Use of Adverbs across Science and Social Science A Corpus Based Study of Pakistani Research Articles

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ABSTRACT
This study explores the usage of adverbs in Pakistani research articles across the disciplines of science and social science. Adverbs play an important role in conveying precise meaning and providing a nuanced description of actions and processes. By analyzing a corpus of Pakistani research articles, this study aims to examine the frequency distribution and semantic categorization of adverbs within the scientific and social science discourse. The mix method is thoroughly used in this investigation. Multidimensional analysis tagger 1.3.3 and Antconc 4.2.2 are utilized for tagging and counting, normalization, and dispersion of frequencies in a specified area. The corpus analysis will reveal the adverbial usage in each discipline and shed light on potential variations in their usage. Furthermore, this research investigates how adverbs contribute to the overall clarity, effectiveness, and development of academic writings and the expression of authorial points of view in scientific and social science writing. The findings of this study will enhance our understanding of the role of adverbs in Pakistani research articles and contribute to the broader field of corpus-based linguistic research.

Key Words: Corpus Analysis, Frequency Distribution, Usage of Adverbs, Semantic Categorization,

INTRODUCTION
English is one of the most significant worldwide languages, which also provides access to vital fields like the science and social sciences. Students who speak English well may be able to contribute to the advancement of their nation. English being a second language around the world has both benefits and drawbacks. People from various language origins may communicate with one another using it. It promotes international trade, diplomacy, and intercultural understanding (Green, 2013). In the global employment market, having a strong command of English is frequently regarded as an asset (Clark, 2009).
Concerns over linguistic variety, language extinction, and the maintenance of regional languages and cultures have been expressed as a result of the dominance of English (Brown, 2012). To encourage multilingualism and provide fair access to linguistic opportunities and resources, efforts have been made (Hudson, 2010).

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(Harmer, 2007) claims that humans use language in many ways: reading, writing, speaking, and listening. These are typically separated into two groups. Receptive skills, such as reading and listening, entail sifting through communication to determine its meaning. The term "productive skills" refers to speaking and writing abilities that call for language acquisition by the students.

Since writing is a useful talent, it has been said that it is the hardest one to learn for language learners. The most important characteristic of writing English is its grammar and structure. Because it is more sophisticated than any other language. Here are some opinions of professionals about grammar:

Grammar is one of the key components of teaching and learning English, in the opinion of (Muhammad et al., 2017). Since grammar is the foundation of learning the English language, everyone must be able to understand it. No one can compose well-formed sentences that belong together if they have not learned grammar. Another way to think about grammar is as a set of rules and guidelines that control how words are formed and used. It includes a number of elements, including syntax (sentence structure), phonology (sounds and pronunciation), semantics (meaning), and pragmatics (language usage in context) (Green, 2013).

Research Background

According to (Swales, 1990; Murray, 2016; & Chen, 2006), writing within a certain academic discipline or area of study is referred to as disciplinary writing. Each subject has its own standards and rules, which are reflected in the structure, tone, terminology, and citation styles used in writing. Academic writing is characterized by a formal, organized style that aims to communicate knowledge in an objective manner (Anwar et al., 2025). Adverbial use in academic writing has been studied by several scholars in a variety of fields and cultural situations. Their research offers insightful information on the usage patterns, purposes, and disciplinary norms of adverbs. Although there is little study explicitly on the use of adverbs in Pakistani research articles, the body of already existed material provides the groundwork for understanding the larger context of adverbial use in academic writing.

Definitions, Meaning, Purpose, and Placement of Adverbs

Adverbs are flexible language constructions that can alter verbs, adjectives, or other adverbs to add details about the way, when, where, how much, and with what confidence something is spoken. Many scholars have offered definitions, studied their meanings, covered their goals, and looked at where they fit into academic writing. The usage of adverbs in academic writings must be understood in the perspective of these components. Adverbs, in the words of (Biber, 1999), are "a grammatical category that provides additional information about the manner, place, time, frequency, degree, and other circumstances of the event or state expressed by a verb, an adjective, or another adverb". This definition emphasizes the variety of data that adverbs may express.

The meaning of adverbs can vary based on their semantic interpretations. Adverbs are categorized into several semantic groups by (Biber, 1999), for example, adverbs of manner, time, frequency, degree, Additive/restrictive, stance, and Linking's. Adverbs of method and time specify the manner in which an action is carried out and the time at which it takes place, respectively. Adverbs of frequency describe how frequently an activity occurs, whereas adverbs of degree describe how intense or extensive an action is. Adverbs of evaluation can be used to express opinions or judgments.

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Statement of the Problem
The effective communication of precise and nuanced information depends heavily on the usage of adverbs in academic writing. However, adverbial use trends and standards might differ among academic fields and cultural situations. To comprehend the unique language practices within this academic community, it is necessary to look at the usage of adverbs throughout the scientific and social science fields in the context of Pakistani research articles. Consequently, the issue that this study attempts to solve is: What are the pattern and variations in the use of adverbs across science and social sciences disciplines in Pakistani research articles?

Hypothesis
The hypothesis suggests that there are differences in adverbial usage in the academic writing of the social sciences and science. As a result of the specific characteristics of the subject matter, techniques, and writing standards, it is suggested that the frequency of adverb usage and the purposes they serve in different disciplines may vary. It is hypothesized that adverbs are employed less frequently in the sciences than in the social sciences. The presentation of factual facts, objectivity, and accuracy are frequently prioritized in scientific writing. As a result, the usage of adverbs of certainty, such as "definitely," "clearly," or "undoubtedly," may be reduced because the emphasis is on factual assertions and the interpretation of facts rather than judgment.

Importance of the Study
This study holds significant importance for several reasons:

Contribution to Linguistics Research: Research on the usage of adverbs in Pakistani research articles in the science and social sciences makes a contribution to linguistics and language studies. It contributes to the corpus of research in the use of adverbial trends, frequency distribution, grammatical functions, and disciplinary rules, notably in the context of Pakistan. The study offers important insights that may be contrasted and compared with results from other linguistic studies carried out in other locales and languages.

Enhancing Academic Writing: Pakistani researchers, students, and teachers can substantially benefit from the understanding of the use of adverbs in the scientific and social science fields. By offering instructions and suggestions for the proper use of adverbs in research articles, the findings of the study can aid in the improvement of academic writing abilities. Researchers can successfully present their points, increase clarity, and raise the overall caliber of their academic writing by following the norms unique to their field.

Facilitating Effective Communication: The findings of the study about the usage of adverbs can improve effective communication among Pakistani academics. Adverbs may be used wisely to explain concepts in a clear and accurate manner, which will increase readers' comprehension and interest. Better information transmission and fruitful academic debates are made possible by researchers' improved ability to articulate their results.

Recognizing Conventions Specific to a Discipline: The comprehension of academic discourse within the scientific and social science disciplines is aided by the discovery of

discipline-specific preferences and trends in the use of adverbs in Pakistani research articles. Researchers can more easily connect their writing with discipline norms and engage with their intended audience by being aware of and following and being aware of these conventions. Additionally, it draws attention to the distinctive features of research writing in Pakistani academia, which deepens our awareness of regional academic norms.

Contextualizing Academic Writing: A corpus-based analysis of Pakistani research articles offers a regional perspective on the use of adverbs. It recognizes the value of researching language use in particular situations as well as the variety of linguistic conventions found in academic groups. This study advance the knowledge of the background for academic writing in Pakistan and inspires future research into the regional differences in language and culture that influences scholarly communication.

Objectives of the Studies
The objectives of this study are as follows:
To examine the frequency of the usage of adverbs in Pakistani research articles across science and social sciences disciplines..
To identify the semantic categorization of adverbs in science and social sciences disciplines in Pakistani research articles.
To provide guidelines and recommendations for clear and effective usage of adverbs in academic writings.

Research Questions
What is the frequency of the usage of adverbs in Pakistani research articles in science and social sciences disciplines?
What are the semantic categorizations of adverbs in science and social science disciplines in Pakistani research articles?
How does the use of adverbs contribute to the overall clarity and effectiveness of academic writing?

Delimitation of the Study
The corpus of 90 Pakistani research articles was used in this study, and it was drawn from the science and social sciences. The six separate fields represented by these research publications are: Botany, Chemistry, Medicine, Linguistics, Psychology, and Sociology. For this study, 15 research papers from each subject that were published in 2022 were used.

LITERATURE REVIEW
Previous Associated Findings
Vakili et al. (2022) have researched adverbials, and they have been categorized and grouped the works of numerous linguists in various ways over time by various syntacticians (Bellert, 1977; Cinque, 1999; Ernst, 2002; Delfitto, 2007) and semanticists (Ernst, 2002; Bonami et al., 2004; Jackendoff, 1972). But each of these investigations was done in a field specific setting. This study's primary objective is to fill this gap by looking into the frequency of the usage of adverbs and their syntactic places. We have planned our study to focus on officially published research articles (RAs) in the two hard sciences of engineering and medicine as well as the soft sciences of literary studies and linguistics in order to achieve this goal. The findings show that 102 adverbs make up the majority of adverbs in literary articles, whereas 39 adverbs make up the majority of adverbs in medical studies. The orientation of each discipline may really be determined

by the frequency of adverbs. When a field of study is fact-based, scholars tend to use factual language rather than descriptive language to describe the real world. Human sciences, on the other hand, make every effort to depict the reality in which people live; hence, they require a more descriptive language to accomplish their goal. In terms of position, the medial position is the most preferred of the eight positions listed by (Quirk et al., 1985). Additionally, the end and initial positions alternately rank second and third in terms of popularity. Adverbs are a particularly complex class of words that need more study overall because of their adaptability and freedom to move about in phrases. Additionally, while choosing which kind of adverbials to use and where to place them, writers should think about the goals of their field.

Hacini et al. (2019) examines the usage of adverbs by second year EFL students at Larbi Ben Mhidi University's English department. The primary research instrument was a corpus analysis of thirty test papers from "written expression" and "linguistics" courses. Three groups of second-year students were randomly chosen for the papers. The data was manually analyzed in terms of frequency, variety, and issues with the usage of adverbs, relying on (Biber's, 1999) classifications of adverbs. The findings showed that second year students used a lot of adverbs in each of their written assignments. They also often use a variety of adverbs. However, it was noted that people continue to struggle with using them correctly. It is proposed that detailed and organized teaching on the proper usage of adverbs is necessary. A collection of issues with the usage of adverbs have been discovered after a thorough semantic and syntactic study of the corpus. Despite the fact that students use a lot of adverbs in their writing, there is a lack of accuracy in how they are used while producing academic documents. The findings demonstrate that students' usage of adverbs varied from three adverbs per paper, or 1.5% as the least amount of adverb use, in the cases of W1 and W2, to thirty (30), or 15.07% as the greatest frequency of adverb use, in the case of W12. According to these figures, all students do employ adverbs in their writing, albeit to varying degrees.

(Yilmaz & Dikilitas, 2017) said that even the most proficient speakers of that language struggle to use adverbs effectively since they need a lot of practice to perfect them (Narita & Sugiura, 2006; Peacock, 2010; Lei, 2012; Leedham & Cai, 2013). 29 students who were studying in the engineering department at a private campus in western Turkey participated in the study, which was done in English. The information was gathered in a lecture hall with 60 seats that comfortably fit 29 pupils. 29 argumentative essays prepared by undergraduate students with intermediate and advanced English language skills served as the study's primary data sources. After counting all of the tokens, the adverbs that were used were identified and subsequently classified into semantic groups. The academic prose section of the LSWE corpus that (Biber et al., 1999) provided was used to compare the frequency rates of each semantic category. The findings of this study have given an in-depth insight into how and to what degree EFL learners utilize adverbs in argumentative essays at various proficiency levels. The aim of this study is to examine the usage of various adverb types by relatively competent EFL learners in their argumentative writings. A set of students who have previously attended an academic writing course are chosen for this project. Using a guided writing exercise in the target language, the data is gathered. By considering how often adverbs are used, the data is quantitatively analyzed. According to the findings, degree adverbs are used by EFL learners more frequently than any other semantic group of adverbs. Additionally, they frequently overuse adverbs and employ inappropriate adverbs in academic writing. It is indicated that there is a need for systematic, explicit teaching of L2 adverbs as well as for increasing learners' understanding of the meanings and purposes of adverbs in L2

writing. The classification of adverbs and

Overview of Academic Writings and Corpus Linguistics

Since multiple studies in second language writing have suggested that learning to write second language academic writing offers obstacles for students and researchers alike, academic discourse has been a key subject of inquiry in applied linguistics. (Flowerdew, 2002) defined four approaches for the study of academic speech, including genre analysis, contrastive rhetoric, ethnographic methods, and corpus-based analysis. While corpus-linguistic methods concentrate on the co-occurrence of certain grammatical and/or lexical components in academic texts, the first three methods related to English for Academic Purposes highlight the situational or cultural context of academic conversation. In other words, corpus linguistics is primarily employed to research the linguistic characteristics of academic conversation. It can highlight and explain the use of terms that are common to the genre. Furthermore, corpus-based research reveals a number of linguistic characteristics that set academic writing apart from other genres. For instance, academic writings have an informative and non-narrative orientation, as demonstrated by (Biber's, 1988) research on the variance between writing and speech

Notion of Adverbs

To effectively and clearly explain your emotions, thoughts, and concepts you must maintain an obvious, clear, simple, and to the point writing style. Adverbs may be a helpful tool to improve your academic writing by adding details about the way, the extent, or the frequency of an action or occurrence. But in order to assure accuracy and prevent verbosity, it's imperative to employ adverbs carefully and with intention. In terms of language and grammar, an adverb is a word that serves to modify or add details to verbs, adjectives, other adverbs, or entire sentences. It enhances the clarity and complexity of language by clarifying or refining the action, character, or event indicated by the term it modifies. Adverbs may communicate a variety of ideas, including style, time, location, frequency, degree, and more, enabling literary writings to express ideas and descriptions in a delicate and precise manner.

RESEARCH METHODOLOGY
Gathering of Data

The researcher uses an organized method to find appropriate articles from journals that satisfy established requirements while doing a disciplined search for papers using Google that describe web-based surveys for data collection. The researcher chooses journals that publish both qualitative and quantitative research, (a) use a peer review system, (b) are regarded and prominent in their respective domains, and (c). The inclusion of high-quality, peer-reviewed research that offers a thorough grasp of web-based surveys for data gathering is ensured by this stringent selection procedure. The researcher assures the inclusion of outstanding pieces from reputable and prominent articles by employing this systematic method of searching. This strategy provides for an in-depth investigation of web-based surveys used for data collection and improves the validity and trustworthiness of the research findings.

Table 3.1 Specifications of Pakistani Research Articles (PRA) across Various Disciplines of Science and Social Sciences

The following table shows the of various Pakistani research articles that were selected with each category representing a unique discipline:

Sr. No.	Discipline	Category
1		Botany
	Science	Chemistry
		Medicine
2		Linguistics
	Social Science	Psychology
		Sociology

Structure of Corpus
The organized structure of corpus, which includes the necessary data, offers an excellent framework for carrying out in-depth analysis of adverbial usage trends across a variety of fields. This methodical strategy makes it easier to get an insightful understanding and aids in a thorough comprehension of adverbs in Pakistani research articles. This corpus hierarchy structure allows for organized and methodical exploration of the collection by academics. The effective extraction of articles based on certain disciplines, journals, or individual papers is made possible by this hierarchical method, enabling detailed investigation and exploration of adverb usage trends in Pakistani research articles.

COLLECTION OF RESEARCH ARTICES ⟶ SELECTION OF RESEARCH ARTICLE ⟶ ANALYSIS OF RESEARCH ARTICLES
Note: Corpus Hierarchy of Pakistani Research Articles
The construction of the corpus from multiple fields in Pakistan improves the conceptual structure of the study and permits a thorough examination of the usage of adverbs in several academic domains. This holistic approach aims to include a wide variety of academic areas and offer an accurate representation of the research carried out across the nation. An in-depth study of adverb usage across diverse fields of knowledge can be conducted through the collection of articles from many different fields.

Population and Sampling
The study population was selected from the fields of science and social science, including a wide range of academic specialties, in order to ensure thorough representation. Also, a telephonic interview was arranged for conducting the answer to the third research question from various (15) visiting English lecturers of two universities, i.e., Qurtuba University of Science and Information Technology, Peshawar Campus, Hayatabad Phase 3, KPK, and Ghazi University, DG Khan, Southern Punjab. A corpus of 90 articles from six different disciplines and fifteen articles from each subject was consequently created, allowing for a complete investigation of adverbial usage in a variety of academic domains.

Table 3.2 Specification of Data across Various Disciplines

Sr.No.	Discipline Abbreviations	Numbers
1	BOT	15
2	CHE	15
3	MED	15
4	LING	15
5	PSYC	15
6	SOC	15
Total	**-**	**90**

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3.6 IMRD Structure

The study included 90 Pakistani articles from six different fields of science and social sciences. A unique list was developed for every section of the research articles, including the introduction, methodology, results, and discussion sections, to make analysis easier. An in-depth understanding of the semantic classification of adverbs within specific parts of science and social science research is provided by this category, which enables a systematic evaluation of adverbial usage patterns throughout various sections of the articles.

Table 3.3 List of Article Section (AS) and Abbreviations

Sr.No.	Article Sections	Abbreviations
1	Introduction	INT
2	Methodology	METH
3	Result and Discussion	RD

The majority of the research articles have been divided into three primary sections: introduction, methodology, and results and discussion. The list that is provided contains the acronyms for each section of the research publications, making it easier to organize and analyze the data.

DATA ANALYSIS

In this chapter, the outcomes of the data analysis are presented with the purpose of addressing the research questions and drawing conclusions. The main goals of this study are to offer answers to the research questions and advance knowledge of the subject field. A mix method (quantitative and qualitative) has been frequently employed throughout the study process to accomplish this. The reliability of the issue is highlighted in each area of the results, which is important for demonstrating the accuracy and correctness of the conclusions. The findings are given in a systematic manner, commencing with a research question that leads the reader to interpret the importance of the results. In order to improve the clarity and coherence of the findings, the study presents them in a systematic way. Because the data are arranged according to the research questions, it is easy for readers to look through the results and understand their significance in relation to the overall context of the study.

Analysis of the Usage of Adverbs in Pakistani Research Article across Science and Social Sciences

What is the frequency of usage of adverbs in Pakistani research articles in science and social sciences disciplines? This research question aims to determine the overall occurrence of adverbs in research articles and identify any variations in frequency between science and social sciences disciplines.

In order to analyze the usage of adverbs, six diverse fields of science (botany, chemistry, and medicine) and social science (linguistics, psychology, and sociology) were chosen. These fields have been selected because they cover a wide variety of topics with considerable variance.

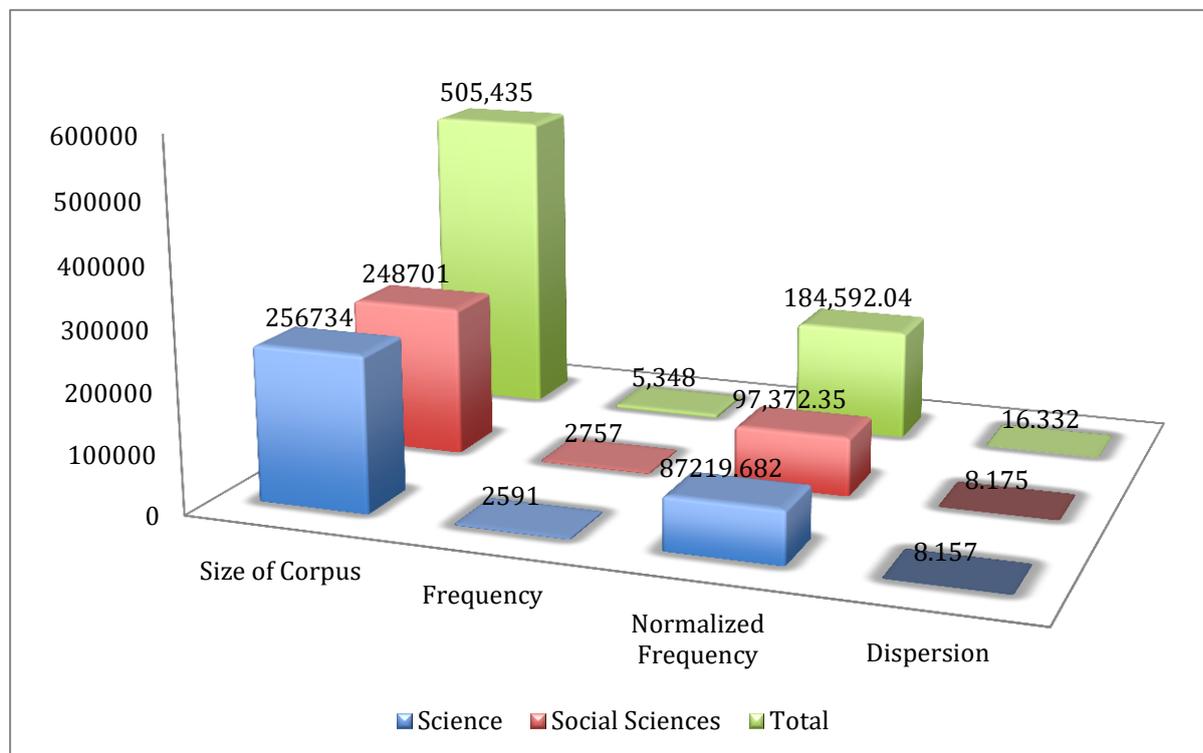**Table 4.1 Usage of Adverbs in Pakistani Research Articles across Science and Social Sciences**

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion

1	Science	255,734	2,591	87,219.682	8.157
2	Social Sciences	248,701	2,757	97,372.354	8.175
Total	**-**	**505,435**	**5,348**	**184,592.04**	**16.332**

Graphical Representation of the Usage of Adverbs in Pakistani Research Articles across Science and Social Sciences

In the presented table and figure, the researchers showcased the overall usage of adverbs in Pakistani research articles across science and social science disciplines. In particular, the results showed that social sciences (2,757) used adverbs more frequently than sciences (2,591). This difference in usage emphasizes the primary goal for choosing these disciplines: to examine and comprehend the distinct usage patterns of adverbs in academic writing.

Usage of Adverbs in Various Disciplines across Science and Social Sciences
This comparison is divided into two parts. In the initial part, the overall frequencies of various disciplines across science, namely botany, Chemistry, and medicine, are shown in the table and figure. On the other hand, the overall frequencies of various disciplines across the social sciences, namely, linguistics, psychology, and sociology, are displayed separately in table and figure form.

Table 4.1.1 Usage of Adverbs in Pakistani Research Articles across Various Disciplines of Science
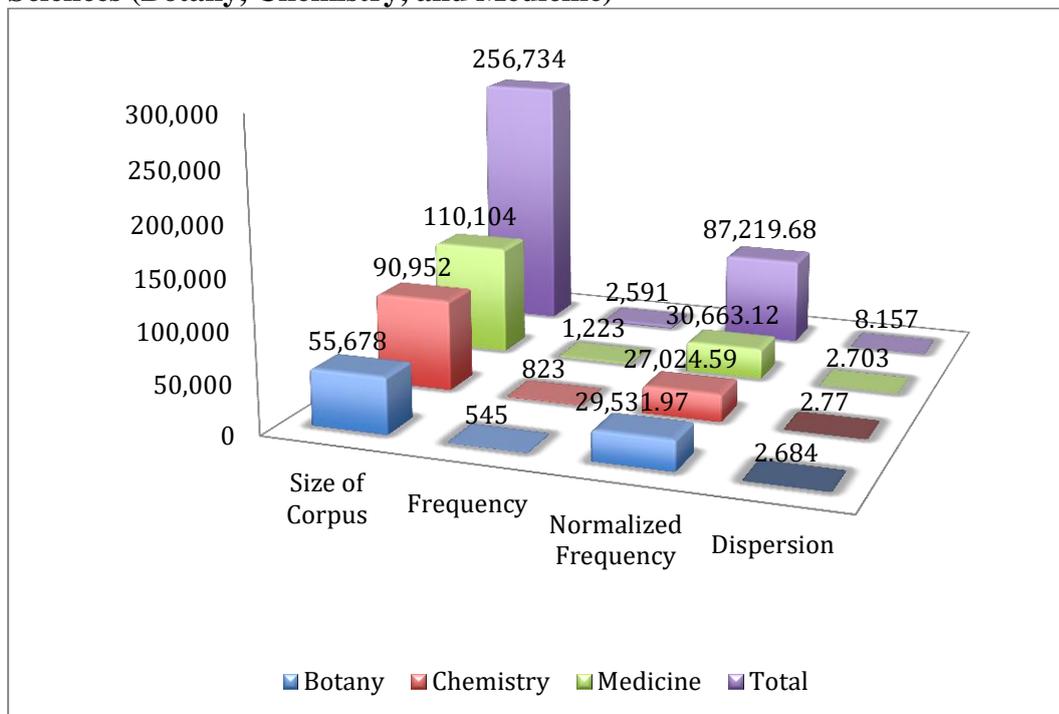
S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
1	Botany	55,678	545	29,531.969	2.684
2	Chemistry	90,952	823	27,024.589	2.77

3	Medicine	110,104	1,223	30,663.124	2.703
Total	**-**	**256,734**	**2591**	**87,219.682**	**8.157**

Graphical Representation of the Usage of Adverbs in Various Disciplines of Sciences (Botany, Chemistry, and Medicine)

Usage of Adverbs in Pakistani Research Articles across Various Disciplines of Social Sciences

In the second part, the overall frequencies of several disciplines across the social sciences, namely, linguistics, psychology, and sociology, are displayed separately. In order to evaluate the usage variations in adverbs throughout several fields, the attached table and graphic give the corresponding counts of adverbs in each field, which are given below.
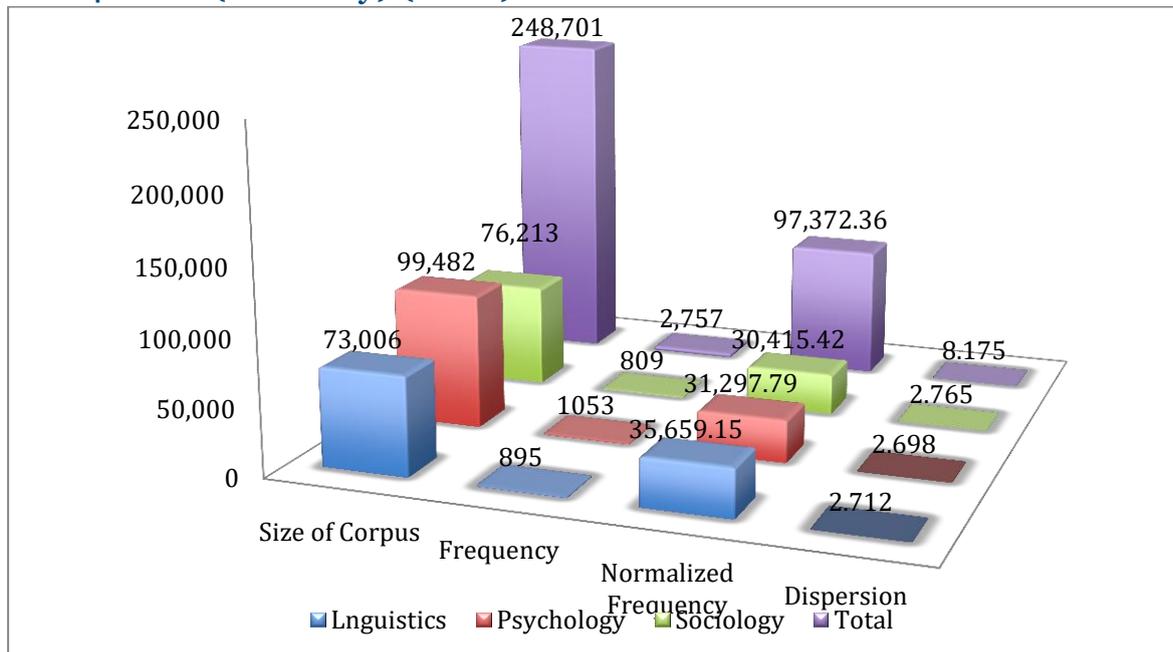
Table 4.1.2 Usage of Adverbs in Pakistani Research Articles across Various Disciplines of the Social Sciences

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
4	Linguistics	73,006	895	35,659.146	2.712
5	Psychology	99,482	1,053	31,297.786	2.698
6	Sociology	76,213	809	30,415.422	2.765
Total	**-**	**248,701**	**2557**	**97372.354**	**8.175**

Graphical Representation of the Usage of Adverbs in Various Disciplines of the Social Sciences (Linguistics, Psychology, and Sociology)

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From the above comparison, the results of various disciplines across science and social science have concluded that social sciences have used a large amount of adverbs, which is very effective and fruitful in academic writings as compared to scientific areas. So the more we use adverbs in our writings, communication, discourse, and so on, the more effective and insightful our language will be.
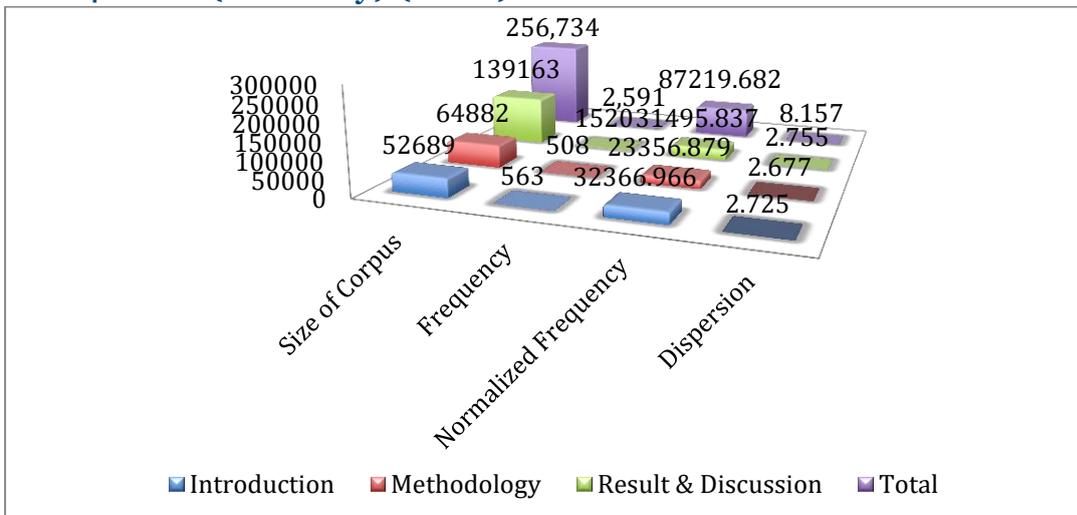
Usage of Adverbs across Various Sections of Pakistani Research Articles in Discipline Science

In this part, first, we analyze the various sections (introduction, Methodology, results, and Discussion) of Pakistani research articles across science, while in the second part; we analyze the various sections of social sciences disciplines, namely Linguistics, Psychology, and sociology. So

Table 4.1.3 Usage of Adverbs across Various Sections of Botany, Chemistry, and Medicine

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
1	Introduction	52,689	563	32366.966	2.725
2	Methodology	64,882	508	23356.879	2.677
3	Result and Discussion	139,163	1520	31495.837	2.755
Total	**-**	**256,734**	**2591**	**87219.682**	**8.157**

Graphical Representation of the Usage of Adverbs in Various Sections of Science Disciplines (Botany, Chemistry, and Medicine)
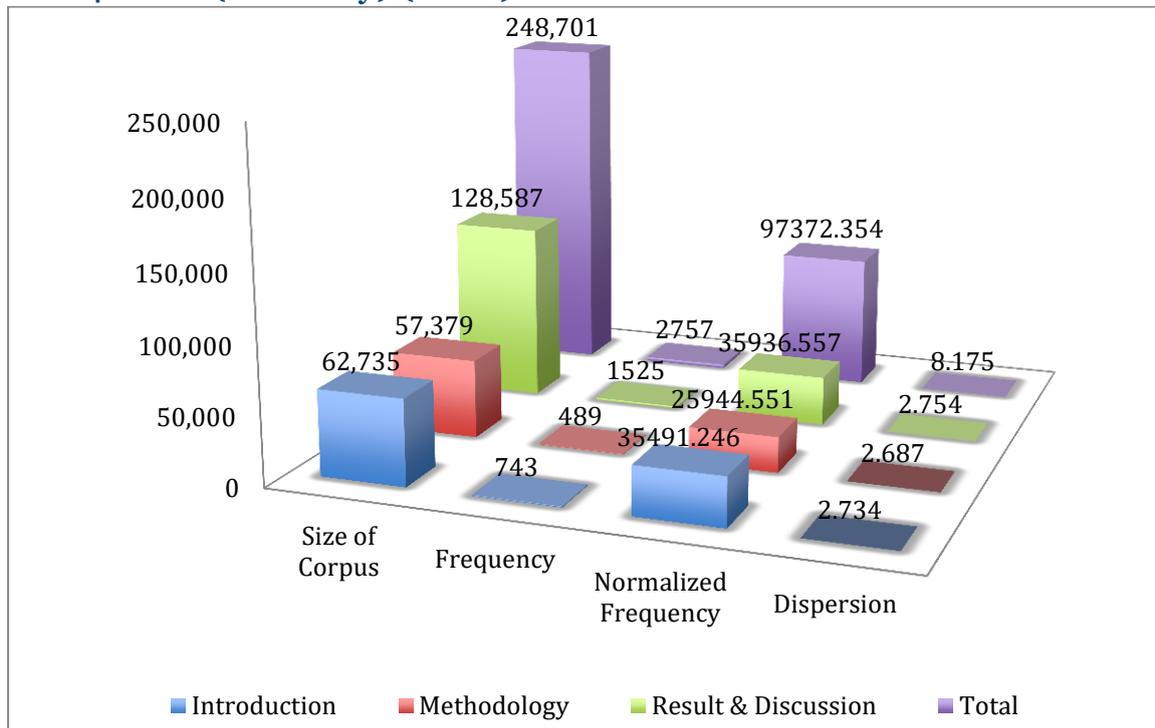
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Usage of Adverbs across Various Sections of Pakistani Research Articles in Discipline Social Science

In the second part, we analyze the various sections (introduction, methodology, result and discussion) of social sciences disciplines, namely Linguistics, Psychology, and sociology.

Tabel 4.1.4 Usage of Adverbs across Various Sections of Linguistics, Psychology, and Sociology

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
1	Introduction	62,735	743	35,491.246	2.734
2	Methodology	57,379	489	25,944.551	2.687
3	Result and Discussion	128,587	1,525	35,936.557	2.754
Total	**-**	**248,701**	**2,757**	**97,372.354**	**8.175**

Graphical Representation of the Usage of Adverbs in Various Sections of the Social Sciences disciplines (Linguistics, Psychology, and Sociology)

Analysis of Semantic Categorization of Adverbs in Pakistani Research Articles across Science and Social Science

What are the semantic categorizations of adverbs in science and social science disciplines in Pakistani research articles? This research question seeks to categorize the usage of adverbs based on their semantic categorization and analyze the frequencies of the most common adverbs in shaping and conveying specific information within science and social science disciplines. According to Biber's (1999) framework for adverbs, the researcher examines the semantic classification of adverbs in the study of the second question. In this procedure, the researcher used MAT 1.3.3, software for tagging the text and Antconc 4.2.2, a concordance programme, to normalize, count, disperse, and create frequency lists for several types of semantic categorization.

Table 4.2 Semantic Classification of Adverbs in Pakistani Research Articles across Various Disciplines of Science (Botany, Chemistry, and Medicine)

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
	Science	256,734			
1	**Adverbs of Place**				
	Here		28	698.782	1.437
	There		123	3,883.366	5.179
	Away		5	105.503	0.333
2	**Adverbs of Time**				
	Now		15	547.380	1.586
	Then		82	3,188.291	3.746
	Again		13	375.072	1.122
	Always		16	370.354	1.129
	Still		35	1,552.980	2.981
	Today		5	211.882	0.333

	Never	15	285.531	0.742
	Ago	6	268.442	0.333
	Ever	6	94.396	0.553
	Just	6	109.789	0.553
	Yesterday	0	0.00	0
	Already	8	288.869	0.622
	Sometimes	19	409.119	0.778
	Yet	12	500.061	1.157
	Latter	5	117.909	0.491
	Often	43	1,376.924	2.842
	Usually	18	691.283	1.981
3	**Adverbs of Manner**			
	Together	5	174.029	0.491
	Significantly	54	1,602.941	2.991
	Well	121	4,356.961	6.177
4	**Adverbs of Degree**			
	Very	56	1,810.668	3.789
	Really	2	28.457	0.333
	Too	8	271.447	0.666
	Quite	6	198.80	0.666
	Exactly	0	0.00	0
	Right	10	309.40	0.982
	Pretty	0	0.00	0
	Real	4	143.491	0.333
	More	204	6,131.802	5.762
	Relatively	8	279.423	0.491
5	**Additive/ Restrictive Adverbs**			
	Only	130	3,699.41	5.313
	Even	30	956.653	2.147
	Also	329	11,110.01	6.772
	Especially	30	920.521	2.761
	Particularly	43	1,729.235	2.935
6	**Stance Adverbs**			
	Probably	4	154.583	0.447
	Like	50	1,686.591	3.933
	Actually	2	66.019	0
	Generally	22	925.742	2.315
	Indeed	9	404.241	1.157
7	**Linking Adverbs**			
	Then	79	3,188.291	3.746
	So	64	1,932.259	3.738
	Though	22	589.213	1.297
	However	167	5,152.124	6.198
	Therefore	74	2,749.273	4.599
	Thus	50	1,693.582	3.715
Total	- 505,434	2,043	67,341.099	101.652

Note: For tagging of corpora, the researcher used MAT version 1.3.3, and for

normalization, dispersion, and counting of frequencies, Antconc version 4.2.2 was used. In the above table, some of the most common adverbs are displayed with their frequencies, and all these adverbs of various categories are taken from (Biber's, 1999) framework for semantic categorization. From the above semantic classification of adverbs, the researcher concludes that the usage of additive and restrictive adverbs, linking adverbs, adverbs of time, and adverbs of degree is mostly utilized in various disciplines of science (Botany, Chemistry, and Medicine) in Pakistani research articles.

Pie Chart of the Highest Frequencies of the Usage of Adverbs in Pakistani Research Articles across Various Disciplines of Science (Botany, Chemistry, and Medicine)
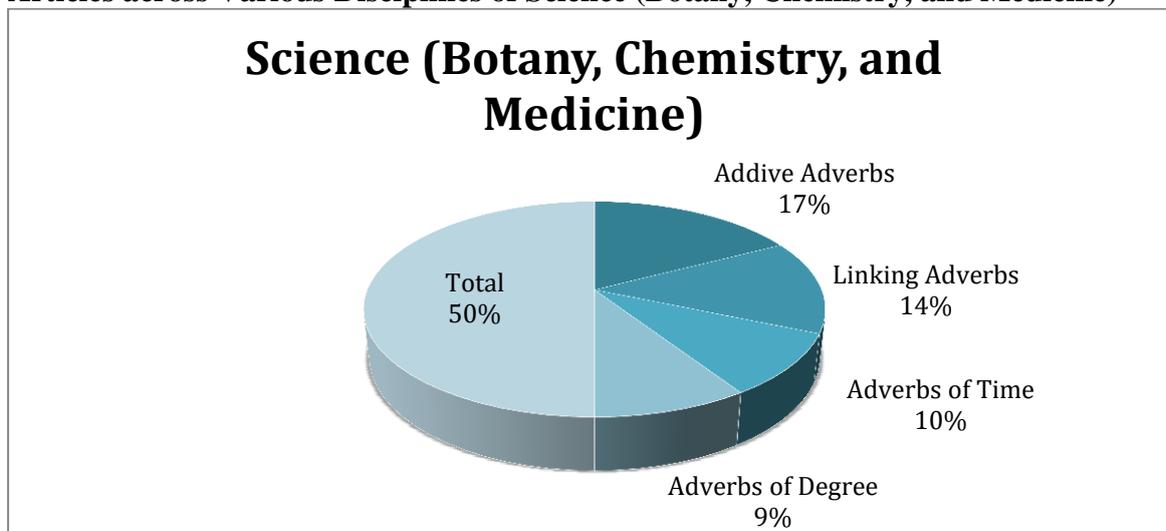

Table 4.2.1 Semantic Classification of Adverbs in Pakistani Research Articles across Various Disciplines of Social Sciences (Linguistics, Psychology, and Sociology)

S.No.	Names	Size of Corpus	Frequency	Norm Freq	Dispersion
	Social Sciences	248,701			
1	Adverbs of Place				
	Here		19	570.886	1.253
	There		189	6,186.125	5.992
	Away		8	238.475	0.333
2	Adverbs of Times				
	Now		17	647.564	1.899
	Then		44	1,842.80	3.898
	Again		19	611.549	1.155
	Always		15	563.056	1.779
	Still		28	852.737	2.37
	Today		4	306.639	0
	Never		10	428.326	0.289
	Ago		0	0.00	0
	Ever		8	376.366	0.666
	Just		31	1,062.094	3.161
	Yesterday		1	28.076	0
	Already		20	371.113	0.911

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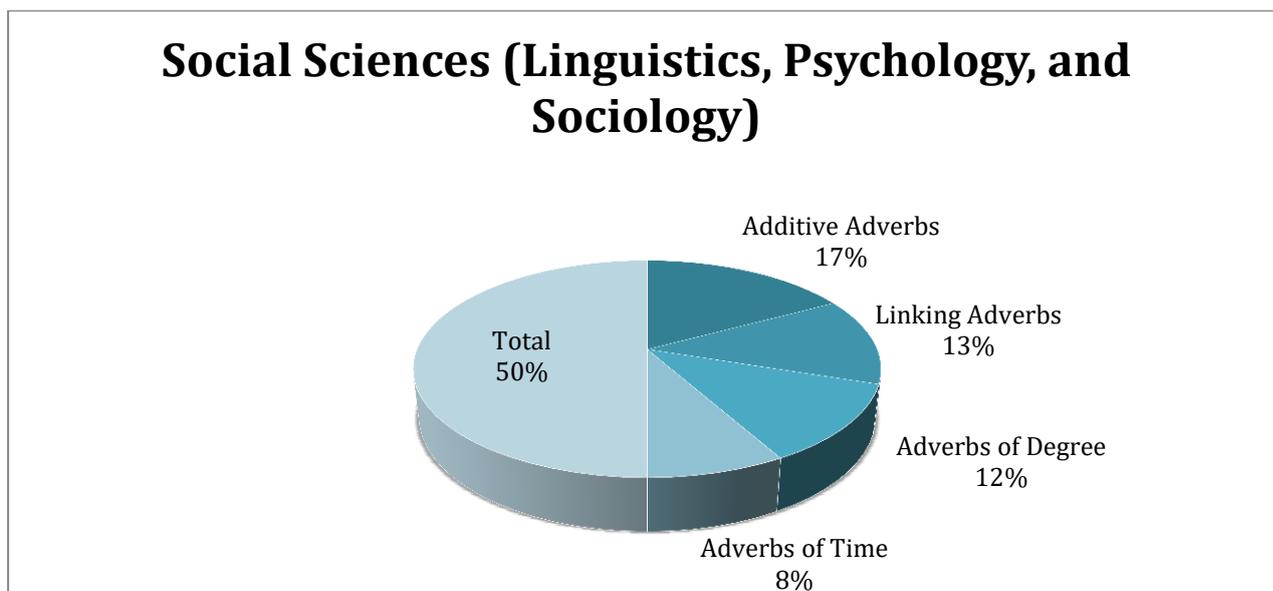|					
	Sometimes		14	551.836	1.113
	Yet		19	688.434	2.398
	Latter		9	395.080	0.982
	Often		47	1,550.089	3.313
	Usually		24	786.043	1.888
3	**Adverbs of Manner**				
	Together		30	1,122.896	3.274
	Significantly		55	1,533.478	1.881
	Well		135	5,240.606	6.13
4	**Adverbs of Degree**				
	Very		71	2,369.503	4.43
	Really		7	191.645	0.622
	Too		17	461.573	1.104
	Quite		11	350.103	1.157
	Exactly		0	0.00	0
	Right		22	799.884	1.491
	Pretty		1	19.145	0
	Real		9	364.608	0.666
	More		305	9,660.208	6.671
	Relatively		8	239.082	0.333
5	**Additive/ Restrictive Adverbs**				
	Only		118	4,219.489	5.792
	Even		75	2,477.592	4.155
	Also		371	12,527.399	7.306
	Especially		58	1,984.996	3.921
	Particularly		31	1,144.759	2.16
6	**Stance Adverbs**				
	Like		85	3,097.105	4.268
	Actually		1	24.548	0
	Generally		15	574.975	1.705
	Indeed		13	446.682	1.749
7	**Linking Adverbs**				
	Then		44	1,842.80	3.892
	So		85	3,108.521	4.736
	Though		29	988.757	2.646
	However		178	5,840.974	6.156
	Therefore		98	3,311.879	5.253
	Thus		63	2,004.043	4.002
Total	**-**	**505,434**	**2,461**	**84,004.538**	**118.9**

Note: For tagging of corpora, the researcher used MAT version 1.3.3, and for normalization, dispersion, and counting of frequencies, Antconc version 4.2.2, was used. In the above table, some of the most common adverbs are displayed with their frequencies, and all these adverbs of various categories are taken from (Biber's, 1999) framework for semantic categorization.From the above semantic classification of

adverbs, the researcher concludes that the usage of additive and restrictive adverbs, linking adverbs, adverbs of degree, and adverbs of time is mostly utilized in various disciplines of the social sciences (Linguistics, Psychology, and Sociology) in Pakistani research articles.

Pie Chart of the Highest Frequencies of the Usage of Adverbs in Pakistani Research Articles across Various Disciplines of Social Sciences (Linguistics, Psychology, and Sociology)

In the above pie chart the most common frequently semantic categories of adverbs are displayed. It is clear and obvious that the usage of additive/restrictive adverbs are on the top, following linking, degree, and time of adverbs were shown in a series across social sciences (Linguistics, Psychology, and Sociology). In analyzing the semantic categorization of adverbs in Pakistani research articles across science and social sciences, several key findings emerge. By examining the usage and distribution of adverbs within these academic disciplines, we can gain insights into the linguistic strategies employed by Pakistani researchers and their impact on the overall quality of the articles.

Demographics Information and Comments of (15) Fifteen Visiting Lecturer of English
1) Name: Muhammad Riaz Afridi
Age: 28
Education: M.phill in English Literature
Designation: Visiting Lecturer
Institute Name: Qurtuba University of Science and Information Technology Peshawar Campus Hayatabad Phase 3
Area of Occupation: Peshawar Kpk
Religion: Islam
Comment: Adverbs are effectively used to clarify the text's general meaning. Adverbs provide details regarding actions or event's timing, location, source, repetition, method, degree, and intensity. Since acts and episodes only make sense in specific settings, they aid in setting the proper stage for interpreting the text. Word meanings in context are decoded by good readers. In well-structured phrases, they serve as coherent indicators

like "additionally," "moreover," "furthermore," and "consequently." These words give various sorts of paragraphs internal coherence and further establish order and coherence in a lengthy composition. Adverbs should be used sparingly to avoid confusing the reader, as poor word choice often leads to confusion and contradictions in written work. Adverbs convey the author's perspective on the text's topic matter.

Name: Riaz Ullah
Age: 43
Education: M.phill in English Linguistics
Designation: Visiting Lecturer
Institute Name: Qurtuba University of Science and Information Technology Peshawar Campus Hayatabad Phase 3
Area of Occupation: Peshawar Kpk
Religion: Islam
Comment: The usage of adverbs can contribute to the clarity and effectiveness of academic writing in several ways:
In academic writing, when accuracy is crucial, adverbs may be especially helpful since they can indicate the strength or gravity of an action or mood. Adverbs allow you to add complexity and detail to your sentences. You may add an adverb like "significantly" to highlight the degree of a favourable conclusion, for example, rather than just stating that an experiment had "good results."
Adverbs can be used to express frequency or place occurrences in time. This might be helpful when outlining methods or reporting study findings in academic writing. Adverbs of time or frequency, such as "recently," "frequently," or "rarely," assist readers in comprehending the importance and relevance of the information you are delivering by adding crucial temporal context. In academic writing, adverbs can be used to explain the connection between cause and effect. They can describe how something occurred (e.g., "efficiently," "inadvertently") or why it occurred (e.g., "consequently," "therefore"). You may make it easier for readers to understand the logical progression and links between various elements of your writing by utilizing adverbs to link concepts and occurrences.
Adverbs that are wisely chosen can improve the overall look and feel of your academic work. They can assist you in clearly, professionally, and confidently expressing your thoughts. Adverbs can be used to emphasize points, draw attention to crucial details, or gently convey your position on a subject. However, it's crucial to use adverbs sparingly and to avoid becoming overly dependent on them, as doing so might make your writing wordy or undermine your arguments. In conclusion, the use of adverbs in academic writing improves style and tone while adding more information, conveying degree or intensity, showing time or frequency, and defining cause and effect. Adverbs may enhance the clarity of your writing, draw readers in, and increase its overall effect when used properly.

Name: Laila Gull
Age: 30
Education: M.phill in English Linguistics
Designation: Visiting Lecturer
Institute Name: Qurtuba University of Science and Information Technology Peshawar Campus Hayatabad Phase 3
Area of Occupation: Peshawar Kpk
Religion: Islam

Comment: Adverbs play an essential role in our expressions by providing additional information about verbs, adjectives, other adverbs, or even entire sentences. They contribute to the enhancement and clarification of a sentence's meaning, improving its clarity and effectiveness. Here are a few examples of how adverbs improve the clarity of our expressions: Adverbs alter verbs by addressing issues including how, when, where, why, and to what extent an action is carried out. Adverbs can also be used to modify other adverbs, which helps to clarify their meaning. Adverbs can change entire sentences, adding clarity and nuance to the speaker's intentions or attitude. In order to make our communication clearer and more successful and to help others comprehend our intentions and meaning, we may add important information and context to our statements by using adverbs.

CONCLUSION

A mixed method (quantitative and qualitative) is utilized to conduct this research. Three research tools are frequently used in this research: MAT version 1.3.3 for tagging corpora; Antconc version 4.2.2 for normalization, dispersion, and counting of frequencies; and a telephonic interview for the third research question. The technique of Quota sampling was used for selecting the data from Pakistani research articles. For the study of the first two research questions, corpus data of a total of 90 and from each 15 Pakistani research articles were assembled from the 6 distinctive domains of disciplines of Science (Botany, Chemistry, and Medicine) and Social Sciences (Linguistics, Psychology, and Sociology), and for the third research question, the telephonic interview of fifteen visiting lecturer from two universities i.e. Qurtuba University of Science and Information Technology, Peshawar campus, Hayatabad phase 3, Kpk, and Ghazi University, DG Khan, Southern Punjab was taken as a sample across Pakistan Universities.

In general, our study helps to explain how adverbs are used in Pakistani research articles, particularly in the social science and scientific fields. The results demonstrate the importance of adverbs in these fields and their function in aiding clear and efficient communication of research findings. Researchers may enhance their academic writing abilities and guarantee the clarity and coherence of their research papers by taking note of the patterns and tendencies revealed in this study.

It is significant to mention that our study has limitations. First off, the research was based on a particular corpus of Pakistani research articles, which might not accurately reflect the whole range of the nation's articles in science and social science. To acquire a deeper knowledge of how adverbs are used in research writing, future studies can think about extending the corpus to include papers from various locations or nations. Second, while we did analyze the existence and frequency of adverbs, we did not go into great detail on the context-specific meanings and purposes of adverbs.

In conclusion, usage of adverbs is important in Pakistani research articles in both the sciences and social sciences. The frequency, distribution, and uses of adverbs in several areas are discussed in this paper in useful detail. The study intends to advance understanding of the usage of adverbs in research publications from Pakistan in the social and natural sciences by achieving these objectives. The study might be a helpful resource for academics, pupils, and instructors, promoting coherent academic writing and fostering engagement within the Pakistani academic environment.

Findings and Discussions

In English grammar, adverbs cover a wide range, and multiple approaches have been used in studies on their use. Accurate grammar is frequently the primary focus of

academic writing when a language is first learned. As one's level of skill rises, however, additional problems arise, such as the overuse, underuse, and misuse of particular kinds of adverbs, insufficient grammatical education, and a lack of awareness of register appropriateness. As a result, knowing the proper use of adverbs still presents a difficult challenge in the world of academic writing. To improve students' comprehension of adverb usage in certain academic contexts, these problems must be addressed. To do so, specialized educational tactics must be used, as well as more research.

Adverbs are often employed in Pakistani research publications in both social science and science, according to the analysis of the corpus. They are crucial language tools for expressing specific meanings and improving the clarity of the author's assertions. Adverbs were discovered to be used in the corpus at a comparatively high frequency, demonstrating their importance in academic writing. In this part, the importance of adverbial usage and a comparative analysis of frequency across different fields of science and social science were discussed. As a result, the way in which research publications define concepts using adverbs and their semantic categories may have implications for academic writing across disciplines.

While the study mainly concentrated on the frequency and distribution of adverbs, a more in-depth analysis of their contextual purposes may offer a better understanding of their usage. Adverbs can modify verbs, adjectives, or other adverbs in research papers to indicate method, time, frequency, degree, and causation. The comprehension and efficient sharing of study findings can both benefit from an understanding of the contextual roles of adverbs.

The researcher will next discuss some findings related to the study's educational effects. As the aim and objectives of the research is to investigate the general frequency of adverbs and semantic classification of adverbs utilizing the (Bibers, 1999) framework or any other research design throughout the academic writing of Pakistani research publications in the various Science and Social Sciences fields.

An initial finding from the disciplines of Science and Social Sciences in Pakistani research articles showed that the frequency of adverbial usage indicates high integration (2,757) in the various disciplines of Social Sciences. On the other hand, the adverbial usage is lower (2,591) in various disciplines of the sciences.

The researcher also identified that in Pakistani research articles, in semantic classification, the usage and frequency of additive and restrictive adverbs, linking adverbs, adverbs of time, and adverbs of degree in various disciplines of science (Botany, Chemistry, and Medicine) are used less than in the social sciences disciplines (Linguistics, Psychology, and Sociology).

This study also seeks to conduct the telephonic interview of fifteen (15) visiting lecturers from two universities, i.e., Qurtuba University of Science and Information Technology, Peshawar campus, Hayatabad Phase 3, KPK, and Ghazi University, DG Khan, Southern Punjab, taken as a sample across Pakistani Universities.

The opinions regarding the use of adverbs in academic writing varied, according to telephonic interviews with fifteen (15) visiting lecturers from the Qurtuba University of Science and Information Technology, Peshawar campus, Hayatabad Phase 3, KPK, and Ghazi University, DG Khan, Southern Punjab. According to some lecturers, the misuse and overuse of adverbs might undermine the accuracy and clarity of academic writing. They emphasized the need to sparingly use adverbs in order to prevent repetition and preserve a clear writing style. On the other hand, the underuse of adverbs was brought up by a few lecturers as an ongoing issue. They observed that adverbs were frequently avoided entirely by students, which left their academic writing lacking in complexity and

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nuance. These teachers emphasized the necessity for students to strategically use adverbs to strengthen their claims and express clear meaning. Overall, all of the interviewed lecturers agreed that students have difficulty using adverbs in academic writing. The need to offer comprehensive instruction on adverbs, including their proper placement and usage in various academic contexts, was emphasized. To enhance students' understanding of register and the use of register specific adverbs, they also recommended implementing exercises and activities.

It is significant to note that these results may not reflect the views of all teachers in the nation since they are based on a particular sample of visiting lecturers from certain Pakistani universities. To gain a thorough knowledge of lecturers viewpoints on adverbial usage in academic writing across Pakistani universities, more study using a larger and more varied sample is suggested. This study will have a wide range of pedagogical effects on instructors, students, and syllabus designers, as well as academic and second language researchers. In addition to the above, the overall genre, disciplinary approach, literary analysis, comparative analysis, and linguistic analysis of particular elements will all benefit from this research.

The purpose of this study is to ensure that research paper writing is formal and demands care. With the objectives of each study field and section, several variances among various research articles and their parts have been identified. Since the findings are consistent with the nature of the disciplines and study article contents, they appear to be required.

As a result, the study emphasizes how adverbs are often and creatively used in Pakistani research publications in the sciences and social sciences. The results aid in advancing our knowledge of linguistic trends and patterns in academic writing and offer advice to scholars on how to write more effectively. The quality and efficacy of research communication can be improved with further study in this area, which can enhance our understanding of how adverbs are used in many situations and fields.

REFERENCES:

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.).

Anthony, L. (2014). AntConc homepage. http://www.laurenceanthony.net/software/antconc/

Azher, M., Jehangir, H., & Faiz, R. (2019). Expressing attitudinal stance in Pakistani academic writing: A corpus-based study. Global Regional Review, 4(1), 175–185.

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

Biber, D. (1999). The use of adverbial connectors in advanced academic writing. English for Specific Purposes, 18(3), 165–189.

Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). Longman grammar of spoken and written English. Longman.

Brown, L. (2012). Language endangerment and language rights: A sociolinguistic perspective. Cambridge University Press.

Chen, C. W. (2006). The use of conjunctive adverbials in the academic papers of advanced Taiwanese EFL learners. International Journal of Corpus Linguistics, 11(1), 113–130.

Clark, H. H. (2009). Language and globalization. Cambridge University Press.

Costa, D. D. (2015). Linking adverbials in applied linguistics research articles: A corpus-based study. [Publisher/journal information missing].

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Crystal, D. (1980). A first dictionary of linguistics and grammar. Cambridge University Press.

Finch, G. (2000). Linguistic terms and concepts. Macmillan Press Ltd.

Flowerdew, J. (2000). Introduction: Approaches to the analysis of academic discourse in English. In J. Flowerdew (Ed.), Academic discourse (pp. 1–17). Longman.

Gao, X. (2016). A cross-disciplinary corpus-based study on English and Chinese native speakers' use of linking adverbials in academic writing. Journal of English for Academic Purposes, 24, 14–28.

Givon, T. (2001). Syntax: An introduction. John Benjamins Publishing Company.

Green, G. (2013a). English as a global language: Benefits and challenges. Oxford University Press.

Green, G. (2013b). English grammar: A comprehensive guide. Wiley-Blackwell.

Hacini, H., Loucif, S., & Benyahia, A. (2019). A corpus-based study of the use of adverbs in EFL learners' writings: Investigating problems and suggesting solutions. [Publisher/journal information missing].

Hudson, R. (2010). Sociolinguistics (2nd ed.). Cambridge University Press.

Hyland, K. (2000). Disciplinary discourses: Social interactions in academic writing. Longman.

Muhammad, M., Huda, S., & Bambang, E. (2017). An analysis of second-year students' problems in writing passive voice at the English department of Bung Hatta University. Abstract of Undergraduate, Faculty of Education, Bung Hatta University, 6(2).

Murray, R. (2016). Writing for academic success: A postgraduate guide. SAGE Publications Ltd.

Phoocharoensil, S. (2017). Corpus-based exploration of linking adverbials of result: Discovering what ELT writing coursebooks lack. 3L: Language, Linguistics, Literature, 23(1).

Sabzevar, A., Haghverdi, H., & Biriya, R. (2020). A corpus-based analysis of epistemic stance adverbs in essays written by native English speakers and Iranian EFL learners. Journal of English Language Pedagogy and Practice, 12(25), 32–52.

Stefanova, S., & Bobkina, J. (2015). A corpus-based study of adverbs of frequency in EFL students' writing: A case of distance learning. In EDULEARN15 Proceedings (pp. 2562–2568). IATED.

Su, L. (2011). Adverbial positioning in English research articles in applied linguistics and chemistry. English for Specific Purposes, 30(4), 258–268.

Swales, J. M. (1990). Genre analysis: English in academic and research settings. Cambridge University Press.

Vakili, P., & Mohammed, R. (2022). A cross-disciplinary corpus-based analysis of the frequency and syntactic positions of adverbials. [Publisher/journal information missing], 31–40.

Wang, W. (2023). A corpus-based study of stance adverbs in TED scientific talks. International Journal of Linguistics, Literature and Translation, 6(3), 189–198.

Yilmaz, E., & Dikilitas, K. (2017). EFL learners' uses of adverbs in argumentative essays. Novitas-ROYAL (Research on Youth and Language), 11(1), 69–87.

Anwar, M., Zaman, M., & Masood, A. K. (2025). Examining context-based assessment approaches for enhancing English language learning in Pakistani higher education. Zenodo. https://doi.org/10.5281/ZENODO.17611618