Topics in Linguistics (2022), 23(2), pp. 36-49

10.2478/topling-2022-0010

An investigation into the use of metadiscourse in undergraduates' abstracts in social sciences

Lin Ruonan
Ghayth Kamel Shaker Al-Shaibani*
English Language and Communication, Education Department
Faculty of Social Sciences and Liberal Arts
UCSI University, Kuala Lumpur, Malaysia

Abstract

There is very little research on the use of metadiscourse markers in abstracts across different disciplines (especially in a single study) in the research of undergraduates as novice researchers, and little qualitative research has been done on the topic in EFL and ESL contexts altogether. Thus, the purpose of this study is to examine the use of metadiscourse markers in EFL and ESL undergraduates' abstracts in social sciences across three disciplines (English Language and Communication, Mass Communication, and Psychology) in the Faculty of Social Sciences and Liberal Arts at UCSI University, a Malaysian private university. We adopt Hyland's (2005) interpersonal model which involves two main categories – interactive metadiscourse and interactional metadiscourse – to analyse all 62 abstracts collected from the 2016 Colloquium held at the faculty. The method used is qualitative to categorize the metadiscourse markers accordingly as well as counting their frequencies. The findings showed that the interactional metadiscourse markers were used nearly twice as often as the interactive discourse markers for the three disciplines, and the most used markers are boosters. The most used interactive metadiscourse markers are transitions, followed by frame markers, evidentials, code glosses, and endophoric markers. The findings can be used by ESL and EFL instructors when teaching students learning argumentative writing and research writing to use metadiscourse markers to make arguments and write proper critiques to reflect their stance and voice. This research adds some insights into this neglected genre of academic discourse at the undergraduate level.

Key words

abstract; academic discourse; discourse analysis; interpersonal model; interactive metadiscourse markers; interactional metadiscourse markers; metadiscourse

1. Introduction

Metadiscourse studies have witnessed important progress at the theoretical and empirical levels for the past few decades (Xin and Yan, 2016). Since Harris coined the concept of metadiscourse in 1959, some scholars have further developed this term, such as Williams (1981), Vande Kopple (1985), Crismore, Markkanen, and Steffensen (1993), Hyland and Tse (2004), and Hyland (2005). Abstracts as an independent section in a research article perform a significant function (Xin and Yan, 2016), perhaps the most important function among all sections of a research article (Mocanu, 2015). This is so because

* Address for correspondence: Ghayth Kamel Shaker Al-Shaibani, English Language and Communication, Education Department, Faculty of Social Sciences and Liberal Arts (FoSSLA), UCSI University, No. 1, Jalan Menara Gading, UCSI Heights, Cheras 56000, Kuala Lumpur, Malaysia. E-mail: ghayth.k@gmail.com; ghayth@ucsiuniversity.edu.my

abstracts summarize the whole paper; they help experienced and young researchers to obtain information about a specific research topic. Moreover, abstracts are very important in attracting readers with different orientations to continue reading the paper if the topic is relevant to a particular investigation. Many studies have been conducted on metadiscourse markers in sections of research articles, as in the introduction (Farzannia and Farnia, 2016; Kawase, 2015; Salar and Ghonsooli, 2016), results and discussion (Khedri et al., 2013; Kuhi and Mousavi, 2015), and conclusion sections (Estaji and Vafaeimehr, 2015). However, not many studies have been carried out on the use of metadiscourse markers in the abstract section across different disciplines in a single study (Wang and Zhang, 2016) let alone in EFL and ESL contexts. Moreover, attention to the analysis of metadiscourse markers used in research article abstracts across different disciplines is scarce (Xin and Yan, 2016) and even more so in the research of undergraduates. In previous studies, scholars mostly adopted either mixed or quantitative methods; however, little qualitative research has been done in this respect. In addition, some researchers have focused only on the analysis of interactional metadiscourse markers as in Hyland (1998), Abdi (2002) and McGrath and Kuteeva (2012). To bridge these gaps and to enrich the literature, we are interested in investigating both interactive and interactional metadiscourse markers outlined by Hyland (2005), employing his framework in this respect. The objectives of this paper are to investigate a) the most interactive metadiscourse markers used in undergraduate students' abstracts, and b) the most interactional metadiscourse markers used in undergraduate students' abstracts presented at the 2016 Colloquium, held for the first time at the Faculty of Social Sciences and Liberal Arts (FoSSLA), UCSI University, Kuala Lumpur, Malaysia. We hope that the present study can contribute to the body of knowledge on academic research writing from two perspectives. Firstly, this study helps both undergraduate and postgraduate students to raise their awareness of using metadiscourse markers in their academic research writing by realizing the importance of using metadiscourse markers in the academic discourse as a whole, not only in writing the abstract section. Secondly, this study helps postgraduates and young researchers to use metadiscourse markers in their writing regardless of their discipline, especially those studying in research-oriented universities such as UCSI University and the like, to make their research more interesting and coherent whereby their ideas are well linked and thus clearly understood by readers.

2. Literature review

Past research on metadiscourse markers is essentially based on examining the use of interactive and interactional markers mostly used by postgraduate and undergraduate students, researchers and journalists in their writing. Moreover, only Xin and Yan's study was done on BA abstracts in 2016. To further highlight the research gap, the literature is presented thematically based on the studies reviewed within two categories (metadiscourse in pair languages and discipline-based metadiscourse) as outlined in the subsequent two subheadings. Hyland's (2005) model was adopted in all these studies, except for Carrio-Pastor (2021), who adapted it. The corpus size and type of data of each study are summarized in Table 1 below over a span of the past 10 years (2012-2021).

2.1 Metadiscourse in pair languages

Some scholars examined metadiscourse in pair languages to identify patterns of metadiscourse used in those pair languages such as English and Persian (Karimi et al., 2017; Kuhi and Mojood, 2014; Mansouri et al., 2016; Samar and Yazdanmehr, 2013), English and Turkish (Akbas, 2012; Ozdemir and Longo, 2014; Bal-Gezegin, 2016; Yüksel and Kavanoz, 2018), and English and Arabic (Alotaibi, 2015), reporting various findings. As for English and Persian, Samar and Yazdanmehr (2013) found that interactive metadiscourse markers were employed more than interactional markers. This could be due to the fact that Iranian applied linguists have a greater tendency to organize their academic discourse structurally competently in English. In a similar fashion, Mansouri et al. (2016) reported that applied English linguistics EFL writers tend to use more interactive and interactional metadiscourse than Persian writers in computer engineering. They justified this variation by suggesting that studies in humanities describe changeable realities and comprehensibility is very important, and that is why metadiscourse elements are used more than in non–humanities research. Karimi et al. (2017) found similar results when analysing 80 law article abstracts in English and Persian. Their findings showed that the English writers used much more metadiscourse markers than the Persian writers. They attributed this difference to the cultural differences and discourse structures in both languages. As for Kuhi and Mojood (2014), they examined 60 English and Persian editorials, and pointed out that interactional metadiscourse markers

were used more than interactive markers, possibly due to the persuasive nature of this genre as they play a key role in persuading readers.

Pertaining to English and Turkish, Akbas (2012) discovered a great variation in the use of interactional metadiscourse markers among three groups – native speakers of Turkish, native speakers of English, and Turkish speakers of English in Master's thesis abstracts in social sciences. Ozdemir and Longo (2014) found that American postgraduates used interactional metadiscourse twice more than their Turkish counterparts. Bal-Gezegin (2016) collected a corpus of 150 book reviews as a genre published in academic journals from 10 disciplines in English and Turkish to examine how metadiscourse was used in these two languages. Bal-Gezegin found that the use of metadiscourse markers was higher in the English corpus than in the Turkish corpus, and that native writers of English use hedges more than other markers, whilst Turkish writers use more attitudinal markers than the other markers. This explains that the use of both markers reflects the nature of book reviews as an academic genre. Yüksel and Kavanoz (2018) collected three corpora – 316 essays written by Turkish learners of English as a second language, British Academic Written English (BAWE), and British National Corpus (BNC) to investigate the differences between native and non-native speakers of English in terms of frequencies and usages of metadiscourse markers. They used a mixed method approach. Interestingly, they found that "in academic discourse, regardless of experience in writing (novice or expert) and L1 language background, interpersonal metadiscourse markers are used more frequently than textual metadiscourse markers" (p. 104) and that pragmatic competence related to metadiscourse use develops by experience regardless of L1 background.

Regarding English and Arabic, Alotaibi (2015) analysed 44 bilingual abstracts collected from the *Arab Journal for the Humanities* written by Arab scholars. Alotaibi found that the interactional markers *self-mentions* were used the most in English and Arabic abstracts; and as for interactive markers, Arabic version abstracts featured more *transition* markers, whereas the English versions used more *frame markers* and *code glosses.*

2.2 Discipline-based metadiscourse

Metadiscourse has also been examined within different disciplines and genres such as news discourse and academic discourse (mathematics, engineering, accounting, linguistics, education, literature, English, and PhD research). For instance, Fu and Hyland (2014), Farahani and Sabetifard (2017) and Moghadam (2017) explored the topic in news discourse; whereas the other researchers focused on academic discourse as discussed herein. Fu and Hyland (2014) examined the topic in two journalistic genres: popular science and opinion articles. Their findings revealed that popular science texts used fewer metadiscourse markers as compared to opinion texts. Farahani and Sabetifard (2017) found that English native writers used more metadiscourse than Persian non-native writers of English. This may be because English native writers are influenced by their mother tongue more than Persian writers. They also found that interactive markers were used more than interactional markers. This possibly indicates that both groups of writers paid more attention to guiding readers through their news discourse. On the other hand, Moghadam (2017) found that Iranian EFL writers used fewer metadiscourse markers (both interactive and interactional) in their news discourse than English native writers.

Farahani (2019) conducted corpus linguistics research on metadiscourse markers by employing a quantitative approach. He used the British Academic Written English (BAWE) corpus as data, which contains 6,968,089 words. He used the R software program to run a statistical analysis. He found that interactive metadiscourse markers are more prevalent than interactional metadiscourse markers. That is to say, for the former, transitions and endophoric markers are used more than other ones; whereas, for the latter, hedges and boosters are the predominant metadiscourse markers in the corpus. This indicates that writers are more interested in organizing discourse rather than interacting with the audience in this respect.

Wang and Zhang (2016) carried out a comparative study to examine the usage and frequency of metadiscourse markers in mathematical and linguistic academic research articles collected from the Social Sciences Citation Index (SSCI) and Sciences Citation Index (SCI) journals. The results showed that metadiscourse was used more in the abstracts of linguistics papers than mathematics papers. This is because linguistics falls partially under the category of humanities, and hence more linguistic features are used. Moreover, interactive metadiscourse was used more than interactional metadiscourse in the abstracts of the two disciplines. This is because the corpus is made up of abstracts, hence the writers find no room to make their opinions and interactions with the readers in the abstract section due to space constraints.

Pooresfahani et al. (2012) analysed the features of metadiscourse markers written by Iranian researchers from applied linguistics and engineering disciplines. Four research articles were selected from each discipline, and they found that interactional markers were used less than interactive markers.

Kan's (2016) study aimed to determine the use of interactional metadiscourse in articles from the domains of Turkish language education and Turkish literature by examining 10 articles from each discipline. The findings showed that the use of interactional metadiscourse markers in Turkish language education and Turkish literature was significantly different. Researchers of Turkish language education used more interactional metadiscourse than their counterparts in Turkish literature, which could be due to attempts to establish connections with their readers.

Mocanu (2015) examined abstracts in Romanian accounting research articles. Mocanu analysed the evolution of interactional metadiscourse markers in the Romanian context. One hundred and thirty abstracts from the *Journal of Accounting and Management Information Systems* (JAMIS) from 2006 to 2014 were selected for the study employing a mixed method. Mocanu found that *hedges*, *boosters* and *attitude* markers are the most frequent elements of interactional metadiscourse; they are used to convince and interact with the audience. Mocanu also found that the sampled abstracts showed a greater tendency towards boosting rather than hedging.

Carrió-Pastor (2021) adapted Hyland's (2005) model to make it applicable to the EFL context; she identified the metadiscourse devices (textual and interpersonal) used by 360 Spanish learners of English with six different levels of language proficiency (A1, A2, B1, B2, C1 and C2), and then she classified them into different levels and categories, accordingly, following certain exclusion and inclusion criteria. These L1 Spanish learners of English came from different degree courses at the Universitat Politècnica de València in Spain. Her corpus included 360 essays (with 250 to 300 words each) on a general topic gathered between 2014 and 2017. She analysed the corpus data over two stages qualitatively. She used (METOOL) which is an automated text analyser to do a preliminary text analysis first; after that, she analysed the corpus manually through a MS-Word Processing file. Her main purpose in conducting this study was to help EFL students improve their pragmatic proficiency for more effective communication.

For textual devices, Carrió-Pastor (2021, p. 5) found three types as listed below with examples, starting with the most to the least frequent ones.

1. Logical devices (items that create explicit cohesion of a text, guiding readers): in addition, furthermore, moreover, also, similarly, further, furthermore, however, as such, in contrast, but, yet, rather, nevertheless, instead, still, thus, therefore, then, consequently.
2. Frame devices (items that connect parts of the text in a linear way): first, firstly, second, secondly, third, thirdly, finally, to begin with, beginning, next, on the one hand, regarding, concerning, turning to, in terms of, thus far, in sum, in brief, briefly, aim to, seeking.
3. Code glosses (devices that present examples or explanations): that is, for example, for instance.

As for interpersonal metadiscourse devices, Carrió-Pastor (2021, p. 5-6) found the following three types as listed below with examples, starting with the most to the least frequent ones.

1. Hedges (devices that mitigate the proposition and protect the face of writers): may, maybe, would, can, might, could, seem, suggest, believe, feel, think, argue, almost, theoretically, partly, almost, perhaps, quite, unclear, idea, theory, partially, approximately, probable.
2. Attitude devices (items that show the writers' critical evaluation of a fact or idea): critical, exact, fundamental, important, key, limited, main, major, new, relevant, robust, significant, sufficient, unique, valuable, have to, dramatically, only, support, consistency, improvement, significance, fail, ensure, expand.
3. Boosters (devices that exemplify the writers' certainty about some facts or ideas, showing conviction about certain facts or ideas): determine, show, demonstrate, reveal, highlight, confirm, emphasize, conclude, establish, assert, prove, know, clearly, significantly, generally, indeed, highly, primarily, consistently, strongly, actually, especially, entirely, always, fully, clear, majority.

Overall, she found that metadiscourse devices portray specific ways of argumentation in the students' essay writing with different levels of EFL proficiency in the Spanish context.

Kawase (2015) collected a corpus of eight PhD dissertations and eight published research articles by eight Japanese English language writers to analyse the use of metadiscourse in the introduction sections

in these two genres of academic discourse. The findings showed that the variations of these two genres may be due to certain metadiscourse features. For example, the changes in the use of some interactive and interactional items can be due to similar reasons related to how research writers construct their authorial presence in their dissertations and research articles.

Lo, Othman and Lim (2020) examined eight doctoral research proposals across four disciplines in education written by Malaysian first-year ESL doctoral students. In their quantitative study, they analysed the corpus data utilizing AntConc (version 3.4.4) to examine the frequency of three dimensions of academic discourse, namely textual, engagement, and evaluative. The results showed that, firstly, the engagement dimension (3.1%) is the lowest of all three dimensions which is attributed to the lack of experience in academic writing. Secondly, even though there is a variation among these four disciplines and among the students themselves, there is a noticeable development in the proposal drafts written over their first year.

Lastly, Xin and Yan (2016) explored the use of metadiscourse markers in BA abstracts of three courses (Applied Linguistics, Material Science, and Electronic Engineering) by analysing 60 abstracts from these three disciplines. The findings showed that the frequency in using interactive markers in Material Science and Electronic Engineering was the same, while the frequency in Applied Linguistics was much higher. This may be attributed to the young researchers' high proficiency in English. Moreover, Applied Linguistics abstracts used the most interactional metadiscourse markers compared to the other two disciplines.

To conclude and critique the literature, the studies reviewed have investigated the use of metadiscourse in pair languages, disciplines, selected sections and all sections of research articles, dissertations, book reviews, research proposals, essays, editorials, and news articles among postgraduate and undergraduate students, researchers and journalists. Moreover, these studies have used Hyland's (2005) interpersonal model to analyse data. Scholars mostly adopted either mixed or quantitative methods; however, little qualitative research has been done in this respect. For example, we found that Alotaibi (2015), Farahani and Sabetifard (2017), Fu and Hyland (2014), Gillaerts and Velde (2010), Kan (2016), Mocanu (2015), Moghadam (2017), Ozdemir and Longo (2014), and Wang and Zhang (2016) used mixed methods for data collection and analysis. On the other hand, some researchers such as Karimi et al. (2017), Kuhi and Mojood (2014), Pooresfahani et al. (2012), and Xin and Yan (2016) only used quantitative methods. Other scholars such as Mansouri et al. (2016) did not mention the method of data collection they used, yet in this case it seems like a qualitative study. Kawase (2015) also did not mention the research method used; yet we noticed that Kawase did mainly a qualitative study; however, Kawase did a frequency analysis (occurrences) of the metadiscourse items and called this as a quantitative approach which we do not think it is because we did not notice any statistical analysis done. Akbas (2012) did not mention the method of data collection used either, yet we noticed a mixed method was used. On the other hand, we found only one study, Xin and Yan (2016), done on BA abstracts. Hence, we believe that young researchers' abstracts and their academic discourse should not be neglected.

3. Methodology

The data we collected consists of 62 abstracts from three departments (18 from English Language and Communication (ELC), 22 from Mass Communication (Mas Com), and 22 from Psychology at FoSSLA of UCSI University, Malaysia. These abstracts were printed as an abstract book for the 2016 Colloquium organized by FoSSLA for the first time when final year undergraduates from the three departments presented their research as a Final Year Project (FYP). We have access to this set of data through the Research and Postgraduate office at the faculty as attached in the appendix. By reviewing several past studies, most of the researchers, such as Wang and Zhang (2016) applied both qualitative and quantitative approaches to conduct research on metadiscourse markers. Our study employs a qualitative approach, with a frequencies (occurrences) count of linguistic structures of interactive and interactional metadiscourse markers to make the analysis more meaningful and to address the research objectives. Purposive sampling was adopted to explore metadiscourse use among these three groups of social sciences students as case study research (Creswell, 2014; Kumar 2011). Furthermore, Table 1 below shows the corpus size in several relevant past studies for the past 10 years (2012-2021).

Table 1 Data collected from 21 previous studies (2012-2021) presented chronologically

Number	Scholar's surnames	Publication Year	Corpus size
1	Akbas	2012	90 thesis abstracts
2	Pooresfahani, Khajavy & Vahidnia	2012	8 research articles
3	Samar & Yazdanmehr	2013	100 article abstracts
4	Ozdemir & Longo	2014	52 research abstracts
5	Kuhi & Mojood	2014	60 news editorials
6	Fu & Hyland	2014	400 journalistic genres
7	Alotaibi	2015	44 article abstracts
8	Mocanu	2015	130 article abstracts
9	Kawase	2015	8 PhD dissertations and 8 research articles
10	Mansouri, Najafabadi & Boroujeni	2016	20 article abstracts
11	Wang & Zhang	2016	60 article abstracts
12	Xin & Yan	2016	60 BA abstracts
13	Kan	2016	20 research articles
14	Bal-Gezegin	2016	150 book reviews
15	Karimi, Maleki & Farnia	2017	80 article abstracts
16	Farahani & Sabetifard	2017	2 news writing of 10,000 words each
17	Moghadam	2017	60 newspaper articles
18	Yüksel & Kavanoz	2018	3 corpora: 316 essays, BAWE (484 essays) & BNC (229 books and periodicals)
19	Farahani	2019	BAWE corpus (6,968,089 words)
20	Lo, Othman & Lim	2020	8 doctoral research proposals
21	Carrió-Pastor	2021	360 essays

Annotation: BAWE refers to British Academic Written English & BNC refers to British National Corpus

Based on the objectives, we adopted Hyland's (2005) model. When analysing the data, we utilized definitions and samples provided by Mocanu (2015) to identity metadiscourse markers because Hyland did not provide a clear explanation for every sub-category, and he did not provide sufficient examples for each sub-category either. However, Hyland's (2005) interpersonal model is the most cited model and thus it is used as the theoretical framework for this study. Table 2 shows the details of this model.

Table 2 The Interpersonal Model of Metadiscourse [Adopted from Hyland (2005), p. 49]

Category	**Function**	**Example**
Interactive	**They help to guide the reader through the text.**	
Transitions	express relations between main clauses	In addition, but, thus, and
Frame markers	refer to discourse acts, sequence or stages	Finally, to conclude, my purpose
Endophoric markers	refer to information in other parts of the text	Noted above, see fig
Evidentials	refer to information from other texts	According to X, Z states
Code glosses	elaborate propositional meanings	Namely, e.g., such as, in other words
Category	**Function**	**Example**
Interactional	**They involve the reader in the text.**	
Hedges	withhold commitments and open dialogue	might, perhaps, possible, about
Boosters	Emphasize certainty or close dialogue	in fact, definitely, it is clear that
Attitude markers	Express writer's attitude to proposition	Unfortunately, I agree, surprisingly
Self-mentions	Explicit reference to author(s)	I, we, my, me, our
Engagement markers	Explicitly build relationship with reader	consider, note, you can see that

Note: The examples are adopted from Hyland (2005) and Mocanu (2015).

As presented in Table 2, the interactive metadiscourse markers refer to how the information is organized by authors based on the needs of the readers. This helps the readers to understand the text that authors are trying to explain. For interactional markers, they refer to the ways that authors are trying to interact with their readers. The reason for authors to use this category is to involve the readers in their discourse.

4. Results and discussion

Based on the first objective, we analysed the corpus to find out the most used interactive metadiscourse markers in the undergraduate students' abstracts. The findings are summarized separately for the three disciplines in Table 3.

Table 3 The frequency of interactive metadiscourse markers used in ELC, MasCom and Psychology students' abstracts

Interactive metadiscourse markers and their frequency			
	ELC	**Mas Com**	**Psychology**
Transitions	however (4), thus (2), therefore (2), additionally (2), then, moreover, due to that, accordingly, in light of this problem, in view of this problem, the reason is, overall, since, instead, hence, in general, on the other hand, while, besides	however (8), therefore (6), thus (4), hence, meanwhile, while, even though, although, moreover, furthermore	however (4), thus (3), therefore (3), hence (2), meanwhile (2), in addition (2), besides, furthermore, additionally, generally, nevertheless, on the other hand
Frame markers	the purpose (3), the result, the findings, first, lastly, main purpose, aims to (7) aimed at, the objective (3) objectives, focus on (2) focused on	the purpose (4), main objective (3), as a result (2), focus on (2), in order to, targeted, aims to (9), aimed to	focus on (4) the purpose (3), later, the research objective, aims to (7), aimed to (3)
Endophoric markers	NONE	NONE	NONE
Evidentials	based on	based on (14), according to (6), previous literature, previous studies	according to, based on
Code glosses	such as (3)	such as (5), for example (2)	such as (2)

Note: Frequencies higher than 1 are indicated by the number placed in parentheses.

From this table, one can notice that all ELC, Mas Com and Psychology students used transitions more than the other interactive markers as shown in the frequency indicated in the parentheses. Transitions play an important role in the coherence of texts, and they show the relationships between clauses such as the relationship of addition, contrast, and cause and effect. Moreover, transitions consist of conjunctions and adverbial phrases, and they show the writer's thinking patterns (ideas) in different parts. Some words such as *however, moreover, therefore, in addition,* and *thus* can all be seen as transitions as shown in the following three excerpts:

Excerpt 1 (ELC)
However, there is minimal research on it in terms of cultural difference.

Excerpt 2 (Mas Com)
Therefore, this study examines the association between personalities by measuring participants' Big Five Personality and selfie usage on SNS(s).

Excerpt 3 (Psychology)
Thus, this research used quantitative method to find out the impact of minority stress and self-acceptance on depression on the moderator role of homosexuality in order to serve as guidance for the related agencies on this issue.

To elaborate further, the words *however, therefore,* and *thus* in Excerpts 1, 2 and 3 are transitions. For instance, *However* indicates a transition and shortcoming in previous research; *therefore* and *thus* indicate a transition as a result or a conclusion in the respective sentences to help establish academic argument.

From Table 3, one can also notice that in terms of frequency, transitions represent almost half of all the interactive metadiscourse markers used in the students' abstracts. Hyland (2005) stated that the most frequent way that the argument structure of a text is made explicit is through the use of transitions which indicate how the writer intends to make the connection of ideas and concepts between the elements of discussion to be understood by the readers. As this table illustrates, among these three disciplines, transitions are the most frequently used interactive metadiscourse markers followed by *frame markers*, *evidentials* and then *code glosses*. As for frame markers, they were found to be the second most used interactive metadiscourse markers in this study, which is also supported by Alotaibi (2015) who found that *frame markers* were the second most interactive category in his research results.

Not surprisingly, none of the students from the three disciplines used endophoric markers. This is due to the sample in this study only including abstracts. This is also explained by Wang and Zhang (2016) who state that an abstract is a summary of the whole research paper unlike the other sections and that endophoric markers such as *noted above* or *as discussed earlier* are used in the body of the research paper and thesis/dissertation, not in abstracts. Wang and Zhang (2016) and Samar and Yazdanmehr (2013) found that in their studies endophoric markers are the least frequently used markers in abstracts.

From Table 3, one can also see that ELC and Mas Com students used the transitions and frame markers more than Psychology students. This is perhaps these students may be exposed to such discourse markers during their studies as it seems they are familiar with them. Moreover, Mas Com students used more evidentials and code glosses than ELC and Psychology students. This might be due to the fact that Mas Com students attempt to prove that their research is more reliable and credible and also to make their ideas look clearer because objectivity to media students is crucial.

As for the second objective, we also analysed the corpus to find out the most interactional metadiscourse markers used in the students' abstracts; the findings are summarized separately for the three disciplines in Table 4.

Table 4 The frequency of interactional metadiscourse markers used in ELC, Mas Com and Psychology students' abstracts

Interactional metadiscourse markers and their frequency			
	ELC	**Mas Com**	**Psychology**
Hedges	would be (2), more likely, likely, would, about, may be, might be, might	likely (6), might be, may (4), may not, possible, might, could be	likely (2), could be, possible, might, may
Boosters	greatest, providing, frequently, determine, highlighted, fact, examine (7), examines, investigate (5), investigated, investigating, indicate (3), indicates (2), indicated, show (2), shows (2), showed (2), shown, found (2), find, find out, identify, identified, analyse, analysed, reveal, reveals, revealed	Stated, investigate (5), investigated, find (3), found (3), find out (3), show (2), showing (2) shows, showed, shown, examine (2), examines, examined, examining, reveal, revealed	found (4), identify (4) revealed (4), find out, increase, highest, indicate (4), indicated, investigate (4), investigated (2), showed, (4), shows (2), shown (2), examine, examining, determine (2) determined

Interactional metadiscourse markers and their frequency			
	ELC	**Mas Com**	**Psychology**
Attitude markers	significant (5), important (4), better (2), effective, crucial, prefer, not easy, most important, popular	important (5), positive (4), vital (3), significant (3), popular (2), impact (2), negatively (2), better (2), positively, indispensable, bad, negative, believed, benefit, significantly	better (3), negative (3), risk (2), positive (2), useful (2), unwanted, effective, important, healthy, significantly (6), significant (2)
Self-mentions	this study (12), the study (10), this research study (2), this paper (2), this qualitative research study, the research	this study (13), this research (8), the current study (4), this paper (3), the present study (2), the study (2), this current study	this study (10), this research (5), present research (3), present study (2), the study (4), the preset study, this present study, this research paper, this case study, in current study, this thesis, the present research
Engagement markers	NONE	NONE	NONE

Note: Frequencies higher than 1 are indicated by the number placed in parentheses.

From this table, one can notice that boosters are the most used interactional metadiscourse markers among the five categories. Boosters enable authors to reduce options, settle disagreements, and express certainty of what is said (Hyland, 2005). In this study, here is an example of the use of boosters. Verbs such as *examine, investigate* and *identify* are used as infinitives to inform the reader about research objectives as shown in the following three excerpts:

Excerpt 4 (ELC)
The purpose of the study is to *identify* types of processes and clauses selected in the story, and to *examine* why the author writes in that way.

Excerpt 5 (Mas Com)
The main objective of this research is to *investigate* how people use Facebook within the context of their romantic relationship from an attachment theory perspective.

Excerpt 6 (Psychology)
The purpose of this study was to *identify* the measurement invariance of the ULS-8 with the respect of gender and age among the adolescents and young adults in Malaysia.

The verbs *examine, investigate* and *identify* in Excerpts 4, 5 and 6 are boosters. The students from the three disciplines used different boosters in their writing; however, some of them used the same boosters, such as *investigate* which is one of the most used boosters for all the three disciplines; in total, it was used 18 times. From Table 4, one can also see that boosters are used the most. This finding is similar to the results of Gillaerts and Van de Velde (2010) and Mocanu (2015) who found that abstracts show more affinity with boosting rather than with hedging. Moreover, Mansouri et al. (2016) in their research paper stated that in the computer engineering course, boosters were used more than hedges. This frequent use of boosters showed the writers' certainty of the firm and reliable statistical grounds established by non-humanities.

Self-mention is the second most used of the interactional markers. They are mainly used for explicit reference to authors and help authors to establish connections with readers. Psychology students used it

more than Mas Com and ELC students as they possibly intended to make it explicit. This is stressed by Zhou (2014) who believed that self-mentions are one of the most significant metadiscourse markers in academic discourse.

Attitude markers and hedges are the third and fourth most used interactional markers respectively in our study. Mocanu (2015) pointed out that hedges, boosters and attitude markers are the most frequent elements of interactional metadiscourse. As for hedges in our study, the students do not use them much, and this is possibly because the students are not taught nor familiar with the use of hedges such as *likely, possibly, may be, might be, perhaps, about, could be* and the like. Another reason could be the nature of abstracts for there is no room for hedging.

The last category of interactional markers is the engagement markers, which are not used by all three disciplines' students because our data set comprises only abstracts and there is no room for such markers. This finding is also supported by Samar and Yazdanmehr (2013) and Ozdemir and Longo (2014) who stated that engagement markers were wholly absent in their data sets of article abstracts.

5. Conclusion

In general, interactional markers are used 317 times, nearly twice more often than interactive discourse markers, which are used 176 times in the 62 abstracts for the three disciplines. This may be because the students were paying more attention to interacting with their readers and attempting to involve them in the brief text of the abstract. On the contrary, Xin and Yan (2016) found in their research that the number of interactive metadiscourse markers was three times greater than interactional metadiscourse. It is believed that writers might think that interactive metadiscourse is more important as it can be used to help readers to understand a text by explaining, orienting and guiding them. In other words, writers can organize content in a coherent way by considering the target readers' knowledge, experiences and needs. With regards to the interactive metadiscourse markers in this study, *transitions* and *frame markers* are the most frequent markers used in the three disciplines. This finding indicates that the students' possible intention is to make the abstracts more coherent and easier to follow. Among the three disciplines, ELC and Mas Com students used more *transitions* than Psychology students. This is attributed to English exposure because ELC students are exposed to English language courses, and Mas Com students had to take two core courses with ELC students related to written discourse and writing skills at that time which make them more linguistically aware compared with the Psychology students. For endophoric markers, none of the students in the three disciplines used them. For evidentials and code-gloss markers, Mas Com students used more than ELC and Psychology students. The reason could be that they intend to show that their research is more reliable and more credible for their audience.

Pertaining to interactional metadiscourse markers, *boosters* are the most used markers compared with the other four sub-categories. The ELC students used *boosters* more than the other two groups from the other two disciplines; the reason is perhaps that they have more confidence in their academic discourse. In the findings of Mansouri et al. (2016), it is pointed out that *boosters* are used more to show writers' certainty about their findings. For *self-mention* markers, they are the second most frequently used markers. The findings showed that Mas Com students used more *self-mention* markers. The reason is more likely that they want to highlight themselves in the text to avoid confusion. Moreover, for *attitude* markers and *hedges*, Mas Com students are the most frequent users, and this could be because the Mas Com students are more willing to share their attitudes with their readers. As for the use of hedging, it implies the students' uncertainty in their findings and desire to avoid generalization. The last category is *engagement* markers such as *you can see that, consider* and *note*; this is the only type of interactional marker that none of the students used because the data of this study comprises only research abstracts, and there is no room to involve their readers in the abstract by using engagement markers. This finding is similar to the finding in Samar and Yazdanmehr (2013) and Ozdemir and Longo (2014) in that they discovered that no engagement markers were found in their data made up of abstracts.

6. Implications

Firstly, these findings can be used by ESL and EFL instructors in the teaching of metadiscourse markers as a reference to know more about the problems related to academic discourse that such undergraduate students might have. Lecturers can also use the definitions utilized in this research with their respective examples to help university students to use metadiscourse markers in their research as well as essay assignments and examinations. For example, frame markers refer to text boundaries, items of sequence, topic shifts, text stages and discourse goals, such as *firstly*, *secondly*, *thirdly*, *lastly*, and *my purpose* so

that the students can learn how to use frame markers from the definition and the examples for quality academic writing.

Furthermore, from this research, lecturers would know which category of metadiscourse is used more frequently and its implications; for instance, transitions are the most frequently used marker in interactive metadiscourse, and so lecturers could allocate more time to teach transition markers as they contribute to discourse coherence when writing an abstract for research. Secondly, the findings will be of good use to ESL and EFL writers who are engaged in argumentative essay writing and writing news reports because transitions are the most used interactive metadiscourse markers. This is also supported by Hyland (2005) who stated that transition is the most frequent way to engage in argumentative discourse. For example, *however* and *therefore* show the writers' argument about different opinions or ideas in their writing of academic discourse. Thirdly, this study can add to the existing literature some insights on the importance of using metadiscourse makers in writing academic abstracts, which can be applied to other parts/sections in the academic discourse because we employed a reliable model adopted from Hyland (2005), a well-known authority in the area of academic discourse.

For more insights on the topic, it would be interesting to investigate other sections, such as literature review and methodology, which have not been examined in the reviewed literature involving other Malaysian private and public universities because we found very little research done on this topic in the Malaysian context.

Lastly, we provide here a guideline for abstract structure to help young and junior researchers organize their abstract academically and professionally by referring to Alexandrov and Hennerici (2006) who stated that a good structure for an abstract should include an Introduction (i.e. Background and Purpose), Methods, Results and Conclusions. This closely follows the IMRaD (Introduction, Methods, Results and Discussion) principle for writing a research article which was introduced in the early 20th century. The IMRaD principle for writing a research article is adopted by many journals. We believe that this structure is considered substantially informative and very clear to readers when writing an abstract because the abstract is a mini version of a research paper, thesis or dissertation. However, the research gap/problem is not highlighted in this IMRaD structure nor the rationale, which should be not neglected in abstracts.

Acknowledgements

We would like to express our gratitude and thanks to Assistant Professor Dr Mansour Amini and Assistant Professor Dr Oh Siew Pei, from (English Language and Communication) and (General Studies) departments at FoSSLA, UCSI University respectively for their comments and feedback on the manuscript drafts.

Declaration of ownership

This report is our original work.

Conflict of interest

None

Ethical clearance

The study was approved by the institution.

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