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A corpus-based analysis of Arab scholars' use of interactional metadiscourse markers

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ABSTRACT

Authors frequently employ metadiscourse markers (MDMs) in academic literature to encode their perspectives, support their claims and captivate readers. The usage of MDMs based on a variety of taxonomies and models has long been studied by researchers with the interpersonal model being one of the most widely applied. Results have shown a significant relationship between the use of MDMs and the comprehensibility of the texts. Though these findings seem insightful and valuable for fostering academic writing, Arab scholars' use of MDMs especially the interactional type seems to be neglected. Accordingly, the purpose of the present study is to bridge this gap and reveal the use of interactional MDMS by Arab scholars in the fields of applied linguistics, translation and literature. The study adopted the corpus linguistic method and used a one-million-token specialized corpus that had been compiled for research purposes. The results have shown an imbalanced use of MDMs by Arab scholars using descriptive statistics and Key Word in Context (KWIC) qualitative analysis. The results have shown an imbalanced use of MDMs by Arab scholars. However, despite the limited and imbalanced use of MDMs, they are effectively utilized to serve various pragmatic functions. These findings can have implications for designing training courses that aim at fostering Arab scholars' and students' academic writing. Further research that investigates the writing production of Arab scholars in different disciplines is recommended to further support the current findings.

Contribution/ Originality: This research used a unique corpus compiled specifically for the study consisting of published articles by Arab scholars. Unlike previous studies that focused on specific parts of research articles by writers with different linguistic backgrounds. Its originality also lies in its focus on interactional MDMs making it more targeted and focused.

1. INTRODUCTION

The focus of classical discourse analysis studies was primarily on the propositional content of the texts. Research in this field aims to understand how writers and speakers construct and convey meaning through language and explore the explicit or implicit propositions within a given discourse. However, in the last decades, another type of research on discourse analysis has emerged that focuses on the tools and techniques used by writers and speakers to facilitate comprehension of the provided content. These linguistic devices which are also used to engage the audience, compose what is known as metadiscourse. Metadiscourse has acquired conspicuousness in applied linguistics research (Radonja, 2019) and its analysis has become one of the major approaches to discourse

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studies (Hyland & Jiang, 2020). Accordingly, several research studies addressed the topic finding that metadiscourse is a crucial linguistic feature for communicating the author's point of view and establishing interaction with the audience (Alyousef, 2015). Moreover, it enables writers to compose a text in a relational style appropriate for the declared propositions (Binmahboob, 2022). These results encourage further research into the subject and the exploration of different aspects of it including the classification of the linguistic tools used to achieve its purpose, their application in various registers and the various pragmatic tasks carried out by means of these instruments. The major results of such research can be summarized by the fact that metadiscourse is manifested through the utilization of various linguistic devices referred to as Metadiscourse Markers (MDMs). Different models have been established to standardize these devices with Hyland's (2005) model being the most widely used. Hyland classified MDMs into two main categories: interactive and interactional. Thus, he identified MDMs according to their pragmatic functions stating that they are used either to engage the reader or listener in the discourse i.e., interactive or to establish a connection between the author and the reader i.e., interactional. Subsequent studies used the Hyland (2005) model to investigate the use of MDMs in different discourses. In academic writing, MDMs are widely accepted as an integral part (Adel, 2006; Binmahboob, 2022; Hyland, 2005, 2015; Hyland & Jiang, 2022). Academic writing involves a level of formality, precision and explicitness that necessitates effective communication of ideas. These features require using MDMs to achieve coherence and cohesion, reflect the author's voice and stance, and engage readers (Hyland, 2005). Given the importance of metadiscourse to academic writing, several studies such as Al-Subhi (2022) and Hyland and Jiang (2020) were conducted to investigate its use in various related areas. Insightful findings were thus generated regarding how MDMs can be used to serve various rhetorical functions and strategies employed in academic writing. Furthermore, research is also interested in genre-specific conventions by investigating different MDMs employed in different academic writing genres such as research articles, essays and conference papers (Alharbi, 2021).

However, there is a lack of studies investigating the employment of metadiscourse in English language studies in general and by Arab scholars in particular. This disparity is undesirable since it has been demonstrated that the use of MDMs can encourage academic writing; hence, studying them can aid in raising Arab scholars' academic output. Moreover, research has focused on investigating interactive MDMs neglecting interactional ones. It is hoped that studying interactional MDMs will yield similarly insightful results since they are as important as prior research has indicated. The present study aims to scrutinize Arab scholars' use of interactional MDMs in English language studies by answering the following research questions:

1. To what extent do Arab scholars use interactional MDMs?
2. How do Arab scholars employ interactional MDMs in their research articles (RAs)?

2. LITERATURE REVIEW

2.1. Metadiscourse

The term metadiscourse refers to the notion that communication is not only about the exchanging of information or services but also reflects the characters and stances of the communicators (Hyland, 2005). It explores linguistic items that fall beyond the function of informing and extends to the tools writers use to interact with their readers or with the text itself. The term has numerous uses in literature and has been defined by several researchers. It is commonly used in discourse analysis. However, these definitions slightly differ.

The concept of metadiscourse in its current state started in the mid-eighties of the last century when William (1985) identified two levels that compose several discourses. The first is related to providing information about the subject of the text while the second known as metadiscourse is concerned with assisting in organizing, classifying, interpreting, evaluating and reacting to such information. Thus, metadiscourse is essentially a discourse regarding the discourse itself or a communication about the process of communication. This definition entails that every linguistic feature used to organize the text or enhance the information included can be considered a metadiscourse.

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Furthermore, according to Hyland (2005) a variety of roles and functions have been defined by later classifications of metadiscourse features or resources. A similar definition is provided by Crismore, Markkanen, and Steffensen (1993) who focused on the exact function of metadiscourse. They stated that it incorporates linguistic devices that do not contribute to the semantic content of the text but are meant to assist the audience in interacting with the provided information. Furthermore, Hyland (2005) stipulated that these metadiscourse devices should make the text coherent for the audience and appropriate for the context. As a result, they are considered to play a crucial role in shaping the discourse, engaging the audience and reflecting the author's stance (Fuertes-Olivera, Velasco-Sacristán, Arribas-Baño, & Samaniego-Fernández, 2001).

2.2. Metadiscourse in Academic Writing

According to Hyland (2005), one prerequisite for successful writing is the readers' awareness. He also points out that writers and speakers need to consider their readers and listeners while they write or speak as this facilitates the achievement of text objectives. Metadiscourse which is significant for academic writing is one factor that writers and speakers use to consider their audience (Radonja, 2019). Ifantidou (2005) relates this to relevance theory by stating that writers aim to compose perfect and appealing texts that can convey the planned meaning with minimal intellectual endeavor. Moreover, it has been discovered that readers are drawn to both efficient and inefficient text reading. More precisely, readers are interested in texts that facilitate comprehension with low cognitive effort.

According to Wilson and Sperber (2004) relevance theory shows that a person's perception of the appropriateness of an input increases significantly when positive mental effects are more substantial and require less effort to understand. Ifantidou (2005) attempted to test this by studying non-native university students' comprehension of English texts with and without metadiscourse. Results revealed that the participants found the texts that contained MDMs easier to understand and they read them in a shorter time despite being long texts.

MDMs are valuable to academic writing as they increase interest in research beyond how texts feature the world and how they operate interpersonally (Hyland, 2015). An extensive usage of MDMs in the review of academic books (Hyland & Tse, 2004) and undergraduate studies (Hyland, 2010) was revealed. In general, academic writers' use of MDMs causes their texts to be more comprehensible, accessible and excellent (Radonja, 2019). Hyland emphasises the significance of MDMs in academic writing since they help writers express their thoughts and direct readers' comprehension.

2.3. Metadiscourse Across Linguistic and Cultural Backgrounds

Language and writing are considered cultural aspects indicating that each social group possesses special discourse traditions and styles that vary across cultures (Connor, 1996; Hyland, 2005). Language is the vessel that carries cultural values and offers guaranteed ways to engage the audience in writing. Cultural values impact various aspects including language, learning, communication and especially the employment of metadiscourse (Hyland, 2005). Adel (2006) points out that in English culture metadiscourse is used to escort readers through texts. On the other hand, relationships between various textual parts are kept implicit in other cultures including Japanese culture. Thus, the responsibility of influential communication in the English culture is the writer's while it is the reader's in the Japanese one. Writers in L1 and L2 might vary in their favorable methods of organizing their ideas and captivating their readers. These methods are values, language and modes of communication (Adel, 2006). Various cultures have different methods of creating coherent and organized texts (Hyland, 2005). The inclusion of values leads to a focus on the cultural impact on text creation. This can be related to Connor's (1996) intercultural rhetoric theory which holds that a relationship exists between the style of writing and culture. This is based on the principle that culture has a significant impact on language performance particularly in terms of rhetorical performance which can vary from one language to another (i.e., from one culture to another) (Hayisama, Shah, & Adnan, 2019). According to Hayisama et al. (2019) writers of different cultural backgrounds possess various anticipations about written texts and their logical organization. Hyland (2005) proposes that culture forms our

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basic comprehension and how we incorporate our language in speaking or writing. Hayisama et al. (2019) emphasize that MDM choice and utilization in a specific text indicate preferences originating from cultural perceptions.

2.4. Previous Studies

Benraiss and Koumachi (2023) studied interactional MDMs in 15 abstracts written by Moroccan applied linguists. These abstracts were published in two Moroccan peer-reviewed journals. Benraiss and Koumachi (2023) revealed that the 15 abstracts showed a low frequency of interactional MDMs (less than 2%). Boosters appeared (33.3%), the next one was attitude markers (26.7%) followed by self-mentions (22.2%) and hedges (17.8%). Finally, engagement markers did not appear in the corpus. Akoto and Afful (2020) scrutinized metadiscourse in the introduction and literature review chapters of 10 English language theses written by non-native researchers. A total of 150.500 words were collected. The study revealed that interactional MDMs are employed more frequently than interactive ones. Interactional MDMs that appeared were hedges, boosters, attitude markers and engagement markers. Akoto and Afful (2020) discovered the following hierarchy for interactive markers: evidential, endophoric, transitional and frame markers. Nugrahani and Bram (2020) investigated eight published English language articles. The articles were analyzed manually to find which type and subtype of metadiscourse appeared more frequently. Their analysis was limited to the findings and discussion sections. The results revealed that there were 708 occurrences of MDMs with interactive one appearing more than interactional ones (529 and 197) respectively. Interactive markers appeared in this organization: transitions, framer markers, endohporic markers, evidential and code glosses while interactional markers occurred as follows: hedges, boosters, attitude markers and engagement markers. Alharbi (2021) examined the metadiscourse position in the results, discussion and conclusion sections of 40 applied linguistics published papers and master's theses. It was shown that interactive MDMs were employed more than interactional one. Additionally, transitions and hedges were found to be the most frequent markers in both genres. Alkhathlan (2019) investigated the type and frequency of occurrence of MDMs in 50 RAs by Saudi EFL college students. It was found that the students employed more interactive metadiscourses than interactional ones. In addition, transitions and hedges were the most common subtypes of metadiscourse whereas the least frequent ones were endophoric and attitudinal markers.

Musa, Hussin, and Ho (2019) studied the use of interactional MDMs in Yemeni applied linguists and advanced writers. They examined 34 RAs. The study found limited use of interactional MDMs in their corpus, 11.46%/1000 words. In addition, the study concluded that hedges were the first in use (6.12%) followed by boosters (1.94%), attitude markers (2.05%), self-mentions (90.44%) and engagement markers (0.90%).These studies have certain limitations. Initially, everyone concentrated on one, two or three segments within the articles they examined. For example, Benraiss and Koumachi (2023) and Musa et al. (2019) focused on one section, Akoto and Afful (2020) and Nugrahani and Bram (2020) studied two sections and Alharbi (2021) investigated three sections. This may affect the examined data and accordingly may not yield the required results. Second, all the studies suffer from a small sample size ranging from eight to fifty articles. This size accompanying one, two or three sections was scrutinized and the results might be questionable. Third, Alharbi (2021) and Alkhathlan (2019) investigated Arab scholars' use of MDMs in the Arab context. Nevertheless, the two studies suffer from the shortages mentioned above and Alkhathlan (2019) collected his data from college students who might not be proficient writers. This study looks at 198 published RAs (1.089.723 tokens) in an effort to fill in all of these gaps. These papers were authored by proficient Arab researchers in the field of English language studies and published in indexed journals.

3. METHODS

3.1. Design

The study adopted a corpus-assisted discourse study (CADS) approach. A corpus of Arab academic scholars' articles was used to inform the study findings after being analyzed using the corpus analysis tool #Lancsbox.

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3.2. Corpus

A specialized corpus that the researchers developed was employed for the purpose of research. The corpus is named the Arab Scholar Academic Written English Corpus (ASAWEC). It was compiled from RAs published by Arab scholars in eight peer-reviewed journals. The corpus compiling criteria suggested by pioneer scholars in corpus linguistics such as Sinclaire (1991); Atkins, Clear, and Ostler (1992) and Baker, Hardie, and McEnery (2006) were as followes:

ASAWEC is composed of 198 files whose genre is scientific RAs in IMRaD style and whose register is purely academic writing in the fields of applied linguistics, literature and translation. These articles were drawn after following licensing requirements from eight journals that are published by universities and research centers in the Arab world. A sampling frame with specific criteria was set to guide the selection process for the files. Accordingly, only files that were written by Arab scholars in the selected field from 2019 to 2023 were selected. Table 1 details the sources of the articles that compose the corpus.

Table 1. Details of ASAWEEC sources.

Journal	Files	Tokens	%	Indexing
Algerian Translation and Language Journal (ALTRALANG)	33	144759	16.67%	1 - 33
Arab World English Journal (AWEJ)	36	204549	18.18%	34 - 69
The Egyptian Journal of Linguistics and Translation (EJLT)	30	198192	15.15%	70 - 99
International Journal of English Language and Translation Studies (IJELTES)	32	157020	16.16%	100 - 131
Journal of English Studies in Arabia Felix (JESAF)	20	85411	10.10%	132 - 151
Journal of Research in Language and Translation (JRLT)	8	49982	4.04%	152 - 159
The Saudi Journal of Language Studies (SJLS)	31	195732	15.66%	160 - 190
Journal of Umm Al-Qura University for Language Sciences and Literature (UQUJLL)	8	54078	4.04%	191 - 198
Total	198	1089723	100 %	1 - 198

The collected data were processed for preparation for corpus compiling processes by using various software and programming libraries that account for the normalization of the data by converting the files into text format using AntFile Converter (Anthony, 2022). The text files were then cleaned from noise using Python and RegEx commands. Furthermore, the files were tokenized and Parts of Speech (POS) tagged using the Python and Natural Language Toolkit (NLTK) libraries.

The compiled corpus has also undergone extra quality control procedures. The files have been reviewed and double-checked by three referees specializing in applied linguistics and IT. Then, the corpus was tested using two corpus analysis software. Ultimately, ASAWEC has the following features (see Table 2).

Table 2. Corpus statistics.

Item	Stat.
Files	198
Tokens	1089723
Types	41085
Type-token ratio (TTR)	0.04
Lemmas	36061
Lexical density	0.839
Maximum file length	12578
Minimum file length	1073
Average file length	5504

The ASAWEC is publicly published on Figshare.com[1] which is a platform where researchers can make all their research data accessible for other users to discover, cite and share (Figshare, 2023). It enables users to upload files

[1] ASAWEC is available at https://doi.org/10.6084/m9.figshare.24187461.

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of various formats and set access controls and licenses. It also provides DOIs that facilitate the citation and tracking of research output. This procedure was meant to promote ethical considerations such as data transparency, accountability and the potential for identifying and rectifying errors in the present study. It also aims to enhance collaboration, data reuse and reproductivity of the findings of the study.

3.3. Analysis Framework

The analysis of ASAWEC was conducted using the interpersonal model of metadiscourse which is built upon a series of classifications initially introduced by William (1985) and further refined by Crismore et al. (1993). Finally, Hyland (2005) developed the final version of this model which is detailed in Table 3 and was used in the present study with minor modifications.

Table 3. Hyland's (2005) model of metadiscourse in academic text.

Category	Function	Examples
Interactive	Help guide the reader through the text.	Resources
Transition	Express a semantic relation.	In addition, but, thus and and
Frame markers	Express a semantic relationship between the main clauses.	Finally, to conclude and my purpose is.
Endophoric markers	Refer to information in other parts of the text.	Noted above , see figure in section 2.
Evidentials	Refer to the source of information in other texts.	According to X , Y and Z states
Code glosses	Help readers grasp the meanings of ideational material.	Namely, e.g. , such as, in other words
Interactional	Involve the reader in the argument.	Resources
Hedges	Withhold the writer's full commitment to the proposition.	Might, perhaps, possible and about.
Boosters	Emphasize force or the writer's certainty in the proposition.	In fact, definitely, and it is clear that.
Attitude markers	Express the writer's attitude towards the proposition.	Unfortunately, I agree and surprisingly
Engagement markers	Explicitly refer to or build a relationship with the reader.	Consider, note that, you can see that
Self-mentions	Explicit reference to the author(s)	I, we, my and our.

Note: Reprinted from *Metadiscourse: Exploring interaction in writing*, (p. 49) by Hyland (2005).

The goal of the current study is to ascertain how writers include readers in the argument in order to persuade them or strengthen their assertions. In particular the study focuses on the second category of the model or the interactional MDMs. The first category is ruled out because it focuses more on text organization which is beyond the scope of the study. Furthermore, it is noted that the first category of MDMs has been heavily studied while a considerable scarcity is observed in studying interactional metadiscourse. The study is an attempt to bridge this gap. A final adaptation to the framework was conducted for a more focused analysis of metadiscourse which is to rule out the last source of the model i.e., self-mention. The corpus includes a significant amount of usage of the first-person pronouns I, we, my, and ours, according to the exploratory analysis of the data. However, a deeper analysis of the KWIC revealed that most of these instances of occurrence were quoted from participants in the studies and hence cannot reflect writers' use of metadiscourse. Many studies were based on surveys and interviews whereas most items were formulated using first-person pronouns and used in the results and discussion sections. In academic writing, the use of personal pronouns is also seen as one of the main characteristics of informality. Journals typically prohibit this practice and words like "the researcher" are likely to be changed before publication. As a result, it is probably unlikely that the majority of the corpus's self-mentioning examples reflect the writers' writing styles. The analysis will be restricted to the following four categories: hedges, boosters, attitude markers and engagement markers considering all of these factors.

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3.4. Data Analysis

The attained data was analyzed using #Lancsbox. A quantitative analysis of potential interactional MDMs was conducted. The benchmarks for these markers were formulated by referring to previous studies on interactional MDMs. The KWIC lines were then copied to an Excel workbook to conduct a qualitative analysis of the resources to determine how the writers used the MDMs and how this use impacted the overall interpretation of their proposition. The most and least used MDMs were calculated using the quantitative results and discussion will be held regarding the possible implications of these findings.

4. FINDINGS

The corpus analysis revealed that Arab scholars in the fields of applied linguistics, literature and translation used all interactional MDMs defined by Hyland (2005) and selected for the adapted model of the present study. Nevertheless, there was an observable variability in using specific categories as shown in Figure 1.

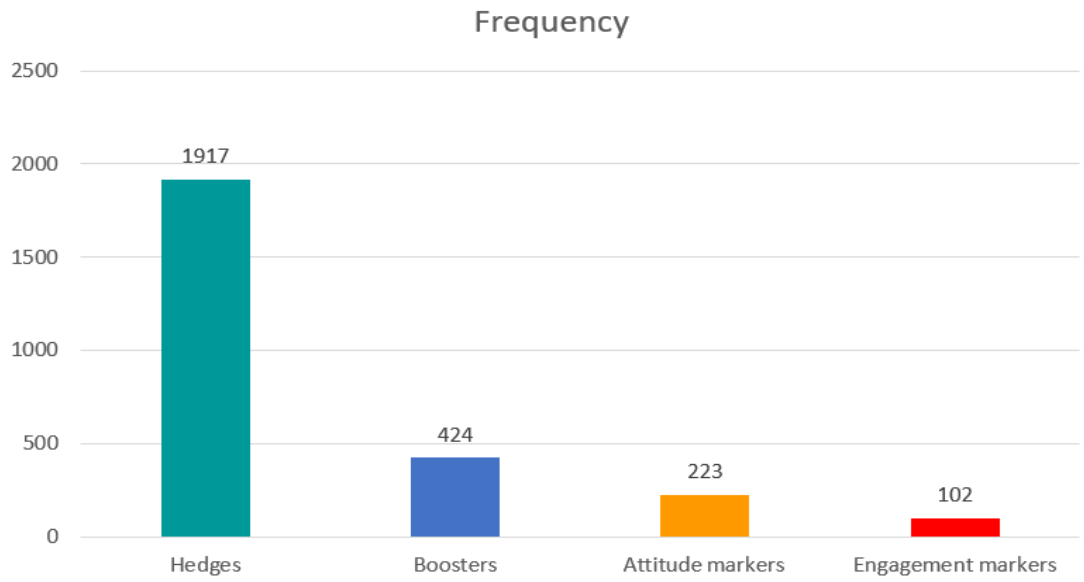

Figure 1. MDMs in the ASAWEC.

The results indicate a significantly elevated use of the hedge category. On the other hand, attitude markers, boosters and engagement markers are slightly used by Arab scholars. Table 4 shows the relative frequency of each category and the percentage of use of each feature in the corpus to represent how the research participants distributed their use of metadiscourse categories.

Table 4. Distribution of MDMS used by Arab scholars.

Category	Frequency*	Percent
Hedges	1917	71.9%
Boosters	424	15.9%
Attitude markers	223	8.4%
Engagement markers	102	3.8%
Total	2666	100.00%

***Note:** Relative frequency per 1 million words.

The statistics reveal that hedges are the most used type in the corpus and they represent around 72 % of the total interactional MDMs used as shown in Table 5.

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Table 5. Hedges in the ASAWEC.

Word	Frequency	Range	Range percent
May	1242	177	89%
Might	419	123	62%
Likely	164	87	44%
Perhaps	64	42	21%
Possibly	28	19	9.6
Total	1917		

It is found that the MDMs 'may' and 'might' are used repeatedly in the corpus along with the marker likely and to a lesser extent the markers perhaps and possibly. Furthermore, the distribution of the corpus revealed that both 'may' and 'might' are commonly used by most writers in the corpus. The second type of interactional MDM used is boosters. This type represents around 16 % of the whole MDMs used in ASAWEC. However, its frequency and distribution are also not equal regarding the items used as displayed in Table 6.

Table 6. Boosters in ASAWEC.

Word	Frequency	Range	Range percent
In fact	162	68	34.3%
Clearly	159	80	40.4
Obviously	45	35	17.7
It is clear that	31	15	7.6
Definitely	27	17	8.6
Total	424	-	-

The most popular boosters in ASAWEC are "in fact" and "obviously." The word "obviously" is employed by more writers than "in fact" despite the latter being more commonly used in the corpus. This suggests that more writers repeated the use of 'in fact'. Table 7 indicates that attitude markers are often used less frequently by Arab scholars.

Table 7. Attitude markers in ASAWEC.

Word	Frequency	Range	Range percent
Interesting	110	68	34.3%
Unfortunately	38	23	11.6%
Interestingly	34	30	15.2%
Surprisingly	18	15	7.6%
Surprising	13	11	5.6%
Fortunately	10	3	1.5%
Total	223		

The results indicate that approximately 50% of the attitude markers in the corpus include variations of the word "interesting". Additionally, markers such as "fortunately" or "unfortunately" are used albeit to a lesser extent, and "surprisingly" is used even less frequently. Furthermore, the least used marker, "fortunately" is repeatedly used by only three writers. Similarly, the engagement markers are not widely used as shown in Table 8.

Table 4. Engagement markers in ASAWEC.

Word	Frequency	Range	Range percent
Note that	73	35	22.9%
See that	18	8	5.2%
Consider that	6	3	2.0%
Observe that	5	5	3.9%
Total	102		

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The distribution of engagement markers in ASAWEC is not even. Approximately 70% of these markers are represented by the word *"note"* indicating a significant preference for this particular resource. On the other hand, other resources are used in a very minimal manner.

5. DISCUSSION

The rank order of the MDMs in ASAWEC is as follows: hedges, boosters, attitude markers and engagement markers which partially align with previous literature. However, these markers are unevenly used in the corpus. In other words, the researchers observe an excessive use of one or two words or variations of the same words (e.g., may or might) within each type while finding little or no results for other examples within the same class. This finding confirms that the ASAWEC has a low lexical diversity as indicated by the low Type-Token Ratio (TTR) of 0.04 in Table 2. This limitation is not only observed in the content vocabulary but it is also apparent in the strategies employed for communication. The TTR means that for every 100 words in the corpus, there are only 4 unique words. This suggests that the vocabulary used by the Arab scholars of English who wrote the corpus is limited and repetitive. The fact that the genre is scientific articles and the register is academic writing may partly explain the low TTR as these types of texts tend to use specialized terminology and jargon which can reduce lexical diversity (Baker et al., 2006). However, the TTR of 0.04 is still quite low even for academic writing. This finding is consistent with earlier research that indicated Arab academics employ a restricted vocabulary such as interactional MDMs in their discourse (Alharbi, 2021; Alkhathlan, 2019; Benraiss & Koumachi, 2023) and other stance markers such as modal verbs (Akeel, 2014) and lexical bundles (Sanosi, 2022).

The findings indicate some alignment with the prior research regarding the rank order of interactional MDMs as reported in ASAWEC. The findings align with the previous literature in that hedges are the most frequent type of MDMs. This finding is found with Malaysian and Thai academic writers (Hayisama et al., 2019) international students (Alyousef, 2015) Spanish and Russian scholars (Boginskaya, 2023) as well as Arab scholars (Alharbi, 2021; Benraiss & Koumachi, 2023). Furthermore, boosters were also found to be the second most commonly used type of MDM (Hayisama et al., 2019; Musa et al., 2019). Nevertheless, the results contradict other studies with different rank orders such as Alkhathlan (2019) and Alharbi (2021) which found that academic scholars used engagement markers to a greater extent making them the second most-used MDMs. It is noteworthy that both of these studies focused on Arab scholars' use of MDMs, yet their findings contradict those of the current study suggesting that further research in this area is needed. It is worth noting that our result contradicts what was revealed by Benraiss and Koumachi (2023) who found that their corpus did not use engagement markers. The observed relative overuse of hedges is a clear marker of improper use of interactional metadiscourse features by Arab scholars. Hedges are extensively used in academic writing to mitigate the strength of the proposition as the genre requires objectivity and acknowledges the nuanced nature of academic discourse. However, excessive use of hedges can lead to an opposing effect as it may indicate uncertainty and hesitation and ultimately undermine the clarity and persuasiveness of the argument. Accordingly, it may be considered a "pragmatic failure" (Cherdan, 2019).

It was discovered by looking at the KWIC lines of hedging markers that the researchers employ hedges for a variety of pragmatic purposes. Some instances from the ASAWEC can demonstrate the use of hedges to soften the strength of the proposition. For example, in one article (AWEJ_21) the author writes "explicit direct instruction of L2 speech acts can possibly facilitate EFL learners' acquisition of new speech act strategies". Another example form (EJLT_14) is "Perhaps the distribution of complement clause structures in Egyptian newspapers' corpora reflects informational discourse and specific, opinion-oriented communication between news writers and Egyptian readers". Hedges are also used to acknowledge the limitations of the study or its method. The multiple nationalities of writers *might* have an influence on the way people write (SJLS_26), "the two questionnaire administrations could have led to tediousness and *possibly* participant attrition" (JRLT_ 5) or as a qualifying statement "the findings of the study *might* have been different if the researcher interviewed the other 6" (IJELTS_24). Hedges are also employed

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to maintain an objective and impartial tone in the articles such as "Additionally". The results *may* provide valuable insights and guidance to EFL teachers" (ALTRALANG_31) and "ChatGPT is *likely* to impact the academic performance of postgraduate students positively" (JESAF_2). They are used to justify findings "It exists more in Arabic. This is *perhaps* Arabic the native language of the subjects" (EJLT_8) or to suggest further research methods "For further research, a larger number of participants can possibly deepen the issue of code-switching among EFL learners on Facebook" (ALTRALANG_20). Although using hedges in a balanced manner is considered appropriate from a qualitative perspective, the excessive use of these markers by Arab scholars raises concerns about the appropriateness of using interactional metadiscourse features.

The usage of any identified boosting marker was below 50% of the total files indicating that they were used to a lesser extent by the researchers. These findings confirm the imbalanced use of interactional MDMs by Arab scholars discussed above as it seems logical that the writers overused hedging markers. They would underuse boosters since they perform two opposing pragmatic functions. For this reason, Hyland (2005) highlights the importance of a balanced use of hedges and boosters which is not the case in the current study.

In ASAWEC, boosters are employed to execute a variety of pragmatic functions. The KWIC analysis revealed that they were used to reflect the significance of the study. In fact, there have not been sufficient studies conducted in this area (SJSL_25). They were also used to express the authors' confidence in their findings as in "The results clearly demonstrate that all respondents are bilingual" (ALTRALANG_7) or to strengthen the proposition "In fact translation is more than transferring meanings or messages from one" (JESAF_19). Boosters are used to emphasize the rigors of the study methodology. The problem of the present study is shown *clearly* in the answers of Iraqi students of the Master of Arts" (AWEJ_29) and to clarify its results "*Obviously*, the participant who provided the last response misunderstood the utterance" (UQUJLL_ 5). In short, the use of boosters in the study reflects the diverse functions they serve. However, both the dispersion and frequency of boosters cannot be considered appropriate in light of the overall use of MDMs particularly hedging markers.

The findings from the other two types of interactional MDMs confirm their inappropriate use or dispersion in ASAWEC. Both attitude and engagement markers were minimally used in the corpus and even the identified ones were used by a limited number of researchers. Hyland (2005) suggests that these markers play a significant function in expressing the writer's emotive attitude and highlighting or underplaying the involvement of readers. The lack of these markers in the corpus indicates lower competence in using interactional MDMs and therefore suggests that fostering these two types of MDMs would be a plausible recommendation.

Furthermore, the identified attitude and engagement markers were also limited in terms of structure. More than half of the attitude markers contain a variant of the lemma (interest). Researchers express their attitudes towards their findings. Interestingly, the vast majority of the participants opted for the pragmatic-based translation (UQUJLL_ 5) despite this *interesting* finding, neither mastery experience nor any other of the four sources appears to have a relationship with self-efficacy" (JRLT_8). Other examples of recurrently used attitude markers of the same stem appeared in the examples: "Fortunately, better results were recorded during the 2020-2021 academic year" (ALTRALANG_24) and "Despite this fact, unfortunately, the research on this issue is very limited in Libya." (IJELTS_2).

Similarly, engagement markers spotted in the corpus were also limited in terms of structure and frequency. Mostly, they used the verb note to engage the readers and direct their interest to another part of the text such as "The readers should *note* that Table 2 is only a sample of the suggested elicitation of the spoken data" or information to contextualize their discussion as in "It should be noted that during COVID-19, Morocco's distance learning faced challenges" (IJELTS_29). In many cases, researchers both use engagement markers with inclusive pronouns "we" to enhance engaging their readers as seen in examples such as "We should note that doublespeak characterizes the language of politics" (ALTRALANG_15), "In Table 2 and Figure 1, we can see that the translators in the UMD are 8 %" and "according to the table above, we notice that fifteen students considered that

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distance learning was poor'" (ALTRALANG_25). Another interesting finding is that several instances of engagement markers are incorporated with attitude markers likely to engage the readers in the discussion and raise their role thus forming a full stance by aligning themselves with the proposition and then engaging the readers in the same attitude. Examples of this strategy include "An *obvious note* to be *noticed* from the previous examples is that not all the translators have knowledge about the issue" (EJLT_30), "it is *easy to see that* information presented is currently published" (SJLS_5), and it is *necessary to consider that* reading in the class should be consolidated with prior reading at home" (ALTRALANG_9). These remarks explain that engagement was used successfully. However, their trivial employment in the corpus is unfortunate and requires interference.

It is important to acknowledge a potential limitation in the analysis conducted. While efforts were made to identify the most common interactional MDMs based on previous literature starting with Hyland's (2005) model, it is not possible to guarantee that all instances of these markers were captured in the 198 RAs. The absence of an exhaustive list of markers for each type makes it challenging to have an absolute list used by writers. Nonetheless, the examples provided as search entries were deemed sufficient to generate rich data reflecting the reality of Arab scholars' use of interactional MDMs in the field of applied linguistics and English language as they were taken from many previous studies addressing the topic. The fact that ASAWEC is composed of articles written by scholars in fields related to applied linguistics in English is significant. It can be reasonably assumed that the use of metadiscourse (MDMs) may be less appropriate and balanced in other disciplines as scholars in applied linguistics are more likely to know discursive strategies and their role in enhancing academic writing. The above results can have several other implications for academic writers, research centers and institutions, and syllabus designers. Scholars need to review and comprehend the nature of metadiscourse considering their role in enhancing the clarity of their texts and the engagement of their audience. Conscious observation of how they actually adopt these techniques can help them improve their writing. This is where the role of academic institutions comes in. They should organize training sessions and workshops to develop and implement interactional MDMs and show how these devices should be used in an effective and balanced way. Furthermore, curriculum designers should seriously consider incorporating interactional MDMs into undergraduate syllabi aiming at developing academic writing skills and clearly showing the exact impact of each type on both the structure and the meaning of the texts.

6. CONCLUSION

Metadiscourse is used to guide the audience's perception of the text and reflect the writers' attitudes and assumptions about their propositions. Thus, it was widely investigated especially in the academic writing genre. However, there is a comparative scarcity of research dealing with the use of interactional MDMs by Arab scholars. The current study has attempted to bridge this gap by compiling a one-million word corpus of RAs in English applied linguistics, literature and translation written by Arab scholars and then conducting a quantitative and qualitative analysis to reveal its findings. The results showed an imbalanced use of interactional MDMs as the study sample incorporated an overuse of hedging markers, a moderate use of boosters and a trivial use of attitude and engagement markers. Nevertheless, the use of these markers, though imbalanced quantitatively was found to be diverse, rich and account for several pragmatic functions.

It is recommended that future studies focus on one type of marker at a time and strive to compile a comprehensive list for each type, thereby yielding more detailed findings based on the potential limitation of the absence of an exhaustive list of interactional MDM that can provide a full picture of their actual adoption in the corpus. Furthermore, the assumption that Arab academic writing in other disciplines may suffer from more inappropriate interactional MDMs use is plausible, however, it cannot be taken for granted. Therefore, it is recommended that further research be conducted on the use of interactional MDMs by Arab scholars from other disciplines as this would provide valuable insights and implications.

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