LINGUISTIC PROPERTIES OF PAKISTANI RESEARCH ARTICLE (RA) ABSTRACTS FROM MULTIPLE DISCIPLINES

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Abstract

Research Articles (RAs) are vital for disseminating the scientific knowledge among the discourse community. RA abstracts are what first meet the eye of the reader after the title and thus helps the reader in deciding whether or not the article needs further reading. The growing importance of RA abstracts has motivated the current quantitative research where the researchers have tried to explore the linguistic features of Pakistani RA abstracts. The research has set out to explore the distribution of linguistic features across disciplines and across functional moves. For the said purpose, 100 RA abstracts; 50 from hard sciences (zoology, chemistry, physics, etc.) and 50 from soft sciences (IR, Linguistics, sociology, etc.), have been collected. Functional moves have been tagged through AntMover software and the linguistic features are explored through Multidimensional Analysis Tagger (MAT) v.1.1 which has tagged the parts of speech (POS) in the whole corpus. The results revealed that *purpose* move can be taken as conventional in both the disciplines while *results* move is conventional only in hard sciences. All other moves, (e.g. methodology, results, conclusion) are considered optional because they do not occur as frequently as purpose and results move. With regards to linguistic features, the results showed that linguistic choices are discipline as well as function dependent and they vary markedly across disciplines as well as across functional moves. The findings of this research have clarified the appropriate academic style of abstracts in research journals. The study also helps to form a pedagogical template practically useful for novice Pakistani RA writers to meet the rigorous demands by Pakistani research journals.

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Introduction

Every discourse is known to have a specific rhetorical pattern and register characteristics. Research articles (henceforth RA), a scientific and academic discourse, are a kind of discourse where researchers try hard to express their knowledge through language. This scientifically driven academic discourse is considered to have internal functional variation having its own technical terminology and grammatical patterns (Halliday et al., 1964).

> Every text, from the discourses of technocracy and bureaucracy to the television magazine and the blurb on the back of the cereal packet, is in some way affected by the modes of meaning that evolved as the scaffolding for scientific knowledge.
>
> (Halliday & Martin 1993: p. 11)

RA writers have to use the language professionally to meet the expectations and interact efficiently with the discourse community. In academic writing like RA, abstract is what first meets the audience after the topic of the RA. According to International Standard (ISO 214:1976) abstracts are "abbreviated, accurate representation of the contents of a document" (p.1). This document also states that abstracts should prove helpful in computerized searching. Given the inherent characteristics of precision and conciseness, abstracts are responsible to attract the prospective audience and get the acceptance or rejection for publication and conferences. This is the most pivotal means of communication among the scholars; and usually, the novice writers find

the art of writing abstract more challenging than writing the whole RA. The work in hand has tried to explore the linguistic features and grammatical patterns in RA abstracts which have been written and edited by non-native Pakistani speakers of English. It has tried to find out the linguistic trends in Pakistani RA abstracts through Multidimensional Analysis Tagger (MAT) v.1.1. The work is significant as it gives insight about the rhetorical patterns of the most read item in RAs i.e. abstracts. Also, it can provide with the concurrent vocabulary items and grammatical structures in abstracts on the whole as well as in each functional move.

Previous researches on abstracts

In recent times, researchers have explored research articles from various perspectives. This section presents an overview of the past researches on abstracts.

It is held that RA abstracts differ from RAs in terms of their functions, linguistic realization and rhetorical structure (Lores 2004: 281). The function of RA abstracts ranges from "summary" (Ventola 1997) up to "selective representation [. . .] [of the] exact knowledge of an article's content" (Hyland 2004: 64). A number of previous researches have focused on about the rhetorical pattern of RA abstracts. The common feature of the studies digging out the generic structures of RA abstracts is that they tend to have smaller data set as compared to the other group. Most of the studies have highlighted the move patterns and have tried to trace out the differences across discipline and/or across cultures. Martin (2003) has studied 160 English and Spanish RA abstracts in experimental social sciences and has tried to locate the cross-cultural differences. He found that logical order of moves i.e. IMRD pattern has been followed in both the corpora except one or two instances. Spanish RA abstracts are less complex while English abstracts follow Swales' model. He inferred that major source of rhetorical variation lies in the relationship between the writer and

the discourse community s/he addresses, which is different both in terms of numbers and expectations.

Another group of researchers are busy in finding out the linguistic patterns of RA abstracts on the whole as well as the linguistic peculiarities of each functional move.Suntara and Usaha (2013) have studied the rhetorical features of two inter-related discipline i.e. linguistics and applied linguistics. They collected 200 abstracts from the year 2009-2012 and found that there are three conventional moves in linguistics in comparison with the four move convention in applied linguistics. They have also studied the linguistic features e.g. reporting verbs, tenses, deictic items, nouns etc. Hu and Cao (2011) have studied the devices of hedging and boosting in the abstracts of applied linguistics RAs. The major objective of their research was to find out the cross-cultural differences at discoursal level in English and Chinese applied linguistics RA abstracts. They compiled corpus consisting on 649 abstracts from 8 journals: four in chines and four in English. They found that abstracts published in English-medium journals use markedly more hedges than those published in Chinese-medium journals. Also, abstracts of empirical research articles used significantly more boosters than those of non-empirical academic articles. They concluded that Chinese writers avoid hedging due to their lack of facility in English as a second/foreign language. Hyland and Tse (2005) studied the use of evaluative *that* in 465 RA abstracts written by L2 writers across discipline. They found that evaluative *that* was widely employed in the abstracts and was an important means of providing author's comment and evaluation. They found that L2 learners are well familiar with the use of evaluative *that* in academic writing which might be due to extensive reading or the explicit instructions.

Similarly, Kanoksilapatham (2013) studied generic features of 60 engineering RA abstracts. After analyzing the move structure of engineering RA abstracts, he focused on the

linguistics features of each functional move. He found that BPMRD move is very much common in engineering RA abstracts

Although RA abstract have gained lot of attention across the world, this area is not much researched in Pakistan. The present work sets out to find out the genre based linguistic features of Pakistani RA abstracts and tries to trace out the similarities and differences between linguistic patterns of soft sciences and hard sciences.

Methodology

This section presents the methodological steps undertaken for the current research.

Corpus Compilation

The researchers have compiled special corpus for this study consisted of 100 English RA abstracts written by Pakistani authors which have been broadly categorized under soft sciences (i.e. Linguistics, Psychology, International Relations) and the hard sciences (i.e. Botany, Zoology, Chemical engineering etc.).

Table 1: Sources of Corpus Collection

Soft Sciences (SS)			Hard Sciences (HS)		
Name of the Journal	Abbreviation	No.	Name of the Journal	Abbreviation	No
Pakistan Journal of Social Sciences	PJSS	10	Biologia	BLG	10
Pakistan Journal Of Social & Clinical Psychology	PJSCP	10	Journal of Animal and Plant Sciences	JAPS	10

Gomal University Journal of Research	GUJR	10	Journal of Chemical Society of Pakistan	JCSP	10
Journal of Independent Studies and Research	JISR	10	Nucleus	NUC	10
Journal of Political Studies	JPS	10	Pakistan Journal of Agricultural Sciences	PJAS	10

Ten Pakistani online journals were randomly selected; five from soft sciences and five from hard sciences. To represent each journal,first ten RA abstracts were chosen from the latest issue of the selected journals published from 2014 to 2016. Therefore, the corpus for linguistic analysis consisted of 100 abstracts, which were numbered in the order of their publication from 1 to 10, along with the year of publication and journal name (e.g. 1_PJSS_SS_2012), for the ease of reference. Table 1above shows the number of abstracts and journal names along with the abbreviations.

Corpus Analysis

The objective of this paper was two pronged: to observe the overall linguistic features of RA abstracts and to trace the linguistic variation across moves as well as across discipline i.e. across soft sciences and hard sciences. To meet the objectives, the researchers have analyzed the linguistic features in the corpus after Parts of Speech (POS) tagging through Multidimensional Analysis Tagger (MAT) v.1.1.

Table 2: Derived Corpus of Moves

Move	Files	Number of Words
Background	Background HS	1268
	Background SS	2424
Purpose	Purpose HS	1405
	Purpose SS	1712
Methodology	Methodology HS	1950
	Methodology SS	1654
Results	Results HS	2982
	Results SS	1975
Conclusion	Conclusion HS	485
	Conclusion SS	621
Total		17090

To meet the second part of the objective, the researchers have first analyzed the compiled corpus as genre and have tagged the functional moves with the help of software AntMover, following Swales and Feak's (2010) five move structure for RA Abstracts which consisted on *Background* (B), *Purpose* (P), *Methodology* (M), *Results* (R) and *Conclusion* (C)moves. A central unit of this analytical framework was a *move*, which refers to a text segment that has a communicative function. Steps are not taken into account due to the nature of the data because abstracts have been considered to be "abbreviated, accurate representation of the contents of a document" (International Standard ISO 214:1976, p.1); also, the selected model could incorporate the whole text without focusing on s*teps*. After the completion of tagging, the researcher collected

all the moves one by one in two separate files maintaining distinction between the disciplines i.e. hard sciences (HS) and soft sciences (SS). This made another corpus derived from the previous one consisting on 10 files.

Again, the data was tagged through MAT v.1.1 and linguistic features were observed. Also the comparison had been made with respect to the Z score, as given by MAT, to report the second part of the objective i.e. to see the variation across discipline as well as across moves. The results are presented in tables.

Results and Discussion

This paper has set out to explore the linguistic variation across discipline as well as across functional moves in Pakistani RA abstracts. To meet the first part of the objective, i.e. to observe the overall linguistic features of Pakistani RA abstracts, the researchers analyzed the whole corpus through MAT. In Table 3, the linguistic features bearing higher score than 2 have been presented.

Table 3: interesting linguistic features in the corpus on the whole

Linguistic features	**Example**	**ST tag**	**Z Score**
Nouns	Community, case	NN	3.68
Phrasal coordination	Salt and pepper	PHC	5.97
Nominalizations	Extension, propositions	NOMZ	2.22
Adverbs	Always, significantly	RB	2.66
Word length		AWL	2.04

Type/token ratio	TTR	1.59

As the table shows, abstracts are thickly populated with phrasal coordination and nouns. Also, the trend of nominalization has also been significant. Use of adverbs is also interesting as it gets 2.66 score. In the determination of dimension it has got negative score i.e. it is -2.66 on dimension. However, here the researcher has consciously removed negative sign from the score. Average word length per sentence is 2.04 and type/token ratio is 1.59 which means that one token is used twice.

To achieve the second part of the objective, the researcher first generically analyzed the corpus of 100 abstracts and tagged the functional moves with the help of software AntMover and then made the separate files for each functional move then to be analyzed by MAT. The next section will provide a brief description of variation in cluster of linguistic features contributing in determination of dimensions across discipline and across moves.

4.1.Clusters of Linguistic Features Across Discipline and Across Functional Moves

As stated above, the researchers had to mark the functional moves to observe the variation in linguistic features. This was done automatically using AntMover, later to be edited manually, after the software has been trained. Table 4 shows the results of tagging of functional moves.

Table 4: Occurrence of Moves in Soft and Hard Sciences

Discipline / Move	Soft Sciences			Hard Sciences		
	N=50	%ages	No. of Words	N=50	%ages	No. of words

Background	28	56	2424	27	54	1268
Purpose	47	94	1712	48	96	1405
Methodology	29	58	1654	40	80	1950
Results	33	66	1975	43	96	2982
Conclusion	17	34	621	18	36	485

As shown in table above, only the purpose move is found to be conventional in both disciplines. The next frequent move is results move in soft sciences; nonetheless, in hard sciences this move can be considered the conventional move. All others can be taken as optional move as guided by the corpus results. There is only minute difference in percentages in background move in both disciplines; however, it is interesting to note that the number of words is almost double in soft sciences than in hard sciences. This entails that RA writers in soft sciences have more tendency to elaborate the full situation and the context of their research while in hard sciences the writers only tend to give a short and concise description as the background to their research. Next section would present variation in linguistic features in each move in both disciplines as provided by MAT.

1.1.1. Variation in linguistic features in each move in both disciplines

For the quantitative linguistic analysis of texts and moves, statistical analyses have been carried out through multidimensional analysis tagger (MAT) software which has analyzed 67 linguistic features. However, to have a deeper look on the variation across moves and disciplines, the focus has been fixed on the Z scores of linguistic features as provided by MAT rather than placement on dimension graphs. Table 5 below has shown the cluster of linguistic features that have noticeable variation across disciplines and across moves.

Table 5: Z score of Linguistic Features across Moves and Discipline

Linguistic Feature	**Mat Tags**	**Move 1**		**Move 2**		**Move 3**		**Move 4**		**Move 5**	
		HS	**SS**	**HS**	**SS**	**HS**	**SS**	**HS**	**SS**	**HS**	**SS**
Word length	AWL	2.35	2.5	**1.85**	**2.35**	**1.13**	**2.15**	**0.58**	**2.75**	2.05	2.65
Type/token ratio	TTR	2.19	2.05	**2.48**	**0.99**	**2.96**	**-0.02**	**-0.45**	**1.42**	**2.62**	**1.62**
That-deletions	THATD	-0.76	-0.76	-0.59	-0.76	-0.66	-0.61	-0.2	-0.63	**-0.76**	**-0.37**
Present tense verbs	VPRT	-0.49	-0.76	-1.54	-1.16	-1.9	-1.82	**-1.79**	**-0.94**	-1.18	-0.93
Analytic negation	XXO	-1.39	-1.13	-1.39	-1.39	-1.39	-1.39	**-1.11**	**-0.52**	-1.39	-0.62
General emphatics	EMPH	**-0.4**	**0.05**	-1.19	-1.24	-1.4	-1.36	**-0.74**	**0**	-1.02	-0.74
Be as main verb	BEMA	-0.74	-1.62	-2.84	-2.74	-2.56	-2.2	-1.48	-1.85	**-2.16**	**-1.48**
Sentence relatives	SERE	**3.5**	**0.75**	**1.5**	**-0.25**	**-0.25**	**2.5**	**1.25**	**2.25**	-0.25	-0.25
Possibility modals	POMD	-1	-1.2	-1.66	-1.66	-1.66	-1.66	-0.83	-1.23	**5.6**	**0.6**
Nonphrasal coordination	ANDC	-0.63	-0.1	**1.56**	**0**	0.46	0.48	0.46	-0.13	-0.52	0.71
Nouns	NN	**4**	**2.71**	**5.2**	**3.69**	**4.89**	**4.05**	**4.02**	**2.97**	**3.56**	**1.73**
Preposition	PIN	0.05	0.53	0.87	1.13	0.04	0.57	0.53	0.23	0.2	-0.18
Att. Adjective	JJ	**1.7**	**2.31**	**1.58**	**0.49**	**1.09**	**0.41**	1.25	1.8	1.66	1.15
Past tense verbs	VBD	-1.02	-0.87	**-0.53**	**-0.93**	0.01	0.39	0.08	-0.35	**-0.74**	**-1.21**

Perfect aspect verbs	PEAS	-0.92	0.9	**-0.75**	**-1.21**	-1.06	-1.21	**-1.54**	**-1**	**-1.27**	**-0.75**
Public verbs	PUBV	-1.43	-1.06	-1.91	-0.7	-1.35	-1.22	**-1.31**	**-0.07**	-0.33	0.04
Synthetic negation	SYNE	-0.56	-0.56	**0.19**	**-1.06**	-1.06	-1.06	**-0.88**	**0.12**	-1.06	-1.06
Time adverbials	TIME	**-1.26**	**-0.57**	-1.11	-1.31	-1.37	-1.49	-1.23	-0.94	**-1.49**	**-1.03**
Adverbs	RB	-2.56	-2.3	**-3.39**	**-2.57**	-3.24	-3.11	-2.85	-2.32	-2.17	-2.11
Phrasal coordination	PHC	**4.93**	**6.96**	**3.44**	**7.7**	**5.7**	**6.96**	**5.63**	**6.48**	**6.7**	**5.19**
Nominalizations	NOMZ	2.15	2.43	**2.06**	**2.85**	1.58	1.47	**1.52**	**2.56**	**2.15**	**3.45**
Infinitives	TO	**-1.45**	**-0.5**	**-0.75**	**1.77**	**-1.63**	**0.09**	-1.36	-1.27	**-1.27**	**2.98**
Prediction modals	PRMD	-0.98	-1.33	**-1.33**	**-0.79**	-1.33	-1.33	-1.33	-1.21	-1.33	1.31
Necessity modals	NEMD	-1	-0.81	-1	-1	-1	-1	-1	-1	**-0.05**	**2**
Split auxiliaries	SPAU	**-1.28**	**-0.28**	**-2.2**	**-1.52**	-0.96	-0.84	**-1.52**	**-0.08**	**-1.4**	**0.32**
Possibility modal	POMD	-1	-1.2	-1.66	-1.66	-1.66	-1.66	-0.83	-1.23	**5.6**	**0.6**
Conjuncts	CONJ	**1.63**	**3.81**	0.5	0.31	-0.5	-0.06	2.69	2	**1.69**	**2.19**
Agentless passive	PASS	0.73	0.02	1.79	0.33	**3.77**	**5.03**	**1.58**	**0.82**	**3**	**0.47**
Past participle adverbial clause	PASTP	-0.25	-0.25	**4.71**	**1.25**	**2**	**1.25**	**3.5**	**-0.25**	**-0.25**	**3.75**
By passives	BYPA	**1.15**	**0.62**	-0.08	0.23	**1.46**	**-0.15**	**1.62**	**-0.23**	0.92	-0.62

The scores showed that abstracts were organized writings and were highly informational and the writers have been least interactive. The objective was to observe the variation across moves and disciplines, the varying z scores have been emboldened in the table to highlight the differences. *That deletion* is more common in conclusion move of HS than SS as they get scores o.76 in HS and 0.37 in SS. Move 4 varied in HS and SS in terms of use of present tense more difference than 0.8 in the z score in both the disciplines. The same move again differed in terms of analytic negation (e.g. *that's not likely*). General emphatics (really, a lot) also differed across disciplines in move 1 (background) and move 4 (results). Move 5 (conclusion) had different scores in both the disciplines in the use of *be* as main verb. Methodology move differed in the use of amplifiers (*absolutely, extremely*) in both the disciplines. HS methodology move uses more amplifiers than methodology in SS. HS and SS differed in both disciplines specially with regards to sentence relatives (*Bob didn't study at all, which is usual for him*). Scores largely varied in the use of sentence relatives in all moves except conclusion move. Move 2 (purpose) varied in the use of non-phrasal coordination in both disciplines. HS used the nonphrasal coordination with the z score of 1.56 while SS background move came up with zero score. The negative scores for the first cluster and positive scores on the other cluster proved the corpus highly academic.

All the moves in HS tend to use more nouns than in SS; however, methodology move in SS also used high number of nouns. Move 1 and move 3 tended to use more attributive adjective in HS while move 2 used more attributive adjectives in move 2. Scores varied across moves and across disciplines in type token ration in all moves except background move. This is interesting to notice that type token ratio is not significantly different even the words are doubled in SS background move than HS background move, as mentioned in Table 4. It can be inferred that background move in HS is thickly populated with information than in SS. Average word length

per sentence is also significantly different in Move 2, 3 and 4. Results move is lengthier in HS than in SS. It can be assumed that results move is more important in HS discipline than in SS disciplines. It has corroborated by the generic analysis as results move appeared to be conventional only in HS disciplines.

Purpose move varied significantly across disciplines in terms of the use of past tense verbs. Abstracts in SS tended to use more past tense verb in purpose move than in HS. Conclusion move in SS also used more past tense verb than in HS disciplines. Again, move 2, move 4 and move 5 used differently perfect aspect verbs differently in both disciplines. Move 4 (*results*) used more public verbs (e.g. *said, explain*) in HS than in SS. Move 2 and move 4 varied across disciplines in terms of the use of synthetic negation (e.g. *no answer is good enough*) as well. On the whole, move 2 and move 4 have different scores in both the disciplines.

Corpus of RA abstracts has got negative scores except *phrasal coordination* and *nominalization* which has made the text context free.

As indicated by the results, move 1 and move 5 significantly differ in HS and SS in terms of their use of time adverbials (e.g. *early, instantly, soon*). Writers from HS disciplines use more time adverbials in background move. This might be because of the new inventions in HS which negate the previous theories which are hinted upon in background by the authors. Move 2 (purpose) found to use more adverbs (*always, significantly*) in HS than in SS. Also, HS abstracts were found to use more wh-relative clauses in subject position in move 5 than in SS. The difference is very much significant in the use of wh-relative clauses in subject position. All the moves, interestingly, use phrasal coordination with larger scores; however, the difference is significant in move 2 where HS got 3.44 score and SS got 7.7 score in use of phrasal coordination. Move 2, 4 and 5 are

significantly different in both the disciplines in terms of nominalization. SS are found to use more nominalization in move 4 and 5 than in HS. This has lead to infer that writers in soft sciences have more tendencies to use nominalization while describing results and conclusion in abstracts.

All the features have got negative score on dimension 4 indicating formal version of written text. Almost all the moves have significant differences in the use of*to* infinitives except move 4 (*results*) in both disciplines. Move 1 and 3 in HS have used more infinitives while move 2 and 5 in SS has used more infinitives. Use of predictive modals (e.g. *will, would, shall*) have been more frequent in purpose move of HS abstracts than in SS. Another significant difference has been observed in terms of the usage of conditional subordination (e.g. *if you want…*) in conclusion move in both the disciplines. Conclusions in HS have used more conditional subordination with the score of -1.14 than in SS that has got score of -0.41. The same move i.e. conclusion, is significantly different in terms of the usage of necessity modals (e.g. *must, should, have to*) in both the disciplines. This has directed to infer that pure scientific disciplines are less decisive in conclusions than in soft sciences. Split auxiliaries (e.g. should really be) are more frequently used in all moves in HS than SS. The scores differ significantly in all moves than the methodology move where both disciplines have got almost similar scores. Conclusion move in HS has been found to use more possibility modal (e.g. can, could) with the score of 5.6 than in SS that has got 0.6 score in the use of possibility modals.

On the use of conjuncts, move 1 has got significantly different scores in HS (1.63) and SS (3.81). Authors in SS have shown more tendencies to use conjunctions and have thus created larger sentences which consequently produces larger texts. Also the conclusion move in SS has used more conjunctions than in HS. HS has used more agentless passives in methodology move with the score of 5.03 than in SS which scored 3.77 (e.g. *the same mechanism was analyzed*). The use

of agentless passives has also been significantly different in HS and SS in move 4 and move 5. Conclusion and results moves in HS have used larger number of agentless passives than in SS. Use of past participle adverbial clause (e.g. *directed by Twilling, production is delightful*) is also notably different in all moves except background move in both disciplines. HS has used more past participle adverbial clauses in Move 2, 3 and 4, while SS has used this linguistic feature more frequently in Move 5. The scores of past participle adverbial clause are remarkably different in move 4 where it has got only -0.25 score while on the other hand, HS results move has scored 3.5 on the use of such adverbial clauses. By passives (e.g. *he was surrounded by a ring of men*) are again more frequent in HS in Move 1, 3 and 4. Past participle post-nominal clause (e.g. *the course chosen by the large majority…*) is notably different in conclusion move of HS and SS where HS has used more post nominal clauses than in SS.

Conclusion

This paper presented an empirical study of Pakistani RA abstracts, broadly bifurcated in soft and hard sciences, from a linguistic perspective. This study has the objectives to examine their overall linguistic features and the probable differences across disciplines i.e. soft sciences and hard sciences and across functional moves. The findings of multidimensional analysis revealed that Pakistani RA abstracts are closest to official documents and academic writing on five dimensions. To examine the linguistic variations across disciplines and across functional moves the generic analysis has been carried out following Swales and Feak's (2010) model; BPMRC move pattern to identify the internal organization of abstracts. The results indicated that only 24% abstracts came up with the five move structure i.e. BPMRC; the rest of the abstracts had individual internal organization which might be due to the demand of the particular subject. This has lead the researcher to agree withKanoksilapatham (2013) that abstracts are dynamic in themselves and such

variations can be expected from them. Further studies are required which may look into the subject specific variations to overcome the limitation of this study.

After analyzing the generic features of Pakistani RA abstracts, the researcher set out to explore the linguistic features of each move in both the disciplines. The dimension graphs on MAT showed that abstracts have been closest to official documents, broadcast and academic prose and have been found to be non-narrative, situation-dependent, persuasive and highly informational. The results of micro analyses showed that abstracts are discipline dependent in their choices of linguistic features. Also, the functional moves are one of the determining variables in the choice of linguistic feature. The findings are in line with that of Pho (2008), the functional moves are determining variable of linguistic choices as well as the linguistic features can be used to determine the functions performed by the move. However, the results of this paper do not corroborate one of the findings by Pho (2008) who held that distribution of linguistic features is quite similar across disciplines. The present work found that there are significant differences in the distribution and choice of linguistic features across discipline as well as across functional moves. This might be because of the non-nativity of Pakistani RA abstracts or because of the cultural differences and thus the demands of the discourse community.

The present study gave a glance to rhetorical patterns of the representative data of both faculties on the whole and has focused on the distribution of linguistic features across moves and disciplines; however, it is limited in itself as it does not take into account any solid categorization according to the subject. Further, it is limited in its scope because of the smaller corpus consisting on only 100 abstracts; 50 from each discipline. Nevertheless, the study is important as it takes initiative to find out the internal linguistic patterns of RA abstracts written by L2 English writers of Pakistan. It can prove to be a roadmap for future researchers to conduct similar studies in

different subject in Pakistani context. These can, then, cater the needs of the novice writers who need to know the organizational patterns and choose among the linguistic as well as grammatical patterns of an important part of RA i.e. abstract. At the same time the findings of such studies can be used as academic template by the novice researchers cum writers. Following the given templates, the writers can meet the expectation of the discourse community and can achieve the quality communication with other researchers.

REFERENCES

Biber, D. (1988). *Variation across speech and writing*. Cambridge: Cambridge University Press.

Biber, D., Conrad, S., Reppen, R., Byrd, P., &Helt, M. (2002). Speaking and writing in the university: a multidimensional comparison. *TESOL quarterly.*Vol. 36, No. 1. Pp. 9-49.

Bhatia, V. K.(1993). *Analysing genre: Language use in professional settings*. London: Longman;

Cross, C. & C. Oppenheim (2006). "A genre analysis of scientific abstracts". *Journal of Documentation* 62,4: 428-446.

Halliday, M. A. K., McIntosh, A. &Strevens, P. (1964). *The Linguistic Sciences and Language Teaching*. London: Longman.

Halliday, M. A. K. & Martin, J. R. (1993). *Writing Science: Literacy and Discursive Power*. London, Washington D.C.: The Falmer Press.

Holtz, M. (2011). *Lexico-grammatical properties of abstracts and research articles: a corpus based study of scientific discourse from multiple disciplines*. Unpublished PhD dissertation. Universitat Darmstadt.

Hu, G. & Cao, F. (2011). Hedging and boosting in abstracts of applied linguistics articles: A comparative study of English- and Chinese-medium journals. *Journal of Pragmatics.* 43. 2795-2809

Hyland K. (2000). *Disciplinary Discourses. Social Interactions in Academic Writing*. Harlow: Longman.

Hyland, K. (2004). *Disciplinary Discourses. Social Interactions in Academic Writing*. Michigan Classics Edition. Ann Arbor: The University of Michigan Press. First published by Pearson Education Limited, Longman, 2000.

International Standard. *Documentation: abstracts for publication and documentation*. (ISO 214:1976). Retrived from http://englishforlibrarians.wikispaces.com/file/view/ISO_214_1976_E.pdf,

Kanoksilapatham, B. (2013). Generic characterization of Civil Engineering Research Article Abstracts. *The Southeast Asian Journal of English Language Studies* – Vol 19(3): 1 – 10.

Kitchenham, B. A., O. P. Brereton, S. Own, J. Butcher & C. Jefferies (2008). "Length and readability of structured software engineering abstracts". *IEP Software* 2,1: 37- 45.

Lores, R. (2004). On RA abstracts: from rhetorical structure to thematic organisation. *English for Specific Purposes*, 23 (3), 280{302.

Martín, P. M. (2003). A genre analysis of English and Spanish research paper abstracts in experimental social sciences. *English for Specific Purposes* 22, 25-43.

Suntara, W. and Usaha, S. (2013). Research Article Abstracts in Two Related Disciplines: Rhetorical Variation between Linguistics and Applied Linguistics. *English Language Teaching*; Vol. 6, No. 2. Pp. 84-99.

Swales, J. M. & C. B. Feak (2010). "From text to task: putting research on abstracts to work" in M. F. Ruiz-Garrido, J. C. Palmer-Silveira& I. Fortanet-Gómez (eds.), *English for Professional and Academic Purposes*. Amsterdam – New York: Rodopi, pp. 167-180.

Ventola, E. (1997). Abstracts as an object of linguistic study. In F. Danes, E. Havlova& S. Cmejrkova (Eds.) Writing vs. Speaking: Language, Text, Discourse, Communication. Proceedings of the Conference held at the Czech Language, (pp. 333{352). T• ubingen: G• unterNarr.

Weissberg, R., & S. Buker (1990). *Writing up research. Experimental research report writing for students of English*. Englewood Cliffs, NJ, Prentice Hall Regents.