

A Systematic Literature Review on Academic Title Studies in Genre Analysis

Zhijie Wang^{1,2}, Mohd Azidan Abdul Jabar¹ & Farhana Muslim Mohd Jalis¹

¹ Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Selangor, Malaysia

² Foreign Language School, Huanghuai University, Henan, China

Correspondence: Zhijie Wang, Department of Foreign Languages, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia. E-mail: gs60638@student.upm.edu.my

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Abstract

This systematic literature review examined the titles of academic texts in the context of genre analysis, an area obtaining increasing academic attention. Employing PRISMA (2020), this study systematically analyzed 52 studies (2004–2024) on academic titles sourced from three major academic databases (Web of Science, Scopus and ProQuest), with additional support from Google Scholar. A significant post-2020 increase in academic title studies illustrates the growing importance of effective title formulation in the digital age of academia. The review indicated a geographical concentration of studies from the regions of Asia and Europe, highlighting a gap in contributions from other regions like North and South America, and Africa. It also revealed a prevalent focus on the research contents of titles' length, syntactic structure, and information attribute, alongside an emphasis on cross-disciplinary comparisons, particularly between titles from 'hard' and 'soft' sciences. This review not only mapped the current landscape of academic title research in genre analysis but also suggested potential directions for further exploration, aiming to enhance a more comprehensive and globally representative understanding of this crucial aspect of academic communication.

Keywords: academic texts, academic titles, literature review, genre analysis

1. Introduction

Genre is a class of communicative events, the members of which shared some set of communicative purposes (Swales, 1990). Bhatia (1993) elaborated on the concept of genre within professional settings, suggesting that genres represented conventionalized communicative acts that were part of professional or disciplinary activities. He emphasized that genres were characterized by a set of communicative purposes, which were understood and shared by the members of the professional community. Thus, genres serve to meet the expectations of the community, facilitating the achievement of specific communicative goals. Following their definitions, titles of academic writings can serve as a form of communication that is not only crafted and utilized by members of the academic community but also adhere to socially recognized objectives and conventions. Academic titles (ATs) serve distinct communicative purposes within different academic fields, from signaling the methodology or theoretical framework employed in the study, to outlining the research's geographical or temporal scope. Gesuato (2008) presented that "the title of an academic publication names, introduces, metonymically represents and advertises the content it labels, circulating from one text to the next" (p. 127). Therefore, ATs can be seen either as an independent genre or a subgenre (Pálová 2017). The focus on analyzing ATs did not emerge in isolation; it was significantly influenced by the genre-based textual analysis within English for Specific Purposes (ESP), particularly following Swales' (1990) seminal work, "Genre Analysis: English in Academic and Research Setting" (Morales et al., 2020).

Titles seem like small parts compared to the main content in academic works such as research papers, books, theses/dissertations, and conference papers, and have attracted a lot of attention in the literature. This attention has led to the development of a unique area of study called "titleology." The focus on titles as an area for academic study is quite recent (Diao, 2021), with the term "titrologie" first used in French by Duchet in 1973 (Roy, 2008; Sahragard & Meihami, 2016). Baicchi (2003) further explored this area of study by creating a detailed classification that showed how titles and texts were connected, officially naming this area of research "titleology." Titles need to be attractive, informative (Ball, 2009; Hartley, 2005), and concise (Jiang & Jiang, 2023; Kerans et al., 2020; Wang & Bai, 2007). Despite their brevity, crafting academic titles poses a significant challenge. Swales (1990) emphasized the complexity of crafting a title, describing it as a challenging task that requires significant effort because titles are considered "serious stuff" (Salager-Meyer & Alcaraz-Ariza, 2013). Titles are described as a "highly condensed" (Wang & Bai, 2007, p. 397) subgenre that serves crucial functions such as outlining a document's contents, drawing in the intended audience, and reflecting the authors' expertise and professional identities (Hao, 2024). These elements, referred to as "front matter and summary matter," encapsulate the essential information within a text (Swales, 1990, p. 179). Swales and Feak (1994) suggested that an effective research article title should meet four criteria to serve its purpose effectively: (1) it should outline the scope of the research, (2) present the topic, (3) be able to explain itself, and sometimes, (4) specify the type of research conducted. Often overlooked in academic discourse studies, ATs are gaining recognition for their role in shaping knowledge, drawing readers' attention, and potentially influencing readership and citations (Hyland & Zou, 2022). However,

Jalilifar (2010) noted that various academic genres, influenced by social, cultural, cognitive, and disciplinary factors, conformed to distinct conventions and review standards. Consequently, ATs differ in purpose and characteristics across genres, fields, and languages. Following Swales' (1990) observation that titles had been under-researched in academic genres, there was a significant surge in interest concerning ATs across various dimensions (e.g., Cheng et al., 2012; Haggan, 2004; Hartley, 2007; Jiang & Hyland, 2023; Kerans et al., 2020; Lewinson & Hartley, 2005; Pearson, 2020; 2021; Soler, 2007; 2011).

Despite the importance of AT studies in genre analysis, no comprehensive systematic review has been conducted in this area. It's essential to critically analyze existing literature to understand what is known and identify future research directions. To address this gap, this study proposes a systematic literature review on ATs, encompassing research contexts, categories, contents, and frameworks. By examining the research methodologies and foci in these studies, the review aims to enhance the design and planning of future AT research. To achieve this, the study will explore two key research questions:

RQ1: What is the research trend of academic title studies?

RQ2: What are the research foci of academic title studies?

The following section explains the methodology applied in the current study. The results discuss the findings of the reviewed studies. The discussion then analyzes the research gaps derived from the findings and proposes directions for future research.

2. Method

This review paper applied the PRISMA (2020) guidelines for conducting a systematic literature review (SLR), a method that is a systematic, transparent, and replicable approach to synthesizing research findings (Cook et al., 1997). Distinguished from traditional literature reviews, a SLR is characterized by its objectivity, systematic methodology, transparency, and reproducibility (Mallett et al., 2012). SLRs supply an exhaustive summary of the literature based on particular research questions, facilitating the presentation and synthesis of research findings.

An SLR was performed in this paper to examine the existing AT studies within the genre analysis of ESP from 2004 to March, 2024, along with identifying potential research gaps for further investigation. Employing a widely recognized method for SLRs across different academic fields, the PRISMA model was followed through three phases: identification, screening, and eligibility, as elaborated in the following sections.

2.1 Identification

In the current study, this systematic literature review used three databases: Web of Science (WoS), Scopus, and ProQuest. WoS was the pioneering international bibliographic database with a broad scope. Consequently, it has evolved into one of the most influential bibliographic data sources, traditionally employed for journal selection, research evaluation, bibliometric analyses, and various other tasks (Li et al., 2018). Scopus is known for its accurate document categorization and advanced metadata analysis (Dan et al., 2024; Visser et al., 2021). It also provides broader coverage than WoS, particularly in the social sciences (Martín-Martín et al., 2021). The ProQuest database was chosen for its extensive collection of global publishers, and its broad scope of peer-reviewed journals across different fields (Ali et al., 2014). The search, which included key terms such as "research article titles" OR "journal article titles" OR "thesis titles" OR "conference paper titles" OR "review paper titles" OR "academic titles" OR "titleology," collected 1237 articles from these databases. Additionally, a manual search from Google Scholar using similar keywords resulted in 48 more articles. Consequently, the initial phase accumulated a total number of 1285 articles (see Figure 1).

2.2 Screening

The screening phase of the study focused on removing duplicates or irrelevant articles. In the first stage, 54 articles were discarded due to duplication. The remaining 1231 articles underwent evaluation based on specific criteria (see Table 1) set by the researchers. These criteria included the publication time, limiting the review to articles published from 2004 to March, 2024. Additionally, the study considered only those articles that contained empirical data and were published in academic journals. Furthermore, the articles had to align with the study's focus on academic titles. After applying these criteria, 612 articles were excluded, leaving 619 articles for further consideration in the next phase.

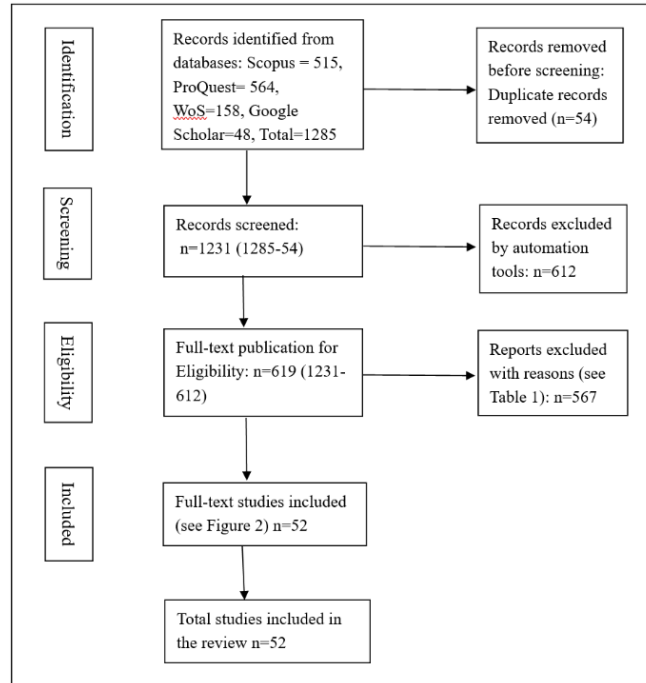


Figure 1. PRISMA flowchart of study selection (adapted from Page et al. (2021))

2.3 Eligibility

The third step is the eligibility process. Two independent reviewers manually assessed all the studies that met the inclusion criteria to confirm they conformed to the specified requirements. A significant number, 567 articles, were excluded at this point. The reasons for exclusion included their focus on the relationship between ATs and citations in Scientometrics, concentrating on translations of ATs, or investigating guidelines or manuals for academic titles. As a result of this detailed review process, only 52 articles remained for further evaluation.

Table 1. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Timeline	2004-2024	< 2004
Document type	research articles with empirical data	books, systematic reviews, proceedings, theses/dissertations
Title type	academic titles of journal articles, research articles, review papers, theses/dissertations, proceedings, books, scientific letters and case reports	non-academic titles of films, songs or news
Scope	academic title studies in genre analysis	guidelines, translation of academic titles, academic titles and citations in Scientometrics

2.4 Coding Framework and Inter-rater Reliability

Following the eligibility process, the remaining studies underwent a detailed examination to address the research questions. This analytical process involved initially examining the abstracts of these studies, followed by a comprehensive reading of the entire article. Key information was extracted and organized into a Microsoft Excel database. This document included various critical aspects of each study, such as (1) the year of publication, (2) the geographical location, (3) the size of the sample used, (4) the genre types of academic titles, (5) the language types of academic titles, (6) research categories and disciplines, (7) research contents, and (8) the analytical frameworks or models employed in the research.

In this review, two researchers, serving as independent coders, analyzed the selected studies. They conducted a thorough analysis of the full texts to identify and remove any studies failing to adhere to the established eligibility requirements. To assess the consistency of article selection between the two coders, Cohen’s Kappa was employed, resulting in a value of 0.83. This score indicates a near-perfect agreement between the coders. Any discrepancies encountered during the review process were cooperatively solved by the coders until they achieved undisputed agreement.

3. Results

3.1 Research Trend

This section explores the dynamic trend and distribution of AT studies in aspects of publication years, regional participation, sample sizes, genre types, and linguistic features of ATs.

3.1.1 Publication Distribution by Year

Figure 2 reveals a varied distribution of reviewed studies over the period from 2004 to 2024. The year 2020 witnessed the highest number of publications (Afful & Ankomah, 2020; Filyasova, 2020; Kerans et al., 2020; Morales et al., 2020; Pearson, 2020; Xiang & Li, 2020; Xie, 2020), accounting for 17.3% of the total. This spike suggested a significant increase in interest or research output in that year. The year 2023 followed, contributing 11.5% to the overall count (Chen & Liu, 2023; Demir, 2023; Diao, 2023; Heßler & Ziegler, 2023; Jiang & Jiang, 2023; Surapongraktrakool, 2023). The years 2017 and 2022 were also notable, each with 7.7% of the publications. The remaining years showed a relatively lower frequency of publications, ranging from 0% to 5.8%.

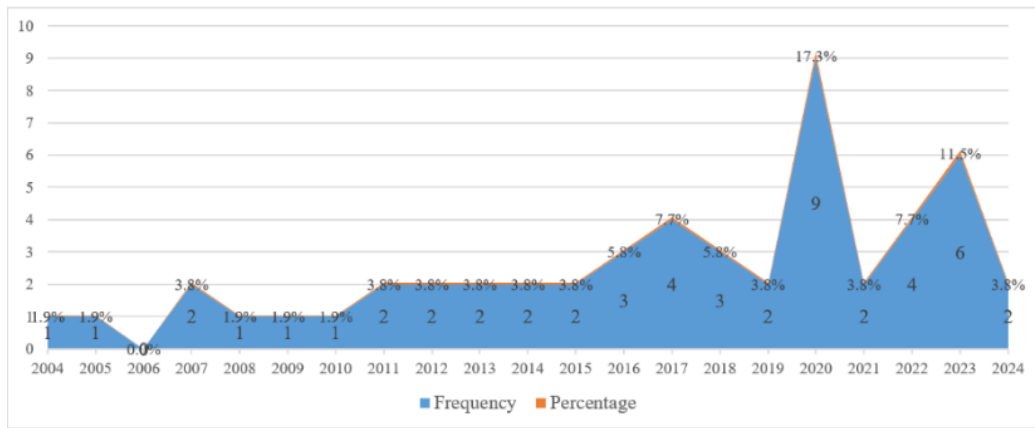


Figure 2. Published years of reviewed studies

3.1.2 Publication Distribution by Region/Country

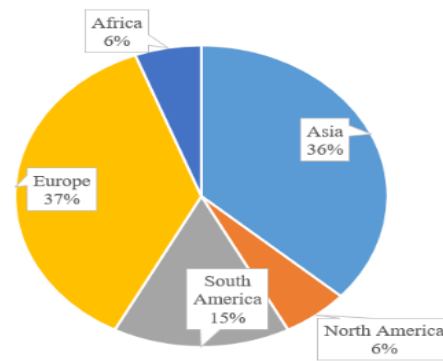


Figure 3. Continent distribution of reviewed studies

The reviewed studies (see Figure 3) showed that the continents of Asia and Europe were leading in AT research, with each continent contributing 36-37% of all studies, showing a strong focus in these regions. South America had a smaller share, with eight studies accounting for 15%. Africa and North America had fewer studies, each making up 6%, indicating less research activity in these continents. Specifically, as is shown in Figure 4, China led with eight studies, indicating a significant research interest in this area, followed by Spain and Iran with six studies respectively, reflecting their active academic communities. Venezuela and the United Kingdom also showed notable contributions with five and four studies, respectively. Other countries like the United States, Argentina, Russia, Germany, Hungary, Italy, Ghana, and India, among others, contributed to a less extent, each with no more than three studies. This distribution revealed a diverse but concentrated pattern of academic activity, with certain countries emerging as key contributors in AT studies. It also suggests that while AT research is happening globally, Asia and Europe are the most active areas. The lower contribution from Africa, South America, and North America highlights opportunities for growth in these regions.

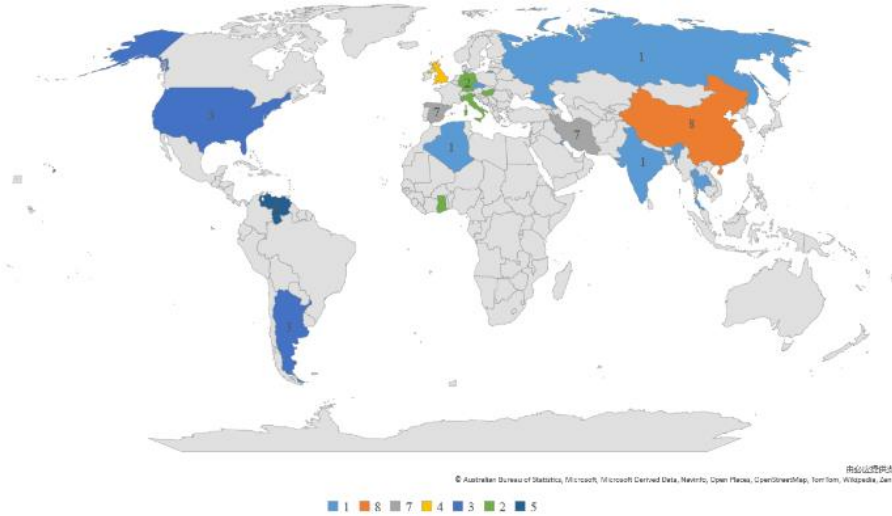


Figure 4. Country distribution of reviewed studies

Within the reviewed literature, eight researchers have notably influential studies on academic titles by each publishing more than one paper: Hyland (2022a; 2022b), Diao (2021; 2023), Morales (2020a; 2020b; 2020c), Kerans (2016; 2020), Mandez (2014; 2017), Salager-Meyer (2013a; 2013b; 2017), Nagano (2011; 2015), and Soler (2007; 2011; 2018). While these authors have made significant contributions, the trend among other scholars in the field has been consistent, with most publishing only a single paper. This observation suggests a need for a greater number of researchers to contribute to the field of titleology.

3.1.3 Sample Size of Reviewed Studies

The sample sizes of the reviewed studies exhibited a diverse range, shown in Figure 5, demonstrating the variability of research designs within the field. The sample size of less than 300 was observed in 11 studies, representing 21.2% of the total, suggesting focused, possibly qualitative investigations. The most common sample size fell within the range 301-600, with 13 studies accounting for 25.0%, indicating a preference for medium-scale studies (e.g., Sahragard & Meihami, 2016). Both the 601-1000 and 1000-2000 ranges were represented by nine studies each, making up 17.0% for each type, reflecting substantial quantitative analyses. Similarly, larger-scale studies with samples greater than 2000 were found in 10 studies, constituting 19.2% of the total, showing extensive research efforts that aimed at summarizing broad trends and generalizing findings across larger populations, enhancing the reliability and validity of the results.

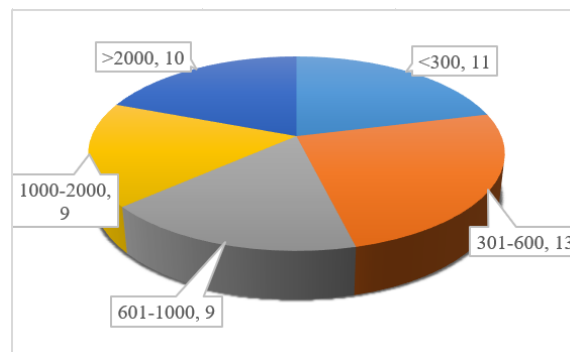


Figure 5. Sample size of reviewed studies

3.1.4 Distribution of AT Genre Types

According to Table 2, the distribution of AT genre types revealed a varied situation, with research article (RA) titles being the most prevalent at 33 occurrences, emphasizing their significant role in academic communication. Journal article (JA) titles followed with 13 instances, illustrating their important presence in academic publishing. Titles of theses and dissertations also contributed greatly with six instances (Gesuato, 2008; Hao, 2024; Jalilifar, 2010; Morales et al., 2020; Soler, 2018; Slougui, 2018), highlighting their importance in academic research and higher education. Review paper titles (Morales et al., 2020; Salager-Meyer et al. 2017; Soler, 2007; 2011) were noted four times. Titles in proceedings (Afful & Ankomah, 2020; Gesuato, 2008), scientific letters (Cianflone, 2013; Mandez & Alcaraz, 2017), and case reports (Salager-Meyer et al., 2017) were found two times separately, indicating their role in synthesizing research findings and presenting them in academic forums. Titles of books (Gesuato, 2008) and poster presentations (Cianflone, 2013) each had a single appearance, pointing to their specific feature within the academic discourse. This distribution highlights the dominance of article titles in AT studies.

Table 2. Genre types of reviewed AT studies

Genre types of ATs	journal article title	research article title	thesis/dissertation title	proceeding title	review paper title	book title	scientific letter title	poster presentation title	case report title
Frequency	13	33	6	2	4	1	2	1	2

3.1.5 Linguistic Features of Reviewed Studies

As is shown in Table 3, the reviewed studies predominantly were in English, comprising 92% of the total, with Spanish making up the remaining 8%. This distribution underscores the dominance of English in academic research, highlighting a need for more inclusive representation of other languages.

The distribution of language types of titles in the reviewed studies (see Table 4), shows a strong predominance of English titles (48 titles), followed by Spanish (five titles), Persian (two titles), and Turkish (one title) titles. This highlights English’s dominance in AT studies, with limited representation from other languages.

Table 3. Written language of reviewed studies

Written Language of Reviewed Studies	Frequency	%
English	48	92%
Spanish	4	8%
Total	52	100%

Table 4. Language types of titles

Language Types of Titles	Frequency
English	48
Spanish	5
Turkish	1
Persian	2
Total	56

3.2 Research Foci

This part indicates the results related to the research categories, research disciplines, research contents, and analytical frameworks found in the reviewed studies.

3.2.1 Research Categories and Disciplines

Table 5 depicts the research categories of AT studies, in which one study might apply two or more categories (e.g., Jiang & Hyland, 2022). The table displays a diverse range of academic interests. Mono-disciplinary studies (e.g., Diao, 2023) were the most prevalent, with 28 occurrences, revealing a strong focus on exploring ATs within specific disciplines. Close behind, cross-disciplinary research (e.g., Appiah et al., 2019) accounted for 24 studies, indicating an interest in comparing AT formulating across different academic fields. Diachronic studies (e.g., Sahragard & Meihami, 2016), examining the evolution of ATs over time, contributed 13 instances, indicating an interest in the historical development of titling conventions. Cross-generic research (e.g., Soler, 2007), with eight instances, explored how ATs function across different types of academic genres. Comparatively, less frequent categories were cross-linguistic (e.g., Soler, 2011) and cross-cultural studies (e.g., Xie, 2020), each with four and two occurrences, respectively, pointing to a rare but important interest in understanding ATs across various languages and cultures. This distribution highlights a diverse methodological approach in AT studies, emphasizing both depth within disciplines and breadth across them.

Table 5. Research categories of reviewed studies

Research categories	mono-disciplinary	cross-disciplinary	cross-linguistic	cross-cultural	cross-generic	diachronic
Frequency	28	24	4	2	8	13

The disciplines researched in AT studies revealed a wide range, reflecting a multidimensional academic interest. As shown in Figure 6, the reviewed studies covered a range of 32 disciplines in total. The field of medicine lead with 18 instances, indicating a significant focus on ATs within the health sciences. Linguistics and applied linguistics followed, with 11 and 9 occurrences respectively, revealing interest from language studies. Engineering, highlighting the hard sciences’ engagement with AT research, also accounted for nine instances. Other disciplines like biology, history, economics, psychology, and physics also contributed, each varying in frequency from four to six

studies. Generally, soft sciences, including fields like linguistics, history, and education, accounted for 13 disciplines, indicating their focus on aspects of social and human behavioral disciplines. Hard sciences, represented by fields such as medicine, engineering, and biology, had a higher presence with 19 disciplines, reflecting their emphasis on empirical data and the natural sciences. This distribution highlights the cross-disciplinary interest in AT studies, illuminating their importance in enhancing communication and research dissemination within scholarly communication.

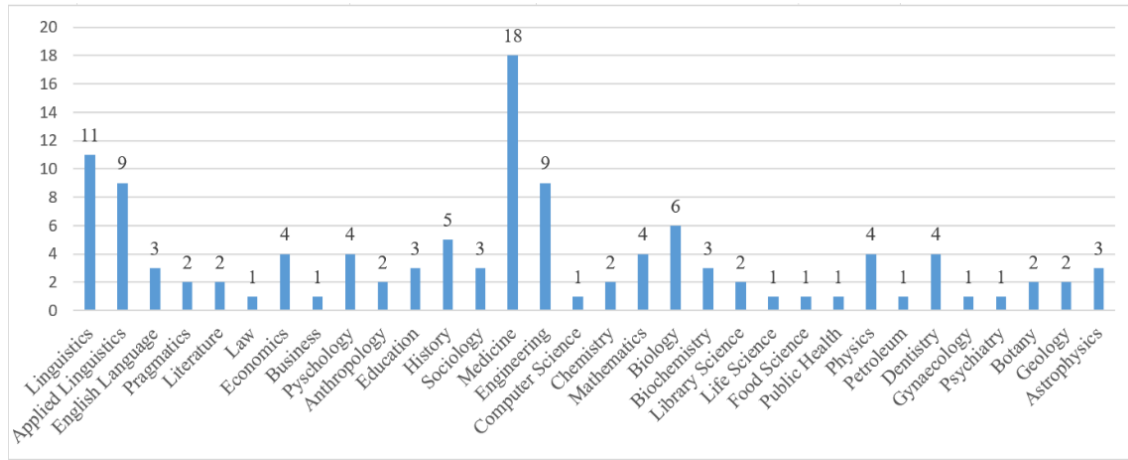


Figure 6. Distribution of researched disciplines in reviewed studies

3.2.2 Research Contents

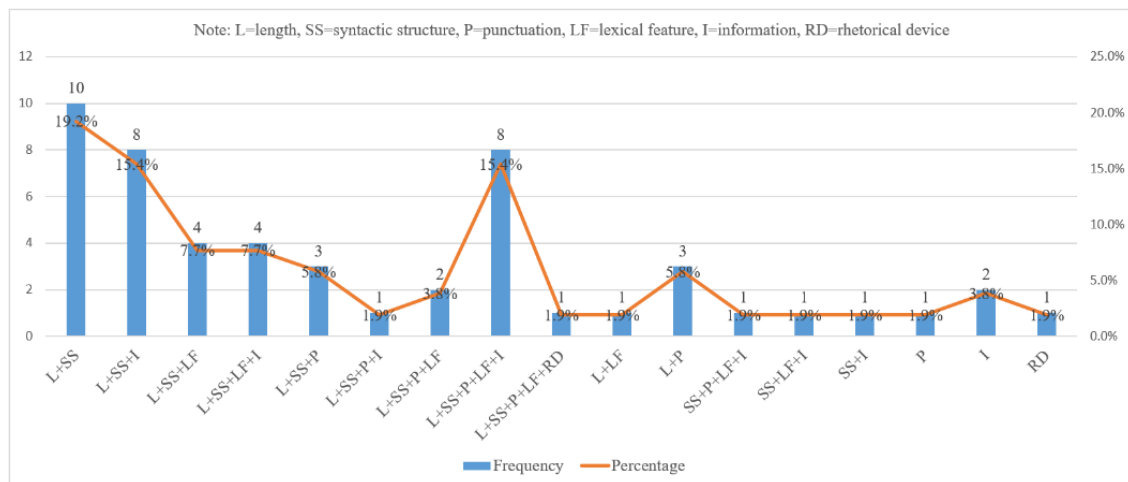


Figure 7. Research contents of reviewed AT studies

The types of research contents in AT studies (see Figure 7) show various combinations of elements, with a total of 52 studies analyzed. The most common focus was on the combination L+SS (Length + Syntactic Structure), making up 19.2% of the total, reflecting the emphasis on the basic composition of titles. The combination type L+SS+I (Length + Syntactic Structure + Information) was also significant, representing 15.4% of the studies, underlining the importance of conveying key research information briefly. Studies focusing on more comprehensive combinations, such as L+SS+P+LF+I (Length + Syntactic Structure + Punctuation + Lexical Feature + Information), also accounted for 15.4%, indicating a holistic examination of how various elements interact to communicate research effectively. Other areas of focus included more specific components like punctuation (P), information (I) and rhetorical device (RD) alone, each constituting 1.9%, pointing to specialized interests within AT research. This diverse range of research contents highlights the multidimensional nature of ATs, exploring how their structural and informational features impact readability and engagement.

As is shown in Table 6, the research foci of AT studies were quite diverse, emphasizing various forms and content. The most frequent focus was on the length of titles, found in 45 studies, suggesting a significant interest in how the length of an academic title impacts its effectiveness or perception. Closely following was the syntactic structure, with 44 studies examining the arrangement of words and phrases within titles. Lexical feature and information attribute were also prominent aspects, with 22 and 26 studies respectively, highlighting the importance of word choice and the conveyance of essential information through titles. Punctuation, explored in 20 studies, indicated its role in the readability and interpretation of titles. Rhetorical devices, though less frequently examined with only two

studies, implied an emerging interest in the rhetorical elements of titles. This distribution highlights the elements that contribute to a title’s clarity, engagement, and informational efficiency.

Table 6. Research foci of AT studies

Research Foci	Frequency
Length	45
Syntactic Structure	44
Punctuation	20
Lexical Feature	22
Information	26
Rhetorical Device	2

3.2.3 Research Frameworks

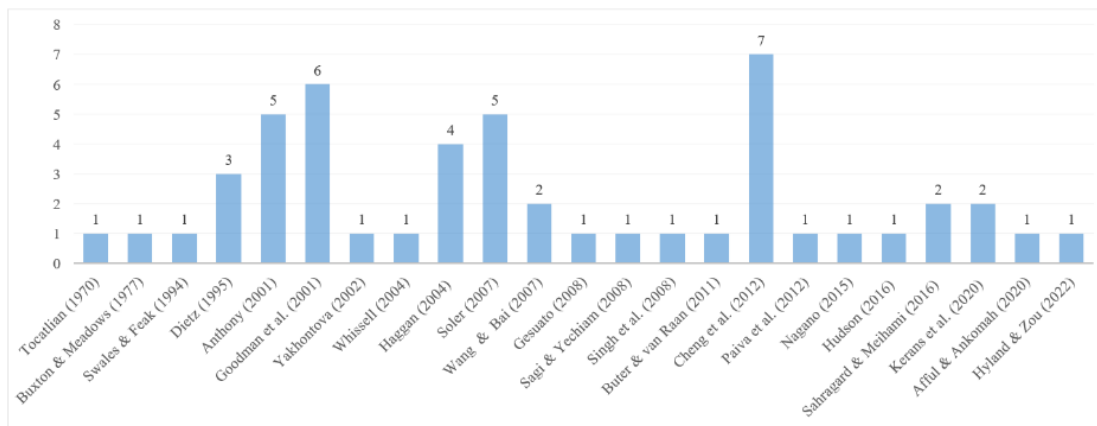


Figure 8. Research frameworks in reviewed studies

Overall, 38% of the 52 reviewed studies utilized analytical frameworks to guide their investigation and 62% applied no specific frameworks, highlighting the dynamic methodologies in this field. Specifically, the research guided with frameworks used a variety of approaches, with a total of 50 instances identified across the reviewed studies. Out of these, Cheng et al. (2012) was the most applied framework or model with seven occurrences; the model of Goodman et al. (2001) followed with six times. Anthony (2001) and Soler (2007) followed with their application in five studies, indicating their significant influence in academic title studies of genre analysis. Dietz (1995) and Haggan (2004) were also notable, each guiding three and four studies respectively. The diversity also extended to frameworks such as Tocatlian (1970), Buxton and Meadows (1977), and Swales and Feak (1994), each of which was employed once, mirroring the wide range of theoretical frameworks in exploring the titles of academic writings. This variety also underscores the multifaceted character of AT studies, employing different analytical frameworks to investigate the structure, information, and function of titles in academic communication.

4. Discussion

The results above indicate possible future directions in the field of ATs, suggesting areas for further exploration and deeper investigation. This guidance helps understand and optimize how ATs are crafted and their impact on academic communication.

The increase in AT studies since 2020 could be connected with the COVID-19 pandemic, which caused a burst in digital academic activity. As researchers and readers shifted online, the effectiveness of titles in absorbing attention became even more significant. Additionally, the total increase in research publications during this period presumably arose interest in understanding the role of titles in research dissemination and visibility. With the growing importance of digital searchability and academic measurements, such as citation rates, there was likely a parallel rise in studies examining how well-crafted titles can influence these factors (e.g., Fiala et al., 2021; Kousha & Thelwall, 2024).

The geographical distribution of the reviewed studies not only shows the global interest in AT research but also points to a disproportion in research outcomes across different regions. The dominant activity in Asia and Europe suggests a concentration of academic resources or a higher valuation of this field in these two regions. The relatively lower contribution from Africa, South America, and North America indicates potential areas for academic growth and collaboration. Expanding research efforts in underrepresented areas could stimulate a more diversified and comprehensive understanding of academic titles across different cultural and academic contexts, improving the global discourse on academic communication.

Different AT studies varied in sample size due to specific factors, such as study objectives, research method, and available resources. The type of research, whether qualitative or quantitative, also influenced the sample size. For instance, some studies might use smaller samples to deeply analyze each case (e.g., Moslehi & Kafipour, 2022), while those exploring broader trends might need larger samples for statistical reliability (e.g., Xie, 2020). Additionally, the resources, such as time, money, and staff, limited or expanded the number of titles a study could examine. Lastly, the availability of data played a crucial role too; studies with easy access to large databases could deal with bigger samples (e.g., Hyland & Zou, 2022), while those collecting data manually might choose smaller sizes.

4.1 More AT Studies on Diverse Genres

AT studies predominantly focus on RA titles and JA titles because these types of articles are principal to academic communication and dissemination. RA titles and JA titles were highly represented, with 33 and 13 instances respectively in this dataset. This finding makes sense as these sources serve as the primary carriers for sharing new knowledge and findings within the academic community. These articles often undergo strict peer review processes, ensuring their credibility and relevance. The focus on these titles could be attributed to their widespread consumption and impact on academic communication. They play a critical role in promoting fields of study and influencing future research. Furthermore, the standardized format and broad accessibility of journal and research articles make them suitable materials for systematic study, allowing researchers to analyze patterns, trends, and conventions in academic titling practices across various disciplines. However, the dominant status of RA or JA titles in the field reveals a significant gap in the examination of titles from other academic genres, such as books, conference proceedings, theses or dissertations, and case reports. These academic works are distinguished by unique features and conventions that are specific to their genre (El-Dakhs, 2018; Kawase, 2015; Koutsantoni, 2006; Swales, 2004). For instance, theses and dissertations are identified as a genre that bridges the gap between student-produced coursework papers and research articles that undergo strict peer review processes (Xiao & Sun, 2020). Therefore, examining thesis or dissertation titles is also crucial as they represent an important academic milestone, incorporating years of research and contributing new knowledge to specific fields. Thesis titles can also influence future research directions, inform academic and industry practices, and advance the dissemination and accessibility of academic work. Understanding the conventions and impact of thesis titles can enhance their effectiveness in academic communication, making them a vital area for deeper investigation. In all, extending research to include a wider range of genres can provide a more comprehensive view of academic titling practices, unveiling generic trends and conventions that could enhance the effectiveness of ATs in engaging readers and conveying research findings across different academic fields.

4.2 More Studies on Academic Titles of Diverse Languages

The lack of non-English language studies limits the generalizability of findings related to title formulation, effectiveness, and impact. ATs serve as the first point of contact for readers, influencing their perception and engagement with the research. Titles in different languages might follow unique syntactic, lexical, and stylistic conventions, which are crucial for understanding how academic work is communicated and received globally. Additionally, expanding AT research to include more diverse languages can foster greater inclusivity and equity in academic discourse. This inclusion can provide a mechanism for underrepresented linguistic communities to contribute their perspectives and knowledge, enriching the global academic landscape. Therefore, conducting more studies on ATs in diverse languages is essential for a more comprehensive, representative, and inclusive understanding of academic communication.

4.3 More AT Studies on Diverse Research Categories and Disciplines

The analysis of the reviewed AT studies also revealed a research gap in research categories, such as cross-linguistic (Shahidipour & Alibabae, 2017; Soler, 2011) and cross-cultural (Slougui, 2018; Xie, 2020) types, each with only a few studies. This output indicates a lack of focus on how academic titles are influenced by different languages and cultures, which can provide valuable insights into the global academic community's diversity. Additionally, while mono-disciplinary and cross-disciplinary studies are well-represented, the lower frequency of cross-generic (8 studies) and diachronic studies (13 studies) suggests further research possibilities. Exploring how academic titles evolve over time and across different genres could enrich the understanding of the dynamic nature of academic communication.

Furthermore, studying ATs across different disciplines is important and prevalent because each field has its own way of creating titles. The diversity and variations help us understand how different areas summarize and highlight their research. By comparing titles from different disciplines, we can learn about the specific ways each field engages its readers and communicates key information. This approach is also valuable in the current cross-disciplinary academic world because it enhances better understanding and collaboration between different fields. Overall, studying titles from a range of disciplines provides a deeper, more comprehensive view of academic communication. Nevertheless, the cross-disciplinary comparison between hard sciences (e.g., engineering) and soft sciences (e.g., applied linguistics) titles was common due to their distinct styles and conventions. Hard science research usually used concise language and focused on empirical data, while soft science studies often employed a narrative style reflecting a qualitative nature. This distinction offered insights into cross-disciplinary communication and emphasized how different fields influenced the creation of titles. However, conducting cross-disciplinary studies between social sciences and arts and humanities, although both of which are traditionally categorized within soft sciences, is also crucial in this field. This integration enriches our understanding of language use in ATs, combining the communicative effectiveness from social sciences with the expressive features from humanities and arts. Such studies can also foster creativity and engagement in title formulation, broadening the reach and impact of academic work. Additionally, they highlight the significance of interdisciplinary research, yielding deeper insights into complex subjects and enhancing the overall quality and appeal of

academic communication.

4.4 More AT Studies on Diverse Research Contents

As for the research contents of AT studies, more research in the L+SS+P+LF+I category should be conducted because it provides a holistic view of how titles are crafted. This comprehensive approach could indicate how different elements like title length, structure, word choice, punctuation and information work together to make titles clear, attractive, and effective. Such studies are particularly important in the current digital age, where titles play a vital role in online visibility and searchability. Additionally, exploring this category could provide valuable insights of ATs across different disciplines, languages, genres and cultures, ultimately leading to better presentation and dissemination in this field. Given the predominance of studies on length, syntactic structure, and information attribute of titles, it also highlights a gap in the exploration of rhetorical devices, with only two studies addressing this aspect. This deficit indicates a potential oversight of how rhetorical strategies within titles may affect reader engagement and perception.

4.5 More Comprehensive and Persuasive Frameworks in AT Studies

The 52 reviewed studies of this review reflected a diverse methodological approach in AT research, with 38% utilizing specific frameworks for title analysis, indicating the application of established theoretical models to guide their investigation (e.g., Xiang & Li, 2020). Conversely, 62% of the studies did not rely on established frameworks, indicating a preference for exploratory or inductive methods that allowed for the discovery of new insights without the constraints of existing models (e.g., Hyland & Zou, 2022), or they could be preliminary studies that served as a basis for further research (e.g., Haggan, 2004; Soler, 2007). This distribution underlined the field's methodological flexibility, containing both structured and open-ended investigations to enrich the understanding of academic titles.

Some analytical frameworks or models were used more often in the reviewed studies due to their recency, relevance, and conformity with current methods and trends. Newer frameworks (e.g., Hyland & Zou, 2022) incorporated the latest research tools or techniques, making them popular, while older, established ones (e.g., Anthony, 2001; Goodman et al., 2001) were trusted for their long-standing credibility. The choice of framework also relied on its methodological fit. For instance, comprehensive frameworks, like Gesuato's (2008) study that offered a wide array of analytical tools, might be preferred. Additionally, the popularity of certain academic genres, like research articles or theses, could influence the application of frameworks that were especially suitable to those genres. Essentially, the comprehensive and persuasive frameworks that matched the current needs, methods, disciplines, and genres in AT research tended to be adopted more frequently for their effectiveness and precision in analysis.

5. Conclusion

The studies under review have shown that academic titles, a relatively new and less explored field of research, hold great potential in genre analysis of ESP. This review illustrated key findings and directions for future research. A notable increase in such studies since 2020 suggested the growing importance of effective titles in digital academic communication. The existing studies were predominantly from regions like Asia and Europe, highlighting a need for more research contributions from other regions, especially North and South America, and Africa, to ensure a globally balanced perspective. The review also pointed out a research gap in the exploration of ATs in different academic genres and languages, indicating an opportunity for more comprehensive studies beyond traditional English research articles. It emphasized the value of interdisciplinary research in the future, especially between social sciences and humanities and arts, to deepen our understanding of how titles function across different fields. It also illustrated the diverse research contents when analyzing titles, particularly focusing on the aspects like length, syntactic structure, punctuation, lexical features and information attributes. In essence, this SLR paved the way for future investigations to expand and enhance the understanding of ATs in genre analysis, aiming to improve academic communication and the impact of academic research.

This study has several limitations. First, the research was confined to the databases of WoS, Scopus, ProQuest and Google Scholar, suggesting that including additional databases could enhance the research's scope. This constraint may affect the comprehensiveness and generalizability of the findings and conclusions. Secondly, the examination focused solely on genre-based academic title studies within the context of ESP. Researchers from fields such as scientometrics, informetrics, and computer science can further explore ATs from alternative perspectives in the future, providing a more holistic understanding of ATs. This interdisciplinary approach will enrich the current research by incorporating diverse methodologies and contexts, ultimately leading to a more comprehensive insight into the role and impact of ATs across various disciplines.

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Authors contributions

The authors confirm contribution to the paper as follows: research conception and design: Zhijie Wang, Prof. Azidan and Dr. Farhana; data collection, analysis and interpretation of results: Zhijie Wang, Prof. Azidan and Dr. Farhana; draft manuscript preparation: Zhijie Wang. All authors reviewed the results and approved the final version of the manuscript.

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