



Examining Influence of Forensic Accounting Skills and Education on Fraud Detection: Mediating Role of Job Satisfaction

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Abstract

In such a backdrop, drawing on both Job Demands–Resources (JD–R) model and Human Capital Theory, this study aims to investigate the impact of forensic accounting education and skills on fraud detection among accounting practitioners in Saudi Arabia, while also evaluating the role of job satisfaction as a mediating factor in these interactions. Data were collected from a probability-based simple random sample of private-sector accounting practitioners through a survey questionnaire. Partial Least Squares-Structural Equation Modelling (SmartPLS-4) was employed to test the hypotheses. The results show that both forensic accounting education and forensic accounting skills have positive and significant influence on fraud detection. Moreover, the study found job satisfaction as a mediator for both relationships. By combining JD–R and Human Capital Theory at the practitioner level, it improves the basic principles of fraud detection and helps with methods for building skills and getting people involved in emerging markets. Moreover, this study offers unique, context-specific data from Saudi Arabia that connects forensic education and skills to fraud detection, revealing job satisfaction as an innovative mediating factor. The study has implications for businesses, academics, and policymakers.

Keywords: Forensic Accounting, Accounting Education, Fraud Detection, Job Satisfaction, Saudi Arabia.

Introduction

As fraud schemes have been more complicated and more computerised, detecting financial fraud has become a top priority for regulators, auditors, and accountants all around the world. In Western nations, prominent corporate scandals and ongoing financial misreporting persistently highlight systemic weaknesses and urge for more stricter initiatives in detecting frauds (ACFE, 2024; PCAOB, 2023). The Report of The ACFE (2024) highlighted to Nations outlined that the median loss per case is 145000 dollars. However, fraud in financial statement causes the biggest losses, even though it does not happen as often. Internal audit and management review do not always work as early-warning systems (ACFE, 2024).

However, Europe and North American organisations show significant vulnerability to cyber-enabled fraud, procurement manipulation, and corruption, intensified by distant work, intricate supply chains, and third-party risk (PwC, 2022; EY, 2023). In the Middle East, economic diversification, faster digital transformation, and growing capital markets have made fraud risk landscapes worse. This has shown weaknesses in governance, internal controls, and assurance skills, especially in SMEs and family-owned businesses (PwC Middle East, 2022; Transparency International, 2024). Saudi Arabia has made progress in fighting fraud and corruption in the Gulf through the National Anti-Corruption Commission (Nazaha), Vision 2030 gover-

* This article was submitted in October 2025, and accepted for publication in November 2025. Published Online in November 2025.

DOI: 10.21608/aja.2025.431340.1960



nance reforms, stronger internal audit mandates, and capital market oversight. However, there are still problems with specialised forensic capacity, data analytics adoption, and the consistency of fraud risk management across sectors (CMA, 2023; Nazaha, 2023; Amin & Motta, 2023). These factors underscore the strategic significance of forensic accounting education as well as skills in improving efficacy regarding fraud detection within Saudi Arabia's dynamic corporate landscape.

Organisations and markets are losing money, damaging their reputations, and putting themselves at risk because of fraud, which is why it is so important to improve fraud detection. Global studies consistently indicate an increase in asset misappropriation, bribery, cyber-fraud, and misconduct by third parties, with discovery frequently achieved via tips rather than formal controls, implying deficiencies in assurance operations (ACFE, 2024; PwC, 2022; Sukhai, Houmes, Ngo & Wang, 2025). Timely identification is associated with substantial loss mitigation, market integrity, and stakeholder confidence, particularly in emerging and swiftly reforming economies (OECD, 2021). As digitisation progresses, forensic accounting skills especially in data analytics, e-discovery, and investigative studies are essential adjuncts to conventional audit techniques that are not equipped to identify collusive or technology-facilitated schemes (Messier et al., 2018; ISA 240, IAASB, 2025). Thus, more studies on how forensic accounting skills and education influence fraud detection directly and indirectly via the intervening mechanism should be investigated.

The research is simultaneously grounded on JD–R model i.e., Job Demands–Resources model and human capital theory. JDR reveals that personal and work i.e., job resources (such as specialised skills and supportive training) enhance work engagement and performance through motivational mechanisms, with job satisfaction serving as a proximal attitudinal objective associated with effectiveness (Bakker & Demerouti, 2007). Human Capital Theory posits that education and skill enhancement increase productivity by augmenting capacities and task efficiency (Becker, 1993).

By combining these ideas, we say that forensic education and skills are resources or human capital that help practitioner accountants be happier at work and, as a result, better at finding fraud. The study theoretically contributes by delineating and evaluating a micro-level mechanism job satisfaction through which forensic competencies are converted into fraud detection, thereby extending JD–R and Human Capital frameworks to forensic accounting within an emerging-market context (Bakker & Demerouti, 2007; Becker, 1993; Del Pozo-Antúnez et al., 2018). The evidence can help Saudi regulators, professional organisations, and businesses understand the return on investment (ROI) of targeted forensic education, certification, and analytics training. It can also help them decide whether to focus on improving skills, satisfaction drivers, or both to improve detection outcomes (CMA, 2023; Nazaha, 2023). By focussing on the skills of practitioners in Saudi Arabia's reform process, the study gives useful advice on how to improve skills and governance.

Theoretical Framework and Literature Review

The paper is developed based on the two theories, such as, JDR model and HCT theory. In this regard, the JDR model interprets that individuals' performance and well-being result from dynamic balance between demands particularly job demands (e.g., emotional labour, workload, cognitive complexity) and job resources (including training, skills, feedback, autonomy) (Naidoo-Chetty & Du Plessis, 2021; Bakker & Demerouti, 2007). Job resources facilitate a motivating process that improves job satisfaction, work engagement, and performance, whereas mitigating the impact of demands (Bakker & Demerouti, 2017). The task environment for fraud detection is quite demanding where forensic work includes complicated data processing, investigation interviews, evidence review, and ethical stresses (Messier, Glover & Prawitt, 2018; Michelet, Bretinger & Horsman, 2023). Specialised knowledge and abilities serve as fundamental resources that enhance efficacy (self-efficacy, task mastery) and alleviate tension, consequently increasing detection outcomes (Bakker et al., 2004; Michelet et al., 2023).

According to the JD-R theory, forensic accounting education and skills should increase job satisfaction by improving competence and perceived impact, which in turn leads to greater discretionary effort and performance in fraud detection (Christian et al., 2011; Schaufeli & Taris, 2014). In this regard, human capital theory (HCT) elucidates the mechanism by which investments in education, training, and experience enhance worker productivity through the augmentation of knowledge, skills, and capacities (Becker, 1993). In accounting, human capital improves analytical accuracy, professional judgement, and technology utilisation, resulting in superior audit and forensic results (Alsheikh et al., 2023; Finley & Sathe, 2017; Usman, Wirawan & Zulkifli, 2021).

Forensic accounting education is a unique investment in human capital that helps people learn about litigation support, digital forensics, internal controls, and fraud schemes (Awwad & Abdelsattar, 2025). This particular human capital is particularly advantageous in contexts characterised by information asymmetry and intricate fraud patterns when general accounting expertise proves inadequate (Van Driel, 2018; Hou & Liu, 2025). HCT also predicts complementarities: education and practice work together to create larger marginal returns to performance, which means that forensic skills put the knowledge learnt in school to use (Becker, 1993; Okeke, R. 2016; Yaqoub et al., 2023). The integration of JD–R and HCT establishes a comprehensive framework wherein forensic education and skills (human capital) function as job resources that (a) directly augment fraud detection performance and (b) indirectly enhance performance by elevating job satisfaction and engagement, particularly in the context of high demands characteristic of investigative work (Bakker & Demerouti, 2007; Christian, 2014).

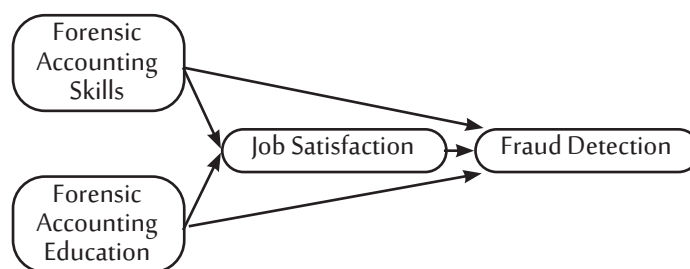


Figure 1: Research Framework

Taken together all the arguments on both theories validate direct correlations between education/skills and fraud detection, while also endorsing a mediating pathway via job satisfaction as depicted in the Figure 1 below:

The Problem and Questions of the Study

Problem of the Study

Previous studies have investigated various predictors to fraud detection in accounting firms and organisational contexts, for example, Xu, Wang, & Ye, (2024) examined the role of digitalization on fraud detection if fraud occurs in Chinese publicly listed companies. Moreover, Soehaditama, (2024) examined the role of organisational culture and internal audit on the fraud detection in the Indonesian organisations. Furthermore, detection procedures and technology anti-fraud awareness and fraud prevention significantly and positively influence the fraud detection skills (Sipayung, Yanti & Setya, 2022). Furthermore, Awosika, Shukla, & Pranggono, (2024) examined the effect or influence of explainable artificial intelligence and learning in fraud detection in the financial aspects. Furthermore, research indicates that strong internal control systems and favourable ethical environments enhance the probability of fraud detection (Bonrath & Eulerich, 2024). Research in the Middle East underscores the impact of governance reforms, Shariah-compliant oversight in Islamic finance, and the quality of disclosure on fraud risk mitigation. However, it also reveals deficiencies in investigative techniques and analytics among practitioners (Amin & Motta, 2023; PwC Middle East, 2022). In Saudi Arabia, growing data indicates advancements in regulatory enforcement and the professionalisation of internal auditing; nonetheless, there is a paucity of empirical research connecting practitioner competencies to detection outcomes within enterprises (Al-Shammari et al., 2018; CMA, 2023). This literature indicates that although organisational and system-level elements are extensively examined, the

micro-foundations of fraud detection-specifically the forensic skills and educational preparation of practitioners-necessitate more empirical scrutiny, especially within the Saudi Arabian context. It is because there is a lack of studies conducted in the Middle Eastern countries' context specifically, the current research on fraud detection among the accountants in Saudi Arabia is limited. It is dearth particularly with empirical studies linking forensic skills and education of practitioners to quantified detection outcomes in accounting firms (Al-Shammari et al., 2018). This gap makes it harder to make policies and develop training based on evidence, especially when rules are changing quickly. Hence, filling this gap in the current literature could enrich current understanding and help practitioners figure out if investing in skills and education leads to real improvements in detection in the Saudi professional world.

With the above gaps, this study proposes job satisfaction as a mediator in connection between forensic skills as well as detection findings for practitioners. Studies (Riyanto, R. Endri, E. & Herlisha, N. 2021) indicate that job satisfaction promotes motivation, persistence, and discretionary effort elements that might improve investigative thoroughness and the successful utilisation of forensic technologies (Vo, Tuliao, & Chen, 2022; Bakker & Demerouti, 2007; Fan, 2025). Research has employed job satisfaction as a mediator in various audit and accounting scenarios, including the correlation between resources and performance or ethics and compliance behaviours (Berhanu, 2023; Promchart, and Potipiroon, 2020). However, to our knowledge, it has yet to be examined as a mediator in the direct relationships between forensic skills/education and fraud detection outcomes proposed herein. This signifies a significant gap: if skills and education augment perceived competence and job clarity, subsequently increasing satisfaction and investigative diligence, then satisfaction emerges as a viable conduit through which competences boost detection particularly in high-pressure contexts.

Questions of the Study

The questions of the study are outlined below:

- To what extent do forensic accounting education directly influence fraud detection?
- To what extent do forensic accounting skills directly influence fraud detection?
- To what extent do job satisfaction mediate the relationship between forensic accounting education and fraud detection?
- To what extent do job satisfaction mediate the relationship between forensic accounting skills and fraud detection?

Objectives of the Study

The questions of the study are outlined below:

- To examine the direct influence of forensic accounting education on fraud detection.
- To examine the direct influence of forensic accounting skills on fraud detection.
- To assess the mediating role of job satisfaction in the relationship between forensic accounting education and fraud detection?
- To assess the mediating role of job satisfaction in the relationship between forensic accounting skill and fraud detection?

Hypotheses of the Study

Forensic accounting education & fraud detection

Empirical literature as well as practitioner reports indicate that containing forensic accounting education and curriculum and professional development enhances fraud detection skills (Kinanti et al., 2023, Micheletetal.,2023;Awwad&Abdelsattar, 2025).Studies(i.e.,Kinantietal.,2023;Awwad,&Abdelsattar,2025)

report that a market demand for forensic education and demonstrated that familiarity with forensic subjects (fraud schemes, investigative procedures, litigation assistance) prepares graduates for detection responsibilities. Apostolou et al. (2010) recognised forensic and fraud-related subjects (analytical methods, interviews, data mining) as essential competencies for assurance professionals (Labuschagne & Fourie, 2025). Research indicates that auditors with forensic training demonstrate increased professional scepticism and enhanced red flag detection, resulting in superior identification of misstatements and fraud risks (Atika & Rochayatun, 2023). Khaksar, Salehi, & Lari DashtBayaz, (2022) contended that specialised fraud training improves audit quality by synchronising procedures with fraud risk indicators. Universities that incorporate forensic courses observe improvements in students' critical thinking and case-based reasoning pertinent to fraud detection (Nilendu, 2024). From a human capital theory's standpoint, this schooling enhances domain-specific knowledge beyond conventional auditing, whilst the JD–R model conceptualises it as a job resource that elevates efficacy and motivation in high-demand investigative settings (Khaksar et al., 2023; Kinanti et al., 2023; Awwad, & Abdelsattar, 2025; Nilendu, 2024). Thus, we propose following hypothesis.

Hypothesis H1: Forensic accounting education is positively related with fraud detection.

Forensic accounting skills & fraud detection

Forensic accounting skills, including digital forensics, data analytics, investigative questioning, link analysis, and litigation support, are closely linked to how well someone can find fraud. Empirical evidence demonstrates that data analytic expertise facilitates the early detection of anomalies within extensive transaction datasets, hence enhancing the sensitivity to hidden schemes (Kinanti et al., 2023). Interviewing and deception detection skills improve the gathering of diagnostic clues and confessions during investigations (Niledu, 2024). Understanding internal controls and fraud schemes enhances the identification of high-risk procedures and the creation of customised testing (Mohd-Sanusi, Mohamed, Omar, & Mohd-Nassir, 2013; Ziorklui, 2024). Additionally, proficiency in electronic evidence collecting maintains the chain of people who are associated with frauds are essential for effective case settlement (Dkhar, Lyngdoh, & Kumar, 2025).

Experimental study indicates that forensic professionals surpass common auditors in fraud risk assessments and red flag identification, particularly in high-pressure or intricate situations (Campa, Quagli & Ramassa, 2023). Companies that use forensic analytics say they find more problems and fix them faster (Holmes, & Douglass, 2021; Veledar, Bašić, Demirović, & Beširević, 2024). According to HCT, these skills are a type of human capital that makes it easier to find things. In the JD–R model, skill depth serves as a job resource that mitigates cognitive demands and enhances outcomes, in part by boosting confidence and perseverance. These arguments affirm a relationship of forensic accounting skills with fraud detection. Hence, we hypothesise that:

Hypothesis H2: Forensic accounting skills is positively related with fraud detection.

Job satisfaction as a mediator

Job satisfaction of employees is called primary attitudinal outcome in the JD–R paradigm, occurring when job resources meet or surpass job expectations, and when employees perceive competence, autonomy, and effect (Bakker & Demerouti, 2007; Schaufeli, W., & De Witte, H. (2017; Veledar et al., 2024). Greater job satisfaction is associated with enhanced task performance and discretionary effort, especially perseverance in fraud detection tasks (Narsa, Afifa & Wardhaningrum, 2023). Forensic accounting knowledge and abilities can enhance job satisfaction by fostering a sense of competence, diminishing role ambiguity, and facilitating meaningful work-specifically, the detection and prevention of fraud (Ismail, Azizan, & Fahmi, 2019).

First, accounting education as a job resource makes investigation procedures and legal frameworks clearer, which reduces confusion and mental stress. This increase in resources can make people happier, which in turn makes them more involved and diligent in finding fraud (Bakker & Demerouti, 2017;

Adejumo, & Ogburie, 2025). Second, specialised skills make investigative stages (such analytics, interviewing, and evidence management) more effective, leading to quick victories that boost intrinsic motivation and pleasure, which are associated with greater performance quality (Vuong & Nguyen, 2022). In accounting, higher levels of competence and possibilities for professional growth are linked to higher levels of satisfaction and better audit quality (Ali, Khinger, Subhe, & Al-Orfali, 2024). The proposed mediation in this study aligns with Human Capital Theory (HCT), positing that returns to human capital manifest not alone as direct productivity enhancements but also through elevated job attitudes that facilitate knowledge application and resilience under duress. Research in auditing demonstrates that training and supervisory support enhance satisfaction, hence improving performance and retention (Omer, 2024). Consequently, forensic education and skills should influence fraud detection indirectly through job satisfaction, in addition to their direct impacts.

Hypothesis H3: Job satisfaction has a mediating role in the relationship between forensic accounting education and fraud detection.

Hypothesis H4: Job satisfaction has a mediating role in the relationship between forensic accounting skills and fraud detection.

Study Design

Study population and sample

The population in a study project is called the whole collection of people or events a researcher wishes to investigate or base decisions upon (Saunders & Lewis, 2017). For instance, the population of this study includes accounting practitioners.

A sampling strategy is a technique applied to choose a subset from the population. A sample is this subset. There are various sampling strategies. Firstly, the sampling strategy is divided into probable and non-probable sampling. Since all the accounting practitioners working in the private companies of Saudi Arabia are the population of this study, hence, all of them are probable to be included in this research. Thus, this study first selects probability sampling. Then, the researcher adopts simple random sampling to make sure a sufficient number of accounting practitioners are included in this research (random sampling means anyone working in the workplace can participate if he or she is an accounting professional). In this regard, sample size is an important factor to ensure that the results from the data analysis fairly depicts the population, a bigger sample size usually yields more consistent results (Hossan, Dato'Mansor & Jaharuddin, 2023). Moreover, sufficient population and suitable sampling techniques guarantee the representation of the population, therefore helping researchers to produce legitimate results. Furthermore, the credibility of research findings depends on proper population identification, sampling strategy, and sample size in line with the research objectives (Kang, 2021). The population of this study are accounting practitioners working in private companies, while the sampling strategy is simple random sampling and the sample size is also calculated using Cochran's formula (1977). This formula uses two key factors:

- 1- the risk the researcher is willing to accept in the study, commonly known as the margin of error, or the error the researcher is willing to accept.
- 2- the alpha level, the level of acceptable risk the researcher is willing to accept that the actual margin of error may exceed the acceptable margin of error.

Based on that formula, a selection of 372 respondents were determined through the use of random sampling techniques.

Measurement of the study variables

A research measures is a tool that helps researchers get real-world data by using surveys so they can assess, or analyse, the data to see if they have met their goals (Van & Simmie, 2024). These tools are widely used in social sciences, health sciences, business and education to evaluate the respondents' opinion

(Ghanad, 2023). Instruments are a collection of tools used to gather data, such as surveys, observations, interviews, and other methods that assist researchers in data gathering (Hair et al., 2022). For this study, the questionnaire includes 3 parts. The cover letter is the 1st part that explains the objective of the research while gives other information. The 2nd part provides information on demographic, and the last part is about the tools that will be used to collect the data. Moreover, the research utilises 3 items for forensic accountant education (Al Samara, 2017; Ozili, 2015; Hegazy et al., 2017; Ozili, 2020; Alabdullah et al., 2014), 4 items for fraud detection (Silverstone and Sheetz, 2004; Bressler and Bressler, 2007; Yuniarti and Ariandi, 2017), and 3 items for job satisfaction (Hancer & George, 2003; Batura et al., 2016) from prior research. The measurement table, Table 1, lists these items.

Data Collection Tool and Method

The survey data in this study was gathered through the survey questionnaire; hence questionnaires were distributed among the accounting practitioners working in the accounting firms. The researcher then collected the responses from the participants, who were distributed. This is called the drop-off/pick-up (DOPU) method (Junod & Jacquet, 2023). In data collection, drop and pick, or drop-off/pick-up (DOPU), is a survey method that involves delivering surveys in person and then picking them up later (Broussard Allred & Ross-Davis, 2011). This method can increase response rates and reduce non-response bias (Allred & Ross-Davis, 2010). However, before the data collection, the researcher took permission from the managers of the organisations from where the data were collected.

Data Analysis Methods

This study employed SmartPLS M4.0 software. It was used as it helps to analyse collected data with the Partial Least Squares-Structural Equation Modelling (PLS-SEM) approach. SmartPLS enables researchers to assess complex models that incorporate numerous variables, including independent and dependent variables. Additionally, SmartPLS has capabilities for testing moderation and mediation effects (Hair et al., 2024).

The measurement model includes both validity as well as reliability. Reliability in the context of data analysis refers to the consistency of what the instrument measured (Saputra, 2025). The measurements, which are perfect, produce the same results for every replication; anything arising as unreliable is the product of random measurement errors. Though they are not always valid, obtaining dependable measures is a prerequisite for obtaining trustworthy measurements. Cronbach's alpha was used to find the internal consistency whereby every item is regarded as a replicate measurement of the construct (Hair et al., 2024), and the suggested Cronbach Alpha coefficient for reliability is 0.7. All instruments in this study are adopted, and these were employed in the previous studies as explained in the instrumentation sections, therefore, the adopted instruments have proven reliability and dependability.

The convergent validity is the extent to which a set of variables converge to assess a specific concept (Hair et al., 2012) that also assessed in this study. In this regard, factor loadings, AVE (average variance extracted), and composite reliability (CR) was assessed accordingly recommendations of Hair et al. (2010). Moreover, composite reliability was also assessed that shows the extent to which a collection of items regularly signals the latent construct, marks the second component of convergent validity (Hair et al., 2024). In this regard, composite reliability values were then under investigation. These outcomes should support the convergent validity of the outer model.

Furthermore, discriminant validity was also assessed using the Fornell and Larcker (1981) suggestion that recommends that the AVE of every variable ought to be higher to the square of the intercorrelation that variable and other variables or the square root of the AVE of every construct should be higher than the correlation between a specific variable and other variables. This study will verify the discriminant validity of the variables using both approaches. A collinearity test was done so that there is no multicollinearity in

the data (Ghanbar, 2024; Nagar et al., 2024). However, collinearity happens when there is a high level of interrelation among the variables (Subhaktiyasa, 2024). Variance inflation factor (VIF) is recommended to assess collinearity (Hair et al., 2024). If the VIF results are higher than 5 indicating collinearity among predictor constructs (Hair et al., 2024). Moreover, this study also conducted a collinearity test to make sure that the data did not have multicollinearity (Ghanbar, 2024; Nagar et al., 2024). Collinearity, on the other hand, occurs when the variables are very closely related to each other (Subhaktiyasa, 2024). Hair et al. (2024) suggest using the variance inflation factor (VIF) to check for collinearity. If VIF results exceed 5, it signifies collinearity among predictor constructs (Hair et al., 2024).

This research also employed the structural model result from PLS-SEM to test our hypotheses. The t-statistics are usually the benchmarks for testing hypotheses. If the t-statistics for a variable are greater than 1.96, it is significant at the 5% level (Namaziandost, Kargar Behbahani & Heydarnejad, 2024). The present study is capable of determining the p-value for significance level and hypothesis testing. A p-value below 0.05 indicates a 95% confidence level, while a p-value below 0.01 signifies a 99% confidence level (Kumar et al., 2024), elucidating both direct correlations and the outcomes of mediation and moderation (Kumari & Kaur, 2024; Hidayat-ur-Rehman, 2024).

Discussion of the Study Results

Demographic

The study was conducted among the accounting professionals in Saudi Arabia. In this regard, the study has found that 79% participants were male while the rest were females. Moreover, 87% were married and the rest were single. Furthermore, the study included the 45% participants from 30-40 years, while 17% from 41-50 and the rest were above 51 years old.

Common Method Bias (CMB)

This was also tested in this study before the analysis of models i.e, measurement and structural. To ensure, it was completed that there is no common method bias effect on the model being tested. In this regard, the variance inflation factor (VIF) values were computed that shows that the VIF values in this study were less than 3.3 i.e., maximum value in this study was 2.665. It fulfills the recommendation of Kock (2015), who argued that if the VIF values are less than 3.3, the results would have no common method bias issue. Thus, based on this result, we proceeded to analyse the measurement mode.

Measurement Model

This study employed a comprehensive method using CA and CR to thoroughly assess the internal consistency and reliability of variables in model, as recommendation of Hair, et al. (2021). Table 1 and Figure 2 below demonstrate that CA and CR values for all variables are higher than 0.7. This reveals that the internal consistency was strong. When checking for convergent validity, this study strictly followed the rules set by Hulland (1999) and Hair et al. (2021). These rules say that each item must have a FL more than 0.40 & an AVE higher than 0.50. Results in Table 1 is acceptable since it reveals that all the items had loadings > 0.70, which is far higher than the FL benchmark. Each construct also met the AVE standard, with values higher than 0.50. This outcome illustrates strong convergent validity in line to the standards of Hair, et al. (2021).

Discriminant Validity

This research applied HTMT and Fornell Larcker criteria to analyse discriminant validity. In this regard, Table 2 shows the HTMT values where it compares correlations between every construct within the same constructs. According to Henseler et al., (2015) if the ratio is less than 0.90 the HTMT is fulfilled. In this regard, the results in this study as mentioned in the Table 2 shows the values are lower than 0.90, hence, the results are feasible to be argued to have good and clear discriminant validity.

Moreover, this study has also checked the Fornell Larcker criteria where the study found that the diagonal values i.e., square roots of the AVE to the correlation results are lower. Table 3 shows that the diagonal values are more than the related correlation values. According to Fornell Larcker (1981) the results then show higher and acceptable discriminant validity.

Table 1: Results of Measurement Model

Variables	Items	Item Codes	FL	CA	CR	AVE	VIF
Forensic	Fraud examiners should possess investigative skills to detect fraud	AE_1	0.89	0.858	0.913	0.778	2.442
Accounting	Forensic accountants have strong written communication skills	AE_2	0.883				2.244
Education	Forensic accountants have strong verbal communication skills	AE_3	0.873				1.933
Forensic	Forensic accounting procedures are effective in detecting fraud	AS_1	0.855	0.82	0.892	0.734	1.669
Accounting	Forensic accounting education is essential for forensic accountants	AS_2	0.857				1.968
Skills	Forensic accountants training on detecting fraud is very important	AS_3	0.859				1.951
	Financial fraud in is detected by internal audit procedure	FD1	0.836	0.798	0.869	0.624	1.921
Fraud	Accounting information systems help detecting financial fraud	FD2	0.734				1.457
Detection	Helping employees to meet their needs is one method to decrease fraud	FD3	0.756				1.543
	A manual control is required for files used in computer processing	FD4	0.828	0.876	0.923	0.801	1.976
	The job I do is like a hobby for me.	JS1	0.908				2.665
Job satis- faction	The job I do is interesting hence it keeps me away from to be bored.	JS2	0.89				2.404
	I am enthusiastic in my work in most days.	JS3	0.886				2.183

Note: Factor Loading = FL; Cronbach's Alpha = CA; Composite Reliability = CR; Average Variance Extracted = AVE; Variance Inflation Factor = VIF

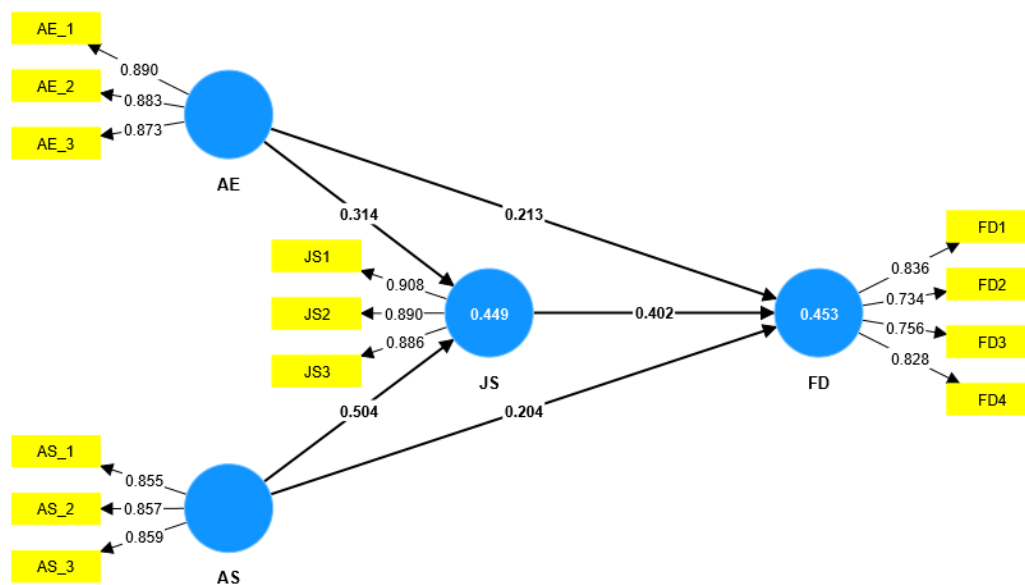


Figure 2: Measurement Model

Hypothesis Testing

Results of hypothesis evaluation as depicted in Table 4 as well as Figure 3 show that every hypothesis has been accepted. In this regard, For H1 i.e., forensic accounting education (AE) positively related to the fraud detection (FD) as we found that $\beta=0.213$, $p=0.007$. Moreover, the findings show that H2 i.e., forensic accounting skills (AS) also enhance FD as we found that $\beta=0.204$, $p=0.032$. Moreover, findings of H3 i.e., the mediating influence of job satisfaction in accounting education and JS relationship was also accepted as $\beta=0.126$, $p=0.003$. Furthermore, the results also showed that H4 is also accepted that job satisfaction mediates the relationship of forensic accounting skills with JS i.e., $\beta=0.203$, $p=0.002$.

Table 2: Heterotrait-Monotrait (HTMT)

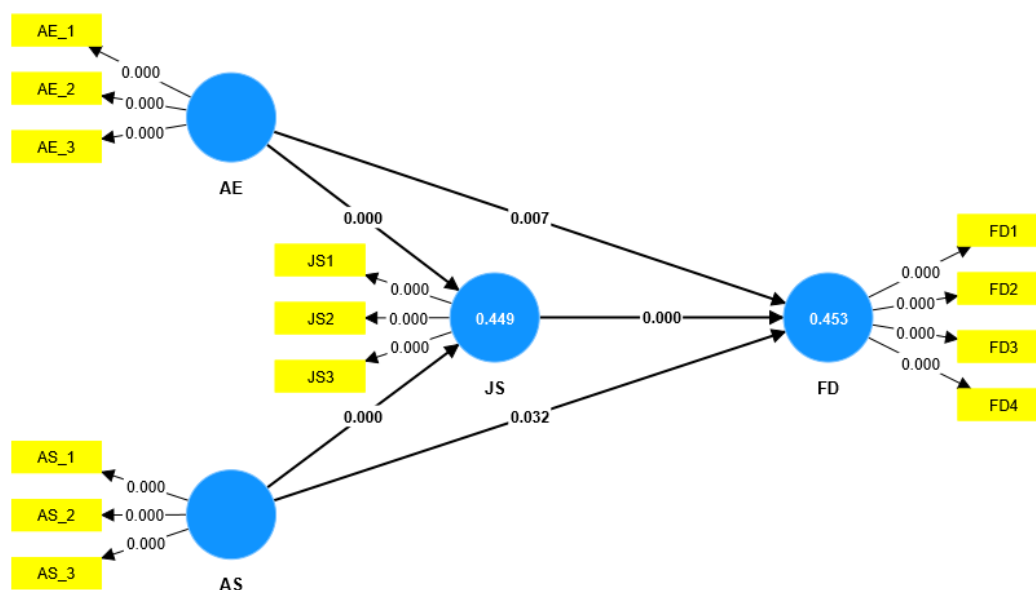
	AE	AS	FD	JS
AE	0.882			
AS	0.356	0.857		
FD	0.554	0.617	0.801	
JS	0.535	0.705	0.741	0.895

Table 3: Fornell Larcker Criteria

	AE	AS	FD	JS
AE	0.882			
AS	0.302	0.857		
FD	0.462	0.509	0.79	
JS	0.466	0.599	0.623	0.895

Table 4: Hypothesis Testing (Structural Model Analysis Results)

	Paths	Original sample	Sample mean	Standard deviation	T statistics	P values	Decision
Hypotheses1	AE -> FD	0.213	0.215	0.079	2.685	0.007	Accepted
Hypotheses2	AS -> FD	0.204	0.203	0.095	2.145	0.032	Accepted
Hypotheses3	AE -> JS -> FD	0.126	0.127	0.042	3.003	0.003	Accepted
Hypotheses4	AS -> JS -> FD	0.203	0.203	0.065	3.113	0.002	Accepted

**Figure 3: Structural Model**

Results above substantiates that forensic accounting education and skills positively and significantly influence fraud detection among Saudi accounting professionals, with job satisfaction serving as a mediating factor for both impacts. These results align with the theoretical foundations of the study. Human Capital Theory posits that specialised education and skills enhance productivity and task efficiency (Becker, 1993), whereas the JD–R model conceptualises education and skills as job resources that activate motivational pathways, thereby increasing satisfaction and performance in challenging forensic environments (Bakker & Demerouti, 2007; 2017). The findings align with empirical literature that associates forensic training with professional scepticism, red-flag identification, interview effectiveness, and analytics-driven anomaly detection (Apostolou et al., 2010; Mohd-Sanusi et al., 2013; Atika & Rochayatun, 2023; Kinanti et al., 2023; Nilendu, 2024). Simultaneously, they build upon previous research by investigating these effects in Saudi Arabia, a market experiencing regulatory enhancement although still exhibiting deficiencies in capability and analytics (CMA, 2023; Nazaha, 2023; PwC Middle East, 2022; Amin & Motta, 2023).

Our findings provide a nuanced perspective on the points presented in the introduction, which highlighted systemic governance vulnerabilities and the prevalence of tips over controls in detection (ACFE, 2024; PwC, 2022; PCAOB, 2023). These macro-level realities persist, particularly in the context of cyber-enabled fraud and intricate supply chains (EY, 2023; OECD, 2021). However, the current findings indicate that individual-level competencies and attitudinal states significantly enhance detection, even when formal controls are inconsistent (Bonrath & Eulerich, 2024; Ziorklui et al., 2024). This is in line with what the current literature outline about how specialised skills in data analytics, e-discovery, and interviews can help traditional audit methods that have trouble with collusive or technology-driven schemes (Messier et al., 2018; IAASB, 2025; Michelet et al., 2023).

Moreover, importantly, the mediation through work satisfaction validates the JD–R motivating process and aligns with findings that resources improve satisfaction, thereby increasing task persistence and

performance (Christian, 2014; Vo, Tuliao, & Chen, 2022; Narsa et al., 2023). This elucidates the reason why training alone occasionally produces minimal improvements: neglecting satisfaction factors such as autonomy, recognition, access to tools, and supportive supervision limits the return on human capital investments (Omer, 2024; Veledar et al., 2024). In Saudi Arabia, where Vision 2030 aims to improve governance and market integrity, the results show that improving forensic skills at the practitioner level, along with work design that keeps people happy, can significantly improve detection effectiveness along with ongoing regulatory reforms (CMA, 2023; Nazaha, 2023).

Implications

Theoretical Implications

Findings in this research have several theoretical implications. First, it expands the JD–R concept into the field of forensic accounting by demonstrating a motivational pathway from job resources, specifically, forensic accounting education and skills to job satisfaction and subsequently to performance in fraud detection (Bakker & Demerouti, 2007; 2017). While JD–R forecasts such mechanisms in high-demand environments, empirical examinations at the micro-level of fraud detection are still limited; the validated mediation reinforces the argument that attitudinal states serve as immediate channels through which resources convert into outcomes (Christian, 2014; Del Pozo-Antúnez et al., 2018). Second, the study enhances Human Capital Theory within a specialised assurance context by differentiating domain-specific forensic competencies (e.g., analytics, digital evidence, interviewing) from general accounting knowledge, and by illustrating both direct and indirect returns to detection quality (Becker, 1993; Ismail et al., 2019; Kinanti et al., 2023). This aligns with the HCT concept of complementarities training generates greater returns when integrated into practical situations that facilitate application and acknowledgement (Okeke, 2016; Yaqoub et al., 2023). Third, the results fill in gaps in fraud research that are too big or too little. Although existing literature focuses on governance, culture, and the robustness of internal audits (PwC, 2022; Bonrath & Eulerich, 2024; Xu et al., 2024), our findings indicate that individual resources and satisfaction are significant predictors of detection, even in dynamic systems such as Saudi Arabia's (CMA, 2023; Nazaha, 2023). This theoretically prompts the development of multilevel models that combine organisational controls and market oversight with practitioner competencies and job attitudes. Finally, in a context characterised by digitisation and capacity limitations, the study enhances the generalisability of JD–R and HCT to emerging markets and proposes boundary conditions, workload, ethical climate, and technology enablement (Michelet et al., 2023; IAASB, 2025) that future theories should explicitly integrate.

Practical Implications

The practical implications includes the suggestion that combining capability-building with job design that makes people happier can help find more people. For practitioners, targeted enhancement in analytics, digital evidence management, and investigative interviews improves effectiveness and perceived impact, hence increasing satisfaction and commitment in complicated situations (Michelet et al., 2023; Nilendu, 2024; Kinanti et al., 2023). Accounting firms should make it a standard practice to use integrated programs that combine technical training with JD–R levers like autonomy in planning, high-quality tools and data, and supportive supervision. It is also important to keep an eye on detection KPIs along with engagement and satisfaction, since they are linked to performance (Bakker & Demerouti, 2017; Omer, 2024; Veledar et al., 2024). Moreover, professional organisations can connect certificates and CPD with skills in e-discovery, AI-assisted analytics, and chain of custody, using regional case libraries to speed up experiential learning (Awwad & Abdelsattar, 2025; Awosika, Shukla, & Pranggono, 2024). Furthermore, the findings could be useful for the accreditation of forensic training providers, and sector-specific guidance, especially for SMEs and family businesses and policymakers. Moreover, the findings can be useful to enhance the forensic

modules, hands-on laboratories, and internships in various level education programs to speed up entry-level preparation and minimise the time it takes for students to become competent (Apostolou et al., 2010; Ismail, Azizan, & Fahmi, 2019). These initiatives together address the known gap between the region's increasing risk and the uneven maturity of practitioner analytics (PwC, 2022; EY, 2023; OECD, 2021).

Study Limitations

In this study, few limitations should be acknowledged and hence, the findings should be employed cautiously. The cross-sectional design constrains causal inference; while mediation is substantiated, longitudinal or experimental designs are requisite to confirm the temporal sequence from education and skills to satisfaction and subsequently to detection. Self-reported measures of detection are susceptible to common method variance and social desirability bias, notwithstanding acceptable VIF thresholds (Kock's criterion) and measurement diagnostics; forthcoming studies should integrate objective metrics such as detected cases, recovery amounts, and time-to-detection. Generalisability is limited to private-sector practitioners in Saudi Arabia; public enterprises and other contexts within the Gulf Cooperation Council (GCC) may exhibit divergent governance systems and fraud profiles.

Future Studies

This study has some directions for future studies, for example, the model in this study emphasises job satisfaction as the exclusive mediator; in the future studies other JD–R variables (engagement, exhaustion, role clarity) and contextual moderators (ethical climate, workload, AI tool maturity, management support) are anticipated to influence pathways. Moreover, future studies can utilise panels or randomised training rollouts, integrate surveys with archival indicators and can examine supplementary mediators and moderators, and adopt multilevel designs that connect firm-level controls and governance with practitioner competencies. Comparative research across industries and GCC jurisdictions, along with ROI assessments of AI-enabled versus traditional training packages, would provide decision-useful evidence.

Conclusion

The research indicates that forensic accounting education and skills improve fraud detection among Saudi practitioners, with job satisfaction serving a mediating variable/construct, in align with HCT and the JDR model.

The findings elucidate the rationale for the efficacy of competence programs when integrated with satisfaction-enhancing job design and resources, illustrating both direct and attitudinal paths. Coordinated investments in competences, analytics infrastructure, and stimulating work environments can significantly enhance fraud detection for businesses, educators, and regulators during Saudi Arabia's ongoing governance changes.

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