

## A REVIEW OF DIVERSE RELEASES ON PROFESSIONAL SKEPTICISM IN AUDITING

### UMA REVISÃO DE DIVERSAS PUBLICAÇÕES SOBRE O CÉTICO PROFISSIONAL NA AUDITORIA

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#### Abstract

Professional skepticism is a distinctive qualification of auditors that is required by the International Standard on Auditing (ISA) to be maintained throughout the audit (ISA 240). Thus, the latter has been continuously subjected to various scrutiny by scholars in the field of accounting and auditing. This review of literature thoroughly assesses the approaches, findings, and other essential aspects of 30 empirical articles published apropos professional skepticism from 2012 to 2023 in renowned journals in accounting, auditing, and business ethics. By the very essence of this review, professional skepticism is conferred on the basis of its framework from divergent point of views. Moreover, the author contemplated on geographical settings, samples selected, sources of data, and the applied statistical techniques. As proposed, this piece of work progresses the frameworks and structures that are expected to expand and concur the diverse scholarly findings relative to professional skepticism.

**Keywords:** Professional Skepticism, Auditing, Literature Review, Auditors, Auditing Standards.

#### Resumo

*O ceticismo profissional é uma qualificação distintiva dos auditores exigida pela Norma Internacional de Auditoria (ISA) para ser mantida ao longo da auditoria (ISA 240). Assim, esta última tem sido continuamente submetida a vários escrutínios por estudiosos da área de contabilidade e auditoria. Esta revisão da literatura avalia exaustivamente as abordagens, conclusões e outros aspectos essenciais de 30 artigos empíricos publicados sobre o ceticismo profissional entre 2012 e 2023 em revistas de renome nas áreas de contabilidade, auditoria e ética empresarial. Pela própria essência desta revisão, o ceticismo profissional é conferido com base no seu quadro a partir de pontos de vista divergentes. Além disso, o autor contemplou as configurações geográficas, as amostras selecionadas, as fontes de dados e as técnicas estatísticas aplicadas. Conforme proposto, este trabalho desenvolve as estruturas e os quadros que se espera que expandam e concordem com as diversas conclusões acadêmicas relativas ao ceticismo profissional.*

**Palavras-chave:** Ceticismo profissional. Auditoria. Revisão da literatura. Auditores. Normas de auditoria.



## 1 INTRODUCTION

Inherent to all professionals is the adherence to their specific code of professional ethics. Auditors in particular, are required to comply with the fundamental ethical principles: integrity; objectivity; professional competence and due care; confidentiality; and professional behavior (IESBA, 2021). Such ethical principles are inter-related to professional skepticism which includes maintenance of an attitude that includes a questioning mind, being alert to conditions which may indicate possible misstatement due to error or fraud, and a critical assessment of audit evidence (ISA 200,2009; Hurtt, 2010). It is well emphasized throughout the ISA the substance of maintaining professional skepticism in all the stages of the auditing process; however, the challenge of maintaining an appropriate level of professional skepticism continues to persist in practice. The insufficiency of the level of professional skepticism being displayed by auditors may have drawn the attention of several scholars (Hurtt, 2010; Payne, 2005; Nelson, 2009; Fullerton and Durtschi, 2004). The slow advancement of the literature regarding skepticism prior to 2011 somehow pick-up its phase starting in 2012 when articles about professional skepticism were published in reputable journals scrutinizing and explaining professional skepticism and some variables associated with it.

ISA 200 (2009) described professional skepticism as an attitude that includes a questioning mind and a critical assessment of audit evidence and thus requires an ongoing questioning of whether the information and audit evidence obtained suggests that a material misstatement due to fraud may exist. Related to the latter, Hurtt (2010) and Rasso (2015) similarly described professional skepticism as suspension of judgement until sufficient and competent evidence has been obtained. This exercise of the underlying principle of ethical behavior for auditors is well being used in the conduct of audit for small, medium, and large enterprises since most of these enterprises' financial reports should be examined relative to its fairness in the presentation. However, insufficient level of professional skepticism from the auditors may cast doubt on their opinion about the fairness of the financial statements of their clients. The latter phenomenon is allegedly linked to biased processing consistent with an implemental mindset (Griffith *et al.*, 2015) or over reliance on management assertions (PCAOB 2008; 2014) which in turn will put financial reporting at risk (Griffith *et al.*, 2015).

Cohen *et al.* (2017) explained that based on literature there are two prevailing perspectives of professional skepticism, namely: neutrality and presumptive doubt (Nelson, 2009). These standpoints were further investigated by a number of scholars gazing for the effects of the mentioned perspectives on audit decisions and judgements (Cohen *et al.*, 2017; Quadrackers *et al.*, 2014; Rasso, 2015; Peytcheva, 2013; Lee, 2013; Popova, 2012; Lee *et al.*, 2012). Nonetheless, recent articles infuse further concepts such as technology, knowledge management, academe programs, payment channels, and culture (Hatfield, 2018; Zimmerman, 2016; Rodgers *et al.*, 2017; Ciolek and Emerling, 2019; Kim *et al.*, 2018; Dickey *et al.*, 2021) to better elucidate the ethical standard of professional skepticism. In addition to the former approach, researchers have employed the state and trait dimensions or framework to differentiate professional skepticism and to determine whether an auditor's skepticism stems from inherent traits or is shaped by specific audit conditions. (Peytcheva, 2013; Popova, 2012; Ciolek and Emerling, 2019; and Khan & Harding, 2019). The focus of this review reflect a broad body of principle that even the International Ethics Standards Board for Accountants (IESBA) expressed that the concept of skepticism is difficult to define in a way that is easy to understand and generally accepted by both the profession and other stakeholders (IESBA, 2018). In congruence with the latter, Kang *et al.*, (2015), Hoos *et al.*, (2017), Ciolek and Emerling (2019), Mubako and O'Donnell (2017), Kim *et al.*, (2018), Fehrenbachera *et al.*, (2020), and Chen *et al.*, (2023) produced articles about professional skepticism and they all recommended that supplemental studies should be done in relation to this evolving research field as response to the progressive cumulative assertions relative to professional skepticism.

In consideration of the collected research findings in recent years, the review of the relevant articles relative to the topic is in order. The situation craves for a collective understanding about the models employed by the researchers in envisioning and deliberating the ethical condition of professional skepticism. It is the general objective of this review to look into the articles from the prospect of the methodologies utilized. Pertinent issues with regard to the wavering results amongst the articles are anticipated to be adequately deciphered by this review. Furthermore, this assessment may provide assistance and guidance for the advancement of future research relative to this essential issue on auditor's professional skepticism.

To ponder on the relevant articles and to discover opportunities for future research, the author furnished a digest of current research frameworks and evidence in auditor's professional skepticism over the period of twelve (12) years from 2012 to 2023. It is fascinating that there were studies conducted during the mentioned period that strive to expound the notion of professional skepticism in some other distinctive perspectives apart from professional and personality traits. Studies viewing professional skepticism as a driver of audit quality and audit judgement; as well as categorizing professional skepticism as professional disposition and auditor's perception have been continuously studied in the discipline of accounting, auditing, and business ethics.

Several focal factors were considered all throughout the review process. Initially, the author wondered in a number of articles and literature about professional skepticism to embrace a formidable comprehension of the subject matter. Due to sparse articles available on few well-known journals relative to professional skepticism during the period mentioned on the latter section, the author used a broad web search using google scholar. Nonetheless, the author was able to select published articles from journals with high-impact factors based on the 2022 Clarivate Analytics Journal Citation Reports release of JCR Thomson Reuters. The aforementioned journals are: Journal of Business Ethics; Accounting, Organizations and Society; Contemporary Accounting Research; Managerial Auditing Journal; The Accounting Review; Computers in Human Behavior; Auditing, A Journal of Practice and Theory; International Journal of Auditing; Accounting and Finance; Journal of Accounting Research; and Sustainability.

Next, the methods employed by the different researchers on the construct of professional skepticism were prudently examined with emphasis on the models and frameworks used. Apart from the latter, the author ruminated on data sources, sample sizes, geographical settings, and statistical treatments employed in the subject articles to widen the conceptualization of professional skepticism. The author then classified the concept of professional skepticism on the basis of generalized perspectives and presented a conceptual figure of professional skepticism as a result variable with precursor variables and consequential variables. Finally, the author provided a digest of methodology, future research proposals, and contributions to the prevailing body of knowledge in accounting, auditing and business ethics.

The conceptual figure of professional skepticism, emerging from this review, marks a significant advancement in the field. It goes beyond previous models and literature syntheses, notably those of Nelson (2009) and Hurtt *et al.* (2013). While these earlier models acknowledged the multifaceted factors influencing skeptical judgments and actions, encompassing incentives, traits, knowledge, experience, environmental conditions, and auditor characteristics, they fell a little short in providing a clear and explicit definition of the professional skepticism construct. In response, Nolder and Kaduos (2018) made a pivotal contribution by defining professional skepticism as both a mindset and an attitude, encompassing both cognitive and affective dimensions.

The resulting conceptual framework presented in this review not only builds upon these accepted models but also extends their scope by meticulously delineating specific antecedents and general consequences of professional skepticism. Moreover, it effectively captures and validates various constructs identified in prior researches, including those related to task dynamics, cognitive abilities, and skeptical judgments and actions. This comprehensive framework serves as a structured foundation that integrates existing knowledge while pushing its boundaries, providing scholars and practitioners with a robust platform to identify specific and valid constructs that can serve as valuable sources for future research.

This study contributes to the continuous research relative to professional ethics by way of pondering on the articles about auditors' professional ethics and several precursors and consequences of professional skepticism. This methodical review of the selected empirical articles about professional skepticism, empowers the author to formulate concepts which may help cultivate the appreciation of the professional skepticism paradigm of auditors. The result of this review may extend the knowledge of integrating professional skepticism throughout the audit process relative to several units of analysis and observations, settings, and related variables that may help in explaining this vague phenomenon. Furthermore, this piece of work may help enlighten business stakeholders on the substance of professional skepticism in the auditing and accounting profession. Scholars may also exploit the results of this review and use the same as auxiliary literature for professional skepticism concept enrichment.

This study acknowledges the limitation of integrating more recently published articles, primarily due to scarce access to full-text sources. Nevertheless, this limitation does not detract from the study's ability to achieve its stated objectives.

The remainder of this paper is organized as follows. The second section describes the materials and methods used in this study including the review process in the identification and selection of articles, and recapitulates the publication journals that sponsored the subject articles. In the third section, the digest subject articles are presented. The fourth section laid down the focal findings of the review and delineated the achieved concepts and propositions for future research that may serve as a rudder in this vast ocean of knowledge. The final section provides the conclusion of this paper.

## 2 MATERIALS AND METHODS

The assessment of professional skepticism through this study was done by employing a systematic review of the related studies and literature. Systematic reviews take stock of the body of literature to date using precise filtering techniques to screen the articles and evaluate each related study in a critical, justified way (Schiehl and Martins, 2016). Unlike the traditional narrative review, the systematic review follows a rigorous, replicable, scientific, and transparent process (Tranfield *et al.*, 2003). It is a transparent goal of the author to provide an inclusive review of professional skepticism literature. Thus, the author restrained the scale of its electronic pursuit of related articles as follows. (1) Only articles published in foremost peer-reviewed academic journals in accounting, auditing, and business ethics with a good impact factor appropriate to professional skepticism and skeptical behavior were subjected to review. (2) Only empirical studies were included thus, conceptual paper, books, and book chapters were excluded from this review. The author maintained the mindset that the frameworks harnessed from yesteryears' empirical literatures can bequeath appreciation on the concept of professional skepticism. (3) Only micro or local level of analyses were composed by this paper thus, only studies that lay down emphasis on individuals and partnership firms enquiry of professional skepticism were selected. The author surmised that individuals and partnership audit firms are the distinctive professional venue where professional

skepticism is always required therefore the same venue is the cradle of abundant information about the topic.

Categorized as systematic review of literature, this study executed all-encompassing world wide web searches. Further, only those foremost and high-impact factor academic journals (Clarivate Analytics Journal Citation Reports, 2022) were chosen by the author as exhibited in Table 1.

The selected articles are published in reputable journals in accounting and allied subjects viz: International Journal of Auditing, Accounting and Finance, Journal of Accounting Research, Managerial Auditing Journal, Computers in Human Behavior, Journal of Business Ethics, The Accounting Review, Accounting, Organizations and Society, Sustainability, Auditing: A Journal of Practice and Theory, and Contemporary Accounting Research. The topic of professional skepticism is not a conventional topic relative to business in general; thus, eleven (11) journals were utilized to complete this review of literature from the confined twelve (12) year period. The author deliberated the model articles by using the subsequent keywords: “professional skepticism”, “professional skepticism audit”, and “skeptical behavior”. The latter keywords were used to delimit the electronic search in various publications’ titles, keywords, and abstract of the studies. As mentioned in the previous section, this study only considered empirical studies that tried to expound the concept of professional skepticism based on twelve (12) year period therefore, out of forty-six (46) studies, only thirty (30) were considered as an operative sample.

**Table 1**  
*Journal Impact Factors of Source Journals*

Journal Title	Impact Factor
Computers in Human Behavior	8.957
Journal of Business Ethics	6.331
The Accounting Review	5.182
Journal of Accounting Research	4.446
Accounting, Organizations and Society	4.114
Contemporary Accounting Research	4.041
Sustainability	3.889
Auditing: A Journal of Practice and Theory	3.076
Accounting and Finance	2.473
Managerial Auditing Journal	2.388
International Journal of Auditing	2.345

NB: Table 1 shows the journal impact factor based on the 2022 Clarivate Analytics Citation Reports release of JCR Thomson Reuters. Impact Factor is not a perfect tool to measure the quality of articles but there is nothing better and it has the advantage of already being in existence and is, therefore, a good technique for scientific evaluation (Hoeffel, 1998). A journal's impact factor is based on 2 elements: the numerator, which is the number of citations in the current year to items published in the previous 2 years, and the denominator, which is the number of substantive articles and reviews published in the same 2 years (Garfield, 2006).

Since this study aims to identify the methodologies employed by various scholars, the author grouped the articles on the basis of its year of publication. By doing so, it can categorize and evaluate the development of methods employed in explaining professional skepticism from recent to early years of deliberation. As shown in Table 2, the sampled articles are categorized using the following year group: 2012 to 2015, 2016 to 2019, and 2020 to 2023.

The author was able to identify researches related to professional skepticism from 2003 to 2011 however, most of the product of the said researches were not published in the chosen accounting and allied journals. The forerunner of contemporary researches about the topic were published in 2009 to 2010 which focused on development of scale to measure professional skepticism (Hurt, 2010) and model of professional skepticism (Nelson, 2009).

**Table 2**  
*Sampled Articles*

Journal Title	2012- 2015	2016- 2019	2020- 2023	Total	%
Computers in Human Behavior		1		1	3
Journal of Business Ethics	2	1		3	10
The Accounting Review	1	1		2	7
Journal of Accounting Research	1			1	3
Accounting, Organizations and Society	2	2		4	13
Contemporary Accounting Research	1			1	3
Sustainability		1	1	2	7
Auditing: A Journal of Practice and Theory		1		1	3
Accounting and Finance	1	1	1	3	10
Managerial Auditing Journal	2	3	2	7	24
International Journal of Auditing	2	3		5	17

## 2.1 Evaluation of professional skepticism literature

The thirty (30) sampled empirical researches are classified on the basis of source of data, geographical settings, statistical treatment employed, and categorical prospect. The latter classification is employed to organize the flow of thought for systematic comprehension of the literature and frameworks used in the articles of professional skepticism. In addition, the author identified the precursors and consequences variables that caused the and effected by professional skepticism, respectively.

## 2.2 Data sources

This study tried to distinguish the sources of data used in the sampled literature whether primary or secondary. As expected, of the thirty (30) studies examined, a predominantly primary data-driven (29 out of 30) relied on primary data, while only one (1) utilized secondary data. Professional skepticism is a psychological construct pivotal

to an auditor's attitude and mindset, encompassing rigorous evaluation and an inquisitive, questioning stance. Given its subjective nature, capturing the intricate cognitive processes and attitudes of auditors necessitates primary data, typically sourced from surveys, experiments, or interviews. As Eamon (2004) noted, while primary sources are often rare or unique, some can exist in multiple copies if they were popular and widely accessible when created. Thus, the uniqueness or rarity of primary data emphasizes its invaluable role in offering firsthand, authentic insights into an auditor's mindset and behaviors.

The instruments used by the authors of the sampled articles were surveys, and realistic and fictional accounting and auditing cases. These instruments include Hurtt's Professional Scepticism Scale (HPSS) (Cohen *et al.*, 2017; Quadrackers *et al.*, 2014; Rasso, 2015; Peytcheva, 2013; Harding and Trotman, 2017; Popova, 2012; Ciolek and Emerling, 2019; Chen *et al.*, 2023; Khan and Harding, 2019; Dickey *et al.*, 2021), Rotter Interpersonal Trust Scale (RITS) (Cohen *et al.*, 2017; Quadrackers *et al.*, 2014), Nelson (2009) Professional Skepticism Model (Brown-Liburd *et al.*, 2012), Brazel *et al.* Judgement Reasonableness Scale (Hoos *et al.*, 2017), z - Tree Program on Rotation and Chat (Bowlin *et al.*, 2015), Likert Scale on Perceived Partner and Organizational Support (Cohen *et al.*, 2017), Likert Scale on Communication Preference (Benett and Hatfield, 2018), C&T Cheater Detection Paradigm (Peytcheva, 2013), Likert Scale on Effect on Audit Quality, Belief of Audit Inspectors, Management Estimate, and Due Diligence (Kang *et al.*, 2015), Likert Scale on Skeptical Judgement (Zimmerman, 2016; Bennett and Hatfield, 2018), Likert Scale on the Effects of Indirect Payment (Kim *et al.*, 2018), Scale for Nature Behaviors - Deception Detection (Lee *et al.*, 2013), and Pre-to-post-task Change (Mubako and O'Donell, 2017). Other instruments categorized as online platforms with diverse features (Lee *et al.*, 2012; Kim and Trotman, 2014; Brazel *et al.* 2018), case scenarios that include evaluative scales (Fehrenbacher *et al.*, 2020; Khan and Harding, 2019; Ho *et al.*, 2021), program tools and models (Chen *et al.*, 2023; Dicket *et al.*, 2021), and financial reports (Feng and Li, 2014) were also employed in several reviewed articles.

What is commonly used by the researchers of the tested articles to observe professional skepticism were realistic and fictional cases and tasks. The latter includes cases on: unexpected material increase in company's gross margin (Quadrackers *et al.*, 2017), accounting estimate on valuation of warranty provision (Asbahr and Ruhnke, 2019), valuation on reacquired franchise rights (Rasso, 2015), unexpected fluctuation in

unaudited deferred policy on acquisition cost (Grenier, 2016), evaluation of client assertion (Peytcheva, 2013), to book or waive up potential adjustment on cut off error and revenue recognition (Brown-Liburd, 2012), partner's view on potential fraud (Harding and Trotman, 2017), audit of impairments (Stevens *et al.*, 2019), significant accounting issue on inventory obsolescence (Kang *et al.*, 2015), deception and risk assessment (Lee, 2013), revenue recognition issue due to fraud or error (Popova, 2012), evaluation of client's inventory value of a particular product line for potential obsolescence (Zimmerman, 2016), and selection of inventory valuation; audit opinion to be issued; estimated warranty liability (Kim *et al.*, 2018); role assumption and application of Benford's Law (Fehrenbacher *et al.*, 2020); and case study focusing on a restaurant franchise operator (Ho *et al.*, 2021). There are also tasks that were assigned to the participants of the sampled articles like: time budget preparation for and audit (Rodgers *et al.*, 2017), evaluation of reasonableness of the going concern assumption (Hoos *et al.*, 2017), analytical procedures to assess account-level misstatement risks (Mubako and O'Donnell, 2017), and online environment tasks and video interview with a deceptive interviewee (Lee *et al.*, 2012).

Majority of the source of primary data were the instruments used by several authors of professional skepticism articles. Most of the participants are auditors employed in large auditing firms that are engaged in the practice of the accounting profession. Nonetheless, first-hand data sources have some challenges that need to be dealt with such as incomplete responses with regard to key dependent variables (Asbahr and Ruhnke, 2019) and incorrect answers to manipulation checks (Hoos, 2017; Zimmerman, 2016).

### **2.3 Sample sizes**

To review the empirical studies in professional skepticism, this study adapted the literatures that focus on an individual and firm level. The size of participants from diverse studies that talks about professional skepticism and skeptical behaviors is summarized in Table 3 as shown in the succeeding paragraphs. In addition, the title of the study, year of publication, and authors are also shown in the same table.

To ensure a normal distribution in the review of articles, the author opted to exclude one specific study by Feng and Li (2014) from this section's descriptive statistic,

as it utilized secondary data for examining professional skepticism. This study, with its 1,054 samples, was clearly an outlier among the 30 articles reviewed and could skew the representation of primary data samples from the other 29 articles. As shown in Table 3, the twenty-nine (29) articles have an average sample mean size of one hundred twenty-six (126) and a standard deviation of ninety-one (91) from a sample range between thirty-eight (38) and four hundred thirty-two (432). Table 3 shows that most of the empirical studies in professional skepticism involve a regular number of participants to interpret the results. Furthermore, the result of the standard deviation shows that the data points are averagely closer to the average value (Bansal, 2019) thus, the number of outliers in the data set is at an average level. The qualifications of the participants in the sampled studies may be a key feature in determining the quality of the results since professional skepticism is studied by employing cases and tasks; thus, both general-experience and task-experience may suggest that participants possess the requisite task knowledge (Quadrackers *et al.*, 2014) for the study.

Nonetheless, bold assessments of professional skepticism were considered by some of the authors since they considered accounting and auditing students to observe professional skepticism. In the sampled articles, Popova (2012), and Ciolek and Emerling (2019) pondered whether trait skepticism of students has effects on audit judgement, and whether it is possible to shape trait skepticism through undergraduate and graduate programs, respectively. Meanwhile, Peytcheva (2013), Khan and Harding (2019), and Dickey *et al.* (2021) used both student and auditor participation (1) to evaluate the effects of two different types of state skepticism prompts from the two categories of participants; (2) to understand the role of aesthetically pleasing environment to auditors' skeptical disposition and; (3) to analyze effect of social, firm, and team culture to professional skepticism.

**Table 3***Sample Size of Selected Articles*

Title	Year	Author	Sample Sizes
Neutral and presumptive doubt perspectives of professional skepticism and auditor job outcomes	2017	Cohen, J. R., <i>et al.</i>	176
Staff auditors' proclivity for computer-mediated communication with clients and its effect on skeptical behavior	2018	Bennett, G. and Hatfield, R. C.	93
Professional Skepticism: Neutrality versus Presumptive Doubt	2014	Quadrackers, L., <i>et al.</i>	96
Real effects of reporting key audit matters on auditors' judgment and choice of action	2019	Asbahr, K. and Ruhnke, K.	122
Construal instructions and professional skepticism in evaluating complex estimates	2015	Rasso, J. T.	58
Encouraging Professional Skepticism in the Industry Specialization Era	2016	Grenier, J. H.	171
Professional skepticism and auditor cognitive performance in a hypothesis-testing task	2013	Peytcheva, M.	163
The Effects of Auditor Rotation, Professional Skepticism, and Interactions with Managers on Audit on Audit Quality	2015	Bowlin, K. O., <i>et al.</i>	226
Knowledge management: The effect of knowledge transfer on professional skepticism in audit engagement planning	2017	Rodgers, W., <i>et al.</i>	97
Effects of Earnings Forecasts and Heightened Professional Skepticism on the Outcomes of Client–Auditor Negotiation	2012	Brown-Liburud, H. L., <i>et al.</i>	38
The Effect of Partner Communications of Fraud Likelihood and Skeptical Orientation on Auditors' Professional Skepticism	2017	Harding, N. and Trotman, K. T.	88
Professional skepticism: The combined effect of partner style and team identity salience	2019	Stevens, E., <i>et al.</i>	79
The effect of an Audit Judgment Rule on audit committee members' professional skepticism: The case of accounting estimates	2015	Kang, Y. J., <i>et al.</i>	49
An Experimental Investigation of Professional Skepticism in Audit Interviews	2013	Lee, C., <i>et al.</i>	59
Who's Watching? Accountability in Different Audit Regimes and the Effects on Auditors' Professional Skepticism	2017	Hoos, F., <i>et al.</i>	47
Exploration of skepticism, client-specific experiences, and audit judgments	2012	Popova, V.	79
Can We Shape Trait Professional Skepticism through University Accounting Programs? Evidence from Polish University	2019	Ciolek, M. and Emerling, I.	432

The Joint Impact of Management Expressed Confidence and Response Timing on Auditor Professional Skepticism in Client Email Inquiries	2016	Zimmerman, A. B.	69
Effect of fraud risk assessments on auditor skepticism: Unintended consequences on evidence evaluation	2017	Mubako, G. and O'Donnell, E.	93
Audit fees via an indirect payment channel and professional Skepticism	2018	Kim, S., <i>et al.</i>	140
An Experimental Investigation of Professional Skepticism in Audit Interviews	2012	Lee, C., <i>et al.</i>	59
The comparative effect of process and outcome accountability in enhancing professional scepticism	2014	Kim, S. and Trotman, K.	63
Can multitasking influence professional scepticism?	2020	Fehrenbachera, D., <i>et al.</i>	61
How Personality Traits and Professional Skepticism Affect Auditor Quality? A Quantitative Model	2023	Chen, Y. <i>et al.</i>	254
Why is trait scepticism not consistently reflected in state scepticism? An exploratory study into the role of aesthetic engagement	2019	Khan, M. J. and Harding, N.	126
The Outcome Effect and Professional Skepticism	2018	Brazel, J. F., <i>et al.</i>	332
The combined effect of perspective-taking and incentives on professional skepticism	2021	Ho, S. Y., <i>et al.</i>	177
An empirical evaluation of future auditors in the U.S.A. and India using the trifurcated dimensions of trait professional skepticism	2021	Dickey, G., <i>et al.</i>	156
Elevating professional scepticism An exploratory study into the impact of accountability pressure and knowledge of the superior's preferences	2019	Gong, Y. F., <i>et al.</i>	52
Are auditors professionally skeptical? Evidence from auditors' going concern opinions and management earnings forecasts***	2014	Feng, M. and Li, C.	1054

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\*\*\*To ensure a normal distribution in the review of articles, the author opted to exclude the study of Feng & Li (2014) from this section's descriptive statistics, as it utilized secondary data for examining professional skepticism. This study, with its 1,054 samples, could skew the representation of primary data samples from the other 29 articles

## 2.4 Geographical settings

This study categorized the professional skepticism from several geographical settings based on the review of empirical studies employed by different scholars in accounting, auditing, and business ethics. The number of articles and percentage distribution of geographical settings of professional skepticism of selected studies are

presented in Table 4. The countries where the scholars gathered and pondered information are the United States of America, Canada, Australia, the Netherlands, Germany, Poland, China, South Korea, and India. One of the standards set by the author is that only articles published with a good impact factor based on Clarivate Analytics are analyzed; and the Social Science Index of Clarivate Analytics is a major channel of publishers from Europe and North America (Mutuc *et al.*, 2018)

**Table 4**

*Distribution of geographical settings of professional skepticism of selected studies*

Settings	Number of Studies	Percentage
North America	16	53
Europe	4	13
Australia and Oceania	8	27
East and South Asia	2	7
Total	30	100

Most of the sampled studies are from North America which represents 53% of the total studies. Some instruments constructed in North America were replicated and used in the other parts of globe however, if the said instruments are translated or used in a country that is culturally dissimilar to where the scale was developed, it might have a lower reliability (Ciolek and Emerling, 2019). Nonetheless, the study of professional skepticism and skeptical actions may be fruitful to conduct in different cultural settings (Nolder and Riley, 2014; Dickey *et al.*, 2021).

## 2.5 Statistical analysis of professional skepticism

The analytical methods utilized in the selected empirical studies concerning professional skepticism have been meticulously evaluated in this research to the best knowledge of the author. The table below showcases the specific types of statistical models predominantly used under categories such as descriptive statistics, correlational analysis, regression analysis, hypothesis testing, and advanced models. Each model is

accompanied by a concise description and its typical application in relation to the professional skepticism of auditors. Additionally, this study seeks to determine the prevalence and distribution of each methodological category across the 30 articles centered on auditor's professional skepticism.

Descriptive statistics were frequently used in the reviewed articles, with 93% of the studies employing this methodology. Descriptive statistics, including measures such as mean, median, mode, variance, standard deviation, and frequency distribution, were instrumental in summarizing the main characteristics of data. Essentially, descriptive statistics allowed researchers to set the stage for their investigations into the complex and multifaceted concept of professional skepticism in the auditing profession. In addition, the aim of conducting this form of analysis is to provide a detailed description of the sample group from which the data was gathered. This procedure enables the data to be organized systematically, facilitating the ability to narrate the characteristics and attributes of the sample group effectively (Delaney, 2020).

In 50% of the studies, correlational analysis, encompassing techniques like Pearson, Spearman, and Kendall's Tau correlations, was a common statistical method. Its primary goal was to measure the strength and direction of linear relationships between professional skepticism and other variables, ultimately helping researchers determine the presence of linear relationships between auditor professional skepticism and other valid constructs.

**Table 5**

*Statistical Model of Sampled Articles*

Methodology Category	Statistical Model	Brief Description	Application to Professional Skepticism	Number of Articles	Percentage to Total (30) Articles
Descriptive Statistics	<ul style="list-style-type: none"> <li>• Mean, Mode</li> <li>• Median, Variance</li> <li>• Standard Deviation</li> <li>• Frequency Distribution</li> </ul>	Summarize the main characteristics of data.	Researchers utilize these information to gain basic understanding of the variables related to professional skepticism	28	93
Correlational Analysis	<ul style="list-style-type: none"> <li>• Pearson</li> <li>• Spearman</li> <li>• Kendall's Tau</li> </ul>	Measures the strength and direction of a linear relationship	Researchers use the result to determine if there is a linear relationship	15	50

Regression Analysis	<ul style="list-style-type: none"> <li>• Linear</li> <li>• Logistic</li> <li>• Ordinary Least Square</li> <li>• Multiple</li> <li>• Polynomial</li> </ul>	<p>between professional skepticism and other variables.</p> <p>Predicts the outcome (Professional Skepticism or other variables) variable from one or more predictor variables (Professional Skepticism or other variables).</p>	<p>between auditor professional skepticism to some other valid constructs.</p> <p>Researchers assess how changes in auditor professional skepticism or other variable might influence several variables.</p>	15	50
Hypothesis Testing	<ul style="list-style-type: none"> <li>• T-Test</li> <li>• ANOVA</li> <li>• Chi-Square Test</li> <li>• P-Values</li> <li>• One-Sample Kolmogorov-Smirnov Test</li> <li>• MANOVA</li> <li>• Fisher's Exact Test</li> <li>• Z-Test</li> <li>• F-Test</li> </ul>	<p>Determines if there is significant difference between groups or if a factor has an effect relative to professional skepticism.</p>	<p>Researchers test if different groups within a profession exhibit varying outcomes based on certain characteristics or if specific interventions enhance a desired trait.</p>	30	100
Intermediate and / or Advanced Models	<ul style="list-style-type: none"> <li>• Factor Analysis</li> <li>• Structural Equation Modeling</li> <li>• Cluster Analysis</li> <li>• Partial Least Square</li> <li>• Causal Modeling</li> <li>• Mediation and Moderation Analysis</li> <li>• Heckman Two-Stage Models</li> <li>• Confirmatory Factor Analysis</li> <li>• Decomposition Analysis</li> </ul>	<p>Complex techniques to explore underlying structures or groupings in data.</p>	<p>Investigate underlying constructs of professional skepticism or to cluster auditors based on multiple characteristics including skepticism and some other variables.</p>	8	27

Correlations serve as valuable research tools, but they do not encompass the capacity to gauge the predictive abilities of variables. The responsibility of addressing this aspect falls upon regression analysis (O'Brien *et al.*, 2012). Regression analysis, another frequently used statistical approach in the same percentage of articles, encompassed various forms such as linear, logistic, ordinary least square, multiple, and polynomial regression. Its purpose was to predict outcomes, such as professional

skepticism or other variables, based on one or more predictor variables, enabling researchers to assess the influence of changes in auditor professional skepticism or other variables on several related variables.

Most importantly, hypothesis testing was a pervasive inferential statistical technique, employed in all 30 articles. This category included various tests like T-Tests, ANOVA, Chi-Square Tests, P-Values, One-Sample Kolmogorov-Smirnov Tests, MANOVA, Fisher's Exact Tests, Z-Tests, and F-Tests. The selection of an apt statistical model for hypothesis testing holds significant importance, as it has a direct bearing on the credibility and dependability of research outcomes. Field (2012) emphasizes that the choice of an appropriate statistical method guarantees the congruence between the analysis, the data's characteristics, and the research query, thereby elevating the precision of the findings. The primary purpose of hypothesis testing in the reviewed articles was to determine if there was a significant difference between groups or if specific factors had an effect concerning professional skepticism. Researchers used these tests to assess whether different groups within the auditing profession exhibited varying outcomes based on specific characteristics or interventions.

Other models like Factor Analysis, Structural Equation Modeling, Cluster Analysis, Partial Least Square, Causal Modeling, Mediation and Moderation Analysis, Heckman Two-Stage Models, Confirmatory Factor Analysis, and Decomposition Analysis were also used in the subject articles. Considered as advanced statistical techniques, the latter were employed in 27% of the articles. These complex techniques allowed researchers to explore underlying constructs of professional skepticism or to cluster auditors based on multiple characteristics, including skepticism and other variables.

The extensive use of descriptive statistics in 93% of the reviewed articles underscores its foundational role in understanding professional skepticism-related variables. Correlational analysis, found in 50% of the studies, measures linear relationships but lacks predictive capacity, while regression analysis, also in 50% of articles, predicts outcomes and assesses the impact of changes in professional skepticism. Hypothesis testing, present in all 30 articles, is pivotal for assessing group differences and factors affecting professional skepticism, emphasizing the importance of choosing appropriate statistical models for robust research outcomes (Field, 2012).

## 2.6 Perspective in explaining professional skepticism

The reviewed articles viewed professional skepticism in a broader context thus, very few of the articles obviously described their perception over the topic. Therefore, the author categorized the diverse concepts of professional skepticism, as described by the scholars of the sampled articles, to the best of its knowledge. Table 6 displays the general categories of professional skepticism as described from the sampled studies. The latter categories are: task predisposition, cognitive ability, personality trait, and auditing ethics perspective.

**Table 6**

*Distribution of Perspectives in Explaining Professional Skepticism*

Categories	Number of Studies	Percentage
Task Predisposition Perspective	11	37
Cognitive Ability Perspective	11	37
Personality Trait Perspective	7	23
Auditing Ethics Perspective	1	3

*Task Predisposition Perspective.* Professional skepticism was discussed commonly by the authors of reviewed studies on the aspect of task predisposition. (Bennett and Hatfield, 2018; Asbahr and Ruhnke, 2019; Rasso, 2015; Grenier, 2016; Bowlin *et al.*, 2015; Stevens *et al.*, 2019; Kang *et al.*, 2015; Mubako and O'Donnell, 2017; Lee *et al.*, 2012; Kim and Trotman, 2014; Brazel *et al.*, 2018). Bennett and Hatfield (2018) linked professional skepticism to the auditors' performance tasks such as the identification of more content and follow-up questions while comparing face-to-face (FTF) communication with computer-mediated communication (CMC) based on social presence theory. A study connecting task complexity revealed that it can interfere with professional skepticism and that auditors think and act with more professional skepticism when using the documentation instructions that promote high-level construals as compared with auditors using documentation instructions promoting low-level construals (specific, detailed interpretations of the evidence, akin to current audit practice) and with

auditors not given documentation instructions (Rasso, 2015). Brazel *et al.* (2018) found that auditors' evaluations are influenced more by the outcomes of their tasks than by their actual skepticism levels during the task itself, potentially causing auditors to exercise caution in applying professional skepticism due to expected outcome bias in evaluations. Additionally, Lee *et al.* (2012) discovered that auditors may not consistently adhere to prescribed levels of professional skepticism, particularly in tasks related to detecting deception during interviews. This deviation from professional guidelines could impact the quality and reliability of audit assessments, potentially leading auditors to insufficiently scrutinize information and overlook critical indicators of fraudulent activities. On the other hand, when auditors are held accountable for justifying their judgment process, they exhibit higher levels of skepticism during this critical task, highlighting the importance of task-specific accountability in enhancing audit quality (Kim and Trotman, 2014).

Asbahr and Ruhnke (2019) investigated the impact of reporting accounting estimates as key audit matters (KAM) on skeptical action, revealing that skeptical action significantly decreases when accounting estimates are reported as KAM, highlighting how task characteristics can affect skepticism. Bowlin *et al.* (2015) on the other hand explored the effects of auditor rotation on client interaction and found that the beneficial effects of a skeptical mindset depend on an auditor's ability to stay with the same client, emphasizing the importance of task-related factors in fostering skepticism. Team identity salience was also identified to influence the relationship between partner style and professional skepticism, demonstrating how task-related dynamics within audit teams can affect skepticism levels (Stevens *et al.*, 2019).

The studies by Mubako and O'Donnell (2017) and Kang *et al.* (2015) shed light on the pivotal role of audit procedures and the unique dynamics of audit tasks in shaping auditors' professional skepticism. These findings are firmly grounded within the perspective of task predisposition, emphasizing how audit tasks and procedures can significantly influence the manifestation of skepticism among auditors. Moreover, Mubako and O'Donnell's discovery of reduced skepticism in the face of higher fraud risk in revenue compared to costs underscores the profound impact of task-specific variables on auditors' skeptical attitudes. In a parallel exploration, Kang *et al.*'s study suggests the existence of task-independent skepticism among audit committee members (ACMs),

further enriching our comprehension of this critical construct in the context of auditing. These insights collectively contribute to a deeper understanding of professional skepticism, emphasizing its complex relationship with the tasks and responsibilities of auditors.

*Cognitive Ability Perspective.* Rodgers *et al.* (2017), Harding and Trotman (2017), Lee *et al.* (2013), Hoos *et al.* (2017), Ciolek and Emerling (2019), Zimmerman (2016), Kim *et al.* (2018), Fehrenbacher *et al.* (2020), Feng and Li (2014), Ho *et al.* (2021), and Gong *et al.* (2019) examined professional skepticism on the context of cognitive ability. One of the empirical studies assessed associated the accuracy of auditors' judgement in engagement planning. In the said study, the authors Rodgers *et al.* (2017) suggested that knowledge transfer plays an important role in enhancing auditor professional skepticism, thereby improving the accuracy of auditor judgments. In addition, a key finding of the study conducted by Harding and Trotman (2017) linking professional skepticism to audit judgements reflected that inward skeptical orientation, instead of an outward orientation, does not elevate the level of professional skepticism in audit judgments and that emphasizing an inward orientation in addition to an outward orientation does have an incremental benefit in encouraging professional skepticism in audit actions but not in audit judgments.

The comparison of presumptive trust and presumptive doubt were also associated with professional skepticism. Relative to the latter statement, the prevalence of presumptive trust over presumptive doubt in audit interviews under the conditions of deception risk may reveal a general reluctance among auditors to undertake deception detection in audit interviews, an attitude that could compromise authoritative calls for auditors to do so for fraud risk assessment (Lee *et al.*, 2013). Meanwhile, Hoos *et al.* (2017) investigated the reasoning on the effect of changes in accountability on auditors' judgement process and learned that auditors are significantly more skeptical with regard to the outcome in the internal review setting than in the joint audit setting, and the no review setting. The findings of Kim *et al.* (2018) and Zimmerman (2016) seem to add to the idea that professional skepticism can be affected by incidental forces such as an indirect payment channel and response to client email inquiries. The latter authors concluded that the level of skeptical perception; and intention are affected by the indirect audit fee payment system; and expressed confidence and timing, respectively. These

findings provide insights into the cognitive ability perspective of auditors' professional skepticism and its susceptibility to external influences. On the other hand, the sense of exploring professional skepticism was also done with accounting students. This cognitive perspective showed that the ACCA-accredited (Association of Chartered Certified Accountants) accounting program significantly increased the level of trait skepticism of the accounting students in comparison to the control group and students who followed the standard accounting program (Ciolek and Emerling, 2019).

In addition to the latter, the following findings collectively shed light on the cognitive ability perspective of auditors' professional skepticism, emphasizing the nuanced factors that influence their judgments. Fehrenbacher's study demonstrates how mindset orientation carried over from one task to another can impact skepticism, highlighting the cognitive flexibility required in multitasking environments (Fehrenbacher, 2020). Ho *et al.* (2021) shed light on the role of incentives and perspective-taking, highlighting auditors' cognitive adaptability across various assessment perspectives. Meanwhile, Gong *et al.* (2019) discovered that accountability fosters self-criticism among auditors, revealing their cognitive awareness in pressure situations. Lastly, the research by Feng and Li (2014) exemplifies auditors' cognitive discernment as they evaluate the credibility of management earnings forecasts. Together, these studies underscore the intricate cognitive processes that underlie professional skepticism in auditors, influenced by task sequencing, incentives, accountability, and credibility assessment.

*Personality Trait Perspective.* The other scholars from the sampled review of empirical studies talked about the personality trait to elucidate professional skepticism (Cohen *et al.*, 2017; Quadrackers *et al.*, 2014; Peytcheva, 2013; Popova, 2012; Chen *et al.*, 2023; Khan and Harding, 2019; Dickey *et al.*, 2021). Cohen *et al.* (2017) examined the impact of auditor traits that measure the two predominant perspectives of professional skepticism (i.e., the neutral perspective and the presumptive doubt perspective) on critical job outcomes within the audit profession (i.e., organizational citizenship behaviors and turnover intentions). Furthermore, the presumptive doubt perspective of professional skepticism is more predictive than neutrality of auditor skeptical judgments and decisions in higher-risk situations (Quadrackers *et al.*, 2014). Meanwhile, Peytcheva (2013), used both students and auditors to examine auditors' reasoning performance and she suggested

that the personality trait of professional skepticism is a significant predictor of cognitive performance in the sample of students but not in the sample of auditors. While Popova (2012), proposed that decisions are influenced by both auditors' level of trait skepticism and their previous client-specific experiences.

Chen *et al.* (2023) suggests that personality traits alone may not significantly mediate audit quality but highlights the moderation effect of professional skepticism, particularly in extroverted individuals, as a potential enhancer of audit quality. This indicates a potential synergy between specific personality traits, such as extroversion, and professional skepticism, reinforcing their importance in the audit context. In contrast, Khan and Harding (2019) introduces the concept of aesthetic engagement, which weakens the expected positive relationship between trait skepticism and the level of skepticism. Although this finding doesn't directly address personality traits or professional skepticism, it underscores the impact of external factors, like engagement, on auditors' inherent skepticism traits. Aside from physical aspect of audit environment, the role of culture in shaping professional skepticism, showcasing differences between Indian and American audit students and the influence of firm and team culture on auditors' professional skepticism were studied by Dickey *et al.* (2021). These collective findings illuminate the interplay between personality traits, cultural factors, and contextual elements in molding the expression and effectiveness of professional skepticism within the auditing profession.

*Auditing Ethics Perspective.* The author only found one article that examined professional skepticism in the context of auditing ethics (Brown-Libur, 2012). Auditing Standards 1015: Due Professional Care in the Performance of Work, requires auditors to exercise professional skepticism all throughout the audit process (PCAOB, 2002). It is critical to integrate professional skepticism into the realms of auditing ethics and auditing negotiation research, underlining the need for a renewed focus on auditing ethics investigation (Brown-Libur, 2012). Within the same study, it was posited that auditors who lack a robust display of professional skepticism are more inclined to align with client preferences compared to their counterparts who demonstrate heightened professional skepticism.

## 2.7 Precursors of professional skepticism

The conceptual overview in what way professional skepticism was used in the thirty (30) reviewed articles is presented in Figure 1. The conceptual precursor from four (4) perspectives recognized in this review to assess professional skepticism is shown in Panel 1 of the same figure. The said perspectives are task predisposition, cognitive ability, personality trait, and auditing ethics.

Professional skepticism in auditing is influenced by various factors, and understanding these dynamics from the perspective of task predisposition reveals critical insights. Several key precursor variables shed light on this complex interplay. For instance, auditors' behavior, particularly their choice of communication methods like Computer-Mediated Communication (CMC), can impact skepticism. Electronic communication may hinder auditors' ability to detect deception, altering their predisposition to skepticism based on interaction style (Bennett & Hatfield, 2018). In addition, reasonableness in assessing Key Audit Matters (KAM) reporting can influence auditors' actions. Asbahr and Ruhnke (2019) stated that the presence of KAM reporting can either bolster or diminish skepticism levels, depending on how auditors respond to these external reporting requirements. Moreover, professional policies, such as mandatory auditor rotation, can have unintended consequences on skepticism standards, affecting auditors' trust in managers and their selected levels of audit effort (Bowlin *et al.*, 2015). Stevens *et al.* (2019) who looked into the salience of team identity found that when team identity is made salient, auditors become more sensitive to their partner's style, impacting their skepticism levels. Thus, team identity salience also plays a role in shaping auditors' skepticism.

Other precursor variables of professional skepticism within the task predisposition perspective such as process and outcome, outcome effect, construal instruction, industry specialization, audit judgement rule, risk assessments, and risk deception are also identified by the author coming from the reviewed articles. Kim and Trotman (2014) for instance, highlight the significance of accountability mechanisms, specifically process accountability, in amplifying skepticism, particularly among inexperienced auditors. In contrast, Brazel *et al.* (2018) reveal a bias referred to as the "Outcome Effect," demonstrating how the presence or absence of misstatements affects auditors' evaluations

and highlighting the difficulties associated with mitigating this bias. Grenier (2016) adds a new dimension by demonstrating that, depending on the presence of misstatement indicators, industry specialization can either inhibit or enhance skepticism. Rasso (2015) brings construal instructions into the equation, showing that high-level instructions promote skepticism and effective evidence processing. Scholars like Mubako and O'Donnell's (2017) underline the susceptibility of auditors' skepticism to contrast effects during risk assessments, potentially compromising audit quality. In contrast, Kang *et al.* (2015) investigation into the Audit Judgment Rule (AJR) reveals that while it enhances perceived accountability and comfort, it does not consistently translate into increased skepticism, highlighting a disconnect between accountability mechanisms and skeptical behaviors. While, Lee *et al.* (2012) study on deception risk indicates that auditors often default to presumptive trust over doubt, driven by decision heuristics favoring truth and a desire to avoid causing offense.

Relative to the cognitive ability perspective of professional skepticism, the author also recognized knowledge transfer, partner communication, mental perspective, mindset orientation, perspective-taking as precursors of auditors' professional skepticism as can be gleaned from Figure 1. For instance, knowledge transfer (Rodgers *et al.*, 2017) and partner communication (Harding and Trotman, 2017) both emphasize the significance of information sources. While expertise enhances knowledge transfer, the source of information regarding fraud likelihood can sway skepticism levels. Ho *et al.* (2021) demonstrated that cognitive factors, such as framing and mental perspectives, play a vital role in shaping skepticism, ultimately influencing how auditors approach their judgments and decisions. On the other hand, Lee *et al.*'s (2013) study on professional skepticism on audit interviews reveals the default tendency towards presumptive trust, showcasing the potential cognitive biases that auditors may possess. While, Fehrenbacher *et al.* (2020) adds another layer by demonstrating how aligning cognitive approaches with specific task characteristics can impact skepticism.

Other precursors of professional skepticism within the perspective of cognitive ability such as accountability, professional statistics, client's confidence, payment channels, earnings forecast, and pre-emptive self-criticism were also identified by the author from the literatures being reviewed. Specifically, Hoos *et al.* (2019) emphasizes the paramount role of accountability, revealing that auditors adapt their final judgments

based on the accountability regime they face, thereby suggesting the significant influence of varying accountability audiences on skepticism levels while keeping judgment processes consistent. Gong *et al.*'s (2019) investigation underscores the importance of pre-emptive self-criticism as a cognitive technique that can effectively elevate skepticism levels among auditors. Conversely, Ciolek and Emerling (2019) suggest that specific accounting programs, like the ACCA-accredited program, can positively shape auditors' cognitive abilities, consequently enhancing their professional skepticism.

Other research highlights auditors' cognitive capacity to critically evaluate management earnings forecasts, aligning their judgments with bankruptcy prediction models (Feng and Li, 2014). Zimmerman (2016) brings the cognitive aspect of skepticism to the forefront, showcasing how auditors' judgments can be influenced by cognitive cues related to clients' confidence and response timing during communication. In a contrasting perspective and in relation to the impact of payment channels on professional skepticism, research suggests that the alterations in the payment channel structure can affect auditors' perceptions and the way they execute audit procedures, leading to a more skeptical approach (Kim *et al.*, 2018).

From the perspective of personality traits, the author identified additional precursors of professional skepticism within the reviewed articles. These include auditors' unique characteristics and traits, client-related experiences, aesthetic engagement, and the influence of societal culture. Auditors' characteristics and traits impact auditors' job outcomes, organizational behaviors, and turnover intentions based on their perceptions of partner support (Cohen *et al.*, 2017). Additionally, Quadrackers *et al.* (2014) and Chen *et al.* (2023) identified that specific traits interact with professional skepticism, affecting auditors' skeptical judgments and audit quality. Furthermore, the influence of professional skepticism prompts varies between students and practicing auditors, highlighting the role of experience and individual traits (Peytcheva, 2013).

Within the personality traits perspective of professional skepticism, client experiences are found to have a significant role in shaping auditors' skepticism levels, particularly for individuals with lower trait skepticism (Popova, 2012). The study emphasizes that auditors' prior experiences influence their perceptions of client trustworthiness, subsequently affecting initial fraud/error expectations. Moreover, Khan and Harding (2019) introduce the concept of aesthetic engagement, which moderates the

relationship between trait skepticism and state skepticism. Their experiments reveal that aesthetically pleasing office environments can distract auditors from translating their inherent skepticism into skeptical actions during audits. Finally, Dickey *et al.* (2021) contribute to the understanding of how societal culture influences professional skepticism, particularly in offshore audit work contexts.

The final perspective on professional skepticism, as identified in the reviewed articles, centers around auditing ethics. Within this perspective, a single precursor variable of professional skepticism is recognized, conservatism. The study of Brown-Liburd (2012) reveal that auditors who exhibit lower levels of professional skepticism tend to be less conservative and are more willing to make concessions to management, particularly when earnings management incentives are at play. The study underscores the importance of including negotiation-specific training components, aimed at sensitizing auditors to consider risk factors, especially when management's actions may affect analyst forecasts. In addition, it emphasizes the interconnectedness of auditing ethics, professional skepticism, and auditor decision-making, emphasizing the need for a balanced approach that upholds ethical standards while maintaining a critical and skeptical mindset to ensure the integrity of the audit process and financial reporting (Brown-Liburd *et al.*, 2012).

As shown in Figure 1, the analysis of professional skepticism from four discrete vantage points—task predisposition, cognitive ability, personality traits, and auditing ethics—a multidimensional structure of precursors emerges, which cumulatively shape the professional skepticism of auditors. The unique characteristics of all the identified precursors highlight the complex and indispensable function of professional skepticism in safeguarding the integrity of financial reporting and audits.

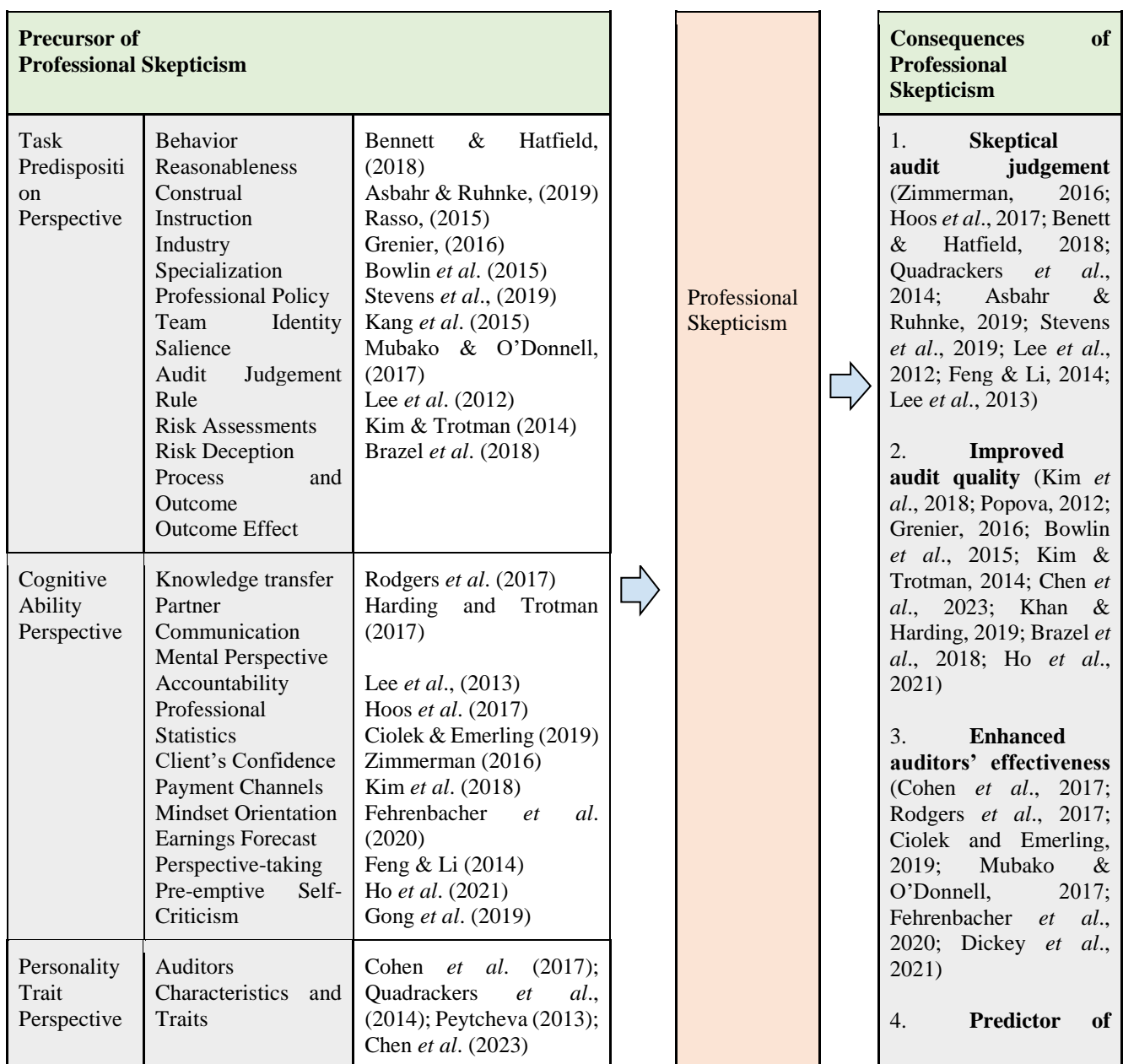
## **2.8 Consequences of professional skepticism**

The concept of professional skepticism, which is fundamental to the auditing profession, has a significant impact on the formation of numerous outcomes and consequences. This discourse explores the diverse consequences of professional skepticism, scrutinizing its capacity to forecast a multitude of crucial variables and consequences. The predictive outcomes cover a wide range of audit-related aspects, such

as increased skepticism towards audit judgments, improved audit quality, enhanced auditor effectiveness, cognitive abilities, and more efficient audit actions. Upon examination of these varied implications, it becomes apparent that professional skepticism is not solely a conceptual framework; rather, it is an essential factor that determines the integrity and efficacy of audits, impacting the conduct, assessments, and overall contributions of auditors to the fields of financial reporting and auditing.

**Figure 1**

*Outline of how professional skepticism is used in the thirty (30) reviewed articles*



	Client Experiences Aesthetic Engagement Societal Culture	Popova (2012) Khan & Harding (2019) Dickey <i>et al.</i> (2021)
Auditing Ethics Perspective	Conservatism	Brown-Liburd <i>et al.</i> , (2012)

		<b>cognitive performance</b> (Peytcheva, 2013; Brown-Liburd <i>et al.</i> , 2012)
		<b>5. Efficient audit actions</b> (Rasso, 2015; Harding & Trotman, 2017; Kang <i>et al.</i> , 2015; Gong <i>et al.</i> 2019)

Notes: Panel 1 shows the precursors (antecedents) of professional skepticism while panel 2 displays professional skepticism as both consequence and precursor. Panel 3 indicates the consequences of professional skepticism.

Skeptical audit judgment, which arises from professional skepticism, is a complex and nuanced concept that is impacted by a multitude of intricate factors, as evidenced by several studies. For instance, in the investigation of joint audit environment, it reveals that it has the unintended consequence of reducing skepticism, specifically with regard to the going concern assumption (Hoos *et al.*, 2017). While the importance of management confidence levels and response timing in influencing auditors' skepticism is underscored by Zimmerman (2016). Decreased management confidence and delayed responses result in increased skepticism, whereas enhanced credibility diminishes it. On the other hand, Asbahr and Ruhnke (2019) demonstrate that when accounting estimates are disclosed as Key Audit Matters (KAM), it can lead to a reduction in skeptical actions by creating a judgment-action gap. Other study examines the impact of team identity salience on skepticism in the presence of a supportive partner style (Stevens *et al.*, 2019). In a study that questions the concept of presumptive doubt, Lee *et al.* (2012) demonstrate that auditors have a propensity to place trust in interviewees, even when confronted with high-risk deception situations. Feng and Li (2014) provide an illustration of the manner in which auditors employ skepticism in the assessment of earnings forecasts made by management. On the contrary, Lee *et al.* (2013) emphasize the widespread occurrence of presumptive trust over doubt, specifically in interview scenarios where there is a risk of deception. Meanwhile, Benett and Hatfield (2018) highlight the impact of communication mediums, particularly computer-mediated communication (CMC), on auditor skepticism, with CMC potentially hindering skeptical behavior, especially among younger auditors. Lastly, the relationship between auditors' skeptical perspectives and their judgments across varying client risk settings is also explored, with presumptive doubt emerging as a

more predictive factor (Quadrackers *et al.*, 2014). The aforementioned studies highlight the complex character of skeptical audit judgment, which arises from professional skepticism. They uncover a wide range of factors that impact auditors' skepticism in various audit settings.

The reviewed articles also collectively emphasize that professional skepticism plays an essential role in enhancing audit quality. For example, Kim and Trotman (2014) highlight the importance of training programs tailored to improve skepticism, particularly for novice auditors, suggesting that investing in skepticism development can lead to higher audit quality. Ho *et al.* (2021) and Bowlin *et al.* (2015) reveal that auditors' judgments and effort levels are influenced by perspective-taking and incentives, respectively, indicating that fostering a skeptical mindset and management efforts can improve audit quality. Moreover, skepticism, rooted in client experience, can enhance fraud detection (Popova, 2012), further contributing to better audit quality. However, Brazel *et al.* (2018) caution that outcome biases in evaluations may discourage auditors from exercising skepticism, potentially affecting audit quality. Other scholars draw attention to the impact of office environment on skepticism levels, suggesting that a less attractive client environment might foster higher skepticism (Khan & Harding, 2019) and, consequently, better audit quality. The latter discussions demonstrate the positive relationship between professional skepticism and audit quality, indicating that auditors with higher skepticism levels are likely to produce higher-quality audits (Kim *et al.*, 2018; Chen *et al.*, 2023). However, specialization coupled with confidence may inhibit auditors' inclination to be skeptical (Grenier, 2016) thus implications to audit quality should be carefully observed.

Continuing to draw upon the insights from thirty (30) reviewed articles, it becomes increasingly apparent that professional skepticism is a multi-faceted concept. A multitude of findings within these studies collectively emphasize the profound importance of professional skepticism in enhancing auditors' effectiveness, extending its impact to various aspects, including judgment and even career advancement. While Mubako & O'Donnell (2017) emphasize the influence of skepticism on judgment accuracy, Rodgers *et al.* (2017) emphasize the importance of knowledge transfer and expertise in improving skepticism. Moreover, the varying effects of different skepticism perspectives on auditors' career trajectories was identified (Cohen *et al.*, 2017). Offering

a means to boost skepticism levels, academic programs are explored to increased trait skepticism (Ciolek & Emerling, 2019). On the other hand, Fehrenbacher *et al.* (2020) shed light on how the initial task's mindset orientation can impact subsequent skepticism and effectiveness. While Dickey *et al.* (2021) identify distinct aspects of skepticism that can vary among auditors and affect their performance.

Several reviewed articles also unveiled two significant consequences of professional skepticism: being a predictor of cognitive performance and efficient audit actions. Professional skepticism emerges as a predictor of cognitive performance, particularly evident among students, as demonstrated by Peytcheva (2013) and Brown-Liburd *et al.* (2012). This trait is linked to heightened ethical consciousness and resilience in auditors' decision-making, underscoring its role as a cognitive performance enhancer. Regarding efficient audit actions, some scholars offer insights into how professional skepticism influences audit procedures and actions. While the application of professional skepticism can be influenced by factors like perceived accountability pressure and partner's expressions, it generally leads to more efficient audit actions; and auditors with a skeptical mindset tend to ask probing questions, consider high-level construal, and exhibit a balance between inward and outward skepticism orientations, which collectively contribute to more effective and thorough audit processes (Gong *et al.*, 2019; Kang *et al.*, 2015; Rasso, 2015; and Harding and Trotman, 2017).

Coming from the latter discussions within this section, professional skepticism hence is a multi-dimensional concept with diverse consequences that significantly impact the auditing profession. It serves as a predictor of cognitive performance; and a variable in enhancing resilience in auditors' actions, decision-making processes, and judgment. Additionally, professional skepticism contributes to improved audit quality by fostering a skeptical mindset and potentially enhancing fraud detection, although outcome biases and specialization should be monitored. Together, these discussions underscore the essential role of professional skepticism in shaping auditors' effectiveness, judgment, and even career progression, highlighting its profound influence on the auditing field.

### 3 DISCUSSIONS

The preceding sections of this review article yield essential insights, notably the call for a more comprehensive understanding of professional skepticism. It is imperative to probe deeper into this well-established concept by exploring additional facets and explaining the complex relationships discussed in this study. Examining professional skepticism through the lens of task predisposition allows us to contemplate how individuals, particularly auditors, approach and execute specific audit tasks. Auditing, at its core, involves examining a company's financial records to ensure their accuracy and compliance with regulations, often encompassing advisory and risk mitigation aspects. By investigating into audit tasks such as the diagnostic process, which involves identifying and explaining unexpected fluctuations in financial balances and relationships (Koonce *et al.*, 1993), we can enhance our comprehension of professional skepticism. Furthermore, the discussed drivers of professional skepticism such as construal instruction, industry specialization, risk assessment, etc. that goes along with the perspective of task inclination provided learnings and opportunities to associate other features of the audit activities, from planning to the evaluation stage of the overall audit process. These propositions draw inspiration from previous studies that have examined auditors' professional skepticism from the perspective of task predisposition (Bennett and Hatfield, 2018; Asbahr and Ruhnke, 2019; Rasso, 2015; Grenier, 2016; Bowlin *et al.*, 2015; Stevens *et al.*, 2019; Kang *et al.*, 2015; Mubako & O'Donnell, 2017; Lee *et al.*, 2012; Kim & Trotman, 2014; and Brazel *et al.*, 2018).

Professional skepticism can also be viewed through the perspective of cognitive ability. The mere conveyance of a partner's perspective or the display of management's attitude can trigger intricate mental reasoning and analysis within auditors, often influencing their skeptical behavior. It is evident that cognitive ability encompasses a diverse range of mental processes that can be conceptualized and studied to gain deeper insights into auditors' professional skepticism. This perspective offers multiple avenues for understanding and rationalizing the existing framework of knowledge and wisdom, as cognitive ability forms a pivotal component in the auditor's ability to comprehensively analyze both financial and non-financial information. This viewpoint is drawn from a body of research about cognitive ability related to auditors (Rodger *et al.*, 2017; Harding

& Trotman, 2017; Lee *et al.*, 2013; Hoos *et al.*, 2017; Ciolek & Emerling, 2019; Zimmerman, 2016; Kim *et al.*, 2018; Fehrenbacher *et al.*, 2020; Feng & Li, 2014; Ho *et al.*, 2021; and Gong *et al.*, 2019).

Personality traits and ethics in auditing likewise play significant roles in shaping professional skepticism. While existing studies have explored the connections between auditors' traits and professional skepticism, as well as the clear stance of regulatory bodies on the ethical dimension of professional skepticism within the accounting and auditing profession, there remains an opportunity for scholars to provide a more accessible and straightforward explanation that resonates with the general public. Researching into these concepts further can help bridge the gap between academic research and public understanding. The empirical articles that have examined personality traits and auditing ethics in relation to professional skepticism (Cohen *et al.*, 2017; Quadrackers *et al.*, 2014; Peytcheva, 2013; Chen *et al.*, 2023; Popova, 2012; Khan and Harding, 2019; Dickey *et al.*, 2021; and Brown-Liburd *et al.*, 2012) offer valuable insights, and the challenge now is to distill this knowledge into practical, relatable insights that shed light on the essence of professional skepticism in the accounting and auditing profession. This endeavor can contribute to greater transparency and trust in the profession, reinforcing its role in financial accountability and integrity.

Based on the extensive findings presented in this review, it becomes evident that professional skepticism yields a multitude of consequences across various dimensions, as illuminated by the sampled articles. These consequences encompass a spectrum of audit-related aspects, including skeptical audit judgment, improved audit quality, enhanced auditors' effectiveness, the potential to predict cognitive performance, and efficient audit actions. The depth and breadth of these outcomes underscore the multifaceted nature of professional skepticism, inviting further exploration and analysis. Beyond these established consequences, there is room for scholars to investigate into additional facets and uncover supplementary outcomes that may be associated with professional skepticism. This expanded assessment contemplates the potential ripple effects of these consequences on the overall audit process. By considering these diverse outcomes, scholars and practitioners alike can strive to enhance the quality and integrity of financial reporting, ultimately contributing to the delivery of financial reports that are both transparent and accurate in all material respects.

The implications arising from this study shed light on critical considerations regarding the sources and compilation of data in professional skepticism research. Most of the reviewed articles rely on case studies and task-based approaches, which may inadvertently encourage respondents to provide superficial or less serious responses. However, it is evident from the literature that with meticulous manipulation, rigorous testing, and the identification and removal of outliers, valuable and reliable insights can be gleaned from a diverse range of sources, including large audit firms, small and medium-sized practices (SMPs), business organizations, and educational institutions. Therefore, it is imperative to emphasize not only the quantity but also the quality of responses to gain a deeper understanding of the multifaceted concept of professional skepticism. Furthermore, this study suggests that categorizing sample data into sectors such as public practice, commerce and industry, government, and academia could provide a valuable avenue for comprehensive analyses of professional skepticism across the broader accountancy profession. Establishing a dedicated working paper focused on probing professional skepticism could serve as an invaluable resource for gaining a holistic perspective on the factors that impact, influence, modify, drive, moderate, mediate, and contrast this central topic within the review.

In addition to the previously discussed implications, there is significant potential for conducting similar studies in countries such as the Philippines and other emerging economies worldwide. Exploring professional skepticism in these diverse cultural contexts can provide valuable insights into how societal values, culture, religion, beliefs, and even myths shape and influence this overarching concept within the realm of accountancy. It is hypothesized that by acknowledging the role of professional skepticism within the collective perspectives of emerging countries, we can uncover nuances and distinctions that set them apart from more developed nations. This exploration becomes particularly relevant given the established partnerships between many global auditing firms and their counterparts in developed countries. Consequently, comparing the manifestations and perceptions of professional skepticism across different nationalities and cultural backgrounds holds significant promise for enriching our understanding of this multifaceted concept.

It is also noteworthy to consider that the majority of respondents in the selected articles are auditors affiliated with large accounting and auditing firms. Consequently, the

discussions surrounding professional skepticism primarily revolve around the context of well-established organizations and the characteristics of external auditors. To broaden the scope of research in this area, scholars might contemplate exploring alternative perspectives. This could involve investigating the experiences of internal auditors within various organizations, audit staff working in small and medium-sized practices (SMPs), or even non-accountant audit personnel engaged in auditing tasks. Additionally, examining the socio-demographic profiles and ethnic backgrounds of potential respondents may yield unique insights into the nuanced understanding of professional skepticism within diverse groups and contexts.

Finally, the conceptual model emerging from this review offers a promising foundational framework for future researchers aiming to develop innovative research designs and concepts. By assimilating and synthesizing the variables and constructs identified as antecedents and consequences of professional skepticism through this comprehensive review, researchers can build upon this foundation to deepen their understanding of this critical concept. This model not only provides guidance but also encourages the exploration of new dimensions and perspectives within the field, nurturing a dynamic and evolving body of knowledge in the realm of professional skepticism.

This systematic review of articles acknowledges two primary weaknesses: the possibility of publication bias due to the emphasis on high-impact factor journals and the restriction of the review to twelve-year timeframe. While these limitations exist, they are balanced by the credibility associated with articles published in reputable journals and the relevance of recent research.

#### **4 CONCLUSIONS**

Professional skepticism, as explained in this study through a diverse range of perspectives, has been systematically examined to conceptualize and organize its multifaceted nature. While numerous scholars have provided valuable insights into the drivers, outcomes, and nuances of professional skepticism, it is apparent that this concept remains extensive and ripe for further exploration. This paper reflects upon prior studies that have highlighted various factors influencing professional skepticism and synthesized

them using distinct perspectives, including task predisposition, cognitive ability, personality traits, and auditing ethics.

This contribution aims to enrich the existing body of knowledge within the realms of accounting, auditing, and professional ethics by exploring into the intricate domain of auditors' professional skepticism, its antecedents, and its repercussions. Given that audit processes demand astute critical thinking and decision-making, as mandated by auditing standards and regulatory bodies, the paramount concern is the potential risk of tarnishing the reputation of auditing firms or individual auditors through scandals and controversies. Consequently, auditors are enjoined to exercise professional skepticism throughout the audit process (PCAOB, 2002), as past financial scandals have raised apprehensions about auditors becoming excessively reliant on management and the potential degradation of audit quality, especially in enduring auditor-client relationships (DeFond and Francis, 2005).

Empowering auditors to embody and enact the principles of professional skepticism at every phase of auditing, and even in accounting, holds the promise of enhancing audit quality, elevating auditors' effectiveness and judgment, and ultimately culminating in the issuance of fairly presented financial reports. The author envisions that future research endeavors will explore the impact of audit-related intervention programs, seminars, and training initiatives conducted by audit firms, accountant associations, and regulatory bodies. This exploration can shed light on whether such initiatives effectively cultivate an acceptable level of professional skepticism among accountants, auditors, and other professionals, thereby fortifying the pillars of transparency, integrity, and accountability within the realm of financial reporting and auditing.

### **CONFLICT OF INTEREST STATEMENT**

The authors declare that there is no conflict of interest regarding the publication of this paper.

## DECLARATION OF AI USE

The authors declare that no Artificial Intelligence (AI) technology or tools were used in the conception, writing, analysis, or editing of this paper. All content is the original work of the authors.

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### **Authors' Contribution**

All authors contributed equally to the development of this article.

### **Data availability**

All datasets relevant to this study's findings are fully available within the article.

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