Noun Phrase Constructions in Abstracts Written by EFL Academic Writers

Unaree Taladngoen*
Kanittha Suwannapracha
Naruporn Palawatwichai
Rajamangala University of Technology Lanna, Thailand
*Corresponding author's email: unaree@rmutl.ac.th

Abstract

Academic writing favors lexical and phrasal nominal premodifications and postmodifications over the clausal type. However, for novice writers, whether the constructed complex noun phrases (NPs) maintain conciseness and grammatical accuracy is questionable. The present study analyzed the types of NPs and the grammatical devices used to construct complex NPs in abstracts authored by twenty-five English-majoring English as a foreign language undergraduates. Additionally, the extent to which the NPs maintained conciseness and grammatical accuracy was also examined. Following the content analysis procedures, the study revealed the frequent use of complex NPs over simple NPs. Regarding complex NP constructions, extensive use of multiple and mixed grammatical devices in the same complex NPs was observed. While this reflects an attempt to construct condensed academic discourse, excessive layered modifications and the unnecessary use of such modifications led to verbosity, grammatical inaccuracy, semantic errors, and reduced clarity. The findings highlight the need for targeted academic writing instruction that balances complexity, clarity, and grammatical accuracy.

The current trend of academic writing has shifted from a verbose and elaborated style to a more concise and compressed form, characterized by a movement away from lexical density that is realised through complex nominal structures (Biber & Gray, 2016; Timyam, 2024). This shift aligns with modern publishing, where limited space and strict word counts necessitate economical writing conventions, following the style of compressed academic prose (Biber & Gray, 2011; Ruan, 2018; Timyam, 2024). This

trend prioritizes the use of head nouns with minimal lexical and phrasal modifiers rather than extensive pre- and post modification (Bowen, 2019), and a reduction in the amount of abstraction (Bowen & Thomas, 2020) Thus, to conform with the economical academic discourse, academic writers will typically use noun phrases (NPs) with varied lexical and phrasal modifications (Bychkovska, 2021; Jitpraneechai, 2019; Timyam, 2024), enhancing the presentation of condensed information and abstract academic discourse (Bychkovska, 2021).

Considered as part of an academic work, an abstract should also follow a concise language style to present the completeness of a research article within limited space (Kessler et al., 2024). Additionally, due to the word-limit constraint, noun phrases (NPs) with modifications are typically prevalent in abstract writing similar to other elements of a research paper, as Biber et al., (1999) observe an approximate NPs' occurrence of 300,000 nouns per million words.

The complexity of NPs in varied writing genres has been examined by various scholars. For instance, Jitpraneechai (2019) analyzed NP complexity in argumentative essays written by Thai and native English undergraduates, while Lan and Sun (2019) investigated the NP complexity of Chinese L2 writers' compositions. Regarding academic papers, Demir (2019) analyzed NP complexity in the Introduction section of research articles, authored by Turkish EFL writers. More recently, Timyam (2024) investigated NP constructions in the Introduction and Methodology sections of research manuscripts submitted to an international journal administered by a Thai public university. Regarding abstract writing analysis, Ansarifar et al. (2018) examined and compared NP complexity in abstracts authored by Persian graduates (MA and PhD levels) and experienced writers. These studies reveal a consistent trend in the lexical and phrasal nominal modifiers over the clausal ones, reflecting the alignment to compressed academic writing conventions of experienced writers. Additionally, academic texts written by experienced writers are more syntactically compressed, with the prevalence of phrasal constructions (Ansarifar et al., 2018). Moreover, these studies confirm the hypothesized developmental stages proposed by Biber et al. (2011), in which complex NPs will be developed at later stages when writers gain more writing experience.

Regarding inexperienced English writers, Bowen et al. (2023) report that one of the most challenging factors that hinder English writing development is the low English proficiency level of EFL students. Concerning issues in the academic writing of EFL students, Biley (2015)

and Phothongsunan (2016) identify sentence formation as a major problem. That is to say, an academic discourse requires writers to incorporate grammatical devices to construct concise and meaningful academic expressions. This is particularly difficult for less proficient academic writers, as Parkinson and Musgrave (2014) observe that less proficient students rely heavily on attributive adjectives when constructing complex NPs. As a result, the heavy reliance on attributive adjectives or layered nominal premodifiers can reduce clarity and lead to ambiguity (Biber et al., 2011). In addition, less proficient students are likely to have difficulties mastering the linear order of attributive adjectives as nominal premodifiers (Al-khresheh & Alruwaili, 2023). Paradoxically, the balance between complexity, clarity, conciseness, and grammatical accuracy of academic writing is also challenging for novice EFL academic writers, as they struggle to convey ideas using appropriate academic language (Phothongsunan, 2016).

In the context of the research-oriented academic writing classroom, Thai EFL undergraduates, majoring in English for International Communication (EIC) at a Thai public university, are mandated to conduct an independent study (IS) in English language studies and write an IS manuscript to report the results and findings of their study. Similar to academic papers of expert writers, an abstract is one of the most important elements, addressing the why, how, what, and so what questions. Produced by novice academic writers, an investigation of NP constructions and their alignment with current compressed academic prose is beneficial.

NP constructions are the main focus due to their importance in students' syntactic development and mastery of the language (Durrant & Brenchley, 2023). Additionally, as Biber et al. (1999) observe, NP complexity varies from one writing genre to another, and pre-modifying adjectives, post-modifying prepositional phrases, and post-modifying non-finite clauses are typically prevalent in academic writing (Bowen, 2019). As a result, undergraduate IS abstracts are purposefully selected, as they represent EFL students' academic work in the actual classroom setting and serve as foundational practice for academic writing, providing a bridge to more professional forms of scholarly communication. These context-specific data will offer a more focused study and possibly lead to highlighting pedagogical benefits in academic writing instruction.

The present study investigates the types of NPs most frequently found in IS abstracts written by EIC-majoring undergraduates, examines grammatical devices used, and analyses grammatical errors exhibited in the constructed NPs. The analysis will draw on the framework of the five

grammatical devices suggested by Biber and Gray (2011) and a range of grammatical devices, including non-finite clauses (e.g., *to*-infinitive and participial clauses) and finite clauses (e.g., relative clauses), as proposed by Downing and Locke (2006). The study will also address three research questions:

(1) Which type of NPs (simple and complex) is the most commonly used in IS abstracts authored by EIC-majoring undergraduates?

(2) What are the most commonly found grammatical devices in complex NP constructions in IS abstracts written by EIC-majoring undergraduates?

(3) To what extent do the constructed NPs maintain grammatical accuracy?

Literature Review

Abstracts

A research paper abstract is a short paragraph of 100–250 words, which summarizes the contents and purpose of a study.Serving as an essential component of a research paper (Arono, 2019), an abstract provides an overview of published and unpublished academic work (Russo, 2020), covering the introduction, method, results, discussion, and conclusion, addressing the why, how, what, and so what questions. Additionally, according to Huckin (2001), an abstract demonstrates four prominent functions, including providing a quick summary of the study, enhancing the reader's reading decisions, creating an interpretive frame to guide the reader, and serving as an aid to indexing. Kumar (2018) also adds that a concise and engaging abstract will capture its readers' attention, compelling them to explore more of the work. In contrast, an ineffective and unengaging abstract will deter exploration. Thus, a well-crafted abstract plays a pivotal role in advancing a manuscript (Swales & Feak, 2009).

Noun Phrases (NP)

Similar to other types of phrases, noun phrases (NPs) are constructed around their heads, which are always nouns (Timyam, 2024). According to Biber and Gray (2016), NPs can consist of an optional determiner and a head noun, forming a simple NP (e.g., *students,* the *participants,* and thirty *respondents*). In contrast, adding elements to a simple NP increases its complexity, resulting in complex NPs (e.g., the independent *study*, *students* from the three faculties, and English vocabulary recall *skills* before and after learning by using a rhyming word technique).

Head nouns of complex NPs can be modified using attributive adjectives and nouns as nominal premodifications, as well as prepositional phrases as nominal postmodifications. Some head nouns can take either nominal premodifications or nominal postmodifications. However, it is common for head nouns to be surrounded by both nominal premodifications and postmodifications, contributing to the structural complexity of the NP (Bowen & Thomas, 2020).

Additionally, different noun classes can take different syntactic categories as their modifications (Durrant & Brenchley, 2023). For example, the concrete noun *participants* in "the *participants* from the three faculties" takes a prepositional phrase as its postmodifier, whereas the abstract noun *number* in "a total *number* of 120 students" takes a prepositional phrase as its complement. Although the two prepositional phrases share the same surface structure, they function differently when accompanying different noun classes.

Regarding the significance of complex NPs, Jitpraneechai (2019) observes that written academic work requires a significant density in presentations, leading to a great reliance on complex NP structures with a range of nominal premodification and postmodifications (see also Bowen, 2019; Thomas & Bowen, 2020). The selection of NP modifications tends to reflect genre-specific conventions (Pu et al., 2022) and discipline-specific conventions (Esfandiari & Ahmadi, 2022), meaning that different writing discourses and fields also prefer different types of NP modifications.

Grammatical Devices in Complex NP Constructions

Complex NP constructions typically involve five grammatical devices as essential NP modifications (Biber & Gray, 2011). These devices include nominalization, attributive adjectives, nouns as nominal premodifiers, prepositional phrases as nominal postmodifiers, and appositive noun phrases. Each device contributes uniquely to the syntactic and semantic density of NPs, a feature characteristic of formal academic writing.

Nominalization changes verbs into nouns. This change can occur through simple conversion (e.g., *waste, increase*, and *decrease*) or the addition of derivational suffixes (e.g., dispose → *disposal*, participate → *participant*, and analyze → *analysis*). The use of nominalization allows the writer to shift from emphasizing actions or processes to concepts or entities, enabling the alignment with the abstract and impersonal tone of academic discourse. They also help readers to condense information and manipulate the thematic or progression of ideas (Bowen & Thomas, 2020).

Attributive adjectives are lexical elements that directly modify head nouns by providing descriptive and qualifying information (i.e., functioning as Epithets). They are placed adjacent to the head noun, creating compact descriptive units (e.g., foreign *language*, universal *culture*, and independent *study*). This grammatical device in complex NP construction enables the inclusion of detailed and descriptive information without expanding the sentence unnecessarily, contributing to syntactic efficiency and conciseness.

Nouns can serve as premodifiers to the head nouns, functioning as Classifiers to specify or narrow the meaning of the head nouns (e.g., sentence *form*; vocabulary *words*, and student *teachers*). The use of nouns as nominal premodifiers is common in academic writing, enabling conciseness and context-specific lexicons.

Placed after the head nouns, prepositional phrases serve either as nominal postmodifiers or complements. Serving as postmodifiers, prepositional phrases often indicate location, source, or type (e.g., *students* <u>from the three faculties</u>; many *students* <u>in the classroom</u>). Prepositional phrases serving as complements help complete the meaning (e.g., the participants' *awareness* <u>of grammatical errors</u>; the *types* <u>of syntactic errors</u>).

Appositive noun phrases are placed after the head nouns to offer supplementary information or clarification (e.g., *morphology*, a study of word structure). They are commonly used to define terms or concepts concisely. The incorporation of this grammatical device encourages writers to provide explanations and details in the text.

Nominal premodifications are not restricted to attributive adjectives and nouns, and nominal postmodifications, serving as postmodifiers or complements, are not limited to prepositional phrases and appositive noun phrases. Jitpraneechai (2019) highlights that participles (e.g., gathered *data*, participating *students*) and possessive nouns (e.g., learners' *motivation*, students' *deficiency* in English speaking) can also serve as nominal premodifications.

Similarly, nominal postmodifications include a wider variety of structures. In addition to prepositional phrases and appositive noun phrases, finite clauses (e.g., relative clauses) and non-finite clauses (e.g., present participle clauses, past participle clauses, and *to*-infinitive clauses) can also function as nominal postmodifications (Downing & Locke, 2006).

Writing correct complex NPs can indicate students' mastery of the language and their syntactic development (Durrant & Brenchley, 2023). Additionally, the level of NP complexity differs across writing genres, and adjectives as nominal premodifications and prepositional phrases and non-

finite clauses as nominal postmodifications are distinct to academic writing (Biber et al., 1999). Furthermore, using different grammatical devices in complex NP constructions enables the writer to achieve greater syntactic density and precision, aligning with the demands of compressed academic discourse (Jitpraneechai, 2019; Lau, 2017; Timyam, 2024).

Grammatical Errors in NP Constructions in Academic Writing

Academic writing is regarded as the most difficult skill for EFL learners, including Thai EFL undergraduates, to master (Kampookaew, 2020). As a result, academic writing authored by these EFL students usually contain grammatical errors typically caused by insufficient linguistic knowledge and first-language (L1) interference (Srisawat & Poonpon, 2023). Errors caused by limited linguistic knowledge are known as intralingual errors, while errors caused by the interference of the student's L1 are known as interlingual errors (Gass & Selinker, 2008; Richard 1974, as cited in Srisawat & Poonpon, 2023). The former includes examples of wrong preposition choice, incorrect word choice, and misspelled words. The latter involves examples of the omission of copular *"be"* before noun, adjectival, and prepositional predicates, subject-verb disagreement, and determiner-noun disagreement.

Regarding grammatical errors in NP constructions in academic writing, a study by Syafutri et al. (2022) reports that the most common grammatical errors in NP constructions found in the introduction of Indonesian undergraduate theses are errors regarding head nouns, such as missing plural suffixes and noun-quantifier disagreement. The researchers further clarify that, due to the interference of their first language in which plurality is not marked by suffixes, these Indonesian EFL students usually and repeatedly make such errors.

Despite being considered language flaws, students' grammatical errors in academic writing are important, as they demonstrate the student's learning process (Dulay et al., 1982, as cited in Kampookaew, 2020). According to Kampookaew (2020), grammatical errors in academic writing inform EFL teachers what students have learned and what they lack so that the teachers can help them become better at writing and write more grammatically.

Method

Sample

The sample for the present qualitative study were twenty-five (25) Independent Study (IS) abstracts written by fourth-year Thai EFL undergraduates majoring in English for International Communication (EIC) at a Thai public university. The number of EIC-majoring undergraduates in the research setting between the academic years 2019 and 2023 was relatively small. Consequently, all twenty-five (25) abstracts, with an average word count of 184 words, were used for data analyses. Table 1 provides a summary of the IS abstracts used for data analyses.

Table 1
A Summary of IS Abstracts for Data Analysis

Academic Year	No. of IS Abstracts	Total Word Counts	No. of NPs
2019	5	1,061	99
2020	5	1,060	129
2021	3	653	58
2022	4	660	50
2023	8	1,164	110
Total	**25**	**4,598**	**446**

Although the 25 abstracts, with a total of 4,598 words and 446 NPs, are relatively small for content analysis, they could be considered sufficient for the current descriptive study due to their homogeneity in the areas related to English language studies. Additionally, these IS abstracts were written by novice academic writers with similar writing backgrounds, as all completed a prerequisite academic writing course before being eligible to enroll in the IS course. Also, there were sessions that the IS teacher held to guide them on how to write an IS manuscript, including specific instructions on writing an abstract. Consequently, according to Hennik and Kaiser (2022), a small sample size can be sufficient to reach data saturation when the population is homogeneous, suggesting fewer samples provide meaningful and consistent patterns.

In addition, academic writing is particularly shaped by genre-based writing conventions (Bowen & Thomas, 2020; Hyland, 2000), and grammatical structures, such as noun phrases (Swales & Feaks, 2012), are typically used, including in abstract writing (Sukhapabsuk, 2021). Therefore, although the samples were relatively small, the recurrent language patterns could be identified in the existing dataset and enhance a consistent analysis of NP constructions in IS abstract writing of EFL undergraduates.

In sum, although the 25 IS abstracts tend to be relatively small for descriptive analysis, their genre-based structure and clear linguistic patterns could allow precise and consistent analysis in terms of types of NPs, grammatical devices in NP constructions, and grammatical accuracy of the constructed NPs.

Data Collection Procedures

The data collection follows the content analysis procedures (Zhang & Wildemuth, 2009) as follows:

Gathering raw data

The hard copies of the IS manuscripts were stored in the office of the EIC program and were accessed with the written permission of the EIC program head. The 25 abstracts were scanned into a PDF file and then converted into a DOCX file to facilitate data analysis. The identities of the students and their IS advisors were excluded to comply with anonymity conventions. For systematic organization and analysis, the abstracts were coded according to the academic year of their creation, followed by a unique number. For instance, the code "2019-A1" refers to the first IS abstract written in the academic year 2019.

Searching for head nouns

The 25 abstracts were read and reread to identify head nouns and their constructions. Following Murugaraj's (2023) guidelines for identifying head nouns, the main head nouns were first located in the subject and object positions of the main verbs. Dummy subjects and nouns in prepositional phrases, possessive forms, appositions, finite and non-finite clauses, and parenthetical clauses were excluded.

Data Coding

The obtained raw data were manually coded based on the research questions as follows:

Coding the Types of NPs

The identified NPs were categorized into simple and complex types. Based on the frameworks proposed by Biber and Gray (2011, 2016) and Downing and Locke (2006), head nouns with or without determiners (e.g., a, an, the, this, that, these, and those) are considered simple NPs with the assigned

code 'S-NP.' Also, pronouns used as head nouns are included in the simple NP category. However, dummy subjects, such as the "it" in **_It was found that…_**, are excluded from this category. On the other hand, head nouns with additional elements (e.g., adjectives, prepositional phrases, non-finite clauses, and finite clauses) are classified as complex NPs, and the assigned code is 'C-NP.'

Coding the Structural Patterns of NPs

Building on the frameworks proposed by Biber and Gray (2011, 2016) and Downing and Locke (2006) regarding the grammatical devices in complex NP constructions, all identified NPs were coded according to their NP structural patterns, as presented in Table 2.

Table 2
Code Assignments to Constructed NPs Found in IS Abstracts

Codes	Explanations	Structural Patterns	Examples
S-NP	Simple NPs that contain a head noun with or without a determiner	(Det) + N	- a *questionnaire* (2020-A1) - the *instrument* (2022-A2) - This *study* (2023-A7)
C-NP-1	Complex NPs Type 1 that has the head noun with at least one nominal premodification but does not contain any nominal postmodifications	(Det) + Pre + N	- The collected *data* (2019-A3) - This independent *study* (2020-A3) - The student's vocabulary *knowledge* (2022-A2)
C-NP-2	Complex NPs Type 2 that contains the head noun with at least one nominal postmodification but does not include any nominal premodifications or determiners	N + Post	- *Results* of the study (2020-A3) - *factors* that affect English reading aloud ability of participants from three faculties (2020-A4) - *Comments* from open-ended questions (2020-A4) - *Learning* a foreign language like English (2019-A3)

Table 2

Code Assignments to Constructed NPs Found in IS Abstracts (Cont.)

Codes	Explanations	Structural Patterns	Examples
C-NP-3	Complex NPs Type 3, which includes the head noun with both nominal premodifications (with or without a determiner) and postmodifications	(Det) + Pre + N + Post	- the symbolic *structure* that makes the activities prominent and important (2019-A2) - the total *number* of 120 students (2019-A3) - a fundamental English *course* at a private university (2020-A2)
C-NP-4	Complex NPs Type 4, in which multiple head nouns are combined by conjunctions with or without nominal premodifications or postmodifications	N1 + Conj + N2	- *parents* and *family* (2020-A4) - the *preferences* and *opinions* of students (2022-A1) - the syntactic *forms* and communication *functions* of car brand slogans (2023-A5)

Coding Grammatical Errors Found in Simple and Complex NP Constructions

Grammatical errors were identified at the phrase level, following the error analysis procedures suggested by Gass and Selinker (2008). Then, the identified grammatical errors were classified and coded in themes, as presented in Table 3.

Table 3

Theme Assignments of Grammatical Errors in NP Constructions

Themes		Explanations
Theme 1	Error regarding the forms of head nouns	- The use of singular nouns instead of plural nouns, and vice versa - Incorrect choices of head nouns - The absence of required head nouns
Theme 2	Incorrect use of articles	- The incorrect choices of articles - The absence of required articles
Theme 3	Incorrect forms or choices of modifications	- The use of plural nouns as nominal premodifiers where adjectives are required - The use of past participial clauses instead of present participial clauses, and vice versa

Table 3

Theme Assignments of Grammatical Errors in NP Constructions (Cont.)

Themes		Explanations
Theme 4	Incorrect forms of possessive nouns	- The use of singular form of possessive nouns when the plural form was required, and vice versa
Theme 5	Errors regarding writing mechanics	- The absence of hyphens in compound nouns as nominal premodifiers
		- The incorrect use of capital letters
		- The absence of an apostrophe showing possession
Theme 6	Incorrect use of prepositions in nominal postmodifications	- The incorrect choice of prepositions in prepositional phrases as nominal postmodifications
		- The absence of prepositions in finite and non-finite clauses as nominal postmodifications
Theme 7	Incorrect sequences of modification placements	- Wrong order of adjectives
		- The separation between the head noun and its relative clauses

Data Analysis

The identified NPs were first examined and categorized into two main categories: Simple NPs and Complex NPs. The categorization relied on their structural patterns. Then, the frequency of occurrence was counted and calculated for percentages.

After the categorization of NP types, the linguistic structures of complex NPs were analyzed based on grammatical devices used in their constructions, as suggested by Biber and Gray (2011). Concerning conciseness and simplicity, present and past participles before head nouns were classified as attributive adjectives due to their function as head noun modifications (Gu, 2020). In addition, nominal postmodifications were further analyzed for more extensive grammatical devices, such as non-finite clauses (e.g., *to*-infinitive and participial clauses) and finite clauses (e.g., relative clauses), based on the framework of Downing and Locke (2006).

Finally, the simple and complex NPs were further examined for phrase-level grammatical accuracy. Following the error analysis procedures of Gass and Selinker (2008), the collected simple and complex NPs were first analyzed for errors. The errors were then classified into themes, as presented in Table 3, and quantified for frequencies. Sources of errors, whether they were intralingual, interlingual, or writing mechanic errors, were identified.

The analysis employed a manual coding procedure since the data were relatively small. In addition, manual coding helps ensure accurate classifications of grammatical devices in complex NP constructions, as well as errors in the constructed NPs (Timyam, 2024). After the researchers completed the initial analyses, two experienced EFL teachers crosschecked 10% of the data for reliability, following O'Connor and Joffe's (2020) inter-coder practical guidelines.

Since the two coders crosschecked the researchers' analyses, Cohen's Kappa (κ) (Cohen, 1960, as cited in O'Connor & Joffe, 2020) was used to assess inter-coder agreement. The interpretation of the κ value is that the closer to 1 the κ value is, the higher the level of agreement the coders have. According to Landis and Koch (1977), the interpretation of Kappa statistics is as follows: less than 0.2 showing poor agreement; 0.21–0.4 showing fair agreement; 0.41–0.6 showing moderate agreement; 0.61–0.8 showing substantial agreement; and 0.81–1.0 showing perfect agreement. The κ values regarding the agreement on NP types, grammatical devices in complex NP constructions, and grammatical errors were 0.75, 0.79, and 1, respectively, representing substantial to perfect agreement.

Findings

This section presents the findings of the research based on the research questions. The first part presents the types of simple and complex NPs used in the IS abstracts written by Thai EFL undergraduates, majoring in EIC, between the academic years 2019 and 2023. The second part deals with the use of grammatical devices in complex NP constructions. Then, the third part discusses grammatical errors found in simple and complex NP constructions.

Types of NPs Used in IS Abstracts Written by EIC-Majoring Undergraduates

Twenty-five IS abstracts with a total of 4,598 counts written by EIC-majoring undergraduates at a Thai public university were included in the study. The analysis revealed 446 instances of NPs. Of the 446 NP instances, simple NPs totaled 157 instances (35.20%), while complex NPs totaled 289 instances (64.80%). Table 4 presents the types of NPs used in IS abstracts written by EIC-majoring undergraduate students in the past five academic years.

Table 4

Types of NPs in IS Abstracts of EIC-Majoring Undergraduates

Academic Year	No. of NPs		Types of NPs			
			Simple NPs		Complex NPs	
	Stances	%	Stances	%	Stances	%
2019	99	22.20	31	6.95	68	15.25
2020	129	28.92	53	11.88	76	17.04
2021	58	13.00	16	3.59	42	9.42
2022	50	11.21	14	3.14	36	8.07
2023	110	24.66	43	9.64	67	15.02
Total	446	100	157	35.20	289	64.80

As shown in Table 4, complex NPs, characterized by the presence of premodifications and postmodifications were more frequently used in IS abstracts over the past five academic years. Simple NPs found in this study consisted of common nouns with or without determiners (e.g., the *participants,* the *instrument, students*), pronouns (e.g., *it, they, this*), initialisms (e.g., *GT*), and proper names (e.g., *Facebook*).

In contrast, complex NPs included at least one modification. Table 5 provides a detailed breakdown of the structural components of complex NPs found in the study.

Table 5

Structural Components of Complex NPs in IS Abstracts of EIC-Majoring Undergraduates

Codes	Structure of Complex NPs	Counts	%
C-NP-1	(Det) + Premodification(s) + N.	92	31.83
C-NP-2	N. + Postmodification(s)	44	15.22
C-NP-3	(Det) + Premodification(s) + N. + Postmodification(s)	141	48.79
C-NP-4	N1 and N2 / N1, N2, and N3	12	4.15
Total		**289**	**100**

As presented in Table 5, of the 289 complex NPs, the complex NPs with both premodifications and postmodifications occurred most frequently, accounting for 141 instances (48.79%). The second most common structure was the complex NPs with premodifications, appearing 92 times (31.83%), followed by the complex NPs with postmodifications, appearing 44 times (15.22%). The complex NP involving multiple head nouns joined by conjunction was the least frequent, with only 12 instances (4.15%).

Grammatical Devices Used in Complex NP Constructions

The analysis revealed extensive use of grammatical devices in complex NP constructions in IS abstracts authored by EIC-majoring undergraduates at a Thai public university over the past five academic years (2019–2023). It was also found that these students employed both premodifications and postmodifications in complex NP constructions to align with compressed academic writing discourse. Table 6 presents the grammatical devices used for constructing nominal modifications with head nouns italicized.

Table 6

Grammatical Devices Used to Construct Nominal Modifications

Grammatical Devices	Examples
Premodifications	
Attributive adjectives	- this independent *study*
	- the gathered *data*
	- the strongest *agreement*
Nouns	- English vocabulary recall *skills*
	- a 10-item satisfaction *questionnaire*
	- the research *instrument*
Compound nouns	- verb + preposition *collocations*
	- adverb + adjective *collocations*
Proper nouns	- Google *Translate*
	- Harry Potter *novels*
	- Online Oxford Collocations *Dictionary*
Possessive nouns	- freshmen's vocabulary *size*
	- the student's vocabulary *knowledge*
	- the authors' intentional metaphorical *use*
Initialisms	- RP *students*
	- the EP *students*
	- the GT *usage*
Postmodifications	
Prepositional phrases	- 120 *students* from the three faculties at XXX University
	- the *satisfaction* with the rhyming word technique for word memorization
	- the *contents* of greeting, companies, and occupations
to-infinitive clauses	- the *instrument* to gather the data
	- the *ability* to distinguish British and American cultural elements
	- parents' *motivation* to send their children in an EP classroom
	- more *features* to help GT users, specifically students, for language understanding and learning
Relative clauses	- the symbolic *structure* that makes the activities prominent and important
	- the listening *activity* that contains audio from the said nationalities
	- 15 *parents* who sent their children in an EP classroom
Appositives	
- Parenthesized initialisms	- Google *Translate* (GT)
	- the Vocabulary Level *Test* (VLT)
	- standard *deviation* (S.D.)
- Parenthesized acronyms	- The General Aptitude *Test* – English (GAT ENG)
Past participial clauses	- the *requirements* stated by the Ministry of Education
	- the *instrument* used in this study
	- the clause *form* used 17 times
Present participial clauses	- 38 first-year *students* doing a bachelor's degree
	- *adjectives* ending with -ed and -ing
NP complements	- *Learning* a foreign language like English
	- *Telling* stories
	- *learning* vocabulary with the use of rhyming word techniques

According to Table 6, the commonly used nominal premodifications in IS abstracts of EIC-majoring undergraduates were attributive adjectives, single nouns, noun phrases, proper names, possessive nouns, and initialisms. In addition, the commonly used nominal postmodifications included prepositional phrases, *to*-infinitive clauses, relative clauses, appositives (including parenthesized initialisms and acronyms), present participial clauses, past participial clauses, and NP complements.

The analysis also revealed the use of multiple and mixed-type modifications in complex NP constructions in undergraduate IS abstracts. The following excerpts demonstrate examples of complex NPs with multiple modifications.

Excerpt 1	This independent study aimed to compare <u>English vocabulary recall *skills* before and after learning by using rhyming word techniques</u>. (2019-A2)
Excerpt 2	The participants were <u>31 first-year *students* doing a Bachelor's degree from the three faculties at XXX University.</u> (2021-A2)

The underlined complex NP in Excerpt 1 contains the head noun *skills* with both premodifications and postmodifications. The premodifications include three nouns (i.e., English, vocabulary, and recall), and postmodifications encompass layered prepositional phrases (i.e., before and after learning and by using rhyming word techniques). The prepositional phrase, before and after learning, postmodifies the head noun *skills*, while the prepositional phrase, by using rhyming word techniques, functions as a complement of the gerund *learning*.

Similarly, in Excerpt 2, the underlined complex NP has the head noun *students* with both premodifications and postmodifications. The former includes a numeral determiner (31) and a compound noun (first-year). The latter consists of a present participial clause (doing a Bachelor's degree) and two prepositional phrases (from the three faculties and at XXX University).

The analysis also identified a sequence of four different nominal premodifications within the same noun phrases. Additionally, this sequence is usually present when the students reported quantitative findings. Excerpts 3 and 4 demonstrate how the students employed a sequence of different premodifications in complex NP constructions.

| *Excerpt 3* | The students agreed that Indonesian male had <u>the most comprehensible English *accent*</u>. (2019-A4) |
| *Excerpt 4* | <u>The least frequently used language *form*</u> was the clause form. (2020-A2) |

The underlined complex NP in Excerpt 3 has the head noun *accent* with a sequence of different premodifications, including a determiner (the), an adverb (most), an adjective (comprehensible), and a pre-modifying noun (English). Similarly, the underlined complex NP in Excerpt 4 takes the head noun *form* with a sequence of different premodifications, including a determiner (the), an adverbial phrase (least frequently), a past participle (used), and a pre-modifying noun (language).

Another notable finding regarding nominal postmodification constructions was the use of layered grammatical devices within the same complex NP, resulting in verbosity. The students usually used layered postmodifications when they specified the research aims and explained the research participants. Excerpts 5 and 6 illustrate the students' use of multiple postmodifications in their IS abstracts.

| *Excerpt 5* | This study aimed to investigate and analyze <u>the *types* of syntactic errors found in translated work from Thai to English produced by eight students who were studying in English for International Communication, the Faculty of Business Administration and Liberal Arts, XXX University</u>. (2020-A5) |
| *Excerpt 6* | In this study, it had <u>48 undergraduate *students* as participants from three faculties, Faculty of Business Administration and Liberal Arts (BALA), Faculty of Science and Agricultural Technology (SAT), and Faculty of Engineering (ENG) selected by using purposive sampling method to complete online modification 20-item questionnaire using Google Forms, an online application by Google</u>. (2021-A3) |

The underlined complex NPs in Excerpts 5 and 6 were constructed with layered postmodifications. In Excerpt 5, the student tended to include the research objective and the research participants in one sentence, leading to a wordy and lengthy sentence. Similarly, in Excerpt 6, the wordy and lengthy complex NP resulted from layered postmodifications to explain the research participants, the sampling method, the research instrument, and the data collection method.

The use of gerund phrases in undergraduate IS abstracts was also observed. Since gerund phrases contain a gerund serving as the head noun

and the complement elements serving as nominal posmodifications, they are classified as complex NPs. In our sampled undergraduate IS abstracts, gerund phrases usually appeared in the introduction and conclusion parts, as presented in Excerpts 7 and 8.

Excerpt 7   In this finding, it is safe to say that ***learning*** vocabulary with the use of rhyming word techniques works effectively and *(is)* beneficial to the students. (2019-A2)

Excerpt 8   ***Learning*** a foreign language like English means learners have to learn its culture elements as well. (2019-A3)

In addition, the use of multiple head nouns, joined by a conjunction, with the same nominal modifications, was also observed, as shown in Excerpts 9 and 10.

Excerpt 9   It aimed to understand English speaking ***ways*** and ***varieties*** among these nationalities. (2019-A4)

Excerpt 10   Hence, this independent study examined the GT ***usage*** and ***experience*** among students, who have had taken *(have taken)* English courses. (2020-A3)

The complex NP in Excerpt 9 has two head nouns, *ways* and *varieties,* with a pre-modifying noun (English), a present participle (speaking), and a prepositional phrase (among these nationalities) as a postmodification. Similarly, the complex NP in Excerpt 10 has the head nouns *usage* and *experience* with a determiner (the) and an initialism (GT) as premodifiers. These head nouns in Excerpt 10 also take the post-modifying prepositional phrase (among students) with a relative clause modifying the preceding noun (students).

Grammatical Errors Found in Simple and Complex NP Constructions

Similar to other novice EFL writers, EIC-majoring undergraduates also constructed simple and complex NPs with prevalent grammatical errors at phrase level. The commonly found grammatical errors in NP constructions are categorized and presented in Table 7.

Table 7

Common Grammatical Errors in NP Constructions in IS Abstracts of EIC-Majoring Undergraduates

Types of Grammatical Errors	Sources of Errors	Frequencies (%)	Examples
1. Error regarding the forms of head nouns	Interlingual	16 (31.37%)	- many *form* from other sources (2020-A2) - the *three* lowest preferred *accent* (2022-A1) - the *using* of vocabulary learning strategies (2021-A1)
2. Incorrect use of articles	Intralingual	14 (27.45%)	- *guideline* for lecturers (2022-A3) - *problem* about having little knowledge of vocabulary (2022-A4)
3. Incorrect forms or choices of modifications	Intralingual	7 (13.73%)	- the *sentences* form (2020-A2) - a 25 item questionnaire with a 5-point Likert scale *by adapting* from Schmitt (1997) (2021-A1) - the three *lowest* preferred accent (2022-A1)
4. Incorrect forms of possessive nouns	Intralingual	4 (7.84%)	- the *participant's* scores (2022-A2) - the *student's* vocabulary knowledge (2022-A2)
5. Errors regarding writing mechanics	Intralingual	4 (7.84%)	- a *25 item* questionnaire (2021-A1) - *R*eading *C*omprehension *T*est (2021-A2)
6. Incorrect use of prepositions in nominal postmodifications	Intralingual	3 (5.88%)	- misunderstanding *for* hearing these different accents (2019-A4) - adjectives *ending* -ed and ing (2023-A2)
7. Incorrect sequences of modification placements	Intralingual	3 (5.88%)	- *The questionnaire* was used to collected* the data *which utilized a Likert scale*. (2019-A1) - The *top most three* syntactic errors (2020-A5)
Total		**51 (100%)**	

Note. Since the present study focuses on grammatical errors in NP constructions, grammatical errors existing in sentence constructions are not reported.

As seen in Table 7, both simple NPs and complex NPs in undergraduate IS abstracts contained common grammatical errors. These grammatical errors include errors regarding head nouns, the use of articles, the forms or choices of modifications, the form of possessive nouns, writing mechanics, the use of prepositions, and the placements of nominal modifications.

Concerning the sources of errors, it was observed that most of the grammatical errors were intralingual errors, caused by the students' low English proficiency. In this study, it was observed that the grammatical errors related to head nouns was interlingual errors, influenced by the absence of plural suffixes in the Thai language.

Notably, even though they were grammatically constructed, some complex NPs in undergraduate IS abstracts contained semantic errors. As a result, the constructed complex NPs did not communicate the intended message and caused confusion, as shown in Excerpts 11 and 12.

> *Excerpt 11*   Harry Potter novels provide <u>a new **phenomenon** in the famous reading of novels that means a well-known novel for reading all over the world.</u> (2023-A1)
>
> *Excerpt 12*   The finding revealed that <u>the **students** with very highest scores</u> were in part of expressions. (2023-A7)

In Excerpt 11, the underlined NP is confusing and does not clearly express the intended idea about the Harry Potter novels being widely read. Similarly, the underlined NP in Excerpt 12 is semantically unclear due to an awkward relationship between the head noun *students* and its prepositional phrase as a predicate. These semantic errors could be attributable to a heavy reliance on AI tools in translating the abstract from Thai to English. In addition, due to a lack of grammatical knowledge, the EIC-majoring undergraduates did not recheck the validity of the translated work, resulting in grammatical inaccuracy and ambiguity.

Discussion

The present research examined types of NPs found in IS abstracts authored by EIC-majoring undergraduates, analyzed the grammatical devices used in complex NP constructions, and investigated grammatical errors found in the constructed NPs of EIC-majoring undergraduates when writing their IS abstracts over the past five academic years. These complex NPs were constructed using multiple premodifications and postmodifications with various grammatical devices, such as attributive adjectives, prepositional phrases, relative clauses, past participial clauses, present participial clauses,

and appositives. A closer look into grammatical devices used in the complex NP constructions highlighted a marked preference for lexical and phrasal premodifications and postmodifications over clausal ones. Furthermore, there were certain types of grammatical errors present in both simple and complex NPs, such as the incorrect form of head nouns, the incorrect use of articles, and the incorrect choice or form of modifications. These grammatical errors were caused by the students' low English proficiency and L1 interference.

Characterizing NP Types

Regarding the first research question, the analysis revealed a predominant use of complex NPs over simple NPs in undergraduate IS abstracts from the past five academic years. These complex NPs were constructed using multiple premodifications and postmodifications, employing various grammatical devices. The most frequently used NP structure was *Premodification(s) + N. + Postmodification(s)*, echoing a study by Lau (2017) in which this NP structure is common in research articles. Furthermore, the use of complex NPs in IS abstract writing of EIC-majoring undergraduates aligns with the claim of Demir (2019) that complex NPs are more preferable than simple ones to maintain complexity, conciseness, and clarity.

Grammatical Devices Used in Complex NP Constructions

Concerning the second research question, the findings highlighted a marked preference for lexical and phrasal modifications over clausal ones. This extensive use of complex NPs with lexical and phrasal modifications reflects an adherence to the conventions of condensed academic prose. As suggested by Biber and Gray (2011, 2016), lexical and phrasal nominal modifications are more prevalent than clausal types in academic writing. These findings also support the assertion that complex NPs are characteristic of academic discourse (Biber & Gray, 2011; Lan & Sun, 2019).

However, the frequent use of multiple and mixed types of postmodifications suggests an inconsistency with the complex NP constructions by expert writers. According to Liu and Li (2016), the most complex NPs in academic papers of experts typically contain only two or three consecutive postmodifications, aligning with academic publication conventions. In contrast, excessive use of layered postmodifications constructed by EIC-majoring undergraduates was observed when they explained the research participants. While lexical and phrasal nominal modifications are preferred in condensed academic writing, the use of

multiple and mixed grammatical devices by novice EFL academic writers can result in verbosity and reduce readability (Demir, 2019).

The employment of complex NP structures with lexical and phrasal modifications in undergraduate IS abstracts adheres to the conventions of condensed academic prose. However, the use of post-modifying prepositional phrases (e.g., *the participants* <u>of this study</u>), *to*-infinitive clauses (e.g., *the instrument* <u>to gather the data</u>), and past participial clauses (e.g., *the instruments* <u>used for the study</u>) can be unnecessary, especially when the context is clear, as Johnson (2016) emphasizes the importance of simplicity, clarity, and conciseness in academic writing. Thus, this practice typically leads to verbosity and reduces readability. The potential cause of verbosity can be a lack of genre-specific lexical knowledge, as Kongcharoen et al. (2024) observe that, like EFL undergraduate students in other disciplines, English-majoring undergraduates still possess insufficient academic word knowledge, as evident in their writings. This leads the students to use descriptive language instead of specific technical terms.

The use of prepositional phrases and non-finite clauses as nominal postmodifications when the context is already known also reflects the hypothesized developmental stages, as proposed by Biber et al. (2011). That is, less proficient learners tend to use simpler grammatical devices in complex NP constructions. However, the use of multiple and mixed types of nominal modifications of these EIC-majoring undergraduates casts doubt on whether the students have developed linguistically or merely follow formulaic patterns. The latter is evident from the grammatically constructed NPs with a sequence of four lexical premodifications (e.g., the most comprehensible English *accent* and the least frequently used language *form*). The possibility that the students constructed complex NPs based on formulaic patterns echoes findings in a study by Casal and Yoon (2023), in which formulaic language patterns are prevalent in academic writing and have a strong connection with rhetorical moves.

Grammatical Errors Found in the Constructed NPs

Based on the third research question, EIC-majoring undergraduates produced simple and complex NPs with certain types of grammatical errors, such as the incorrect form of head nouns, the incorrect use of articles, and the incorrect choice or form of modifications, due to their low English proficiency and L1 interference. This aligns with a study by Syafutri et al. (2022), in which missing plural suffixes and noun-quantifier disagreement are the most common errors in NP constructions of EFL writers. Regarding the source of errors, the majority of grammatical errors

in NP constructions were considered intralingual errors. This means EIC-majoring undergraduates' low English proficiency led them to produce ungrammatical NPs. The finding echoes a study by Srisawat and Poonpon (2023), in which intralingual and interlingual errors are commonly found in academic essays written by Thai EFL undergraduates. The finding also supports a report by Bowen et al. (2023) in which students' low English language proficiency is one of the challenges in English writing development. Thus, despite an attempt to follow the compressed academic prose when they wrote IS abstracts, the students still produced grammatical errors that stem from their low English proficiency and the interference of their first language.

In addition to grammatical errors, semantic errors were also observed. These errors tend to be influenced by the use of AI tools, such as Google Translate, to translate undergraduate IS abstracts from Thai to English. The reliance on machine translation tools occasionally results in verbatim translation and ambiguity in the constructed complex NPs. Coupled with low English proficiency, the students were unable to verify the accuracy of the translated abstracts. This finding supports a study by Tongpoon-Patanasorn and Griffith (2020), which revealed that machine translation applications, like Google Translate, typically produce semantic errors, leading to incomprehensible meanings.

Conclusion

The present study investigated types of NPs frequently used in IS abstracts written by novice EIC-majoring undergraduates between academic years 2019 and 2023, examined grammatical devices used in complex NP constructions, and analyzed grammatical errors found in NP constructions. The findings revealed the common use of complex NPs over simple NPs in IS abstract writing of EIC-majoring undergraduates. Regarding complex NP constructions, these undergraduates employed different types of grammatical devices, such as attributive adjectives, prepositional phrases, finite clauses, and non-finite clauses. The study also found common grammatical errors in NP constructions, such as the incorrect forms of head nouns, articles, and modifications. Additionally, semantic errors were also observed. These errors could have resulted from low English proficiency and L1 interference of EIC-majoring undergraduates. Regarding the results of the study, pedagogical implications in academic writing instruction, some limitations of the present study, and suggestions for future research are proposed as follows:

Pedagogical Implications

The findings of the present research yield a significant pedagogical implication for academic writing instruction of abstracts to focus on balancing complexity, accuracy, and clarity.

Since low English proficiency is likely to be one of the most significant hindrance to the academic writing development of EFL students, it is necessary that EFL students' fundamental grammatical capacity, such as understanding word order in phrasal and sentential constructions, using correct forms of head nouns and selecting appropriate choices of modifications, is strengthened in order to help them formulate grammatical sentences. In addition, because different noun classes take different syntactic categories as modifications, EFL students should be made aware of this fact and guided accordingly when they write academic work.

In addition, explicit instruction on formulaic patterns and research-related technical terms in abstract writing is recommended. Formulaic language patterns and research-related vocabulary are worth explicit instruction since they enhance academic fluency and accuracy. Additionally, sufficient linguistic knowledge is necessary for EFL students to construct more concise and context-specific academic prose. Moreover, the incorporation of authentic materials, such as effective and ineffective abstracts, will help EFL students be aware of the effective use of nominal modifications to adhere to the compressed academic prose and reduce verbosity.

Since AI tools currently play a significant role in assisting EFL students with writing academic work, it is critical to enable the students to use AI tools critically. With sufficient linguistic knowledge, field-specific knowledge, and writing experience, EFL students can effectively review AI-generated or AI-assisted content and maintain grammatical accuracy that aligns with condensed academic writing conventions.

Additionally, offering immediate, constructive feedback during the drafting process will help students identify weaknesses in their NP constructions, enabling targeted revisions. To illustrate the effectiveness of feedback, students should present their drafts before and after receiving feedback, highlighting how specific revisions contribute to improved clarity and precision.

Limitations of the Study

The present research exhibits some limitations. First, the twenty-five abstracts included in the submitted IS manuscripts were checked by IS advisors. Therefore, it is possible that these manuscripts had been proofread and edited before submission. Another limitation is that the data for

analysis were small and taken from a single academic discipline, which is English for International Communication, and the study solely emphasized the use of grammatical devices in complex NP constructions in undergraduate IS abstract writing. As a result, the findings may not be generalizable across disciplines or other sections of the IS manuscript structure. Finally, error analysis was conducted at a phrase level, as simple and complex NP constructions were the focus of the present study, resulting in the negligence of grammatical errors found in sentence constructions.

Suggestions for Future Research

Future research is recommended to conduct a broader analysis of abstracts across disciplines in terms of grammatical devices in complex NP constructions. It is also recommended to examine grammatical errors in a holistic manner rather than solely focusing on a phrase level, particularly in the context of AI-enhanced academic writing. While the delivery of concise and complex short passages like abstracts is challenging for EFL students, understanding the issues present in grammatical structures like noun phrases will allow instructors to impart directed guidance for improved student output.

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