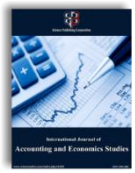
International Journal of Accounting and Economics Studies, 13 (2) (2026) 629-644

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/zrqpmr97
Research paper



Determinants of Professional Scepticism among Accounting Students: The Moderating Role of University Engagement

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Received: January 22, 2026, Accepted: February 16, 2026, Published: May 17, 2026

Abstract

Professional scepticism is a critical attribute for future accountants because it underpins sound audit judgment and ethical decision-making (IAASB, 2022). However, recent concerns raised by the Malaysian Institute of Accountants (MIA, 2020) and the Committee to Strengthen the Accountancy Profession (CSAP, 2014) indicate that many accounting graduates lack the sceptical disposition required by the profession. Drawing on Hurtt's (2010) model of professional scepticism, this study investigates the influence of two major domains which are sceptical mindset that consists of questioning mind, search for knowledge and suspension of judgement, and sceptical attitude that consists of self-determination, self-confidence and interpersonal understanding on the level of professional scepticism among accounting students. Furthermore, this study introduces university engagement as a moderating variable and proposes that active academic and co-curricular participation strengthens the relationship between students' sceptical traits and their professional scepticism. This study will employ a quantitative research design using survey data collected from final-year accounting students at a Malaysian public university. Partial Least Squares Structural Equation Modelling (PLS-SEM) will be applied to test the hypothesised relationships and to examine the moderating effect of university engagement. The findings are expected to contribute to theory by extending Hurtt's (2010) model within the context of Malaysian higher education and to practice by offering insights for universities and policymakers to enhance professional scepticism development through curriculum design and student engagement strategies.

Keywords: *Professional Scepticism; Sceptical Mindset; Sceptical Attitude; University Engagement; Accounting Education; Malaysia.*

1. Introduction

Professional scepticism is a fundamental attribute that underpins ethical judgement and audit quality in the accounting profession. The International Auditing and Assurance Standards Board (IAASB, 2022) defines professional scepticism as an attitude that involves having a questioning mind, being alert to conditions that may indicate possible misstatement due to error or fraud, and critically assessing audit evidence. In Malaysia, several high-profile financial scandals such as 1Malaysia Development Berhad (1MDB) and Serba Dinamik Holdings Berhad have raised concerns regarding whether future accountants possess adequate sceptical judgement to navigate increasingly complex financial reporting environments. These concerns have been echoed by the Malaysian Institute of Accountants (MIA, 2020) and the Committee to Strengthen the Accountancy Profession (CSAP, 2014), both of which have highlighted the need for universities to enhance their accounting curricula to strengthen the professional competencies of graduates, particularly in developing their professional scepticism. Although professional scepticism has been widely examined in the context of practising auditors, limited attention has been given to its development among accounting students at the pre-professional stage (Hurtt et al., 2013; Nolder & Kadous, 2018). Previous studies have often focused on trait-based scepticism among auditors rather than understanding how this attribute begins to form during students' academic training. This gap is particularly critical because the habits and cognitive dispositions that students acquire during their university education may significantly influence their professional judgement when they enter the workforce. Furthermore, the lack of empirical research in the Malaysian context means that there is insufficient evidence to understand how local educational settings influence the development of professional scepticism among future accountants.

This study is grounded in Hurtt's (2010) conceptualisation of professional scepticism, which consists of two major domains: sceptical mindset and sceptical attitude. The sceptical mindset reflects cognitive dispositions such as questioning mind, search for knowledge, and suspension of judgement, whereas the sceptical attitude reflects behavioural traits such as self-determination, self-confidence, and interpersonal understanding. These two domains collectively explain how individuals think and behave when confronted with evidence that requires careful evaluation. Previous research has found that students who demonstrate a strong questioning mind and a greater tendency to search for knowledge are more likely to display higher levels of professional scepticism, while traits such as self-determination and self-confidence have been linked to better ethical decision-making and the ability to resist undue pressure (Popova, 2023; Hardies et al., 2016; Ghani et al., 2022).

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However, professional scepticism does not develop in isolation. Educational and institutional contexts play a significant role in shaping this attribute. University engagement, which encompasses students' participation in academic, co-curricular, and professional development activities, has been identified as a key factor that may strengthen or weaken the relationship between students' personal traits and their sceptical disposition (Kuh, 2009; Trowler, 2010). For example, and Fatmawati, Mustikarini, and Fransiska (2018) found that students who actively engaged in case-based learning, ethics workshops, and auditing simulations demonstrated significant improvements in their professional scepticism. This suggests that a supportive university environment can act as a catalyst that enhances the impact of both sceptical mindset and sceptical attitude on the overall level of professional scepticism among accounting students.

In line with Hala Tuju 4 for Accounting Programmes in Malaysia, which emphasises the importance of producing graduates who are both technically competent and ethically resilient (MOHE, 2021), this study aims to address the current gap in the literature by investigating the determinants of professional scepticism among accounting students before they enter the auditing profession. Specifically, the study will examine the influence of sceptical mindset and sceptical attitude on the level of professional scepticism, and it will also test the moderating role of university engagement in these relationships. By doing so, the findings of this study are expected to provide meaningful contributions to both theory and practice. From a theoretical perspective, this study will extend Hurtt's (2010) model by incorporating university engagement as a moderating variable. From a practical standpoint, the results are expected to inform universities and policymakers on how to design and implement strategies that effectively foster professional scepticism among accounting students, thereby enhancing the quality of future accounting professionals in Malaysia.

2. Literature Review

Professional scepticism is a vital competency for accounting students, particularly as they prepare to enter the auditing profession. It is widely acknowledged as a core attribute that underpins audit quality and ethical decision-making (IAASB, 2022). Professional scepticism comprises two interrelated components, namely sceptical mindset and sceptical attitude (Hurtt et al., 2013; Nolder & Kadous, 2018). The sceptical mindset reflects the cognitive disposition to question assumptions, search for knowledge, and evaluate information critically, while the sceptical attitude captures the motivational and behavioural readiness to engage in such evaluative processes, encompassing traits such as self-confidence, self-determinant and interpersonal understanding. (Perdana, 2023; Fabiańska et al., 2021). Together, these dimensions provide the foundation for developing students' ability to exercise sound professional judgement in complex audit contexts.

Regulatory bodies such as the International Auditing and Assurance Standards Board and the Audit Oversight Board have repeatedly emphasised the centrality of professional scepticism to audit quality (IAASB, 2021; AOB, 2023). Numerous audit failures and financial reporting scandals have been attributed to a lack of scepticism, highlighting the urgent need to cultivate this competency at the earliest stages of professional education (Ghani et al,.2022; Kusumawati & Syamsuddin, 2018). Strengthening students' sceptical dispositions not only enhances their analytical reasoning and ethical decision-making but also supports the broader objective of restoring public trust in the auditing profession.

In accounting education, nurturing a sceptical mindset is essential to cultivate professional scepticism in students. Accounting students will be future professionals responsible for detecting anomalies, discovering fraud, and making sure that ethical standards are met. The sceptical mindset serves as the cognitive basis for many of these activities and prepares them with the skill and mindset to apply professional scepticism in their future roles. A few researchers have pointed out the positive relationship between having a sceptical mindset and exercising professional scepticism (Popoola, Che-Ahmad, & Samsudin, 2015). A sceptical mindset can be broadly defined as a cognitive disposition that involves a habitual wish to question, scrutinise, and delay one's conclusion about information until enough evidence has been provided (Nelson, 2009). This attitude is not the same as scepticism or cynicism; it is an intellectual rigor necessary for critical thinking and decision-making in business environments. This capacity is rooted in a sceptical mindset, which is crucial to functioning in an unpredictable and complicated world, as in the case of accounting, where precision and equity are essential. Sceptical attitude is not only important for an auditor but is also necessary for a good amount of qualitative audit and authentic financial reporting. The professional scepticism mindset is important for an auditor when considering audit evidence (Fabiianska et al., 2021) and plays a role in the success of fraud detection and error detection. The connection between audit quality and scepticism highlights the need for a sceptical mindset among professional accountants. The sceptical mindset is not only in one's nature but can also be affected by external factors like training and the culture of the organisation. As another example, Gissel (2018) stated that letting practitioners determine their own degree of flexibility in judgements can affect the volume of entity scepticism thus increasing audit quality.

A questioning mind can be defined as a cognitive disposition characterised by an active and inquisitive approach to information, ideas, and assertions (Hurtt, 2010; Nolder & Kadous, 2018). This mindset is marked by a readiness to challenge assumptions, seek clarification, and evaluate the validity of claims made by others critically (Kadous & Zhou, 2019; Popova, 2023). In the context of professional scepticism, particularly within the fields of accounting and auditing, a questioning mind is essential for effectively assessing evidence and making informed judgements (Peytcheva & Warren, 2022). The questioning mindset is the foundation of professional scepticism, defined by a willingness to challenge assumptions and seek greater understanding (AOB, 2023). Auditors must assess evidence and management statements critically, and hence this attribute is crucial (IAASB, 2021; MIA, 2024).

Studies have indicated a strong questioning mind among accounting students correlates positively with higher levels of professional scepticism. For instance, Adhikara and Widodo (2023) highlighted that auditors motivated to maintain vigilance and adopt an inquisitive attitude are better equipped to detect potential fraud or errors, knowing they are liable for the audit outcomes. This finding underscores the importance of fostering a questioning mindset in educational programs, as it directly influences students' ability to exercise professional scepticism in their future careers. Furthermore, the questioning mind enhances students' critical thinking skills, enabling them to evaluate evidence more effectively. The ability to question and assess information critically also plays a significant role in fostering ethical behaviour among accountheg professionals. As noted by Perdana (2023), a questioning mind encourages auditors to remain vigilant and ethical in their practices, ultimately leading to higher audit quality. This ethical dimension of a questioning mindset further emphasises its importance in shaping the professional scepticism of accounting students.

H1: There is a significant relationship between questioning mind and the level of professional scepticism among accounting students in a public university in Malaysia.

The search for knowledge reflects a person's intrinsic motivation to acquire information, pursue deeper understanding, and explore beyond readily available data. In the audit profession, this trait is critical for effective evidence gathering, credibility assessment, and the formation of well-supported audit conclusions. Razzaque (2020) found that students who demonstrated high levels of knowledge-seeking behaviour performed better in audit risk simulations, indicating the trait's practical relevance. As audit tasks become increasingly complex, the ability to probe beneath the surface and pursue additional evidence becomes a defining competency.

Ghani et al. (2022) argue that in a dynamic and evolving audit environment, continuous learning and the pursuit of diverse information sources are crucial for effective sceptical practice. Similarly, Dimase (2019) and Rahim (2019) highlight that integrating research-oriented and inquiry-based tasks within the accounting curriculum fosters more analytical and sceptical thinking. These findings support the development of the following hypothesis:

H2: There is a significant relationship between search for knowledge and the level of professional scepticism among accounting students in a public university in Malaysia.

Suspension of judgement refers to the ability to delay forming conclusions until sufficient and appropriate evidence has been collected and analysed (Hurtt, 2010). This trait counters premature decision-making and promotes reflective evaluation, which are essential when responding to ambiguous evidence or uncertain audit conditions. Zinke (2021) underscores that suspension of judgement enhances objectivity and leads to more defensible audit conclusions. Supporting this view, Quadackers et al. (2014) found that auditors with stronger judgement restraint were more adept at identifying misstatements in cases where client information was incomplete or vague. Similarly, Shaub and Lawrence (1996) reported that auditors who exhibited high levels of judgement suspension were more inclined to seek corroborating evidence rather than rely on client assertions, thereby reducing the risk of audit failure.

Despite its importance, this trait may be more challenging to develop. Yustina and Sutarsa (2020) observed that under time pressure or without clear guidance, students often struggle to withhold judgement, leading to overconfidence or premature conclusions. Based on these insights, the following hypothesis is proposed:

H3: There is a significant relationship between suspension of judgement and the level of professional scepticism among accounting students in a public university in Malaysia.

A sceptical attitude refers to the disposition to question the validity of information and to maintain a level of doubt until sufficient evidence is obtained. This attitude is critical in the accounting profession, where auditors are required to assess the reliability of financial statements and audit evidence (Siriwardane et al., 2014). It represents a dual construct that involves both cognitive and affective dimensions, in which auditors not only think critically but also experience a sense of doubt that prompts further inquiry (Sayed Hussin et al., 2017; Perdana, 2023). Professional scepticism is not merely an innate trait but can be developed through education, training, and professional experience (Sayed Hussin et al., 2017; Perdana, 2023). The International Auditing and Assurance Standards Board (IAASB) reinforces this view by emphasising that professional scepticism is fundamental to audit quality and requires auditors to remain alert to potential misstatements arising from error or fraud (Noviyanti & Winata, 2015). Furthermore, a sceptical attitude involves recognising that management assertions may be influenced by internal and external pressures, requiring auditors to proactively seek corroborative evidence and challenge assumptions rather than accepting information at face value (Kusumawati & Syamsuddin, 2018; Murtanto et al., 2023).

The relationship between sceptical attitude and audit quality is well established, as studies have shown that auditors who maintain a sceptical attitude are more effective in detecting fraud and misstatements, leading to higher quality audits (Pham, 2024). Training initiatives that develop sceptical attitudes have been found to enhance auditors' abilities to critically evaluate evidence and improve the integrity of financial reporting (Awaluddin et al., 2019). This underscores the importance of embedding the elements of sceptical attitude which are including self-determination, self-confidence, and interpersonal understanding within accounting education (Hurtt, 2010; Gissel, 2018).

Self-determination is the ability of individuals to make autonomous choices and regulate their own behaviour, encompassing decision-making, goal-setting, and self-advocacy (Seong et al., 2014). Grounded in Self-Determination Theory (SDT), this construct is central to fostering intrinsic motivation, which in turn enhances engagement, persistence, and academic success (Licardo & Schmidt, 2016). Within accounting education, self-determination is particularly relevant because it shapes how students approach their studies and their readiness to develop critical skills such as professional scepticism. Students with high levels of self-determination are more likely to engage deeply with learning materials, challenge underlying assumptions, and seek additional evidence to support their conclusions, behaviours that are consistent with the fundamental principles of professional scepticism (Sampewai et al., 2022; Cheng & Chiou, 2010).

In the context of accounting education, this means that students who believe in their ability to perform well are more likely to scrutinise audit evidence, question management assertions, and apply sceptical judgement effectively (Light, 2024). However, while self-determination is crucial, it must be guided by structured feedback and pedagogical support to prevent excessive or misdirected scepticism that could reduce audit efficiency.

H4: There is a significant relationship between self-determination and the level of professional scepticism among accounting students in a public university in Malaysia.

Self-confidence is a critical component of professional scepticism and plays a central role in Hurtt's (2010) model, which identifies it as one of six traits that shape individuals' ability to assess and challenge information effectively. It reflects an individual's belief in their own judgement and their capacity to evaluate evidence independently, allowing auditors and accounting students to maintain objectivity and resist external pressures (Hurtt, 2010). According to Nelson (2009), auditors with strong self-confidence are more likely to apply sceptical judgement consistently, resulting in improved fraud detection and higher audit quality. Similarly, Quadackers et al. (2014) found that self-confident auditors were less influenced by management explanations and demonstrated a greater willingness to question inconsistencies in financial statements. Among accounting students, self-confidence is equally important as it fosters early development of critical thinking skills necessary for effective audit decision-making (Shaub & Lawrence, 1996). This trait enables students to challenge established norms and engage actively in the evaluation of evidence, which strengthens their professional scepticism and prepares them for real-world audit contexts (Hurtt et al., 2013).

The development of self-confidence in professional scepticism is influenced by education, experience, and organisational culture. Bonner and Pennington (1991) highlighted that exposure to case-based learning and real-world audit simulations enhances students' ability to make independent judgements, thereby strengthening their confidence. Similarly, Harding and Trotman (2017) observed that repeated exposure to complex audit tasks enables auditors to build the assurance required to question financial information rigorously. Organisational culture also plays a role, as environments that encourage autonomy, constructive feedback, and open dialogue foster higher levels of self-confidence among auditors (Knechel et al., 2013). However, self-confidence must be balanced to avoid the risk of overconfidence, which may lead to auditors dismissing contradictory evidence or underestimating audit risks (Asare, Wright, & Zimbelman, 2020). Therefore, while cultivating self-confidence is essential for developing professional scepticism, it must be supported by continuous learning, reflective practice, and structured feedback to ensure that confidence translates into effective and objective audit judgement.

H5: There is a significant relationship between self-confidence and the level of professional scepticism among accounting students in a public university in Malaysia.

Interpersonal understanding refers to an individual's ability to recognise, interpret, and respond appropriately to social and behavioural cues in professional contexts. It involves perceiving the emotions, intentions, and perspectives of others, which allows auditors to evaluate the credibility of information provided by clients, management, and other stakeholders (Hurtt, 2010). This skill is integral to professional scepticism because it enables auditors to identify potential bias, detect inconsistencies, and assess whether information has been influenced

by personal or organisational motives (Rose, 2007). Shaub and Lawrence (1996) further argue that auditors who possess strong interpersonal understanding are better equipped to maintain scepticism under pressure, as they can navigate social dynamics and remain objective even in complex audit environments. In the context of accounting students, this trait is equally important because it prepares them to engage in analytical discussions, question assumptions presented in classroom cases, and develop a habit of evaluating the motives behind information presented to them (Hurtt et al., 2013).

The development of interpersonal understanding is influenced by experience, education, and organisational culture. Libby and Tan (1994) found that repeated exposure to client interactions and audit simulations enhances students' ability to interpret behavioural cues and assess underlying motivations. Similarly, educational strategies such as case-based learning, role-playing exercises, and ethics training have been shown to improve students' ability to evaluate not only financial evidence but also the context in which it is presented (Rest et al., 1999). Organisational culture also plays a key role, as workplaces that encourage open communication and constructive feedback foster stronger interpersonal awareness among auditors, allowing them to question information effectively (Nelson, 2009). Therefore, while interpersonal understanding enhances professional scepticism, it must be balanced with rigorous audit procedures and objective evidence evaluation to ensure accurate and impartial decision-making.

H6: There is a significant relationship between interpersonal understanding and the level of professional scepticism among accounting students in a public university in Malaysia.

University engagement is a critical contextual factor that strengthens the relationship between students' internal traits and their professional scepticism. It refers to students' involvement in academic, co-curricular, and professional activities that collectively support their cognitive and professional development (Trowler, 2010; Kuh, 2003). In the context of accounting education, engagement has been linked to the development of critical thinking, ethical reasoning, and practical judgement skills that are essential for future auditors (Apostolou et al., 2013). According to Astin's (1999) Theory of Student Involvement and Kahu's (2013) Conceptual Framework of Student Engagement, student learning outcomes are directly influenced by the extent of their active participation in meaningful educational experiences. When students are highly engaged, they are more likely to activate and apply traits such as a questioning mind, search for knowledge, suspension of judgement, self-confidence, self-determination, and interpersonal understanding in ways that reinforce their professional scepticism (Nelson, 2009; Nolder & Kadous, 2018).

As a moderating factor, university engagement functions by amplifying or constraining the influence of individual sceptical traits on professional scepticism. For example, a student with a strong search for knowledge trait may fail to fully develop professional scepticism if they are not actively engaged in case-based learning or research activities. Conversely, engagement in academic discussions, audit simulations, and professional networking events creates opportunities for students to apply and strengthen their sceptical traits in practical settings, thereby increasing their sceptical judgement (Astin, 1999; Kahu, 2013). Johari et al. (2022) and Fatmawati, Mustikarini, and Fransiska (2018) further highlight that accounting students who participate in structured learning and professional development programs demonstrate higher levels of professional scepticism than those with low engagement. These findings indicate that engagement serves as a catalyst that transforms students' inherent cognitive and behavioural dispositions into observable professional sceptical behaviours.

In Malaysia, this moderating role of engagement is particularly important due to concerns raised by the Committee to Strengthen the Accountancy Profession (CSAP, 2014) and the Malaysian Institute of Accountants (MIA, 2020) regarding the readiness of accounting graduates for professional practice. By interacting with sceptical traits such as questioning mind or self-confidence, university engagement can intensify the development of professional scepticism through academic, co-curricular, and professional channels, including internships, industry seminars, and faculty mentorship (Kuh, 2003; Martin & Bolliger, 2018). Without such engagement, even students with high intrinsic traits may not fully translate these attributes into effective sceptical judgement. Therefore, this study positions university engagement as a moderating factor that enhances the relationship between sceptical mindset, sceptical attitude, and professional scepticism, ultimately contributing to the production of more competent, analytical, and ethically grounded accounting graduates (Nelson, 2009; Nolder & Kadous, 2018).

H7: University engagement moderates the relationship between a questioning mind and the level of professional scepticism of accounting students in a public university in Malaysia.

H8: University engagement moderates the relationship between the search for knowledge and the level of professional scepticism of accounting students in a public university in Malaysia.

H9: University engagement moderates the relationship between suspension of judgement and the level of professional scepticism of accounting students in a public university in Malaysia.

H10: University engagement moderates the relationship between self-determination and the level of professional scepticism of accounting students in a public university in Malaysia.

H11: University engagement moderates the relationship between self-confidence and the level of professional scepticism of accounting students in a public university in Malaysia.

H12: University engagement moderates the relationship between interpersonal understanding and the level of professional scepticism of accounting students in a public university in Malaysia.

The conceptual framework for this study is grounded in Hurtt's (2010) multidimensional model of professional scepticism and extended to incorporate the moderating role of university engagement. This framework posits that two primary domains which aresceptical mindset, which includes questioning mind, search for knowledge, and suspension of judgement, and sceptical attitude, which consists of self-determination, self-confidence, and interpersonal understanding directly influence the level of professional scepticism among accounting students. By integrating these cognitive and behavioural traits, the framework provides a comprehensive lens for examining how individual dispositions shape students' sceptical judgement. Furthermore, university engagement, encompassing academic, co-curricular, and professional dimensions, is introduced as a moderating variable that is expected to strengthen the relationship between these traits and professional scepticism. This framework not only offers a structured basis for empirical testing but also provides actionable insights for educators and policymakers to develop targeted pedagogical interventions aimed at fostering professional scepticism among future accountants. The conceptual framework guiding this study is illustrated in Figure 1.

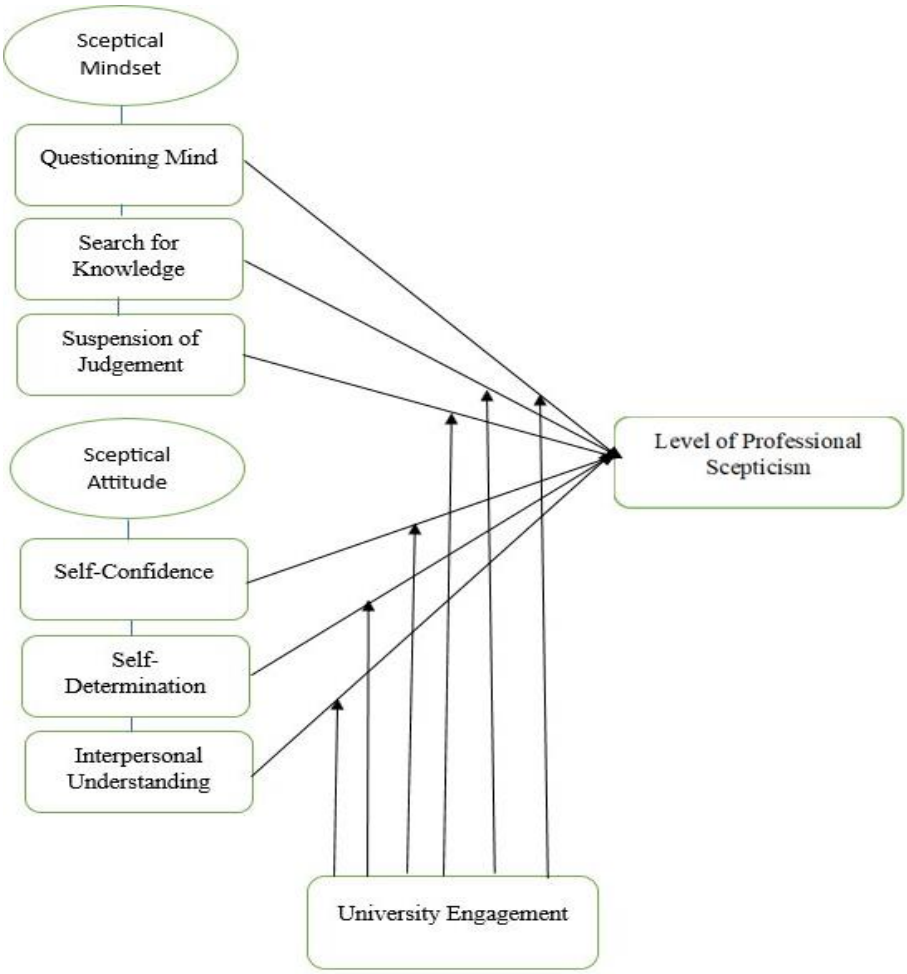


Fig. 1: Conceptual Framework.

3. Research Design

3.1. Sample selection

The sample for this study comprises third-year accounting students from one of the public universities in Malaysia. As of 1 March 2025, the total number of third-year accounting students enrolled at the university is 2,278. This specific cohort was chosen because they are at a critical transition point in their academic journey—on the verge of beginning their formal audit coursework. At this stage, the students have not yet received audit-specific education or training, which makes them ideal subjects for assessing the baseline level of professional scepticism without the potential bias introduced by formal audit instruction.

The selection of the sample size was guided by the Krejcie and Morgan (1970) sample size determination table, which recommends a minimum of approximately 330 respondents for a population of this size. To ensure adequate representation and to account for possible non-responses or incomplete data, the researcher decided to distribute a total of 400 questionnaires to the targeted respondents. This approach aims to achieve a statistically significant sample while maintaining a manageable scope for data collection and analysis.

3.2. Research instrument

This study utilises the questionnaire survey as the research instrument. The questions in the questionnaire are adapted from adapted from Hurtt (2010) and Nolder and Kadous (2018) with some modifications to suit the context of this study. The questionnaire is divided into two sections. Section A requests the respondents to provide information on their demographic information including gender, age, academic year, and prior experience with audit-related coursework or activities. Section B, on the other hand, asks the respondents to indicate their level of agreement with a series of statements related to their level of professional scepticism. The respondents will be asked to indicate their agreement on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for level of professional scepticism includes: "I critically evaluate the reliability of evidence before accepting it as valid." These items are designed to measure various dimensions of professional scepticism, including analytical thinking, cautious judgment, and information verification. The respondents are requested to respond to Section B based on a six-point Likert scale ranging from 1 as strongly disagree to 6 as strongly agree.

Besides, the construct of a questioning mind reflects an individual's inclination to analyse information critically, challenge assumptions, and seek clarity before forming conclusions. This concept is adapted from the works of Hurtt (2010), and the measurement scale for a questioning mind consists of five key items that assess an individual's tendency to evaluate sources, challenge unsupported assertions, and analyse multiple perspectives before accepting a conclusion. The respondents will be asked to indicate their agreement with the statements on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample of the items for this construct is "I evaluate the sources of information critically before trusting them.

Next, search for knowledge represents an individual's motivation to seek additional resources, verify information, and explore alternative explanations to deepen their understanding. This construct is adapted from Hurtt (2010) and the measurement scale for the search for

knowledge consists of five key items that evaluate a student's tendency to actively seek supplementary materials, consult multiple sources, and investigate questionable issues. The respondents will be required to indicate their level of agreement with each statement on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I seek out additional resources actively to deepen my understanding of a topic.

Suspension of judgment refers to an individual's ability to delay forming conclusions until sufficient and reliable evidence is available. This concept is adapted from the works of Hurtt (2010) and the measurement scale for suspension of judgement consists of five key items that assess a respondent's tendency to consider multiple perspectives, withhold immediate conclusions, and remain neutral until all facts are examined. The respondents will be asked to rate their agreement with the statements on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I avoid making decisions until I have considered all available evidence thoroughly.

The next construct, self-determination, represents an individual's ability to act autonomously, make independent decisions, and take ownership of their learning and professional development. This construct is adapted from Hurtt (2010) and related literature on professional scepticism. The measurement scale for self-determination consists of five key items that assess a student's ability to maintain independence in decision-making, resist external pressures, and demonstrate persistence in achieving goals. The respondents will be asked to indicate their agreement with each statement on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I rely on my judgement even when others disagree with me."

Next, self-confidence reflects an individual's belief in their ability to make sound judgements and defend their conclusions. This construct is also adapted from Hurtt (2010) and Nolder and Kadous (2018). The measurement scale for self-confidence includes five items that evaluate students' willingness to trust their judgement, challenge information they consider inaccurate, and maintain assertiveness in decision-making. The respondents will be asked to rate their agreement with each statement on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I am confident in my ability to assess the accuracy of information critically."

The following construct, interpersonal understanding, measures an individual's ability to recognise, interpret, and respond to social cues and the behaviour of others, which is a key component of professional scepticism in auditing contexts. This construct is adapted from Hurtt (2010) and supported by prior studies on sceptical traits. The measurement scale for interpersonal understanding comprises five items that assess students' ability to understand others' motivations, detect potential bias, and evaluate credibility based on contextual factors. Respondents will rate their level of agreement on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I consider the motives of others when evaluating the information they provide."

Finally, university engagement represents the moderating variable in this study and is operationalised into three dimensions based on engagement literature: academic engagement, co-curricular engagement, and professional engagement (Astin, 1999; Kuh, 2003; Kahu, 2013). The measurement scale for university engagement consists of fifteen items (five per dimension) assessing the extent to which students participate in lectures, tutorials, and case-based assignments (academic engagement), join student clubs and group projects (co-curricular engagement), and attend internships, seminars, or networking sessions with practitioners (professional engagement). Each item will be rated on a six-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). A sample item for this construct is "I actively participate in seminars or workshops organised by my university to improve my professional knowledge.

3.3. Data collection procedure

Upon obtaining ethical clearance and institutional approval, the data collection process commenced with the distribution of questionnaires to third-year accounting students. The distribution took place at the beginning of the academic semester, with the cooperation and assistance of the students' respective teaching lecturers, who facilitated access to the targeted respondents. To enhance participation and ensure accuracy, the questionnaires were distributed and collected manually during scheduled lecture sessions. This method allowed the researcher to provide immediate clarification if needed and helped minimise the risk of incomplete or inaccurate responses.

On average, students required approximately 10 minutes to complete the questionnaire, indicating a reasonable cognitive load and time commitment. A total of 373 completed questionnaires were returned, resulting in an impressive response rate of 93.25%, which exceeds the minimum threshold recommended for robust statistical analysis. This high response rate enhances the reliability and generalisability of the study's findings.

4. Results and Discussion

4.1. Demographic profile

This section presents the findings related to the demographic profile of the respondents, focusing on two key characteristics: gender and age group. The detailed distribution is summarised in Table 1. In terms of gender, the majority of respondents were female (71.04%), while male students accounted for 28.96% of the sample. This reflects a higher representation of female students among the third-year accounting cohort involved in the study. With respect to age, 75.07% of the respondents were between 20 and 22 years old, whereas 24.93% were aged between 23 and 25 years. This age distribution suggests that most participants belong to the younger age group, which is consistent with the typical academic progression of students in their third year of undergraduate accounting studies at the university.

Table 1: Demographic Profile of Respondents

Demographic	Category	Frequency	Percentage (%)
Gender	Male	108	28.96%
	Female	265	71.04%
Age Group	20-22	280	75.07%
	23-25	93	24.93%

4.2. Descriptive statistics

This section presents the descriptive statistical analysis conducted for this study. Descriptive statistics are used to summarise, simplify, and provide an overview of the dataset, allowing for a clearer understanding of the distribution, central tendencies, and variability of the research

variables. This analysis offers insights into how participants responded to each construct measured, serving as a foundation for subsequent inferential analysis.

Table 2: Descriptive Statistics

Variable	Min	Max	Mean	Std. Dev
Questioning Mind	1.00	6.00	4.328	0.748
Search for Knowledge	1.00	6.00	4.466	0.774
Suspension of Judgement	1.00	6.00	4.693	0.728
Self-Determination	1.00	6.00	4.348	0.741
Self-Confidence	1.00	6.00	4.220	0.764
Interpersonal Understanding	1.00	6.00	4.913	0.756
University Engagement	1.00	6.00	4.522	0.774
Level of Professional Scepticism	1.00	6.00	4.483	0.708

Table 2 displays key statistical indicators for each construct, including the minimum and maximum values, mean, median, mode, and standard deviation. These metrics collectively describe the range, central tendency, and variability of the data, thereby providing an overview of students' baseline levels of professional scepticism and its related traits. All constructs recorded a minimum response value of 1 and a maximum of 6, which corresponds to the six-point Likert scale used in this study. The mean scores for the variables ranged from 4.22 (self-confidence) to 4.69 (suspension of judgement), indicating that, on average, respondents either agreed or strongly agreed with the statements measuring these constructs.

Furthermore, the median and mode values for all constructs were consistently 5, demonstrating a strong central tendency towards positive responses. The standard deviation values for all variables were below 1.0, reflecting relatively low variability among the responses. For example, questioning mind (M = 4.33, SD = 0.75) and search for knowledge (M = 4.47, SD = 0.77) displayed moderate dispersion, while suspension of judgement (M = 4.69, SD = 0.73) exhibited the highest mean with similarly low variability, indicating that most students shared comparable views regarding the importance of withholding judgement until sufficient evidence is obtained. These results align with prior research, which reported that Malaysian accounting students typically demonstrate a strong baseline level of sceptical traits even before formal exposure to auditing courses (Ghani et al., 2022; Fatmawati et al., 2023).

Overall, these descriptive statistics suggest that the sample of accounting students demonstrated a generally high and consistent level of agreement with the constructs related to professional scepticism, including both cognitive traits (sceptical mindset) and behavioural traits (sceptical attitude). This pattern highlights a positive foundation for further development of sceptical judgement through university engagement and audit-specific education, supporting the study's objective of examining the antecedents of professional scepticism among accounting students.

4.3. Measurement model

This section presents the assessment of the outer measurement model, with a specific focus on the convergent validity of the constructs used in the study. Convergent validity refers to the extent to which multiple indicators of a construct agree in representing the same underlying concept. In this study, convergent validity was assessed based on two key criteria: (1) the outer loadings of individual indicators and (2) the Average Variance Extracted (AVE) for each construct. Following the guidelines of Hair, Hult, Ringle, and Sarstedt (2021), an indicator loading of 0.708 or higher is considered ideal. However, items with loadings between 0.50 and 0.70 may still be retained in exploratory studies if the construct's AVE exceeds 0.50, thereby ensuring adequate shared variance.

Figure 2 displays the outer loadings for all indicators measuring the independent variables (sceptical mindset and sceptical attitude), the moderating variable (university engagement), and the dependent variable (level of professional scepticism). The results are summarised as follows:

- Questioning Mind: The five indicators recorded loadings ranging from 0.564 (QM1) to 0.803 (QM3). Although QM1 falls below the preferred threshold of 0.708, it was retained because the construct's AVE remains above 0.50, indicating adequate convergent validity.
- Search for Knowledge: All five items exhibited strong loadings between 0.753 (SK2) and 0.829 (SK1), demonstrating high indicator reliability and satisfactory convergence.
- Suspension of Judgement: The indicators for this construct produced loadings between 0.704 (SJ4) and 0.807 (SJ2), meeting the recommended criteria and confirming acceptable convergent validity.
- Self-Determination: The five items for this construct showed loadings between 0.715 (SD2) and 0.855 (SD3), reflecting robust convergence.
- Self-Confidence: The indicators ranged from 0.758 (SC2 and SC3) to 0.809 (SC4), exceeding the minimum threshold and supporting the construct's validity.
- Interpersonal Understanding: The five indicators recorded high loadings from 0.777 (IU5) to 0.887 (IU3), establishing strong convergent validity.
- University Engagement: The five indicators showed loadings between 0.774 (UE3) and 0.829 (UE5), indicating reliable convergence.
- Level of Professional Scepticism: The ten indicators produced loadings from 0.698 (PS8) to 0.793 (PS10). Although PS8 is slightly below 0.708, it was retained as the construct's AVE remains satisfactory for exploratory research.

In conclusion, all constructs meet the minimum requirements for convergent validity. While a few indicators display marginally lower loadings, they do not compromise the overall reliability and are retained in the model given their theoretical relevance and contribution to the construct measurement. These findings provide sufficient evidence to proceed with the structural model assessment.

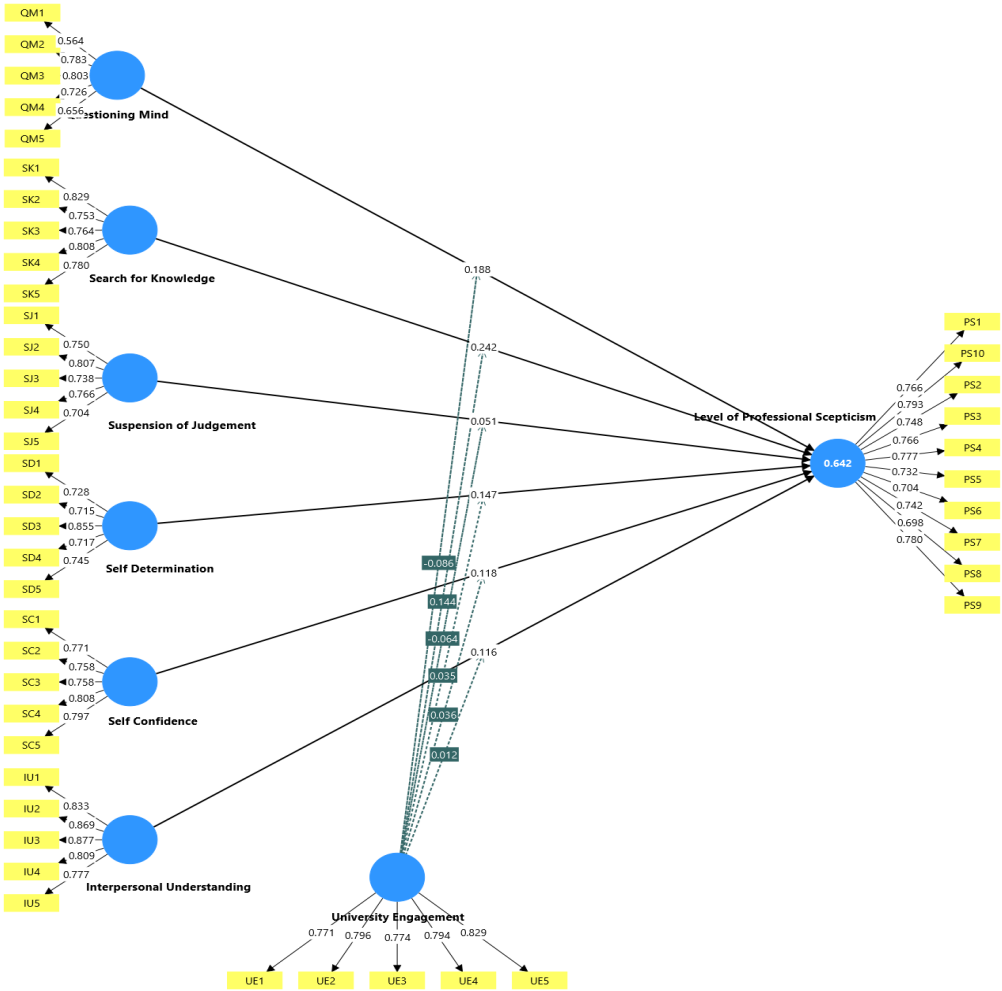


Fig. 2: Initial Measurement Model (Outer Model) Output.

Following the confirmation that all indicator loadings exceeded the minimum acceptable threshold of 0.50, the next step in evaluating the measurement model involved assessing convergent validity through the Average Variance Extracted (AVE) and the Composite Reliability (CR). AVE measures the amount of variance captured by a latent construct relative to the variance attributable to measurement error. According to Hair et al. (2021), an AVE value greater than 0.50 indicates that a construct explains more than half of the variance in its observed indicators, confirming acceptable convergent validity. As presented in Table 3, all constructs in this study namely questioning mind search for knowledge, suspension of judgement, self-determination ,self-confidence ,interpersonal understanding ,university engagement .and level of professional scepticism are exceeded the recommended threshold.

Additionally, all constructs demonstrated Composite Reliability (CR) values above the recommended threshold of 0.70, ranging from 0.836 for questioning mind to 0.930 for interpersonal understanding, indicating high internal consistency and reliability (Hair et al., 2021). These results confirm that the indicators for each construct are sufficiently correlated and reliably represent their underlying theoretical concepts.In sum, the findings support the measurement model's validity and reliability, providing a robust foundation for the subsequent evaluation of the structural model and hypothesis testing.

Table 3: Average Variance Extracted

No	Construct	AVE Value
1	Questioning Mind	0.509
2	Search for Knowledge	0.620
3	Suspension of Judgement	0.568
4	Self-Determination	0.568
5	Self-Confidence	0.607
6	Interpersonal Understanding	0.699
7	University Engagement	0.629
8	Professional Scepticism	0.579

Source: Processed primary data (2025).

Table 4 presents the outer loadings of the indicators for each construct, which were examined to assess their individual item validity. Consistent with the guidelines by Hair et al. (2017), the majority of indicators achieved the minimum threshold of 0.50, indicating acceptable levels of item reliability. Only one item, Questioning Mind (QM1), registered a loading slightly below this threshold. According to Hulland (1999), indicators with loadings between 0.40 and 0.70 should be carefully evaluated for possible removal, particularly if eliminating the item leads to an increase in the construct's composite reliability and AVE. In this study, however, QM1 was retained based on strong theoretical justification, as it captures a critical aspect of the questioning mind construct. Furthermore, the decision to retain the item was supported by the fact that its inclusion did not adversely affect the overall reliability or validity of the measurement model. Therefore, it can be concluded that all remaining indicators demonstrate sufficient item validity and are appropriate for inclusion in the final analysis. Their retention supports the robustness of the measurement model and ensures the theoretical integrity of the constructs being assessed.

Table 4: Outer Loadings Validity Test Results

Construct	Indicator Code	Outer Loading	Information
Questioning Mind	QM1	0.564	Valid
	QM2	0.783	Valid
	QM3	0.803	Valid
	QM4	0.726	Valid
	QM5	0.655	Valid
Search for Knowledge	SK1	0.829	Valid
	SK2	0.753	Valid
	SK3	0.764	Valid
	SK4	0.808	Valid
	SK5	0.780	Valid
Suspension of Judgement	SJ1	0.75	Valid
	SJ2	0.807	Valid
	SJ3	0.738	Valid
	SJ4	0.766	Valid
	SJ5	0.705	Valid
Self-Determination	SD1	0.728	Valid
	SD2	0.715	Valid
	SD3	0.855	Valid
	SD4	0.717	Valid
	SD5	0.745	Valid
Self-Confidence	SC1	0.771	Valid
	SC2	0.758	Valid
	SC3	0.758	Valid
	SC4	0.809	Valid
	SC5	0.797	Valid
Interpersonal Understanding	IU1	0.833	Valid
	IU2	0.869	Valid
	IU3	0.887	Valid
	IU4	0.809	Valid
	IU5	0.777	Valid
University Engagement	UE1	0.771	Valid
	UE2	0.796	Valid
	UE3	0.774	Valid
	UE4	0.794	Valid
	UE5	0.829	Valid
Level of Professional Scepticism	PS1	0.765	Valid
	PS2	0.791	Valid
	PS3	0.747	Valid
	PS4	0.770	Valid
	PS5	0.781	Valid
	PS6	0.703	Valid
	PS7	0.697	Valid
	PS8	0.779	Valid
	PS9	0.742	Valid
	PS10	0.732	Valid

As presented in Table 5, the diagonal elements represent the square roots of the AVE values, while the off-diagonal elements reflect the correlations between constructs. The results show that for all constructs questioning mind, search for knowledge, suspension of judgement, self-determination, self-confidence, interpersonal understanding, university engagement, and level of professional scepticismt he square root of each AVE is greater than its corresponding inter-construct correlations. This indicates that each construct shares more variance with its own indicators than with any other construct, fulfilling the Fornell-Larcker criterion (Fornell & Larcker, 1981).

These findings confirm that the constructs are empirically distinct and measure unique aspects of professional scepticism and its antecedents. Consequently, the results provide strong evidence of sufficient discriminant validity, thereby supporting the robustness of the measurement model and reinforcing confidence in the conceptual distinctions among all cognitive, behavioural, and contextual factors examined in this study (Hair et al., 2021).

Table 5: Discriminant Validity (Fornell-Larcker Criterion)

	QM	SK	SJ	SD	SC	IU	UE	PS
QM	0.713	0.343	0.303	0.355	0.330	0.320	0.340	0.394
SK	0.343	0.787	0.479	0.410	0.420	0.400	0.450	0.427
SJ	0.303	0.479	0.754	0.400	0.415	0.390	0.430	0.455
SD	0.355	0.410	0.400	0.754	0.460	0.450	0.470	0.440
SC	0.330	0.420	0.415	0.46	0.779	0.48	0.490	0.450
IU	0.320	0.400	0.390	0.45	0.480	0.841	0.500	0.460
UE	0.340	0.450	0.4300	0.47	0.490	0.500	0.793	0.470
PS	0.394	0.427	0.455	0.440	0.450	0.460	0.470	0.766

In addition to the Fornell-Larcker criterion, cross-loading analysis was conducted to further assess the discriminant validity of the measurement model. According to Hair et al. (2021), discriminant validity is established when each indicator loads more strongly on its associated latent construct than on any other constructs in the model. This method ensures that each item contributes uniquely to the construct it is intended to measure, without significant overlap with unrelated constructs.

Table 6: Cross Loading

Indicator	QM	SK	SJ	SD	SC	IU	UE	PS
QM1	0.564	0.346	0.391	0.381	0.399	0.321	0.348	0.421
QM2	0.783	0.418	0.486	0.457	0.535	0.421	0.542	0.564
QM3	0.803	0.469	0.467	0.579	0.403	0.493	0.514	0.544
QM4	0.726	0.480	0.503	0.413	0.370	0.520	0.531	0.459
QM5	0.665	0.353	0.350	0.365	0.436	0.456	0.475	0.407
SK1	0.478	0.829	0.432	0.581	0.422	0.433	0.518	0.528
SK2	0.409	0.753	0.482	0.498	0.513	0.432	0.423	0.452
SK3	0.404	0.764	0.416	0.429	0.516	0.554	0.548	0.562
SK4	0.465	0.808	0.532	0.473	0.546	0.470	0.416	0.486
SK5	0.428	0.780	0.433	0.465	0.516	0.464	0.473	0.465
SJ1	0.479	0.468	0.750	0.556	0.426	0.522	0.467	0.483
SJ2	0.453	0.444	0.807	0.463	0.543	0.472	0.539	0.545
SJ3	0.443	0.469	0.738	0.466	0.409	0.483	0.504	0.411
SJ4	0.557	0.391	0.766	0.526	0.405	0.48	0.386	0.509
SJ5	0.355	0.446	0.704	0.388	0.515	0.369	0.353	0.491
SD1	0.440	0.435	0.431	0.728	0.365	0.451	0.375	0.379
SD2	0.381	0.501	0.508	0.715	0.381	0.443	0.489	0.420
SD3	0.613	0.617	0.429	0.855	0.503	0.468	0.557	0.497
SD4	0.447	0.418	0.407	0.717	0.520	0.519	0.406	0.402
SD5	0.413	0.388	0.393	0.745	0.500	0.444	0.429	0.558
SC1	0.417	0.496	0.524	0.497	0.771	0.566	0.402	0.495
SC2	0.438	0.481	0.508	0.419	0.758	0.482	0.403	0.543
SC3	0.422	0.497	0.419	0.385	0.758	0.441	0.466	0.475
SC4	0.457	0.431	0.584	0.593	0.809	0.598	0.449	0.480
SC5	0.569	0.41	0.555	0.508	0.797	0.495	0.566	0.517
IU1	0.419	0.563	0.469	0.613	0.503	0.833	0.474	0.492
IU2	0.504	0.582	0.464	0.600	0.470	0.869	0.562	0.556
IU3	0.517	0.635	0.625	0.659	0.464	0.887	0.475	0.664
IU4	0.478	0.409	0.484	0.497	0.428	0.809	0.491	0.511
IU5	0.449	0.423	0.517	0.412	0.519	0.777	0.463	0.417
UE1	0.436	0.526	0.480	0.504	0.494	0.573	0.771	0.525
UE2	0.570	0.517	0.525	0.517	0.551	0.515	0.796	0.441
UE3	0.396	0.530	0.408	0.504	0.426	0.517	0.774	0.481
UE4	0.445	0.585	0.424	0.408	0.504	0.498	0.794	0.474
UE5	0.425	0.590	0.504	0.583	0.453	0.459	0.829	0.452
PS1	0.515	0.566	0.553	0.395	0.552	0.453	0.411	0.766
PS2	0.555	0.569	0.407	0.455	0.515	0.438	0.575	0.793
PS3	0.424	0.494	0.465	0.509	0.378	0.394	0.49	0.748
PS4	0.565	0.495	0.546	0.580	0.408	0.425	0.537	0.776
PS5	0.397	0.460	0.520	0.518	0.450	0.431	0.530	0.777
PS6	0.527	0.494	0.509	0.428	0.405	0.542	0.377	0.732
PS7	0.396	0.430	0.410	0.473	0.437	0.451	0.486	0.742
PS8	0.383	0.485	0.468	0.418	0.400	0.380	0.369	0.698
PS9	0.440	0.481	0.421	0.438	0.473	0.500	0.457	0.78
PS10	0.423	0.468	0.556	0.493	0.568	0.405	0.413	0.793

Table 6 presents the cross-loadings of all measurement items across the latent constructs. The results demonstrate that each indicator achieves its highest loading on the construct it is theoretically associated with, thereby supporting the discriminant validity of the measurement model. For example, items related to the questioning mind construct (QM1–QM5) consistently show higher loadings on questioning mind compared to any other constructs. These results confirm that all indicators are appropriately allocated to their constructs and that the constructs are empirically distinct from one another. This outcome reinforces the discriminant validity of the measurement model and provides additional evidence that the measurement items reliably capture their intended theoretical dimensions. Therefore, the cross-loading criterion for discriminant validity is satisfied, further supporting the robustness and interpretability of the measurement model (Hair et al., 2021).

The final step in the outer measurement model analysis involves assessing the reliability of the constructs. Reliability refers to the internal consistency of the items measuring a particular construct, indicating the extent to which they consistently reflect the same underlying concept. In this study, reliability was evaluated using two commonly accepted measures: Cronbach's Alpha and Composite Reliability. According to Ghozali and Latan (2015), a construct is considered reliable if both Cronbach's Alpha and Composite Reliability values exceed the threshold of 0.70.

Table 7 presents the results of the reliability analysis for all constructs included in the study. Three key indicators are reported: Cronbach's Alpha, Composite Reliability and AVE. In accordance with the recommendations of Hair et al. (2014), Cronbach's Alpha and Composite Reliability values above 0.70 indicate strong internal consistency, meaning that the items within each construct reliably measure the same latent variable. In addition to reliability, the table also includes AVE values, which serve as an indicator of convergent validity. AVE values greater than 0.50 confirm that each construct explains more than half of the variance in its indicators, further supporting the validity of the measurement model.

In sum, the findings in Table 7 demonstrate that all constructs in the study exhibit acceptable levels of reliability and validity, confirming that the measurement model is both statistically sound and theoretically robust for further structural model analysis.

Table 7: Reliability Test

Construct	Cronbach's Alpha	Composite Reliability (rho_c)	AVE
Level of Professional Scepticism	0.914	0.928	0.564
Questioning Mind	0.754	0.835	0.507
Suspension of Judgement	0.847	0.891	0.620
Search for Knowledge	0.810	0.868	0.568
Self-Determination	0.806	0.874	0.568

Self-Confidence	0.837	0.884	0.607
Interpersonal Understanding	0.890	0.930	0.707
University Engagement	0.853	0.889	0.629

4.4. Structural model

This section discusses the assessment of the inner (structural) model, which is a fundamental component of Partial Least Squares Structural Equation Modelling (PLS-SEM). The structural model is designed to test the hypothesised relationships between latent constructs, as specified in the research framework. Through this analysis, the study evaluates the predictive power and explanatory strength of the model. The evaluation of the inner model involves examining several key metrics. First, the path coefficients (β) indicate the strength and direction of the relationships between constructs, demonstrating how changes in one construct are expected to influence another. Second, t-statistics and p-values, derived from bootstrapping procedures, are used to determine the statistical significance of these path relationships. Prior to interpreting the structural relationships, collinearity among the predictor constructs was assessed using variance inflation factor (VIF) values. Following the guideline proposed by Hair et al. (2019), VIF values below the threshold of 5.0 indicate that multicollinearity does not pose a critical issue. The results show that all VIF values fall below this recommended threshold, suggesting that collinearity does not threaten the stability or interpretability of the structural model estimates. Finally, the coefficient of determination (R^2) assesses the model's explanatory power, reflecting the proportion of variance in the endogenous construct explained by the exogenous constructs. Together, these indicators provide a comprehensive evaluation of the structural model's performance in explaining and supporting the theoretical relationships posited in the study.

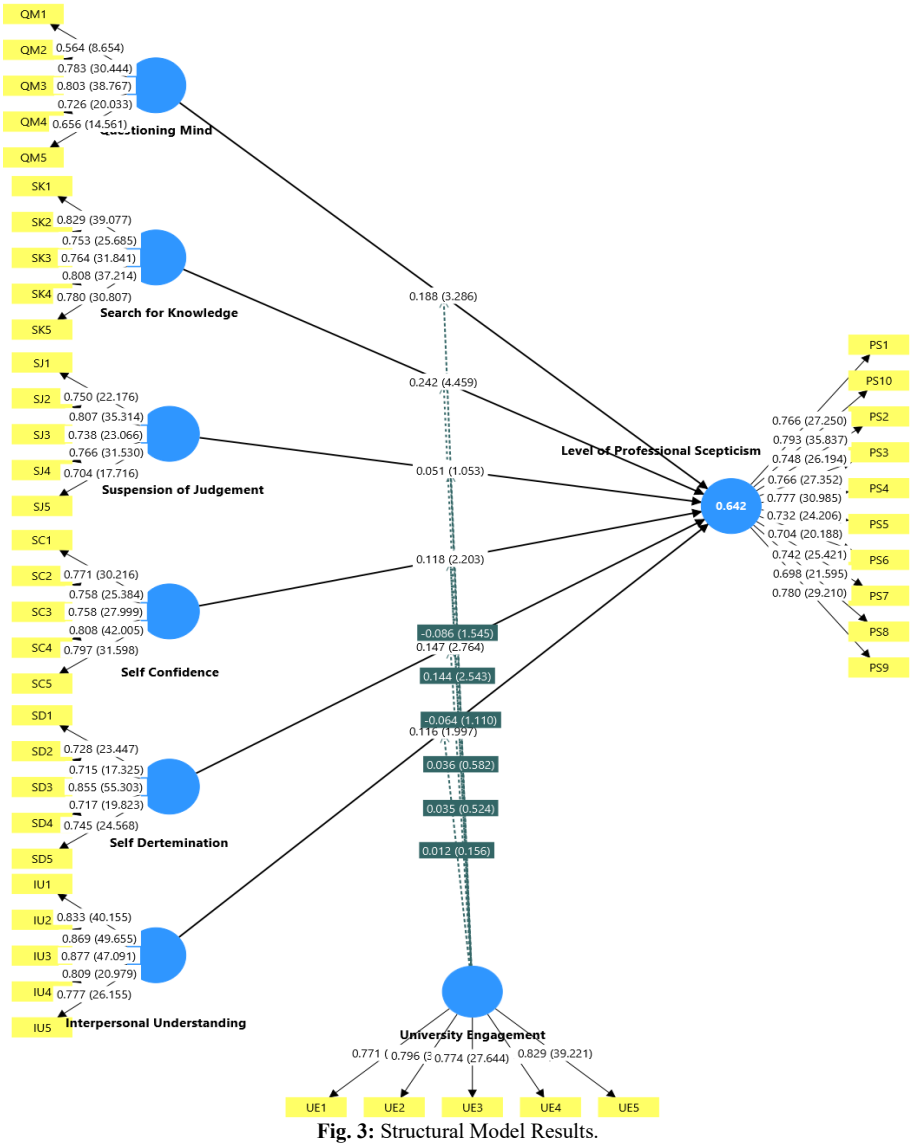


Fig. 3: Structural Model Results.

Based on the structural model presented in Figure 3, the coefficient of determination (R^2) for the dependent variable, level of professional scepticism, is 0.642. This indicates that approximately 64.2% of the variance in professional scepticism among accounting students can be explained by the three cognitive traits examined in this study: questioning mind, search for knowledge, and suspension of judgement. According to the guidelines provided by Hair et al. (2019), an R^2 value exceeding 0.10 is considered acceptable in behavioural and social science research, with higher values reflecting greater explanatory power. In this context, an R^2 of 0.642 signifies that the model possesses moderate to strong predictive accuracy, supporting the relevance and influence of the selected cognitive traits on professional scepticism. This result provides empirical support for the study's theoretical framework, confirming that these cognitive dispositions are meaningful predictors of sceptical behaviour among accounting students

Table 8: R^2 Value

Dependent Variable	R^2 Value
Level of Professional Scepticism (PS)	0.642

Prior to interpreting the structural relationships, collinearity among the predictor constructs was assessed using the Variance Inflation Factor (VIF). In PLS-SEM, VIF values below 5.0 indicate that multicollinearity does not pose a critical issue (Hair, Hult, Ringle, & Sarstedt, 2019). The results show that all predictor constructs recorded VIF values within acceptable limits: Questioning Mind (1.873), Search for Knowledge (2.147), Suspension of Judgment (1.962), Self-Determination (2.364), Self-Confidence (1.891), Interpersonal Understanding (2.103), and University Engagement (1.765). Although Search for Knowledge and Self-Determination exhibited relatively higher VIF values compared to other predictors, these remain well below the recommended threshold and likely reflect expected conceptual proximity among sceptical dimensions rather than problematic redundancy. Therefore, multicollinearity does not threaten the stability or interpretability of the structural model estimates.

To evaluate the significance of the relationships between constructs, the path coefficients (β) and their associated t-statistics were examined, as presented in Table 9. In PLS-SEM, a construct is generally considered to exhibit a meaningful relationship with another if its path coefficient exceeds 0.10 (Hair et al., 2021). The significance of these relationships was determined using the bootstrapping method with 5,000 resamples, which provides robust estimates of the standard error and supports reliable statistical inference.

Table 9 summarises the results of this analysis, including the path coefficient values, t-statistics, and p-values for each hypothesised relationship. The findings allow the researcher to determine whether the proposed hypotheses are supported and to what extent the independent constructs significantly influence the dependent construct—Professional Scepticism.

These results serve as the basis for hypothesis testing and further discussion of the theoretical implications of the study

Table 9: Path Coefficient

Hypothesis	Relationship	Path Coefficient (β)	t-value	p-value	Supported
H1	Questioning Mind → PS	0.173	2.937	0.003	Yes
H2	Search for Knowledge → PS	0.178	3.316	0.001	Yes
H3	Suspension of Judgment → PS	0.062	1.003	0.316	No
H4	Self Confidence → PS	0.118	2.203	0.028	Yes
H5	Self Determination → PS	0.147	2.764	0.006	Yes
H6	Interpersonal Understanding → PS	0.116	1.997	0.046	Yes
H7	University Engagement × Questioning Mind → PS	-0.086	1.545	0.123	No
H8	University Engagement × Search for Knowledge → PS	0.144	2.543	0.011	Yes
H9	University Engagement × Suspension of Judgement → PS	0.035	0.524	0.6	No
H10	University Engagement × Self Confidence → PS	0.036	0.582	0.561	No
H11	University Engagement × Self Determination → PS	-0.064	1.11	0.267	No
H12	University Engagement × Interpersonal Understanding → PS	0.012	0.156	0.876	No

Note: A path is considered significant if $p < 0.05$ and $t > 1.96$ (two-tailed test).

Based on the results presented in Table 9, it can be concluded that six of the hypothesised direct relationships between the independent variables and the level of professional scepticism are statistically significant. The only construct from the sceptical mindset dimension that does not exhibit a significant effect is suspension of judgement (H3), as its p-value exceeds 0.05, indicating a lack of statistical support for this relationship. In contrast, the analysis revealed a significant positive influence between questioning mind and the level of professional scepticism among accounting students ($\beta = 0.173$, $t = 2.937$, $p = 0.003$). This suggests that students who tend to critically question information are more likely to display higher levels of scepticism, a trait essential in the context of audit judgment and evidence evaluation. This finding is consistent with Hurtt (2010), who identified a questioning mind as a core component of professional scepticism, emphasising its role in challenging the validity and reliability of information encountered during the audit process. Furthermore, the result is supported by Putri and Ghozali (2021), whose study among Indonesian auditors similarly found a significant association between a strong questioning disposition and professional scepticism. These findings reinforce the idea that individuals who are habitually inquisitive and sceptical of assumptions are more likely to engage in critical analysis and professional judgment, which are essential competencies in the auditing profession.

The study also found a significant positive relationship between the search for knowledge and professional scepticism ($\beta = 0.178$, $t = 3.316$, $p = 0.001$). This implies that students who actively seek new information and demonstrate intellectual curiosity tend to be more sceptical in their professional judgment. These findings are consistent with prior research by Hurtt et al. (2013) and Quadackers et al. (2014), which identified the search for knowledge as a driver of sceptical thinking and anomaly detection in audit contexts. This is further reinforced by Amiruddin et al. (2023), who found that knowledge-seeking students exhibit greater vigilance when evaluating audit evidence. Similarly, Nelson (2009) and Asare and Wright (2012) asserted that inquisitiveness enhances one's ability to identify incomplete or biased information. Studies by Ghani et al. (2022) and Siriwardane, Low and Samkin (2014) also observed that encouraging reflective decision-making leads to increased awareness of the need for corroborating evidence. Pham (2024) further emphasised that a strong desire for knowledge strengthens one's ability to question assumptions and detect inconsistencies. These findings collectively underscore the importance of embedding investigative learning strategies within accounting curricula to foster sceptical judgment and analytical depth among students.

Conversely, the relationship between suspension of judgement and professional scepticism was found to be statistically insignificant ($\beta = 0.062$, $t = 1.003$, $p = 0.316$). Although suspension of judgement is theoretically central to professional scepticism (Hurtt, 2010), the results suggest that undergraduate accounting students may struggle to delay forming conclusions in complex or ambiguous audit situations. This finding is consistent with Rasso (2015) and Sayed Hussin et al. (2022), who reported that suspension of judgement may be underdeveloped in educational environments lacking practical, real-world reinforcement. Hammersley (2011) also noted that students often seek quick resolutions when solving case-based tasks, which may hinder their ability to withhold judgment until sufficient evidence is obtained. Similarly, Putra, Hasanah and Kusuma (2023) suggest that this cognitive trait may only develop fully through exposure to actual audit settings and professional experience. Therefore, while the theoretical role of suspension of judgement remains valid, its lack of significance in this study highlights a developmental gap in sceptical thinking at the undergraduate level.

This non-significant finding may reflect a developmental sequencing effect in the formation of professional scepticism. While suspension of judgement is theoretically central to sceptical reasoning (Hurtt, 2010), its effective enactment may require exposure to ambiguous and high-stakes audit environments. Undergraduate academic contexts often emphasise structured problem-solving and time-bound assessments, which may not sufficiently reinforce evidential restraint. As such, students may conceptually endorse delaying judgement but lack

the experiential reinforcement necessary for it to significantly predict professional scepticism. This suggests that suspension of judgement may mature later through professional exposure rather than during pre-professional education.

The results further show that self-confidence has a significant positive effect on professional scepticism (β = 0.118, t = 2.203, p = 0.028). Students who are confident in their analytical abilities are more likely to question information, defend their professional judgment, and resist undue influence from external parties. This finding aligns with Nelson (2009) and Hurtt et al. (2013), who emphasised that self-confidence is essential for auditors to maintain independence and professional objectivity. Similarly, Quadackers et al. (2014) noted that self-confident auditors are less likely to accept management explanations without verification, thereby strengthening the quality of audit judgments. These findings suggest that developing self-confidence through case-based learning and practical training could significantly enhance students' professional scepticism, enabling them to challenge assumptions and assess evidence more effectively.

Self-determination also demonstrates a significant positive relationship with professional scepticism (β = 0.147, t = 2.764, p = 0.006). This result implies that students who possess higher levels of autonomy, intrinsic motivation, and goal orientation are more likely to engage in critical analysis and exhibit sceptical behaviour. Sampewai et al. (2022) argued that self-determined individuals are more persistent in resolving audit-related issues, while Cheng and Chiou (2010) highlighted that self-determination fosters the willingness to question conventional practices and seek well-supported evidence. In the context of accounting education, these findings underscore the importance of cultivating self-determination through learning environments that promote student autonomy and active participation. By fostering self-determination, universities can help students develop the persistence and independence required for applying scepticism in professional decision-making.

Interpersonal understanding is also found to be significantly related to professional scepticism (β = 0.116, t = 1.997, p = 0.046). Students who are capable of interpreting social cues and understanding the perspectives of others are better equipped to evaluate the credibility of information provided by clients or other stakeholders. This finding is consistent with Hurtt (2010) and Rose (2007), who argued that interpersonal understanding enables auditors to identify signs of bias, misrepresentation, or pressure that may influence financial reporting. Additionally, Libby and Tan (1994) observed that auditors with strong interpersonal understanding were more effective in detecting inconsistencies during client interactions. These results indicate that interpersonal understanding should be reinforced in accounting education through group projects, role-playing exercises, and exposure to professional networking opportunities that develop both social awareness and critical evaluation skills.

The analysis reveals that university engagement has a significant direct effect on professional scepticism (β = 0.140, t = 3.186, p = 0.002). This result indicates that students who actively participate in academic, co-curricular, and professional activities exhibit stronger sceptical judgment. Engagement enables students to apply theoretical knowledge in practical contexts and develop the ability to analyse complex information critically. Kahu (2013) emphasised that academic and co-curricular involvement is a crucial driver of students' learning outcomes, particularly in the development of higher-order thinking skills. Similarly, Apostolou et al. (2013) highlighted that university engagement fosters professional competencies by creating opportunities for students to participate in problem-solving, networking, and industry-related experiences. In the Malaysian context, Johari et al. (2022) noted that students who engage in university-supported activities, such as case-based assignments and accounting society events, develop greater analytical and professional judgment capabilities, which directly enhance their professional scepticism.

Regarding its moderating role, university engagement significantly strengthens the relationship between search for knowledge and professional scepticism (β = 0.144, t = 2.543, p = 0.011). This finding implies that students who are highly engaged in their learning environments are better positioned to translate their curiosity and information-seeking behaviour into effective sceptical judgment. Nelson (2009) suggested that engagement provides the necessary context for knowledge-seeking traits to be expressed through collaborative learning, workshops, and applied case studies. Similarly, Biggs and Tang (2011) argued that highly engaged students benefit from exposure to multiple perspectives and iterative feedback from instructors and peers, which reinforces their inclination to gather and assess additional evidence before making professional judgments.

However, university engagement does not significantly moderate the relationship between questioning mind and professional scepticism (β = -0.086, t = 1.545, p = 0.123). This result suggests that the effect of a questioning mindset on sceptical behaviour is relatively stable and not contingent upon environmental factors. Widyaningsih et al. (2022) support this notion, indicating that questioning behaviour may function as a deeply rooted cognitive trait rather than a skill influenced by engagement. Similarly, Hurtt (2010) pointed out that the questioning mind is a fundamental aspect of an individual's personality, and while it can be enhanced through education, it is less dependent on contextual learning factors such as engagement.

The moderating effect of university engagement on the relationship between suspension of judgement and professional scepticism is also found to be insignificant (β = 0.035, t = 0.524, p = 0.600). This finding implies that while engagement can promote active learning, it may not necessarily develop the ability to withhold judgment until sufficient evidence is gathered. Rasso (2015) observed that suspension of judgement often requires experience in high-stakes audit situations, which students typically lack. Consequently, while engagement enhances learning, it may not adequately replicate the professional conditions needed for this trait to manifest in measurable sceptical behaviour.

Similarly, university engagement does not significantly moderate the relationship between self-confidence and professional scepticism (β = 0.036, t = 0.582, p = 0.561). This suggests that self-confidence operates primarily as an internal disposition rather than a behaviour shaped by engagement. Shaub and Lawrence (1996) noted that confidence is a personal characteristic influenced more by self-efficacy and prior achievements than by external educational factors. Furthermore, Knechel et al. (2013) asserted that although educational environments can provide reinforcement, they do not fundamentally alter individuals' confidence levels.

The moderating effect of university engagement on self-determination is also insignificant (β = -0.064, t = 1.110, p = 0.267). This result indicates that while engagement provides a structured environment for learning, it does not substantially change students' intrinsic motivation or autonomy in applying sceptical thinking. According to Deci and Ryan's (2000) Self-Determination Theory, intrinsic motivation is a relatively stable factor that is more deeply influenced by personal values and internalised goals than external institutional factors.

University engagement does not significantly moderate the relationship between interpersonal understanding and professional scepticism (β = 0.012, t = 0.156, p = 0.876). This suggests that while engagement fosters teamwork and communication, it does not necessarily strengthen the ability of students to interpret social cues in ways that directly enhance their sceptical judgment. Libby and Tan (1994) indicated that interpersonal understanding is developed primarily through accumulated professional interactions rather than academic engagement alone.

The pattern of moderation results suggests that sceptical traits vary in their sensitivity to contextual reinforcement. Traits such as questioning mind may function as relatively stable dispositional characteristics, exerting direct influence irrespective of institutional engagement. Hurtt (2010) conceptualises questioning mind as a personality-linked cognitive orientation, which may explain its limited susceptibility to

environmental amplification. Similarly, Nelson (2009) argues that sceptical judgement partly reflects enduring cognitive tendencies rather than purely situational responses.

From a motivational perspective, Self-Determination Theory (Deci & Ryan, 2000) posits that intrinsic autonomy operates independently of external context once internalised. This may explain why university engagement did not significantly moderate the relationship between self-determination and professional scepticism. Furthermore, prior research suggests that certain sceptical behaviours, particularly suspension of judgement and interpersonal sensitivity, are strengthened through professional interaction rather than academic participation (Shaub & Lawrence, 1996; Libby & Tan, 1994). Academic engagement alone may not replicate the evidential complexity and social pressure characteristic of audit practice.

Notably, university engagement significantly moderated the relationship between search for knowledge and professional scepticism. This aligns with Kuh (2003) and Kahu (2013), who argue that active engagement enhances learning outcomes when traits are behaviourally expressed through participation. Knowledge-seeking behaviour may therefore be more environmentally responsive compared to other sceptical traits.Collectively, these findings suggest that educational context selectively amplifies certain cognitive dispositions while others operate more independently of engagement intensity.

In summary, university engagement exerts a significant direct effect on professional scepticism and moderates the relationship between search for knowledge and professional scepticism. However, it does not significantly moderate the relationships of questioning mind, suspension of judgement, self-confidence, self-determination, or interpersonal understanding with professional scepticism. These findings highlight that while engagement is a critical factor in enhancing analytical and knowledge-driven sceptical behaviours, other traits may depend more on individual dispositions or professional experience.

5. Conclusion

This study set out to examine the influence of six key traits—questioning mind, search for knowledge, suspension of judgement, self-confidence, self-determination, and interpersonal understanding—on the level of professional scepticism among final-year accounting students at a public university in Malaysia, as well as the moderating role of university engagement. Based on responses from 374 students, the results provide meaningful insights into how both cognitive and attitudinal dispositions shape sceptical thinking at the pre-professional stage.

The results of this study confirm that questioning mind has a significant positive effect on professional scepticism. This demonstrates that students who are inclined to challenge assumptions and critically evaluate information are more likely to develop the analytical judgement required for the auditing profession. This supports previous findings by Hurtt (2010), Quadackers et al. (2014), and Putri and Ghozali (2021), reinforcing that inquisitiveness is a core cognitive trait essential for detecting inconsistencies and improving the quality of audit judgment.

Similarly, search for knowledge was found to be a significant predictor of professional scepticism. Students who actively seek additional information and evidence demonstrate a stronger inclination toward sceptical thinking. This finding is aligned with studies by Hurtt et al. (2013), Amiruddin et al. (2023), and Ghani et al. (2022), which highlight the importance of intellectual curiosity in improving audit quality and critical thinking skills.

Conversely, suspension of judgement was not found to be significant in predicting professional scepticism. This result suggests that students may struggle to withhold conclusions until sufficient evidence is obtained, which may be due to their lack of practical experience or a tendency to prefer quick resolutions. This is consistent with research by Rasso (2015) and Sayed Hussin et al. (2022), who indicated that this trait often develops later in professional practice rather than during undergraduate education.

With respect to sceptical attitude, self-confidence was found to have a significant and positive effect on professional scepticism. This suggests that students who possess strong belief in their own analytical abilities are more likely to challenge questionable information and assert their judgments. This finding is consistent with Nelson (2009) and Hurtt et al. (2013), who argue that self-confidence is a key element in the effective application of professional scepticism.

Self-determination also showed a significant positive effect on professional scepticism, indicating that motivated students who take ownership of their learning and decisions are better equipped to apply sceptical reasoning. This finding is supported by Sampewai et al. (2022) and Cheng and Chiou (2010), who demonstrated that self-determination fosters persistence in problem-solving and enhances students' willingness to challenge assumptions.

Interpersonal understanding was also a significant predictor of professional scepticism. Students who are able to interpret social cues and understand the perspectives of others are better positioned to identify potential biases in financial reporting. This aligns with the findings of Hurtt (2010) and Rose (2007), who highlight the value of interpersonal understanding in supporting auditors' ability to detect inconsistencies in client-provided information.

In relation to university engagement, the results indicate that engagement has a significant direct effect on professional scepticism. This means that students who actively participate in academic, co-curricular, and professional activities are more likely to develop sceptical judgement skills. This is in line with the findings of Kahu (2013) and Apostolou et al. (2013), who emphasised the role of an engaging academic environment in developing critical and analytical skills among students.

However, for its moderating role, university engagement was found to significantly moderate only the relationship between search for knowledge and professional scepticism. This shows that engaged students are better able to translate their knowledge-seeking tendencies into sceptical behaviour when supported by active learning environments. This finding echoes the arguments of Nelson (2009) and Biggs and Tang (2011) on the importance of experiential learning. The moderating effects for questioning mind, suspension of judgement, self-confidence, self-determination, and interpersonal understanding were not significant, suggesting that these traits may function more as stable individual dispositions rather than context-dependent skills influenced by engagement (Widyaningsih et al., 2022).

In conclusion, this study provides strong evidence that while cognitive and attitudinal traits play a central role in shaping professional scepticism, university engagement also functions as an important contextual factor, especially for enhancing the effect of knowledge-seeking behaviour. These findings highlight the need for accounting education to integrate both trait-based development and structured engagement opportunities to cultivate students who are well-prepared for the analytical and ethical demands of the auditing profession.

Acknowledgment

We would like to express our appreciation and gratitude to Universiti Teknologi MARA for their support and to the Ministry of Higher Education for their funding (600-RMC/FRGS 5/3 (159/2023).

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