INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 7, (2025) E-ISSN: 2222-6990

Identity Construction in China's Highly Cited Researchers' Research Article Abstracts

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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v15-i7/25936 DOI:10.6007/IJARBSS/v15-i7/25936

Published Date: 19 July 2025

Abstract

This article investigates the usage of stance markers and the constructed authorial identities by China's highly cited researchers based on Hyland's stance model and Sun's identity classification. It adopts a mixed-method approach combining quantitative data and qualitative pragmatic analysis based on a self-built corpus of 200 abstracts of 36,183 words. Quantitative data show that there are 1534 stance markers in the abstracts examined. China's highly cited researchers predominantly employ hedges and boosters with attitude markers and self-mentions less frequently used when expressing the stance in their abstracts. In terms of identity construction, they construct the identity of representor most frequently, which is significantly more than evaluator and interactor. Through qualitative textual analysis, it is found that hedges and boosters help China's highly cited researchers construct the identity of cautious representor; attitude markers construct the identity of objective evaluator; and self-mentions construct the identity of active interactor. Findings of this study are expected to provide pedagogical implications for the teaching of EFL learners' academic writing.

Keywords: Stance Markers, China's Highly Cited Researchers, Research Article Abstract, Identity, Interaction

Introduction

High citation, which has often been considered as an important indicator of researchers' academic articles, has evolved into a critical metric for assessing national research competitiveness. Highly cited researchers have been increasingly attracting attention from the academic community and the public (Zhao & Zhu, 2024). According to *2022 China Science and Technology Paper Statistics Report,* Chinese researchers contributed 27.3% of the world's highly cited papers from various disciplines during 10 years from 2012 to 2022, ranking second only to the United States in the world (Institute of Scientific and Technical Information of China, 2022). Since 2019, China mainland has maintained its status as the world's second-largest concentration of highly cited researchers for four consecutive years (Clarivate, 2023).

This prominence makes China's highly cited researchers (referred to "CHCRs" hereafter) an ideal and significant population for understanding effective strategies in academic discourse. As academic publishing becomes increasingly competitive, the effective discourse strategies employed by highly cited researchers to construct compelling academic identity have evolved from an academic interest to a professional necessity.

Academic discourse is an important medium for individuals to gain recognition as members of the academic community, and the use of stance markers is beneficial for enhancing persuasive effects and constructing an authoritative identity (Wilkinson, 1992; Hyland, 2001). Citation frequency reflects the influence of the cited researchers in the academic community, in which abstracts of their research articles have been recognized as a crucial component (Akbaş et al., 2024). As a necessary part of research articles, abstract is a microcosm of full articles and the first part of the research article that readers encounter (Jiang & Hyland, 2017; Martín, 2003; Huckin, 2001, p. 93), influencing the readers' interest in delving deeper into the articles (Tankó, 2017). As a crucial platform to quickly inform the readers about the main content of the paper, it not only reports objective facts to readers, but also construct the authors' stance to express their evaluation, attitude, and emotions towards the proposition, aiming to persuade the readers to accept their viewpoint or research findings in their abstract. Therefore, it is an important basis for the paper to be cited.

Abstract has attracted substantial academic attention, which highlighted variations among identities in abstracts (Chen & Shi, 2024; Wu & Paltridge, 2021; Yun, 2009). Identity is what makes people similar to and different from each other, and for academics it is how they both achieve credibility as insiders and reputations as individuals (Hyland, 2015). Identity construction has emerged as a significant topic in academic discourse research in recent years, and previous studies have shown the relationship between identity construction and citation (Liu et al., 2023). The authors employ various linguistic strategies to construct various identities and gain recognition from the academic community, thus influencing the citation of their research articles. How highly cited researchers construct their identity in academic discourse warrants more attention, in that understanding these strategies provides actionable insights for improving academic writing effectiveness and citation impact. In academic discourse, stance is often used to highlight the author's identity, clearly expressing a textual voice or community recognized personality (Hyland, 2005). Stance is a author-oriented aspect of interaction, which conveys a author's socially defined identity in the act of communicating (Hyland & Zou, 2021; Campbell, 1975, p. 394). Hyland (2005) defined stance as an attitudinal dimension and includes features which refer to the ways authors present themselves and convey their judgements, opinions, and commitments. With the restricted textual space of abstract, authors must hook the reader at the outset, making it a demanding rhetorical challenge which the versatility and functional importance of stance markers could help authors to meet (Jiang & Hyland, 2017). The use of stance markers in abstracts can help authors to enhance interaction with readers and strengthen the illocutionary force of abstract. Therefore, their preference for stance markers in abstracts reflects authors' awareness of genre, reader, and scholarly community, allowing for richer and more appropriate rhetorical strategies to interact and negotiate with readers, to promote academic viewpoints, express stance, and thus construct their own academic identity (Li & Cheng, 2020) .

Despite the clear practical importance of understanding successful academic discourse strategies, there remains a significant knowledge gap in current literature. Few studies have focused on the stance features and identity construction of highly cited researchers, not to mention studies taking abstracts of highly cited research articles as the object. The study on the features of stance and identity CHCRs construct offers immediately applicable knowledge, and the insights from this study can help EFL researchers enhance their identity awareness in academic writing and learn to use stance markers appropriately to construct an academic identity. To fill this gap, the present study seeks to investigate the distribution features of stance markers and the way they are employed to construct identity of CHCRs in the abstracts of their research articles.

To achieve this objective, it proposes two research questions:
RQ1: What are the distribution patterns of stance markers in the abstracts of CHCRs' research articles?
RQ2: What types of identity are constructed by CHCRs through different stance markers in the abstracts of their research articles?

Literature Review

Identity is a choice made to serve specific communicative purposes within a particular context (Chen, 2014). In academic writing, the concept of identity refers to the positioning or role of the author as a member of the academic community (Deng, 2012). Driven by the communicative needs of the context, the authors can construct their identities through various discursive resources (Chen, 2013). Constrained by genre paradigms and discourse conventions that are recognized or customary within the academic community, the authors need to select appropriate discursive resources according to their communicative needs, thereby constructing different types of identities (Sun, 2015). Huckin (2001) pointed out that the key to successful abstract writing lies in whether it achieves the authors' purpose. For the abstract writing of academic papers, the authors' purpose is to concisely introduce the main content of the paper to the readers, so that readers can quickly and accurately grasp the essence of the paper by reading the abstract. Thus, driven by this communicative need, identity the authors construct in abstract writing and discursive resources used in the construction of this identity have become a focus of academic interest.

Numerous scholars have conducted theoretical explorations and empirical studies on identity construction and the discursive resources employed in academic abstract writing. For instance, Yun (2009) and Liu (2011) investigated authorial identity construction in academic abstracts based on the functions of first-person pronouns. While some scholars have also examined other discursive resources except for first-person pronouns for constructing authorial identity (e.g. Hyland, 2002; Ouyang & Tang, 2006; Tang, 2012; Wu, 2010; Han, 2010), they didn't establish a clear classification of the specific types of identity used for authorial identity construction in English academic writing. What kind of identity has been constructed still warrants further exploration.

Sun (2015), based on the pragmatic identity theory of Chen (2013; 2014), clearly categorized author identities in the abstracts of graduates' theses into four types: representor, interactor, evaluator, and organizer. Although Sun (2015) has investigated the specific types of authorial identity, she only examined part of subcategories of metadiscourse that directly participate

in authorial identity construction (such as attitude markers, self-mentions and engagement markers), while neglecting the other stance markers that indirectly construct authorial identity (such as hedges and boosters) in selecting discursive resources. However, the construction of pragmatic identity is closely related to the stance conveyed by the author, and all stance markers have been proven as an effective means for authorial identity construction (Wang & Zeng, 2021; Liu et al., 2023).

Stance refers to the overt expression of an author's or speaker's attitudes, feelings, judgments, or commitment concerning the message (Biber & Finegan 1988:1; Biber et al, 2021). Stance is an important rhetorical device for enhancing interaction in academic discourse, and it is an indispensable method that academic paper authors use to attract readers' attention and persuade them (Li & Cheng, 2020). It is made up of evidentiality, which refers to the author's commitment to the credibility of the stated proposition; affect, which denotes the author's personal and professional attitude toward the proposition; and presence, which indicates the degree of the author's self-projection in the discourse (Hyland 2005a: 178).

Numerous studies have demonstrated variation in stance expression among across identities. Existing research on stance primarily focuses on undergraduates' or graduates' theses (Wang & Lv ,2017; Wang & Jiang, 2019; Wu & Paltridge, 2021), with relatively limited exploration of stance expression characteristics in expert papers (Wu, 2010; Hu & Cao, 2011; Li & Cheng, 2020; Chen, 2021). Experienced academic authors employ stance markers more proficiently than novice student authors to express their positions, demonstrating a stronger ability to engage with readers (Wu & Paltridge, 2021). Therefore, how experts express their stance in their research articles are more worth investigation, and this study takes CHCRs representative of experts as the research objects.
In order to address the aforementioned research gaps, this study seeks to explore the types of identity constructed by CHCRs by examining the stance markers that are used in the abstracts of their research articles.

Methodology

Data Collection

On March 27, 2024, Elsevier Information Analysis Company officially released the 2023 "Highly Cited Chinese Researchers" list. The list involves 10 subject areas, including philosophy, economic, law, education, literature, science, engineering, agriculture, medical sciences, and management science, with a total of 5,801 researchers. This list is sourced from Scopus, a citation and indexing database, covering the authors affiliated with Chinese (mainland) institutions and currently working in China, including those who are not of Chinese nationality and not of Chinese ethnicity. This article aims to explore the features of stance expression and identity construction in the abstracts by CHCRs, and therefore, to ensure robust and representative samples as well as relevant and reliable outcomes, articles that are indexed in Scopus and whose first author is Chinese were selected. After meeting this condition, abstracts of 20 articles from each discipline were randomly selected as the research objects. 200 abstracts were collected in total, amounting to 36,183 words. After being cleansed and proofread, all texts were incorporated into the corpus.

Analytical Framework

With the focus on the identity constructed by stance markers, this study will build an analytical framework combining Hyland's (2005) stance model and Sun's (2015) identity classification in the academic writing to explore the identity constructed by CHCRs in the abstracts of their research articles.

In Hyland's (2005) model, he categorized stance markers into hedges, boosters, attitude markers, and self-mentions based on the evidentiality, affect and presence connoted in stance. In the present study, each category is subclassified according to Wu (2010), as shown in Table 1.

Table 1
The Integrated Stance Framework Based on Hyland (2005) and Wu (2010)

Stance markers	Subcategories	Examples
Hedges	Accuracy-oriented hedges	some, mainly, generally, about
	Commitment hedges	might, could, suggest
Boosters	Fact-asserting boosters	fact, evidence, demonstrate
	Certainty-indicating boosters	clearly, must, definitely
Attitude markers	Emotive markers	hope, prefer, surprisingly
	Judgemental markers	important, crucial, good
Self-mentions	First-persons	I, we, our
	Third-persons	the writer, the author

Hedges indicate the author's decision to recognize alternative voices and viewpoints and so withhold complete commitment to a proposition. Therefore, hedges imply that a statement is based on the author's opinions rather than facts (Hyland, 2005a: 52). Based on the definition and functions of hedges, Wu (2010) further classified them into two types: accuracy-oriented hedges and commitment hedges. Accuracy-oriented hedges Accuracy-oriented hedges are restricted mainly to those expressions that hedge quantity, degree, frequency and time, etc., while commitment hedges limit the author's personal commitment by expressing the probability of a proposition.

In contrast to hedges, boosters help authors to close down alternatives, head off conflicting views and express their certainty in what they say (Hyland, 2005a: 52). Wu (2010) divided boosters into fact-asserting boosters and certainty-indicating boosters according to their functions. Fact-asserting boosters express the author's clear stance towards the certainty or truth of a proposition, while certainty-indicating boosters convey the author's epistemic conviction and project author's credibility as an academic and an image of authority (Wu, 2025).

Attitude markers focus on the explicit signals of affective assessment and personal feelings (Hyland, 2005), which are categorized into emotive markers and judgmental markers in Wu's (2010) study. Emotive markers are defined as words and phrases which describe authors' emotional states, such as their expectation (e.g., expect, hope, etc.), preference (e.g., prefer, bored with, etc.), feelings of surprise or luck (e.g., surprisingly, fortunately, etc.), etc.. Judgmental markers are restricted to words or phrases which denote authors' personal judgments towards or evaluation of the content, such as the importance of a certain point

(e.g. important, significant, etc.), the effectiveness of a certain method (e.g., useful, successful, etc.), the attraction of certain research (e.g. interesting, etc.), and so on.

Self-mentions refer to the degree of explicit author presence in the text (Hyland, 2005a: 53). Based on Wu's (2010) classification, self-mentions include first person and third person. First person is realized by the the first person pronoun, including singular pronouns, plural pronouns, and their possessives, such as "I", "my", "we", "our", etc.. When examnining first-person plurals, inclusive-we and exclusive-we are not differentiated in this study because of its focus on the types of identity constructed by China's highly cited researcher. Third person is realized by nouns and their possessives, such as the author or the author's.

In terms of identity framework, this study draws insights from Sun (2015). In Sun's (2015) study, the authors need to meet the communicative requirements at two levels: discourse organization and content expression. It involves four types of identities, that is, the representor, the interactor, the evaluator, and the organizer.

Authors construct an identity of representor by presenting research background, objectives, data, theoretical models, methodologies, processes, findings, and implications, etc.. This identity is constructed hedges and boosters within the stance model, and both of them convey the author's credibility about the research regardless of whether the author strengthens or weakens the belief in the proposition (Wu, 2025; Liu et al., 2023).

They adopt an identity of evaluator when evaluating the contributions or limitations of others' or their own research, which involves the subjective emotions and attitude of the author (Wu, 2025). Attitude markers in the stance framework function in expressing evaluation, which have been considered as important interpersonal resources to construct the authorial identity of evaluator (Sun, 2020; Wu, 2025).

Authors establish an identity of interactor when comparing their research with previous studies to demonstrate alignment or disalignment wtih viewpoints or results (Sun, 2015). The stance markers that construct the identity of interactor are self-mentions. They use first-person and third-person forms to refer to themselves in the discourse , constructing the identity of a spontaneous interactor (Sun, 2020).

Authors also construct an identity of organizer when structurally arranging and organizing their contents due to the concise and clear requirement from abstracts. The organizer identity is usually constructed by transitions, frame markers, endophoric markers, and code glosses (Sun, 2020), which are engagement markers and not included in stance framework (Hyland, 2005).

Therefore, only the identities of representor, interactor and evaluator are kept in the present study, as shown in table 2.

Table 2
The Refined Identity Framework from Sun (2015)

Identity	Communicative needs	Stance markers	Examples
Representor	Presenting the research objectives, contents, methods, results, and implications	Hedges	The results indicate that *some* restaurants continued to operate and offer online food delivery while lockdowns were in effect.
		Boosters	The inertia effect of target *must* be considered in the scenario of thick target plate.
Evaluator	Evaluating their own or others' studies	Attitude markers	The AIDAL showed *good* test–retest reliability for both non-CAI and CAI groups.
Interactor	Interacting with readers by mentioning themselves	Self-mentions	*Our* data show that it is difficult to establish an evident genotype-phenotype correlation for DRD.

Data Analysis

This study employs a mixed-method approach, combining quantitative and qualitative analysis of the data, allowing for a deeper insight into the identity constructed by by CHCRs through their use of stance markers in the abstracts of their research articles. First, AntConc 4.3.1 is utilized to conduct quantitative analysis on the frequencies of stance markers in the self-built corpus. Additionally, each search item is manually reviewed in context to determine whether the targeted items function as a stance marker, to ensure the accuracy and reliability of the findings. Second, based on the raw frequencies, the proportions of different categories of stance markers are calculated to get the distribution pattern of stance markers in the examined abstracts. Meanwhile, a qualitative pragmatic analysis of the types of identity constructed through the researchers' choice of different stance markers is conducted.

Results and Discussions

There are 1534 stance markers in the abstracts examined, as illustrated in Table 3. In terms of total frequency, the frequency of stance markers used in the abstracts of research articles by CHCRs, when sorted from high to low, is as follows: hedging markers, boosters, attitude markers, and self-mentions.Among all stance markers, hedges are the most frequently used by CHCRs in the abstracts of their research articles, with 597 occurrences, accounting for 39%. This finding is consistent with the views of Li and Cheng (2020) and Hyland and Jiang (2016) that hedges are the most commonly used strategy for authors to express their stance. Self-mentions occur with the lowest frequency, with 219 times, only accounting for 14%. It is mainly because research papers aim to express opinions objectively, in which authors usually avoid showing subjective presence (Hyland, 2001).

Table3
General Distribution of Stance Markers and Identities in the Corpus

Identities	Stance Markers	Raw Frequencies	Percentage
Representor	Hedges	597	39%
	Boosters	422	28%
	Total	1019	67%
Evaluator	Attitude markers	296	19%
Interactor	Self-mentions	219	14%
Total		1534	100%

CHCRs construct their identities as representor, evaluator, and interactor in the abstracts in descending order. They construct the identity of representor most frequently, accounting for 67%, which is significantly more than evaluator and interactor. This finding is supported by Sun (2015) who holds that the authors of international journals construct the identity of representor in almost every sentence of abstracts. It is influenced by the communicative needs of abstract of research articles, which require the authors to introduce the main content of research articles concisely to readers in the restricted textual space, enabling them to quickly and accurately grasp the essence of research.

Hedges and Identity Construction

Hedges play a crucial role in academic writing, as they can reflect the truth conditions of propositions and make affirmative tones more moderate and cautious. Kaltenböck et al. (2012, p.1) defined hedging as "a discourse strategy that reduces the force or truth of an utterance and thus reduces the risk a speaker runs when uttering a strong or firm assertion or other speech act". Accuracy-oriented hedges affect the truth-conditions of propositions (Wu, 2010), while commitment hedges convey the authors' evaluation of the reliability and understanding of the truth and bring readers into the argument (Wu, 2025).

In the corpus examined, the frequency of commitment hedges are more than twice that of accuracy-oriented hedges. As shown in Table 4, there are 370 commitment hedges in total, accounting for 71% of all hedges, and 175 accuracy-oriented hedges, only accounting for 29%. This finding is consistent with that of Wu (2010a) who holds that experts prefer to employ more commitment hedges in their research articles.

Table 4
Hedges in the Abstracts of CHCRs' Research Articles

Hedges	Subcategories	Examples	Raw Frequencies	Percentage
Accuracy -oriented hedges	Rounders	quite, generally, basically	67	38%
	Imprecise numeric expressions	some, a few, certain	72	41%
	Expressions indicating degree of frequency	often, occasionally, usually	18	10.5%
	Qualifications	to my best of knowledge, from the perspective of...	18	10.5%
		Total	175	29%
Commitment hedges	Probability modality expressions	can, could, may, might, possibility...	234	55%
	Epistemic evidential expressions	seem, appear...	11	3%
	Epistemic judgment expressions	suggest, indicate, implication...	177	42%
		Total	422	71%
Total			597	100%

Commitment hedges reflect the relationship between authors and their proposition, which show the authors' uncertainty about certain arguments. In many cases, they are a pragmatic strategy. CHCRs employ such hedges in the abstracts to reduce their commitment to the proposition, thereby avoiding potential disagreement from readers at the beginning of their reading. They are classified mainly into probability modality expressions, epistemic evidential expressions and epistemic judgment expressions.

Among commitment hedges, probability modality expressions are most frequently used, accounting for 55%. The probability modality expressions that allow authors to mitigate the certainty of their claims and to express conditional epistemology take various forms, including modal verbs, epistemic adjectives, adverbs, and nouns, among which the presence of modal verbs is particularly significant.

Modal verbs, including *can*, *may*, *would*, etc., occur 177 times in total, accounting for 76% of all probability modal expressions. *Can* is used most frequently, with 65 times, followed by *may*, occuring 42 times, whereas *might* is used the least, occurring only 6 times. This finding is consistent with Chen's (2021) study which suggests that EFL experts tend to use modal verbs more frequently when writing English abstracts to express judgments on propositions and employ mitigating tones to achieve persuasive functions, thereby making their viewpoints more readily accepted by other members of the academic community.

These modal verbs can convey the author's reservation and tentativeness to a proposition and involve readers in the author's ratification of a claim (Wu, 2025; Alonso-Almeida & Vazquez, 2009, p. 1171). They tend to tone down the strength of their claims, recognize the limitations of their assertions, and allow the existence of different opinions.

1. Players *may* have different optimistic attitudes with respect to a strategy profile. (Philosophy-6)

As shown in the example 1, the modal verb may indicating possibility expresses the researcher's subjective uncertainty in this proposition and blurs the precision with which he associates himself with the claims. It demonstrates the author's attempt to mitigate the degree of commitment to the proposition, allowing readers to hold different opinions on it. It effectively helps the researcher avoid absolute statements and shows his inclusiveness. By employing probability modality expression to present viewpoints, CHCRs construct an inclusive representor identity. It could be explained by the fact that experts tend to adopt a more tentative stance when presenting results and making claims (Dontcheva-Navratilova, 2025).

There are 177 epistemic judgment expressions, accounting for 42% of commitment hedges, which take the forms of judgment verbs (e.g., indicate, suggest, etc.), and their derived adjectives (e.g., indicative, implied, etc.) and nouns (e.g., indicator, implication, etc.). Among them, *suggest* is the most frequently used, with the occurence of 34 times, and it is followed by *indicate*, with the occurrence of 31 times. *Suggest* or *indicate*, referred to as "communication verbs" (Biber et al.,2021), carry the implication that the act is a speculation but not something that is demonstrated or proved (Wu, 2010a).

2. The overall results *suggested* that the variant genotypes were associated with a significantly reduced breast cancer risk (GC vs. GG: OR = 0.91, 95% CI: 0.83-1.00; CCIGC vs. GG: OR = 0.90, 95% CI: 0.82-0.99). (Medicine-9)
In the examined abstracts, *suggest* and *indicate* exclusively follow the subjects that are inanimate, such as *result(s)*, *finding(s)*, or the pronoun *it*. As shown in the example 2, the inanimate subject leads to the impression that it is not the researcher but the fact that performs the act, i.e. suggests something to the reader. By reporting research findings in this way, CHCRs construct a humble and cautious representor identity with their illocutionary commitment reduced (Meyer, 1997: 29), and readers are left with options to decide whether to accept the suggestion or not.

Accuracy-oriented hedges are divided into rounders, i.e. adjectives and adverbs indicating degree of precision, as well as imprecise numeric expressions, expressions indicating degree of frequency, and qualification (Wu, 2010). In the examined abstracts, there are 175 accuracy-oriented hedges.

Among accuracy-oriented hedges, imprecise numeric expressions are the most frequently used. By employing imprecise numeric expressions, CHCRs not only convey the accuracy of their argument to the readers but also demonstrate their respect for objective facts, thereby enhancing the credibility of their research. In addition, their preference for employing imprecise numeric expressions over precise numbers "allows information to be presented as an opinion rather than an accredited fact" (Hyland, 2005a, p. 178), enhancing accessibility and persuasiveness in arguments (Wu, 2025). Among imprecise numeric expressions, *some* and *many* are dominant, in which *some* occurs 34 times, and *many* 17 times.

3. Overall, our findings reveal the importance of *some* pre-reform institutions in shaping China's unique paths towards industrialization. (Economics-10)
As shown in the example 3, *some* indicates that the authors try to present the information as accurately as possible within their knowledge scope, or deliberately intend to avoid accurate

information by constraining and placing a boundary on the claim. Thus, this strategy, to some extent, also presents a degree of researchers' prudence and rigor, by which CHCRs construct an identity of rigorous representor.

Ranking the second, rounders occur 67 times, marking the limitation of the proposition (Biber et al., 2021: 855). Among rounders, *mainly* and *relatively* occur most frequently, with 10 times respectively. This finding is largely consistent with that of Lou and Yao (2019). They found that journal article authors prefer to use *mainly* and *relatively* to express higher and lower degrees of certainty, thereby strengthening or mitigating their tone.

4. Available data suggest that the destruction occurred mainly in the eastern NCC, whereas the western NCC was only locally modified. (Science-5)

As shown in the example 4, *mainly* has a delimiting function, typically used to delimit the research scope. In such cases, *mainly* modifies prepositional phrases to specify the research perspectives and research objects. The use of rounders functions to construct an identity of conscientious and rigorous representors, by which CHCRs hope to assure his readers that their conclusion is well grounded out of the evident fact or data, rather than being made arbitrarily. In general, the use of accuracy-oriented hedges fully demonstrates the cautious attitude held by CHCRs when expressing their viewpoints. They base their propositions on the content itself and use this strategy to avoid sounding overly assertive or absolute. In their argumentation, they construct an identity of representor not only conveying the precision of their arguments to the readers but also showing respect for objective facts (Chen & Shi, 2024). Such practices effectively enhance the credibility of the argumentation, making it easier for readers to accept their viewpoints. Therefore, the habits for using hedges of CHCRs are one of the important factors for their high citation in international academic community.

Boosters and Identity Construction

Boosters, as another common rhetorical strategy in abstracts for expressing the author's stance, are an important rhetorical device for describing truth and avoiding speculative expressions (Chen, 2020). Using boosters in abstracts of research articles can not only enhance the strength of propositions but also share knowledge with readers and gain their recognition. As presented in Table 5, CHCRs employ much more fact-asserting boosters than certainty-indicating boosters in the abstracts of their research articles. There are 274 fact-asserting boosters, which is almost twice the number of certainty-indicating boosters. A potential explanation may be that CHCRs do more empirically oriented studies that require rigorous research design, data analysis, and verification process.

Table 5
Boosters in the Abstracts of CHCRs' Research Articles

Categories of Boosters	Raw Frequencies	Percentage
Fact-asserting boosters	274	65%
Certainty-indicating boosters	148	35%
Total	422	100%

This finding is different from that of Liu and Chen (2023), who find more certainty-indicating boosters than fact-asserting boosters in Chinese English major undergraduates' these of Bachelor of Arts, but consistent with Li and Cheng's (2020) study, which found more fact-asserting boosters than certainty-indicating boosters in international journals' abstracts. It

could demonstrate that CHCRs are same with international academic community in stance expression, which differentiates them from Chinese EFL learners. This kind of preference for boosters moderate CHCRs' personal stance to present research that can withstand the rigors of falsifiability (Wu, 2025).

Fact-asserting boosters highlight the persuasion of readers by presenting the truth and research findings, to express the author's clear stance towards the certainty or truth of a proposition. They can be realized by nouns (e.g. fact, evidence) and verbs (e.g. show, demonstrate). More use of fact-asserting boosters indicates their more emphasis on the objective presentation of data analysis and empirical results rather than subjective assumptions. (Gillaerts & Van de Velde, 2010; Hyland & Jiang, 2016). Among fact-asserting boosters, CHCRs predominantly rely on the boosting device of *show* (shows/showed/showing/shown), in order to reinforce their or others' propositions. *Show* occurs most frequently, with 92 occurrences.

5. The empirical findings show that, on average, Taobao villages contribute to an annual increase of RMB 1820 in rural residents' income, and this effect is more prominent in counties with a dominant tertiary sector, larger scale, and non-poor counties. (Economics-7)
Show is usually used to report research findings. In the example 5, by using *show*, CHCRs could effectively demonstrate the objectivity and factuality of research findings to readers to enhance the reliability of their studies (Wu, 2010). In this way, CHCRs construct an identity of authoritative and confident representor to persuade readers to accept their arguments.

In contrast, certainty-indicating boosters emphasize the author's subjective judgements of the reliability and understanding of the truth. They convey the author's epistemic conviction, thereby projecting author's credibility as an scholar and an image of authority, through expressions such as adverbials (e.g. definitely, undoubtedly), modal verbs (e.g. must, cannot), and adjectives (e.g. clear, impossible). The smaller proportion of certainty-indicating boosters indicates CHCRs avoid expressing their viewpoints in absolute way, refraining themselves from expressing a stance of complete affirmation or negation towards research findings (Li & Cheng, 2020). This approach aligns with the cautious and rigorous characteristic of academic discourse. Among all certainty-indicating boosters, *significantly* is the most frequently used, with 53 occurrences.

6. Results support that global value chain embedding *significantly* improves enterprise energy efficiency, and this conclusion holds even after self-selection and endogeneity are considered. (Economics-3)

Significantly can increase the intensity of verbs, adjectives, or adverbs, expressing a relatively high degree of certainty in the proposition (Lou & Yao, 2019). In the example 6, *siginificantly* state unequivocally that the author is absolutely convinced of what he is saying, by which he actually "claims shared knowledge with the audience" (Vassileva, 2001). Thus, CHCRs give prominence to their knowledge as part of the general knowledge of the academic community (Wu, 2010), and construct themselves as competent and confident representors.

Attitude Markers and Identity Construction

Attitude markers serve as a strategy for the author to unite readers and enhance the persuasiveness of their arguments, indicating not only the author's stance but also their emotions and evaluations. In this study, CHCRs use fewer attitude markers, indicating that they tend to avoid expressing personal emotional arguments in academic writing to reduce the risk of their papers lacking authority. As presented in Table 6, the frequency of judgemental markers is significantly higher than that of emotive markers, almost 14 times. The striking contrast between the two types of attitude markers suggests that CHCRs are more cautious about conveying their personal emotions than making judgment in the abstracts of their research articles. It indicates that they tend to avoid using expressions with personal subjective emotions to enhance the objectivity of academic discourse. As Jiang and Tao (2007) pointed out, Chinese scholars avoid excessive use of emotionally charged words and prefer objective expression to convey viewpoints based on their considerations that overly strong emotional tones may undermine the authority and seriousness of academic discourse.

Table 6
Attitude Markers in the Abstracts of CHCRs' Research Articles

Categories of Attitude markers	Frequencies	Percentage
Emotive markers	18	6%
Judgemental markers	278	94%
Total	296	100%

Among emotive markers, *hope* and *expect* are most frequently used, with the occurrences of 4 times respectively. They are all used by CHCRs to express the purpose of their study, as shown in the example 7. There is a lack of personal emotion, such as preference or surprise, in the examined abstracts.

7. In this paper, a hybrid wind speed forecasting model is proposed with the *hope* of achieving better forecasting performance. (Economics-15)

By the use of judgemental markers, CHCRs take a more involved and visible position to evaluate the novelty and significance of their research. In the examined abstracts, CHCRs highlight novelty with two adjectives, *new* and *novel*, with their frequencies of 44 times and 13 times respectively. They also emphasize the significance of their research with the frequent use of *important* and *significant* that occurred 54 times and 29 times respectively. Bearing in mind the cutting-edge and significant nature of their research, CHCRs employ more positive judgemental markers towards their own research in the abstracts, helping their research to stand out in the academic community, as shown in the example 8 and 9.

8. Combining thermal events, crustal thickness variations, and paleomagnetic data, we propose a *novel* model explaining oblique compression along the north Yangtze Block during the early Mesozoic. (Science-10)
9. A family of parasite antigens known as Plasmodium falciparum erythrocyte membrane protein 1 (PfEMP1) is believed to play an *important* role in the binding of infected erythrocytes to host receptors in the micro-vasculature. (Agriculture-4)

In the construction of identity of evaluator, CHCRs are more inclined to conceal their personal emotions, and make more judgement about the study. By doing so, they constructed an identity of objective and cautious evaluator, which in accordance with the requirements of academic writing. The objectivity in academic discourse requires that researchers should primarily direct their evaluations toward the study itself, including its content, significance, or findings, rather than expressing personal emotions or critiquing the behavior of researchers (Sun, 2020).

Self-mentions and Identity Construction

In academic discourse, self-mention is a conscious strategy not only revealing the presence and stance of the author but also facilitating interaction between the author and the reader (Li & Cheng, 2020; Liu & Chen, 2023; Wu, 2010). As shown in Table 7, the frequencies of the first-person pronouns are much higher than that of the third person in the examined corpus,. The first-persons occur 210 times, and the third-persons occur only 9 times in total, creating a striking contrast. The third-person is used to indicate a lower level of authorial engagement in the texts, while the first-person signifies the authors' active presence in the discourse (Wu, 2010a). This distribution means CHCRs prefer to use first-persons to present themselves actively. The preference of the first person pronouns suggests CHCRs' stronger awareness and expectation of presenting themselves and involving readers in the interaction.

Table 7
Self-mentions in the Abstracts of CHCRs' Research Articles

Self-mentions			Frequencies	Percentage
First-person	First-person singulars	I	14	6.7%
		my	7	3.3%
	First-person plurals	our	54	25.7%
		we	128	61%
		us	7	3.3%
		Total	210	96%
Third-person nouns and adjectives		the author/authors /author's	9	4%
Total			219	100%

Among first-person pronouns, there is also a sharp contrast between singular pronouns and plural pronouns. The frequencies of the first-person singular pronouns are extremely low, with *I* occurring 14 times, *my* occurring 7 times, and no occurrence of *me*. In contrast, plural pronoun *we* occurs 128 times, *us* 7 times, and *our* 54 times. Neither nominal possessive pronouns, such as *mine* and *ours*, nor reflexive pronouns are found in the corpus.

The first-person singulars are of high responsibility risk, and its use in academic discourse reflects the personal ownership of the information conveyed by the authors (Huang et al., 2008). The first-person plurals are more inclusive, and authors often establish an equal relationship with their readers by using the first-person plurals (Kuo, 1999). As stated by Lou and Wang (2020), proficient authors use *we* to invite readers to share existing knowledge, guide the readers' thinking, and achieve interaction with the readers, promoting the readers' acceptance of the authors' viewpoints.

It is also found that as compared to subject pronouns *I* and *we*, the possessive adjectives *my* and *our* as well as their object pronouns me and *us* are relatively fewer in the corpus. It can

be partially explained by the fact that through the subject pronoun a stronger authorial voice is conveyed than when using the first person plural object pronoun or possessive adjective (Dueñas, 2007).

In the 14 cases of the first-person singular pronoun *I* as self-mention, there are 4 instances of *address* following *I*, making *I address* the most frequent collocation. The most frequent collocation of *we* is *find* (found), with a total of 16 times. In the construction of identity of interactor, CHCRs actively present their responsibility for the outcomes to the readers, to highlight the professionalism and scientific nature of their research, and to enhance credibility and authority (Wu, 2010a).

10. Finally, I address a common criticism against NCR, that is, with numerous variables, NCR lacks theoretical synthesis and hence a theoretical core. (Law-7)

As shown in the example 10, the author constructed an authoritative identity as an interactor to gain the trust of readers by presenting his capability to deal with the common criticism with the expression of "I address". Through the use of "I address", CHCRs position themselves as professional researchers, indicating their active engagement and in-depth exploration of research issues.

Conclusion

Abstracts play a crucial role in the transmission of textual information, possessing independent structures and genre characteristics. The use of stance markers in abstracts can assist authors in enhancing interaction with readers and strengthening authorial identity construction. This article investigates the usage of stance markers and the constructed authorial identities in abstracts of CHCRs' research articles. It is found that CHCRs predominantly employ hedges and boosters with attitude markers and self-mentions less frequently used when expressing the stance in their abstracts. In terms of identity construction, hedges and boosters help CHCRs construct the identity of cautious representor; attitude markers construct the identity of objective evaluator; and self-mentions construct the identity of active interactor.

This study examines the functions of stance markers from the perspective of identity construction, not only further clarifying the relationship between stance markers and identity construction but also providing a pragmatic interpretation of the functions of stance markers, thereby enriching research on stance markers, identity construction, and academic writing from a pragmatic perspective. Given that stance is a developmental feature in the academic writing (Hyland & Jiang, 2022), the findings of this study are expected to provide empirical basis for targeted academic writing teaching, guiding EFL learners to learn form the use of stance markers by highly cited researchers to strengthen their awareness of identity and readers in academic English writing.

Due to space limitations, this study only relied on textual analysis to reveal the pragmatic identity construction in CHCRs' research article abstracts, without delving into the contextual constraints. Future research could adopt methods such as interviews and questionnaires to examine which contextual factors influence the use of stance markers and the identity construction process in academic writing, thereby providing a systematic interpretation of the relevant research findings.

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