Religiosity, Gender, Personality Type A and Trait Professional Skepticism: Perspective of Accounting Students in Ghana

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Abstract:
Professional skepticism of auditors has been described as an essential skill required to detect material misstatements and to evaluate the evidence obtained. This study investigates the professional skepticism traits of undergraduate accounting students described as potential auditors and analyses the relationship between religiosity, personality type A, gender and trait professional skepticism from the perspective of these students. A self-administered questionnaire was used to collect data from 225 undergraduate accounting students enrolled at the University of Ghana Business School, who have taken one auditing course. The study's hypothesized associations were tested using Partial Least Squares-Structural Equation Modelling (PLS-SEM). The study shows that accounting students are exhibiting the *search for knowledge and self-confidence* dimensions of trait professional skepticism rather than *action-oriented dimensions*. On the factors that influence the professional skepticism of these potential auditors, the study finds a positive and significant relationship between *achievement striving*, a personality type and *trait professional skepticism,* while *impatience irritability* personality type showed a negative but significant relationship. The study failed to find support for a direct relationship between *religiosity* and *professional skepticism*, although the relationship is positive, but reports a positive and significant indirect relationship between *religiosity* and *professional skepticism*.

Key words: Trait Professional skepticism, Religiosity, Personality Type A, Gender, Accounting students.

Introduction

The concept of professional skepticism in auditing and accounting seems to generate increased interest in recent years, as professional skepticism is required during the auditing process for enhancing audit quality. As suggested by the International Federation of Accountants (IFAC), an independent and skeptical mindset of auditors throughout the auditing process is vital to the practice of auditing and essential for delivering a suitable audit report. Aside from this, a report by the Institute of Chartered Accountants, England and Wales (ICAEW, 2018 p.1) posits that "*professional skepticism is at the heart of what auditors do; without it, the audit has no value*". Therefore, maintaining a proper level of professional skepticism throughout the audit may improve audit quality (Liu, 2018). The recent rise in accounting fraud cases which seems to attract the attention of the public and audit regulatory boards has been bemoaned by Farag and Elias (2016). The cases of Wirecard, Union Carbide, Lehman Brothers' demise, BP oil spills, Glaxo Smith Kline's mis-selling issues, Volkswagen's Dieselgate, Barclay's rate-fixing, Facebook's data leaks, and Apple's Batterygate (Abbasi and Amran, 2023) seem to have necessitated the need perhaps to increase attention towards imbibing adequate ethical and auditing education amongst students to inculcate virtues of professional skepticism in these potential auditors. Subsequently, incorporating education on professional skepticism for students cannot be overemphasized, as Liu (2018) suggests it shapes the ethical and professional behaviours of students, who are seen as potential accountants and auditors alike. Additionally, Agrawal et al. (2021) suggest that professional skepticism is very much needed and encourages academics to emphasise skepticism in academic curricula as it is applicable in other professional accounting areas.

Again, the seemingly increased worry expressed in literature by the International Auditing and Assurance Standards Board (IAASB-IFAC) and other stakeholders over audit inefficiencies also suggests the need for enhanced professional skepticism. However, the literature seems to have an inconclusive description of professional skepticism (Ciolek, 2017), indicating the need for further interrogation of the concept. Perhaps, Hurtt's (2010) suggestion that individuals largely reveal dimensions of trait professional skepticism makes it imperative to know which of these qualities students as potential accountants and auditors seem to exhibit. The auditing standards board describes professional scepticism as auditors having and maintaining an attitude of a questioning mind (IAASB, 2019), suggesting a mannerism adopted that may aid and enhance the effectiveness of the audit. This study perceives professional skepticism in the same light.

This study argues that this mannerism may stem from one's religious perspective, as Keller et al., (2007) suggest a person's religiosity may determine his/her ethical behaviour and assist in setting standards of good and bad. Considering that religiosity may influence an individual's values, beliefs, and practices once there is a commitment to it (Worthington et al., 2003), then it is likely that developing the trait of a questioning mindset may be influenced by a person's religiosity. In Ghana, the 2021

census suggests only 1.1% of the population had no religion (Sasu, 2022), implying that possibly, the 98.9% having religion may be impacted positively by religious beliefs and values. Therefore, if accounting students are to portray innate professional skeptical behaviour, then, perhaps this may be influenced partly by their religiosity. It is thus worth analysing if the religiosity of these students influences their professional skepticism behaviour.

Again, exhibiting the professional skepticism characteristic may emanate from your kind of personality. This is because people may react in diverse ways to ethical issues. In supporting this viewpoint, Janssen et al. (2020) concluded that personality traits of individuals contribute to their skeptical behaviour. Indeed, various personality types have been alluded to in literature with varying characteristics ascribed, see Gundry and Liyanarachchi (2007), and inconclusive studies on which personality type influences ethical decisions. While this enriches literature, the perspective of accounting students considered *potential accountants, auditors, and business executives* from a developing country may further enhance the academic discourse on personality and skeptical behaviour. Moreover, accounting and auditing practice involves people who need to exercise professional skepticism throughout their professional practice. Therefore, the personality of such potential individuals must be analysed to understand better how their personality may influence their skeptical behaviour.

Accounting students have been referred to as "potential auditors who have not yet received training" (Farag and Ellias, 2016; p. 124) and future professionals in the corporate accounting world (Agrawal et al., 2021). Therefore, to recruit the appropriate students with the right personality, judgment and behaviours required to enhance professional skepticism and ultimately work performance, this study seeks to know the personal attributes and traits students possess that may enhance their professional skepticism. This view is supported by Nelson (2009), who suggests that firms could test the professional skepticism traits of job seekers during their recruitment process aside from testing knowledge. This study aims to determine which professional skepticism mannerism undergraduate accounting students seem to be exhibiting and whether personality and religiosity influence this mannerism.

The study focuses on students majoring in accounting as they are potential accounting and auditing professionals. Moreover, one of their undergraduate course – auditing- exposes them to the concept of professional skepticism; therefore, they may have nurtured some of these characteristics. Consequently, identifying which characteristics they exhibit most is crucial for harnessing their career opportunities and potential in the accounting and auditing profession.

The study contributes to the literature on professional skepticism. It exposes how the potential accounting or auditing professional's personality, demographic and belief factors affect professional skepticism and provides support to the mindset and attitude theory. The study also provides insight into the trait skepticism of final-year accounting students at the University of Ghana Business School. It could assist the management of practice firms in determining the appropriate and suitable skeptical traits expected of 'potential accounting professionals' as these final-year accounting students apply for accounting-related jobs. Additionally, it could assist practice firms to map out appropriate training for these "future

accountants and auditors" thereby supporting their career growth and development. The study also provides evidence on whether *personality type A*, *religiosity*, and *gender* influence trait skepticism of undergraduate accounting students in Ghana, thus extending the body of knowledge on professional skepticism.

Theoretical and Empirical Review

Professional Skepticism

Given the increasing importance of professional skepticism in identifying fraud risk factors, current and potential accountants and auditors must recognise the necessity of being professionally skeptical throughout their careers. Professional skepticism is considered essential in undertaking financial statement auditing, as recommended by IAASB (2019). It has been described variously in literature (Ciolek, 2017; Janssen, et al., 2020; Nelson, 2009) and largely by the auditing standards board as auditors having and maintaining an attitude of a questioning mind; "being alert to conditions that may indicate possible misstatements due to fraud or error, and a critical assessment of audit evidence" (AICPA, 2002; Bellovary and Johnstone, 2007; Liu and Bi, 2007). Despite this largely accepted description, Agrawal et al. (2021) find that this trait is not only beneficial to the auditing profession but to every other accounting profession and even non-accounting ones that require high ethical assessment. Consequently, it is necessary to determine which of these traits have been nurtured in these undergraduate students (potential accountants and auditors) during their studies, as they may be facing ethical dilemmas as they step into the world of work. Other authors have described the construct in various ways (see Janssen et al., 2020). Despite the varied descriptions in the literature, this study adopts that of the IAASB, questioning which of the professional skepticism characteristics accounting students seem to be exhibiting.

Nelson (2009) in his seminal work identified components of skeptical behaviour. While he suggested that professional skepticism could be a trait or state (depending on characteristics in the environment), Nolder and Kadous, (2018) theorize professional skepticism as both a mindset and an attitude. Ciolek (2017) characterized it into trait-dependent and action-dependent behaviours. He cited questioning mind, suspension of judgement and search for knowledge as personal attributes of accountants and auditors that may allure to the benefit of the accounting profession to be considered skeptical while interpersonal understanding, autonomy and self-esteem are attributes to be portrayed by an individual to be seen as skeptical. Could accounting students, as potential accountants and auditors also have similar attributes? This study highlights the trait skepticism arguing that attitude directs intention and behaviour derived from beliefs and feelings.

Studies on professional skepticism exist in literature with a wide focus on how auditors can use it to detect or reduce fraud (Janssen et al., 2020), negotiate more hours (Ciolek, 2017) and enhance audit quality (Gundry and Liyanarachchi, 2007). Ciolek (2017) also calls for studies on how auditors can sustain skeptical traits throughout the audit process to maintain the high level of professional skepticism expected. For student-related studies, Ciolek and Emerling (2019) and Liu (2018) find that students' professional skepticism can successfully be developed when they

undertake accounting programmes at the University. Therefore, from a developing country perspective, this study, also, directs attention to students who are perceived as potential accountants and auditors, to determine which of the professional skeptical features accounting students exhibit most and to analyse how religiosity, personality traits and gender drive this professional skeptical behaviour.

Personality type and professional skepticism

Different personality types and characteristics have been suggested in the literature (see Gundy and Liyanarachchi, 2007; Elias and Farag, 2011; Farag and Elias, 2016; Bratton and Strittmatter, 2013) in sociology, psychology, amongst others. Business-related studies have also been conducted on personality types since Friedman and Rosenman (1959), who conducted medical research discovered a behavioural pattern and labelled it Type A and others Type B (Eysenck and Fulker, 1983; Fisher, 2001; Rayburn and Rayburn, 1996; Elias and Farag, 2011). Distinct attributes from prior studies have characterised these personality types. For instance, Gundry and Liyanarachchi (2007, p. 131) suggest that type A personalities seem to be "aggressive, ambitious, competitive and impatient, experiencing higher levels of stress, having a greater sense of time urgency and speed and commitment to occupational goals". Indeed, accounting students as potential accounting and auditing professionals may seek to make an impact in their early career years. Based on the literature, in this case, they may exhibit personality type A to gain acceptance and drive higher career prospects in accounting and auditing practice. Spence et al. (1987) identified two variants of personality type A individuals i.e., those striving for achievement and those easily irritated and impatient. He acknowledged that personalities striving for achievement are more focused, work hard and are serious about work, while others are easily irritated and hostile.

Other studies have collaborated on these attributes, for instance, Rayburn and Rayburn (1996) have posited that individuals exhibiting Type A personality desired competition at work and strived to achieve challenging goals, suggesting achievement striving personality. Gundry and Liyanarachchi (2007) also postulated that type A individuals were more likely to engage in practices that reduced audit quality when under stress. Fisher (2001) assessed auditors categorized as Type A personality and their impact on job output. They speculated that auditors exhibiting personality type A persevered during stress-related jobs more than Type B. However, Choo (1986) found that such individuals encounter more tension as they pursue higher ambitions.

The attributes of personality type A may imply professional skepticism, as Janssen et al. (2020) suggest that professional skepticism is developed from a myriad of individual characteristics of which personality trait is one. Studies indicate that individuals exhibiting personality type A strive to achieve stated objectives and may exhibit more skeptical behaviour to enhance work performance. Additionally, Gundry and Liyanarachchi, (2007) suggest limited studies on some personality type A attributes - impatience and irritability and achievement striving and call for additional research into these constructs.

Therefore, this study proposes that:

Hypothesis (H_1): *Impatience irritability of accounting students as potential accountants and auditors negatively influences their professional*

skepticism behaviour.

Hypothesis (H_2): *The achievement striving of accounting students as potential accountants and auditors positively influences their professional skepticism behaviour.*

Religiosity of accounting students and professional skepticism

The religiosity of individuals has been studied in literature and is seen as a multifaceted construct (Worthington et al., 2003; Cornwall et al., 1986). In business research, studies have been mainly directed at the relationship between religiosity and ethical decision-making, and personality among others (see Miller and Hoffmann,1995; Albaum and Peterson, 2006; Francis and Bourke, 2003; Keller et al., 2007). Religiosity considers an individual's responsibility to act appropriately based on their values, principles and beliefs and has been suggested to impact the lives of individuals (Sauerwein, 2017); and is associated with ethical behaviour (Barnett e*t al.*, 1996; Clark and Dawson, 1996; Kennedy and Lawton, 1996).

This study posits in line with Uysal and Okumuş (2019, p. 1333) that "the level of commitment by a person to religious values, beliefs and practices determines how he uses them in everyday life". Therefore, it may be implied that if accounting students are religious, the values and beliefs they adopt may influence their trait skeptical behaviour. In related studies by Omer, Sharp and Wang (2018) to determine if highly religious U.S Metropolitan Statistical Areas (MSAs) exhibit going concern decisions that reflect professional skepticism, it was concluded that highly religious MSAs were more likely to issue risk-averse going concern audit opinions. In contrast, Arfiana (2019) studied the effect of religiosity on internal auditors' ability to detect fraud and concluded that religiosity does not have a positive and significant effect on the ability of internal auditors to act skeptically. Based on the inconclusive evidence, this study's 3rd hypothesis is:

Hypothesis (H_3): *Religiosity positively relates to the professional skepticism of accounting students.*

Religiosity and personality type A

Studies on religiosity and personality exist in literature with varied models of personality being explored (Eysenck, 1998; Francis and Bourke, 2003). Eysenck (1998) studied the relationship between Eysenck's theory of personality and religiosity and concluded that low psychoticism indicated high religiosity and that there was no significant evidence relating extraversion and neuroticism personality type to religiosity. Francis and Bourke (2003) compared the relationship between Cattell's model of personality and religion and concluded that religious youth are more persistent, unadventurous, rule-bound, moralistic, obsessive, socially precise, exert willpower, serious, restrained and disciplined while irreligious youth are more expedient, cheerful and undisciplined. If the attributes in the literature describing religious individuals are valid, then it may reflect in personality type A as they may be achievement-oriented and remain focused on their religious values which impact their personality type. Therefore, hypotheses 4 and 5 are:

Hypothesis (H_4): *Religiosity positively influences Achievement striving personality type A.*

Hypothesis (H_5): *Religiosity positively influences Impatience irritability personality type A.*

Gender and religiosity

The evidence on the relationship between

gender and religiosity seems to be inconclusive in literature, although it is a universally suggested view that females are more religious. Miller and Hoffmann (1995) and several other studies (Cornwall, 1989; Thompson,1991; Collett and Lizardo, 2009) agreed that females are more religious than males largely because of the risk preferences of men. However, Sullins (2006) disagreed that this is always the case and cited religions in the world where men are more religious. Following the widely accepted view and supporting the prior studies that uphold the view that females are more religious, this study suggests that: Hypothesis (H_6): *Female accounting students are more religious.*

Gender and professional skepticism

Although females have been widely suggested to be more religious in literature, this may not necessarily influence their trait skeptical behaviour. Liu (2018) tested Hurtt's professional skepticism scale (HPSS) on accounting and business administration students in China, comparing the average scores of males and females and found no significant relationship between gender and professional skepticism. Therefore, gender may not influence an individual in evaluating evidence to enhance audit quality. Christina and Tjaraka, (2018) also found no relationship between professional skepticism and gender in their research. Therefore, based on the review of the literature, this study's 7th hypothesis is that; Hypothesis (H_7): *The gender of accounting students does not affect professional skepticism.*

Conceptual framework

Ullman & Bentler (2012) argue that Structural Equation Modelling (SEM) uses multiple regression to define the relationship between independent variables *(in this study; religiosity, gender, personality, gender)* and dependent variables *(in this study; professional skepticism)* illustrated with diagrams.

Conceptual framework

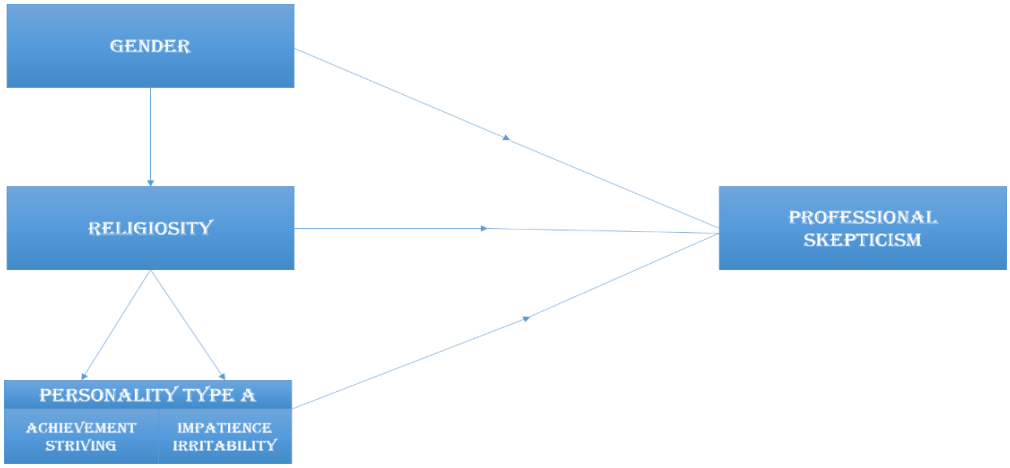

Figure 1 presents the study's conceptual framework based on the above-hypothesised relationships.

SEM tests hypotheses by evaluating causal relations between variables and uses arrows in path diagrams to show the direction of the relationship (Mueller & Hancock, 2019; Lefcheck, 2016) SEM also assists researchers in hypothesizing the relationship of a model which be translated into equations (Ullman & Bentler, 2012). Hair et al. (2012) explained that SEM can test latent variable relationships on a theoretical level. They added that SEM has two main methods: Covariance-Based SEM techniques (CB-SEM) and Partial Least Squares SEM (PLS-SEM). This study employs the Partial Least Squares - SEM (PLS-SEM) as it is commonly used in several research disciplines, including accounting (Hair, Ringle, & Sarstedt, 2013) and it has unique methodological features making it a possible alternative compared to CB-SEM approaches (Hair, et al., 2012). Hair et al. (2013) explained that PLS-SEM has gained wider popularity as a multivariance analysis tool, distinguished by the fact that it calculates latent variable scores as accurate linear combinations of their corresponding manifest variables and uses them as perfect substitutes for the manifest variables (Hair et al., 2012). Comparing PLS-SEM to CB-SEM, PLS-SEM works better with smaller samples- an average of 211.29 samples (Hair et al., 2012) and it achieves higher statistical power at all sample sizes (Hair, Matthews, Matthews and Sarstedt, 2017). PLS-SEM also produces higher composite reliability and convergent validity according to Hair, et al., (2017). Hair, et al. (2017) also explained that PLS-SEM is useful where theory is less developed in exploratory research and it can produce significant results in most instances.

Methodology

Research design, sample and data collection

This study employed a quantitative approach to collect and analyse data from undergraduate accounting students at the University of Ghana. Final-year accounting students were the focus since they were required to take auditing as a core course in their third year of study. Their auditing course exposes them to ethical issues, education, and knowledge of professional skepticism. Additionally, some of these students have undertaken internships in practice firms and other professional institutions. Although professional skepticism may require on-the-job experience, a good discussion of the issue is undertaken in the Auditing class. The study used students majoring in accounting because their focus on accounting and its related subjects predisposes them more to accounting and auditing careers. Studies like Ciolek and Emerling (2019); Farag and Elias, 2016; Liu (2018) have used students to understand professional skepticism behaviours.

The study's questionnaire was administered to all the students, after engaging them and assuring them of their anonymity. The questionnaires were administered using Google Forms with the link circulated through students' WhatsApp pages. Wright (2005) argues that online surveys help access unique populations, save time, and reduce costs. The total population of final-year students pursuing accounting majors was 638. Out of this number, valid responses of 225 were received, indicating a response rate of 35.2%.

Variable measurement and survey instrument

Variables used in this study include professional skepticism religiosity, and personality type. For professional skepticism, Hurtt's (2010) professional skepticism scale (HPSS) was used, consisting of the six characteristics of professional skepticism behaviours/attitude (questioning mind, suspension of judgement, search for knowledge, self-determination, self-confidence and interpersonal relationship). The religious commitment inventory scale developed by Worthington et al. (2003) and Keller et al. (2007) was adopted to determine religiosity. Finally, personality type A was measured using the shorter version of the Jenkins et al. (1971) scale by Spence, Helmreich and Pred (1987). As opposed to type B personality, the study opts to test type A personality because of the general notion that the accounting and auditing profession requires more focused personalities who are goal-oriented. Consequently, the need for transparent and accurate financial information makes type A personality qualities more disposed to the profession (Yigitbasioglu and Velcu, 2012). The self-administered questionnaire was in two parts: section one captured the respondents' demographic data, while section two covered questions on the study variables. Each respondent answered the questions on a seven-point Likert scale ranging from one (strongly disagree) to seven (strongly agree), giving respondents a relatively wide range of options. The professional skepticism scale by Hurtt (2010) had thirty (30) questions measuring the six characteristics of trait skepticism and was randomly arranged. Prior studies conducted by Farag and Elias (2016) and Liu (2018) have used this scale in their studies relating to professional skepticism. Also, to reduce Common Method Bias, students had the option to participate in the study voluntarily, and the questionnaire had detailed instructions for students explaining the research objective. A pre-test with 50 responses was carried out to evaluate the research instrument and initial responses.

Modelling

The collected data was analysed using Statistical Package for Social Sciences (SPSS) for descriptive statistics and SmartPLS application following the Partial Least Square – Structural Equation Modelling (PLS-SEM) technique (IBM Corp, 2017; Ringle et al., 2015; Hair et al., 2011; Sarstedt et al., 2022). PLS-SEM was chosen for inferential analysis due to its ability to model reflective constructs, explore complex models, and its robustness to deal with normality checks (Sarstedt et al., 2022).

Inferential analysis helps to use sampling methods to make generalizations about the population of interest while descriptive statistics summarize data collected to describe the sample (Allua and Thompson, 2009). SPSS was used to generate descriptive analysis of the sample data, which have been presented in a tabular form (discussed under *Table 1: Profile of respondents*).

In analysing the 225 valid responses received, the data collected were assigned numbers, for example, a "strongly agree " response was 7 while a "strongly disagree" response was 1. The coded data was run on SPSS to get the descriptive results *(see Table 1)*. The data was then assessed in Smart PLS. The path weighing scheme was used as it provides the highest R^2 value for dependent latent variables and can be applied to all PLS path model specifications and estimations (Ringle, et al. 2015). Additionally, maximum iterations were set at 10000 (Matthews Sarstedt, Hair, & Ringle, 2016) and 7, the default stop

criterion was used. The conceptual framework discussed in the literature review was analysed. The relationships examined by the hypotheses were mapped onto each other, and the three main steps in running PLS-SEM (PLS Algorithm, Bootstrapping and Blindfolding) were run to get the study's results.

Results and Discussion

Profile of respondents

Out of the total responses of 227, two questionnaires were largely incomplete, and therefore not usable, leaving 225 valid questionnaires analysed. 51.1% were females and 48.9% were males. Most respondents were between the ages of 16 to 25 years (93.3%). Most of the respondents (73.8%) were undergraduate accounting students only, while the remaining 26.2% of respondents additionally were pursuing the accountancy professional examination. Of the 59 (26.2%) students taking the professional accounting course, most (30) were at the second level of the examination. The descriptive details show that the demographic of interest (accounting students) is fairly represented *(see Table 1).*

PLS-SEM analysis

Partial Least Square – Structural Equation Modelling (PLS-SEM) analyses were carried out after the descriptive analyses to evaluate the relationship among the study variables. PLS-SEM has two broad assessment criteria: the measurement and structural models (Hair et al., 2011; Sarstedt et al., 2022).

Measurement model assessment was tested using internal consistency, convergent validity, indicator loadings, and discriminant validity. An indicator loading of above 0.7 is recommended. Nevertheless, indicator loadings below 0.7 are accepted when the other model assessment criteria are met (Hair et al., 2011). Following this rule, some indicators were removed to achieve the measurement model thresholds.

Table 1: Profile of respondents

Variables	Groupings	Frequency (225)	Percentage (%)
Gender	Male	110	48.9
	Female	115	51.1
Age	Below -25	210	93.3
	26-35	15	6.7
Educational Level	Undergraduate	166	73.8
	Undergraduate and Professional Course	59	26.2
Professional Level	Not Applicable	166	73.8
	Level 1	9	4.0
	Level 2	30	13.3
	Level 3	14	6.2
	Affiliate	6	2.7

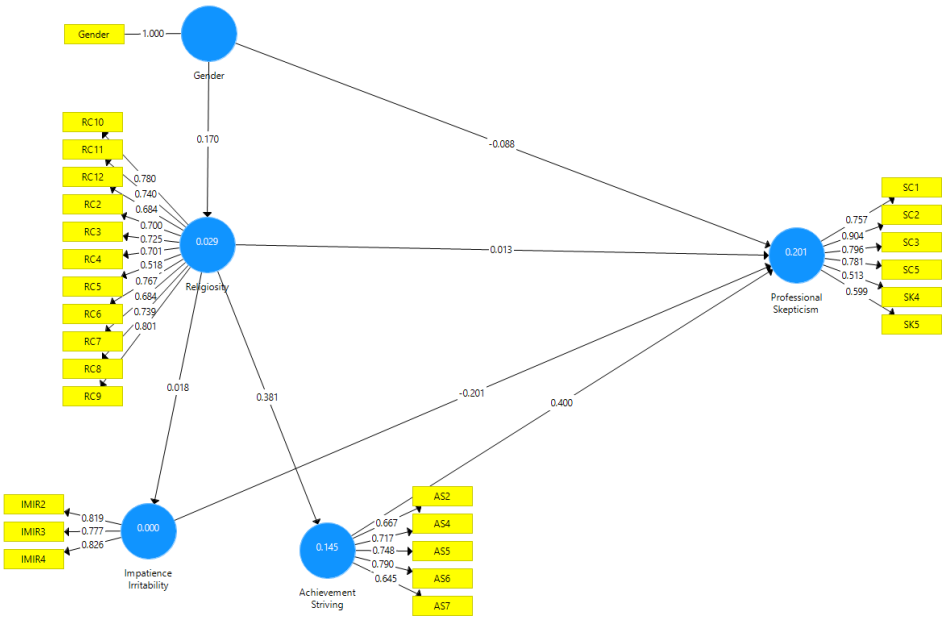

Figure 2: PLS-SEM model for analysis

The initial conceptual model is maintained for the structural modelling analysis. Figure II represents the model used to analyse data collected in the SmartPLS3 application (Ringle et al., 2015).

Measurement model assessment

The assessment of the PLS-SEM model begins with an evaluation of the indicator loading, internal consistency reliability, convergent validity, and discriminant validity. This study's variables were reflective of these four criteria used in assessing the measurement model as presented in *Table 2*. After deleting some variable indicators to improve the other criteria estimates, as Hair et al. (2014) recommended, the model achieved indicator reliability with most variables being greater than 0.70 (Sarstedt et al., 2022).

Next, convergent validity, which measures the correlation between the indicators of constructs, is assessed with the Average Variance Extracted (AVE) (Hair *et al.,* 2014). The study model achieved convergent validity with all Average Variances Extracted (AVE) variables being higher than the recommended threshold of 0.50 (Sarstedt et al., 2022). In addition, internal consistency reliability was tested following Cronbach's alpha, reliability (ϱ_A) and composite reliability (ϱ_c) (Sarstedt et al., 2021). Cronbach's alpha values were within an acceptable range of 0.585 to 0.905. Largely, Reliability (ϱ_A) and composite reliability (ϱ_c) values met the threshold of being higher than 0.70 (Hair et al., 2014; Sarstedt et al., 2021). This indicates that variables in the study model meet the internal consistency reliability measurement threshold since all-composite reliability values are higher than 0.70.

Table 2: Reliability and validity

Latent Variables	Convergent Validity			Internal Consistency Reliability		
	Indicator	**Loading**	**Average Variance Extracted (AVE)**	**Cronbach's Alpha**	**Reliability ρA**	**Composite Reliability ρc**
			> 0.500	**0.735 - 0.905**	**> 0.700**	**> 0.700**
Achievement Striving	Achievement Striving 2	0.667	0.512	0.761	0.768	0.839
	Achievement Striving 4	0.717				
	Achievement Striving 5	0.748				
	Achievement Striving 6	0.790				
	Achievement Striving 7	0.645				
Impatience Irritability	Impatience Irritability 2	0.819	0.652	0.735	0.745	0.849
	Impatience Irritability 3	0.777				
	Impatience Irritability 4	0.826				
Religiosity	Religiosity 10	0.780	0.513	0.905	0.916	0.920
	Religiosity 11	0.740				
	Religiosity 12	0.684				
	Religiosity 2	0.700				
	Religiosity 3	0.725				
	Religiosity 4	0.701				
	Religiosity 5	0.518				
	Religiosity 6	0.767				
	Religiosity 7	0.684				
	Religiosity 8	0.739				
	Religiosity 9	0.801				
Professional Skepticism	Self-confidence 1	0.757	0.543	0.825	0.856	0.874
	Self-confidence 2	0.904				
	Self-confidence 3	0.796				
	Self-confidence 5	0.781				
	Search for Knowledge 4	0.513				
	Search for Knowledge 5	0.599				

Furthermore, the discriminant validity under the measurement model was assessed using the Heterotrait Monotrait (HTMT) criterion, with a conservative threshold of 0.85 expected (Sarstedt et al., 2021; Sarstedt et al., 2022). Additionally, bootstrapping results assured the HTMT values with all confidence intervals upper boundary (UB:95%) higher than the HTMT values. Thereby, achieving discriminant validity as seen in *Table 3* (Sarstedt et al., 2021).

Table 3: Discriminant validity (HTMT)

	Variables	1	2	3	4	5
1	Achievement Striving					
2	Gender	0.064 (UB_{95}: 0.180)				
3	Impatience Irritability	0.159 (UB_{95}: 0.299)	0.097 (UB_{95}: 0.193)			
4	Professional Skepticism	0.485 (UB_{95}: 0.548)	0.112 (UB_{95}: 0.390)	0.243 (UB_{95}: 0.390)		
5	Religiosity	0.426 (UB_{95}: 0.548)	0.165 (UB_{95}: 0.233)	0.133 (UB_{95}: 0.233)	0.182 (UB_{95}: 0.307)	

Note: UB - Upper Boundary of the 95% Confidence Interval

Structural Model Assessment

After confirming the reliability and validity of the measurement model, the structural model assessment is next evaluated. This assessment model covers the collinearity, R^2, PLS prediction and path coefficient (Sarstedt et al., 2021; Sarstedt et al., 2022). Multicollinearity among study variables was assessed using the indicators' Variance Inflation Factor (VIF). The VIF values for all the indicators were below the conservative threshold of 3 (Hair et al., 2019).

The R^2 values are subsequently presented as the percentage variance explained in the dependent variable. The bootstrapping results indicated that the R^2 value of the main dependent variable, professional skepticism was significant. For example, professional skepticism had an R^2 value of 0.201 (*P-value = 0.002*) indicating that all other variables explain 20.1% of the variance in the professional skepticism variable in the study model.

Additionally, the model's predictive power was assessed by running the PLS $_{predict}$ procedure with 10 folds and 10 repetitions. The predictive power analysis focused on the main dependent variable of the study and its indicators. The results indicate that the RMSE static values of the LM are consistently greater than the PLS RMSE values (Sarstedt et al., 2021). Also, the PLS $Q^2_{predict}$ values were greater than zero (Hair et al., 2014). These criteria indicate substantial predictive power in the study's model *(see Table 4)*.

The last step in the structural model assessment model was to consider the path coefficient estimates and their significance. The model had seven direct path coefficients, among which three had negative coefficients. Three of the path coefficients were not significant at the consistent threshold of 1% and 5%. The highest path coefficient estimate was the relationship between Achievement Striving and Professional Skepticism (*0.400, P-value = 0.000*). *Table 5* shows the path coefficient estimate results, their P values and hypothesis outcome as Sarstedt et al. (2022) recommended.

Table 4: Predictive value

Professional Skepticism Indicators		Q^2 predict	Root Mean Square Error (RMSE)	
			Partial Least Squares (PLS)	Linear Regression Model (LM)
SK5	Search for Knowledge 5	0.398	1.105	1.107
SC3	Self-confidence 3	0.666	1.099	1.102
SC5	Self-confidence 5	0.439	1.114	1.116
SC2	Self-confidence 2	0.431	1.073	1.076
SC1	Self-confidence 1	0.111	1.071	1.073
SK4	Search for Knowledge 4	0.214	0.981	0.983

Table 5: Path coefficients and significance testing results.

	Path	Coefficient	95% Confidence Interval	t statistics	p values	Outcome
	Direct Effect					
H1	Impatience Irritability -> Professional Skepticism	-0.201	[-0.327,0.058]	2.384	0.017**	Accepted
H2	Achievement Striving -> Professional Skepticism	0.400	[0.279,0.540]	5.032	0.000***	Accepted
H3	Religiosity -> Professional Skepticism	0.013	[-0.110,0.131]	0.175	0.861	Rejected
H4	Religiosity -> Achievement Striving	0.381	[0.300,0.483]	6.841	0.000***	Accepted
H5	Religiosity -> Impatience Irritability	0.018	[-0.198,0.220]	0.140	0.889	Rejected
H6	Gender -> Religiosity	0.170	[0.065,0.272]	2.720	0.007***	Accepted
H7	Gender -> Professional Skepticism	-0.088	[-0.197,0.015]	1.367	0.172	Rejected
	Indirect Effect					
Religiosity -> Professional Skepticism		0.149	[0.068,0.216]	3.289	0.001***	

Notes: p = Significant Probability.
"***" represents significant probability with $p < 0.01$
"**" represents significant probability with $p < 0.05$

Discussion of results

The results from Table 5 represent the regression outcome generated from the conceptual framework model in SmartPLS 3.

Achievement striving, a personality type A feature had a positive and highly significant relationship with professional skepticism (*β = 0.400, p-value = 0.000*). The study finds support for H_2. This indicates that these potential accounting and auditing professionals with achievement-striving personality traits are more inclined to be skeptical, suggesting their eagerness to succeed and become competitive. Thus, they are likely to question events, seek further knowledge, and have the confidence to perform their duties diligently to achieve the required results. Farag and Elias (2016) studied personality type A and professional skepticism and found a positive relationship.

For impatience irritability personality type and professional skepticism, the study outcome showed a negative and significant relationship (β = - 0.201, p-value = 0.017), supporting H_1. This infers that undergraduate accounting students seem to exhibit a low tolerance for delay and may rush in carrying out a task. They are, therefore, more likely to miss out on some key issues. With the need to finish work faster and the eagerness to critically assess all material issues, these potential accounting and auditing professionals may not pay attention to details or question everything. This finding is supported by Gundry and Liyanarachchi (2007) who found a significant relationship between personality type A (impatience irritability) and reduced audit quality practices caused by reduced professional skepticism.

Gender (coded 1 for females and zero for males), another key construct of this study was found to exhibit a negative but insignificant relationship with professional skepticism as hypothesized (*β = -0.088, p-value = 0.172*). H_7 is not supported. Despite the result not being significant, it highlights the possibility of males being more professionally skeptical compared to females. Furthermore, the result indicates that males may be willing to know more about any situation and go by their professional duty without compromise or compassion. A similar study by Ciołek and Emerling (2019) found partial support for their study on the relationship between gender and the level of professional skepticism among university students.

However, the results found a positive and significant relationship between gender (coded 1 for females and zero for males) and religiosity (*β = 0.170, p-value = 0.007*), finding support for H_6. The results suggest that accounting major students who are females are more religious as compared to male students. This finding implies that females are more likely to be committed to their religious activities, values, beliefs, and teachings as Thompson (1991) and Collett and Lizardo (2009) also indicated in their study.

Furthermore, the study evaluated the impact of religiosity on achievement striving personality and impatience irritability. The results indicate positive relationships between religiosity and both variables. However, the relationship between religiosity and impatience irritability was not significant (*β = 0.018, p-value = 0.889*) at the standard levels The study did not find support for H_5. Religiosity had a positive and significant relationship with achievement striving (*β = 0.381, p-value = 0.000*) at 1%, supporting H_4. These results indicate that an individual's religiosity may impact their ambitions and personality. Francis and Bourke (2003) observed in their study that

students who are committed to their religious activities may strive to attain success with great willpower.

Finally, the relationship between religiosity and professional skepticism was positive (β = 0.013, p-value = 0.861) but was not statistically significant. H_3 is not supported. Despite the relationship not being significant, the findings suggest the possibility of an individual improving professional skepticism with enhanced religious behaviour. Religiosity has been identified in the literature as a construct that can influence the behaviour of individuals in the accounting profession (Al-Ebel et al., 2020).

Finally, the study tested the indirect relationship of religiosity to professional skepticism and found that religiosity indirectly impacts the professional skepticism of accounting major students' (β = 0.149, p-value = 0.001). The assessment of the total indirect effect of religiosity on professional skepticism reveals that the commitment of undergraduate accounting major students to their religious activities and doctrines can significantly impact their level of professional skepticism once they have the personality attribute of type A. This, possibly, is because most religions preach and encourage members to be morally upright, carry out their activities with diligence as a reverence to their deity, and produce excellent work output. This indirect relationship with the influence of religiosity is supported by Mostafa et al. (2020).

Conclusion and Implication

The study concludes that final-year undergraduate accounting students exhibit predominantly self-confidence and search for knowledge characteristics of professional skepticism. The analysis from the study posits that students revealing personality type A feature of achievement striving are more likely to exhibit professional skepticism mannerisms. The study finds that students with personality trait of impatience irritability characteristics are unlikely to exhibit professional skepticism traits. In general, students perceive that their religious commitment may influence their personality. Finally, the study concludes that students who commit to their religion are more likely to demonstrate skeptical traits, when the personality factor comes to play.

The study's findings have implications for academia, professional practice firms and industry. For academia, the study adds to the limited empirical study on students' professional skepticism mannerisms from the perspective of final-year accounting major students in an African context. For professional practice firms, the outcome of the study could guide management of practice firms to know and understand skeptical and personality traits of these final-year students to enable the design of appropriate training and professional development programmes for these potential accounting and auditing professionals. It could help determine the speciality areas of these potential employees, allowing employees to know if they are the best fit for the job or not. Managers of institutions and educators can leverage ethical and religious values and beliefs at work and in school to train employees and students to improve their ethical judgement and professional skepticism.

Limitations and Recommendations for Future Research

These limitations should be considered when interpreting the findings of this study.

First, the study measured the professional skepticism of accounting students, who are considered potential accounting and auditing professionals. The study acknowledges the possibility of some not pursuing any of these professions. Therefore, results could differ if professionals were used as the sample. Second, respondents to the questions were not permitted to provide their thoughts and comments. Finally, data were collected in Ghana only and limited to the University of Ghana Business School final-year accounting undergraduate students. Future researchers can include other variables external to accounting students to evaluate their effects on professional skepticism features. Again, the study could have combined both personality types A and B to determine their effects on professional skepticism behaviour combined and individually. Finally, researchers can conduct this study with audit professionals, or accounting students at different levels of study.

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