.669
pr2	.829
pr1	.936
bh4	.643
bh3	.643
bh2	.799
pb3	.549
pb2	.680
pb1	.965
aw3	.744
aw2	.838
aw1	.777

Table 13: Summary of coefficient of determination R^2 for endogenous constructs

Construct	R^2
Awareness (aw)	0.128
Perceived risk (pr)	0.010
Perceived benefit (pb)	0.331
Behavioural intention (bh)	0.682

Table 13 shows that all the R^2 values are above the minimum requirement of 0.10, except for perceived risks. This finding is similar to those of Muthusamy *et al.* [21] where they concluded that the low R^2 value for perceived risks suggests that awareness is only one of the many factors influencing perceived risks. This suggestion is also made for the present finding. Above all, the overall coefficient of multiple determination (R^2) value for the model is 0.682. This means that the data fit the model well and the model explains 68.20 per cent of the variance of the intention to use forensic

accounting services. This is higher than the findings of Muthusamy *et al.* [21], in which case the model was able to explain 39.50 per cent of the total variance. For this study, the unexplained 0.318 per cent of the variance on the behavioural intention of using forensic accounting services is attributed to the unique factor z_1 (residual). Hence, a relatively high percentage of the practitioners intend to use forensic accounting techniques in fraud prevention and detection.

Test of model propositions

Table 14 presents the summary of the results of the test of the seven propositions within the SEM that were posited in this research.

Table 14: Test of propositions from SEM

Proposition	Unstandardised Regression weights	CR value	P	Remarks
P1: Educational activities (edu)→Awareness(aw)	0.373	8.490	<0.001	Supported
P2: Awareness (aw) → perceived benefits (pb)	0.521	14.825	<0.001	Supported
P3: Awareness (aw) → perceived risk	-0.077	-2.259	0.024	Supported
P4: Perceived benefits (pb)→behavioural intention(bh)	0.637	23.448	<0.001	Supported
P5: Perceived risk(pr) →behavioural intention (bi)	-0.057	-2.002	0.045	Supported
P6: Perceived susceptibility to fraud (psc)→behavioural intention (bh)	0.117	4.190	<0.001	Supported
P7: Perceived severity of fraud (pse) →behavioural intention (bh)	0.135	5.109	<0.001	Supported

DISCUSSION OF FINDINGS

From the results, it is clear that educational activities of training institution were found to positively influence the awareness of forensic accounting techniques. Previous studies were done on professional bodies, accounting firms, media and government [21, 31-33]. The present study has found awareness of forensic accounting services to be significantly and positively influenced by educational activities of training institutions. Hence, educational institutions in Nigeria have a significant role to play in promoting the application of forensic accounting services. This it can do by including forensic accounting courses in their curriculum and encouraging specialisation in the area. This may further include organisation of academic workshops, seminars and conferences.

The result of the study further shows that awareness of forensic accounting services positively influence perceived benefits of using forensic accounting services. This finding is similar to that of Muthusamy *et al.* [21]. It therefore means that the more practitioners are aware of the services of forensic accounting the more they will perceive the benefits of using forensic accounting services in their organisations.

This study confirmed the proposed negative direction of the relationship between awareness and perceived risks of using forensic accounting services. The implication is that when organisations vis-à-vis practitioners are aware of forensic accounting services, their benefits in the risks of acquiring these services are significantly reduced. Forensic accounting services is therefore likely going to be employed in the detection and prevention of fraud in Nigeria based on the practitioners' perceptions on the benefits and risks of acquiring the services.

It has been confirmed in this study that the perceived benefits of using forensic accounting services will positively influence the behavioural intention of accounting practitioners in using forensic accounting techniques in fraud prevention and detection in Nigeria. On the other hand, perceived risks of using forensic accounting services will negatively influence its application in fraud prevention and detection in Nigeria. Invariably, the more practitioners perceive the benefits, the more they will intend to acquire the service and the less they perceive the risks, the more likely they will intend to acquire the services of forensic accountants.

Propositions 6 and 7 tested the influence of the threat perception factors on the practitioners' intention of using forensic accounting services. Statistical analysis performed in the course of this study confirmed the positive influence of perceived susceptibility on intention to be consistent with previous studies [44, 21]. The organisation's or department's susceptibility to fraud will increase the intention of using forensic accounting services in fraud prevention. Again, educational institutions have a role to play in this direction. Similarly, statistical analysis confirmed the positive influence of perceived severity of fraud on intention. This finding, which is in the proposed direction, is a marked improvement of the insignificant influence obtained by Muthusamy *et al.*, [21].

CONCLUSION

Accounting practitioners should be aware of the benefits of forensic accounting in preventing and detecting fraud in their establishments. It is concluded from this study that accountant's will accept use of forensic accounting in the prevention and detection of fraud if they understand the benefits, risk, fraud susceptibility and fraud severity in their establishment. Moreover, this would be enhance when they become aware of these issues through educational activities. Educational activities of training institution should therefore be directed toward increasing awareness on forensic accounting.

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