Diachronic Variation In Pakistani English Newspaper Editorials: A Corpus-Based Multi-Dimensional Analysis

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Abstract

This study delves into the diachronic linguistic variation of co-occurring linguistic features in Pakistani English newspaper editorials (PENE) through a comprehensive corpus-based multidimensional analysis (MDA). The primary aim is to examine language changes observed in newspaper editorials from 1995 to 2021. To ensure the representativeness of the diachronic PENE corpus, a meticulous selection process drew upon prominent online data sources. The multidimensional analysis framework proposed by Biber (1988) was utilized, allowing for a nuanced exploration of various linguistic dimensions within the newspaper editorials. To ensure accuracy and reliability in the linguistic annotation process, the data was systematically tagged using the MAT tagger, developed by Nini (2014). The research findings shed light on the evolving nature of language usage in Pakistani English newspaper editorials. Dimension 1 reveals a shift towards a more informational style, emphasizing conveying factual information and providing objective analysis. In contrast, Dimension 2 demonstrates a prominent narrative quality, suggesting an increasing focus on storytelling and engaging readers through compelling narratives. Dimension 3 highlights the explicitness of discourse, while Dimension 4 demonstrates an overtly argumentative and persistent characteristic across the decades. Lastly, Dimension 5 indicates a trend towards an abstract style of discourse over time. These findings offer valuable insights into the changing linguistic landscape of Pakistani English newspaper editorials.

1. Introduction

The evolution of language is an intriguing area of study, offering valuable insights into the dynamic nature of communication over time. In this context, the present research aims to delve into the diachronic linguistic development of PENE using MDA framework proposed by Biber (1988). The primary objective of this study is to explore the grammatical variations within and across the diachronic corpus of PENE, shedding light on the evolution of language usage over the years.

The 88 MDA framework, chosen for this investigation, holds particular significance due to its comprehensive coverage of 67 linguistic features. This extensive coverage allows for effective comparisons and facilitates a deeper understanding of linguistic shifts in PENE editorials over time. Previous studies that employed the 88 MDA framework have demonstrated its utility in examining synchronic, diachronic, and contrastive perspectives, making

it an ideal tool for our investigation (Xie, 2020; Collins & Yao, 2019; Ali, 2018; Ali & Sheeraz, 2018; Latif & Chaudhary, 2016; Biber & Finegan, 1997; Biber & Finegan, 1989).

The corpus-based MD analysis in this research focuses on describing the language characteristics of PENE and examining its diachronic development across different time periods, with particular attention to grammatical features identified through Biber's (1988) framework. To build upon existing knowledge, the study also investigates lexical variations in PENE over the decades, providing insights into the distinctiveness of each period in terms of vocabulary usage.

One of the key distinctions of this study lies in the use of a representative diachronic corpus of PENE, which comprises carefully selected samples from the relevant corpus. Previous corpus-based MD studies often focused on individual sub-registers of newspapers at the diachronic level, such as editorials (Westin, 2001; Westin & Geisler, 2002; Ali & Sheeraz, 2018), or specific categories of press reportage, leaving a gap in our understanding of the broader language trends across newspaper editorials.

Moreover, while some previous MD studies explored five textual dimensions for examining grammatical features (Biber, 1988; Latif & Chaudhary, 2016; Westin, 2001; Westin & Geisler, 2002; Ali & Sheeraz, 2018), this research endeavors to investigate all five textual dimensions while focusing on grammatical features at the diachronic level. By employing five dimensions borrowed from Biber's 1988 framework, this study aims to offer a more comprehensive view of the linguistic evolution in PENE editorials.

Furthermore, the research addresses a gap in the previous diachronic studies by moving beyond

the analysis of individual linguistic features. Instead, it adopts a corpus-based MD approach to study register variation in the form of a group of co-occurring linguistic variables. This allows for a more holistic understanding of how linguistic elements interact within the editorials, contributing to a nuanced exploration of language change over time.

Finally, as a pioneering attempt in its domain, this research applies the MD analysis to the language of PENE at the diachronic level. While previous corpus-based diachronic MD studies have been conducted on individual sub-registers of newspaper editorials (Westin, 2001; Westin & Geisler, 2002; Ali & Sheeraz, 2018), our study takes a broader approach, encompassing the entire diachronic corpus of PENE editorials. By doing so, this study aims to answer the research question: To what extent has register variation occurred in the language of editorials of PENE over the past decades, with regard to the 88 MDA framework?

2. Literature Review

This section provides a comprehensive overview of previous studies in the field of MDA, both in general and specifically in the context of PENE. The review begins with an exploration of theoretical frameworks and theory-based studies concerning World Englishes, followed by an in-depth discussion of research conducted using the MDA approach.

2.1 Researches on MD Analytical Approach (1988)

The MDA approach, proposed by Biber in 1988, offers a corpus-based method for exploring sets of co-occurring linguistic features within naturally occurring texts. The purpose of this approach is twofold: firstly, to identify morpho-syntactic and grammatical features underlying textual dimensions of linguistic variation, and

secondly, to investigate similarities and differences among different registers concerning previously identified dimensions.

Biber (1995) outlines seven steps defining the MDA approach, starting with the development of a corpus that incorporates automated computational techniques to analyze linguistic features extracted from the data. By focusing on texts, text varieties, and text types, the MDA approach emphasizes a functional interpretation of statistical results in relation to underlying communicative functions.

In the context of Pakistani English newspaper editorials, Alvi (2013) studied linguistic variation in terms of grammatical information, distinguishing PENE from other sub-registers of newspapers using both the 1988 and the 2004 MDA frameworks. This research provided insights into the linguistic characterization of PENE within the larger newspaper corpus.

Ali, Ali, and Ghani (2020) explored linguistic variation in South Asian Englishes, including Pakistan, India, and Bangladesh, and compared it to British English using Biber's (1988) framework. The study's findings revealed similarities and differences across the textual dimensions, indicating the distinctive linguistic characteristics of each variety.

2.2 Synchronic and Diachronic MD Studies in Other than Pakistani Context

This section focuses on prior synchronic and diachronic MD studies conducted in contexts other than Pakistan. Studies by Westin (2001), Westin and Geisler (2002), and Westin (2002) explored the historical development of British newspaper editorials and analyzed changes in grammatical features over time using Biber's MDA framework. Saily (2014) studied sociolinguistic variation diachronically from early modern English to present-day English,

while Baker and Levon (2015) investigated discourse prosodies about a gay man in a British newspaper.

Ehret and Toboada (2021) examined linguistic variation among online news comments using the MDA framework, revealing evaluative, informational, and argumentative characteristics of the comments on different textual dimensions.

2.3 Synchronic and Diachronic MD Studies in Pakistani Context

In the context of Pakistan, several synchronic and diachronic MD studies have been conducted. Latif and Chaudhry (2016) investigated diachronic changes in press reportage, focusing on sports category articles, and compared them to British sports category press reportage. Ali and Sheeraz (2018) studied diachronic variation across PENE editorials, highlighting language changes in different socio-political phases.

Ali, Ali, and Ahmad (2018) explored linguistic variation at synchronic and diachronic levels in PENE, observing changes in the language of newspaper editorials across different periods. Ali, Bashir, Ali, and Aleem (2021) studied linguistic variation over time in letters-to-editors of newspapers, shedding light on changes in the language of these letters across different phases.

In conclusion, the review of related past studies provides a comprehensive overview of studies conducted using the MDA approach, both globally and in the context of Pakistani English newspaper editorials. Previous research has explored linguistic variation across various registers, identified changes over time, and provided valuable insights into the distinctiveness of different varieties of English. These studies serve as a foundation for the present research, which aims to contribute to our understanding of the diachronic linguistic

development of PENE using the MDA framework.

3. Methodology

3.1 Research Model for the Study

For this research, MDA approach proposed by Biber (1988) was selected as the research model. The MDA approach comprises 67 linguistic features categorized into 16 categories, including tense and aspect markers, time and place adverbials, pronouns and proverbs, questions, nominal forms, passives, stative forms, subordination features, prepositional phrases, adjectives, adverbs, lexical specificity, lexical classes, modals, reduced forms and dis-referred structures, coordination, and negation. This approach allows for a comprehensive exploration of linguistic variation across different registers and discourse domains.

3.2 Corpus Development

A large corpus of data spanning 27 years, from 1995 to 2021, was collected to conduct the

analysis. The data collection process involved several sequential steps:

- **Retrieval and Downloading Data:** Relevant data from Pakistani English newspaper editorials (PENE) was retrieved and downloaded.
- **Conversion from PDF to Notepad:** The downloaded data in PDF format was converted into plain text files for further processing.
- **Text Editing:** The text files were edited to ensure consistency and accuracy in the data.
- **Proposing Codes for Naming the Files:** Codes were assigned to the files for easy identification and organization.
- **Renaming Files:** The files were renamed according to the proposed codes.
- **Classification of Data in Years:** The data was organized into decades to facilitate diachronic analysis.
- **Maintaining Metadata of the Corpus:** Metadata of the corpus, such as register types, number of years covered, number of files, type of words, and token words, was documented.

Table 3.1 Description of the Diachronic Corpus of PENE

Written Registers	Decades	File No.	No. of Words	Percentage (%)
	1995-2004	608	725172	31.41
Editorials	2005-2014	499	807900	34.99
	2015-2021	1647	775725	33.60
Total		2754	2308797	100

3.3 Analysis of the Data

3.3.1 Multidimensional Analysis Tagger

The Multidimensional Analysis Tagger (MAT), based on Biber's (1988) tagger, was used to analyze the data. MAT is a computer program that applies Biber's MD analysis to study text type or

register variation. It provides grammatical features for analysis and determines the closest text types based on Biber's (1989) proposal.

3.3.2 Procedure of Corpus Analysis

The data underwent tagging for over 67 linguistic features using Biber's (1988) framework. The

tagged data was then analyzed using the 88 MD analysis framework. Dimension scores were obtained alongside the tagged data, and interesting co-occurring linguistic features were identified through Biber's guidelines and statistical techniques, such as normalization, standardization, and calculating dimension scores. For factorization, a cut-off point, +/-0.3 was set to identify significant linguistic features.

3.3.3 Statistical Techniques for Data Analysis

Various statistical techniques were employed to analyze the data. Raw frequency counts of linguistic features were normalized to a text length of 100 words to ensure accurate frequency distribution comparisons. Standardization was performed by setting the mean to zero and the standard deviation to one, following the convention in MD analysis studies. Next, dimension scores for each text in the diachronic corpus of PENE were calculated by subtracting standardized scores of negative features from the sum of standardized scores of positive features. The five textual dimensions explored by Biber (1988) were named as involved vs. informational production on D1, narrative vs. nonnarrative concerns on D2, explicit vs. reference-dependent context on D3, expression of argumentation on D4, and abstract vs. non-abstract style on D5.

Finally, ANOVA tests were conducted using the dimension scores to assess the statistical significance of diachronic linguistic variation across the decades of PENE. These analyses aim to provide valuable insights into the evolving nature of language usage in Pakistani English newspaper editorials over time.

4. Results and Discussion

This research aimed to investigate the extent of diachronic linguistic variation in PENE across the decades, comparing it with the variation found in Biber's (1988) registers. The results, as presented in Table 4.1, illustrate the average usage of linguistic features in PENE, highlighting both maximum and minimum values to emphasize the presence and absence of specific features. Additionally, the table displays the range of differences among these features and their standard deviations, revealing the significant variations in their usage patterns.

Table 4.1 Distribution of Linguistic Features across Pakistani English Newspaper Editorials

Linguistic Features	Mean	Max Value	Min Value	Range	S.D.
Average word length	4.92	5.04	4.79	0.25	0.06
Type-token ratio	216.80	232.40	183.70	48.70	10.81
Amplifiers	0.12	0.24	0.07	0.17	0.04
Independent clause coordination	0.41	0.61	0.23	0.38	0.10
Be as main verb	1.62	1.88	0.94	0.94	0.20
By-passives	0.15	0.22	0.10	0.12	0.02
Causative adverbial subordinators	0.09	0.15	0.04	0.11	0.03
Concessive adverbial subordinators	0.07	0.12	0.04	0.08	0.02
Conditional adverbial subordinators	0.22	0.38	0.13	0.25	0.06
Conjuncts	0.27	0.41	0.20	0.21	0.05
Contractions	0.04	0.31	0.00	0.31	0.07
Demonstratives	0.82	1.17	0.61	0.56	0.14

Demonstrative pronouns	0.43	0.58	0.24	0.34	0.09
Discourse particles	0.03	0.08	0.01	0.07	0.02
Downtoners	0.24	0.31	0.16	0.15	0.03
Emphatics	0.47	0.60	0.23	0.37	0.07
Existential there	0.24	0.32	0.07	0.25	0.06
First person pronouns	0.73	1.99	0.17	1.82	0.53
Gerunds	0.47	0.59	0.36	0.23	0.06
Hedges	0.00	0.01	0.00	0.01	0.00
Indefinite pronouns	0.04	0.08	0.02	0.06	0.02
Attributive adjectives	7.24	7.89	6.46	1.43	0.33
Necessity modals	0.30	0.44	0.14	0.30	0.07
Total other nouns	26.13	30.46	22.97	7.49	1.58
Nominalizations	3.52	4.33	2.86	1.47	0.40
Other adverbial subordinators	0.23	0.36	0.15	0.21	0.05
Agentless passives	1.24	1.66	0.92	0.74	0.15
Past participial clauses	0.10	0.28	0.04	0.24	0.06
Perfect aspect	1.18	1.54	0.87	0.67	0.17
Phrasal coordination	0.97	1.20	0.73	0.47	0.11
Total prepositional phrases	11.52	12.62	10.90	1.72	0.40
Pied-piping relative clauses	0.08	0.13	0.04	0.09	0.02
Pronoun it	1.21	1.45	0.83	0.62	0.14
Place adverbials	0.31	0.39	0.18	0.21	0.05
Possibility modals	0.52	0.67	0.42	0.25	0.06
Predicative adjectives	0.65	0.83	0.45	0.38	0.08
Present participial clauses	0.17	0.22	0.11	0.11	0.03
Private verbs	0.96	1.12	0.76	0.36	0.09
Predictive modals	0.56	0.71	0.38	0.33	0.07
Pro-verb do	0.09	0.20	0.04	0.16	0.03
Public verbs	0.64	1.58	0.44	1.14	0.22
Total adverbs	2.95	3.48	2.24	1.24	0.26
Sentence relatives	0.11	0.16	0.05	0.11	0.03
Seem|appear	0.10	0.24	0.03	0.21	0.04
Split auxiliaries	0.48	0.64	0.38	0.26	0.07
Split infinitives	0.03	0.07	0.00	0.07	0.02
Second person pronouns	0.04	0.16	0.00	0.16	0.05
Stranded preposition	0.06	0.12	0.04	0.08	0.02
Suasive verbs	0.41	0.56	0.29	0.27	0.07
Synthetic negation	0.24	0.38	0.15	0.23	0.06
That adjective complements	0.06	0.09	0.02	0.07	0.02
Subordinator that deletion	0.16	0.30	0.05	0.25	0.05
That verb complements	0.35	0.58	0.21	0.37	0.07

Time adverbials	0.39	0.51	0.29	0.22	0.05
Infinitives	1.93	2.24	1.58	0.66	0.18
That relative clauses on object position	0.20	0.27	0.14	0.13	0.03
Third person pronoun	1.60	2.95	1.02	1.93	0.55
That relative clauses on subject position	0.22	0.37	0.08	0.29	0.08
Past tense	2.44	4.37	1.72	2.65	0.56
Present tense	5.02	6.01	2.86	3.15	0.68
WH-clauses	0.04	0.08	0.01	0.07	0.02
WH relative clauses on object position	0.04	0.11	0.01	0.10	0.02
Direct WH-questions	0.05	0.11	0.02	0.09	0.02
WH relative clauses on subject position	0.19	0.36	0.07	0.29	0.06
Past participial WHIZ deletion relatives	0.22	0.30	0.13	0.17	0.04
Present participial WHIZ deletion relatives	0.31	0.37	0.26	0.11	0.03
Analytic negation	0.63	0.88	0.48	0.40	0.11

Source: Authors

Furthermore, this study presents the statistical results in Table 4.2, which display the mean dimension scores across the decades of PENE. The table provides a comprehensive overview of how these mean dimension scores have evolved over time in PENE.

Table 4.2 Descriptive Statistics of the 88 MD Analysis of Editorials Across Decades

Register	Sub-Register	Year	Dimensions	Mean	Min	Max	SD
			D 1	-13.11	-16.31	-10.15	1.93
			D 2	0.94	-0.52	3.09	1.01
Written	Editorials	1995-2004	D 3	5.68	4.13	8.07	1.13
			D 4	1.09	0.07	3.35	1.00
			D 5	2.09	0.93	3.53	0.82
				Mean	**Min**	**Max**	**SD**
			D 1	-14.47	-16.58	-12.95	0.93
			D 2	-0.71	-1.10	0.05	0.36
Written	Editorials	2005-2014	D 3	5.19	4.10	6.12	0.78
			D 4	0.80	-0.32	1.36	0.61
			D 5	2.50	1.46	3.33	0.62
				Mean	**Min**	**Max**	**SD**
			D 1	-13.14	-14.32	-12.13	0.85
			D 2	-0.03	-0.60	0.87	0.53
Written	Editorials	2015-2021	D 3	4.31	3.76	4.92	0.42
			D 4	1.71	0.97	2.75	0.68
			D 5	2.88	2.48	3.83	0.50

The table above presents the statistical measures of editorials in three different time periods: 1995-2004, 2005-2014, and 2015-2021, focusing on the sub-register of editorials in the written

register. Dimensions D1, D2, and D5 demonstrate relatively consistent mean values across the three time periods. However, there have been notable changes in the means of dimensions D3 and D4 over time.

4.1 Analysis of Variance of Editorials Across Decades

Table 4.3 below presents the ANOVA results comparing the language of Pakistan across the decades of editorials on five factors studied through the 1988 MD analysis.

Table 4.3 Comparison across the pairs of decades of PENE of the 1988 MD Analysis

Sub-Category	Comparison/Dimensions	Source of Variation	SS	df	MS	F	P-value	F crit
	1995-04 vs. 2005-14	Between Groups	0.79	1.00	0.79	0.02	0.91	5.32
Editorials	1995-04 vs. 2015-21	Between Groups	0.29	1.00	0.29	0.01	0.94	5.32
	2005-14 vs. 2015-21	Between Groups	0.12	1.00	0.12	0.00	0.96	5.32

The table above indicates that there are no statistically significant differences among the following decade pairs of editorials: 1995-04 vs. 2005-14, 1995-04 vs. 2015-21, and 2005-14 vs. 2015-21, as the significance value is greater than 0.05.

Table 4.4 ANOVA results of PENE on Five Dimensions of the 88 MD Analysis

Dimensions	Values of Sig. (p-value)		
	1995-04 vs. 2005-14	1995-04 vs. 2015-21	2005-14 vs. 2015-21
Dimension 1	0.04	0.02	0.03
Dimension 2	0.00	0.00	0.00
Dimension 3	0.65	0.00	0.00
Dimension 4	0.02	0.25	0.25
Dimension 5	0.00	0.45	0.45

The table above shows the results of the statistical comparisons among the decades of editorials (i.e., 1995-04 vs. 2005-14, 1995-04 vs. 2015-21, and 2005-14 vs. 2015-21) of DCPE across the five dimensions studied through the 1988 MD analysis.

On D1, there is a statistically significant difference among the comparisons of the decades of editorials, with a significance value less than 0.05. On D2, there is also a statistically significant difference among the comparisons of the decades of editorials, with a significance value less than 0.05. On D3, there is a statistically significant difference among some of the

comparisons of the decades of editorials (i.e., 1995-04 vs. 2015-21, and 2005-14 vs. 2015-21), with a significance value less than 0.05. However, no statistically significant difference exists between the comparisons of the decades (i.e., 1995-04 vs. 2005-14) of DCPE on D3, with a significance value greater than 0.05. On D4, there is a statistically significant difference between some of the comparisons of the decades of editorials (i.e., 1995-04 vs. 2005-14) of DCPE, with a significance value less than 0.05. However, no statistically significant difference exists among the comparisons of the decades (i.e., 1995-04 vs. 2015-21, and 2005-14 vs. 2015-21) of DCPE on D4, with a significance value greater than 0.05. On D5, there is a statistically significant difference between some of the comparisons of the decades of editorials (i.e., 1995-04 vs. 2005-14) of DCPE, with a significance value less than 0.05. However, no statistically significant difference exists among the comparisons of the decades (i.e., 1995-04 vs.

2015-21, and 2005-14 vs. 2015-21) of DCPE on D5, with a significance value greater than 0.05.

Overall, the ANOVA results reveal varying degrees of linguistic variation across the decades of editorials in DCPE, suggesting that certain dimensions have undergone significant changes over time while others have remained relatively consistent.

4.2 Comparison of Decades of Editorials Across Five Dimensions

To facilitate a comparison of the linguistic differences in editorials across decades, Figure 4.1 presents a visual representation of how editorials, as a sub-register of the written category, vary on five textual dimensions across the decades: 1995-2004, 2005-2014, and 2015-2021. The figure offers a comprehensive comparative analysis of the variations observed in the five textual dimensions over time.

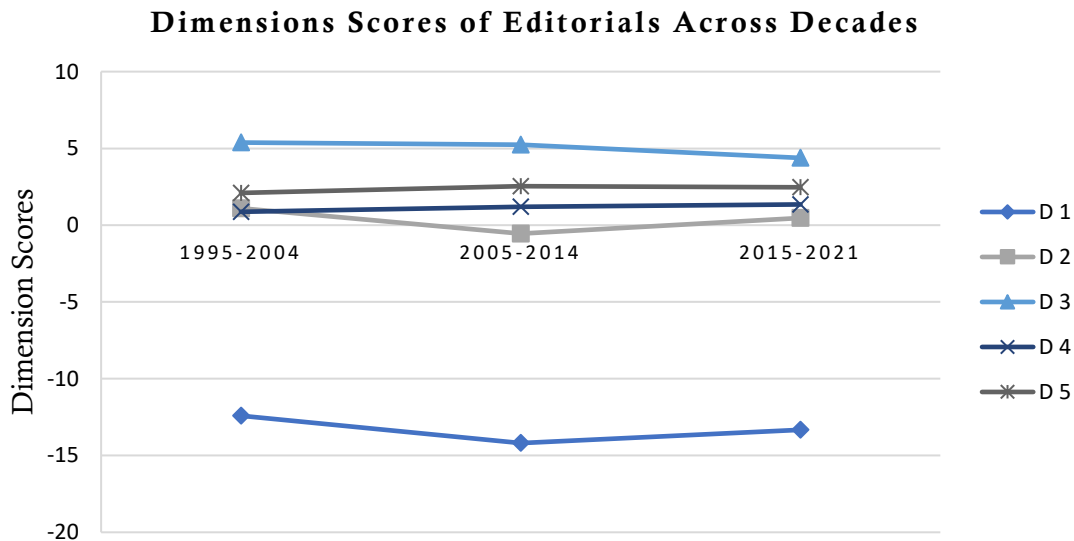**Figure 4.1 Comparison of Five Dimensions Scores of Editorials Across Decades**

Figure 4.5 Mean Scores of Dimensions for Editorials and Five Genres by Biber (1988)

Involved	Narrative	Explicit	Overtly Argumentative	Abstract
25	8	8	8	8
20	6	6	6	6
		Editorials (1995-2004) Editorials (2005-2014) Editorials (2015-2021) Press Reviews Academic Prose		Academic Prose
15 — Press Reportage	4	4	4	4 — Editorials (2015-2021) Editorials (2005-2014) Editorials (1995-2004)
		Press Reportage	Press editorials	
10	2	2	2	2
		Press editorials	Editorials (2015-2021) Editorials (1995-2004)	
5	1	1	1	1
	Editorials (1995-2004) Press Reportage		Editorials (2005-2014)	Press Reviews Press Reportage Press editorials
0	0	0	0	0
Broadcasts	Editorials (2015-2021) Editorials (2005-2014) Press editorials	Press Reportage	Academic Prose Press Reportage	
-5	-1	-1	-1	-1
	Press Reviews			
-10 — Press editorials	-2	-2	-2	-2 — Broadcasts

Informational		Non-Narrative		Dependent Reference	Not Overtly Argumentative		Non-Abstract
		Academic Prose				Press Reviews	
		Broadcasts	-4		-4		-4
Editorials (1995-2004) Editorials (2015-2021) Editorials (2005-2014)							
-15	-3						
Press Reviews						Broadcasts	
-20	-6		-6		-6		-6
-25	-8		-8	Broadcasts -8	-8		-8

To compare editorials with other registers, this study categorised the decades 1995-2004, 2005-2014, and 2015-2021 as "informational" on D1 due to the prevalence of negative co-occurring linguistic features. These decades exhibit similarities with press editorials and press reviews, as studied by Biber (1988). Additionally, the decade 1995-2004 is classified as "narrative" on D2 due to the higher score of positive co-occurring linguistic features, resembling press reportage studied by Biber (1988). Conversely, the decades 2005-2014 and 2015-2021 are categorized as "non-narrative" on D2 due to the higher score of negative co-occurring linguistic features, similar to press editorials and press reviews studied by Biber (1988). Across all the decades (1995-2004, 2005-2014, and 2015-2021), there is a consistent presence of "explicit discourse" on D3 due to the abundance of positive co-occurring linguistic features, similar to press reviews and academic prose as studied by Biber (1988). Furthermore, all the decades exhibit an "overtly argumentative" nature on D4, attributed to the presence of positive linguistic features. Specifically, the decades 1995-2004 and 2015-2021 show similarity with press editorials studied by Biber (1988), while 2005-2014 aligns with academic prose and press reviews also studied by Biber (1988). Finally, all the decades display an "abstract" style on D5 due to the presence of positive linguistic features, similar to academic prose as studied by Biber (1988). To illustrate these co-occurring linguistic features, a textual example has been extracted from the diachronic corpus of PENE.

Text (Extracted from Editorials):

Shoaib Malik 's tenure as captain of the Pakistan cricket team was never secure from **day** one. He became skipper by default when Younis Khan turned down the job in the wake of the World Cup fiasco in 2007. Many said Malik did not merit automatic selection in the Test team, and as such would find it difficult to and the respect of senior players. To be fair he tried, and this **paper** wished him well when he took over, but his side couldn't hold its own against quality opposition.

Table 4.6 Factor Loadings Based on the 88 MD Analysis Across Editorials

Dimension 1:
Involved vs. Informational Production

Positive Features	Scores
Split infinitives	5.00
Sentence relatives	2.43
Total other nouns	2.27
Average word length	1.04
Direct WH-questions	0.75
Type-token ratio	0.69
Attributive adjectives	0.65
Total prepositional phrases	0.55
Pronoun it	0.45
Downtoners	0.39
Existential there	0.32

Negative Features

Possibility modals	-0.37
Causative adverbial subordinators	-0.38
Discourse particles	-0.41
WH-clauses	-0.42
Demonstrative pronouns	-0.42
Hedges	-0.43
Subordinator that deletion	-0.43
Analytic negation	-0.45
Emphatics	-0.46
Indefinite pronouns	-0.49
Stranded preposition	-0.51
Amplifiers	-0.6
Pro-verb do	-0.61
Second person pronouns	-0.69
Contractions	-0.71
First person pronouns	-0.78
Present tense	-0.8
Private verbs	-0.81
Be as main verb	-1.27
Independent clause coordination	(-0.07)

Dimension 2:
Narrative vs. Nonnarrative Concerns

Positive Features	Scores
Perfect aspect	0.73

Dimension 3:
Explicit vs. Situation Dependent Reference

Positive Features	Scores
Phrasal coordination	2.34
That relative clauses on subject position	2.24
Nominalizations	1.06
Predicative adjectives	0.76
Concessive adverbial subordinators	0.57
Pied-piping relative clauses	0.39

Negative Features

Place adverbials	-0.37
Time adverbials	-0.43
WH relative clauses on object position	-0.6
Total adverbs	-2.05
WH relative clauses on subject position	(-0.30)

Dimension 4:
Overt Expression of Argumentation

Positive Features	Scores
Infinitives	0.83
Necessity modals	0.54
Suasive verbs	0.51
Predictive modals	-0.09

Negative Features

Split auxiliaries	-0.41
Conditional adverbial subordinators	(-0.29)

Dimension 5:
Abstract vs. Non-Abstract Style

Positive Features	Scores
Conjuncts	0.95
Other adverbial subordinators	1.17
By-passives	0.61
Agentless passives	0.54
Past participial clauses	2.23

Negative Features

Past participial WHIZ deletion relatives	-0.35

Synthetic negation	0.72
Present participial clauses	0.46
Negative Features	
Past tense	-0.57
Third person pronoun	-0.72
Public verbs	(-0.29)

The table provided offers a comprehensive overview of the positive and negative features across different textual dimensions in the 88 MD analysis of the editorials within the diachronic corpus of PE. These linguistic features, including those mentioned in parentheses, work together to achieve a common communicative objective.

Table 4.7 Factor Loading of PENE across Decade 1995-2004

Dimension 1		Dimension 3	
Positive Features	**Scores**	**Positive Features**	**Scores**
Split infinitives	5.00	Phrasal coordination	2.57
Sentence relatives	2.08	That relative clauses on subject position	1.08
Total other nouns	1.96	Nominalizations	0.98
Average word length	0.99	Predicative adjectives	0.61
Direct WH-questions	0.91	Pied-piping relative clauses	0.37
Type-token ratio	0.83	Concessive adverbial subordinators	0.31
Attributive adjectives	0.60	**Negative Features**	**Scores**
Total prepositional phrases	0.55	Place adverbials	-0.37
Downtoners	0.49	Time adverbials	-0.44
Pronoun it	0.48	WH relative clauses on object position	-0.50
Negative Features	**Scores**	Total adverbs	-2.07
Possibility modals	-0.35	**Dimension 4**	
WH-clauses	-0.39	**Positive Features**	**Scores**
Analytic negation	-0.39	Infinitives	0.69
Discourse particles	-0.40	Necessity modals	0.54
Demonstrative pronouns	-0.42	Suasive verbs	0.48
Hedges	-0.42	Predictive modals	0.35
Indefinite pronouns	-0.42	**Negative Features**	**Scores**
Causative adverbial subordinators	-0.44	Split auxiliaries	-0.40
Subordinator that deletion	-0.46	**Dimension 5**	
Stranded preposition	-0.50	**Positive Features**	**Scores**
Amplifiers	-0.53	Conjuncts	0.95
Emphatics	-0.54	Other adverbial subordinators	0.84
Pro-verb do	-0.55	By-passives	0.73
First person pronouns	-0.60	Agentless passives	0.56
Second person pronouns	-0.66	Past participial clauses	1.69
Contractions	-0.68	**Negative Features**	**Scores**

Private verbs	-0.80	Past participial WHIZ deletion relatives	-0.38
Present tense	-0.98		
Be as main verb	-1.39		
Dimension 2			
Positive Features	**Scores**		
Synthetic negation	0.86		
Perfect aspect	0.68		
Present participial clauses	0.45		
Negative Features	**Scores**		
Past tense	-0.53		
Third person pronoun	-0.55		

4.3 Interpretation of Dimensions for the Decade 1995-2004

Dimension 1: Involved vs. Informational Production

Dimension 1 indicates a strong preference for "Informational Production" over an "Involved" style in the text. The highly negative mean score suggests that the text focuses on conveying information objectively and concisely rather than adopting a personal or expressive approach. Features like split infinitives, sentence relatives, and other nouns contribute to this informational style.

Dimension 2: Narrative vs. Nonnarrative Concerns

Dimension 2 reveals a slight inclination towards "Nonnarrative Concerns" in the text. The positive mean score suggests that while the text is not heavily focused on narrative elements, it still exhibits some features related to a descriptive or explanatory style. Synthetic negation and perfect aspect are examples of this nonnarrative focus.

Dimension 3: Explicit vs. Situation Dependent Reference

Dimension 3 indicates a strong emphasis on "Explicit Reference" in the text. The significantly positive mean score suggests that the text employs explicit and precise referencing techniques, enhancing clarity and specificity. Phrasal coordination, that relative clauses on subject position, and nominalizations contribute to this explicit reference style.

Dimension 4: Overt Expression of Argumentation

Dimension 4 shows a moderate tendency towards "Overt Expression of Argumentation" in the text. The positive mean score suggests that while the text does include some argumentative elements, it does not overwhelmingly focus on persuasive or forceful language. Features like infinitives, necessity modals, and suasive verbs contribute to this moderate argumentative style.

Dimension 5: Abstract vs. Non-Abstract Style

Dimension 5 indicates a preference for a somewhat "Abstract Style" in the text. The positive mean score suggests that the text includes features related to abstract and conceptual language usage. Past participial clauses, conjuncts, and other adverbial

subordinators contribute to this somewhat abstract style.

Table 4.8 Factor Loading of PENE across Decade 2005-2014

Dimension 1		Dimension 3	
Positive Features	**Scores**	**Positive Features**	**Scores**
Split infinitives	5.00	That relative clauses on subject position	2.96
Total other nouns	2.62	Phrasal coordination	2.44
Sentence relatives	2.30	Nominalizations	1.05
Average word length	1.10	Predicative adjectives	0.76
Type-token ratio	0.84	Concessive adverbial subordinators	0.73
Attributive adjectives	0.73	Pied-piping relative clauses	0.45
Direct WH-questions	0.45	**Negative Features**	**Scores**
Pronoun it	0.39	Time adverbials	-0.45
Downtoners	0.36	WH relative clauses on subject position	-0.57
Existential there	0.33	WH relative clauses on object position	-0.61
Negative Features	**Scores**	Total adverbs	-2.07
Independent clause coordination	-0.34	**Dimension 4**	
Discourse particles	-0.42	**Positive Features**	**Scores**
Subordinator that deletion	-0.43	Infinitives	0.80
Hedges	-0.43	Necessity modals	0.48
Analytic negation	-0.44	Suasive verbs	0.45
Emphatics	-0.44	**Negative Features**	**Scores**
Possibility modals	-0.46	Conditional adverbial subordinators	-0.40
WH-clauses	-0.50	Split auxiliaries	-0.43
Indefinite pronouns	-0.52	Predictive modals	-0.44
Stranded preposition	-0.53	**Dimension 5**	
Pro-verb do	-0.63	**Positive Features**	**Scores**
Amplifiers	-0.65	Conjuncts	0.97
Second person pronouns	-0.70	Other adverbial subordinators	1.26
Contractions	-0.72	By-passives	0.53
Present tense	-0.73	Agentless passives	0.52
Private verbs	-0.83	Past participial clauses	1.88
First person pronouns	-0.89	**Negative Features**	**Scores**
Be as main verb	-1.19	Past participial WHIZ deletion relatives	-0.32
Dimension 2			
Positive Features	**Scores**		
Perfect aspect	0.53		
Synthetic negation	0.43		
Present participial clauses	0.42		
Negative Features	**Scores**		
Public verbs	-0.45		
Past tense	-0.54		
Third person pronoun	-0.75		

4.4 Interpretation of Dimensions for the Decade 2005-2014

Dimension 1: Involved vs. Informational Production

Dimension 1 indicates a strong preference for "Informational Production" over an "Involved" style in the text. The highly negative mean score suggests that the text predominantly focuses on presenting objective information rather than adopting a personal or expressive approach. Features like split infinitives, sentence relatives, and total other nouns contribute to this informational style.

Dimension 2: Narrative vs. Nonnarrative Concerns

Dimension 2 shows a slight preference for "Nonnarrative Concerns" in the text. The negative mean score suggests that while the text is not heavily narrative-focused, it does exhibit some elements related to a descriptive or explanatory style. Features like synthetic negation and perfect aspect contribute to this nonnarrative tendency.

Dimension 3: Explicit vs. Situation Dependent Reference:

Dimension 3 indicates a strong emphasis on "Explicit Reference" in the text. The significantly positive mean score suggests that the text utilizes explicit and precise referencing techniques to enhance clarity and specificity. Phrasal coordination, that relative clauses on subject position, and nominalizations contribute to this explicit reference style.

Dimension 4: Overt Expression of Argumentation

Dimension 4 shows a moderate inclination towards "Overt Expression of Argumentation" in the text. The positive mean score indicates that the text does include some argumentative elements but is not excessively focused on persuasive or forceful language. Features like infinitives, necessity modals, and suasive verbs contribute to this moderate argumentative style.

Dimension 5: Abstract vs. Non-Abstract Style

Dimension 5 suggests a preference for a somewhat "Abstract Style" in the text. The positive mean score implies that the text includes features related to abstract and conceptual language usage. Past participial clauses, conjuncts, and other adverbial subordinators contribute to this somewhat abstract style.

Table 4.9 Factor Loading of PENE across Decade 2015-2021

Dimension 1		Dimension 3	
Positive Features	**Scores**	**Positive Features**	**Scores**
Split infinitives	5.00	That relative clauses on subject position	2.87
Sentence relatives	3.11	Phrasal coordination	1.86
Total other nouns	2.23	Nominalizations	1.19
Average word length	1.04	Predicative adjectives	0.92
Attributive adjectives	0.60	Concessive adverbial subordinators	0.45
Existential there	0.54	**Negative Features**	**Scores**
Pronoun it	0.47	Time adverbials	-0.36
Downtoners	0.38	WH relative clauses on subject position	-0.45
Direct WH-questions	0.34	WH relative clauses on object position	-0.72

Type-token ratio	0.31	Total adverbs	-2.00
Negative Features	**Scores**	**Dimension 4**	
Independent clause coordination	-0.31	**Positive Features**	**Scores**
Possibility modals	-0.32	Infinitives	1.05
Causative adverbial subordinators	-0.36	Necessity modals	0.64
Emphatics	-0.37	Suasive verbs	0.58
Subordinator that deletion	-0.37	**Negative Features**	**Scores**
Discourse particles	-0.41	Split auxiliaries	-0.34
Hedges	-0.44	Conditional adverbial subordinators	-0.39
Analytic negation	-0.49	**Dimension 5**	
Stranded preposition	-0.51	**Positive Features**	**Scores**
Indefinite pronouns	-0.54	Conjuncts	0.93
Amplifiers	-0.63	Other adverbial subordinators	1.52
Present tense	-0.64	By-passives	0.54
Pro-verb do	-0.66	Agentless passives	0.53
Second person pronouns	-0.71	Past participial clauses	3.49
Contractions	-0.72	**Negative Features**	**Scores**
Private verbs	-0.78	no negative feature found	
First person pronouns	-0.86		
Be as main verb	-1.23		
Dimension 2			
Positive Features	**Scores**		
Perfect aspect	0.99		
Present participial clauses	0.54		
Synthetic negation	0.51		
Negative Features	**Scores**		
Past tense	-0.63		
Third person pronoun	-0.78		

4.5 Interpretation of Dimensions for the Decade 2015-2021

Dimension 1: Involved vs. Informational Production

Dimension 1 indicates a strong preference for "Informational Production" over an "Involved" style in the text. The highly negative mean score suggests that the text primarily focuses on presenting objective information rather than adopting a personal or expressive approach. Features like split infinitives, sentence relatives, and total other nouns contribute to this informational style.

Dimension 2: Narrative vs. Nonnarrative Concerns

Dimension 2 shows a near-neutral stance between "Narrative" and "Nonnarrative Concerns" in the text. The mean score closes to zero suggests that the text does not strongly prioritize either narrative storytelling or descriptive/explanatory elements. It might indicate a balanced use of both narrative and nonnarrative features.

Dimension 3: Explicit vs. Situation Dependent Reference

Dimension 3 indicates a strong emphasis on "Explicit Reference" in the text. The significantly positive mean score suggests that the text extensively utilizes explicit and precise referencing techniques to enhance clarity and specificity. Phrasal coordination, that relative clauses on subject position, and nominalizations contribute to this explicit reference style.

Dimension 4: Overt Expression of Argumentation

Dimension 4 indicates a moderate inclination towards "Overt Expression of Argumentation" in the text. The positive mean score suggests that the text includes some argumentative elements but does not overwhelmingly focus on persuasive or forceful language. Features like infinitives, necessity modals, and suasive verbs contribute to this moderate argumentative style.

Dimension 5: Abstract vs. Non-Abstract Style

Dimension 5 suggests a preference for a somewhat "Abstract Style" in the text. The positive mean score implies that the text includes features related to abstract and conceptual language usage. Past participial clauses, conjuncts, and other adverbial subordinators contribute to this somewhat abstract style.

5. Conclusion

In conclusion, this research successfully investigated the diachronic linguistic variation of the language of Pakistani English newspaper editorials (PENE) using the 88 MDA framework. The study's primary objective was to explore the evolution of PENE over time and compare it with variations observed in Biber's (1988) registers. The analysis revealed significant differences in

linguistic features across different decades, shedding light on the development of PENE over the years.

The findings from the 88 MD analysis provided valuable insights into the textual dimensions of PENE across the decades. Dimension 1 indicated a strong preference for an "Informational Production" style, Dimension 2 showed a slight inclination towards "Nonnarrative Concerns," Dimension 3 emphasized "Explicit Reference," and Dimension 4 displayed a moderate tendency towards "Overt Expression of Argumentation." Moreover, Dimension 5 pointed towards a preference for a somewhat "Abstract Style" in the text.

Comparing the linguistic features of PENE with prior research on specific registers, this study showcased its uniqueness and evolution. It identified variations in co-occurring linguistic features across different decades, contributing to a comprehensive understanding of PENE's linguistic development.

Furthermore, the statistical analysis conducted in Figure 4.6 confirmed that certain decades of editorials within the written category showed statistically significant differences on some textual dimensions. However, no significant differences were observed among specific decade pairs, indicating stability in linguistic features over certain time periods.

The consistent mean values of Dimensions D1, D2, and D5 across the decades suggested a certain level of stability in PENE's language characteristics in those aspects. However, there were notable changes in the means of Dimensions D3 and D4 over time, indicating shifts in the explicit reference and argumentative styles in PENE editorials.

In conclusion, this study's findings contribute to the understanding of the diachronic linguistic

development of PENE and its distinctiveness from other registers studied by Biber (1988). The research sheds light on the evolution of PENE over the years, providing a foundation for further investigations into the dynamic nature of the language. As a corpus-based MD analysis, this study highlights the significance of register variation and linguistic dimensions in understanding language evolution, thus opening avenues for future research in the field.

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