A Contrastive Study of Lexical Cohesive Devices in Financial Academic Paper Abstracts

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Abstract: English abstracts of financial and economic academic papers are an important medium for academic communication, and their clarity and consistency are crucial for international readers to understand and cite. Lexical cohesion, as a key component of discourse analysis, has a significant impact on the logical structure of a summary and the efficiency of information transmission. However, academic writing in different linguistic contexts may differ in lexical cohesion strategies, which may affect the international readability and impact of abstracts. Using Halliday's discourse cohesion theory as an analytical framework, this study compares lexical cohesion devices in abstracts of Chinese and English financial academic papers through quantitative and qualitative analysis methods. First, this paper uses the corpus analysis tool to conduct word frequency statistics and co-occurrence analysis on the collected abstracts to identify common cohesive words and phrases. Then, this paper makes an in-depth qualitative analysis of the functions and effects of these cohesive devices in the discourse, and discusses how they promote the coherence and logic of information. It is found that English abstracts tend to use more references and articulation devices, with MATTR values up to 0.91, lexical articulation frequency up to 92% and discourse coherence score up to 84. These differences reflect the culture and habits of English in academic writing. The research results have practical significance for guiding the writing of English abstracts of financial and economic academic papers.

1. Introduction

As an important medium of research communication, English abstracts of financial and economic academic papers have a significant impact on international academic exchanges. In view of this, in-depth analysis of the textual features of English abstracts, especially from the perspective of lexical cohesion, compared with Chinese abstracts, not only helps to reveal the differences in academic writing styles between the two languages, but also provides strategies for scholars from

non-native English countries to write efficient English abstracts.

The purpose of this paper is to compare and analyze the lexical cohesion in the abstracts of Chinese and English academic papers on finance and economics, and to explore the characteristics of the two languages in discourse construction and their influence on academic communication. The contribution of this study is to systematically compare the differences in lexical cohesion latitude between Chinese and English abstracts and to provide a detailed analytical framework for assessing and understanding the textual structure of abstracts in both languages.

The introduction introduces the background and importance of the study, and expounds the purpose and main contribution of the study. The methods section describes the research design, corpus selection and analysis methods in detail. The construction of analysis frame introduces how to construct a contrastive analysis frame from the perspective of lexical cohesion. The results and discussion section then presents the main findings of the comparative analysis and discusses its implications for academic writing. Finally, the conclusion part summarizes the whole paper, points out the limitations of the study, and puts forward suggestions for future research directions.

2. Related Work

Abstract is the window of the article in academic writing, and its quality directly affects the reader's first impression of the whole article. Yu Qiangfu made a comparative analysis of hedges in domestic master's degree theses on mechanical engineering and in abstracts of international core journals written by native English speakers. His research results showed that there were significant differences in the frequency and type of hedges used between domestic graduate students and native English speakers [1]. Using the English abstracts of 400 highly cited papers from graphic journals as corpus, Ling Min built two corpora by himself to explore the linguistic features of sentence subjects in the English abstracts of papers from graphic journals [2]. Wang Zihan built a corpus based on the English abstracts of master's theses in China and abroad, and compared and analyzed the use of connectives in English abstracts of master's theses by Chinese students and native English students from four types of links [3]. Taking abstracts of international English academic journals with high impact factors as reference, Wang Xinjie analyzed and studied the technical indicators such as length distribution, nominalization and grammatical metaphor in this language category, as well as the operation mechanism and textual composition function of these technical indicators [4]. Wang Miner compared and analyzed Lin Yutang's English translation and Xu Yuanchong's English translation from the three important aspects of thematic structure, information structure and cohesion in functional texts, and came to the conclusion that Xu's translation followed the principle of fidelity and fluency, well retained the artistic conception and the original ecology of poetry in the original text, and was highly consistent with the information in the original text [5].

In addition, based on the "Nation Column" of The Jakarta Post published from March 26 to 30, 2012, Sumani S used descriptive qualitative research methods to mainly analyze the types and functions of lexical cohesion in the ethnic column of the Jakarta Post [6]. Wang Y selected 20 natural science articles from IELTS reading articles and conducted a discourse analysis under the framework of Halliday and Hassan's English cohesion. By combining the research results with vocabulary teaching methods, vocabulary teaching syllabus design and subject knowledge structure development, the teaching implications were revealed [7]. Sinambela S I applied the cohesion theory of Halliday and Hassan to identify lexical cohesion forms in German Chancellor Angela Merkel's speech text [8]. Based on Halliday and Hassan's theory of textual cohesion, Sujatna M L explored the uniqueness of lexical cohesion in lyrics by describing and evaluating it [9]. Sinaga N T aimed to identify the most common types of lexical cohesion in Jakarta Post educational articles, showing the degree of affirmation or intensity and beauty of ideas when clarifying text content [10].

The above research did not make a comparative analysis of the text of English abstracts of financial academic papers, but this paper aims to make a comparative analysis of English abstracts of financial academic papers with lexical cohesion latitude. Through comparative analysis, this paper reveals the characteristics and rules of lexical cohesion in the abstracts of finance and economics academic papers, and the changes of these characteristics under different academic levels, subject backgrounds and degrees of internationalization.

3. Method

3.1 Lexical Cohesion Latitude

Lexical cohesion is an important part of textual coherence. By using repetition, synonym/antonyms, episense and phrase collocation, it establishes connections between the information in a text, thereby enhancing the coherence and readability of a text.

The principle of lexical cohesion mainly includes the repeated use of some key words, which can emphasize some important concepts or viewpoints, and help readers better understand and grasp the main idea of the article. The use of words with the same or opposite meaning to the key words can enrich the semantic expression and make the article more accurate and comprehensive. The use of upper words (more general words) or lower words (more specific words) can establish semantic hierarchy and help readers understand the subordination between concepts. The use of fixed collocation phrases can strengthen the naturalness and fluency of the language, make the article more authentic and easy to understand, and establish semantic correlation through lexical cohesion, such as causality, contrast, juxosition, etc., can enhance the logic and coherence of the text.

In the contrastive analysis of lexical cohesion, researchers usually use corpus methods and computer-aided analysis tools to conduct quantitative or qualitative analysis of lexical cohesion in the text, so as to reveal the organizational characteristics of the text and the author's communicative intention [11-12]. Through comparative analysis, researchers can explore the differences in lexical cohesion between different authors or different types of articles, and how these differences reflect the authors' language styles, ways of thinking and academic views.

3.2 Construction of Analysis Framework

When conducting discourse comparative analysis of English abstracts of academic papers on finance and economics, it is first necessary to determine the data source [13-14]. Choosing well-known academic Financial journals, such as the Journal of Finance and the Financial Analysts Journal, which often contain a wealth of English abstract resources. In addition, abstracts of graduate dissertations, especially doctoral dissertations, can be obtained from the databases of major university libraries. Online databases such as JSTOR, EBSCO, and ProQuest are also effective ways to collect academic abstracts. Table 1 shows the lexical cohesion of the collected abstracts.

Table 1 shows the data used to analyze the lexical cohesion characteristics of English abstracts of financial academic papers. Each line represents a different summary, including its unique identification number, lexical diversity indicator, lexical density, type of cohesive devices, total number of cohesive devices, collocation usage, and semantic coherence score. These indicators not only reflect the quality of the summary writing, but are also critical to understanding the clarity and validity of the summary.

Table 1. Summary vocabulary cohesion data table

Abstract ID	Lexical Diversity (TTR)	Lexical Density	Types of Cohesive Devices	Total Number of Cohesive Devices	Collocations	Semantic Coherence Score
Abstract 1	0.60	45%	Conjunctions, Pronouns, Deixis	16	8	4.0
Abstract 2	0.55	50%	Conjunctions, Pronouns, Synonyms	14	10	3.5
Abstract 3	0.65	40%	Conjunctions, Pronouns, Antonyms	18	6	4.5
Abstract 4	0.70	35%	Articles, Prepositions, Anaphora	12	5	4.2
Abstract 5	0.50	55%	Pronouns, Lexical Repetition, Hyponymy	20	12	3.8
Abstract 6	0.58	48%	Conjunctions, Adjectives, Metaphors	15	7	4.0
Abstract 7	0.62	42%	Pronouns, Articles, Personification	17	9	4.3

After the data is collected, these abstracts need to be sorted out and unified in format, such as converting into TXT or CSV files, so as to facilitate subsequent analysis. In the process of comparative analysis, it can be based on Halliday's discourse cohesion theory to study the differences between English and Chinese academic thesis abstracts in discourse cohesion devices.

Quantitative analysis will use statistical methods to identify and compare commonly used cohesive words and phrases in Chinese and English abstracts, as well as their frequency of occurrence.

After quantitative analysis, this study further conducts qualitative analysis to explore the specific roles of these cohesive devices in discourse. This includes analyzing how they help construct arguments, emphasize themes, or guide readers to understand.

After the above steps, this study will integrate the results of comparative analysis and explore the differences in vocabulary cohesion between Chinese and English abstracts and their possible reasons. This not only includes the frequency of the use of cohesive devices, but also their functions and effects in the discourse. Through this comparison, this study can reveal the characteristics of academic writing in different language backgrounds, providing guidance for academic writing, especially in international academic exchanges [15-16].

3.3 Steps and Processes of Data Analysis

When conducting textual comparative analysis of English abstracts of financial academic papers with lexical cohesion latitude, the focus of analysis is first determined based on Halliday's textual cohesion theory, which includes various forms of lexical cohesion, such as repetition, synonym, antonym, and supposition [17-18]. This theoretical framework will guide the whole analysis process and ensure the systematic and comprehensive analysis.

By using corpus analysis tools, the collected English abstracts are preliminatively processed, including text cleaning, word segmentation, part-of-speech tagging, etc., so as to facilitate subsequent analysis. This step is key to ensuring data quality, as accurate text processing directly affects the reliability of the analysis results.

After preliminary processing, quantitative analysis is carried out, and the functions of corpus analysis tools, such as word frequency statistics and co-occurrence analysis, are used to identify and compare common cohesive words and phrases in Chinese and English abstracts.

On the basis of quantitative analysis, qualitative analysis is carried out to explore the specific functions and effects of these cohesive devices in discourse. Then, the differences in lexical

cohesion between Chinese and English abstracts are compared and analyzed [19-20]. Comparative analysis can help this study to understand the characteristics of academic writing in different language contexts and how these differences affect academic communication.

After the above steps are completed, the results of the analysis are integrated, and the methods, steps, and findings of the analysis are described in detail, as well as the significance of these findings for academic writing and discourse analysis. At the same time, the possible limitations in the process of analysis are discussed, and the direction of future research is proposed.

4. Results and Discussion

Through comparative experiments and analysis of the results, this study aims to explore the differences in lexical diversity, frequency of lexical cohesion and textual coherence in abstracts of Chinese and English academic financial papers. This study extracted 11 English abstract datasets from the constructed corpora, compared them with Chinese abstracts, and then conducted detailed text analysis on these abstracts to identify and record the lexical coherence devices used in Chinese and English abstracts. This includes but is not limited to strategies such as repetition, synonym replacement, pronoun reference, and the use of conjunctions. Through quantitative methods, this study can systematically compare abstracts from two languages.

4.1 Lexical Diversity

In order to gain a deeper understanding of the differences in vocabulary usage between Chinese and English financial academic paper abstracts, this study designed a series of comparative experiments. The study used the computational tool Moving Average Type Token Ratio (MATTR) to measure vocabulary diversity. The results are shown in Figure 1:
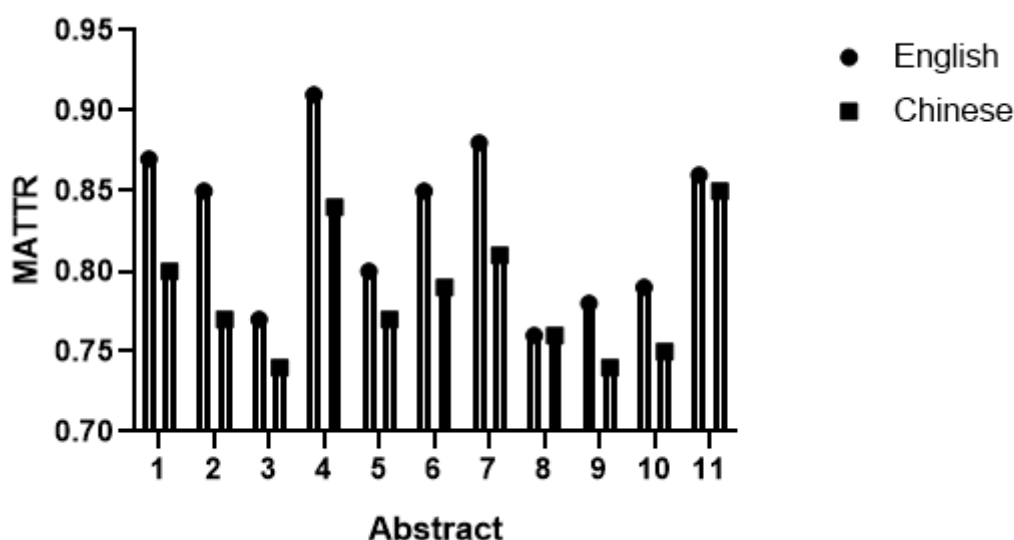

Figure 1. Comparison of lexical diversity

As shown in Figure 1, the maximum MATTR value of the English abstract is 0.91, and the minimum is 0.76, while the maximum MATTR value of the Chinese abstract is only 0.85, and most of the MATTR value of the Chinese abstract is lower than that of the English abstract. This finding indicates that English abstracts show a high level of lexical diversity among the financial abstracts analyzed. The high MATTR value of English abstracts reflects the richness and variety in the use of

words by authors, which is related to the nature of English as a language of international academic communication, where a wide range of vocabulary resources and expressions provide authors with more options to express ideas accurately and variously.

In contrast, the low MATTR values of Chinese abstracts may reveal a different language usage habit in Chinese academic writing. Chinese may be more inclined to use certain core words to convey professional concepts, rather than adopting different words to express similar meanings as frequently as English.

4.2 Frequency of Use of Lexical Cohesion

Lexical cohesion devices, such as synonym substitution, lexical reference and conjunctive use, are important tools used by authors to guide readers to understand, maintain consistency and enhance persuasion. The comparative experimental results are shown in Figure 2:
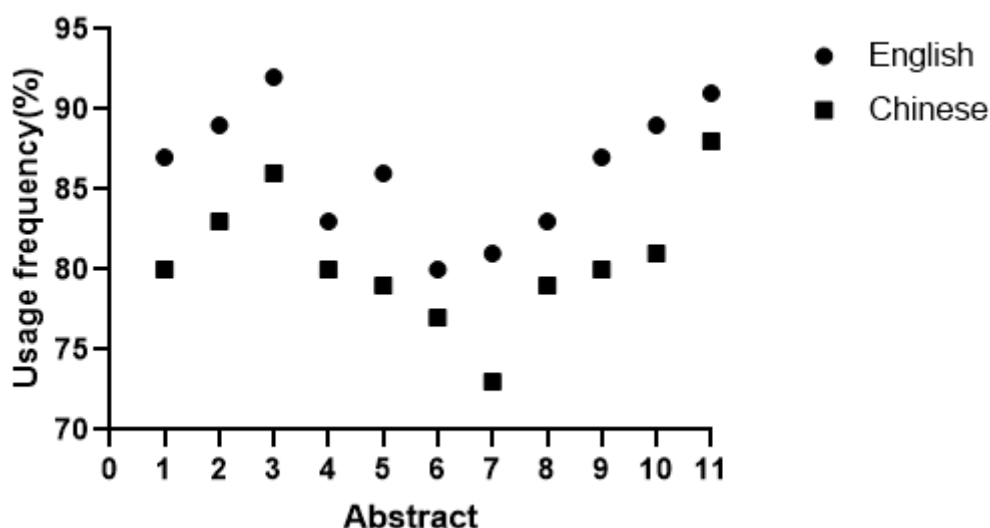

Figure 2. Comparison of usage frequency

As can be seen from the comparison results in Figure 2, in the comparison of the first abstract, the frequency of lexical cohesion in the English abstract reached 87%, while that in the Chinese abstract only reached 80%. Similarly, in the second group of abstracts, 89% of English abstracts were compared with 83% of Chinese abstracts. The frequency of lexical cohesion in Chinese abstracts was still lower than that in Chinese abstracts, and the frequency of lexical cohesion in English abstracts was up to 92%. The results show that English abstracts show a high consistency and coherence in the use of lexical cohesion devices in the selected financial and economic academic abstracts. In contrast, Chinese expression habits may be more focused on the implicit logical relationship and the internal connection of context, so the use of lexical cohesion is slightly less frequent.

4.3 Discourse Coherence

In this study, the coherence of each abstract was scored using the Kibble scoring tool. By comparing the coherence scores of Chinese and English abstracts, this paper reveals the differences in textual coherence between Chinese and English financial academic abstracts. By carefully assessing and quantifying the coherence of the two language abstracts, this study is expected to

reveal the authors' strategies for constructing academic discourse in different linguistic contexts, and provide an empirical basis for improving the quality of international communication of academic papers and the teaching of cross-cultural academic writing. The comparison results of coherence scores are shown in Figure 3:
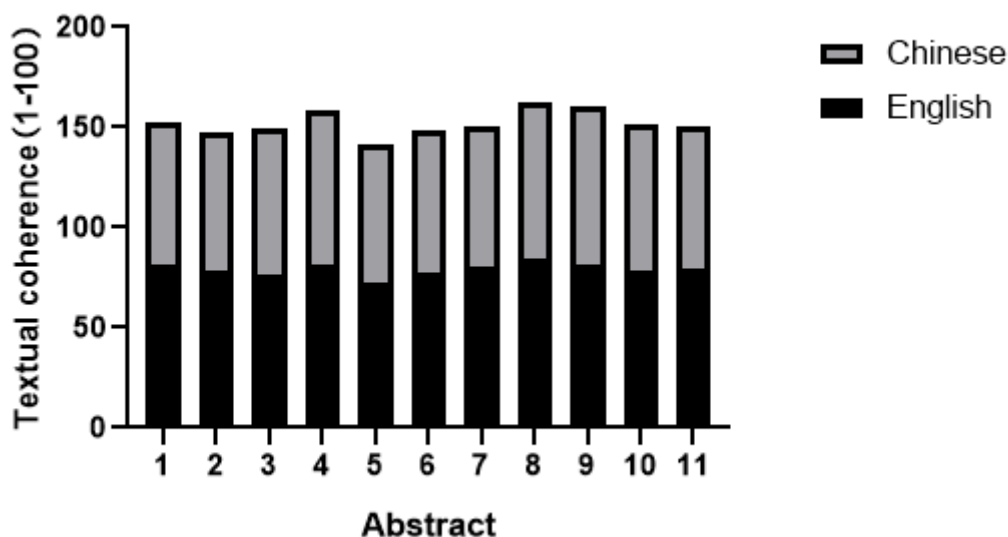

Figure 3. Discourse coherence comparison

It is obvious from the data in Figure 3 that among the 11 groups of abstracts, the coherence scores of English abstracts are all above 70%, and the highest is 84, while the coherence scores of Chinese abstracts are 69 and 79 respectively. This remarkable trend indicates that English abstracts perform better in terms of discourse coherence on the whole because of the characteristics of their own linguistic structure. Although Chinese abstracts are slightly inferior in coherence, their scores remain at a relatively high level, which shows that Chinese authors also pay attention to coherence when writing abstracts.

5. Conclusion

A series of valuable findings and insights are obtained from the comparative analysis of lexical cohesion between Chinese and English abstracts of financial and economic academic papers.

Comparative experimental analysis reveals that English abstracts generally exhibit a high level of lexical diversity, frequency of lexical cohesion, and discourse coherence. The MATTR value, frequency of synonym and synonym usage, and coherence score of English abstracts are generally higher than those of Chinese abstracts. This is related to the characteristics of English as an international academic communication language, where the emphasis on clear and precise expression encourages authors to use diverse vocabulary and effective cohesive devices more frequently.

The results of data analysis are of great significance for understanding and improving the quality of abstracts in Chinese and English financial academic papers. They suggest that in academic writing and translation practice, this study should pay more attention to the richness and variability of vocabulary, as well as the effective use of lexical cohesion. In addition, for non native English speaking authors, understanding the discourse characteristics of English abstracts is crucial for improving the international readability and influence of their papers. Although this study provides valuable insights into the discourse characteristics of Chinese and English abstracts, there are also

some limitations. The limitations of sample size and disciplinary scope may affect the universality of the results. Future research can improve the external effectiveness of research by expanding the sample size, covering a wider range of disciplinary fields, and considering authors from different cultural and academic backgrounds.

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References

[1]Yu Qiangfu. A corpus-based comparative study on hedged heaps in English abstracts of Mechanical engineering academic papers. Journal of North China University of Science and Technology (Social Sciences Edition), 2019,21(1):127-132.

[2]Ling Min, Zhou Xulin. A corpus-based study on the linguistic features of subjects in English abstracts of graphic journals. Journal of Mianyang Normal University, 21,40(6):94-101.

[3]Wang Zihan. A comparative study of Chinese and Foreign conjunctions in English abstracts of Master's theses. Modern Commerce and Industry,202,43(12):177-178.

[4]Wang Xinjie. A study on the Linguistic characteristics and reference value of technical indicators of English academic abstracts. Journal of Chuxiong Normal University, 2019,38(4):44-50.

[5]Wang Miner. A contrastive analysis of functional Discourse in the English translation of "The First Sunny Day on the Drinking Lake and the Later Rain". Journal of Yanbian University of Education,2022,36(3):19-23.

[6]Sumani S, Kartikasari D. Lexical Cohesion Used in "National Column" of the Jakarta Post. New Language Dimensions, 2022, 3(2): 82-90.

[7]Wang Y. Lexical Cohesion Patterns of Natural Science Academic Text and Implications for Lexical Teaching: Textual Analysis of IELTS Reading Passages. Theory and Practice in Language Studies, 2022, 12(5): 836-845.

[8]Sinambela S I, Zein T T. The Study of Lexical Cohesion on Germany Prime Minister's Speech Angela Merkel. Asian Social Science and Humanities Research Journal (ASHREJ), 2021, 3(1): 82-87.

[9]Sujatna M L, Pratiwi U H, Iqlima G N, et al. Lexical Cohesion in Meghan Trainor's lyrics in" TITLE (DELUXE)". Review of International Geographical Education Online, 2021, 11(3): 1514-1519.

[10]Sinaga N T, Sagala H, Hutabarat U E, et al. The Lexical Cohesion Found in the Educational Article of Jakarta Post. Pioneer: Journal of Language and Literature, 2022, 14(1): 207-219.

[11]Ma C, He W. A contrastive ecological discourse analysis of the General Debate statements by the US and China at the United Nations General Assembly (2017–2020). Journal of World Languages, 2023, 9(2): 207-230.

[12]Hartati R, Panah E, Matsom H. A critical discourse analysis of the use of metaphor in online car advertisements. SALTeL Journal (Southeast Asia Language Teaching and Learning), 2021, 4(2): 25-36.

[13]Crible L. A Contrastive View of Discourse Markers. Discourse Markers of Saying in English and French, written by Lansari, Laure. Contrastive Pragmatics, 2021, 2(1): 133-136.

[14]Orts M Á, Vargas-Sierra C. Warning, or manipulating in pandemic times? A critical and contrastive analysis of official discourse through the English and Spanish news. International

Journal for the Semiotics of Law-Revue internationale de Séniotique juridique, 2022, 35(3): 903-935.

[15]*Fatima I, Shah S K, Tahir M A. Medical Discourse on Non-Alcoholic Fatty Liver Condition: A Contrastive Critical Discourse Analysis of Dietary Recommendations of Medical Associations and Research Articles. Journal of Development and Social Sciences, 2022, 3(3): 785-798.*

[16]*Aliboeva N. The expression of comparative analysis. Science and innovation, 2022, 1(B7): 93-95.*

[17]*Bateman J A, Tseng C I. Multimodal discourse analysis as a method for revealing narrative strategies in news videos. Multimodal Communication, 2023, 12(3): 261-285.*

[18]*Ambon L R N S, Ekalia Y J, Selamat E H. Probing Lexical Cohesion in Abstract of Thesis Written by Undergraduate Students. English Language Education Journal (ELEJ), 2022, 1(2): 13-35.*

[19]*Putri N K A A. An Analysis of Lexical Cohesion Found in "Photograph" Song Lyrics. Linguistics Initiative, 2022, 2(1): 77-85.*

[20]*Habibah N. The Used of Lexical Cohesion In Jakarta Post Newspaper. Journal Of Language Education and Development (JLed), 2021, 3(2): 51-60.*