English Language Teaching
Vol. 2, No. 1, pp.43-71, 2015

Examining the Interactional Metadiscourse Markers in Iranian M.A. Applied Linguistics Theses

Saeed Rezaei*
Assistant Professor at Sharif University of Technology
Masoumeh Estaji
Assistant Professor at Allameh Tabataba'i University
Mahdi Hasanpour Ghaleh
MA Student at Khatam University, Tehran

Absract

One of the most salient written academic outputs a university student has the opportunity to create is a thesis which is regarded as "a complex student-produced research genre" (Lee & Casal, 2014). In order to compare the rhetorical features and preferences of distinct discourse communities and evaluate academic writing, a special and long-term attention, on the part of the writers, is required for analyzing the metadiscourse features of the texts (Hyland, 2004). To this end, the present study examined the differences in the use, type, and frequency of interactional metadiscourse markers in theses written by M.A. applied linguistics graduates including 10 males and 10 females from Sharif University of Technology in Tehran. The selected corpus was analyzed using Hyland's (2005) interactional model of metadiscourse. The data were explored through a manual corpus analysis method using Adobe PDF reader software. Moreover, a Chi-Square statistical measure was run to examine whether there were any significant differences in the use of metadiscourse markers in different thesis chapters and across different genders. The results revealed that although there were some subtle differences in the frequency and types of these metadiscourse markers, there was no statistically significant difference between two genders in the use of interactional metadiscourse markers. Besides, it was concluded that there was a significant relationship between the chapters of theses and the use of metadiscourse markers. The findings of this study render some pedagogical implications for writing courses at M.A. and PhD levels in the realms of TEFL and ESP.

Keywords: metadiscourse, interactional markers, applied linguistics, academic writing, MA thesis, gender

---

* Assistant Professor Sharif University of Technology
-Received on:09/12/2015 Accepted on:15/03/2016
Email: *srezaei@sharif.edu*

1. Introduction

A thesis is the final output and report of an academic investigation and its form and content are of great significance in academic discourse. Thompson (2013) compares these texts as "the longest and most challenging piece of assessed writing" (p. 284). He also asserts that in spite of the importance of theses and dissertations in educational settings, they are still relatively neglected genres in research on academic writing. As it is asserted by Hyland (2004):

> The dissertation is a high stakes genre at the summit of a student's academic accomplishment. It is perhaps the most significant piece of writing that any student will ever do, a formidable task of intimidating length and exacting expectations which represents what is potentially achievable by individuals writing in a language that is not their own. (p. 134)

A great deal of time and energy is dedicated in educational centers to teach graduate students how to develop a thesis; therefore, any investigation on writing thesis is of great importance. Metadiscourse plays a vital role particularly at advanced levels of academic writing based on the efforts writers carry out to "present and negotiate propositional information in ways that are meaningful and appropriate to a particular disciplinary community" (Hyland, 2004, p.136).

Harris (1959) coined the term metadiscourse and defined it as a way of understanding language in use, demonstrating writer or speaker's efforts to lead a receiver's understanding of a text. The concept of metadiscourse has been defined by a number of scholars. Williams (1981) defined it as "writing about writing, whatever does not refer to the subject matter being addressed". Mauranen (1993) and Crismore et al. (1993) unanimously agreed that metadiscourse refers to linguistic material in the text that goes beyond the propositional content which adds nothing to the subject matter but guides the listener or reader through managing, construing as well as examining the information mentioned. On the other hand, Hyland (2005) states that its characterization as simply "discourse about discourse" no longer wooed writers and it could be seen as an umbrella term for the range of devices writers use to explicitly organize their texts, engross readers, and signal their attitudes to both their material and their audience which was called 'interactive model'. To produce a written output, it is very crucial to inject coherence into your writing and construct a good interpersonal relationship with your addressees/readers. To this end, one of the main devices that writers can utilize to show their presence and voice in their final writing is the use of interactional metadiscourse markers. Because theses and dissertations are regarded as highly complicated student-produced research

genres which most graduate students are required to submit before they are certified by Master's or PhD degrees (Lee & Casal, 2014), familiarity with these interactional metadiscourse markers, on the part of the authors, can be beneficial to highlight the writers' stance on their written products.

2. Literature Review

The concept of metadiscourse has been explained by lots of outstanding scholars in the field of applied linguistics. According to Schiffrin (1980), metadiscourse is more generally seen as the writer's linguistic and rhetorical manifestation in the text in order to make a framework and to bracket the discourse organisation and the expressive implications of what is being said. Kopple (1985) asserts that it should be taken into account as "the linguistics element which does not add propositional content, but rather signals the presence of the author in the text" (p. 83). In Mao's (1993) words, metadiscourse is not regarded as a stylistic device, but relies on the rhetorical context in which it is implemented and the pragmatic function it fulfils. Hyland (1998) defines metadiscourse as those aspects of the text which clearly refer to the organisation of the discourse or the writer's stance towards either its content or the reader. He also clarifies the metadiscourse as a device used by writers to lead readers and show an appropriate professional charisma which is a key aspect of convincing writing. Moreover, according to Dafouz-Milne (2007) metadiscourse refers to those features which writers include to help readers reveal the message, share the writer's perspective and propose the particular rules that are followed in a given culture.

Over the last few decades, much research has been conducted by scholars interested in finding the influence of individual non-linguistic factors such as gender over the choice of interpersonal metadiscourse markers. As Gray (1998) takes it into account, the first step for the comparison of differences of male and female behavior in utilizing linguistic forms goes back to 1970s. Lakoff (1975) provides two approaches for the study of language and gender as dominance and difference ones. To define the former approach, she asserts some pre-established characteristics such as speaking indirectly, rapport talk, and cooperation as women's talking attributes. In the difference approach, she asserts that the differences between men and women's talk are regarded as a result of different subcultures and distinct ways of socialization. Tannen (1994) in her investigation about discourse and gender expresses that women have a tendency to use more supportive and cooperative styles and men utilize more competitive styles that follow a male dominance in mixed gender talks.

Meyer (1975) designed a classification system for signaling. She introduced her system based on four major criteria: (1) The specification of the structure of relations in the content structure, (2) Prospectively revealed information abstracted from content occurring later in the text, (3) Summary

statements , and (4) Pointer words. Williams (1981) reorganizes metadiscourse into three general levels: (a) advance organizers, (b) connectives, and (c) interpersonal discourse which seems close to Meyer's classification as preliminary and final statements or summaries, specification of structure of relations in the content structure, and pointer words respectively. According to Hyland (2004) metadiscourse is defined as "self-reflective linguistic expressions referring to the evolving text, to the writer, and to the imagined readers of that text" (p. 133). He sees writing as a social and communicative engagement and, in academic contexts, displays the ways writers present themselves into their argumentation in order to control their interactive intentions and signal their vision and commitments (Hyland, 1998). The concept of interpersonal metadiscourse is divided into two main categories of interactive and interactional markers (Hyland, 2005). Interactive metadiscourse markers have five subdivisions such as transitions, frame markers, endophoric markers, evidentials, and code glosses. On the other hand, five groups of interactional metadiscourse markers are presented as following:

- Hedges: Those devices by which "the writer withholds full commitment to a proposition; employed as an index to recognize the alternative voices, viewpoints, and possibilities" (Hyland, 2005, p. 52).
- Boosters: Words which express certainty and highlight the force of propositions (Hyland, 2004).
- Attitude markers: It is referred to as "the writer's attitude and judgment of the propositional content (Hyland, 2005, p. 53).
- Engagement markers: It is referred to addressing the readers explicitly, "either to focus their attention or include them as discourse participants" (Hyland, 2005, p. 53) through second person pronouns, imperatives, question forms, and asides (Hyland, 2001).
- Self-mentions: Show the degree of explicit author presence and attendance in the text represented through the first person pronouns and possessive adjectives (Hyland, 2004; Hyland, 2005, p. 53).

Based on the above-cited literature, the current study aims to answer the following research questions:

1. What interactional metadiscourse markers are employed in Iranian M.A. applied linguistics theses?
2. Is there any statistically significant relationship between thesis writers'gender and the frequency of interactional metadiscourse markers employed in Iranian M.A. applied linguistics theses?
3. Is there any statistically significant relationship between the frequency of interactional metadiscourse markers used and Iranian M.A. applied linguistics theses' chapters?

The present study is theoretically supported by, and is in line with Hyland's (2005) model of interaction, where he suggests a comprehensive model for the interaction between writers and readers. This model by Hyland consists of two major elements of Stance and Engagement. Stance itself is divided to four categorical features of hedges, boosters, attitude markers, and self-mention. Engagement consists of five elements under the titles of reader pronouns, directives, questions, shared knowledge, and personal asides.

3. Method

3.1 Corpus

In this study, 20 theses were selected as the corpus needed for conducting the corpus analysis. All these theses were written by Iranian applied linguistics M.A. graduates from Sharif University of Technology in Tehran. These theses were submitted in a time period from 2011 to 2014, half of which were carried out by male and the other half by female students. Table 1 shows the frequency of the words employed in research corpus across two genders.

Table 1

The Frequency of the Words Used in Research Corpus across Gender

Gender / *Chapter*	*Chapter 1*		*Chapter 2*		*Chapter 3*		*Chapter 4*		*Chapter 5*	
	Min	*Max*	*Min*	*Max*	*Min*	*Max*	*Min*	*Max*	*Min*	*Max*
Female Writers	1621	3564	7733	13673	1274	3895	4029	15889	670	2514
Male Writers	1728	3883	4657	12945	1456	4583	2398	13278	832	1386

The overall frequency of the words counted in all of the theses was 492,120, of which 269,570 (54.77%) were related to theses written by female graduates and 222,550 (45.23%) were related to theses written by male graduates.

Figure 1 illustrates the percent of words used in research corpus across the thesis chapters. The proportion of the words used in the first, second, and fifth chapters of the theses is almost alike, but there seems a significant difference between the number of words used in chapters 3 and 4. The words used in the female written theses outnumbered those of male ones in the fourth chapter of the theses observed in this research. In contrast to female thesis writers, male thesis writers employed more words in the third chapter of the theses. Overall, female thesis writers used more words in chapter 4 compared to the rest of the chapters. Male thesis writers, however, used more words in chapter 2 compared to the other written chapters.

3.2 Data Collection Procedure

In order to investigate the distribution of interactional metadiscourse markers in different chapters of theses, a manual corpus analysis was carried out primarily to provide a quantitative and comprehensive picture of what metadiscourse markers are used in these theses. All 20 M.A. theses were examined meticulously by utilizing Adobe PDF Reader Software program.

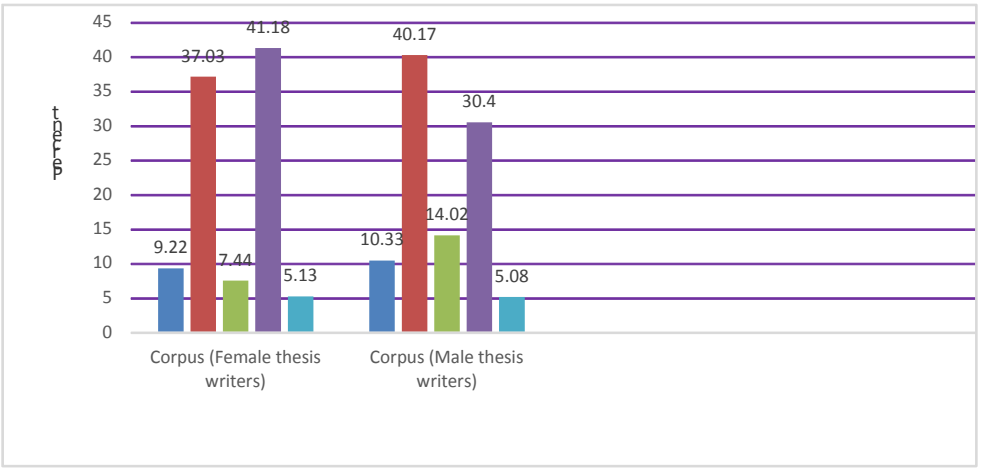

Figure 1. The percent of words used in research corpus across thesis chapters

The metadiscourse markers listed in Hyland's (2005) book were used as the main resource for collecting the required information. (See appendix A for instances of interactional metadiscourse markers). After determining the types of metadiscourse markers employed in different chapters of the theses, the gathered data were quantitatively analyzed in order to identify their frequency of occurrence in the corpus and examine whether there were any statistically significant differences between the two sets of corpus data across two genders.

4. Results and Discussion

Based on the obtained information collected by using Adobe PDF Reader software program, the quantitative values of interactional metadiscourse markers were calculated using frequency count and descriptive statistics. To provide a clear-cut statistical procedure, all raw data were collected by three examiners, so that this study would enjoy an inter-rater reliability because of the same quantitative results obtained from three separated counting procedures. By means of SPSS (Statistical Package for the Social Sciences) statistics software version 21, a set of meaningful interpretations was gathered through a Chi-Square analysis.

4.1 Research Question 1: What interactional metadiscourse markers are employed in Iranian M.A. applied linguistics theses?

In general, to do the analysis for the metadiscourse markers in each chapter, at first the normality of the data was checked employing Kolmogorov-Smirnov test. Then the descriptive statistics for each marker across all the chapters of thesis were computed. Finally, depending on the normality of the data, parametric or non-parametric repeated measure mean comparison statistics were employed.

4.1.1. Comparing the Frequency of Different Markers in Chapter 1

Since the assumptions for the normality of data were not met, Friedman tests as a non-parametric equivalent of one-way repeated measures ANOVA was employed. The results of Friedman test revealed that there is a significant difference ($p < .05$) somewhere between the groups of markers. In order to see where among the groups the significant difference exists, Wilcoxon Signed Ranks tests as a pairwise post hoc test was run.

In order to interpret the results of Wilcoxon Signed Ranks tests, the Bonferroni correction (alpha .05 divided by number of comparisons i.e. 10 = .005) was employed. Accordingly, based on Table 2 and Table 3 it is realized that the number of engagement markers is significantly larger than all other markers ($p < .005$). The second large frequency belongs to hedges which is significantly larger than all other markers except engagement markers. The difference among attitude, booster and self-mentions, however, is not significant ($p > .005$). Finally, it is shown that self-mention is significantly of the smallest frequency in chapter 1 in comparison to all other markers.

Table 2
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Ch 1.Hedges	20	12	50	28.150	13.2318	.450	.512	-1.409	.992
Ch 1. Attitude	20	0	21	7.850	5.29424	.956	.512	1.509	.992
Ch 1. Booster	20	0	33	10.750	7.87317	1.683	.512	2.969	.992
Ch 1. Self-Mentions	20	0	18	3.200	5.19717	2.615	.512	6.022	.992
Ch 1. Engagement-Markers	20	55	213	100.75	37.6729	1.552	.512	3.031	.992

Table 3
Test Statistics [a]

Ch 1 Attitude Ch1. Hedges	*Ch 1 Booster Ch1 Hedges*	*Ch 1 Self Mentions Ch 1 Hedges*	*Ch 1 Engagement Markers Ch 1 Hedges*	*Ch 1 Booster Ch 1 Attitude*	*Ch 1 Self Mentions Ch 1 Attitude*	*Ch 1 Engagement Markers Ch 1 Attitude*	*Ch 1 Self Mentions Ch 1 Booster*	*Ch 1 Engagement Markers Ch 1 Booster*	*Ch 1 Engagement Markers Ch 1 Self-Mentions*
-3.921[b]	-3.923[b]	-3.923[b]	-3.921[c]	-1.794[c]	-2.680[b]	-3.920[c]	-3.851[b]	-3.922[c]	-3.921[c]
.000	.000	.000	.000	.073	.007	.000	.000	.000	.000

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.
c. Based on negative ranks.
Asymp. Sig. (2-tailed)

4.1.2. Comparing the Frequency of Different Markers in Chapter 2

A one-way repeated measures ANOVA was run in order to compare the frequency of different markers in chapter 2. Table 4 presents the main repeated measures one-way ANOVA results which are indicative that somewhere between the groups of markers there is a significant difference ($p < .05$). In order to see where among the groups the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Table 4
Repeated Measures One-Way ANOVA Results

Source		*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig*	*Partial Eta Squared*
Markers	Sphericity Assumed	1566728.50	4	391682.12	115.83	.00	.85
	Greenhouse-Geisser	1566728.50	1.15	1353161.67	115.83	.00	.85
	Huynh-Feldt	1566728.50	1.18	1321284.69	115.83	.00	.85
	Lower-bound	1566728.50	1.00	1566728.50	115.83	.00	.85
Error(Markers)	Sphericity Assumed	256975.50	76	3381.25			
	Greenhouse-Geisser	256975.50	21.99	11681.37			
	Huynh-Feldt	256975.50	22.52	11406.19			
	Lower-bound	256975.50	19.00	13525.02			

Based on Table 6 and with regard to the descriptive statistics in Table 5, it is realized that all the markers are significantly different from one another ($p < .05$), with the engagement markers as the most highly frequent marker and self-mentions as the least frequent marker.

Table 5
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Ch2.Hedges	20	38	157.00	94.95	33.75	.15	.51	-.76	.99
Ch2.Attitude	20	2	53.00	23.50	16.04	.51	.51	-1.27	.99
Ch2.Booster	20	28	146.00	52.35	25.87	2.61	.51	9.10	.99
Ch2.Self-Mentions	20	0	31.00	10.65	10.05	.91	.51	-.47	.99
Ch2.Engagement-Markers	20	167	730.00	349.80	133.77	1.33	.51	2.13	.99

Table 6
Pairwise Comparisons

(I) Markers	*(J) Markers*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*[b]	*95% Confidence Interval for Difference*[b]	
					Lower Bound	*Upper Bound*
1	2	71.450*	6.820	.000	49.806	93.094
	3	42.600*	7.126	.000	19.985	65.215
	4	84.300*	7.522	.000	60.429	108.171
	5	-254.850*	26.472	.000	-338.866	-170.834
2	1	-71.450*	6.820	.000	-93.094	-49.806
	3	-28.850*	5.111	.000	-45.069	-12.631
	4	12.850*	3.559	.019	1.553	24.147
	5	-326.300*	28.768	.000	-417.601	-234.999
3	1	-42.600*	7.126	.000	-65.215	-19.985
	2	28.850*	5.111	.000	12.631	45.069
	4	41.700*	4.734	.000	26.675	56.725
	5	-297.450*	28.201	.000	-386.952	-207.948
4	1	-84.300*	7.522	.000	-108.171	-60.429
	2	-12.850*	3.559	.019	-24.147	-1.553
	3	-41.700*	4.734	.000	-56.725	-26.675
	5	-339.150*	29.027	.000	-431.272	-247.028
5	1	254.850*	26.472	.000	170.834	338.866
	2	326.300*	28.768	.000	234.999	417.601
	3	297.450*	28.201	.000	207.948	386.952
	4	339.150*	29.027	.000	247.028	431.272

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

4.1.3. Comparing the Frequency of Different Markers in Chapter 3

Since the assumptions for the normality of data were not met, Friedman tests as a non-parametric equivalent of one-way repeated measures ANOVA was employed. The results of Friedman test indicated that there was a significant difference ($p < .05$) somewhere between the groups of markers. In order to see where among the groups the significant difference exists, Wilcoxon Signed Ranks tests as a pairwise post hoc test was run.

In order to interpret the results of Wilcoxon Signed Ranks tests, the Bonferroni correction (alpha .05 divided by number of comparisons i.e. 10 = .005) was employed. Accordingly, based on Table 8 and with regard to the descriptive statistics in Table 7, it is realized that the number of engagement markers is significantly larger than all other markers ($p < .005$). The second large frequency belongs to hedges which is significantly larger than all other markers except engagement markers. The difference among attitude, booster and self-mentions, however, is not significant ($p > .005$). Finally, it is shown that self-mention is significantly of the smallest frequency in chapter 3 in comparison to all other markers. In sum, it can be asserted that the same pattern of markers is seen in both chapters 1 and 3.

Table 7
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Ch3.Hedges	20	5.00	90.00	22.8000	20.38	2.20	.51	5.48	.99
Ch3.Attitude	20	.00	19.00	6.7000	6.06	.78	.51	-.81	.99
Ch3.Booster	20	2.00	32.00	12.0500	9.74	.98	.51	-.45	.99
Ch3.Self-Mentions	20	.00	46.00	4.600	10.22	3.85	.51	15.91	.99
Ch3.Engagement-Markers	20	32.00	471.00	103.600	99.01	3.01	.51	10.40	.99

Table 8
Test Statistics [a]

Ch 3 Attitude Ch 3 Hedges	*Ch 3 Booster Ch 3 Hedges*	*Ch 3 Self-Mentions Ch 3 Hedges*	*Ch 3 Engagement-Markers Ch 3 Hedges*	*Ch 3 Booster Ch 3 Attitude*	*Ch 3 Self-Mentions Ch 3 Attitude*	*Ch 3 Engagement Markers Ch 3 Attitude*	*Ch 3 Self-Mentions Ch 3 Booster*	*Ch 3 Engagement-Markers Ch 3 Booster*	*Ch 3 Engagement-Markers Ch 3 Self-Mentions*
-3.81[b]	-3.52[b]	-3.64[b]	-3.92[c]	-2.72[c]	-2.25[b]	-3.92[c]	-3.18[b]	-3.92[c]	-3.92[c]
.000	.000	.000	.000	.006	.024	.000	.001	.000	.000

Asymp. Sig. (2-tailed)

4.1.4. Comparing the Frequency of Different Markers in Chapter 4

A one-way repeated measures ANOVA was employed in order to compare the frequency of different markers in chapter 4. Table 9 presents the main repeated measures one-way ANOVA results and shows that there is a significant difference ($p < .05$) somewhere between the groups of markers. In order to see where among the groups the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Table 9
Repeated Measures One-Way ANOVA Results

Source		*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Markers	Sphericity Assumed	1000614.14	4	250153.53	58.46	.000	.75
	Greenhouse-Geisser	1000614.14	1.09	914368.25	58.46	.000	.75
	Huynh-Feldt	1000614.14	1.11	900948.38	58.46	.000	.75
	Lower-bound	1000614.14	1.00	1000614.14	58.46	.000	.75
Error (Markers)	Sphericity Assumed	325185.06	76	4278.75			
	Greenhouse-Geisser	325185.06	20.79	15639.81			
	HuynhFeldt	325185.06	21.10	15410.27			
	Lower-bound	325185.06	19.00	17115.00			

Based on Table 11 and with regard to the descriptive statistics in Table 10, it is realized that attitude and self-mention are the only markers which are not significantly different from one another ($p > .05$), but the rest of the markers, with engagement markers as the most frequent and hedges and boosters as the next significantly frequent markers, are significantly larger in frequency than attitude and self-mention markers.

4.1.5. Comparing the Frequency of Different Markers in Chapter 5

A one-way repeated measures ANOVA was run in order to compare the frequency of different markers in chapter 5. Table 12 presents the main repeated measures one-way ANOVA results which show that there is a significant difference ($p < .05$) somewhere between the groups of markers. In order to see where among the groups the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Table 10
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Ch4.Hedges	20	26.00	165.00	83.35	43.63	.23	.51	-1.26	.99
Ch4.Attitude	20	.00	94.00	24.50	26.43	1.13	.51	.73	.99
Ch4.Booster	20	6.00	91.00	45.15	29.29	.06	.51	-1.45	.99
Ch4.Self-mentions	20	.00	60.00	16.05	20.28	1.41	.51	.57	.99
Ch4.Engagement-markers	20	54.00	624.00	285.50	158.86	.53	.51	-.19	.99

Table 11
Pairwise Comparisons

(I) Markers	*(J) Markers*	*Mean Difference (I-J)*	*Std. Error*	*Sig.b*	*95% Confidence Interval for Differenceb*	
					Lower Bound	*Upper Bound*
1	2	58.85*	8.11	.00	33.10	84.59
	3	38.20*	5.73	.00	20.00	56.39
	4	67.30*	8.36	.00	40.74	93.85
	5	-202.15*	28.25	.00	-291.72	-112.57
2	1	-58.85*	8.11	.00	-84.59	-33.10
	3	-20.65*	5.04	.00	-36.67	-4.62
	4	8.45	5.08	1.00	-7.67	24.57
	5	-261.00*	32.47	.00	-364.08	-157.92
3	1	-38.20*	5.73	.00	-56.39	-20.00
	2	20.65*	5.04	.06	4.62	36.67
	4	29.10*	4.04	.00	16.27	41.92
	5	-240.35*	31.85	.00	-341.43	-139.26
4	1	-67.30*	8.36	.00	-93.85	-40.74
	2	-8.45	5.08	1.00	-24.57	7.67
	3	-29.10*	4.04	.00	-41.92	-16.27
	5	-269.45*	34.29	.00	-378.34	-160.59
5	1	202.15*	28.22	.00	112.57	291.72
	2	261.00*	32.47	.00	157.92	364.08
	3	240.35*	31.85	.00	139.26	341.43
	4	269.45*	34.29	.00	160.59	378.30

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Table 12
Repeated Measures One-Way ANOVA Results

Source		*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Markers	Sphericity Assumed	25326.00	4	6331.50	66.66	.000	.77
	Greenhouse-Geisser	25326.00	2.00	12625.90	66.66	.000	.77
	Huynh-Feldt	25326.00	2.24	11291.21	66.66	.000	.77
	Lower-bound	25326.00	1.00	25326.00	66.66	.000	.77
Error(Markers)	Sphericity Assumed	7218.00	76	94.97			
	Greenhouse-Geisser	7218.00	38.11	189.39			
	Huynh-Feldt	7218.00	42.61	169.37			
	Lower-bound	7218.00	19.00	379.89			

Based on Table 14 and with regard to the descriptive statistics in Table 13, it is realized that attitude and self-mention are the only markers which are not significantly different from one another ($p > .05$), but the rest of the markers, with engagement markers as the most frequent and hedges and boosters as the next significantly frequent markers, are significantly larger in frequency than attitude and self-mention markers. In sum, it is evident that similar pattern like that of markers in chapter 4 has been observed in chapter 5.

4.1.6. Comparing the Frequency of Different Markers in All Chapters

A one-way repeated measures ANOVA was employed in order to compare the frequency of different markers in all chapters. Table 15 presents the main repeated measures one-way ANOVA results which are indicative that there is a significant difference ($p < .05$) somewhere between the groups of markers. In order to see where among the groups the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Table 13
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Ch5.Hedges	20	6.00	56.00	23.40	14.21	.98	.51	.41	.99
Ch5.Attitude	20	.00	30.00	4.50	6.71	3.16	.51	11.59	.99
Ch5.Booster	20	2.00	24.00	9.60	6.27	1.16	.51	.92	.99
Ch5.Self-mentions	20	.00	6.00	1.45	2.01	1.02	.51	-.29	.99
Ch5.Engagement-markers	20	19.00	82.00	44.80	19.93	.46	.51	-.83	99

Table 14
Pairwise Comparisons

(I) Markers	*(J) Markers*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*[b]	*95% Confidence Interval for Difference*[b]	
					Lower Bound	*Upper Bound*
1	2	18.90*	2.77	.00	10.10	27.70
	3	13.80*	3.01	.00	4.21	23.38
	4	21.95*	3.21	.00	11.76	32.13
	5	-21.40*	3.49	.00	-32.49	-10.30
2	1	-18.90*	2.77	.00	-27.70	-10.10
	3	-5.10*	1.36	.01	-9.44	-.75
	4	3.05	1.55	.64	-1.89	7.99
	5	-40.30*	3.88	.00	-52.61	-27.98
3	1	-13.80*	3.01	.00	-23.38	-4.21
	2	5.10*	1.36	.01	.75	9.44
	4	8.15*	1.37	.00	3.78	12.51
	5	-35.20*	3.82	.00	-47.32	-23.07
4	1	-21.95*	3.21	.00	-32.13	-11.76
	2	-3.05	1.55	.64	-7.99	1.89
	3	-8.15*	1.37	.00	-12.51	-3.78
	5	-43.35*	4.44	.00	-57.47	-29.22
5	1	21.40*	3.49	.00	10.30	32.49
	2	40.30*	3.88	.00	27.98	52.61
	3	35.20*	3.82	.00	23.07	47.32
	4	43.35*	4.44	.00	29.22	57.47

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

4.2 Research Question 2: Is there any statistically significant relationship between thesis writers' gender and the frequency of interactional metadiscourse markers employed in Iranian M.A. applied linguistics theses?

In order to investigate the answer to this question, in the first stage the number of all the markers in all chapters was worked out. Then, eta as the most appropriate test was utilized which indicated that there was a significant relationship between thesis writers' gender and the frequency of interactional metadiscourse markers employed in Iranian M.A. applied linguistics theses. To have a better view of this relationship the mean frequency of females (1552) was a lot higher than that of males (1187). That is to say, females tend to use more markers in their thesis writing.

The above analysis considered the number of all markers in the thesis. To get a more detailed view of the relationship between thesis writers' gender and the frequency of interactional metadiscourse markers employed in Iranian M.A. applied linguistics theses, the markers were considered separately in terms of their types. To investigate the relationship between

thesis writers' gender and the frequency of each interactional metadiscourse marker, fist the relevant crosstab was drawn.

Table 15
Repeated Measures One-Way ANOVA Results

Source		*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Markers	Sphericity Assumed	9867318.80	4	2466829.70	180.42	.000	.90
	Greenhouse-Geisser	9867318.80	1.17	8389399.05	180.42	.000	.90
	Huynh-Feldt	9867318.80	1.20	8171304.45	180.42	.000	.90
	Lower-bound	9867318.80	1.00	9867318.80	180.42	.000	.90
Error(Markers)	Sphericity Assumed	1039104.80	76	13672.43			
	Greenhouse-Geisser	1039104.80	22.34	46498.34			
	Huynh-Feldt	1039104.80	22.94	45289.54			
	Lower-bound	1039104.80	19.00	54689.72			

Table 16
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
	Statistic	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Statistic*	*Std. Error*	*Statistic*	*Std. Error*
Total.Hedges	20	160.00	368.00	252.65	69.62	.26	.51	-1.37	.99
Total.Attitude	20	17.00	158.00	67.05	43.33	.91	.51	-.13	.99
Total.Boosters	20	52.00	250.00	129.90	45.95	.65	.51	1.52	.99
Total.Self.mentions	20	7.00	108.00	35.95	29.86	1.37	.51	.93	.99
Total.Engagement	20	430.00	1536.00	884.45	266.56	.71	.51	.46	.99

Then, chi square as measure of correlation between two nominal variables was computed, the results of which in Table 18 indicate that the relationship is significant with small to medium effect size. To get a better view of this relationship, crosstab table, Table 19 was consulted as regards the observed counts of the markers and standardized residuals for each cell. Evidently, none of the counts is of a significant residual (i.e. beyond ± 1.96) to indicate whether males or females are significantly different from one another in terms of the frequency of a particular marker. However, the observed counts and the magnitude of the residuals indicate that there is a relatively large difference between males and females in terms of hedges and

engagement markers. To test this issue statistically, each marker was investigated in terms of its relationship with gender by employing eta.

Table 17
Pairwise Comparisons

(I) Markers	*(J) Markers*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*[b]	*95% Confidence Interval for Difference*[b]	
					Lower Bound	*Upper Bound*
1	2	185.60*	14.56	.000	139.38	231.81
	3	122.75*	14.63	.000	76.30	169.19
	4	216.70*	16.55	.000	164.15	269.24
	5	-631.80*	53.30	.000	-800.97	-462.67
2	1	-185.60*	14.56	.000	-231.81	-139.38
	3	-62.85*	10.72	.000	-96.88	-28.81
	4	31.10	9.83	.051	-.10	62.30
	5	-817.40*	56.33	.000	-996.21	-638.58
3	1	-122.75*	14.63	.000	-169.19	-76.30
	2	62.85*	10.72	.000	28.81	96.88
	4	93.95*	6.88	.000	72.09	115.80
	5	-754.55*	56.69	.000	-934.40	-574.69
4	1	-216.70*	16.55	.000	-269.24	-164.15
	2	-31.10	9.83	.051	-62.30	.10
	3	-93.95*	6.88	.000	-115.80	-72.09
	5	-848.50*	59.04	.000	-1035.87	-661.12
5	1	631.80*	53.30	.000	462.62	800.97
	2	817.40*	56.34	.000	638.53	996.21
	3	754.55*	56.66	.000	574.68	934.40
	4	848.50*	59.04	.000	661.12	1035.87

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Table 18
Chi-Square Tests

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	11.079[a]	4	.026
Likelihood Ratio	11.029	4	.026
Linear-by-Linear Association	8.447	1	.004
N of Valid Cases	1542		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.53.

The eta results in Table 20 indicate that males and females are significantly different from one another in terms of hedges and engagement markers, with engagement markers as the more highly correlated marker ($p < .05$) with large effect size. In sum, gender is significantly correlated with the frequency of hedge and engagement interactional metadiscourse markers.

Table 19
Symmetric Measures

		Value	*Approx. Sig.*
Nominal by Nominal	Phi	.085	.026
	Cramer's V	.085	.026
N of Valid Cases		1542	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Table 20
Directional Measures

			Value
Nominal by Interval	Eta	Gender Dependent	1.000
		Total. Hedges Dependent	0.388
Nominal by Interval	Eta	Gender Dependent	1.000
		Total. Attitude Dependent	0.214
Nominal by Interval	Eta	Gender Dependent	0.949
		Total. Boosters Dependent	0.071
Nominal by Interval	Eta	Gender Dependent	0.894
		Total. Self-mentions Dependent	0.012
Nominal by Interval	Eta	Gender Dependent	1.000
		Total. Engagement Dependent	0.554

Following the investigation of the relationship between thesis writers' gender and the frequency of each type of interactional metadiscourse marker employed in Iranian M.A. applied linguistics theses, it was required to investigate whether males and females differed from one another in terms of the use of each marker across different chapter of applied linguistics theses. Since each chapter of the thesis is of a different length, hence higher chance of the occurrence of markers in longer chapters, it was necessary to compare the relative frequency of the markers in each chapter rather than their absolute frequency. To clarify this issue, take the example of hedge markers in different chapters. Naturally the number of hedges in chapter 1 should be lower than that in chapter 2 since chapter 2 is a lot larger in size than chapter 1; therefore, there are higher chances of occurrence of hedges in chapter 2. If absolute frequency of hedges in these two chapters is compared, definitely this will not be a fair measure. However, if the relative frequency or percentage of hedges in these chapters is computed by dividing the frequency of hedges by the total frequency of all other hedges multiplied by 100 in the same chapter, then comparing the relative frequency or percentage of two chapters will cancel out the effect of chapter length.

Given the above explanation, the percentage of each marker type was computed in each chapter, and it was compared with the same marker's percentage in the next chapters. Since gender was also an independent variable, each percentage for a marker in each chapter was considered as a dependent variable. Then MANOVA was run to compare males and females

in terms of each marker across different chapters. Levene's test of equality of error variances was employed and the obtained results on the assumption of homogeneity of variances indicated that the great majority of the data have met the assumption ($p > .05$). Table 21 also presents the main MANOVA results, which show that males and females are not significantly different from each other in terms of the percentage of all marker type across all the chapters.

4.3 Research Question 3: Is there any statistically significant relationship between the frequency of interactional metadiscourse markers used and Iranian M.A. applied linguistics theses' chapters?

This question required the comparison of all thesis chapters in terms of each marker. Therefore, separate headings are provided for each marker across thesis chapters in the following. In general, to do the analysis for each marker across the chapters, first the descriptive statistics for each marker across all the chapters of thesis were computed (Table 22).

Then, the normality of the data was checked employing Kolmogorov-Smirnov test. Finally, depending on the normality of the data, parametric or non-parametric repeated measure mean comparison statistics were employed. Wherever, significant differences are found among the chapters, it can be asserted that some significant relationship exists between the frequency of interactional metadiscourse markers used and Iranian M.A. applied linguistics theses' chapters.

4.3.1 Comparing the Frequency of Hedge Markers across Thesis Chapters

A one-way repeated measures ANOVA was employed in order to compare the frequency of hedge markers across thesis chapters. Table 23 presents the main repeated measures one-way ANOVA results which show that somewhere between the chapters there is a significant difference ($p < .05$). In order to see where among the chapters the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Based on Table 24 and Table 25, chapter 5 is found to have significantly larger percentage of hedges in comparison to other chapters ($p < .05$). The rest of the chapters though do not differ from each other in terms of hedge markers.

4.3.2 Comparing the frequency of attitude markers across thesis chapters

Since the assumptions for the normality of data were not met, Friedman tests (as a non-parametric equivalent of one-way repeated measures ANOVA was employed) the results of which indicated that there was a significant difference ($p < .05$) somewhere between the chapters. In order to see where among the groups the significant difference exists, Wilcoxon Signed Ranks tests as a pairwise post hoc test was run.

Table 21
MANOVA Results

Source	*Dependent Variable*	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Gender	Hedg.Ch1.rel	17.616	1	17.616	.547	.469	.030
	Attit.Ch1.rel	1.283	1	1.283	.137	.716	.008
	Boost.Ch1.rel	8.744	1	8.744	.907	.353	.048
	Self.Ch1.rel	1.067	1	1.067	.217	.647	.012
	Engag.Ch1.rel	.857	1	.857	.015	.903	.001
	Hedg.Ch2.rel	30.185	1	30.185	1.040	.321	.055
	Attit.Ch2.rel	.556	1	.556	.076	.786	.004
	Boost.Ch2.rel	14.907	1	14.907	1.443	.245	.074
	Self.Ch2.rel	1.367	1	1.367	.512	.483	.028
	Engag.Ch2.rel	95.619	1	95.619	1.542	.230	.079
	Hedg.Ch3.rel	.161	1	.161	.004	.947	.000
	Attit.Ch3.rel	6.864	1	6.864	.309	.585	.017
	Boost.Ch3.rel	6.864	1	6.864	.309	.585	.017
	Self.Ch3.rel	24.353	1	24.353	2.113	.163	.105
	Engag.Ch3.rel	24.877	1	24.877	.234	.635	.013
	Hedg.Ch4.rel	72.803	1	72.803	2.956	.103	.141
	Attit.Ch4.rel	6.892	1	6.892	.400	.535	.022
	Boost.Ch4.rel	13.938	1	13.938	.782	.388	.042
	Self.Ch4.rel	.190	1	.190	.017	.898	.001
	Engag.Ch4.rel	208.948	1	208.948	2.255	.151	.111
	Hedg.Ch5.rel	23.757	1	23.757	.235	.634	.013
	Attit.Ch5.rel	1.608	1	1.608	.074	.789	.004
	Boost.Ch5.rel	33.582	1	33.582	.859	.366	.046
	Self.Ch5.rel	38.899	1	38.899	3.929	.063	.179
	Engag.Ch5.rel	34.690	1	34.690	.370	.551	.020

In order to interpret the results of Wilcoxon Signed Ranks tests, the Bonferroni correction (alpha .05 divided by number of comparisons i.e. 10 = .005) was employed. Accordingly, based on Table 26 and Table 27, chapter 3 is of the highest percentage of attitude markers, but it is only significantly larger than the attitude markers in chapter 2 ($p < .005$), which is of the lowest percentage of attitude markers among all chapters.

4.3.3 Comparing the Frequency of Booster Markers across Thesis Chapters

A one-way repeated measures ANOVA was employed in order to compare the frequency of booster markers across thesis chapters. Table 28 presents the main repeated measures one-way ANOVA results which indicate that there is a significant difference ($p < .05$) somewhere between the chapters. In order to see where among the chapters the significant difference exists, the Bonferroni method as a pairwise post hoc test was run.

Table 22
Descriptive Statistics

	N	*Min*	*Max*	*Mean*	*SD*	*Skewness*		*Kurtosis*	
						Statistic	*Std. Error*	*Statistic*	*Std. Error*
Hedg.Ch1.rel	20	10.74	29.27	18.63	5.60	.39	.512	-.889	.99
Hedg.Ch2.rel	20	12.28	30.94	18.24	5.39	1.06	.512	.245	.99
Hedg.Ch3.rel	20	7.84	25.86	15.68	5.83	.33	.512	-1.175	.99
Hedg.Ch4.rel	20	10.78	30.34	19.46	5.21	.41	.512	-.188	.99
Hedg.Ch5.rel	20	14.63	47.86	27.41	9.85	.33	.512	-.804	.99
Attit.Ch1.rel	20	.00	12.03	5.12	2.98	.37	.512	.546	.99
Attit.Ch2.rel	20	.67	9.94	4.29	2.63	.76	.512	-.360	.99
Attit.Ch3.rel	20	3.08	22.88	8.32	4.62	1.86	.512	4.290	.99
Attit.Ch4.rel	20	.00	12.81	4.56	4.08	.67	.512	-1.041	.99
Attit.Ch5.rel	20	.00	16.22	4.56	4.55	1.29	.512	.912	.99
Boost.Ch1.rel	20	.00	12.60	6.76	3.09	-.02	.512	.179	.99
Boost.Ch2.rel	20	6.07	18.81	9.96	3.25	1.39	.512	1.961	.99
Boost.Ch3.rel	20	3.08	22.88	8.32	4.62	1.86	.512	4.290	.99
Boost.Ch4.rel	20	2.53	16.55	9.62	4.19	.26	.512	-1.053	.99
Boost.Ch5.rel	20	4.26	29.79	11.79	6.22	1.12	.512	2.199	.99
Self.Ch1.rel	20	.00	7.63	1.84	2.16	1.72	.512	2.525	.99
Self.Ch2.rel	20	.00	5.54	1.90	1.61	.78	.512	-.312	.99
Self.Ch3.rel	20	.00	13.29	2.50	3.49	1.86	.512	3.727	.99
Self.Ch4.rel	20	.00	10.83	2.94	3.26	1.46	.512	1.511	.99
Self.Ch5.rel	20	.00	12.50	2.05	3.38	1.93	.512	3.796	.99
Engag.Ch1.rel	20	55.06	78.65	67.62	7.32	-.30	.512	-1.064	.99
Engag.Ch2.rel	20	46.13	76.94	65.59	7.98	-.76	.512	.449	.99
Engag.Ch3.rel	20	47.46	87.25	68.78	10.10	-.32	.512	-.450	.99
Engag.Ch4.rel	20	47.35	83.21	63.40	9.93	.26	.512	-.841	.99
Engag.Ch5.rel	20	39.06	75.76	54.17	9.52	.49	.512	.085	.99

Table 23
Repeated Measures One-Way ANOVA Results

	Source	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Chapters	Sphericity Assumed	1574.21	4	393.55	11.89	.00	.38
	Greenhouse-Geisser	1574.21	2.35	669.85	11.82	.00	.38
	Huynh-Feldt	1574.21	2.70	582.43	11.82	.00	.38
	Lower-bound	1574.21	1.00	1574.21	11.82	.00	.38
Error(Chapters)	Sphericity Assumed	2515.20	76	33.09			
	Greenhouse-Geisser	2515.20	44.65	56.32			
	Huynh-Feldt	2515.20	51.34	48.97			
	Lower-bound	2515.20	19.00	132.39			

Table 24
Pairwise Comparisons

(I) Chapters	*(J) Chapters*	*Mean Difference (I-J)*	*Std. Error*	*Sig.b*	*95% Confidence Interval for Differenceb*	
					Lower Bound	*Upper Bound*
1	2	.384	1.269	1.000	-3.644	4.413
	3	2.950	1.549	.721	-1.965	7.866
	4	-.830	1.539	1.000	-5.715	4.055
	5	-8.777*	2.212	.008	-15.796	-1.758
2	1	-.384	1.269	1.000	-4.413	3.644
	3	2.566	1.493	1.000	-2.174	7.305
	4	-1.214	1.368	1.000	-5.557	3.128
	5	-9.162*	1.653	.000	-14.408	-3.915
3	1	-2.950	1.549	.721	-7.866	1.965
	2	-2.566	1.493	1.000	-7.305	2.174
	4	-3.780	1.555	.251	-8.714	1.154
	5	-11.727*	2.688	.003	-20.258	-3.197
4	1	.830	1.539	1.000	-4.055	5.715
	2	1.214	1.368	1.000	-3.128	5.557
	3	3.780	1.555	.251	-1.154	8.714
	5	-7.947*	2.313	.028	-15.287	-.608
5	1	8.777*	2.212	.008	1.758	15.796
	2	9.162*	1.653	.000	3.915	14.408
	3	11.727*	2.688	.003	3.197	20.258
	4	7.947*	2.313	.028	.608	15.287

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Table 25
Chapters' Means

Chapters	*Mean*	*Std. Error*	*95% Confidence Interval*	
			Lower Bound	*Upper Bound*
1	18.633	1.253	16.010	21.256
2	18.249	1.206	15.725	20.773
3	15.683	1.304	12.954	18.412
4	19.463	1.165	17.024	21.902
5	27.410	2.204	22.798	32.022

Table 26
Test Statistics [a]

	Attit. Ch2.rel - Attit. Ch1.rel	*Attit. Ch3.rel - Attit.Ch1.rel*	*Attit. Ch4.rel - Attit.Ch1.rel*	*Attit. Ch5.rel - Attit.Ch1.rel*	*Attit. Ch3.rel - Attit.Ch2.rel*	*Attit. Ch4.rel - Attit.Ch2.rel*	*Attit. Ch5.rel - Attit.Ch2.rel*	*Attit. Ch4.rel - Attit.Ch3.rel*	*Attit. Ch5.rel - Attit.Ch3.rel*	*Attit. Ch5.rel - Attit.Ch4.rel*
Z	1.232b	-2.688c	-.560b	-.373b	-3.024c	-.075c	-.075c	-2.501b	-2.203b	-.644c
	.218	.007	.575	.709	.002	.940	.940	.012	.028	.520

a. Wilcoxon signed ranks tests
b. Based on positive ranks.
c. Based on negative ranks.
Asymp. Sig. (2-tailed)

Table 27
Chapters' Means

Chapters	*Mean*	*Std. Error*	*95% Confidence Interval*	
			Lower Bound	*Upper Bound*
1	5.128	.668	3.729	6.527
2	4.294	.590	3.060	5.528
3	8.322	1.034	6.157	10.487
4	4.564	.914	2.651	6.476
5	4.567	1.018	2.437	6.697

Based on Table 29 and Table 30, chapter 5 is found to have significantly larger percentage of boosters in comparison to other chapters ($p < .05$). This is followed by chapters 2, 4, and 3; however, only chapters 5, 2, and 4 are significantly larger in percentage than chapter 1 which has the lowest percentage of booster markers among all chapters.

4.3.4 Comparing the Frequency of Self-Mention Markers across Thesis Chapters

Since the assumptions for the normality of data were not met, Friedman tests -as a non-parametric equivalent of one-way repeated measures ANOVA was employed- the results of which indicated that there was no significant difference between the chapters in terms of self-mention markers.

4.3.5 Comparing the Frequency of Engagement Markers across Thesis Chapters

A one-way repeated measures ANOVA was employed in order to compare the frequency of engagement markers across thesis chapters. Table 31 presents the main repeated measures one-way ANOVA results which are indicative of the fact that there is a significant difference ($p < .05$) somewhere between the chapters. In order to see where among the chapters the significant difference exists, the LSD test as a pairwise post hoc test was run since sphericity was met.

Table 28
Repeated Measures One-Way ANOVA Results

	Source	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Chapters	Sphericity Assumed	283.653	4	70.913	5.196	.001	.215
	Greenhouse-Geisser	283.653	2.552	111.170	5.196	.005	.215
	Huynh-Feldt	283.653	2.981	95.159	5.196	.003	.215
	Lower-bound	283.653	1.000	283.653	5.196	.034	.215
Error(Chapters)	Sphericity Assumed	1037.215	76	13.648			
	Greenhouse-Geisser	1037.215	48.479	21.395			
	Huynh-Feldt	1037.215	56.636	18.314			
	Lower-bound	1037.215	19.000	54.590			

Table 29
Pairwise Comparisons

(I) Chapters	*(J) Chapters*	*Mean Difference (I-J)*	*Std. Error*	*Sig.b*	*95% Confidence Interval for Differenceb*	
					Lower Bound	*Upper Bound*
1	2	-3.200*	.507	.000	-4.809	-1.591
	3	-1.560	1.006	1.000	-4.752	1.633
	4	-2.859*	.768	.014	-5.297	-.422
	5	-5.037*	1.294	.010	-9.142	-.931
2	1	3.200*	.507	.000	1.591	4.809
	3	1.640	1.164	1.000	-2.055	5.336
	4	.341	.973	1.000	-2.748	3.430
	5	-1.837	1.558	1.000	-6.781	3.108
3	1	1.560	1.006	1.000	-1.633	4.752
	2	-1.640	1.164	1.000	-5.336	2.055
	4	-1.299	1.220	1.000	-5.170	2.571
	5	-3.477	1.293	.146	-7.581	.628
4	1	2.859*	.768	.014	.422	5.297
	2	-.341	.973	1.000	-3.430	2.748
	3	1.299	1.220	1.000	-2.571	5.170
	5	-2.177	1.492	1.000	-6.912	2.558
5	1	5.037*	1.294	.010	.931	9.142
	2	1.837	1.558	1.000	-3.108	6.781
	3	3.477	1.293	.146	-.628	7.581
	4	2.177	1.492	1.000	-2.558	6.912

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Table 30
Chapters' Means

Chapters	*Mean*	*Std. Error*	*95% Confidence Interval*	
			Lower Bound	*Upper Bound*
1	6.763	.693	5.313	8.212
2	9.962	.727	8.441	11.484
3	8.322	1.034	6.157	10.487
4	9.622	.939	7.657	11.586
5	11.799	1.393	8.884	14.714

Table 31
Repeated Measures One-Way ANOVA Results

Source		*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Chapters	Sphericity Assumed	2711.398	4	677.850	11.867	.000	.384
	Greenhouse-Geisser	2711.398	2.838	955.543	11.867	.000	.384
	Huynh-Feldt	2711.398	3.388	800.403	11.867	.000	.384
	Lower-bound	2711.398	1.000	2711.398	11.867	.003	.384
Error(Chapters)	Sphericity Assumed	4341.341	76	57.123			
	Greenhouse-Geisser	4341.341	53.913	80.524			
	Huynh-Feldt	4341.341	64.363	67.451			
	Lower-bound	4341.341	19.000	228.492			

Based on Table 32 and Table 33, chapter 5 is found to have significantly lower percentage of engagement markers in comparison to other chapters ($p < .05$). The rests of the chapters though do not differ from each other in terms of engagement markers.

The results of this study support the findings of Kuhi et al. (2012) who believe that there is no significant difference in the performance of male and female participants in using stance markers (including hedges, boosters, attitude markers and self-mentions).

Estaji and Vafaeimehr (2015) conducted a research based on the use of metadiscourse markers in the introduction and conclusion sections of mechanical and electrical engineering research papers and found that attitude markers were the least frequent metadiscourse marker type and the boosters the most frequent ones used by both majors in introduction part of papers; however, the use of metadiscourse markers was more frequent in the conclusion section of Electrical Engineering research articles in which boosters were again the most frequently employed metadiscourse marker and attitude markers were the least used ones. These findings do not support the

obtained results of this study which demonstrate that the most frequently used metadiscourse marker by participants in all chapters of the examined theses is engagement marker.

Table 32
Pairwise Comparisons

(I) Chapters	(J) Chapters	Mean Difference (I-J)	Std. Error	Sig.b	95% Confidence Interval for Differenceb	
					Lower Bound	Upper Bound
1	2	2.035	1.869	.290	-1.877	5.947
	3	-1.160	2.245	.611	-5.858	3.538
	4	4.220	2.217	.072	-.421	8.860
	5	13.458*	2.386	.000	8.463	18.453
2	1	-2.035	1.869	.290	-5.947	1.877
	3	-3.195	2.743	.258	-8.936	2.545
	4	2.184	2.576	.407	-3.206	7.575
	5	11.423*	2.094	.000	7.040	15.806
3	1	1.160	2.245	.611	-3.538	5.858
	2	3.195	2.743	.258	-2.545	8.936
	4	5.380*	1.817	.008	1.577	9.182
	5	14.618*	3.104	.000	8.121	21.115
4	1	-4.220	2.217	.072	-8.860	.421
	2	-2.184	2.576	.407	-7.575	3.206
	3	-5.380*	1.817	.008	-9.182	-1.577
	5	9.238*	2.550	.002	3.901	14.576
5	1	-13.458*	2.386	.000	-18.453	-8.463
	2	-11.423*	2.094	.000	-15.806	-7.040
	3	-14.618*	3.104	.000	-21.115	-8.121
	4	-9.238*	2.550	.002	-14.576	-3.901

Based on estimated marginal means
*. The mean difference is significant at the 0.05 level.
b. Adjustment for multiple comparisons: Least significant difference (equivalent to no adjustments)

Table 33
Chapters' Means

Chapters	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	67.629	1.639	64.199	71.059
2	65.594	1.786	61.857	69.331
3	68.789	2.260	64.058	73.520
4	63.410	2.223	58.758	68.061
5	54.171	2.129	49.715	58.627

5. Conclusions and Implications

A thesis or dissertation written at the final stage of any academic degree program would be regarded as the most influential outcome through which one can provide and express his or her depth of knowledge. By means of the written thesis, writers could be able to reflect on the extent of their

perseverance and involvement in a "dynamic form of textual interaction where writers make research claims, express a stance, and get their voice heard" (Jiang & Hyland, 2015).

As the quantitative analysis of the data reveals, females tend to use more markers in their thesis writing. Female thesis writers use interactional metadiscourse markers more than male ones. The findings also indicated that, overall, participants used engagement markers more than the other metadiscourse markers in each chapter and in all chapters of theses. It was revealed that self-mention markers were regarded as the absolute least frequent marker. Gender is significantly correlated with the frequency of hedges and engagement markers, of which females tend to use more engagement and hedges markers than males do. The findings also depicted that males and females are not significantly different from each other regarding the percentage of all marker types across all the chapters.

The following results were inferred from the comparison of all thesis chapters in terms of each marker. Chapter 5 is found to have significantly larger percentage of hedges in comparison to other chapters. There are no marked differences among other chapters regarding the use of hedges. The highest and the lowest percentage of attitude markers are related to chapters 3 and 2, respectively. Chapter 5 is mentioned to have significantly larger percentage of boosters in comparison to other chapters. The lowest percentage of boosters is related to chapter 1. The least percentage of engagement marker is found in chapter 5. Other chapters have no differences regarding the percentage of engagement markers. Interestingly, no significant difference was revealed in regard with the chapters and the used percentage of self-mention markers.

Estaji and Vafaeimehr (2015) state that:

> Students are highly required to become well-acquainted with the techniques leading to further cohesion and coherence in the text. In particular, the instruction and analysis of the texts focusing on the genres and interactional metadiscourse markers employed in different contexts can help students to better organize their texts and guide their readers. (p. 49)

The findings of this study provide some insights into an urgent need to persuade and encourage English language teachers, professors, and those publishers in the realms of TEFL and ESP to make an effort to provide English learners with appropriate sources and settings to enhance the level of familiarity with different types of metadiscourse markers which would prepare them for producing coherent writings and establishing true interaction with other readers and addressees.

References

Crismore, A., Markakanen, R., & Steffensen, M. (1993). Metadiscourse in persuasive writing: A study of texts written by American and Finnish university students. *Written Communication, 10*(1), 39-71.

Dafouz-Milne, E. (2007). The pragmatic role of textual and interpersonal metadiscourse markers in the construction and attainment of persuasion: A cross-linguistic study of newspaper discourse. *Journal of Pragmatics, 40*(1), 95-113.

Estaji, M., & Vafaeimehr, R. (2015). A comparative analysis of interactional metadiscourse markers in the introduction and conclusion sections of mechanical and electrical engineering research papers. *Iranian Journal of Language Teaching Research, 3*(1), 37-56.

Gray, J. (1998). *Mars and Venus on a date: A guide for navigating the five stages of dating to create a loving and lasting relationship.* New York: HarperCollins.

Harris, Z. (1959). The transformational model of language structure. *Anthropological Linguistics*, *1*(1), 27-29.

Hyland, K. (1998). Persuasion and context: The pragmatics of academic metadiscourse. *Journal of Pragmatics*, *30*(1), 437-455.

Hyland, K. (2004). Disciplinary interactions: Metadiscourse in L2 postgraduate writing. *Journal of Second Language Writing*, *13*(1), 133–151.

Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing*. London & New York: Continuum.

Jiang, F., & Hyland, K. (2015). 'The fact that': Stance nouns in disciplinary writing. *Discourse Studies*, 1-22.

Kopple, V. W. J. (1985). Some exploratory discourse on metadiscourse. *College Composition and Communication*, *36*(1), 82-93.

Kuhi, D., Sorayyaei Azar, A., Shomoossi, A., & Shomoossi, N. (2012). Interaction markers in the written output of learners of English: The case of gender. *Journal of Education*, *1*(2), 79-90.

Lakoff, R. (1975). *Language and woman's place*. New York: Harper and Rowe.

Lee, J., & Casal, J. (2014). Metadiscourse in results and discussion chapters: A cross-linguistic analysis of English and Spanish thesis writers in engineering. *System, 46*(1), 39-54.

Mao, L. (1993). I conclude not: Toward a pragmatic account of metadiscourse. *Rhetoric Review,11*(2), 265-289.

Mauranen, A. (1993). Contrastive ESP rhetoric: Metatext in Finish-English economics texts. *English for Specific Purposes, 13*(1), 3-22.

Meyer, B. (1975). *The organization of prose and its effects on memory.* Amsterdam: North-Holland Pub.

Schiffrin, D. (1980). Meta-talk: Organizational and evaluative brackets in discourse. *Sociological Inquiry*, *50*(3), 199-236.

Tannen, D. (1994). *Gender and discourse.* Oxford: Oxford University Press.

Thompson, P. (2013). *Thesis and dissertation writing. The handbook of English for specific purposes.* West Essex, UK: Wiley-Blackwell.

Williams, J. (1981). *Style: Ten lessons in clarity and grace.* Boston: Scott Foressman.

Appendix A:
Instances of Metadiscourse Markers

Attitude markers

admittedly, agree, agrees, agreed, amazed, amazing, amazingly, appropriate, appropriately, astonished, astonishing, astonishingly, correctly, curious, curiously, desirable, desirably, disappointed, disappointing, disappointingly, disagree, disagreed, disagrees, dramatic, dramatically, essential, essentially, even x, expected, expectedly, fortunate, fortunately, hopeful, hopefully, important, importantly.

Boosters

actually, always, believe, believed, believes, beyond doubt, certain, certainly, clear, clearly, conclusively, decidedly, definite, definitely, demonstrate, demonstrated, demonstrates, doubtless, establish, established, evident, evidently, find, finds, found, m fact, incontestable, incontestably, incontrovertible, incontrovertibly.

Hedges

about, almost, apparent, apparently, appear, appeared, appears, approximately, argue, argued, argues, around, assume, assumed, broadly, certain amount, certain extent, certain level, claim, claimed, claims, could, couldn't, doubt, doubtful, essentially, estimate, estimated, fairly, feel, feels, felt, frequently, from my perspective, from our perspective, from this perspective, generally, guess.

Self-mention

I, we, me, my, our, mine, us, the author, the author's, the writer, the writer's.

Engagement markers

(the) reader's, add, allow, analyse, apply, arrange, assess, assume, by the way, calculate, choose, classify, compare, connect, consider, consult, contrast, define, demonstrate, determine, do not, develop, employ, ensure, estimate, evaluate, find, follow, go, have to, imagine, incidentally, increase, input, insert, integrate, key, let x=y, let us, let's, look at, mark, measure, mount, must, need to, note, notice, observe, one's, order, ought, our (inclusive), pay, picture, prepare, recall, recover, refer, regard, remember, remove, review, see, select, set, should, show, suppose, state, take (a look/ as example), think about, think of, turn, us (inclusive), use, we (inclusive), you, your.