JUPIIS: Jurnal Pendidikan Ilmu-ilmu Sosial

PERSONAL ACADEMIC AND ENVIRONMENTAL FACTORS AS DETERMINANTS OF PERCEIVED COMPLEXITY IN ACCOUNTING COURSES

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Abstract

This study aims to examine the influence of personal, academic, and environmental factors on students' perceived complexity of accounting courses. Accounting is frequently regarded as a difficult subject due to its abstract concepts, procedural rigor, and analytical demands, which often affect students' motivation, engagement, and learning outcomes. Understanding the determinants of perceived complexity is essential for improving the effectiveness of accounting education. This research employed a mixed-method explanatory approach, in which quantitative data served as the primary source of analysis and qualitative data supported the interpretation of results. Quantitative data were collected through a survey of 260 Accounting Education students at Universitas Negeri Medan using a structured questionnaire measured on a five-point Likert scale. The sample was selected using proportionate stratified random sampling based on semester level. The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4. To strengthen the empirical findings, qualitative data were obtained through classroom observations and semi-structured interviews with selected students and lecturers. The results indicate that personal factors—including learning motivation, academic ability, prior learning experience, and attitudes toward accounting—significantly reduce students' perceived complexity of accounting courses. Academic factors, such as curriculum structure, teaching methods, and instructional material quality, also play a significant role in facilitating understanding and reducing cognitive load. Furthermore, environmental factors, encompassing academic, social, and physical learning environments, positively influence students' engagement and perceptions of accounting learning. Qualitative findings confirm that interactive teaching methods and supportive learning environments enhance students' confidence in dealing with complex accounting material. This study contributes to accounting education literature by demonstrating that perceived course complexity is multidimensional and shaped by the interaction of internal and external factors. Practically, the findings suggest that educators and institutions should adopt student-centered teaching strategies, adaptive curricula, and supportive learning environments to mitigate perceived complexity and improve learning outcomes.

Key words: *Personal factors, Academic factors, Environmental factors, Accounting complexity, Students' perception*

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INTRODUCTION

Accounting is a core course in the Accounting Education Study Program at Universitas Negeri Medan and plays a crucial role in developing students' professional competence. Despite its importance, accounting is frequently perceived by students as a complex and challenging subject. This perception arises from the abstract nature of accounting concepts and the need to apply them in practical activities such as journalizing, preparing financial statements, and analyzing financial data (Pawindra, 2020; Prasetyo, 2021; Nurhayati et al., 2020). Difficulties in understanding fundamental concepts often reduce students' motivation and classroom participation (Chen & Yang, 2020; Santoso & Kurniawan, 2022).

Prior studies suggest that students' perceptions of accounting complexity are influenced by personal, academic, and environmental factors. Personal factors include learning motivation, academic ability, prior learning experience, and attitudes toward accounting, all of which shape students' engagement and persistence in learning (Schunk & DiBenedetto, 2020; Afifatus Soleha, 2020). Academic factors, such as curriculum structure, teaching methods, and instructional material quality, affect students' comprehension, particularly when learning relies heavily on traditional instructional approaches (Hasanah et al., 2021). Environmental factors, including academic support, peer interaction, and physical learning conditions, also contribute to students' learning experiences and perceptions (Chen et al., 2020).

Although previous research has examined these factors individually, empirical studies integrating personal, academic, and environmental dimensions within a single analytical framework remain limited, particularly in the Indonesian higher education context. Therefore, this study aims to analyze the combined influence of personal, academic, and environmental factors on students' perceived complexity of accounting courses and to provide evidence-based recommendations for improving accounting education in Indonesia.

Accounting courses are widely recognized as complex due to their technical content and reliance on analytical reasoning. Perceived complexity emerges not only from the difficulty of accounting material but also from how students experience the learning process within specific academic and environmental contexts.

Personal Factors

Personal factors—such as learning motivation, academic ability, prior learning experience, and attitudes toward accounting—play a critical role in shaping students' perceptions of accounting complexity. High motivation and strong academic ability support persistence and effective learning strategies, while positive prior experiences and attitudes enhance conceptual understanding (Schunk & DiBenedetto, 2020; Reski & Halim, 2025).

Academic Factors

Academic factors include the level of material difficulty, teaching methods, and instructional material quality. Interactive and student-centered teaching approaches, supported by clear and relevant learning materials, have been shown to reduce perceived difficulty and improve understanding of complex accounting concepts (Putri & Nugroho, 2022).

Environmental Factors

Environmental factors encompass academic, social, and physical learning environments. Supportive academic interactions, collaborative peer learning, and conducive physical classroom conditions positively influence students' engagement, concentration, and overall learning experience (Yusof et al., 2020; Peng et al., 2022).

Personal Factors

H1a: Learning motivation significantly affects perceived accounting course complexity.
H1b: Academic ability significantly affects perceived accounting course complexity.
H1c: Prior learning experience significantly affects perceived accounting course complexity.
H1d: Attitudes toward accounting significantly affect perceived accounting course complexity.
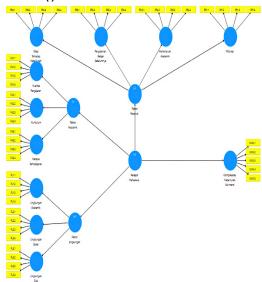
Academic Factors

H2a: Curriculum significantly affects perceived accounting course complexity.
H2b: Teaching methods significantly affect perceived accounting course complexity.
H2c: Instructional material quality significantly affects perceived accounting course complexity.

Environmental Factors

H3a: Academic environment significantly affects perceived accounting course complexity.

H3b: Social environment significantly affects perceived accounting course complexity.

H3c: Physical environment significantly affects perceived accounting course complexity.

Figure 1. Research Framework

Source: Data SEM PLS 2025

METHODOLOGY

1. Research Approach and Method

This study employed a mixed-method explanatory research approach, integrating quantitative and qualitative methods. The quantitative approach was used as the main method to examine the relationships between personal, academic, and environmental factors and students' perceived complexity of accounting courses. A survey method was applied to collect quantitative data, allowing statistical testing of the proposed hypotheses using Structural Equation Modeling.

To complement and strengthen the quantitative findings, a qualitative approach was also employed. Classroom observations and semi-structured interviews were conducted to capture students' learning experiences, attitudes, and perceptions that could not be fully explained through survey data alone. The integration of quantitative and qualitative methods provides a more comprehensive understanding of the research problem and enhances the credibility of the findings.

2. Population and Sampling Technique

The population of this study consisted of 288 students from the Accounting Education Study Program, Faculty of Economics, Universitas Negeri Medan, who had completed core accounting courses. The population included students from semesters 2, 4, 6, and 8.

The sample was determined using proportionate stratified random sampling, which is a probability sampling technique. Each semester level represented a stratum, and respondents were randomly selected from each stratum in proportion to its size. This technique ensured that all students in the population had an equal and known chance of being selected, thereby increasing the representativeness of the sample. A total of 260 students were selected as respondents.

3. Data Collection Methods

Data were collected using three complementary techniques:

a. **Survey**

A structured questionnaire was administered to collect quantitative data on students' perceptions of accounting course complexity and the associated personal, academic, and environmental factors. The questionnaire was measured using a five-point Likert scale and adapted from previously validated instruments.

b. **Observation**

Non-participant classroom observations were conducted to examine teaching methods, student participation, and learning environments during accounting classes. These observations provided empirical context to support the interpretation of survey results.

c. **Interviews**

Semi-structured interviews were conducted with selected students and lecturers to obtain deeper insights into students' learning difficulties, attitudes toward accounting, and experiences in the learning process. The interview data were used to support and explain the quantitative findings.

4. Data Analysis

Quantitative data were analyzed using Partial Least Squares–Structural Equation

Modeling (PLS-SEM) with SmartPLS 4. The analysis included validity testing (convergent and discriminant validity), reliability testing (Cronbach's Alpha and Composite Reliability), and hypothesis testing. Qualitative data from observations and interviews were analyzed thematically and used to enrich the discussion of empirical findings.

RESULT & DISCUSSION

1. Validity and Reliability Testing

Validity and reliability tests were conducted to ensure that the research instruments accurately and consistently measured the intended constructs. In this study, there were three main variables: Student Perceptions, Accounting Course Complexity, and Learning Methods.

Instrument validity was assessed through convergent validity using the Average Variance Extracted (AVE) values. The results indicated that the AVE for all three variables exceeded 0.8, meaning that more than 80% of the indicator variance was explained by the respective constructs. This demonstrates that each indicator had a strong correlation with its construct and that convergent validity was achieved for all variables. Discriminant validity was further evaluated by comparing the AVE of each construct with the squared correlations between constructs. The results showed that AVE values were greater than the squared correlations, confirming that the three variables were distinct and unique from one another.

Construct reliability was measured using the formula of the sum of squared factor loadings divided by error variance. Reliability values for each variable exceeded 0.7, indicating good internal consistency. Therefore, the instruments used were stable and capable of producing trustworthy data for further analysis.

In conclusion, the results of the validity and reliability tests reinforce the credibility of the research data and provide a solid foundation for conducting Structural Equation Modeling (SEM) analysis and hypothesis testing.

Table 1. Validity and Reliability Test Results

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Student Perception	0.994	0.994	0.994	0.775
Attitude Toward the Course	0.942	0.943	0.958	0.851
Complexity of Accounting Course	0.942	0.943	0.956	0.813
Teaching Method	0.936	0.936	0.954	0.839
Environmental Factors	0.928	0.928	0.954	0.874
Curriculum	0.935	0.936	0.954	0.838
Social Environment	0.933	0.933	0.952	0.832
Motivation	0.931	0.931	0.951	0.828
Quality of Teaching	0.930	0.931	0.950	0.827
Academic Ability	0.930	0.931	0.950	0.827
Academic Environment	0.930	0.930	0.950	0.826
Prior Learning Experience	0.928	0.930	0.949	0.823
Physical Environment	0.924	0.928	0.946	0.815
Academic Factors	0.915	0.915	0.946	0.854
Personal Factors	0.923	0.923	0.946	0.813

Source : Olah Data Sem PLS 2025

2. Research Findings

The results of this study indicate that students' perceptions of accounting course complexity are influenced by three main factors: personal factors, academic factors, and environmental factors. These factors do not operate independently but interact to shape students' mindsets, attitudes, and learning behaviors. This finding confirms that the complexity of a course is not solely derived from the nature of the instructional material, but also from students' internal conditions, the quality of academic support,

and the characteristics of the learning environment.

Statistically, Structural Equation Modeling using the PLS approach (SEM-PLS) showed that all indicators forming the three constructs had t-statistic values above 1.96, indicating significant effects. This emphasizes that efforts to reduce perceived complexity must be conducted holistically, encompassing students' internal aspects, learning strategies, and a supportive learning environment.

These findings are consistent with recent research by (Issa, Sannella, & Cohen (2022)), which found that the fulfillment of basic psychological needs—such as competence and motivation—plays a key role in enhancing students' academic performance. Furthermore, a longitudinal study by Zhang et al. (2024) demonstrated that emotional intelligence and mindfulness positively influence each other, thereby reducing academic stress and enhancing learning motivation.

Additionally, Zhao, Ren, and Yang (2024) revealed that students' self-management directly improves academic achievement, and this effect is mediated by self-efficacy. This model underscores the importance of internal student factors in building confidence and reducing perceived complexity. From the perspective of social environment and motivation, Higton et al. (2024) found that a supportive peer learning climate significantly increases autonomous motivation, learning engagement, and reduces academic burnout symptoms.

Within the framework of Self-Perception Theory (originally proposed by Bem in 1972), contemporary findings show that the reciprocal relationship between positive student experiences and academic self-perception significantly influences motivation and learning persistence. For instance, research by Marsh et al. (2011) demonstrated that academic achievement strengthens positive self-perception, enhancing students' motivation and resilience.

The t-statistic values for each indicator can be seen in the following table:

Table 2. Path Coefficient Values

Path	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Student's Perception -> Personal Factors	965	965	5	191,938	0
Student's Perception -> Accounting Course Complexity	962	963	11	85,833	0
Student's Perception -> Academic Factors	959	960	5	181,809	0
Personal Factors -> Learning Motivation	942	942	8	112,583	0
Personal Factors -> Academic Ability	942	942	8	116,991	0
Personal Factors -> Attitudes Toward the Course	940	940	9	109,325	0
Academic Factors -> Teaching Quality	939	940	8	111,101	0
Student's Perception -> Environmental Factors	938	938	7	129,825	0
Academic Factors -> Teaching Methods	933	934	9	100,246	0
Environmental Factors -> Academic Environment	930	931	10	97,627	0
Personal Factors -> Prior Learning Experience	927	927	11	81,478	0
Environmental Factors -> Social Environment	924	924	9	102,702	0
Academic Factors -> Curriculum	915	917	13	71,125	0
Environmental Factors -> Physical Environment	911	912	11	82,534	0

Source: SEM-PLS Data Processing (2025)

3. Personal Factor

Personal factors include learning motivation, academic ability, prior learning experience, and attitudes toward accounting.

a. Learning Motivation

The results of the study indicate that learning motivation has a significant effect on

perceived course complexity, with a t-statistic of 112.583 > 1.96. This suggests that students with high learning motivation tend to exhibit greater resilience when facing academic material perceived as difficult.

These findings align with contemporary literature on intrinsic motivation and academic dedication. For instance, a meta-analysis by Howard, Bureau, Guay, Chong, and Ryan (2021) found that intrinsic motivation is significantly correlated with academic success and learning perseverance. Additionally, a recent study published kamberi (2025) revealed that intrinsic motivation mediates the relationship between extrinsic motivation and academic achievement through emotional engagement and psychological capital.

Within the framework of Self-Determination Theory (SDT), intrinsic motivation—supported by the fulfillment of basic psychological needs such as competence and autonomy encourages active engagement and persistence in learning. Paloş, Vîrgă, and Dediu (2025) confirmed that students with high intrinsic motivation and satisfied autonomy needs are more likely to adopt deep learning approaches rather than surface learning approaches.

b. Academic Ability

Strong academic ability (t-statistic = 116.991 > 1.96) facilitates students' understanding of complex material. According to Cognitive Load Theory (Sweller, 1994), high academic ability reduces cognitive load, enabling more efficient processing of challenging content.

This allows students to allocate more mental resources to analysis and problem-solving.
These results are supported by a study by Chong and Tan (2010) in Singapore, which reported that students with high academic ability adapt more quickly to advanced accounting concepts.

c. Prior Learning Experience

Positive prior learning experiences (t-statistic = 81.878 > 1.96) help students build knowledge schemas. This aligns with constructivist theory, which emphasizes that effective learning occurs when new knowledge is connected to existing knowledge. Research in Indonesia by Nugroho, A., and Ratnawati, V. (2020) also found that students who have attended basic accounting training are better prepared to tackle advanced accounting courses.

d. Attitudes Toward Accounting

The study found that a positive attitude toward accounting significantly influences academic resilience, with a t-statistic of 109.325, well above the 1.96 threshold. This indicates that students who perceive accounting as important for their careers tend to view challenges as learning opportunities rather than obstacles.

These findings are supported by recent research. Murray-Sterling and Onyefulu (2023) found a positive relationship between students' attitudes toward accounting courses and their academic performance, suggesting that a positive attitude enhances perseverance and learning success. Additionally, Shang et al. (2024), in the context of Massive Open Online Courses (MOOCs) in accounting, identified that students' positive attitudes directly influence their intention to continue learning, mediated by self-efficacy and perceived behavioral control.

From the perspective of Self-Perception Theory, students form perceptions of their abilities through direct learning experiences. In this context, positive experiences with accounting—through career relevance or reinforcement of self-confidence—shape a strong self-perception, enhancing academic resilience. Recent empirical studies also show that students' academic resilience is positively associated with self-efficacy, learning engagement, and psychological well-being.

e. Academic Factors

Academic factors include curriculum, teaching methods, and instructional material quality.

1) Curriculum

A dense curriculum significantly increases students' perception of complexity (t = 71.125). This finding aligns with the Situated Expectancy-Value Theory (SEVT) by Wigfield and Eccles (2020), which states that students are more motivated when the material is perceived as relevant and achievable within a reasonable

timeframe. OECD (2022) emphasizes that an excessive curriculum load can reduce student well-being, trigger stress, and hinder deep learning engagement. In the context of accounting, Shang et al. (2024) showed that the relevance of material to the workplace and appropriate pedagogical approaches can strengthen academic resilience and reduce perceived difficulty.

2) **Teaching Methods**
Interactive teaching methods (t-statistic = 100.246 > 1.96), such as case-based learning and problem-based learning, have been shown to reduce perceived difficulty. According to Zimmerman (2002), these methods encourage self-regulated learning, where students actively plan, monitor, and evaluate their learning processes. Recent research also confirms that Problem-Based Learning (PBL) effectively promotes self-regulated learning by engaging students in active planning, monitoring, and evaluating of their learning activities. This is consistent with the study by Villafuerte et al. (2021), which demonstrated that the Problem-Based Learning (PBL) approach enhances critical thinking and problem-solving skills among accounting students in the Philippines. Quality of Instructional Material The quality of instructional material is also a critical factor influencing students' perception of course complexity. High-quality instructional materials (t-statistic = 111.101 > 1.96) facilitate conceptual understanding and reduce cognitive load. Recent research emphasizes that presenting content in a visual, interactive, and structured manner can enhance learning effectiveness. For example, studies by Chen et al. (2019), Rahman and Abdullah (2020), and Yuliana and Pratiwi (2022) demonstrate that well-designed digital learning materials increase student engagement and accelerate the comprehension of accounting content. Environmental Factors

3) **Academic Environment**
The findings indicate that lecturer support and adequate academic facilities have a significant impact (t-statistic = 97.627 > 1.96), fostering a sense of security and enhancing students' self-confidence. This aligns with recent research by Al-Qahtani, M. F., Abdelaziz, A. M., & Elzubeir, M. A. (2023)., which found that perceptions of the educational environment—including academic interactions, facility quality, and teaching support—significantly influence students' emotional, cognitive, and behavioral engagement as well as their academic performance (BioMed Central).

4) **Social Environment**
Peer support has been shown to strengthen understanding through discussions and group work (t-statistic = 102.702 > 1.96). A study by Yang and Xiang (2024) in *Frontiers in Psychology* demonstrated that peer support significantly enhances academic engagement and motivation, serving as an important mediator between instructor support and students' self-efficacy.

5) **Physical Environment**
Comfortable learning facilities (t-statistic = 82.534 > 1.96) have been proven to help students maintain full concentration. This is supported by findings in *Frontiers in Psychology* (2022), which highlighted the importance of "space and furniture perception" as well as the physical environment—such as room flexibility and layout—in increasing satisfaction and positive perceptions of the classroom. Furthermore, results from a study published in *MDPI* (2022) also emphasize the critical role of ergonomic and well-organized learning spaces in enhancing student focus and engagement. It also indicates that indoor environmental conditions—such as temperature, air quality, humidity, and acoustics—directly affect students' concentration and focus. For instance, fresh air, comfortable temperature, and minimal

pollution have been shown to support cognitive performance and attention levels during learning.

CONCLUSION

This study concludes that students' perceptions of the complexity of this course also Accounting students' perceptions of course complexity are significantly influenced by personal, academic, and environmental factors. Personal factors, such as motivation, academic ability, prior learning experience, and attitudes, have been shown to play a role in reducing perceived complexity. Academic factors, including teaching quality, curriculum, and instructional methods, contribute positively to facilitating students' understanding. Meanwhile, environmental factors— academic, social, and physical—also promote the formation of positive perceptions toward accounting learning. These findings underscore that efforts to develop effective accounting learning strategies should simultaneously consider all three factors to reduce perceived complexity and enhance the overall effectiveness of the learning process.

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