

# Impact of Auditors' Industry Specialization and Longevity on Professional Skepticism

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*As a result of financial scandals, such as GE Co. and AIG, professional skepticism received increased significance in the field of auditing. Grounded in Hurr's professional skepticism framework, this quantitative correlational study aimed to examine the relationship between years of auditor experience, the extent of industry specialization of the auditor, and the variation in the level of professional skepticism. The study included data from 68 U.S. accountants and auditors. The results of the multiple regression model showed that at  $F(2, 65) = 4.414$ ,  $p = 0.016$ ,  $R^2 = 0.12$ , auditor's industry specialization was a significant factor, which is positively associated with professional skepticism. Auditor's industry specialization was statistically significant ( $\beta = .316$ ,  $t = 2.704$ ,  $p = .009$ ), accounting for a higher contribution to the model. Auditor's longevity in the field was not statistically significant, thus, did not explain any significant variance in the performance of professional skepticism. The results of this study extended research on professional skepticism attributes and expanded our understanding of predictive variables.*

*Keywords: professional skepticism, auditors experience, auditors industry specialization, longevity*

## INTRODUCTION

Lawmakers and stakeholders started to scrutinize auditors' role in organizations' financial reporting after the scandals in the early 2000's such as Enron, Tyco, and WorldCom. The Federal government passed the Sarbanes-Oxley (SOX) Act in 2002 to monitor accounting auditors' performance and prevent similar incidents (Boyle & Carpenter, 2015; Wilbanks, 2016). In addition to the SOX Act, government bodies have placed other sanctions on financial organizations. A lack of professional skepticism among auditors constitutes a leading cause of audit deficiencies (Favere-Marchesi & Emby, 2018). The Public Company Oversight Board (PCAOB) standards require due professional care to be exercised in the planning and

performance of the audit and the preparation of the audit report. Due professional care requires the auditor to exercise professional skepticism, which is “an attitude that includes a questioning mind and a critical assessment of audit evidence” (PCAOB, 2020, AS1015.07).

The SEC has cited a lack of professional skepticism among auditors as a principal reason for sanctions (Boyle & Carpenter, 2015). Through the auditing process, auditors oversee a business’s financial conduct. While large corporations have drawn most recent attention for violations of financial reporting standards, a lack of professional skepticism and resulting SEC sanctions can occur in a firm of any size. Because of the recent scrutiny of auditors, researchers have taken an increased interest in understanding what factors influence auditors’ levels of professional skepticism to improve auditing quality and reduce the instance of SEC sanctions. Researchers define professional skepticism as the appropriate level of doubt auditors display when assembling information, evaluating evidence, and delivering judgment (Hurt, 2010; Nelson, 2009). Researchers have identified many factors influencing auditors’ demonstration of professional skepticism including, the individual auditor, the audit team, and the audit leader (Noviyanti, 2015; Stevens et al., 2019). However, researchers have not agreed on which individual characteristics influence auditors’ level of professional skepticism. Guiral et al. (2015) indicated that further work could help to explain these varying results by identifying the relationship between experience and professional skepticism. Therefore, we focused on the variation of auditors’ professional skepticism due to years of experience and industry specialization.

This quantitative, correlational study aimed to address the gap in the literature by evaluating whether a predictive relationship exists between auditors’ experience and specialization and auditors’ levels of professional skepticism, as measured by the professional skepticism scale of Hurt (2010). Our sample consisted of 68 accountants or auditors from the American Institute of Certified Public Accountants (AICPA) and the Association of Certified Fraud Examiners (ACFE). The populations that might be aided as a result of this study include professionals who are responsible for evaluating the internal control mechanisms of publicly traded companies and the compliance of those companies’ financial statements with rules disseminated by the Financial Accounting Standards Board (FASB), the Public Company Accounting Oversight Board (PCAOB), and the International Auditing and Assurance Standards Board (IAASB). By understanding the drivers of professional skepticism, which lies at the very core of audit quality, auditors and managers could help close the credibility gap fostered by recent scandals and could illuminate auditors’ decision-making processes when arriving at a professional opinion regarding financial statements’ compliance with generally accepted accounting principles (GAAP), as communicated by the FASB. The data gained from this study can lead to improved auditor quality, helping to improve trust in the financial sector.

Future researchers might use the study results to identify more specific factors that influence professional skepticism, which Ray (2015) stated could help auditors develop this trait. Also, further studies could consider other factors that could influence or mediate professional skepticism. The following sections provide a review of academic literature, a description of our research method and design, and a summary of our results. The paper concludes with limitations and recommendations for future studies.

## **LITERATURE REVIEW**

### **Theoretical Framework**

Hurt’s (2010) theoretical model of professional skepticism was the framework for this study. Hurt (2010) conceptualized an unbiased perception of professional skepticism. An auditor must suspend judgment until they gather significant and appropriate evidence to conclude on the fair presentation of the financial statement. Hurt (2010) and Hurt et al. (2013) viewed professional skepticism as a multi-dimensional individual characteristic and a temporary state provoked by specific situations. Building upon Nelson’s (2009) categorization of professional skepticism and incorporating research from other fields, Hurt (2010) proposed six attributes of professional skepticism: autonomy, a questioning mindset, search for knowledge, suspension of judgment, self-esteem, and interpersonal understanding (see Figure 1).

**FIGURE 1**  
**ATTRIBUTES OF PROFESSIONAL SKEPTICIS**



When evaluating audit information, an auditor must have suspicion, disbelief, or doubt. The auditor suspends judgment until sufficient evidence to formulate an opinion (Hurtt, 2010). Pursuing knowledge involves an appreciation of inquisitiveness rather than just searching for specific information (Hurtt, 2010).

These traits describe how an auditor evaluates evidence. Auditors use an additional characteristic, interpersonal understanding, to understand the motivation and honesty of the individuals providing evidence (Hurtt, 2010). Philosophy researchers teach that a skeptic can only notice and accept individuals' perceptions of the same event or object is by understanding the person. Individuals have different motivations and perceptions that may motivate them to give an auditor false, biased, or ambiguous information (Hurtt, 2010). Therefore, auditors can identify bias in the information provided by understanding individuals' motivation.

Auditors achieve autonomy when they use their discretion in evaluating audit evidence and take the necessary steps to reduce the influence of others' beliefs and attempts at persuasion (Hurtt, 2010). Professional skepticism involves a high level of self-esteem, consisting of feelings of self-worth and faith in one's capabilities. Self-esteem relates to autonomy, allowing an auditor to challenge persuasion tactics and argue against another person's assumptions. The interaction of all these characteristics determines an auditor's attitude toward professional skepticism and, ultimately, the demonstration of professional skepticism (Heath & Staggs, 2015).

### **Hurtt's Theory of Professional Skepticism**

Hurtt's theory of professional skepticism included multi-dimensional characteristics. Building upon Nelson's (2009) categorization of professional skepticism and incorporating research from other fields, including psychology, philosophy, and consumer behavior, Hurtt (2010) proposed six attributes of professional skepticism: a questioning mindset, suspension of judgment, search for knowledge, self-esteem, interpersonal understanding, and autonomy. Therefore, Hurtt's (2010) theory of professional skepticism is a good fit for this study to measure the characteristics that comprise professional skepticism. Researchers have applied this theory when analyzing auditors' professional skepticism concerning various situations (Noviyanti, 2015; Popova, 2013; Quadackers et al., 2014).

Plumlee et al. (2015) used Hurtt's professional skepticism scale. The authors translated the concept into trainable cognitive skills, explicitly training participants in divergent and convergent thinking. When using divergent thinking, auditors generate alternative explications for unusual evidence. Conversely, auditors use convergent thinking to evaluate the credibility of the available explanations.

These two types of thinking are essential to professional skepticism. Plumlee et al. (2015) discovered that auditors who are taught to think divergently and convergently could discern alternatives that provide a fuller explanation. Moreover, those who learned divergent and convergent thinking were better able to perceive the right answer than those who received just divergent training and even more likely than those who received no training. Auditors who received convergent training could identify correct solutions and eliminate illogical explanations. Overall, those trained in both divergent and convergent thinking selected an appropriate choice more frequently, developed more justifications, and ruled out other unsound responses.

Peytcheva (2013) also supported Hurtt's (2010) claim that professional skepticism is a trait. Peytcheva presented a cheater-detection prompt to help auditing professionals and students validate their manager's assertion. However, Peytcheva found that the reasoning capability did not enhance by the prompt for either group and that the nature of the task itself could explain the results. As a result of being asked to check the legitimacy of a superior's contention, student and professional auditors were able to detect deception. Thus, they did not need a prompt. Therefore, students and experienced auditors did not vary in their degrees of skepticism. Similarly, audit firm managers must evaluate their employees' personal characteristics to ensure that individual auditors have the experiences and attributes needed to make those skeptical decisions (Boyle & Carpenter, 2015).

Skeptical auditors do not just raise doubts; they also go beyond what is needed to acquire knowledge so that they can obtain sufficient evidence. Overall, the first three features Hurtt (2010) identified, which are questioning mind, suspension of judgment, and search for knowledge, demonstrate auditors' professional skepticism by highlighting their predilection toward maintaining an open mind toward gathering, processing, and evaluating audit evidence. These three aspects of critical thinking describe how an auditor should examine the evidence.

Consumer behavior and philosophy researchers have suggested that skepticism involves questioning or inquiry (Hurtt, 2010). Thus, professional skepticism includes questioning for clarification or justification. Additionally, skeptical auditors suspend their judgment until they have enough evidence to make a judgment. The search for knowledge involves the action that takes place during the suspension of judgment. The characteristic of interpersonal understanding correlates to the consideration of the individual. In addition to factual evidence, auditors must consider a human element that is the fundamental component of skepticism (Hurtt, 2010).

The fourth feature of interpersonal understanding is necessary because for auditors to maintain a skeptical attitude, they must be able to scrutinize, comprehend, and determine whether the persons providing the information are being honest and objective and have high integrity (Hurtt, 2010). The fifth feature of autonomy is self-explanatory. For auditors to be professionally skeptical, they must have the ability to make or express a decision regardless of influences that could affect their findings (Hurtt, 2010).

Auditors with self-esteem have the confidence to believe in their interpretations and to challenge the assumptions or conclusions of others. Likewise, autonomy in the auditing process allows the auditor to have the courage and authority to move forward with his or her judgments rather than being influenced by those of others (Hurtt, 2010). The interaction of all these characteristics determines auditors' attitudes toward professional skepticism and, ultimately, their demonstration of professional skepticism (Heath & Staggs, 2015).

Researchers have applied Hurtt's theory when analyzing auditors' professional skepticism concerning various variables (Noviyanti, 2015; Popova, 2013; Quadackers et al., 2014). Professional skepticism forms a major predictor of audit quality (Hurtt, 2010). The lack of professional skepticism results in lower audit quality (Nolder & Kadous, 2018). Several of the fraudulent audit behavior instances discovered by the SEC stemmed from auditors' failure to maintain proper levels of professional skepticism (Beasley et al., 2013). When auditors fail to adopt a questioning mindset and criticize audit evidence, they leave room for audit

fraud and deficiencies. Professional skepticism is a mindset that entails a meticulous evaluation of the audit evidence (Boyle & Carpenter, 2015). Kertarajasa et al. (2019) identified professional skepticism as a positive influence on audit quality.

The two essential measures of professional skepticism are skeptical judgment and skeptical action. An auditor must have the knowledge and experience before making sound judgment and to notice a possible problem to develop proper answers. A skeptical auditor realizes that an issue may be present and that extra effort or work is needed. When auditors take skeptical action, they act on skeptical judgments gained through appropriate knowledge and expertise (Hurt et al., 2013).

### **Auditor Experience**

Brewster (2012) revealed that auditors who understand a client's business better were more likely to remain skeptical and to ignore the client's efforts at persuasion. Hurt et al. (2013) concluded that the influence of experience on skeptical judgment stemmed from numerous factors, such as experience with a customer's industry, practice with difficult audit tasks, tenure as an auditor, as well as task-specific experience.

In contrast, auditors with industry experience may be less skeptical as their firm becomes committed to an industry (Coppage & Shastri, 2014; Hurt et al., 2013). An auditor's knowledge can also impact his or her skeptical action. After a series of interviews with working auditors, Griffith et al. (2014) found that many auditors confessed to relying too much on managers' opinions by neglecting to check their assertions, failing to comprehend certain businesses, and lack of consideration of internal controls. Moreover, auditors failed to recognize and resolve external evidence when it conflicted with managers' assertions and that auditors over-relied on external specialists (Griffith et al., 2014). This lack of knowledge and other features such as characteristics and incentives led auditors to fail to exhibit skeptical action because they failed to comprehend and examine occurrences in which they needed more evidence to corroborate or negate a manager's assumptions (Griffith et al., 2014).

However, professional skepticism can have different effects depending on an auditor's level of experience. Peytcheva (2013) looked at how higher levels of professional skepticism could enhance an auditor's reasoning skills when situations present the auditor with a hypothesis-testing activity. Peytcheva (2013) found that novice auditors exhibiting professional skepticism saw an improved cognitive performance, but experienced ones did not see such an effect. This finding could have resulted from a change in professional skepticism between novice and professional auditors (Peytcheva, 2013).

Tenured auditors are required to abide by greater degrees of professional skepticism. They are reminded to remain skeptical through training programs, conduct codes, and auditing standards. Therefore, auditors with more experience could already have a specific level of professional skepticism ingrained into their performance. This already high concentration of professional skepticism could have lessened the impact of further inputs (Peytcheva, 2013). In contrast, student or novice auditors, who do not have exposure to professional skepticism, have received less priming to be skeptical and have a better chance of improving their auditing performance through the use of skepticism.

### *Tenure and Experience*

With longer tenure, auditors tend to have higher audit quality (DeFond & Zhang, 2014). The longer tenure an auditor has, the more expertise they acquire, which leads to more knowledge of the organization's procedures and threats. Researchers have also associated auditing experience in a particular domain, such as knowledge gained through client-auditor relationships (Siregar et al., 2012), industry and task experience, with higher quality auditor judgment, which is essential when building auditing quality (Knechel et al., 2012).

Novice auditors may not yet possess the industry experience or knowledge necessary to effectively audit a new client compared to experienced auditors (Siregar et al., 2012). Auditors also appear less biased when they accrue a proper level of skill and experience. Auditors with longer tenure may also be motivated to increase their audit quality to protect and maintain the reputation they have established in the audit

industry (Lim & Tan, 2010). Moreover, researchers have found industry tenure and experience to be positively related to compliance with auditing standards and lower abnormal accruals (Knechel et al., 2012).

After researching to analyze the impact of audit tenure on audit quality and fees, Cahan and Sun (2015) discovered that experience conducting audits correlated with audit fees positively and negatively related to discretionary accruals. Therefore, the more experience an auditor had, the higher the audit quality (Cahan & Sun, 2015; Krauß et al., 2015). Azizkhani et al. (2013) and Jadiyappa et al. (2021) found that audit tenure and audit-firm rotation both led to increased capital from investors. Likewise, Siregar et al. (2012) found that auditor rotation facilitated the correlation between more audit experience and lower quality of audits. The finding, however, did not apply to the time after the required implementation of auditor rotation regulation. Increased experience with negotiations improved an auditor's negotiation skills by reducing the effect of the client's subjective preferences and led to better audit quality. In contrast, auditors with shorter tenure tended to give the client the dominant position in negotiations (Knechel et al., 2012).

Other researchers found the relationship to be U-shaped between auditor experience and the quality of audits. Bell et al. (2015) found that first-year auditors had a higher chance of receiving a low evaluation of audit quality than experienced auditors, despite spending more effort on their audits. In contrast, these researchers found that auditors with longer tenure also had a greater chance of poor audit quality. Brooks et al. (2013) reported similar findings, identifying 12 to 16 years as the turning point for audit quality. These researchers justified their curvilinear results by explaining that inexperienced auditors initially have audit quality but that audit quality increases as these auditors learn. In contrast, auditors with longer tenure may see a decline in audit quality due to bonds with their clients. Finally, Brooks et al. (2013) noted that the turning point varied, being more extensive for non-specialists, non-Big *N* auditors, and auditors with valuable clients.

The longer an auditor's tenure, the more the auditor was to approve an overly aggressive estimate of the allowance for bad debts. Auditors with increased tenure may receive more financial incentives, making them less independent because they may cater to a client's desires to retain the client and continue to receive those audit fees (Lim & Tan, 2010; Neri & Russo, 2014). Furthermore, when analyzing explanations, auditors can fail to check source credibility adequately (Knechel et al., 2012). Using the Institute of Fraud Prevention (IFP) fraud database, Asare and Abdolmohammadi (2015) examined the relationship between audit experience and auditing fraud and found only a weak positive correlation between lack of tenure and the probability of fraud. They found that nine years of auditing experience was more positively associated with the chance of fraud.

### *Industry Specialization*

While many researchers have researched the influence of auditor industry specialization on the quality of audits, some debate remains regarding this effect. Audousset-Coulier et al. (2016) defined individuals with the greatest market share in a specific industry, as industry specialists. Bolt-Lee and Showalter (2012) defined industry specialization as having more than 25% of the market share within a specific industry. Researchers have used two main strategies to identify industry specialization: client portfolio-based and market share-based tactics (Audousset-Coulier et al., 2016; Rickett et al., 2016).

Industry specialists tended to have a greater understanding of industry culture and accounting procedures than non-specialists, often leading specialists to provide higher quality audit reports (DeFond & Zhang, 2014). Thongchai and Ussahawanitchakit (2015) and Elder et al. (2015) determined that audit specialization was related to higher audit quality. Lim and Tan (2010) also established that the quality of audits was greater for organizations audited by audit specialists compared to non-specialists. Auditors with industry specialization often outperformed non-specialists in error detection, assessing factors of audit risks, disclosing internal control flaws, and performing analytical processes (Knechel et al., 2012). Leaders of audit firms that employ audit industry specialists are also known to contribute more effort and financing for additional training and development of employees in specific industries to increase audit quality.

Some researchers have also looked at the relationship between auditor industry specialization and auditor independence. Sarwoko and Agoes (2014) revealed auditors' industry specialization and independence strongly impacted their abidance to audit standards to recognize fraud and their audit quality.

Through industry specialization, auditors could successfully learn and apply customized audit procedures to clients in their specific industry. Regarding auditor independence, auditors with an unbiased attitude toward fraud detection tend to uphold the independence and obey the audit processes appropriately to inspect evidence for fraud (Sarwoko & Agoes, 2014). With a data sample of 18,513 firm-year cases ranging from 1996 to 2010, Sun and Liu (2012) found a positive correlation between auditor industry specialization and board independence. Specifically, audit boards were more independent and better at limiting earning management when they employed audit industry specialists.

Auditor industry specialists also produced outcomes that led to greater audit quality. Jaggi et al. (2012) researched the relationship between discretionary accruals and audit industry specialists and showed that in countries with poor legal administration and weak investor protection, the industry specialists improved the quality of the audits. This improved audit quality then led to higher earnings quality. Bolt-Lee and Showalter (2012) revealed that auditors with industry specialization are more prone than non-industry specialists to issue a going concern opinion. Additionally, customers who enact improvement methods to impact performance over the short term, such as accruing short-term funds, were not as liable to obtain a going concern opinion from both a non-specialist and specialist (Bolt-Lee & Showalter, 2012).

Moreover, specialists adapt better to dynamic environments by updating their knowledge and keeping up with industry changes (Lim & Tan, 2010). Brewster (2012) tested a concept called the sleeper effect, or delayed persuasion, on auditors with varying specialization levels. Brewster (2012) manipulated the participants' knowledge of a client and found that both sets of auditors initially rejected the client's self-serving and false explanations during an audit. After five minutes, only the auditors to whom a deeper understanding of the client had been given processed correct answers during the audit. Therefore, Brewster (2012) demonstrated that auditors who possess more in-depth knowledge of clients due to specialization are more apt to evaluate audits properly. Moreover, specialist auditors are more worried about their reputation and audit costs, which often induces them to perform broader, more encompassing audits to help guarantee the high quality (DeFond & Zhang, 2014; Jaggi et al., 2012). Auditors will opt to specialize if they believe it will benefit them through greater economies of scale, including, higher audit fees, and additional market share (DeFond & Zhang, 2014).

Many researchers have found a connection between industry specialization and tenure when evaluating audit quality. Gaver and Utke (2019) found conflicting results concerning the influence of auditor industry specialization on audit quality. Based on their examination of Big 4 audit clients from 2003-2010, they revealed the link between the quality of an audit and industry specialization is determined by how much experience or tenure an auditor has as a specialist. New industry specialists showed no better ability to limit clients' discretionary accruals than non-specialists (Gaver & Utke, 2019).

In contrast, tenured specialists were more apt to produce high-quality audits than non-specialists and novice specialists. Specifically, specialists took three years before seeing a significant increase in audit quality. Lim and Tan (2010) revealed that greater auditor work experience increased audit quality when auditors were not as concerned and dependent on audit fees and had higher levels of industry specialization. Some professionals have advocated for mandatory auditor rotation due to findings that auditor tenure decreases audit quality. Lim and Tan (2010) provided contrary evidence that rotation may not be necessary, as tenure improves audit quality if the auditor specializes in industry and didn't rely as much on audit fees.

Just as Gaver and Utke (2019) found tenure to be a positive mediator in the relationship between industry specialization and the quality of audits, Dao and Pham (2014) found auditor industry specialization to be a positive mediator between audit experience and audit quality. They specifically found while short auditor tenure was positively related to audit report lag, industry specialization weakens that relationship, suggesting that auditor industry specialization helps reduce audit report lag in auditors with shorter tenures. This reduction ultimately led to greater audit quality.

Similar to Lim and Tan (2010) and Dao and Pham (2014), Yuan and Zhang (2014) tested how auditors' industry specialization impacted the auditor experience-audit quality relationship and found a curvilinear pattern between them, with the peak occurring at three years. Furthermore, these researchers identified a positive association between audit quality and industry specialization when an auditor's experience was

three years or less. Yuan and Zhang could not distinguish a connection between audit quality and auditors' industry specialization of auditors with more than three years of experience.

Overall, researchers have reached inconclusive or mixed results regarding the ability of various inputs to predict audit quality. For example, some authors found large audit firm size to decrease audit quality (Asare & Abdolmohammadi, 2015; DeFond & Zhang, 2014), while others revealed that a large size increased audit quality (DeFond & Zhang, 2014). Regarding audit fees, some researchers uncovered a positive link between the quality of an audit and associated fees (Eshleman & Guo, 2014), whereas others found a negative relationship (Asthana & Boone, 2012; Knechel et al., 2012).

Researchers have focused most of their attention on the relationship of auditor industry specialization and auditor experience and audit quality. Certain researchers found evidence that experience increased audit quality (Cahan & Sun, 2015; Siregar et al., 2012), while others found that experience diminished audit quality (Asare & Abdolmohammadi, 2015; Chu et al., 2012; Lim & Tan, 2010). A few researchers identified a curvilinear relationship between audit quality and work experience (Bell et al., 2015; Brooks et al., 2013).

Researchers have found the same inconclusive results in studies on industry specialization. Some researchers found that specialization enhanced audit quality (Bolt-Lee & Showalter, 2012; Elder et al., 2015; Thongchai & Ussahawanitchakit, 2015). Interestingly, many researchers have found these two proxies mediators in each factor's relationship with audit quality (Dao & Pham, 2014; Gaver & Utke, 2019; Lim & Tan, 2010; Yuan & Zhang, 2014). Therefore, the purpose of the current study was to contribute to the literature to add much-needed clarification regarding how these two measures operate to either enhance or hinder auditing performance.

## DATA AND METHODOLOGY

### Research Question and Hypotheses

After reviewing the literature, we developed one research question and the associated null and alternate hypotheses about professional skepticism, longevity, and specialization. The research question is as follows: What is the relationship between auditor's longevity, industry specialization, and professional skepticism?

The hypothesis based on the research question is as follows:

*H<sub>01</sub>: There is no significant statistical relationship between auditor's longevity, auditor's industry specialization, and professional skepticism.*

*H<sub>a1</sub>: There is a significant statistical relationship between auditor's longevity, auditor's industry specialization, and professional skepticism.*

### Research Design

The study employed a non-experimental predictive quantitative study. A predictive, cross-sectional, non-experimental quantitative study was a good fit since the objective of the research question was to identify if a relationship between the levels of professional skepticism, auditors years of experience, and specialization, using the results of surveys which can be analyzed quantitatively. Researchers who have conducted studies relating to auditors, specialization, and professional skepticism have also used regression analysis (Hoelscher & Seavey, 2014; Quadackers et al., 2014).

We randomly selected participants from a sample of U.S. CPAs working as auditors using Qualtrics. Qualtrics is a third-party research management platform used to collect data for quantitative research. Data were collected using the Hurtt professional skepticism scale (2010) and was completed online only. A predictive analysis method was selected because the objective of the research question was to determine what/if predictive relationships between levels of professional skepticism of auditors, years of experience and specialization and, if so, the extent of those relationships, using the results of surveys which can be analyzed quantitatively. Previous research on the topics included in this study used similar quantitative



research designs, including Guiral et al. (2015) and the survey tool used in this study (Hurtt, 2010; Quadackers et al., 2014).

## **Definitions of Variables**

### *Auditor Experience (Independent Variable)*

Experience is synonymous with tenure and expertise. Researchers measure experience based on the number of years working as an auditor (Guiral et al., 2015). Thus, auditor experience means the number of years an auditor has worked within a profession. The experience measured in years; respondents selected one of five categories from a drop-down menu to most accurately reflect their experience as an accountant. The categories included (a) fewer than five years, (b) six-10 years, (c) 11-15 years, (d) 16-20 years, and (e) 21 years or more.

### *Industry Specialization (Independent Variable)*

Specialization exists when an auditor or audit firm primarily performs services for businesses within a particular industry (Audoussert-Coulier et al., 2016). Industry specialization is the practice of providing service to multiple clients within a particular industry (Bills et al., 2015). Industry specialization was expressed as a dichotomous variable of either “Yes” (specialized) or “No” (not specialized), measured using one question item to ascertain whether an auditor was specialized.

### *Professional Skepticism (Dependent Variable)*

Professional skepticism refers to the appropriate level of doubt (skepticism) that an auditor displays when gathering information, evaluating evidence, and delivering judgment (Hurtt, 2010; Nelson, 2009). The dependent variable was the level of professional skepticism, measured by Hurtt’s (2010) professional skepticism scale comprising 30 items. Responses for each question item were arranged on a Likert scale, ranging from a score of 1 (Strongly Disagree) to a score of 6 (Strongly Agree). Eight of Hurtt’s question items scored in reverse. Reverse scoring means the numerical measure flows in the inverse direction. Thus, for this survey, when reverse scoring, strongly disagree would earn a score of 6 and strongly agree, a score of 1. The total value of the responses on the professional skepticism scale was computed to ascertain the overall level of professional skepticism. A total score of 89 or below was low professional skepticism. A score of 90 to 150 was a moderate level of professional skepticism. A score of 151 and above was a high level of professional skepticism (Hurtt, 2010). We only used the overall professional skepticism score for this study and measured the score on an interval scale.

## **Sample and Data Collection**

Accountants and auditors are responsible for preparing and examining their clients’ financial records to ensure that they are accurate and pay taxes promptly (Bureau of Labor Statistics, 2015). Qualtrics was used to administer the online survey to select participants randomly. The sample chosen for this study consisted of auditors who were members of the AICPA or the ACFE. From Qualtrics’ existing sample frame of accountants and auditors, 5,000 potential participants were randomly selected for the study. There were 266 of approximately 5,000 potential participants who responded to the invitation. Of the 266 that accepted the invitation, only 68 met eligibility requirements, provided informed consent, completed the survey, and included in the study. The final sample size of 68 was more than the minimum 64 participants required for the study as indicated by G\*Power (Cohen, 1988).

**TABLE 1**  
**SURVEY RESPONSE RATE**

EVENT	N	%
Invitations sent	5,000	100.00
Responded to invitation	266	5.32
Exited at eligibility questions	117	2.34
Exited at informed consent	72	1.44
Started but did not complete survey	9	0.18
Completed surveys	68	1.36

## RESULTS

### Description of the Sample

The independent variables included longevity and industry specialization. Other than longevity and industry specialization, no other demographic data was collected in this study. The experience, measured in years, had five categories containing a span of the number of years that most accurately reflected their experience as an accountant or auditor (five or fewer, 6-10, 11-15, 16-20, and 21 years or more). Table 2 shows a summary of years of experience.

**TABLE 2**  
**SUMMARY OF EXPERIENCE**

YEARS OF EXPERIENCE	N	PERCENT
Fewer than 5 Years	25	36.8
6 to 10 years	29	42.6
11 to 15 years	4	5.9
16 to 20 years	2	2.9
More than 21 years	8	11.8
Total	68	100

Industry specialization status was measured using one survey question that asked if the accountant/auditor specialized in auditing a particular industry. The response to this question was limited to *Yes* or *No*, with responses breaking out, as shown in Table 3.

**TABLE 3**  
**SUMMARY OF INDUSTRY SPECIALIZATION RESPONSES**

	N	PERCENT
No	33	48.5
Yes	35	51.5

Factor analysis was conducted to identify the applicable factors, according to Hurt's professional skepticism. There were 68 samples for the factor analysis. The sample size was acceptable with more than 10:1 ratio to the six variables.

The results of the analysis are presented in Table 4. The result showed six factors extracted. The six-component factors explained 71.728% of variance. All the items have above .52 primary loading factor. Also, the results indicated that 28 items out of the 30 items of the Hurtt's professional skepticism scale were extracted as the best suited to measure skepticism in the study. Items 9 and 20 measurements were below

0.50, which showed low correlation with the rest. Thus, the two items were excluded from the measurement due to low factor loading.

**TABLE 4  
RESULTS OF FACTOR ANALYSIS**

Item	Statement	Component Factors					
		Self-Determining	Interpersonal Understanding	Self Confidence	Suspension of Judgement	Questioning Mind	Search for Knowledge
1	I often accept other people's explanations without further thought	0.858					
10	I tend to immediately accept what other people tell me	0.927					
11	Other people's behavior does not interest me	0.594					
16	I usually accept things I see, read, or hear at face value	0.855					
17	I do not feel sure of myself	0.708					
19	Most often I agree with what the others in my group think	0.727					
25	It is easy for other people to convince me	0.827					
26	I seldom consider why people behave in a certain way	0.677					
4	The prospect of learning excites me		0.700				
5	I am interested in what causes people to behave the way that they do		0.739				
8	Discovering new information is fun		0.597				
14	I like to understand the reason for other people's behavior		0.789				
15	I think that learning is exciting		0.540				
23	I like searching for knowledge		0.626				
30	The actions people take and the reasons for those actions are fascinating		0.803				
2	I feel good about myself			0.837			
6	I am confident in my abilities			0.826			
12	I am self-assured			0.657			
21	I have confidence in myself			0.751			
3	I wait to decide on issues until I can get more information				0.862		

Item	Statement	Component Factors					
		Self-Determining	Interpersonal Understanding	Self Confidence	Suspension of Judgement	Questioning Mind	Search for Knowledge
22	I do not like to decide until I've looked at all of the readily available information				0.687		
27	I like to ensure that I've considered most available information before making decision				0.609		
13	My friends tell me that I usually question things that I see or hear					0.671	
24	I frequently question things that I see or hear					0.770	
28	I enjoy trying to determine if what I read or hear is true					0.652	
7	I often reject statements unless I have proof that they are true						0.543
18	I usually notice inconsistencies in explanations						0.520
29	I relish learning						0.601
Eigenvalues (rotational sum)		5.063	4.641	3.571	2.491	2.292	2.026
% Variation Explained		18.083	16.574	12.752	8.896	8.186	7.235
Cumulative % of variation explained		18.083	34.658	47.410	56.306	64.493	71.728

The professional skepticism scale measured the level of professional skepticism of auditors. The total score of the 28 out of the 30-question instrument was obtained to measure the overall levels of professional skepticism. Table 4 showed that the mean score was 119.78 (SD = 16.26), which was in the high range of the 28 to 168 ranges of possible scores. A mean score above 99 indicates on the high range. Thus, the mean score of 119.78 indicated that the auditors have high levels of professional skepticism.

**TABLE 5**  
**DESCRIPTIVE STATISTICS FOR SKEPTICISM**

Variable	M	SD	Min	Max
Skepticism	119.78	16.26	99	168

Note.  $n = 68$ .

### Multiple Linear Regression Analysis

This quantitative correlational study aimed to analyze the relationship between auditor's longevity, auditor's industry specialization, and professional skepticism. The study included two independent variables: auditor's longevity and industry specialization. The dependent variable was professional skepticism. Table 6 showed that the  $F(2, 65) = 4.414$ ,  $p = 0.016$ ,  $R^2 = 0.12$ , which showed significant relationship with professional skepticism. Auditor's industry specialization was statistically significant with ( $\beta = .316$ ,  $t = 2.704$ ,  $p = .009$ ) accounting for a higher contribution to the model. Auditor's longevity in the field was not statistically significant ( $\beta = -.118$ ,  $t = -1.007$ ,  $p = .318$ ), not explaining any significant variance in the performance of professional skepticism. Hence, the null hypothesis was rejected, and the alternative hypothesis was accepted.

**TABLE 6**  
**MODEL SUMMARY**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE of the Estimate	Change Statistics				
					R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change
1	.346 <sup>a</sup>	0.12	0.092	0.09218	0.12	4.414	2	65	0.016
a. Predictors: (Constant), Auditor's longevity, auditor's industry specialization									
b. Dependent Variable: Professional Skepticism									

**Interpretation of the Findings**

Many researchers have found a connection between industry specialization and tenure when evaluating audit quality (Gaver & Utke, 2019). In line with the consensus, the model showed statistical significance at  $F(2, 65) = 4.414, p = 0.016, R^2 = 0.12$ . The auditor's industry specialization was a significant factor positively associated with professional skepticism. The relationship with auditor's industry specialization was statistically significant ( $\beta = .316, t = 2.704, p = .009$ ), accounting for a high contribution to the model. However, auditor's longevity in the field was not statistically significant ( $\beta = -.118, t = -1.007, p = .318$ ), not explaining any significant variance in the performance of professional skepticism. The value of audit longevity does not appear to have a universal consensus within previous research. Whereas previous studies have linked professional skepticism, experience, and specialty to audit quality, questions remain why longevity does not influence professional skepticism. Thus, further research would be recommended using data from various years.

**CONCLUSION AND FURTHER RESEARCH**

The purpose of the quantitative study was to evaluate if a relationship exists between auditors' experience, specialization, and auditors' levels of professional skepticism, as measured by the professional skepticism scale of Hurtt (2010). Specifically, the focus was on the variation of auditors' professional skepticism as a result of longevity and industry specialization. The outcome of the multiple regression model showed that at  $F(2, 65) = 4.414, p = 0.016, R^2 = 0.12$ , auditor's industry specialization was a significant factor positively associated with professional skepticism. Auditor's industry specialization was statistically significant with ( $\beta = .316, t = 2.704, p = .009$ ) accounting for a higher contribution to the model. Auditor's longevity in the field was not statistically significant ( $\beta = -.118, t = -1.007, p = .318$ ), not explaining any significant variance in the performance of professional skepticism. Hence, the null hypothesis was rejected, and the alternative hypothesis was accepted.

The literature review determined that recent SEC investigations into fraud have found that audit failure in the US should be a concern (Beasley et al., 2013). Current research examines how skepticism affects the audit industry (Brewster, 2012). Decreased skepticism, among other factors, can weaken the outcomes of an audit (Griffith et al., 2014; Hurtt et al., 2013; Peytcheva, 2013). The conclusion of the literature reinforced the assumption that experience and specialization could be two possible factors in influencing professional skepticism, thereby swaying audit quality. Moreover, the literature review supported the gap by uncovering that previous research did not focus on the relationship between experience, specialization, and professional skepticism (Hurtt, 2010; Hurtt et al., 2013; Nelson, 2009).

While the focus was only on specialization and years of experience, professional skepticism is volatile, and several aspects in the audit environment can pressure an auditor to be less skeptical (Hurtt, 2010; Knechel et al., 2012). Moreover, the relationship between the auditor and the audit client is especially challenging. Although auditors can increase audit quality by establishing a positive relationship, may also face incentives stemming from that relationship that may make it difficult for them to be objective and skeptical (Popova, 2013). For instance, when an auditor believes that client management can lead to low-risk attitude towards fraud, they may become unconsciously biased toward what the client wants.

Similarly, an audit client who is too valuable to an audit firm's profitability may pose a threat to skepticism (Asthana & Boone, 2012; Ettredge et al., 2014). Auditors who fear antagonizing or losing an important client may be less likely to embody professional skepticism (Asthana & Boone, 2012). Due to auditing standards, auditors need to exhibit professional skepticism during the entire audit process, from the planning to completion (Boyle & Carpenter, 2015; Carpenter & Reimers, 2013). If an auditor faces threats to his or her skepticism from the start, they may favor the client's point of view later in the process.

The results of this study, while only yielding a one statistically significant relationship, creates numerous opportunities for further research. Additionally, specialization and demographics may be incorporated to see if either changes the conclusions. A qualitative study could also shine a light on *how* and *why* auditor specialization and longevity may have an impact on professional skepticism. Researchers could explore professional skepticism, experience, specialization, and the influence on audit quality. Finding answers to these questions could improve the success of audits.

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