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# Auditors' Professional Skepticism and Its Relationship with Their Thinking Styles

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***Abstract***

*The complexity of financial reporting highlights the need for professional skepticism among auditors. This study examined the relationship between auditors' professional skepticism (PS) and thinking styles (TS) and explored what associations exist among PS, TS, and auditors' sociodemographic attributes. Using snowball sampling, we surveyed 139 auditors in the Philippines using the Thinking Styles Inventory – Revised II and the Professional Skepticism Scale. Confirmatory analysis using Kendall's tau-B showed a strong correlation between PS and TS I (creativity-generating style), implying that it plays a prominent role in professional skepticism. Contrary to earlier studies, our study found only a moderate correlation between TS II (norm-favoring style) and PS. The k-Modes clustering algorithm revealed that auditors showing high PS were low-ranking, less-experienced licensed female CPAs in firms with global affiliations and manifesting creative-generating TS. These findings add to the accounting profession's understanding of PS and may be of valuable help in cultivating PS among auditors.*

*Keywords: thinking styles, professional skepticism, Philippines, sociodemographic attributes, auditors*

## 1.0 Introduction

As businesses and economies evolve, the use of management estimates, business model evolutions, and technological developments also expand. Professionals need to respond to these changes promptly. Although adjustments and modifications of technical standards, regulations, and business practices form an important part of the response, business professionals' thought processes play pivotal roles in it, particularly the following: effective thinking, critical thinking, and professional skepticism.

### *Professional Skepticism*

A widely discussed and debated concept in auditing and accounting literature, professional skepticism is a requirement for due professional care (Public Company Accounting Oversight Board [PCAOB], 2016) and an attitude expected of professional accountants when they perform auditing and assurance engagements (International Ethics Standards for Board for Accountants [IESBA], 2020). Often manifested in auditors' keenness to inquiry and in their suspension of judgment until they can gather sufficient and appropriate evidence (Hurtt, 2010), professional skepticism refers to the questioning and objective mindset that auditors must have throughout the audit while, at the same time, maintaining a neutral assumption about the client (PCAOB, 2016). A professional who has

professional skepticism usually also manifests the following characteristics: search for knowledge, suspension of judgment, autonomy, interpersonal understanding, self-confidence, and questioning mind (Hurtt, 2010).

However, not all auditors hold on exclusively to the tenet of neutrality espoused by current auditing standards, for the application of professional skepticism lies on a continuum that depends on the audit area and client circumstances (Glover & Prawitt, 2014). Along this continuum, auditors can never completely trust or doubt an audit, and so they are induced to neutrality (i.e., the auditor assumes that the client is neither telling the truth nor lying) (PCAOB, 2012; Popova, 2013) or presumptive doubt (i.e., the auditor assumes the falsity of the client's financial statement). According to one study, presumptive doubt affects the efficiency and effectiveness of the audit because the auditor tends to over-collect evidence (Nelson, 2009), but another study reported that it could predict auditors' skeptical judgments and decisions in high-risk contexts much more effectively than neutrality could (Quadackers et al., 2014). Regardless, professional skepticism exerts a positive effect on audit quality because it provides a critical perspective in the assessment of the existence of fraud and material misstatements (Mardijuwono & Subianto, 2018; Coppage & Shastri, 2014; Hai et al., 2020; Popova, 2013; Sunday, 2020).

***The Skeptic Mindset***

Two things fuel an auditor's skeptic mindset: state skepticism (or external variables) and trait skepticism (auditor's traits) (Hurtt, 2010; Nelson, 2009). State skepticism refers to a temporary phase of skepticism arising from aspects of external situations, whereas trait skepticism, which is relatively stable, comes from aspects of an individual's characteristics.

Variations in clients' contexts can result in different levels of state skepticism even among those with similar levels of trait skepticism (Robinson et al., 2018). From such an observation one can deduce that the variable controllable by auditors is their trait skepticism. The latter inference is also congruous with one study's findings that higher levels of trait skepticism exhibit behaviors reflecting higher levels of state skepticism (Hurtt, 2010).

***PS and Effective Thinking***

Effective thinking combines critical thinking and professional skepticism (Urboniene et al., 2013). With critical thinking, accountants can achieve sound decisions, solve existing company issues, and avoid possible fraud-related circumstances (American Institute of Certified Public Accountants, 1999; Urboniene et al., 2013). Interestingly, professional skepticism plays an integral part in the critical thinking processes of accountants, especially when they investigate financial and non-financial information from audit clients.

***Factors Affecting PS Development***

Several studies have identified and examined various factors that influence the level of professional skepticism among auditors. Such factors include, but are not limited to, the auditor's sex, years of experience, rank, firm size, and possession of a Certified Public Accountant (CPA) license.

Auditors' length of experience and rank affect the development of their professional skepticism. Hussin et al. (2017) found that auditors' perceived value of professional skepticism is directly proportional to their experience. Those with more experience in higher ranks tended to be more skeptical (Hussin et al., 2017; Janssen et al., 2020). However, based on rank alone, staff auditors exhibited more skepticism than high-ranking

auditors (Phillips, 1999; Shaub & Lawrence, 1999) as auditors under this latter category were less likely to suspect fraud (Phillips, 1999) and relied heavily on audit routines (Wheeler & Arunachalam, 2008).

The sex of the auditor also significantly affects professional skepticism (Mardijuwono & Subianto, 2018) and influences audit quality (Triani, 2018; Atmaja & Sukartha, 2021; Sari, 2014). Females reportedly render more accurate judgment in complex audit tasks, so they exert a positive effect on audits (Chung & Monroe, 2001; Vinciguerra, 2003).

The size of the accounting firm likewise affects the development of auditors' professional skepticism. Whether large or small, audit firms bear the responsibility of developing professional skepticism among their auditors (Hussin et al., 2017; Payne & Ramsay, 2005). The scrutiny that large U.S. audit firms undergo from the Securities and Exchange Commission (SEC) and the Public Company Accounting Oversight Board (PCAOB) simply magnifies the need to train auditors, develop professional skepticism among them, and have them apply it in their practice (Gissel, 2018). Compared with their smaller counterparts, large auditing firms hold a bigger advantage in the exercise of such a responsibility because they can access and share resources, such as training information (Arens et al., 2012; Baskerville & Hay, 2010), for developing their auditors' career (Acampado & Pajares, 2021) while being subjected to foreign internal monitoring to maintain standards of quality (Suseno & Nofianti, 2018). Affiliations with firms in other countries also matter in an auditing firm's success in developing professional skepticism among its auditors. The so-called Big Four, along with the national accounting firms and many of the regional and large local firms, have affiliations with firms in other countries, but the small local ones do not (Arens et al., 2012).

Professional certifications and licenses, such as the Certified Public Accountant (CPA) license, also affect auditors' professional skepticism. A study by Shaub and Lawrence (1996) found that CPAs were less likely to demand additional tests or conduct client confrontations, making CPAs less skeptical than their uncertified counterparts.

### *Culture and PS Development*

In addition to sociodemographic factors, culture also exerts a strong influence on the development and manifestation of PS. Cultural influences significantly shape Filipinos' judgment, moral reasoning, and decision-making (Thomson et al., 2007; Vasquez et al., 2001). The Philippines' colonial past likewise influenced the country's economic and social characteristics, especially its culture, lifestyle, language, laws and regulations, and notably, accounting (Kamla, 2007; Muniandy & Ali, 2012; Nobes, 2011; Saudagaran & Diga, 1998). One might easily presume the Philippines, being an Asian country, to be predominantly Eastern in its cultural makeup, yet centuries of being under the rule of colonial masters have created for the Philippines a unique blend of both Eastern and Western cultures (Florido, n.d.).

### *Thinking Styles in Sternberg's Theory of Mental Self-Government*

In his theory of mental self-government, Sternberg proposed the notion that an individual's thinking and expression of cognitive abilities can be described in terms of functions, forms, levels, scope, and leanings — five dimensions that portray the forms of mental government as self-reflections created by one's mind (Sternberg, 1997; Sternberg & Wagner, 1991). Sternberg's theory proposed 13 thinking styles (TS) classified into these five dimensions, but in 2005, Zhang and Sternberg re-categorized them into three types (TS I, TS II, and TS III). Each type comprises several thinking styles identified in Sternberg's theory of mental self-government (Sternberg & Wagner, 1991; Urboniene et al., 2013; Zhang & Sternberg, 2005).

Someone with Type I thinking style exhibits a higher level of cognitive complexity and creativity. The following thinking styles comprise the Type I thinking style:

- legislative (decides and plans for actions),
- judiciary (evaluates regulations and processes),
- hierarchical (sets priorities since all goals cannot always be fulfilled),
- global (sees abstract issues from a bigger perspective), and
- liberal (clarifies vague regulations and goes beyond them).

One with Type II thinking style is norm-favoring, prefers following standards, and exhibits a lower level of cognitive complexity. Those classified under Type II exhibit the following thinking styles:

- executive (acts on problems using existing procedures and structures),
- local (focuses on the details of a situation),
- monarchic (thinks single-mindedly and is inflexible), and
- conservative (sticks with familiar situations and processes).

Individuals who do not exhibit either Type I or II thinking style consistently are classified as having Type III thinking style, characterized by adaptability to situations or tasks. The following thinking styles comprise the Type III thinking style:

- anarchic (has a random approach to problems),
- oligarchic (driven by multiple competing goals confusing completing any of the goals),
- internal (prefers to work in isolation), and
- external (extroverted and people-oriented).

***TS and Critical Thinking***

One's thinking style influences one's potential to exercise critical thinking. Thinking style describes a person's preferences for thinking about given information and making decisions out of it (Rani & Agarwal, 2015; Sternberg, 1998; Yaakobi, 2017). It can affect one's potential in approaching and solving a problem, as Sternberg's model of the theory of mental self-government illustrates (Rani & Agarwal, 2015).

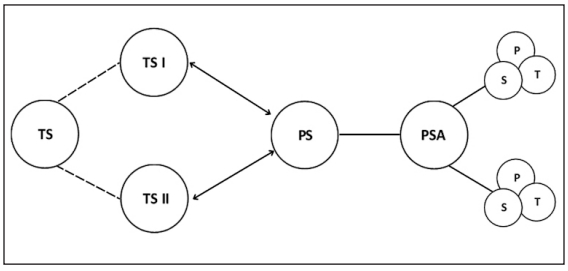
Several researchers (e.g., Hou et al., 2011; Hovencamp, 2014; Turki, 2012; Zhang, 2012) have studied the influence of TS upon different variables such as creativity, organizational commitment, and employees' emotional intelligence (Hou et al., 2011; Hovencamp, 2014). Besides broadening people's understanding of employees' capabilities and how they perform their duties, such studies also guide employers in selecting and training their employees. These studies suggest that thinking styles play an essential role in one's performance and development.

In turn, certain variables — e.g., culture, gender, age, parenting style, religious upbringing, schooling, and occupation — also affect the development of thinking styles (Sternberg, 1997, 1998; Sternberg & Wagner, 1991; Zhang & Sternberg, 2006). Studies have found that a culture-specific thinking style is often the fruit of a culture's preference towards a particular technique and varies from country to country (Bernardo et al., 2002; Han, 2010; Paik et al., 2019; Sternberg, 1997). For instance, Sternberg (1998) has pointed out that history's view of men as leaders and rule setters, while women as followers, points to the legislative thinking style as being more associated with the former than the latter. Distinct thinking styles are also cultivated among preschools and youngsters that are rewarded for creativity, as compared to adults who are more conscious about conforming to the norms set by their environment and society. Religious traditions, beliefs, and practices also form part of how a child, and later an adult, think and view the world.

### *Thinking Styles and Professional Skepticism*

Previous studies have shown a relationship between thinking styles and professional skepticism. One study investigating such a relationship among students in Lithuania found that professional skepticism required conservative thinking and lower levels of cognitive complexity (Urboniene et al., 2013). In Iran, researchers examining the effect of the thinking style in Sternberg's mental self-government model upon auditors' professional skepticism found that the latter had a positive relationship with the executive, judicial, introspective, extroverted, and free-thinking styles and that it had a significant negative association with the legislative thinking style (Heidar & Nikomaram, 2018). Yet, despite sharing variables in common, these studies need to be verified further in other populations because empirical data establishing the association between thinking style and professional skepticism scarcely exist. To the best of our knowledge, for instance, we have not yet encountered any study that tested which thinking style from Zhang and Sternberg's (2005) threefold model exhibits a higher degree of professional skepticism among auditors.

Figure 1, which depicts our study's conceptual model, illustrates how thinking styles, professional skepticism, and relevant sociodemographic characteristics relate with one another.




*Note: TS =Thinking styles*
*TS I = Type I*
*TS II = Type II*
*PS/P = Professional skepticism*
*PSA = Professionally skeptic auditor*
*T = Type of thinking style*
*S = Sociodemographic attributes*

**Figure 1.** *Conceptual Model*

### *PS, TS, and Critical Thinking*

Professional skepticism and thinking styles influence one's critical thinking. Studies of Urboniene et al. (2013) and Heidar and Nikomaram (2018) investigated the relationship between thinking styles and professional skepticism and found a positive relationship. Legislative thinking styles, however, showed a significant negative influence on professional skepticism (Heidar & Nikomaram, 2018). Interestingly, the study further concluded that professional skepticism required conservative thinking and lower levels of cognitive complexity (Urboniene et al., 2013).

### *A Growing Need for PS in the Modern Workplace*

In the face of the complexity of business and financial reporting these days, professional skepticism becomes more significant and relevant and requires highlighting and emphasis. Case in point — the U.S. SEC investigated auditor deficiencies for the period 1998 to 2010 and found that 60% of the cases showed insufficient levels of professional skepticism where auditors struggled to maintain an appropriate questioning mind in various stages of the audit process (Beasley et al., 2013). Clearly, auditors value professional skepticism highly, and since very little is known about how an auditor develops professional skepticism over time, identifying the thinking style that can stand in or act as an indicator for high professional skepticism (because of its significant association with it) will be of great value to auditors and their profession.

Considering the influence of culture on thinking style development and postulating that thinking style and professional skepticism are related, we examined the thinking styles and professional skepticism of external auditors in the Philippines, hoping to uncover facets of the relationship between the two and to characterize professional skepticism through patterns of

attributes of external auditors with high or low levels of professional skepticism. We examined the relationship between external auditors' thinking styles (Type I and Type II) and their professional skepticism to discover the patterns that exist among professional skepticism, thinking styles, and socio-demographic attributes. We hypothesized that an auditor's thinking style had a significant positive relationship with his or her level of professional skepticism and that certain other factors (e.g., years of experience, rank, sex, training, and work environment [especially firm size], and possession of the Certified Public Accountant license) shape their level of professional skepticism.

**2.0 Methodology**

We used the survey method in a quantitative design to answer our research questions and test our hypotheses. To gather data, we administered an online cross-sectional survey consisting of three parts:

- respondents' sociodemographics
- Thinking Styles Inventory – Revised II (TSI-R2) — This questionnaire uses the Type I and Type II classification of Sternberg et al. (2007). It consists of 45 Likert-type questions (originally 7-point, but we decided to use 6 points to eliminate neutral responses) describing how the respondents usually perform their tasks.
- Professional Skepticism Scale — This questionnaire developed by Hurtt (2010) contains 30 Likert-type questions (6 points) about how the respondents generally feel.

We measured only the Type I and Type II thinking styles because, like trait skepticism, which was the other variable that we studied, they are relatively more stable characteristics of an individual. The Type III thinking style is task-dependent, implying non-dominance in any of the styles, and exhibits varying combinations of Type I and Type II, thus making it unstable and difficult to measure effectively, so we excluded it from our study. Moreover, auditors' trait skepticism and experience with prior clients were found to affect audit quality (Popova, 2013), so we also studied trait professional skepticism as a variable because of its relative stability and its influence on the auditor's skeptic mindset (Hurtt, 2010).

We pilot-tested the data collection instrument with 30 fourth-year Bachelor of Science in Accountancy students in a university. The students were in their final year in their accountancy studies, so they presumably already possessed knowledge and skills from their years of tertiary education, and, therefore, could appropriately serve as surrogates for external auditors (Farag & Elias, 2012; Kwock et al., 2016; Rufino, 2016; Ying & Patel, 2016). Pilot testing yielded a Cronbach's alpha of 0.95 (excellent) for the overall TSI-R2, 0.93 (excellent for the Type I items), 0.86 (good) for the Type II items, and 0.83 (good) for the Professional Skepticism Scale.

After the pilot test, we administered the validated survey from December 13, 2021, to March 12, 2022, to a total of 139 external auditors working in firms providing audit services in the Philippines. Owing to the unavailability of the sample frame, we decided to conduct non-probability snowball sampling, fully aware of the limitation and the restriction of this specific sampling technique, particularly regarding projecting data and interpretations beyond the sample. Our use of nonprobability sampling was one of the chief limitations of our study. We were constrained to use a nonparametric test because we could not access data to help us determine a statistically relevant sample size. To get around the limitation presented by the unavailability of such data, we used a larger sample size. Since nonparametric tests do not consider population parameters, the

generalizations from our study's results would apply only to our sample population and would not be generalizable to a wider population.

To be included as a respondent, one must (1) be an external auditor working in an audit firm offering audit services in the Philippines, (2) belong to an audit team performing financial statement audit and external audit work, and (3) have at least six months of financial audit experience. We did not require the respondents to be licensed CPAs. The term *audit firm* in the first criterion covered accounting firms that offered various services (including but not limited to audit services) (Ogunjimi, 2018), sole practitioners, and partnerships.

To determine the relationship between thinking styles and professional skepticism, we conducted a confirmatory analysis of our data by computing Kendall's tau-B using IBM SPSS Statistics (Version 28.0) software. We found this measure appropriate to use as it caters to tied ranks that occur in the data. Authors also found that it drew more accurate generalizations than other nonparametric measures (Akoglu, 2018; Pennsylvania State University, n.d.).

To find out what relationship patterns existed between the sociodemographic attributes and thinking styles of a professionally skeptical auditor, we performed an exploratory analysis using the k-Modes clustering algorithm, an unsupervised learning algorithm that handles categorical domains. Modes (centroids) were updated per iteration in the clustering process (Goyal & Aggarwal, 2017).

Since the terms for ranks varied across firms, we decided to standardize them into three rank labels: associate, manager, and partner.

To determine the level of professional skepticism, we arranged the scores in increasing order and identified the median. Since the median split occurred at 134, we needed to drop three responses. Auditors who scored more than 134 in the Professional Skepticism Scale were said to have high professional skepticism while those whose scores fell below 134 were considered to have low professional skepticism. We eliminated the middle level to extract the most likely direction of actions and decisions that auditors lean towards when exhibiting professional skepticism. All other variables used in the clustering were categorized in the same fashion as they were categorized in the survey.

## 3.0 Results and Discussion

In this section, we report our findings and interpretations for both the confirmatory and exploratory analyses that we performed on our data.

### Confirmatory Analysis

Table 1 shows the results of our confirmatory analysis of the data. This part of our study was designed to determine the relationship between thinking styles (Type I and Type II) and professional skepticism using Kendall's tau-B.

**Table 1.** *Tau and p-values from the Kendall Tau Analysis of Responses*

| Thinking Style | tau | Interpretation of tau | p-value |
|---|---|---|---|
| Type I | 0.47 | Strong | 0.00* |
| Type II | 0.27 | Moderate | 0.00* |

*$*p < 0.05$*

The p-value of 0.00 on both types of TS confirms the significant positive relationship between TS and PS, implying that both variables under investigation move and interact in the same pattern and direction. Our study investigated correlation and not causation, as correlation does not strictly impose a variable to be independent or

dependent. Since TS and PS are both traits innate to a person's mental disposition, one can affect the other and vice versa. Moreover, correlation does not eliminate the possibility of extraneous variables affecting the TS-PS relationship. The tau value also shows a strong positive relationship for TS I but a moderate positive relationship for TS II. These results reveal the interdependence between TS and PS. Interestingly, the moderate positive TS II - PS relationship denotes that although TS II and PS may increase with respect to each other, the norm-favoring thinking style does not strongly affect professional skepticism and vice-versa.

Urboniene et al. (2013) reported that professional skepticism required a conservative mindset, but the results of the TS II and PS interaction in our study poses an interesting insight into how other vital determinants, such as the other nondominant TS or other variables not under investigation, could be at play. This finding has an impact on how an audit is sometimes viewed as a rigid process that follows a step-by-step approach and supports the initiatives of regulatory and standard-setting bodies to adopt a more conceptual approach.

According to the results, factors external to their dominant thinking style (i.e., TS II) exert more influence upon the PS of norm-favoring auditors that tend towards following imposed and expected procedures. The creativity-generating trait weighs more on professional skepticism as opposed to the norm-favoring one. Such observation implies that, in the context of audit work, the central role of professional skepticism in the audit process needs to be viewed and promoted as an interplay among personal traits (including thinking styles), regulatory requirements, and firm policies, among others. This insight is valuable since it adds to the understanding of the multifaceted nature of PS.

Professional accountants need to conform to a set of fundamental principles: professional behavior, integrity, confidentiality, professional competence and due care, and objectivity. Of these five, the ethical requirement of due professional care also requires PS, reminding auditors to be wary of information risk in gathering and evaluating audit evidence. Here, the role of TS comes into focus. For example, an auditor's TS I judicial function expresses fondness for evaluation and analysis, a hallmark of an auditor's work. This judicial function incidentally heightens an auditor's PS when the auditor notices lacking or restricted information. Such an example demonstrates the strong relationship between TS I and professional skepticism. On the other hand, a TS II auditor's executive function is satisfied when she or he does a task well according to the given instructions. However, when a TS II auditor's PS is heightened, other factors, including but not limited to the individual's nondominant TS I, come into play with the auditor's executive function in his or her decisions and actions. Hence, an increase in PS will not directly indicate a simultaneous increase of the same intensity in an individual with TS II. Auditors with TS II can tap their nondominant TS when alarming situations arise. Since the practice of accountancy is laden with standards and regulations to follow, this is an especially important capability to consider using in the audit process.

Our observation about the interaction between TS I and PS seems to counter the findings of Urboniene et al. (2013), who reported no significant relationship between TS I and PS and claimed that PS requires neither cognitive complexity nor creativity. Table 1, however, shows a strong positive relationship, indicating auditors' gravitation towards greater creativity and cognitive complexity as their PS increases strongly, and vice versa. Such a result means that broadly interpreting audit evidence has a stronger association with PS than merely settling with provided information. Notably, the latter situation becomes a threat to due care, which directs back to PS.

Perplexed by the discrepancy between our

study's findings and those of previous studies, we investigated why the contradiction exists, especially since correlation opens doors to the possibility of the existence of other determinants. We narrowed down the possible reasons to differences and variations in the following: (a) statistical analyses and methods, (b) respondent profiles, and (c) research locales.

We ran our data set through analysis of variance (ANOVA), which Urboniene et al. (2013) used in their study, yet our ANOVA still yielded results similar to those of our Kendall's tau-B analysis of a p-value less than 0.05, implying a significant relationship between TS I and PS. The p-values registered for ANOVA and Kendall's tau-B were 0.015 and 0.000, respectively. So, we ruled out statistical analysis as the cause of the contradiction.

Next, we investigated whether the difference in respondent profiles caused the discrepancy. Our study's respondents did actual audit work. In contrast, the respondents of the study by Urboniene et al. (2013) were students. Could this difference rationally explain the dissent in our findings and those of Urboniene et al. (2013)? Studies say otherwise. Although students do not perform actual audit work yet, their tertiary education trains them and prepares them to use the knowledge and skills later in their professional practice as competent and ethical accountants (Rufino, 2016). Further, one study found no significant difference between students' and auditors' deception detection accuracy rates when conducting interviews (Lee & Welker, 2008). Thus, data from students (as in the Urboniene et al. [2013] study) and from professional auditors already working in the field (as in the case of our study) are equally valid. Yet, due diligence obliged us to probe further, so we ran our pilot-testing data (i.e., the data from senior accountancy students of a university) through Kendall's tau-B analysis — the results were similar to those yielded by the data from actual working auditors. Therefore, we ruled out the difference in respondent profiles as a reason for the discrepancy.

Since we had dismissed both statistical analysis and respondent profiles as potential causes for the discrepancy in our findings, we investigated the difference in research locales as the possible cause of the differences. Urboniene et al. (2013) conducted their study in Lithuania; we did ours in the Philippines. The difference in results could have arisen from the influence of culture upon the development of TS. According to the cultural dimension theory, each country and group of people have diverse cultures that prosper in schools and organizations (Hofstede, 2001). Lithuania has a predominantly Western culture, which tends to be more analytic; the Philippines, as is most of Asia, has a predominantly Eastern culture characterized by a holistic cognitive style (Han, 2010; Varnum et al., 2010), which was found to have a significantly positive correlation with creative generating and cognitive complexity (TS I) (Zhang, 2002). In contrast, the analytic mode of thinking has a significantly positive correlation with the norm-favoring thinking style and cognitive simplicity (TS II). Further, multiple studies support Sternberg's claims that culture affects the development of TS and that cultural factors produce culturally unique TS (Bernardo et al., 2002; Gu et al., 2017; Han, 2010; Nisbett et al., 2001; Tang, 2003). These studies also uphold our study's findings as shown in Table 1.

Besides confirming our hypothesis that TS and PS have a significant relationship, our confirmatory analysis also shone a spotlight on the role of culture in the relationship between these two variables. Filipinos shy away from confrontation because, unlike people brought up in Western cultures, Filipinos consider it taboo and disrespectful, especially when directed at an older person or one with a higher status. Such a cultural norm can throw off balance both the trust and doubt that professional skepticism requires. Even if it is done to avoid disrespect, avoiding confrontation

compromises the objectivity of the audit process. Culture-oriented audit-affecting factors such as these have been studied before. For instance, one study found that even if auditing standards were substantially similar across countries, the implementation might differ because auditors' judgment and decisions are functions of their self-perception influenced by their culture (Endrawes, 2010). Another study pointed out that every person needs to thoroughly assess the situation before taking any action that accords to right reason (Agaton, 2015). Thus, in audits, the predominant use of inquiries can yield possible confrontations that directly contrast with the Filipino upbringing of being non-confrontational (Benitez, 2022) and may affect due professional care in the performance of an audit.

Lastly, we examined more deeply what may have caused the stronger correlation between TS I and PS. One study reported that auditors who broadly interpret the audit evidence show a higher level of PS and are more effective in processing evidence (Rasso, 2015) since those who think broadly improve the audit quality (Griffith et al., 2014). These findings affirm the global thinking style, which deals with abstract matters and falls under TS I. We also observed some congruence in the legislative style (under TS I) and autonomy (a component of PS). Individuals inclined towards this style prefer to do things their way. On the other hand, autonomy in PS entails self-direction (Hurtt, 2010; Sagiv & Schwartz, 2000), an exercise of independent thought and action (Schwartz, 2012). Seen this way, a relation between the two supports a more substantial relation between PS and TS I, a point consistent with the results of the Kendall tau-B analysis.

**Exploratory Analysis**

The exploratory analysis portion of our study was not intended to set qualifications or criteria for PS; instead, it was designed to explore the patterns in the sociodemographic attributes and TS of a professionally skeptical auditor. The results of the k-Modes clustering are presented in Table 2.

The results of the k-Modes clustering left some categories undetected. In the clusters, only the ranks of partners and associates came out, only 6-10 years and 5 years or less appeared as years of experience, and only licensed auditors surfaced. Standard clustering techniques such as k-Modes do not assume statistical distribution of variables (Pennazza & Santonico, 2019; Magidson & Vermunt, 2002) and use randomly selected patterns, so to rule out the possibility of a random algorithm error, we ran two simultaneous sets of cluster analyses with varying initial patterns as centroid. Both runs completed with a similar set of patterns per cluster.

**Table 2.** *Patterns Existing Among the Responses After Cluster Analysis*

| | Years of Experience | Rank | Sex | Firm Size (with Global Affiliation) | CPA License | Thinking Style | Professional Skepticism |
|---|---|---|---|---|---|---|---|
| Cluster 1 | 6-10 years | Partner | Male | No | Yes | II | Low |
| Cluster 2 | 5 years or less | Associate | Female | Yes | Yes | I | High |

Table 2 shows that auditors under Cluster 1 with low PS are more-experienced male CPAs working as partners in an audit firm without global affiliation and manifesting TS II. Auditors with high PS under Cluster 2 are less-experienced female CPAs working as associates in auditing firms with global affiliation and manifesting TS I.

Further analysis of the cluster representations

shows that an individual with a dominant TS I exhibits high PS. Individuals with TS I favor low-degree structure, are more creative, and require cognitive complexity as they manifest higher self-esteem and openness to experience. This is a particularly compelling interpretation, as PS is consciously embedded during discussions on accounting and auditing standards, but the results imply that merely following standards does not suffice. Although auditors need to be dutifully firm in conducting the audit process, in most cases they must exercise professional judgment in response to audit risk and setting up materiality. These results demonstrate that cognitive complexity and creativity (TS I) are essential in exercising professional judgment to promote and maintain high PS.

***Sex***

According to our results, females exhibit more skeptical mindsets than males. One possible reason for this disparity is that females tend to use their instinct and intuition to avert negative outcomes. They tend to put more effort into investigation and set low materiality thresholds (Hardies et al., 2010). The keen attention to detail often associated with females often results in a more thorough, although time-consuming, audit.

***Length of Experience***

Table 2 shows that length of experience diminishes professional skepticism. Previous research, however, does not offer a unanimous view about the role of experience in one's professional skepticism. Less-experienced auditors often function in limited areas of audits and face unfamiliar tasks. Such conditions often lead them to double-check their decisions and actions and to avoid error by observing more keenly. They also feel the pressure to perform well to be promoted, and consequently they do more work than needed. On the other hand, increased experience often also includes increased exposure to the audit process. Auditors with longer exposure to and association with procedures develop a certain familiarity with the procedures, resulting in quicker decisions and confirmation bias. Some studies found that experience can be unfavorable to auditors' performance (Chia-Ah & Karlsson, 2010; Payne & Ramsay, 2005) when interacting with PS (Hussin et al., 2017).

***Rank***

As Table 2 shows, auditors occupying higher ranks exhibit lower PS. Previous studies also reported a similar observation (Payne & Ramsary, 2005; Philips, 1999; Shaub & Lawrence, 1999; Wheeler & Arunachalam, 2008). High-ranking auditors lean towards management and supervisory roles, leaving low-ranking auditors more exposed to fieldwork. Because of minimal personal and direct interaction, high-ranking auditors need to rely on the completion of audit routines, consequently impeding the "search for knowledge" and "interpersonal understanding" components of PS. High-ranking auditors, who presumably have more experience, have access to almost all information (including confidential ones), allowing them to see the bigger picture. Because of their broader view of things, they show a greater tendency to side with a higher materiality threshold than that of low-ranking auditors who, with presumably lesser experience, assume most amounts as material.

***Firm Size and Global Affiliations***

Compared with auditors in firms without global affiliations, auditors in firms with such connections showed a higher level of PS, as our analysis shows. The latter audit both large and small companies (Arens et al., 2012) and often find themselves subjected to foreign peer review. The

pressure that they encounter from PCAOB and SEC scrutiny makes their exercise of PS prominent in every engagement (Gissel, 2018; Suseno & Nofianti, 2018).

***CPA License***

The results of our exploratory analysis show that the highness or lowness of PS level does not change with possession of a CPA license. As Table 2 shows, Cluster 1 and Cluster 2 both reflected CPA license holders, with the former exhibiting low PS and the latter high PS. Previous studies (e.g., Shaub & Lawrence, 1996; Tysiac, 2017) yielded differing findings about which category of auditors (i.e., license holders or non-holders of license) manifested high PS, so our study's findings fill up some of that gap but at the same time also opens new questions for further study, especially about how and why, CPAs are present in both clusters despite the diversity of their attributes.

**4.0 Conclusion**

Professional skepticism is an individual's rationalization of delaying conclusions until satisfied with the evidence, while thinking style, as a trait, is a personal preference for information processing and decision-making. Each person possesses these relatively stable mental dispositions. We acknowledge their significance, particularly to those who perform external audit functions and deal with information risk, especially when the public values their opinion of financial statements.

In this study, we deduced the interaction between PS and TS. For instance, in situations needing heightened PS levels, the curious nature of the creative thinkers drives their "what if" reasoning, thus allowing professional skepticism to thrive accordingly. On the other hand, under the same circumstances, norm-favoring auditors tend to tap their nondominant thinking style in conjunction with other factors. Therefore, environments that promote cognitive complexity, an inquiring attitude, and the creative generation of ideas and solutions foster the growth of professional skepticism.

In addition, just as culture affects a person's individual traits, so does it also shape their relationships and associations, and so one's thought process vis-à-vis dealing with information is a psychological and a cultural function at the same time.

In terms of sociodemographic attributes, heightened skepticism is more prominently manifested by low-ranking, less experienced female auditors working in globally affiliated firms. The possession of a professional license is not a distinguishable mark.

Our findings may prove helpful for conceptualizing training programs that develop creative generation of ideas and cognitive complexity among auditors with low professional skepticism.

The variation in findings and the limited literature about the relationship between the thinking styles and professional skepticism of auditors continue to be a wellspring of opportunities for future cross-cultural research in psychology and audit. One valuable endeavor might be to study the causality of the variables under different cultural settings. Another recommendation would be to use probabilistic randomized sampling to give the findings wider generalizability. Lastly, other researchers may want to investigate why licensed CPAs manifest both high and low levels of PS.

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