

A Cross-linguistic Analysis of Formulaic Language and Meta-discourse in Linguistics Research Articles by Natives and Arabs: Modeling Saudis and Egyptians

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Abstract

This corpus-based study aims to identify the interactional and interactive metadiscourse markers in terms of frequency in the abstract and discussion sections of research articles on linguistics, written in English by native, Egyptian, and Saudi researchers. To attain this aim, 60 research articles have been randomly compiled and analyzed qualitatively and quantitatively via AntConc.3.2.4 depending on Hyland's (2005) classification of metadiscourse markers (MM). Taking the abstracts and discussions written by the natives as a benchmark, this study poses the following essential question: How close and far is the amount of the interactional and interactive resources in Egyptian and Saudi abstracts and discussions to and from the native level? The results showed that except for hedges, evidential markers, and endophorics, the usage of attitudes, code glosses, engagement markers, self-mentions and transitions in the E-abstracts (i.e. written by Egyptian researchers) was much far from the native level. But in S-abstracts (i.e. abstracts written by Saudi researchers), only two close points to the native level have been recorded: transitions and engagements. In the E-discussion sections, unlike code glosses and frame markers, attitudes, boosters, endophorics, hedges, and self-mentions were reported very close to the N-level. In the S-discussion sections, boosters, code glosses, emphatic, engagement, frame markers, and transitions have recorded far rates from the N-level; whereas only attitudes and hedges were much close to the native normal level.

Keywords: cross-linguistics, Hyland's classification, interactional marker, interactive devices

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Introduction

Research articles, Thompson (2013) argued, pose a substantial challenge for non-native researchers because of the utter size of the text, the difficulty in arranging the research, and generating consistent arguments. Such an attempt, of course, sets formidable efforts on the Egyptian and Saudi researchers in terms of pragmatic concerns to breed interaction among discourse communities. Regarding the discussion and abstract sections, Farjami (2013) pointed out that this attempt becomes more and more magnified as non-native writers crave more succor since they are expected to stick to traits of discussion and abstract writing and English language for the given communicative setting with a realization of patterns preferred by this type of writing.

One of the ways to generate effective academic writing is the use of some metadiscoursal devices, such as frame markers (FMs), logical connectives (LCs), endophorics (Es), evidential devices, and boosters. FMs, a basic element of written discourse, provide scope information about “text boundaries or elements of schematic text structure” (Hyland & Tse, 2004, p. 168). They are used to serve four major functions encompassing (1) labeling text stages (e.g. to sum up), (2) showing topic shift (e.g. concerning; in connection with), (3) sequencing (e.g. to start with; finally; and then) and (4) declaring the writer’s goal (e.g. my goal; the prime focus) (Hyland, 2005). LCs, like FMs, is a crucial metadiscoursal device. They are used to express semantic relation between two main clauses (e.g. and, but, so, in addition, thus). A third metadiscoursal device is the EMs; they refer to different parts in same text (e.g. see section two; fig three; noted below). Evidential markers, unlike EMs, refer to the sources of information from other texts (e.g. according to X; Z (2017) pointed out). Boosters, a substantial metadiscourse tool, are used to reflect the writer’s certainty in message (e.g. as a matter of fact, actually, definitely).

Despite their diverse types and roles in academic writing, non-native researchers experience difficulties in the effective use of these metadiscoursal devices. Therefore, non-native researchers rely on restricted number of devices because of the scarce emphasis on the usefulness of these devices in not only processing but also structuring the academic texts in educational settings. In this regard, very few studies examined the functions of FMs and the other discoursal devices (i.e. logical connectives (LCs), endophorics, evidential markers, and boosters) in research articles on linguistics written in English by Saudi and Egyptian researchers. Over and above, less attention was given to the sections of discussions and abstracts, and the research conducted in Egypt and Saudi Arabia is relatively little.

To fill this gap, an insight into this matter is expected to contribute to the study importance to gain deep understanding of how some metadiscoursal devices are manifested and used in two significant parts of research articles: abstracts and discussions. Thus, this study attempted to spotlight how Egyptian and Saudi researchers structure and process their abstracts and discussions through frame markers, logical connectives, endophorics, evidential devices, hedges, self-mentions and boosters with various types, frequencies and functions to clarify the differences and similarities between these two different groups of discourse societies.

Theoretical Background

To study the language in action or to look at text in relation to the given social context in which it is used has become a focal tool for identifying language peculiarities in different genres

(Hyland, 2009a &b). That is why; discourse analysis in general and metadiscourse in particular have recently gained mounting attention from scholars. Metadiscourse refers to the way by which the writers and speakers interact through their language use with their audience (i.e. readers or listeners). Thus, metadiscourse is a commentary on a text or an utterance made by its producer. It is a widely employed terminology in language teaching, contemporary discourse analysis and pragmatics. The linguists who study metadiscourse are always motivated by a desire to comprehend the relation between language and its context. That is, how speakers and writers use language to explicate communicative situations, and how they count on their perception of communicative situations to make their intended meanings crystal clear to their interlocutors. Metadiscourse can be employed in the service of not only language but also literacy education. However, while many researchers and teachers find the thought of using metadiscourse in the service of language and literacy to be conceptually substantial and analytically strong, it is not without difficulties of clear-cut definitions, well-defined categorization, and detailed analysis (Hyland, 2017).

Because it is an open category and usually perceived in different ways, metadiscourse has a variety of models, each one proposed to explicate a particular linguistic dimension (Crismore, 1993; Hyland, 2005; Vande Kopple, 1985). The first model, introduced by Vande Kopple (1985) (See Appendix A, Table one), presents two categories of metadiscourse: textual and interpersonal. Four devices – text connectives (TCs), code glosses (CGs), validity markers (VMs) and narrators – form textual metadiscourse, and three metadiscoursal devices – illocution markers (IMs), attitude markers (AMs) and commentaries – constituted the interpersonal metadiscourse. Kopple’s model, for having been criticized as vague and presenting functionally overlapping devices, has been revised and modified by Crismore, Markkanen, and Steffensen, (1993). The revised model, introduced by Crismore et al. (1993) (See Appendix A, Table two) has presented three metadiscoursal devices: textual, interpretive and interpersonal. Textual markers include features that organize the discourse, and interpretive markers are those features that help the readers to interpret and understand the writer’s message.

The model proposed by Hyland (2005; 2017) (See table one below) comprises two major categories: interactive and interactional. This model is based on and benefited from the previous models set by Vande Kopple (1985) and Crismore et al. (1993). What characterizes Hyland’s model and makes it peculiar is that it includes stance and engagement markers. The interactive resources, on the one hand, concern the authors’ awareness of their readers, and the formers’ attempts to satisfy the needs of the readers by making the arguments satisfactory for them. The interactional resources, sometimes called formulaic markers, on the other hand, concern the authors’ attempts to make their opinions very evident, and to engage the readers by expecting their responses to the text (Hyland, 2005; 2017).

Interactional resources that get the readers involved in the argument are sometimes called formulaic devices and excluded from the metadiscourse markers; it is attributed to the fact that hedges, boosters, and engagement markers are not mostly employed by themselves, rather, they are accompanied with other phrases to constitute a formulaic phrase (Santos,2019)

Table 1. *Hyland's taxonomy of metadiscoursal devices (2005; 2017)*

Category	Function	Examples
Interactive resources	Help to guide reader through the text	
Transitions	Express semantic relation between main clauses in	Addition / hence / but / thus / and
Frame markers	Refer to discourse acts, sequences, or text stages	finally / to conclude / my purpose is
Endophorics	Refer to information in other parts of the text	noted above / see Fig / in section 2
Evidential devices	Refer to source of information from other texts	according to X / (Y, 1990) / Z states
Code glosses	Help readers grasp meanings of ideational material	namely / e.g. / such as / in other words
Interactional resources	Involve the reader in the argument (formulaic language)	
Hedges	Withhold writer's full commitment to proposition	might / perhaps / possible / about
Boosters	Emphasize force or writer's certainty in proposition	in fact / definitely / it is clear that
Attitude markers	Express writer's attitude to proposition	unfortunately / I agree / surprising
Engagement markers	Explicitly refer to or build relationship with reader	consider / note that / you can see that
Self-mentions	Explicit reference to author(s)	I / we / my / our

Review of Literature

A general overview of the previous studies on metadiscourse resources showed that metadiscoursal devices varied across different text types such as newspapers (Abdulaal, M., 2020; Yeganeh, Heravi, & Sawari, 2015; Dafouz-Milne, 2008), textbooks (Hyland, 1999; 2004), research articles (Dahl, 2004; Kim & Lim, 2013), academic essays (Hyland, 2007; Adel, 2012; Bruce, 2010), argumentative essays (Anwardeen, Luyee, Gabriel, & Kalajahi, 2013) and theses/dissertations (Hyland, 2010) generated by native and non-native writers of English. Although these research studies focused mostly on the overall frequency of metadiscourse devices, they clearly ignored the functional analysis of the resources. Besides, a vast range of studies (e.g., García-Calvo, 2002; Lee, 2006; Yeganeh, Heravi, & Sawari, 2015; Jones, 2011) focused only on interactional resources ignoring the interactive devices employed in the text.

There is a scarcity of research studies that concentrated on the written manuscripts produced by Egyptian and Saudi researchers with an emphasis on metadiscourse. For example, Burneikaitė (2008) and Bal-Gezegin and Baş (2020) demonstrated that the text connectives were among the frequently employed markers in postgraduate writings produced by Lithuanian non-native writers of English in comparison with British native students. A deep function analysis revealed that these discourse markers were generally used to signal text stages rather than to manifest the goal of writers. In another close study, Burneikaitė (2009) concentrated on metadiscoursal functions of sequencers in some English research articles and revealed over-dependence of Lithuanian learners of English on these resources. Besides, Marandi's (2003) study, one of the scarce contrastive researches on metadiscoursal devices in research articles, manifested no statistically significant differences in terms of frequency of frame markers and connectors in

the articles produced by native Persian and native English writers. According to Marandi (2003), reminders, which has been termed *the announcements* in Hyland's (2005) typology, had higher numbers of occurrences in discussions compared to introductions which in turn encompassed higher intention markers (e.g. to sum up, to conclude, in the next section I will discuss), which are labeling items. Over and above, topicalizers in Marandi's taxonomy were rarely employed by all groups. To complete what Marandi (2003) started, Mirshamsi and Allami (2013) examined both Persian and English research papers, and they reported that the metadiscourse devices occurred with the same percentages in the two groups. Lee and Casal (2014), concentrating on English and Spanish, found that results and discussion parts of Spanish authors encompassed more discourse markers than those of English writers.

As form discussions and abstracts, their analysis has not been given their deserved place in the linguistic literature. Lores (2004), for example, focused on the rhetorical and thematic structure of the abstracts. Unlike Lores (2004), Santos (2019), Martin-Martin (2003), and Ren and Li (2011) concentrated on the rhetorical variation in abstracts and discussions. There was less focus on the use of the metadiscoursal devices used in abstracts and discussions (e.g. Akbaş, 2012; Wang & Zhang, 2016). Less attention was given to master theses compared to PhD dissertations. Actually, it is usually the graduate students who encounter some difficulties and need far more assistance in writing as they are far less familiar with this type of academic writing (Lee & Casal, 2014). For example, Akbaş (2012) investigated metadiscourse devices in PhD dissertation abstracts composed by native and non-native English speakers and native authors of Turkish. He found that native English abstracts contained the highest frequency of metadiscourse devices compared to the native Turkish abstracts. Unlike Akbas (2012), in their descriptive study, Özdemir and Longo (2014) revealed that Turkish students' master abstracts contained higher numbers of metadiscourse resources; especially frame markers compared to the American students' master abstracts.

Research Objectives

This research attempts to attain the following objectives:

1. To explore the similarities and /or differences between Egyptian and Saudi researchers in relation to the interactional and interactive metadiscourse markers used in their research articles.
2. To investigate the influence of Arabic cultural background, if any, on the use of metadiscourse devices in the abstract and discussion parts of the Egyptian and Saudi researchers.
3. To show how far away or close the Egyptian and Saudi researchers from their native counterparts.

Research questions

1. Taking the abstracts written by natives as a benchmark, how close and far are the interactional and interactive resources in E- and S-abstracts to and from the N-level?
2. Considering the discussion parts written by natives as a benchmark, how close and far are the interactional and interactive resources in E- and S-discussions to and from the N-level?
3. Which metadiscourse devices in E- and S- abstracts and discussions recorded typical rates with the N-level?

6. Hypotheses

1. There are no statistically significant differences in E-, S-, and N-, abstracts in terms of the used amount of discourse markers.
2. There are statistically significant differences in E-, S-, and N-, discussions in terms of the used amount of discourse markers.
3. There are some typical rates of discourse markers in E- and S-research articles.

Methodology

Research Design

In the current study, a mixed research design was employed. It is a procedure in which qualitative and quantitative methods were used in combination. Qualitatively, each metadiscourse device was identified and its function was highlighted in the context in which it occurred. Quantitatively, the metadiscourse markers were calculated to define the overall frequency and functions and then they were compared and contrasted among the three groups of articles' abstracts and discussions.

Study Corpus

All the academic articles, which are approximate in word count, have been collected and downloaded from recent issues of high-impact refereed linguistics journals, such as *International Journal of English Linguistics*, *Arab World English Journal*, *Annual Review of Applied Linguistics*, *Applied Linguistics*, and *Modern Language Journal*. Translated articles are discarded. The academic articles investigated in this study consist of 20 discussion and abstract sections of research articles, written by Egyptian researchers, and the same number and kind of sections written Saudi and native English researchers in the field of linguistics. The corpus is limited to a twenty-year period between 2000 and 2020.

Table 2. *The abstracts and discussions corpus*

Academic Item	E Abstracts	E Discussions	S Abstracts	S Discussions	N Abstracts	N Discussions
Number of items	20	20	20	20	20	20
Total number of words	325	12568	379	11582	361	12698

Research Procedures

To conduct the analysis, abstracts and discussion sections are cut out from articles written by Egyptian, Saudi, and English native researchers in linguistics. The selected sections are read thoroughly and analyzed carefully spotlighting metadiscourse resources. The analysis is repeated again after one month and the results are compared together in order to validate the results. Then, the results have been subjected to statistical analysis. The major problem encountered is that some Saudi and Egyptian researchers merge the discussion section with the findings part.

Results

In this section, a comparison is drawn between the qualitative and quantitative nature of interactive and interactional metadiscourse markers used in the abstracts and discussions of linguistics research articles produced by Egyptian, Saudi, and English native scholars. Table three

shows the frequency and the percentage of the interactive and interactional discourse devices in the Egyptian scholars' research articles. The distribution of discourse markers in table three demonstrates the excessive use of interactive rather than the interactional markers in E-abstracts and E-discussions (i.e. abstracts and discussions written by Egyptian linguists). Over and above, it shows the overwhelming use of transitions in E- abstracts and discussions as an interactive discourse device. It finally exhibits the excessive employment of engagement markers and hedges in E- abstracts and E-discussions respectively as the dominant interactional discourse markers. It is also noticed that the endophorics are recorded as the least interactive discourse marker used in E-abstracts in comparison with engagement devices that are reported as the least interactional discourse device in E-discussions.

Table 3. *The frequencies of interactive and interactional metadiscourse markers in the abstracts and discussions of linguistics papers written by Egyptian researchers*

Discourse Markers	E- Abstracts		E- Discussions		
	Total Number	Percentage %	Total Number	Percentage %	
Interactive	Transitions	85	15.37071	312	31.61094
	Frame markers	62	11.21157	119	12.05674
	Code glosses	78	14.10488	64	6.484296
	Evidential devices	69	12.4774	89	9.017224
	Endophorics	12	2.169982	55	5.572442
Interactional	Self-mentions	19	3.435805	19	1.925025
	Engagement markers	84	15.18987	5	0.506586
	Attitude markers	65	11.75407	49	4.964539
	Hedges	44	7.9566	216	21.8845
	Boosters	35	6.329114	59	5.97771
Σ	553		987		

A similar finding can be extracted from table four in which the discourse marker distribution displays clearly the dominant use of interactive rather than the interactional markers in S-Abstracts and S-Discussions (i.e. abstracts and discussions written by Saudi researchers). Further, table four shows the prevailing use of transitions in S- Abstracts and Discussions as an interactive discourse device. It also displays the excessive employment of boosters and hedges in S- Abstracts and S-Discussions respectively as the dominant interactional discourse markers. It is also noticed that the engagement markers and self-mentions are registered as the least interactional discourse markers used in S-abstracts and S-discussions. Table five reveals four basic results, first, the controlling employment of interactive markers in the native researchers' abstracts and discussions; 244 and 673 respectively; a second essential result in the same table is the prevailing usage of frame markers rather than transitions in N- Abstracts and N- Discussions as an interactive discourse device. A third result is the super usage of hedges in N- Abstracts and N-Discussions respectively as the dominant interactional discourse markers. A final result is that only engagement markers are registered as the least interactional discourse markers used in Native abstracts and discussions.

Table 4. *The frequencies of interactive and interactional metadiscourse markers in the abstracts and discussions of linguistics papers written by Saudi researchers*

Discourse Markers		S- Abstracts		S- discussions	
		Total Number	Percentage %	Total Number	Percentage %
Interactive	Transitions	71	24.31507	313	27.79751
	Frame markers	41	14.0411	122	10.83481
	Code glosses	52	17.80822	72	6.394316
	Evidential devices	43	14.72603	87	7.726465
	Endophorics	4	1.369863	40	3.552398
Interactional	Self-mentions	6	2.054795	31	2.753108
	Engagement markers	3	1.027397	116	10.30195
	Attitude markers	14	4.794521	56	4.973357
	Hedges	16	5.479452	219	19.44938
	Boosters	42	14.38356	70	6.216696
	Σ	292		1126	

Table 5. *The frequencies of interactive and interactional metadiscourse markers in native researchers' abstracts and discussions*

Discourse Markers		N- Abstracts		N- Discussions	
		Total Number	Percentage %	Total Number	Percentage %
Interactive	Transitions	63	17.21311	219	22.05438
	Frame markers	72	19.67213	259	26.08258
	Code glosses	24	6.557377	35	3.524673
	Evidential devices	63	17.21311	92	9.264854
	Endophorics	22	6.010929	68	6.847936
Interactional	Self-mentions	33	9.016393	34	3.423968
	Engagement markers	6	1.639344	4	0.40282
	Attitude markers	26	7.103825	42	4.229607
	Hedges	36	9.836066	195	19.63746
	Boosters	21	5.737705	45	4.531722
	Σ	366		993	

To validate the first hypothesis, One-Way ANOVA and its prerequisite tests (i.e. Anderson-Darling normality test and Levene's Test for Equality of Variances) were conducted. Anderson-Darling normality test has been conducted for E-, S-, and N- abstracts to check their normal distribution. It shows that p - value >.05 (i.e. 14.9%), with a skewness of 0.19616 and a kurtosis at -1.23479 (See figure one below). The probability plot of the three categories of abstracts also proved the normal distribution with P-value > 0.05 and SD equals 25.76 (See figure two below); therefore, the null hypothesis (H₀) is accepted and the alternative (H_A) is rejected.

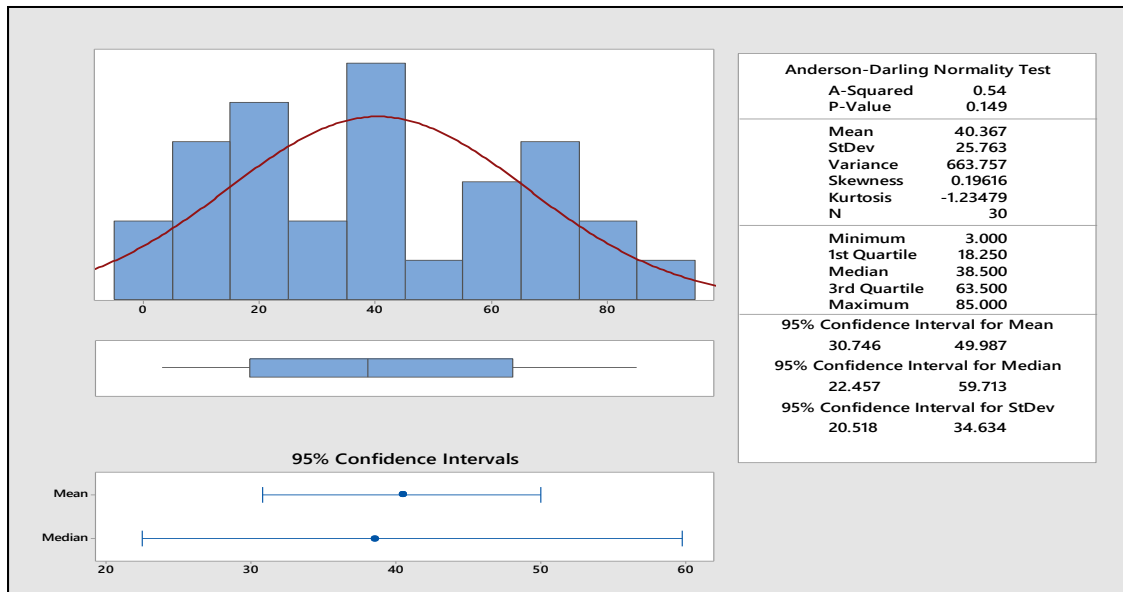


Figure 1. Anderson-Darling normality test of Egyptian, Saudi, and native abstracts

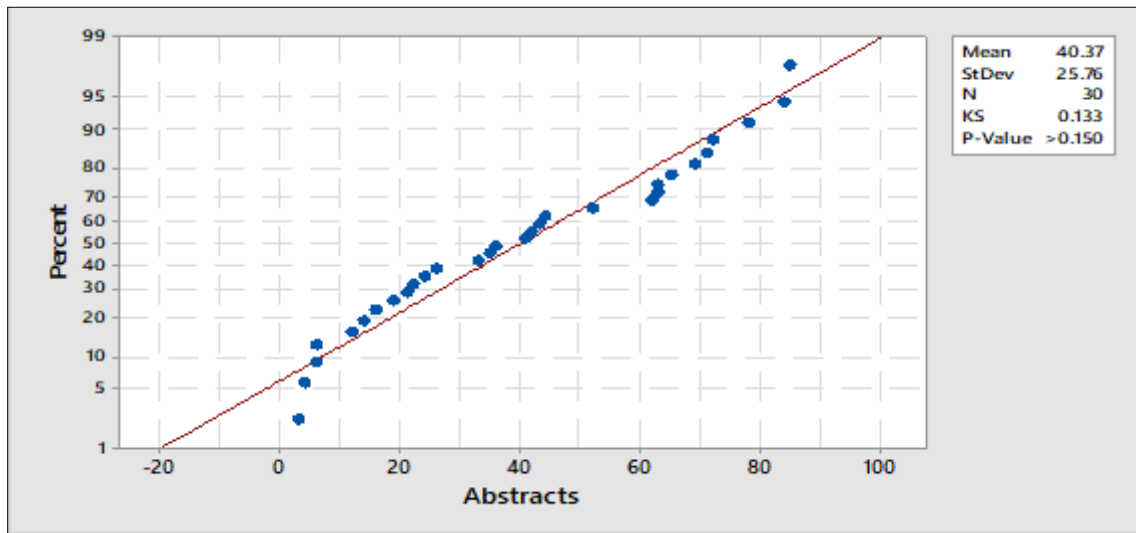


Figure 1. Probability plot of the normal distribution of collected abstracts

Levene's Test for Equality of Variances and Multiple Comparisons Test (i.e. homogeneity of variance test) are inferential statistical tests conducted to assesses the assumption that the variances of the populations from which different samples are drawn are equal (i.e. $H_0: \mu_1 = \mu_2$). The alternative hypothesis states that there are unequal variances among the populations from which the samples are drawn (i.e. $H_A: \mu_1 \neq \mu_2$). In figure three below, the p-value in Levene's Test for Equality of Variances and Multiple Comparisons Test are 80.6% and 77.1% respectively (i.e., $p > .05$). It indicates the equality of the variances among the populations from which the samples are drawn. In other words, the null hypothesis is accepted and the alternative one is rejected.

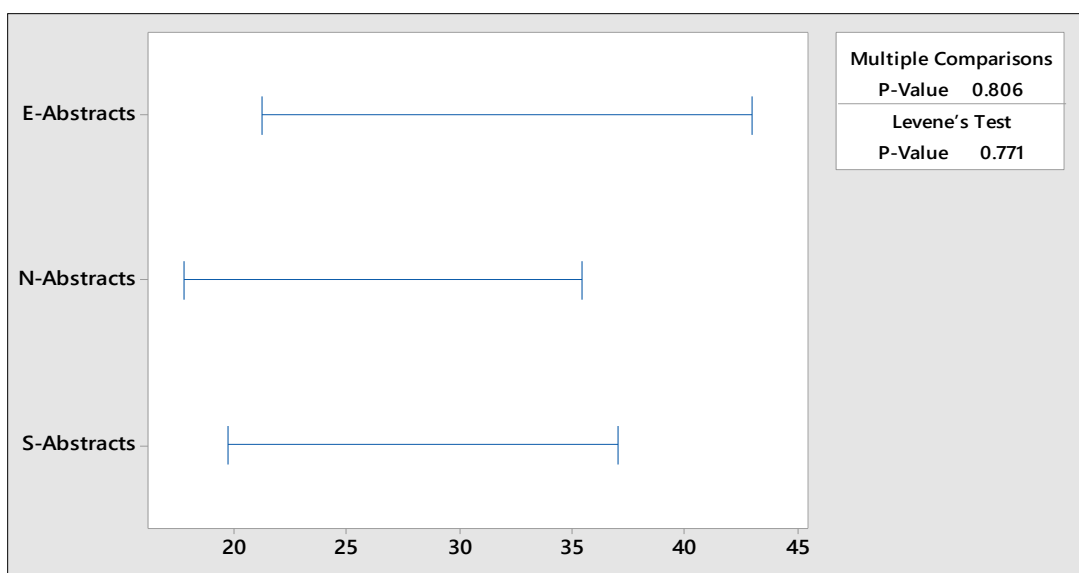


Figure 3. Levene's test for equal variances among Egyptian, Saudi, and Native abstracts
Multiple comparison intervals for standard deviation, $\alpha = 0.05$

Since normality and homogeneity were satisfied (See Anderson-Darling normality test and Levene's Test for Equality of Variances in Figures, one, two, & three), the One-Way ANOVA test were conducted to check the statistic differences between means of the three groups of abstracts. The null hypothesis (H_0) is that $\mu_1 = \mu_2 = \mu_3$ and the alternative is that at least two of the means of the three groups of abstracts are not equal. The p-value as indicated in (test section one) below is bigger than 0.05 (i.e. 6%); therefore, the null hypothesis is accepted and the alternative is rejected. The validation of the first hypothesis crystalized that there are no statistic differences between the used amounts of discourse markers in the three groups of abstracts. However, the test shows that Egyptian researchers' abstracts included the highest number of discourse devices, whereas the Saudi researchers' abstracts ranked the lowest as (test section two) shows. Fisher Test below (See figure four) displays two essential results; first, there are no statistically significant differences between N-abstracts and E-abstracts from one part and also there are no statistically significant differences between N-abstracts and S-abstracts from the other part. It is simply because the intervals between N- and S- abstracts and N- and E-abstracts contain a zero. Second, the only slight significant difference can be noticed between S-abstracts and E-abstracts as the interval between them does not contain a zero as Fisher Test reveals.

Table 6. *The One-Way ANOVA test*

Analysis of Variance

Source	DF	SS	MS	F-Value	P-Value
Factor	2	3619	1809.4	3.13	0.060
Error	27	15630	578.9		
Total	29	19249			

Means

Factor	N	Mean	StDev	95% CI
E-Abstracts	10	55.30	26.42	(39.69; 70.91)
S-Abstracts	10	29.20	23.63	(13.59; 44.81)
N-Abstracts	10	36.60	21.92	(20.99; 52.21)

Pooled StDev = 24.0602

Fisher Pairwise Comparisons

Grouping Information Using the Fisher LSD Method and 95% Confidence

Factor	N	Mean	Grouping
E-Abstracts	10	55.30	A
N-Abstracts	10	36.60	A B
S-Abstracts	10	29.20	B

Means that do not share a letter are significantly different.

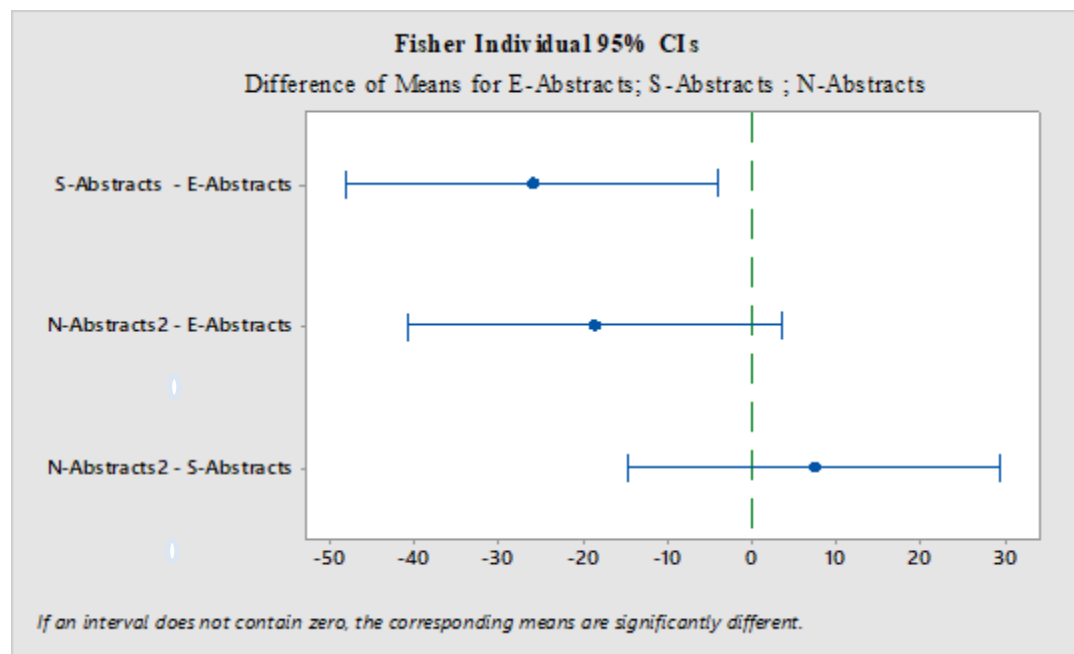


Figure 4. Fisher test: the intervals between each pair of abstract groups

To validate the second hypothesis, the Chi-square is conducted to draw a comparison between the means of the three groups of discussions. This non-parametric test is selected as normality and homogeneity are not met. In Table 7, the value of observed chi-square ($\chi^2 = 313.851$) is meaningful at α level ($\alpha = 0.05$) with a degree of freedom of 18. The null hypothesis (H_0) states that there are no statistic differences between μ_1 , μ_2 , and μ_3 ; whereas the alternative hypothesis states that there are statistical differences between the means of the three groups of discussions. Since p-value is smaller than 0.05, the null hypothesis is rejected and the alternative is accepted. It indicates that there are significant differences between Egyptian, Saudi, and Native discussions in terms of the amount of discourse markers used in each.

Table 7. Chi-Square Tabulated Statistics: Discourse markers in Egyptian, Saudi, and Native Discussions

	E-Discussions	N-Discussions	S-Discussions	All
Attitude	49	42	56	147
	33.33	28.57	38.10	100.00
	4.965	4.230	4.973	4.733
	46.71	47.00	53.29	
Boosters	59	45	70	174
	33.91	25.86	40.23	100.00
	5.978	4.532	6.217	5.602
	55.29	55.63	63.08	
Code	64	35	72	171
	37.43	20.47	42.11	100.00
	6.484	3.525	6.394	5.505
	54.34	54.67	61.99	
Endophorics	55	68	40	163
	33.74	41.72	24.54	100.00
	5.572	6.848	3.552	5.248
	51.80	52.11	59.09	
Engagement	5	4	116	125
	4.00	3.20	92.80	100.00
	0.507	0.403	10.302	4.024
	39.72	39.96	45.32	
Evidential markers	89	92	87	268
	33.21	34.33	32.46	100.00
	9.017	9.265	7.726	8.628
	85.16	85.68	97.16	
Frame	119	259	122	500
	23.80	51.80	24.40	100.00
	12.057	26.083	10.835	16.098
	158.89	159.85	181.26	
Hedges	216	195	219	630
	34.29	30.95	34.76	100.00
	200.20	201.41	228.39	
Self-mentions	19	34	31	84
	22.62	40.48	36.90	100.00
	26.69	26.86	30.45	
Transitions	312	219	313	844
	36.97	25.95	37.09	100.00
	31.611	22.054	27.798	27.173
	268.20	269.83	305.97	
All	987	993	1126	3106
	31.78	31.97	36.25	100.00
	31.777	31.970	36.252	100.000

Pearson Chi-Square = 313.851; DF = 18; P-Value = 0.000

Likelihood Ratio Chi-Square = 315.269; DF = 18; P-Value = 0.000

To closely examine differences and similarities between the three groups, the discourse markers are coded from one to ten (See Figure five). Taking N-abstracts as a benchmark, it is quite obvious that that the Egyptian researchers are going far above from the normal usage of attitudes; whereas the Saudi researchers are less below the accepted native level. As for boosters, Egyptian researchers are a little bit closer than Saudi ones to the normal level. The code glosses in Egyptian and Saudi abstracts recorded higher levels than the normal native benchmark. In terms the endophorics, both the Egyptian and the Saudis are below the normal level, with a slight Egyptian superiority. As for engagement markers in Saudi abstracts, they are closer to the normal level than those in the Egyptian researchers' abstracts which have recorded a tremendously high level, rated second to the usage of transitions in the same group. Unlike the engagement markers in the Egyptian researchers' abstracts which skewed away from the normal level, the evidential markers behaved different, coming so close to the normal level, leaving their counterparts in the abstracts of the Saudi researchers much below the N-level. Frame markers, in Saudi and Egyptian abstracts, come both below the N-level with a slight superiority to the E-abstracts. Again like engagement markers in E-abstracts, the hedges in the same group of abstracts get closer to the N-level than their Saudi counterparts. Like frame markers, the self-mentions devices in E- and S- abstracts came lower to the normal level in N-abstracts. As for transitions, Saudi researchers seemed to be very much close to the native normal level leaving their Egyptian counterparts swaying up away from the N-level.

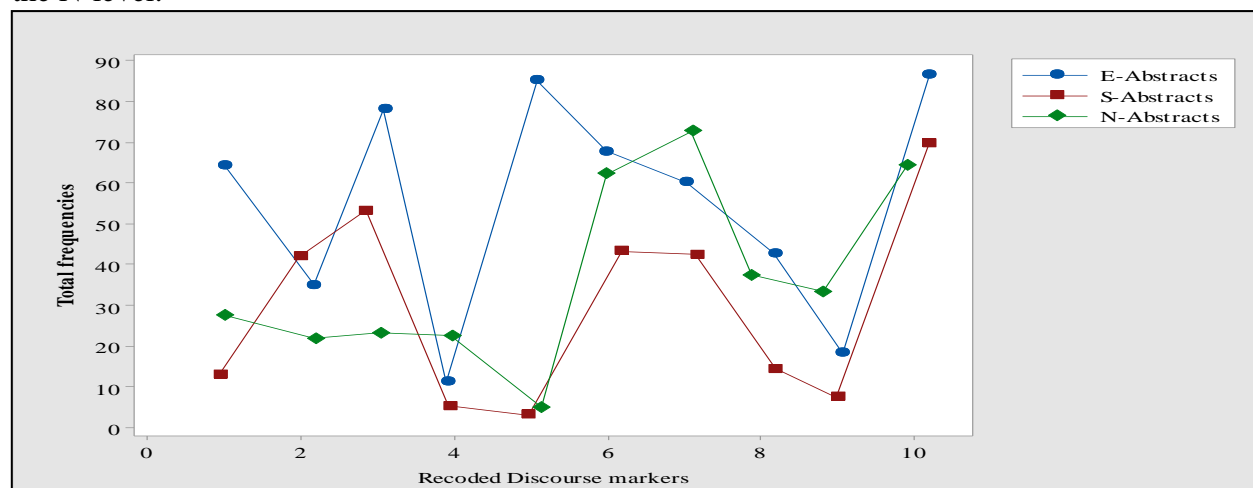


Figure. 5 Scatterplot of E-, S-, and N- abstract Frequencies versus

Recoded Discourse Markers

To investigate the differences and similarities between E-discussions and S-discussions, N-discussion is considered as a benchmark and discourse markers are coded from one to ten (See Figure six). Concerning attitudes and boosters (i.e. codes one & two), it is obvious that Egyptian researchers have been closer than the Saudi ones to the native normal level. For code glosses, the S- and E-discussions recorded very close rates, which were slightly above the normal native level.

Endophorics recorded very close rates in both E- and S- discussions; both were below the N-level though. Engagement markers in E-discussions rated typically with the N-level from which Saudi researchers were kept much higher. Codes six, eight, and nine (i.e. evidential markers, hedges, and self-mentions) have recorded typical rates in E- and S-discussions with the N-level. Typicality in rates came up again between S- and E- discussions in the use of frame markers, in spite of being both much below the normal native level. Unlike frame markers, transitions achieved typical rates in the two group of discussions, marking much higher level than that of the native benchmark.

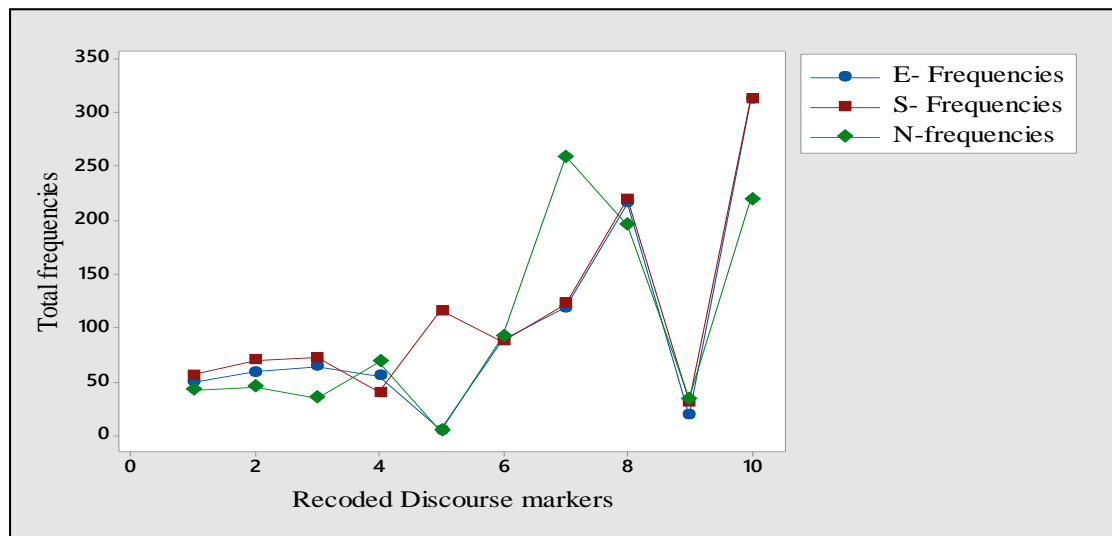


Figure 6. Scatterplot of E-, S-, and N- Discussion Frequencies versus Recoded Discourse Markers

Discussion

In this research study, three basic questions have been raised. Considering the abstracts written by native researchers as a benchmark, the first question investigates how close and far the interactional and interactive resources in E- and S-abstracts to and from the N-level. The results showed that the usage of attitudes, code glosses, engagement markers, self-mentions and transitions in the E-abstracts was much far from the normal N-level. However, the usage of hedges, evidential markers, and endophorics in the same abstracts was much closer to the native rate. The close rates of evidential devices and endophorics reflect the Egyptian researchers' high sense of citation to avoid plagiarism. The close rates of hedges can be interpreted as cautiousness from the Egyptian researchers to distinguish between facts and claims. These findings go in harmony with Jones (2011) who pointed that metadiscourse markers enhance coherence in academic writing, raise precision rates, and makes the authors differentiate between truths and allegations. Further, this finding is in complete accordance with Ho (2018) who concluded that the proper use of hedges and evidential and endophorics leads to the readers' full persuasion and utter trust in the authors.

In S-abstracts, only to close points to the N-level have been recorded: transitions and engagements. The rest of the metadiscourse markers has been much far from the N-level. It seems

that Saudi researchers used engagement markers to create and maintain relationship with their readers, impacting them by addressing them directly in numerous ways. The use of transitions is attributed to the Saudi researchers' keen intentions to signal relationship between ideas. This result goes in harmony with Bal-Gezegin and Baş (2020) who underscored the importance setting relationship between prepositional contents and of getting the readers involved in the academic research, referring to the excellence of the Asian researchers in this domain.

Considering the discussion parts written by natives as a benchmark, the second research question examines how close and far are the interactional and interactive resources in discussion parts written by Saudi and Egyptian researchers from the N-level. In the E-discussion parts, attitudes, boosters, endophorics, hedges, and self-mentions were reported very close to the N-level, unlike code glosses, frame markers, and transitions that were reported much far from the native normal level. The closeness rates can be attributed to the Egyptian researchers' keen desire to represent and emphasize their stances in every situation. This finding goes in harmony with Abdi (2002), Cao (2014), Abdulaal and Abuslema (2020), and Abdollahzadeh (2011) who pointed out that academic articles fall down if their authors do not show clearly their emphatic stances in every single situation. In the Saudi discussion sections, on the other hand, boosters, code glosses, engagement, frame markers, and transitions have reported far rates from the N-level; whereas only attitudes and hedges were much close to the native normal level.

As for typicality, it was reported in Saudi discussion sections as evidential markers and self-mentions were used in typical rates with the native ones. Also, typicality was noticed in the Egyptian discussion sections, as engagement and evidential markers were used in typical rates with the native ones.

Conclusion and Implications

This study sought to examine the metadiscourse markers use in linguistics research articles written by Egyptian, Saudi, and native researchers in terms of frequency and functions. The results of the study displayed that the abstract and discussion sections of the three groups of researchers differed from one another in terms of frequency of metadiscourse markers to a great extent. This study, on one hand, has evidenced that Egyptian researchers heavily relied on transitions and engagement markers in writing their abstracts and on transitions and hedges in their discussion sections. This study has also evidenced that Saudi researchers heavily counted on transitions and code glosses in writing their abstracts and, like the Egyptian researchers, on transitions and hedges in their discussion sections. On the other hand, the Native researchers excessively depended on frame markers and evidential devices in writing their abstracts and on frame markers and hedges in their discussion sections. The conclusion that is drawn from these findings is that the Egyptian and Saudi researchers pursue totally different rhetorical conventions in the articulation of persuasion in their research articles through different use of metadiscourse markers. These findings are intended to generate awareness among Egyptian and Saudi researchers when organizing their research abstracts and discussions. Further, these findings encourage Saudi and Egyptian instructors to incorporate metadiscourse markers in academic writing courses to assist learners to structure their discourse in a much better native-like way.

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Appendix [A]

Table 1. Classification system for Metadiscourse

Category	Function
Textual metadiscourse	
Text Connectives (TCs)	They show how far parts of a text are closely connected to one another; they include sequencers (e.g. first, second, third), reminders (e.g. as I previously mentioned in section 1), and topicalizers (e.g. regarding, in connection with).
Code Glosses (CGs)	They are used to convey the writer's intended meaning (e.g. for instance, for example, namely)
Validity Markers (VM)	They are employed show the writer's commitment to the probability or the truth of a statement. They include hedges (e.g. perhaps, may), emphatics (unquestionably, undoubtedly)
Narrators	They show the source of information presented (e.g. according to X, the President declared that).
Interpersonal metadiscourse	

Illocution Markers (IMs)	They show the acts that the writer performs (e.g. to conclude, I hypothesize, we assume)
Attitude Markers(AMs)	They express the writer's attitudes to material presented (e.g. fortunately, I wish, how terrible that).
Commentaries	They are markers used to address the audience directly (e.g. you certainly agree that, you may want the fourth section first).

Note 1. Adapted from Vande Kopple (1985, pp. 82-92)

Table 2. Metadiscourse Categorization

Category	Function	Examples
Textual Markers		
Logical connectives	Show connection between ideas	Therefore; so; in addition; and
Sequencers	Indicate sequence	First; next; finally; 1,2,3
Reminders	Refer to earlier text material	As we saw in chapter one
Topicalizers	Indicate a shift in topic	Well, now we discuss ...
Interpretive markers		
Code glosses	Explain text material	For example; that is
Illocution markers	Name the act performed To conclude; in sum; I predict	To conclude; in sum; I predict
Announcements	Announce upcoming material	In the next section
Interpersonal metadiscourse		
Hedges	Show uncertainty to the truth of assertion	Might; possible; likely
Certainty markers	Express full commitment to assertion	Certainly; know; shows
Attributers	Give source/support of information	Smith claims that ...
Attitude markers	Display writer's affective values	I hope/agree; surprisingly
Commentary	Build relationship with reader	You may not agree that

Note 2. Adapted from Crismore et al. (1993, pp.47-54)