The Relationship between Auditor's Thinking Styles and Professional Skepticism: Who Should We Hire?

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ABSTRACT

This study aimed to examine the association between auditors' experience, Type I and Type II thinking styles, and level of professional skepticism. The Theory of Cognitive Development was used to analyse the framework surrounding thinking style, experience, and professional skepticism. A questionnaire was developed based on Sternberg & Wagner (1991) and Hurtt (2010) and 140 responses were collected from senior auditors in the Klang Valley and analysed using ANOVA. Findings demonstrated that professional skepticism demanded auditors with conservative thinking and lower cognitive complexity rather than auditors with higher cognitive complexity or inventiveness. This reflected that senior auditors should have a healthy dose of skepticism as well as a range of thinking styles, particularly the Type II style to succeed in the audit industry. However, there was no correlation between auditors' experience and the level of professional skepticism, which may conflict with past research that discovered a positive association between auditor working experience and professional skepticism. The findings add to academics' and audit regulators' understanding of the importance of using professional skepticism and proper thinking styles in every audit engagement. It also provides insights to the management team to ensure that the most qualified auditors are hired in their organisation.

Keywords: Professional Skepticism, Thinking Styles, Auditors' Experience, Senior Auditors, Cognitive Development.

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INTRODUCTION

Plumlee et al. (2015) and Nelson (2009) suggested that critical assessment, evidence evaluation, and complex decision-making skills are essential for problem-solving, requiring both thinking style and professional skepticism. Type I and Type II thinking styles are linked to higher professional skepticism, but differ in cognitive complexity and creativity, with Type I requiring more creativity and Type II requiring less complexity and conservatism (Zhang, 2009).

Agustina et al. (2017) found that both Type I and Type II thinking styles did not significantly impact auditors' performance, indicating no direct impact on their problem-solving skills. Honn and Ugrin's (2012) revealed that auditors' mismatched thinking styles contributed to their negative performance. Previous studies have indicated that auditors should have a comprehensive understanding of their preferred thinking style to effectively make audit judgments. Wolfe et al. (2014) found that auditors with a Type I thinking style tend to focus on negative audit evidence, becoming more sensitive to management assertions, reducing the risk of audit deficiencies.

Eutsler (2017) found that auditors using creativity in audit judgment, a Type I thinking style, have higher professional skepticism due to its effectiveness in problem-solving and adaptability. However, Plumlee et al. (2015) found that using Type I thinking style alone in audit engagement only enhances explanations, not correct solutions, as auditors tend to generate potential explanations. Eutsler (2017) also found that creativity in auditing can lead to time pressure, deterring auditors from assessing evidence appropriately, affecting audit quality and potentially reducing skepticism. Urboniene et al. (2013) found that auditors with higher cognitive complexity or creativity are not necessarily skeptical, suggesting professional skepticism does not necessitate risk-taking or new approaches in audit judgment.

Plumlee et al. (2015) found that Type II thinking style significantly influenced professional skepticism, leading to greater likelihood of auditors generating and choosing correct explanations in analytical procedures. Urboniene et al. (2013) and Chadegani et al. (2015) found a significant link between Type II thinking style and professional skepticism, suggesting auditors with lower cognitive complexity are more skeptical. On the other hand, Wolfe et al. (2014) found that auditors with Type II thinking tend to overrely on analytical processing in auditing, reducing skepticism. They relied on obvious problem context evidence, following procedures without a skepticism mindset.

Auditors' professional skepticism can be influenced by their experience and knowledge, which is influenced by their level of education and training. (Nelson, 2009). Knowledge acquisition and degree qualification enable individuals to master effective thinking skills, enabling them to make better decisions in accounting, business, and other majors (Urboniene et al., 2013). In addition, individual thinking style is influenced by their preferred way of using available abilities and their comfort level in managing activities, suggesting it's not solely related to ability (Albaili, 2007). Experienced auditors possess a higher level of knowledge about errors and non-errors frequencies, and are more familiar with evidence patterns (Nelson, 2009). This could boost auditors' professional skepticism by exposing them to high-risk material misstatements in evidence. Chiang and Chiang (2016) suggested that senior auditors tend to adopt a Type I thinking style due to their extensive knowledge and experience. This showed that working experience can influence auditors' level of professional skepticism.

Rodgers et al. (2017) found that knowledge, position, and judgment are crucial factors in audit planning stages, necessitating auditors to exercise professional skepticism in every engagement. Experienced auditors often have high self-confidence in providing audit opinions due to their expertise in assessing errors and non-errors, making them easy to detect misstatement risks. (Nelson, 2009). Experienced auditors' familiarity with common audit issues reduces skepticism, leading to undetected errors or misstatements, resulting in audit deficiencies (Hayes, 2016). The study indicated that auditors with extensive knowledge can effectively detect management fraud, but this knowledge

can also negatively impact audit decision-making due to familiarity risks. Familiarity threat can arise from long client relationships, potentially deterring auditors from exercising professional skepticism due to over trust (Curtis, 2014). Butler and Ghosh (2015), Carrera et al. (2008) and Rodgers et al. (2017) found that inexperienced auditors tend to become more skeptical in making decisions and performing their tasks due to lack of knowledge and experience, leading to curiosity and questioning about audit evidence, thereby ensuring appropriate audit opinions.

Rodgers et al. (2017) found that auditors' age is linked to their level of experience and knowledge, indicating their professional skepticism in providing audit judgments. Senior auditors exhibit higher professional skepticism and complex knowledge of professional standards, benefiting from their ability to interact with clients on controversial accounting issues (Brown-Liburd et al., 2013). Urboniene et al. (2013) found a significant correlation between age and professional skepticism, with older individuals with more experience and knowledge exhibiting higher levels of skepticism.

The research indicated a significant correlation between auditors' thinking style and professional skepticism, despite the third hypothesis's disparity regarding auditors' experience. The results are also aligned with Sternberg and Wagner's (1991) Thinking-styles theory. This study will reveal that auditors' thought processes significantly influence their skepticism about their abilities, benefiting both researchers and practitioners. It also highlights the importance of professional skepticism in audits, highlighting the failures of auditors who lacked it. It suggests that professional organisations should encourage auditors to use skepticism effectively and provide training to help them spot management fraud. This training can help auditors become more skeptical thinkers. Besides that, this study also provides an insight to the management team to ensure that the most qualified auditors are being hired in their organisation. Academics should explore skepticism and decision-making using additional teaching methods, challenging educational institutions to educate students at all levels to effectively think and make decisions. Cultivating a Type II thinking style, which involves a lower level of cognitive complexity, can help promote professional skepticism.This study suggests that proper policies for developing future auditor's critical and skeptical thinking can benefit the s universities in producing high quality future auditors.

Section 2 will review the literature and develop the hypotheses about Type I, Type II and auditor experience as the three professional skepticism factors considered in this study. Section 3 will discuss the quantitative method used to conduct the questionnaire study. Section 4 will present and analyse the results, and Section 5 will discuss and conclude the results of the study.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Theory of Cognitive Development

The research framework for this study was based on Piaget's (1951/2015) Theory of Cognitive Development, according to which the auditors' thinking styles and experiences have an impact on their level of professional skepticism. This Theory tried to create four phases of intelligence that were categorised according to age ranges for both children and adults. It discussed the nature and development of human intelligence. The four phases of intellect are directly related to the physical environment, claims Wadsworth (1979). Vygotsky (1962) discovered that intellect is independent of age, nonetheless. Instead, social interaction between people influences IQ. This suggests that the idea can be connected to the association between the professional skepticism of auditors and their experience.

The intelligence of auditors may vary depending on their age, with older auditors potentially possessing more knowledge and experience than younger auditors. However, due to decreased social interaction, which in turn leads to a reduced degree of creativity or critical thinking, elderly people may not have had exposure to high levels of knowledge and experience (Palut, 2008). Consequently, a result

of this is a deterioration in the quality of a conclusion, a judgement, and an evaluation. To prevent audit failures, auditors are urged to exercise greater professional skepticism when assessing fraud (Hayes, 2016). To perform effectively in the workplace, auditors must have the proper cognitive thinking style for the task at hand.

According to Kohlberg's (1984) degrees of moral judgement, which are based on Piaget's (1951/2015) Theory, moral judgement and decisions are intertwined. As a result, an individual's decisions may be based on their cognitive growth, whether they are ethical or unethical. The ability to detect, process, and interpret information for the sake of problem-solving is generally defined as a widespread variable influenced by cognitive development (Liu et al., 2008). It offers the theoretical framework for this study's examination of different thinking styles and professional skepticism. According to this theory, thinking style and professional skepticism are related because auditors should be skeptical and question everything, which leads them to select their preferred method for making audit decisions and producing excellent audit quality. Because decisions made based on the data gathered will have a major impact on the performance and reputation of the organisation, auditors should have a suitable level of professional skepticism (Hayes, 2016).

Thinking Styles

Sternberg's mental self-management approach, also known as "mental self-government," identified 13 thinking styles and categorised them into five dimensions: function, form, level, learning, and scope, allowing individuals to utilise their abilities in their daily work.

Mental self-government has three functions: legislative, executive, and judicial. It can be categorized into four forms: monarchic, hierarchical, oligarchic, and anarchic. It operates globally and locally, with global and local styles. Leanings are liberal and conservative, with liberal enjoying novelty and ambiguity and conservative relying on established rules.

Studies have identified three main types of thinking styles: Type I, Type II, and Type III (Cheng & Zhang, 2014; Emamipour & Esfandabad, 2013). Type I focuses on creative ideas and strategies, indicating higher cognitive complexity. Type II is norm-favouring and has lower complexity, including executive, local, monarchic, and conservative styles. Type III is anarchic, oligarchic, internal, and external. An individual's thinking style depends on the task's nature, demonstrating that it can be creative or conservative depending on the situation. In this study, Type III thinking style was not examined because of its situational-dependent style. Only Type I and Type II thinking styles were selected since these thinking styles had a higher probability of relating to professional skepticism due to their high levels of cognitive thinking and better problem-solving skills.

Professional Skepticism

Professional skepticism is crucial in the audit profession, but many auditors fail to practice it (Hurtt et al., 2013). A skeptical mindset increases the chances of detecting fraud and errors, leading to audit regulators calling for studies to examine the elements of professional skepticism (Knechel et al., 2010). Concerns about the lack of professional skepticism among auditors and its importance in audits have been raised by regulators, oversight bodies, and standard setters (Chiang & Chiang, 2016). Despite its importance, there is no consensus on its definition and measurement, and criticisms of auditing standards for providing better guidance (Hurtt et al., 2013).

Hurtt (2010) emphasized the need for a specific professional skepticism framework in accounting and auditing due to the difficulty in measuring skepticism and the lack of standard measurement methods in various studies. She also identified professional skepticism as a combination of a person's character and a condition, influenced by factors such as questioning mind, suspension of judgement, knowledge search, interpersonal understanding, self-determination, and self-confidence. Hurtt (2010)

categorized professional skepticism into three perspectives: evidence-related, human-related, and action-related, focusing on questioning mind, suspension of judgement, interpersonal understanding, and self-determination and self-confidence. The Hurtt's professional skepticism framework measures auditors' skepticism using thirty statements from professional standards, theories, and psychology studies. Hussin et. al. (2017) argued that each characteristic contributes to auditors' skepticism, but variations exist among auditors. Royaee et al., (2013) study found that three out of six Hurtt's professional skepticism characteristics significantly influence the decision-making of Iranian professional auditors. Gabryela (2017) also found that auditors in Indonesia utilized all six of Hurtt's professional skepticism characteristics for fraud detection, as per the study's findings.

Based on prior studies discussed above, the professional skepticism framework developed by Hurtt (2010) was reviewed by experts. It showed that Hurtt's professional skepticism frameworks were a reliable method that can be used to assess the influence of thinking style on professional skepticism level.

Hypotheses Development

This study developed the research hypotheses to reflect the relationship between thinking style and experience and the auditors' professional skepticism in conjunction with the framework that was proposed. There are three different categories of thinking. In contrast to Type III thinking styles, Type I and Type II thinking styles were used in this study because they were more likely to be related to professional skepticism. This is because both Type I and Type II thinking styles necessitate highly developed degrees of critical thinking and problem-solving abilities (Urboniene et al., 2013).

According to several studies, the Type I thinking style—which is adaptable, flexible, and effective—is superior to the Type II thinking style in terms of adaptability. This is due to the auditors' ability to apply creativity to solve difficulties when using their Type I thinking style (Chen & Liu, 2012; Zhang & Higgins, 2008). As a result, this study contended that Type I and Type II thinkers are more likely to have a high level of professional skepticism. Nelson (2009) asserted that as problem-solving is complicated, non-routine, and demands cognitive complexity, it is related to professional skepticism. Professional skepticism does call for critical analysis, evidence appraisal, and complicated decision-making abilities (Plumlee et al., 2015). This demonstrates the need for problem-solving abilities in both thinking approaches and professional skepticism. Professional skepticism is correlated with higher levels of Type I and Type II thinking styles. However, those who think in Type I need higher levels of cognitive complexity or creativity, whereas those who think in Type II need lower levels of cognitive complexity and more conventional thinking (Zhang, 2009).

Previous research has demonstrated a strong association between the Type II thinking style and professional skepticism (Bongcales et al., 2022; Chadegani et al., 2015; Plumlee et al., 2015; Urboniene et al., 2013). These investigations revealed that Type II thinkers exhibit greater skepticism than Type I thinkers due to the expectation of following rules and paying close attention to details in audit tasks. Instead of concentrating on coming up with creative prospective explanations, Type II thinkers are more likely to focus on finding flaws and limitations in their explanations to come up with the right answers.

Moreover, several studies have found a definite association between a Type I thinking style and professionalism (Eutsler, 2017; Wolfe et al., 2014). According to these findings, auditors who are creative tend to have high levels of professional skepticism. When doing audit duties, a creative auditor is more likely to use analogical reasoning and divergent thinking, which could improve the quality of the audit and raise professional skepticism. Auditors can exercise professional skepticism by applying creativity because they are not relying on analytical techniques but rather using novel approaches for audit judgement. However, Eutsler (2017) provided evidence that, while creativity requires more innovative moral justification processes, it can reduce skepticism because of the challenge of time pressure. The auditors cannot properly review and assess the evidence because of time constraints.

There is no correlation between Type I thinking style and professional skepticism, according to Urboniene et al. (2013). This suggests that practising professional skepticism does not call for auditors with creative traits, but rather auditors with a lower level of cognitive complexity and a more traditional way of thinking. However, Bongcales et al. (2022) proposed that auditors' professional skepticism is strongly correlated with creativity-generating Type I thinking style and moderately with norm-favoring thinking style of Type II, influencing their approach to financial reporting. The following research hypotheses were created as a result:

H_1: There is a relationship between Type I thinking style and professional skepticism among the auditors.

H_2: There is a relationship between Type II thinking style and professional skepticism among the auditors.

Based on their previous experiences performing examinations and auditing financial accounts, auditors' experience can be evaluated (Pramana & Irianto, 2016). The number of completed audits and years of experience in the auditing industry both show the level of experience of the auditors. Age may also be related to experience and knowledge, which may represent some professional skepticism on the part of the auditor when making an audit judgement (Rodgers et al., 2017). Professional skepticism also emerges when auditors identify high-risk statements using their understanding of the patterns of evidence and the rates of errors and non-errors (Nelson, 2009). Older auditors are more objective in assessing other items and activities due to their superior knowledge and experience, according to Chiang & Chiang (2016) and Urboniene et al. (2013). Because work experience increases the auditors' level of professional skepticism, older auditors are more likely to have Type I thinking styles (Chiang & Chiang, 2016). Rodgers et al. (2017) found that knowledge, position, and judgement were important variables in the audit planning stage, which necessitates auditors exercising appropriate professional skepticism in an audit engagement.

Pramana and Irianto (2016) evaluated the auditors' experience based on their previous experiences performing examinations and auditing financial accounts. The number of completed audits and years of experience in the auditing industry both showed the level of experience of the auditors. Age may also be related to experience and knowledge, which may represent some professional skepticism on the part of the auditor when making an audit judgement (Rodgers et al., 2017). Professional skepticism also emerges when auditors identify high-risk statements using their understanding of the patterns of evidence and the rates of errors and non-errors (Nelson, 2009). Older auditors are more objective in assessing other items and activities due to their superior knowledge and experience, according to Chiang & Chiang (2016) and Urboniene et al. (2013). Because work experience increases the auditors' level of professional skepticism, older auditors are more likely to have Type I thinking styles (Chiang & Chiang, 2016). Rodgers et al. (2017) supported this claim by finding that knowledge, position, and judgement were important variables in the audit planning stage, necessitating auditors to exercise appropriate professional skepticism in an audit engagement.

Therefore, it is expected that older auditors make better audit decisions than younger auditors. Urboniene et al. (2013) also found a significant relationship between age and professional skepticism. Scholars have suggested that the level of knowledge and experience of older students may influence their level of professional skepticism. However, there is a possibility that experienced auditors have more confidence due to their knowledge and expertise in assessing errors, non-errors, and risk misstatements (Nelson, 2009). Consequently, this decreases their level of skepticism since they are familiar with the issues, resulting in them not being able to detect errors or misstatements (Hayes, 2016). Therefore, the following research hypothesis was developed:

H_3: There is a relationship between auditors' experience and their level of professional skepticism.

METHOD

Questionnaires Design

The questionnaire consisted of items that were established from previous studies, with some modifications to fit the context of this study. There were modifications to the number of questions in Section A, which was adopted from Sternberg and Wagner (1991), and questions in Section B, which was adopted from Hurtt (2010). The questionnaire for this study was divided into three sections, representing thinking styles, professional skepticism, and demographic profile. Section A measured the independent variables of this study, which were the thinking styles of the senior-level auditors. This section was further divided into two sub-sections. One subsection consisted of questions related to Type I thinking style, and the other subsection consisted of questions related to Type II thinking style. Section B focussedon evaluating the level of professional skepticism of the auditors. Section C was related to the demographic profile of the auditors. The questions involved were gender, age, major study, level of education, designation or position, tenure of experience, and the range of salary.

Information on gender was needed as there are potential differences in their level of professional skepticism between male and female auditors. Age was also an important piece of data since the level of professional skepticism may be influenced by their age, which represents their experience as auditors. The respondents were required to state their age so that it will be easier to range accordingly during the analysis. In addition, major study and level of education information were also important to evaluate the auditors' level of professional skepticism. The options given for the major study were accounting, business administration, and others, while the options for the level of education are diploma, bachelor's degree, and professional. These options enabled this study to identify that the thinking styles of the respondents may be different due to their different curriculum development and can justify whether professional skepticism is course-specific or otherwise. The three last questions in Section C comprised the designation or position of the respondents, years of experience, and range of salary that play important roles in determining whether the auditors had a high level of knowledge and experience in the auditing profession, thus affecting their level of skepticism in making audit judgements (Urboniene et al., 2013).

Variables Measurement

Table 1 defines the variables used in this study which include Type I thinking style, Type II thinking style, and experience of auditors. In Section A, the questionnaire evaluated the thinking styles of the respondents, which consisted of two thinking styles, namely, Type I thinking style and Type II thinking style. Type I thinking styles can be categorised as legislative, judicial, hierarchical, global, and progressive, while Type II thinking styles included executive, local, monarchic, and conservative. The thinking styles constituted the independent variables of this study. For each type of thinking style, there were 5 questions used to measure the auditors' thinking style in solving problems, carrying out tasks, and making decisions in audit judgement. The Inventory-Revised II (Sternberg & Wagner, 1991) was used to measure the thinking styles based on a seven-point Likert scale of '1' if the statement does not fit them at all, if they rarely do things this way in carrying out their tasks, and '7' that indicated the statement characterises the respondents extremely well, i.e., they almost always do their tasks this way. The other values in between denoted that the statement fit the respondents in varying degrees.

Section B of the questionnaire evaluated the dependent variable, which was professional skepticism, based on the scales used by Hurtt (2010) to measure professional skepticism. The respondents were required to evaluate 15 statements that addressed skepticism characteristics such as a questioning mind, the suspension of judgement, the search for knowledge, integrity and motivation, personal autonomy, and self-esteem. The respondents' level of professional skepticism was measured by giving a rating of '1', which indicated strongly disagree, to '6', which indicated strongly agree. The respondents could also choose the other values in between when the statement fit them to varying degrees.

Table 1. Variables Measurements

Independent variables	Instruments	References
Thinking styles	LEGISLATIVE (Work on tasks that require creative strategies)	Sternberg & Wagner (1991)
Type I	JUDICIAL (Work on tasks that allow for one's evaluation) HIERARCHICAL (Prioritize tasks according to its significance) GLOBAL (Pay more attention to the overall picture of an issue) PROGRESSIVE (Work on tasks that involve ambiguity)	
Type II	EXECUTIVE (Work on tasks with clear instructions and structures; implement tasks with established guidelines) LOCAL (Work on tasks that require working with details) CONSERVATIVE (Work on tasks that allow one to adhere to the existing rules and procedures in performing tasks) MONARCHIC (Work on tasks that allow complete focus on one thing at a time)	
Dependent Variable	Professional Skepticism	Hurtt's (2013)

Data Collection

In conducting the survey, this study used non-probability sampling on the total population of auditors in 80 audit firms in Klang Valley, Malaysia. Klang Valley was selected because it consisted of 57.6% of the total audit firms in Malaysia (Hussin et. al., 2017). The study used purposive sampling in the selection of respondents as it is more convenient and simpler to perform compared with probability sampling (Sekaran and Bougie, 2016). Each of the audit firms had an average of 20 auditors, giving a total population of 1600 auditors. According to the reliability tabulation by Krejcie and Morgan (1970), the sample size that is appropriate for a population of 1600 is 310 auditors. Therefore, 310 auditors were randomly chosen from the 80 audit firms to make the data reliable for analysis. In addition, based on the rule of thumb (Sekaran & Bougie, 2016), Roscoe (1975) proposed a sample size that is larger than 30 and less than 500, which is appropriate for most research as too large a sample size could result in Type II errors.

Specifically, senior-level auditors were chosen because they are believed to have a high level of professional skepticism. Most senior-level auditors have more responsibility to assess and detect management fraud risk to ensure a higher level of audit quality (Hayes, 2016). The questionnaires were distributed randomly to 310 auditors in the Klang Valley who were willing to participate in this study. Most of the respondents were majors in accounting with either a diploma, bachelor's degree, or professional. The age range of the respondents was 24-42, and all the respondents were Malaysians.

Test of Data Credibility

Normality Test

The normality test was performed to confirm the general assumptions in this study were not violated. To conduct the parametric test, the data must be normally distributed (Field, 2013). There are various ways to perform the test of normality such as the Skewness and Kurtosis of the data distribution,

Kolmogorov-Smirnov, and Shapiro-Wilk normality test, or by referring to the Q-plot (Pallant, 2013). For this study, the test of normality was performed on the items related to the level of professional skepticism which was the dependent variable in this study.

Table 2. Skewness, Kurtosis, Mean and 5% Trimmed mean.

Variables	N	Skewness	Kurtosis	Mean	5% Trimmed Mean
Professional skepticism	140	0.235	0.156	62.56	62.44

Table 2 shows the normality test performed on the dependent variable of this study. As shown in the Table, 140 samples were assessed for data normality based on the questions related to professional skepticism. The Skewness and Kurtosis for the dependent variable recorded the range in between 2 and -2. The skewness of the professional skepticism was 0.235 while the kurtosis also was in the range of 2 and -2, which was recorded at 0.156 for professional skepticism. According to George and Mallery (2003), data is considered normal if it is within the range of 2 and -2. Kolmogorov-Smirnov statistic in tests of normality indicated non-significant results (p- value = 0.20, which is greater than .05), thus indicating normality (Field, 2013).

There are also small differences between the mean score for the variable assessed in the normality test with the trimmed mean score. The difference between the mean score and the 5% trimmed mean score for professional skepticism was only 0.12. Small differences can be considered insignificant to this study, and it dids not affect the normal distribution of data. Thus, it can be assumed that there was no violation of data normality in this study.

Reliability and Validity Test

Following Hair et al. (2019), tests for reliability and validity of the constructs were performed. Table 3 shows the results of the reliability and validity tests on the items of the dependent variable in this study. The Cronbach's alpha for all items in this study was recorded at 0.919. It showed that the scale used in this study was reliable since it was greater than the threshold value of 0.7. Factor loadings from the result of the factorial validity test also showed that all items tested could be considered important and valid in this study. Scores of the factor loadings on all items were above the acceptable value of 0.5. The threshold value of 0.7 was used to ensure that the data had internal consistency. Therefore, if the test score exceeded 0.70, we can consider the study's scale reliable (Pallant, 2013).

Table 3: Cronbach's Alpha and Factor Loadings

Variables	Factor Loadings
Cronbach's Alpha = 0.919	
Type I thinking style	0.747
Type II thinking style	0.812
Professional skepticism	0.773

Data analysis

ANOVA was performed to meet the three research objectives of this study. The first research objective was to examine the relationship between Type I thinking style and professional skepticism. The second research objective was to examine the relationship between Type II thinking style and professional skepticism and the last research objective was to examine the relationship between auditors' experience and their level of professional skepticism. To achieve these objectives, three research hypotheses were developed and tested by using ANOVA.

RESULTS

This study examined the relationship between Type I thinking style, Type II and auditors' experience and professional skepticism. Descriptive statistics and correlation tests were conducted before ANOVA were used to test the hypotheses.

Descriptive Statistics and Correlations

Table 4 summarises the distribution of the responses. The Table shows descriptive statistics for the core demographic variable (age) and other demographic variables on gender, education level, major of study, designation or position, years of experience, and salary. For gender (M = 1.69), out of the total 140 respondents, most of the responses were from female respondents, with a frequency of 96, which is 68.6% of the total respondents, while the remaining 44, which comprised only 31.4%, are male respondents. For age (M = 1.13), 123 respondents are between 21 and 30 years old (87.9%), and the respondents who were between 41 and 50 years old showed the lowest frequency of 1 (0.7%). The number of experiences (M = 1.74) of less than 3 years showed the highest frequency of 64 (45.7%), followed by the number of experiences between 3 and 6 years with a frequency of 59 (42.1%). This result can be used to analyse the relationship between the knowledge and experience of the auditors and their level of professional skepticism (Nelson, 2009).

As for the major of the study (M = 1.19), 131 (80.7%) respondents were from accounting majors, and another 27 (19.3%) respondents were from business administration majors. As for education level (M = 2.15), 95 (67.9%) respondents held bachelor's degrees, 23 (23.6%) respondents held professional qualifications, and 12 (8.6%) respondents hed diplomas. For the position (M = 1.34), the junior executive position showed the highest frequency of 104 (74.3%), followed by the senior executive position with a frequency of 25 (17.9%). The last descriptive data was salary (M = 2.69), which showed the highest frequency of 51 (36.4%) respondents for the salary ranged between RM2000 and RM2999. The information about the major of the study, education level, designation or position, and salary was similar to the study conducted by Urboniene et al. (2013).

Table 4: Demographic Statistics

Variables	Frequency	Percentage (%)
Gender		
Male	44	31.4
Female	96	68.6
Total	140	100
Age		
21-30	123	87.9
31-40	16	11.4
41-50	1	0.7
Total	140	100
Education level		
Diploma	12	8.6
Bachelor's degree	95	67.9
Professional	33	23.6
Total	140	100
Major of study		
Accounting	113	80.7
Business administration	27	19.3
Total	140	100
Designation		
Junior executive	104	74.3
Senior executive	25	17.9
Manager	11	7.9
Total	140	100
No. of experience		

Less than 3 years	64	45.7
3 – 6 years	59	42.1
7-10 years	7	5.0
More than 10 years	10	7.1
Total	140	100
Salary		
RM900 – RM1999	15	10.7
RM2000 – RM2999	51	36.4
RM3000 – RM3999	36	25.7
RM4000 and above	38	27.1
Total	140	100

Table 5 indicates the correlation between all the main variables in this study. The recorded correlation between Type I thinking style and Type II thinking style showed that the Type I thinking style and auditors' experience were 0.417 and 0.021 respectively. According to Pallant (2013), two variables with bivariate correlation of 0.9 or more in the same analysis should not be included. The other values among the independent variables were not too high and did not exceed 0.9. This result indicated that all the variables could be retained as no multicollinearity issue existed.

Table 5. Correlation Matrix

Variables	Professional skepticism	Type I thinking styles	Type II thinking styles	Auditors' experience
Professional skepticism	1			
Type I thinking styles	0.350**	1		
Type II thinking styles	0.454**	0.417**	1	
Auditors' experience	0.009	0.021	0.064	1

**Correlation is significant at the 0.01 level (2-tailed)

ANOVA and Hypotheses Testing

Table 6 presents the results of the ANOVA on professional skepticism. The ANOVA was used to test the effect of independent variables affected the dependent variables. Table 6 shows the results of the ANOVA in testing the relationship between Type I thinking style, Type II thinking style, and auditors' experience with professional skepticism.

Table 6: Results of ANOVA

Variables	Dependent: Professional skepticism				
	Df	SS	MS	F	Sig
Type I thinking styles	53	2671.376	50.403	1.429	0.070
Type II thinking styles	51	2751.710	53.955	1.608	0.025**
Auditors' experience	2	33.589	16.795	0.406	0.667

** Statistically significant (1% level, one-tailed).

H1 stated that there is a relationship between Type I thinking style and professional skepticism among the auditors. Based on Table 6, the ANOVA showed no significant relationship between Type I thinking style and professional skepticism ($F = 1.429$, $p = 0.070$), where $p > 0.05$. Therefore, H1 was rejected. However, H2 suggested that auditors with Type II thinking styles had a significant relationship with their level of professional skepticism. Based on Table 6, the result confirmed the hypothesis. The

result showed a significant relationship between Type II thinking style and professional skepticism (F = 1.608, p = 0,025, p<0.05). Thus, H2 was supported. Nevertheless, H_3 also suggested that there is a significant relationship between auditors' experience and their professional skepticism. ANOVA showed no significant relationship between auditors' experience and their level of professional skepticism (F = 0.406, p = 0.667) where (p>0.05). Therefore, H_3 is rejected.

DISCUSSION AND CONCLUSION

Discussion

Type I - Thinking style and professional skepticism (H1)

This result is consistent with Urboniene et al. (2013), who found no significant relationship between Type I thinking style and professional skepticism. The result indicated that professional skepticism does not require higher levels of cognitive complexity or creativity. This suggests that auditors do not need to exhibit legislative and creative thinking when providing audit opinions, as they should strictly gather and assess the evidence by the prescribed procedures. Individuals with a Type I thinking style have a higher tendency to take new approaches as they may be risk-takers and, thus, are not necessarily skeptical. In other words, this style is not appropriate for auditors because they should not take higher risks in performing audits as they need to follow certain guidelines and standards. Based on the study conducted by Bongcales et al. (2022) and Eutsler (2017), auditors with Type I thinking styles have a higher level of professional skepticism. Auditors with creative characteristics are desirable by audit firms as they engage in the problem-finding process, have better problem-solving skills, and tend to ask more questions. Those skills are interrelated to professional skepticism that requires auditors to have problem-solving skills, questioning minds, and hypothesis generation. Therefore, it is proposed auditors who employ creative thought processes exhibit higher levels of professional skepticism.

However, Eutsler's (2017) study found that auditors with a creative mindset (Type I thinking style) need a more creative moral justification process, which can lead to time pressure issues. Time pressure harms audit effectiveness since auditors' attention is driven away from the main audit tasks, such as detecting fraud, which decreases the extent and depth of testing chosen by the auditors. Due to time pressure, the auditors tend to involve themselves in an inappropriate assessment of unusual evidence and sign off on work papers before the usual time. With such behaviours, the auditors would not be able to exercise the appropriate level of professional skepticism, and this affects audit quality.

In addition, the previous study by Plumlee et al. (2015) provided evidence that auditors with a Type I thinking style have a lower level of professional skepticism since they only focus on generating potential explanations for an unusual situation. This shows that auditors with such thinking styles are not skeptical, as they are not focusing on the concrete details for decision-making. They would not be able to critically evaluate management assertions to detect potential management fraud risk and, thus, have a lower level of professional skepticism. Therefore, the result is not supported, as auditors with a Type I thinking style engage less professional skepticism.

Type II - Thinking style and professional skepticism (H_2)

This result is consistent with the result shown by Urboniene et al. (2013), who found a positive relationship between Type II thinking style and professional skepticism. The result indicated that professional skepticism does not require higher levels of cognitive complexity or creativity but lower levels of cognitive complexity and conservative thinking. Senior auditors with lower cognitive complexity are likely to be skeptical because they are likely to perform audit judgements according to the prescribed procedures, especially in audit planning. They have a higher tendency to work on details, and they are conservative. Individuals with Type II thinking styles may be risk-averse, meaning they are not willing to take risks with new approaches and thus do not necessarily have a higher level of skepticism. This indicates that auditors with a Type II thinking style do not easily accept evidence

without further investigation to support the audit opinion. Bongcales et al. (2022) also found a moderate relationship between Type II thinking style and professional skepticism.

The result in this study is consistent with the result shown by Plumlee et al. (2015), who found that the Type I thinking style alone has only provided a higher number and quality of explanations for an unusual situation. However, the combination of Type I thinking style and Type II thinking style leads to a greater likelihood of generating and choosing correct explanations. This shows that the auditors' level of professional skepticism is higher when applying a Type II thinking style. This is because professional skepticism does not require the auditors to only focus on the creative construction of explanations but rather on the search for a solution to make audit decisions. Auditors with Type II thinking styles are beneficial, as they would be able to give more appropriate audit judgements when they focused more on searching for the best solution for the audit task. By considering limitations and weaknesses in the generated explanations, auditors could eliminate unnecessary explanations that may deter them from being skeptical.

The result in this study is also consistent with the result shown by Chadegani et al. (2015), who revealed the influence of Type II thinking style on auditors' intention to report errors. The intention to report errors corresponds to professional skepticism, as it requires ethical decision-making that can affect audit quality. Individuals with Type II thinking styles are more competitive and committed to their tasks as they are striving to achieve a goal, while individuals with Type I thinking styles find it easier to find potential explanations as they focus on creativity and imagination. This shows that auditors who apply a Type II thinking style will have more focus on evaluating audit evidence as they have a goal to avoid any audit deficiencies. Thus, auditors with such a thinking style will be more skeptical. Therefore, the result is supported, as the auditors with a Type II thinking style have a higher level of professional skepticism.

Auditors' experience and professional skepticism (H_3)

The strengths and weaknesses of the results are discussed based on previous studies to support and argue for the significance of the results in this study. This result is inconsistent with previous studies that found a significant relationship between individuals' experience and their professional skepticism (Nelson, 2009; Pramana & Irianto, 2016; Urboniene et al., 2013). Auditors' experience is important as it reflects auditors' ability and skills to evaluate and assess audit evidence appropriately to avoid audit failures or deficiencies. Previous studies also suggested that older or senior auditors have different knowledge and experience than younger auditors and, thus, different levels of professional skepticism.

There are possible reasons for such a result. First, Auditors' age influences their knowledge and experience, especially in the globalised era where they handle diverse audit work. Younger auditors are encouraged to participate in training to enhance their expertise, resulting in varying levels of knowledge and experience, increasing their professional skepticism. Secondly, Older auditors have higher self-confidence due to their experience in auditing, reducing skepticism. They may avoid thorough investigations and rely on management's evidence, resulting in low professional skepticism. They also have a Type I thinking style, focusing on judicial evaluations, which may lead to unnoticed evidence during audit planning. Thirdly, Recent college graduates often exhibit higher professional skepticism compared to experienced auditors. This is due to their extensive learning about skepticism in college. However, the relationship between auditors' experiences and professional skepticism is not significant, as their experiences do not significantly influence their ability to apply this skepticism effectively.

CONCLUSIONS

The first objective of this study is to examine the relationship between Type I thinking style and professional skepticism. The result showed that there is no significant relationship between senior auditors' Type I thinking and professional skepticism. This result is consistent with Urboniene et al.

(2013), Plumlee et al. (2015), and Eutsler (2017), who found that professional skepticism does not require higher levels of cognitive complexity or creativity in solving problems or making decisions.

The second research objective was to examine the relationship between Type II thinking style and professional skepticism. Using the senior auditors from audit firms in the Klang Valley, the result shows that there is a significant relationship between senior auditors' Type II thinking and professional skepticism. This finding is consistent with Urboniene et al. (2013), Plumlee et al. (2015), and Chadegani et al. (2015), who found that Type II thinking style is associated with professional skepticism. The result indicates that individuals with lower cognitive complexity are likely to be skeptical. There are possible reasons for such a result. First, the senior auditors are likely to perform tasks according to the prescribed procedures (executives). Secondly, they focus on details (local), and lastly, they are conservatives.

The third research objective of this study was to examine the relationship between the auditors' experience and their level of professional skepticism. The result showed no significant relationship between auditors' experience and their level of professional skepticism. This result is inconsistent with Urboniene et al. (2013), Nelson (2009), and Pramana and Irianto (2016), which suggest older auditors have a different level of knowledge and experience compared to younger auditors, thus having different levels of skepticism. This finding indicates that professional skepticism does not require more knowledge and experience from older auditors.

The findings of the study will benefit academics, regulators and practitioners, especially the audit firm in maintaining a high-quality auditor in their audit firm. Having high quality auditors will help in improving the audit quality and audit task when conducting audit in clients' premises. This will eventually assist in improving the performance of the clients in the future. The findings also add to academics' and audit regulators' understanding of the importance of using professional skepticism and the proper thinking style in every audit engagement.

However, the study design is flawed due to a lack of comparable studies on the relationship between auditors' thinking patterns and professional skepticism. The results may have been influenced by the instrument's used in the study being adapted from foreign contexts and cannot be applied to all senior auditors, organizations, or cultural contexts. Future research with diverse respondents could provide new insights into auditing and thought patterns. The study provides a foundation for future research, highlighting the importance of promoting reasonable skepticism in education. Future studies may extend the research to include diverse cultures and professions and suggests a more in-depth case study to understand different thinking patterns.

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