

**ANALYSING UNDERGRADUATE STUDENTS’
LINGUISTIC PROFILE: A STUDY OF
COGNITIVE STRUCTURES USED IN
EXPRESSIVE WRITING**

BY

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis ***Analysing Undergraduate Students' Linguistic Profile: A Study of Cognitive Structures Used in Expressive Writing*** submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Analysing Undergraduate Students' Linguistic Profile: A Study of Cognitive Structures Used in Expressive Writing

Throughout history, scholars have believed that our words provide clues about our psychological processes. However, the methods used to analyse psychological processes from language have evolved significantly over time. With the advancement in modern computational technologies, the researchers are now on the point of a major revolution in language analysis research. Similarly, the present research aims to investigate the cognitive structures and document the frequency of metadiscourse markers in expressive writings of undergraduate students. For this purpose, 50 samples from undergraduate students of NUML Multan Campus (Department of Management Sciences and English) are collected. Participants are randomly assigned to write about a topic The Current Situation of Pakistan. The purpose of assigning this topic is to make students express their thoughts so their cognitive structures can be analysed. The present research employs a software Linguistic Inquiry and Word Count (2022) to analyse cognitive structures and Hyland's (2005) model of interactive metadiscourse analysis. The findings reveal that linguistic profiles have provided useful information for analysing the cognitive structures of participants. They have used more negative tone including tone of hopelessness, despair, and anxiety. Additionally, the cognitive process category which includes thinking and reasoning can be seen in all the texts. Moreover, the researcher also documents the frequency of occurrence of Hyland's interactive metadiscourse markers in the text. The findings reveal that there is a higher use of transitional metadiscourse markers, followed by frame markers, evidentials, endophoric markers and code glosses. It shows that students have expressed their thoughts/opinions while maintaining the coherency and organization of their texts.

Key Terms: Cognitive Structures, Linguistic Profile, Metadiscourse Markers, Expressive Writing

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DEDICATION

This thesis is dedicated to my parents and brothers for their endless support and encouragement. This thesis is also dedicated to my past self, who dreamed of this moment, and to my present self, who has worked tirelessly to make it a reality.

CHAPTER 1

INTRODUCTION

The present study focuses on exploring the cognitive pattern of the students studying at National University of Modern Languages (NUML Multan Campus) through their expressive writing. It examines linguistic content to provide a lens into students' language use in association with expressive writing. Besides, another purpose of the study is to investigate the frequency of occurrence of metadiscourse markers in expressive writing. However, what distinguishes the present research from the others is that besides focusing on the analysis of cognitive structures of the mentioned texts, it also attempts to count the frequency of occurrence of metadiscourse markers employed by the participants in their text. The software employed for the present research is Linguistic Inquiry and Word Count (LIWC, 2022). Moreover, Hyland's (2005) model of Metadiscourse Markers has been employed to document the frequency of occurrence of metadiscourse markers. The research attempts to investigate which metadiscourse markers are used by participants and what is their frequency of occurrence.

In the past, literacy was traditionally limited to the concept of individual's ability to read and write and put words together to create something meaningful. However, nowadays, this definition has been broadened beyond functional perspective. Now, it includes the ability to critically assess, process, and convey written information. This means that in addition to being able to read and write, individuals are now expected to be able to think critically about what they read, and how clearly and effectively they can communicate their own thoughts and ideas. McCutchen (2000) and Kohnert (2012) have demonstrated that formal literacy plays an important role in shaping cognition of an individual.

Traditionally, language is viewed as a tool to communicate, and a way to transmit information, rather than a learning tool. Smith (1982) opined that this perspective completely disregards the fact that language is a generative tool that can be used to create new words and explore ideas, both our own and those of others that language communicates as well as creates. Bruner (1964) opined that language acts as an instrument for analysis and synthesis in solving problem. He is of the view that thinking and language are interrelated. Similarly, Langer (1969) contends that language

is a tool that allows us to express our thoughts and ideas in a clear and concise way. It allows us to communicate with others and to share our knowledge and understanding of the world.

Language serves as a significant medium for expressing internal psychological states (Tausczik & Pennebaker, 2010), offering valuable insights into beliefs, cognitive patterns, social ties, personality traits, and fears (Pennebaker et al., 2015). Irvin Yalom (2013) advocates that psychotherapists should enter into the subjective world of client. Sigmund Freud's (1914) examination of "Freudian slips" or parapraxis, for example, was believed to unveil intentions and meanings from the unconscious. Further, metaphor-based research in counseling and psychotherapy provides valuable insights, as client language employing metaphorical expressions enhances our understanding of their reality (Ronen, 2011). Moreover, studying metaphor and the comprehension of client's language are the center of attention in cognitive behavioral researchers (Mathieson et al., 2015).

1.1 Writing

Writing serves as the means of communicative expression through which the writer conveys information and projects emotions and thoughts to the readers. Hammill and Larson (1996) argued that the mastery of writing includes three fundamental skills: (a) adherence to established conventions, including spelling, punctuation, and capitalization; (b) linguistic competence in employing syntactic, morphological, and semantic components; and (c) cognitive proficiency in expressing sentiments, preferences, and ideas with creativity and maturity. The acquisition of these written language skills hold significance for all individuals.

Writing is now perceived to promote systematic thinking and the development of coherent ideas, while reading contributes to the input and updating of knowledge. When we express something in written form writing goes beyond the basic syntactic elements such as punctuation and grammar. It represents a cognitive activity that requires individuals to stretch their mind. Diverse forms of writing provide specific purposes to audiences. These forms include expository writing, text writing, descriptive writing, persuasive writing, technical writing, creative writing, business writing, academic writing, journalistic writing, and personal writing. This categorization aids

writers in adapting their approach based on the intended purpose and audience without replicating existing content.

1.1.1 Framing Self-Directed Writing

Britton et al.'s (1986) writing development theory serves as a valuable conceptual framework for explaining the role of self-directed writing. Britton's concept of "expressive" writing is occasionally misconstrued to only involve self, whereas, it is more than that. He contends that expressive writing serves the foundation of three principal functions in writing i.e. Poetic, Expressive, and Transactional.

"Expressive" assumes a central term in his model and is described as an utterance that is close to the speaker/writer. He contends that it is the speaker's mood and immediate thoughts of the moment. He further elaborates, stating that "it is an expression in its most relaxed and intimate form, unrestricted by external demands, be they task-related or audience-oriented." He also describes that expressive mode is the medium through which we engage in interpersonal communication in speech/writing (Briton et. al).

Moreover, according to him, most of the time, teachers might perceive "expressive" as synonymous with writing about or for oneself. This kind of writing according to teachers is often on topics closely aligned with the writer's personal experiences. This interpretation could stem from a desire to reduce cognitive load, allowing students more time to address other aspects of writing. There appears to be an expectation for students to employ Standard English or their best approximation of formal school writing, potentially leading students to feel less at ease using their home language in academic settings.

Effective communication is largely dependent on an individual's linguistic proficiency. The more proficient an individual is in a particular language, the more effectively (s)he can communicate in that language. This proficiency is attained through familiarity and fluency in the language, which allows for greater ease and accuracy in expressing ideas and thoughts.

1.1.2 Expressive Writing

Expressive writing (EW) has been defined as “personal and emotional writing without regard to form or other writing conventions, like spelling, punctuation, and verb agreement” (Evans, 2012).

Expressive writing places less emphasis on the individuals, objects, or occurrences within a memory and instead centers on one's emotional experiences (Evans, 2012). Marcus (2017) defines expressive writing in the context of adversity as a form of writing that explores emotional details rather than focusing on facts or narrating a traumatic event. A well-known researcher James W. Pennebaker, who has extensively studied expressive writing, suggests its effectiveness. He points out that individuals often engage in this technique to comprehend significant life upheavals (Pennebaker & Beall, 1986). Essentially, expressive writing can serve as a means to clarify obstacles, especially those that cannot be discussed easily.

Expressive writing is a paradigm that was first developed by Pennebaker in 1986. It was developed after he discovered that those individuals who underwent a traumatic experience tended to have poor health. Expressive Writing encourages the expression and processing of emotions by having individuals write about stressful or traumatic events in a structured and confidential manner. This approach was formulated based on the idea that revealing traumatic experiences might enhance individuals' overall health.

Over the past three decades, numerous studies have suggested that expressive writing has therapeutic value as a form of disclosure. One of the earliest investigations into this phenomenon was conducted by Pennebaker and Beall (1986), who explored the link between writing and physical well-being in a sample of students. Moreover, since the beginning, Expressive Writing has been widely examined as a self-help intervention tool. Pennebaker et al. (2015) argued that it is possible to identify specific “beliefs, fears, thinking patterns, social relationships, and personalities” through this kind of writing. This type of writing is commonly used to communicate/describe personal feelings, attitudes, and opinions (Pennebaker & Evans, 2014).

Expressive writing has been identified as a technique that can have a positive impact on cognitive function. Unlike other forms of writing that are focused on the

details of people, objects or events, expressive writing prioritizes the exploration of one's emotions and feelings (Evans, 2012).

1.1.3 What Does Language Really Measure?

Language patterns are psychologically meaningful, revealing how people think and feel in diverse social settings. For example, empirical research has used words to infer psychological characteristics including distress and well-being (Eichstaedt et al., 2018; Rude et al., 2004), intergroup relations (Giles, 2012; Maass et al., 1989), and individual differences such as personality (Ireland & Mehl, 2014), among many others. The general concept from this literature suggests that by simply counting words, researchers can learn critical information about one's psychological focus and attention (Boyd & Schwartz, 2021; Tausczik & Pennebaker, 2010). Quantifying what people say (e.g., their content) and how they communicate (e.g., their style) can signal their internal processing and map words onto a range of psychological experiences.

Human language, whether spoken, written, or signed, serves as an effective tool for unveiling the organization of thoughts into categories and the perceived associations among them. It shows our perspective on various concepts and reflects the evolving nature of our comprehension over time. At a broader level, language unveils differences in thought processes across cultural and ideological communities. It offers insights into both universal and variable patterns in the human perception of fundamental concepts such as God, emotion, and the self. Consequently, language emerges as a complex and dynamic lens into human psychology.

1.1.4 Language as a Marker of Personality

An existing body of literature has investigated the correlations between linguistic markers and personality traits (Pennebaker, 2011; Stachl et al., 2020). Previous research, notably, gave two primary classifications of linguistic features: linguistic style and linguistic content (Tackman et al., 2020). Linguistic style includes words such as personal pronouns, negations, and auxiliary verbs, which represent the manner in which individuals talk about specific subjects and contribute to sentence structure (Stachl et al., 2020). Despite the absence of explicit information about conversation content, there is a significance of style words as these words constitutes over half of the words processed in daily conversations (Tausczik & Pennebaker, 2010). Moreover, the use of style words can serve as an indicator of individual personality

traits due to their fluent and almost automatic production (Ireland & Mehl, 2014). For instance, extraverts have demonstrated an increased use of first-person singular pronouns in text messages (Holtgraves, 2011).

Conversely, linguistic content pertains to what individuals discuss in conversations (e.g., family, work, achievement) and is typically revealed through nouns, verbs, adjectives, and adverbs (Ireland & Mehl, 2014). Personality traits of individuals may also be associated with the use of content words, which signify conversation topics and emotions. For instance, extraversion and agreeableness have been correlated with a higher frequency of positive words (e.g., pretty, happy; Augustine et al., 2011; Yarkoni, 2010), while neuroticism has been associated with an increased usage of negative emotion words e.g., annoying (Holtgraves, 2011). Likewise, conscientious individuals tend to use more work-related words and fewer leisure-related words (e.g., YouTube) on their social media platforms (Schwartz et al., 2013).

1.1.5 Cognitive Style

Cognitive style, as defined by Riding and Rayner (2013), pertains to an individual's preferred and habitual approach to organizing and representing information. This dimension holds significance influence on how people process information and make decisions. Additionally, cognitive style is related with organizational behaviors, as individuals with different cognitive styles continually interact within their respective organizations (Chan 1996). The identification of individuals' cognitive styles holds substantial potential across various domains, including personalized education (Deborah, Baskaran, and Kannan 2014), marketing (Joseph and Vyas 1984), management (Armstrong, Cools, and Sadler-Smith 2012), and more.

It refers to an individual's preferred and habitual approach to organizing and representing information (Riding and Rayner 2013). Cognitive style is an important personality dimension relevant to people's information processing and decision making. Moreover, it is also relevant to organizational behaviors because individuals of different cognitive styles are continuously interacting with each other in their organizations (Chan 1996). Identifying individuals' cognitive styles has great potentials in various domains such as personalized education (Deborah, Baskaran, and Kannan

2014), marketing (Joseph and Vyas 1984), management (Armstrong, Cools, and Sadler-Smith 2012), etc.

1.1.6 Cognitive Words in Expressive Writing

Cognitive words, as described by Klein and Boals (2010), are words linked to cognitive processing and include insightful words like "realize" and causal words like "because." These words are considered an antecedent to creating a coherent text. These involve coherence of individuals' memories with their written or verbal accounts of events. Previous researches indicate that the use of cognitive words helps in the reorganizing and assessing traumatic events, contributing to the development of a coherent text (Boals, 2012; Hussain, 2010).

Recent studies on texts of stressful events suggest that actively incorporating cognitive words reflects individuals' capacity to find meaning, interpret causal relationships, and develop integrated schemas (Junghaenel, et. al, 2008; Klein & Boals, 2010). Furthermore, the use of cognitive words has been linked to the process of meaning making (Boals, et. al 2011). Therefore, employing cognitive words in expressive writing may facilitate the meaning-making process. These enable individuals to comprehend and find meaning in stressful events, ultimately leading to posttraumatic growth.

1.1.7 Individual Differences

The identification of individual differences can be facilitated through the examination of cognitive complexity, social references, and emotional tone in language use. These linguistic attributes vary with age, gender, personality, and mental health. Language use serves as an indicator of individual differences.

Pennebaker and Stone (2003) investigated the written expressions of participants across various age groups in emotional writing studies. Another experiment involved the analysis of textual content throughout the writing careers of published authors. Over these two studies, a consistent trend emerged: a decline in first-person singular usage over time, and an increase in the use of insight words, future tense verbs, and exclusive words. This observed language pattern was consistent across individuals at different life stages and among authors throughout their writing careers.

Gender differences in the usage of language indicate that females use an increased frequency of social words and references to others, while males display more

complex linguistic structures. A comprehensive meta-analysis, drawing from numerous studies, shows that the differences in language between males and females revolve around linguistic complexity and the extent of social references (Pennebaker et. al, 2008). Males use high frequency of vocabulary, articles, and prepositions, while females use more social words and pronouns, specifically those in the first-person singular and third-person forms.

1.1.8 The Mental Benefits of Expressive Writing

There is evidence supporting the positive impact of the general writing paradigm beyond its effects on health and academic success. Expressive writing has been found to be beneficial for individuals who are not formally diagnosed with clinical depression, specifically in addressing emotional difficulties like rumination and sadness (Gortner, Rude, & Pennebaker, 2006).

Rumination, as defined by Nolen-Hoeksema (1998), refers to "cognitions and behaviors that repetitively focus the depressed individual's attention on his or her symptoms and the possible causes and consequences of those symptoms" (Gortner et al., 2006, p. 293). This study focused on college students vulnerable to depression, indicating those who had shown elevated depressive symptoms in the past but, at the time of the study, exhibited low depressive symptoms (Gortner et al., 2006). Therefore, the research aimed to investigate the advantages of expressive writing and its impact on reducing the recurrence of subsequent depressive symptoms after six months among individuals with a history of depression. This study provides evidence supporting the benefits of expressive writing for individuals who have previously experienced symptoms of depression or may be dealing with persistent sadness or subclinical depressive symptoms.

1.2 Metadiscourse

1.2.1 Persuasion

Miller (1980) suggests that language use can be interpreted as persuasive. However, Halmari and Virtanen (2005) restrict the concept of persuasion to "linguistic behavior aimed at either altering the thoughts or conduct of an audience or reinforcing existing beliefs if the audience already concurs." The writers emphasize the essential role of the audience, whether visible or implied, actual or potential interlocutors, or observers, in the persuasion process. They contend that this dynamic is intricately

linked to the situational and sociocultural context, both shaping and being shaped by it in significant ways (2005).

1.2.2 Metadiscourse

Metadiscourse has become a valuable tool in discourse analysis, offering a new methodology to comprehend how writers and speakers present themselves in their texts. Metadiscourse markers serve as the tools facilitating effective implementation in the text, enabling the receiver to interact with the text in a meaningful way.

Zellig Harris (1959) defines the term metadiscourse as a way of understanding language in use which helps writer to guide the receivers' understanding of a text. Kopple (1985) expressed that meta discourse is discourse about discourse and points to the writer's or speaker's linguistic signs in his/her text for interacting with his receivers." In order to create and develop strong and useful text, meta discourse plays a significance role.

Crismore, Markkanen & Steffensen (1993) define metadiscourse as "Linguistic elements in written or spoken texts that do not contribute to the propositional content but are designed to assist the reader in organizing, interpreting, and evaluating the information provided." Hyland (2005) introduced a model of metadiscourse features, describing it as a cover term including various devices employed by writers for different purposes. These include effectively structuring their texts, involving readers in the content, and conveying their emotions, thoughts, and opinions about the presented text. Metadiscourse serves as a tool for writers and speakers to organize discourse in a manner that establishes a meaningful connection with their audience in a specific context. Hyland (1998) contends that "metadiscourse has been demonstrated to be a crucial aspect of proficient writing for both ESL and native speaker students."

1.2.3 Metadiscourse and Writing

Writing goes beyond the basic understanding of punctuation and grammar. It's a complex mental task that involves stretching one's thinking. For elementary students, the journey into developing writing skills starts with learning basic conventions and crafting simple texts. As they progress into middle school, the expectation is that students can compose multi-paragraph texts in various genres. These texts should revolve around a central idea, follow a logical sequence, and include relevant facts, examples, and details (Nippold, 2007).

Maturity in writing becomes explicit when students become aware of their audience and strive to express their ideas with clarity to meet the requirements of readers. Developing higher-level language skills is crucial for presenting different perspectives on a single event (Rubins, 1998). A quality text is more than just a collection of statements. It is a cohesive whole that incorporates the writer's perspective, takes the reader into consideration, and provides information for a practical purpose. When these elements align, the text achieves coherence, an essential component of effective and understandable writing.

Text writing plays a crucial role in helping students develop coherence and convey their understanding of the social world. When students face challenges in these areas, interventions become necessary. For young school-age children, text language intervention typically involves analyzing microstructures, such as the mean length of utterance or various measures of sentence complexity (Nippold et al., 2008; Heilmann, Miller Nockets & Dunaway, 2010). Additionally, macrostructure analysis goes beyond the sentence level, examining a student's language skills more comprehensively.

Cohesive devices play a role in connecting the surface of the text through words. These devices link sentence parts or different sentences together using pronouns, conjunctions, and lexical devices like repetition, synonyms, and superordinates. A superordinate acts as a tool for organizing discourse, typically involving nouns representing entire categories or classes of things (e.g., "vehicle" as a superordinate for car, ship, and bicycle).

Metadiscourse markers are words or parts of sentences e.g., by any means that establish a connection between the writer and the reader. These markers aid the reader in organizing, interpreting, and evaluating information in the text. Examples of metadiscourse markers include gloss codes, sequencers, and hedges.

1.2.4 Metadiscourse Expresses Writer-Reader Interactions

Metadiscourse is fundamentally about embodying the interactions essential for effective communication. It is proposed that all metadiscourse is inherently interpersonal, as it considers the reader's knowledge, textual experiences, and processing needs. This perspective suggests that metadiscourse equips writers with a range of rhetorical appeals to engage with readers successfully (Hyland and Tse, 2004).

Thompson (2001) and Thompson and Thetela (1995) identify two types of interaction, namely interactive and interactional. Interactive resources pertain to how writers indicate the structure of their texts based on their understanding of the reader's probable knowledge and comprehension. This aspect significantly influences the text's "reader-friendliness" by managing the flow of information—addressing how writers lead readers by anticipating their likely reactions and needs. In contrast, interactional resources are more personal, involving the reader in a collaborative role in the text's development. These resources comprise of the writer's explicit interventions to provide commentary and assessment of material, directly connecting with Halliday's interpersonal metafunction which is concerned with the social, expressive and conative functions of language, with expressing the speaker's angle: his attitudes and judgments, his encoding of the role relationships in the situation, and his motive in saying anything at all. (Halliday and Hasan, 1989: 26)

Thompson (2001) maintains that that these two dimensions of interaction, the interactive and the interactional, are intricately connected.

1.2.5 Metadiscourse in Classrooms

Metadiscourse holds a central role in communication because our ability to construct effective arguments depends on accurately assessing both the readers' understanding of a text and their possible reactions to it. While the importance of metadiscourse is gradually gaining recognition in language teaching, it was previously overlooked as teachers predominantly focused on content—how speakers and writers conveyed their ideas. Particularly in academic writing, this form of writing was perceived as a constrained textual practice. It was typically taught through either mimicking the writing processes of experts or emphasizing grammatical patterns, with successful execution resulting in proficient texts.

Unfortunately, students learning a second language frequently encounter challenges in developing a clear mental picture of their readers (Silva, 1993; Hillocks, 1986). Students commonly recognize the importance of engaging with their readers. However, they lack understanding of available resources, so they tend to incorporate conversational elements into their writing. In written texts, only one of the interacting parties takes on a visible role, and metadiscourse operates in a distinct manner. Its

function is to anticipate the reactions of the other, even though this interactant is purely imagined.

Although most studies using the LIWC have focused on emotion and self-referencing, particularly as these reflect gender and status differences, a smaller number of studies have focused on analysing cognition through expressive writing.

The present study focuses on exploring the cognitive pattern of the students studying at National University of Modern Languages (NUML Multan Campus) through their expressive writing. It examines linguistic content to provide an insight into students' language use in association with expressive writing. Besides, another purpose of the study is to investigate the frequency of occurrence of metadiscourse markers in expressive writing.

For this purpose, 50 undergraduate willing participants from NUML Multan campus department of English, and Management Sciences have been selected. The researcher has employed a software known as Linguistic Inquiry and Word Count (LIWC version 2022) to analyse the cognitive patterns in written text. Two main LIWC categories analytical thinking and tone are assessed. A significant motivation for this study comes from the work of Pennebaker and King (1999) who proposed that the way people write about things reveals important information about them. Studies by (Pennebaker & Graybeal, 2001; Ramirez-Esparza, Chung, Kacewicz, & Pennebaker, 2008; Schwartz et al., 2013) have shown that these linguistic properties serve as markers for some psychological processes as well. It also focuses on documenting the frequency of occurrence of metadiscourse markers in the text. For this purpose, Hyland's (2005) model of metadiscourse markers has been employed.

1.3 Statement of Problem

It is difficult to assess what goes inside of an individuals' mind. However, it is believed that language assigns identity to its users. The way an individual uses language through different cognitive structures may proclaim his/her bent of mind. Such expressions carry different cognitive structures, which are reflected through language use. Expressive writing is an experimental paradigm and a means of describing personal feelings, attitude and opinions in a structured manner. The present study delves deep into the cognitive structures used by the participants to know their bent of mind through

their linguistic profiles. Besides, the frequency of occurrence of metadiscourse markers in expressive writing has also been documented. For this purpose, the researcher has employed Hyland's (2005) interactive metadiscourse model.

1.4 Significance

Expressive writing is thinking aloud on the paper and is commonly used to communicate/describe personal feelings, attitudes, and opinions. It is used as a tool to know an individual's cognition. It is already known that the use of different cognitive structures highlights different mindset. The present study is significant as it attempts to determine cognition of the participants through their linguistic profile. The results of this study might contribute to how expressive writing can be incorporated in academics. Students might be allowed to express their understanding of concepts in a creative and personal way. Institutes/teachers could design expressive writing activities that target patterns of how students process and articulate their thoughts, emotions, and experiences. Expressive writing, when combined with LIWC, can also be a new way to assess students' cognitive development. Besides, by incorporating expressive writing, administrators, supervisors, and teachers can gain valuable insights into teacher effectiveness, identify areas for growth, and promote continuous professional development.

1.5 Objectives

The present study has following research objectives:

- To document the frequency of occurrence of most frequently used interactive metadiscourse markers in Expressive writing of students at BS level in NUML Multan
- To explore cognitive and emotional states through the linguistic profiles used in student's expressive writing at BS level in NUML Multan

1.6 Research Questions

The present study answers following research questions:

1. What is the frequency of occurrence of most frequently used interactive metadiscourse markers in Expressive English writing of students at BS level in NUML Multan?

2. How are cognitive and emotional states expressed through the linguistic profiles used in students' expressive writing at BS level in NUML Multan?

1.7 Delimitations

The study is delimited to analysing the samples of students of BS 8th semester (department of English and Management Sciences) of NUML. Secondly, demography is another delimitation as the participants are taken only from NUML Multan campus. Moreover, the samples have been analysed using the software LIWC (2022) and only cognitive processes and tone have been analysed. Other categories are excluded. Another delimitation is that the researcher has documented the frequency of occurrence interactive metadiscourse markers by employing Hyland's (2005) model of metadiscourse.

1.8 Summary and Discussions

The present chapter ends with the introduction of the present study that it deals with the cognitive analysis of language used by participants in their texts. It also introduces statement of the problem, delimitation of the study, its significance along with describing the research questions which have provided the framework for the present research. Moreover, this chapter provides a brief introduction of the methodology used in this study. The chapter two introduces the review of the related literature, operational definitions of the key terms along with the discussion on theoretical framework.

Chapter Breakdown

The first chapter introduces the current research, outlining the problem statement, research objectives, research questions, methodology, significance of the study, and delimitations.

Chapter two reviews the most relevant prior research, defines key terms, and presents the theoretical framework.

In chapter three, the researcher discusses the research design, data collection methods, data analysis procedures, and the research models to be employed.

Chapter four focuses on the analysis of the collected data and includes a content analysis, documenting the frequency of occurrences.

Chapter five provides a concluding discussion of the findings in relation to the research objectives and includes suggestions and recommendations for future research in the same field.

CHAPTER 2

LITERATURE REVIEW

This part of the research comprises three main sections: a review of existing and most similar literature related to present research, operational definitions of key terms, and the theoretical framework. Firstly, the researcher has provided a chronological overview of previous studies to identify gap for the present research, by reviewing the most recent and relevant studies in the process. Secondly, this chapter has discussed the operational definition of key terms used in the present study. Thirdly, it has also discussed the theoretical framework used in the present study.

2.1 Works Already Done

This section deals with the critical review of the works already done by different researchers. In this section the researcher has critically discussed the previous researches and especially the most similar to the present one. This is done to generate space for the present research that how the present research is different from the previous carried out researches. Moreover, the researcher has kept in mind the chronological order while critically reviewing the works already done in the area. The followings are some of the most similar works already done and they have been discussed chronologically;

Walker (2019) conducted research on college undergraduates and studied the effects of expressive writing on emotional intelligence. The research contended that 40% students leave college without completing the degree. It further viewed that the act of expressing emotions through writing has been shown to engage many capabilities associated with emotional intelligence. Theory of emotion regulation was applied as theoretical framework in this study and the methodology was quantitative. Fifty-eight (58) students from first and second year participated in the study. The study found out that after employing paired t-test, there were no significant differences. However, after a follow-up those students who engaged in expressive writing had high scores of emotional intelligences. The study concluded that expressive writing can be used and implemented to achieve academic goals of students.

Alzarieni M. M. et. al (2019) examined how Interactional Metadiscourse Markers (IMDMs) are used in 60 Arabic patent abstracts within the human necessity field. The objectives were to identify the dominant categories of IMDMs in these Arabic patent abstracts and to clarify the functions of these markers. To achieve these aims, the researchers employed both quantitative analysis to determine the frequency of IMDMs and qualitative analysis to explore their roles within Arabic patent abstracts, drawing on the framework proposed by Hyland in 2005. The findings indicated that boosters, hedges, and attitude markers were frequently used, while the other categories exhibited a lower frequency.

Lee et. al (2019) opined that English is quite commonly used in educational settings nowadays to achieve competitiveness. Keeping this fact in view, it has become compulsory for students to be fluent in both written and oral English. However, there is a noticeable difference between the two. Considering this, the study focused on understanding the linguistic processes affecting such differences. For this purpose, writings of total 205-business students were collected. Those writings were analysed by employing the software Linguistic Inquiry Word Count (LIWC2015). The focus of analysis were the linguistic and grammatical properties used in writings. The study found that their sample used difficult words and wrote less half than the global population. It suggested their ability and unwillingness to write. Moreover, the study also revealed that students come short in terms of critical literacy.

Pak and Teh (2019) highlighted that consumer product reviews serve as a valuable source of opinions and expressions regarding purchased items or services. Therefore, it is crucial to comprehend the meanings conveyed in text reviews. One method to achieve this is by analyzing sentiments, expressions, and emotions conveyed through the text. Among the various writing styles employed, letter capitalization is frequently used to emphasize expressions or convey a more forceful tone within the text. The study aimed to explore the significance of letter capitalization in product reviews, specifically focusing on the value it adds to expressions. By comparing text with only one capitalized word and text without any capitalization, the researcher sought to assess the readers' perspective and their ratings of the text using a Likert scale. The results indicated that letter capitalization can effectively enhance the expression level of a review. In positive reviews, capitalization tends to make them even more positive, while in negative reviews, capitalization tends to amplify the negativity.

Kalianivala & Anahita (2019) carried out a research study to evaluate the differences between traditional expressive writing and writing that incorporates self-compassion principles. The study participants were guided on how to apply self-compassion principles during their writing sessions. The study aimed to explore individual variances and the psychological processes that unfold during the act of writing, employing linguistic analysis for this purpose. According to the findings, participants noted benefits from both traditional and self-compassionate expressive writing methods. Despite an overall increase in negative affect throughout the writing sessions, which aligns with the expected immediate outcomes of expressive writing (EW), the study did not find evidence supporting the anticipated differences in emotional affect or the usage of cognitive words between the different expressive writing conditions. Additionally, the anticipated moderation effects of rumination were not observed.

Nur et. al (2020) opined that appropriate rhetorical behavior and metadiscourse markers enhance the power of argument and persuasion in academic texts e.g., articles, thesis, and essay. However, researchers with different linguistic backgrounds and proficiency may use different RMs and MMs while writing in a nonnative language. The purpose of this study was to explain how Indonesian researchers of applied linguistics used rhetorical moves and metadiscourse markers in abstracts of their research articles published in international and national peer-reviewed journals. Twenty research article abstracts published in both international and national journals were selected for the corpus of this study. Swales' (2009) Five Rhetorical moves for abstracts and Hyland's (2005) metadiscourse markers' classification were used as models for the analysis. As a result, contrary to the expectations of readers of international journals, Indonesian researchers of applied linguistics used only three moves classified as essential (movements 2, 3, and 4), and two moves as conventional (moves 1 and 5). As pointed out in other similar studies, Indonesian researchers valued coherence, and persuasiveness of text over interaction with potential readers.

Brandt and Herzberg (2020) investigated whether word categories of Linguistic Inquiry and Word Count can predict application success or not. In this study, a total of 581 documents including cover letters, CVs, and complete application were analysed. Previous researches suggested that the expectation was that successful candidates, who ultimately received job offers, would exhibit a more definitive, intricate, and less self-

centered language in their application materials. On the contrary, it was predicted that rejected applications would display a dynamic style, linguistic simplicity, a greater focus on hedonistic matters, and a focus on day-to-day experiences. However, it was observed that existing models could only be partially applied in this context. Interestingly, valuable predictive information was found in both the cover letter and the CV, regarding the success of the application, which is significant considering the standardized nature of such documents.

Giordano, M. & Marongiu, M. A. (2020) investigated the use of metadiscourse markers in courses of online teaching methodology. They were of the view that instructors in teaching methodology courses employ a wide range of metadiscoursal features within their oral discourse. These features include commentaries, expressing their intentions and conveying their level of confidence in the statements. Additionally, they provide guidance to the listeners, incorporating logical connectors and frame markers that reference the structure of the oral text. For this purpose, the researchers employed Hyland's interactive and interactional metadiscourse markers. The results indicated a prevalence of interactional features in the examined content, including self-mentions, engagement markers, hedges, and boosters, as opposed to interactive features. The researchers suggested that the increased frequency of interactional features is directly associated with the spoken nature of the analyzed content.

Lumontod, Robinson Z., III (2020) is of the view that depression is a leading problem around the world. Some pieces of evidence suggest that text analysis can help in identifying mental and psychological problems including depression. The main focus of study was to determine suicidal thoughts and depression in college students' writing in the Philippines. For this purpose, a sample of 159 students was taken. The software employed was the online version of LIWC, which is a computerized analysis of text. The findings revealed that students with suicidal thoughts and depression used more personal pronouns i.e. "I", "me", and "my". Moreover, emotional tone and clout also showed significant relationship with suicidal tendency and depression.

Argudo (2021) investigated the effects of expressive writing on the alleviation of academic stress among 157 undergraduate students at a university in Ecuador. The study employed two questionnaires and focus group discussions to collect data. The study highlighted the importance of examining the impact of academic stress on

university students and exploring different strategies to alleviate it. The results indicated that expressive writing has a lasting effect on reducing academic stress.

Franco, M. C. et. al (2021) conducted a study which aimed to determine the differences in languages used by both male and female in grant applications. The study also examined the relationship among career stage, number of publications and curriculum. For this purpose, summaries of research proposals submitted in biomedical field of FAPERGS were collected which were submitted during the year 2013 and 2014. The samples were analysed with the help of software LIWC on six language patterns (Positive emotions, Negative emotions, Analytic thinking, Clout, Authenticity, and Emotional tone). The results indicated that there were no significant different in language patterns used by both genders. however, a small difference was found in clout scores (54.5 for not funded and 56.5 for funded grants).

Memon, M. A. et. al (2021) investigated the use of Interactive metadiscourse markers in engineering and technological research articles written by Pakistani and British engineers. The objectives of study were to compare the use of metadiscourse markers between two sub-corpora. Hyland & Tse's (2004) "Interpersonal model" of metadiscourse was employed for this purpose. Pakistani research articles were selected from X category research journals recognized by HEC (Higher Education Commission) and Britain papers were selected and downloaded from research repositories published between 2010 to 2016. Mixed method approach was employed. Findings revealed that more interactive markers were employed by British writers as compared to Pakistani writers.

Wu, X. & Yang, H. (2022) did a corpus-driven study on teachers. The objective of this study was to analyse the use of three personal metadiscourse markers i.e., we (inclusive), you (engaging) and I (self-mention) in classroom discourse. The sample consisted of eight sessions of four native English-speaking teachers who taught English for Academic Purposes (EAP) in the UK. Mixed method approach was employed. The results indicated that teachers unanimously gave importance to actively involving students in classroom instructions. Moreover, four types of metadiscourse functions involving interaction of students and teachers were identified namely managing students' responses, imagining scenarios, and managing students' discipline, which were further divided into nine sub-categories.

Kilic & Pan (2022) viewed that psycholinguistic knowledge resources have been widely used in constructing features for text-based human trait and behavior analysis. Recently, deep neural network (NN)-based text analysis methods have gained dominance due to their high prediction performance. However, NN-based methods may not perform well in low resource scenarios where the ground truth data is limited (e.g., only a few hundred labeled training instances are available). This study investigated diverse methods to incorporate Linguistic Inquiry and Word Count (LIWC), a widely-used psycholinguistic lexicon, in NN models to improve human trait and behavior analysis in low resource scenarios. It evaluated the proposed methods in two tasks: predicting delay discounting and predicting drug use based on social media posts. The results demonstrate that the methods performed significantly better than baselines that use only LIWC or only NN-based feature learning methods. It is evident that these methods proved beneficial in assessing the behavior of the participants than published results on the same dataset.

Ghaffar et. al (2023) investigated the appropriateness of the use of metadiscourse markers in the Punjab Curriculum & Textbook Board English language books. A comprehensive model of metadiscourse markers, adapted from Siddique et al. (2018), was utilized, with a focus on interactive and interactional markers. The frequency and distribution of interactive and interactional features were analyzed in the data for the academic year 2018-2019, and the functional aspects of metadiscourse markers were studied based on one-word, two-word, and three-word markers in the text. Data was collected using AntConc 4.0.10 software. Results indicated that interactive metadiscourse features were more frequently used than interactional metadiscourse features in the data. Furthermore, subcategories of interactive metadiscourse markers, such as transition markers and code glosses, were frequently observed in the data, as were subcategories of interactional metadiscourse markers, such as engagement markers and self-mention.

Landoni, M. et. al (2023) investigated either there is association of linguistic features and postpartum depression. The researchers suggested that examining linguistic features might shed light on how expressive writing helps individuals suffering from postpartum depression. For this purpose, a longitudinal online study was conducted. A sample of 53 mothers was taken and were divided in experimental and control groups. They were asked to complete self-report questionnaire that was

employed to assess the symptoms of postpartum depression. Besides, they were given an exercise of expressive writing about their journey throughout pregnancy and birth. The software Linguistic Inquiry and word count was employed to analyse written data for both groups. The findings suggested that use of words varied depending on how severe the symptoms were. Those who suffered from depression expressed negative emotions.

Asllani, B. & Mullen, D. (2023) conducted research to detect dementia with the help of personal writings. The researchers used text mining technique. For this purpose, personal writings of public figures were taken. With the help of Linguistic Inquiry and Word Count (LIWC), word choices and affect were analysed, and the writings of writers with dementia and without dementia were compared. The findings revealed the expected pattern in which people with dementia reflected high percentage of analytical thinking words but the percentage of authentic and emotional tone was significantly less. It was also found that less functional words including affections (sadness, happiness, anger) and grammar were used in the writings of people with dementia.

Puspita, S. & Suhandano (2023) investigated the correlation of interactional metadiscourse markers and gender in personal essays. The study was designed to see the differences in the use of interactional metadiscourse markers used by both men and women. The data was taken from essays, 10 from each gender, published in different editions of *Chicken Soup for the Soul*. A corpus tool, Antconc 3.5.9 was employed to extract interactional metadiscourse markers. The interactional metadiscourse markers were based on Hyland's taxonomy. The findings revealed that women used more interactional discourse markers to express themselves by using emotive connections. Whereas, men wrote more directly to attract readers.

Zhang, S. et. al (2023) attempted to detect narcissism from the language used by older adults. Their objective was to explore the relationship between narcissism and language use. 281 participants aged 65-89 were given recorders that were electronically activated. The purpose of recorders was to capture sound every 7 minute for 5-6 days. The participants were also asked to complete the Narcissism Personality Inventory-16 scale. LIWC was employed to extract linguistic features from sound snippets and random forest (a machine learning algorithm) was applied to analyse the relation between linguistic features and narcissism. The results revealed that the random forest

classifier model achieved a classification accuracy indicative of a satisfactory level of performance in its classification task. Through the application of the random forest classifier, the study assessed the significance of specific linguistic features in differentiating between individuals with high and low narcissism.

Aimah, S. et. al (2023) were of the view that metadiscourse markers are an indicator of writing quality and enables the writers to interact with the readers. This study investigated the types of metadiscourse markers used by EFL learners in their final project. Seven introduction sections were selected and mixed method approach was used. The study revealed that both interactive and interactional discourse markers were used by students. Among these, more frequent were interactive discourse markers that were used by learners.

2.1.1 Research Gap

This study not only analyses the cognitive patterns but also documents the frequency of occurrence of meta discourse markers in the expressive writings of undergraduate students in Pakistan. The present study employs a mixed method approach. Moreover, to the best of researcher's knowledge perhaps such study has not been conducted on the population of NUML, Multan.

2.2 Operational Definitions

This section consists of operational definitions of the key terms.

2.2.1 Expressive Writing

Expressive writing is defined as “personal and emotional writing without regard to form or other writing conventions, like spelling, punctuation, and verb agreement” (Evans, 2012).

The concept of expressive writing is straightforward. It is characterized by its deeply personal, emotional, and informal nature, allowing for a free-flowing expression without much concern for form, style, or traditional writing conventions such as spelling, punctuation, or grammar. Besides, it focuses more on feelings than on memories, events, objects, or people and involves expressing thoughts and emotions without a strict structure.

Pennebaker (1986) suggests that the advantages of expressive writing may be explained by changes in the brain. The right prefrontal cortex governs/rules our emotional states, and inhibits other brain regions such as the amygdala associated with intense negative emotions. Thus, expressing our deep emotional experiences through language enhances the brain's ability to assist us in regulating our emotional states.

2.2.1.1 Types of Expressive Writing

Expressive writing has many different types that serve as outlets for creative and therapeutic self-expression. Common types of expressive writing include:

2.2.1.1.1 *Journaling:*

It involves regularly documenting personal thoughts, emotions, and experiences in a journal.

2.2.1.1.2. *Personal Essays:*

These are writing informal essays that delve into personal experiences, reflections, or insights.

2.2.1.1.2. *Poetry:*

It includes crafting poems as a medium to convey emotions, thoughts, or experiences through rhythmic and artistic language.

2.2.1.1.3 *Letters:*

The kind of letters are composed that are directed toward oneself, others, or abstract concepts, facilitating emotional release and self-reflection.

2.2.1.1.4 *Memoirs:*

It captures personal memories and experiences, often with a thematic focus.

2.2.1.1.5 *Stream-of-Consciousness Writing:*

It refers to engaging in unstructured, free-flowing writing to capture thoughts and emotions without censorship.

2.2.1.1.6 *Therapeutic Writing:*

It involves participating in guided writing exercises designed to explore and process emotions, commonly applied in therapeutic or self-help settings.

2.2.1.1.7 Creative Nonfiction:

It means crafting texts that integrate personal experiences while incorporating storytelling elements and creativity.

2.2.1.1.8 Storytelling:

It involves sharing personal stories, whether genuine or fictional, to convey emotions and establish connections with readers or listeners.

2.2.1.1.9 Blogging:

It refers to maintaining a personal blog to share experiences, opinions, and reflections with an online audience.

These diverse forms of expressive writing provide individuals with various ways for engaging with their emotions, thoughts, and experiences, while promoting self-discovery and emotional well-being.

2.2.2 Linguistic Profile

Each of us has a communicative repertoire, or profile, that comprises the activities and kinds of discourse we regularly engage in. A linguistic profile is an in-depth analysis of an individual's or a group's language use. It includes various aspects such as language competence, language performance, sociolinguistic factors, and psycholinguistic elements. This concept is significant in understanding the nature of language.

Moreover, it refers to a detailed analysis and description of an individual's language abilities, skills, and characteristics. It provides an overview of various aspects of their language usage, including vocabulary, grammar, pronunciation, fluency, and communicative competence.

2.2.2.1 Components of a Linguistic Profile

2.2.2.1.1 Language Competence and Performance:

Language Competence refers to the basic knowledge of a language, including grammar, vocabulary, and phonology. It is the subconscious understanding of how language works, as defined by Noam Chomsky (1965) in his theory of generative grammar. Whereas, Language Performance coined by Chomsky, describes the actual use of language in real situations. It includes speaking, listening, reading, and writing

abilities. Besides, it reflects how well an individual can apply their linguistic competence in real-world contexts.

2.2.2.1.2 Psycholinguistic Elements:

It involves language acquisition and cognitive processes. Language acquisition is a process by which individuals learn a language. For children, this involves first language acquisition, while for adults, it often pertains to second language learning. Stephen Krashen's (1982) theory emphasizes the role of comprehensible input in language acquisition. Whereas, cognitive processes involve how the brain processes language, including language production, comprehension, and storage.

Cognitive processes involved in language use, such as production, comprehension, and storage, are explored in psycholinguistics. Researchers like Levelt have delved into the mental mechanisms behind these processes, investigating how the brain plans, organizes, and executes linguistic tasks. For example, during language production, speakers go through stages of conceptualizing a message, formulating it into linguistic structures, and articulating it through speech. Comprehension involves decoding the linguistic input, interpreting its meaning, and integrating it with prior knowledge.

2.2.3 Cognitive Structure

A cognitive structure refers to the mental frameworks and processes that individuals use to organize and interpret information. These structures are fundamental to understanding how people perceive, think, remember, and solve problems. They are the mental models that help individuals make sense of their experiences and the world around them. Cognitive structures are dynamic and can be reshaped through learning and experience, making them important to cognitive development and educational practices.

Jean Piaget, a renowned developmental psychologist, proposed a theory of cognitive development that highlights the importance of cognitive structures. According to him, cognitive development occurs through a series of stages, each characterized by different cognitive abilities. He introduced the concepts of schemas, assimilation, and accommodation to explain how cognitive structures evolve. Schemas are basic units of knowledge that serve as building blocks for more complex thought

processes. Assimilation involves integrating new information into existing schemas, while accommodation requires changing existing schemas or creating new ones in response to new information. His work highlights that cognitive structures are not static but develop and adapt as individuals interact with their environment (Piaget, 1952).

Lev Vygotsky (1978), another significant figure in developmental psychology, emphasized the social aspects of cognitive development. He introduced the concept of the Zone of Proximal Development (ZPD), which refers to the range of tasks that a child can perform with the help of another person who is more knowledgeable but cannot yet accomplish independently. This concept highlights the role of social interaction and cultural tools in shaping cognitive structures. He argued that cognitive development is a socially mediated process, where language and dialogue play crucial roles in the internalization of knowledge and the formation of cognitive structures.

Cognitive structures are also central to the field of cognitive psychology, which studies mental processes such as perception, memory, and problem-solving. Cognitive psychologists investigate how information is processed and stored in the brain. They often use models that describe cognitive structures and their functions. For instance, the information processing model compares the human mind to a computer, where information is input, processed, and output. This model includes components such as sensory memory, short-term memory, and long-term memory. Each of these components represent different cognitive structures involved in the storage and retrieval of information (Atkinson & Shiffrin, 1968).

Another important aspect of cognitive structures is the concept of mental representations. Mental representations are internal depictions of information that the mind can manipulate. These can include visual images, sounds, concepts, and linguistic symbols. Mental representations enable individuals to think about objects and events that are not physically present, facilitating abstract thinking and problem-solving. Theories of mental representation, such as the dual coding theory proposed by Allan Paivio, suggest that information can be represented both visually and verbally, enhancing cognitive processing and memory retention (Paivio, 1986).

Cognitive structures also play a critical role in learning and education. Constructivist theories of learning, inspired by the work of Piaget and Vygotsky, emphasize the active role of learners in constructing their own understanding.

According to constructivism, learners build cognitive structures through active engagement with content and through interactions with others. This perspective has led to educational practices that promote inquiry-based learning, collaborative learning, and the use of real-world problems to enhance cognitive development (Bruner, 1966).

Moreover, cognitive structures are involved in metacognition, which refers to the awareness and regulation of one's own cognitive processes. Metacognitive strategies, such as planning, monitoring, and evaluating, enable learners to manage their own learning more effectively. Research has shown that teaching metacognitive skills can improve academic performance by helping students develop more sophisticated cognitive structures and become more autonomous learners (Flavell, 1979).

Cognitive structures are integral to students' information processing abilities, serving as frameworks that enable the comprehension of one or multiple aspects of a concept. These structures serve as essential reference points, facilitating the learners' engagement with and understanding of the subject matter.

2.2.4 Metadiscourse

Metadiscourse refers to the strategies and linguistic elements that are employed by writers to guide readers. It also helps to facilitate the interaction between the text and its audience. It involves communication that can be both explicit and implicit regarding the organization, structure, and development of any discourse. By offering these cues, metadiscourse aids readers in efficiently navigating and interpreting content. Its significance lies in explaining how writers engage in writing process to establish connections with their audience and effectively convey the intended meaning within the text.

According to Hyland (2005), metadiscourse is a broad term that includes a diverse range of cohesive and interpersonal features. These features play a crucial role in establishing connections between a text and its context. Hyland characterizes metadiscourse as "self-reflective expressions," serving the purpose of "negotiating interactional meaning in a text." Its primary function is to assist the writer or speaker in conveying a specific perspective and actively engaging with readers of a specific discourse community (Hyland, 2005).

Metadiscourse can be classified into distinct categories based on its linguistic characteristics. The primary classifications are:

2.2.4.1 Interactive Metadiscourse

2.2.4.1.1 Engagement Markers:

Linguistic expressions that establish a direct connection between the communicator and the audience. Examples include direct address, employing pronouns like "you," and phrases such as "I believe," to activate reader's participation.

2.2.4.1.2 Questions:

These are interrogative statements strategically employed to facilitate reader's engagement.

2.2.4.2. Interactional Metadiscourse:

2.2.4.2.1 Hedges:

These linguistic devices are employed to convey the writer's degree of certainty or reservation, employing terms like "perhaps" or "it seems."

2.2.4.2.2 Boosters:

These lexical elements enhance the writer's confidence in a statement, e.g., terms like "clearly" or "indeed."

2.2.4.2.3 Attitude Markers:

It involves expressive language that conveys the writer's stance or sentiment toward the presented information, including terms like "surprisingly" or "regrettably."

2.2.4.2.4 Self-Mentions:

It involves references to the speaker or writer, prevalent in academic discourse to assert authority or establish a personalized connection with the audience.

Metadiscourse markers serve a collaborative role in directing readers, shaping discourse, and effectively conveying the writer's intentions. The interactive features help to create engagement, while interactional features assist in managing the perspective of writer, contributing to the overall coherence of the communication.

2.3 Theoretical Framework

This section of the research draws on the critical reading of the related theories put forward by different theorists in the relevant fields. The existing theories concerning the present research are also explained by the researcher.

2.3.1 Linguistic Analysis

Linguistic analysis involves analysing text through the lenses of phonology (sound), morphology (internal word structure), syntax (sentence structure), semantics (meaning in specific contexts), and/or pragmatics (social use), as outlined by Fairclough (1992). In this context, "text" means any naturally occurring instance of spoken or written language, extending beyond traditional written texts (Stubbs, 1996). Linguistic analysis often dissects words into morphemes—meaningful segments that cannot be further deconstructed without compromising meaning (Harris, 1954; Jakobson & Halle, 2010; Langacker, 1972). For instance, linguistic features predict fraudulent events (Louwerse, Lin, & Semin, 2010), predict an individual's personality type (Gill, Nowson, & Oberlander, 2009), whether they are lying (Hancock, 2004), and even to what extent they visit their doctor's office (Campbell & Pennebaker, 2003)

2.3.1.1 *Linguistic Inquiry and Word Count (LIWC)*

The application of LIWC has predominantly been observed within the field of psychology, with limited usage in other social sciences. Numerous social sciences give significant importance to language as a primary medium in various activities. Moreover, the measurement of language can yield valuable insights for the development of theoretical frameworks and models. Some research areas include mass communications, political science, library science, and education. For instance, investigations into the difference between South Korean and North Korean languages have been conducted by some researchers (Lee, et. al, 2010). Furthermore, studies have been conducted to analyse the language of political leaders and criminals. (Seo, et. al. 2012).

Language analysis has been employed to explore differences among individuals, including differences attributed to gender and social standing. A study conducted by Mehl, Vazire, Ramirez-Esparza, Slatcher, & Pennebaker (2007) investigated gender-based differences in word usage frequency in everyday scenarios. By using Linguistic Inquiry and Word Count (LIWC) methodology, the researchers found no significant differences in word usage rates between genders. This finding challenges the prevalent perceptions about male and female communication (Mehl, et al., 2007). The study suggested that while women may use more words in public

settings, men may converse more in private environments, leading to a balance in overall word use across genders.

Additionally, research in social psychology has explored how language aspects can indicate social dynamics (Gonzales, Hancock, & Pennebaker, 2010; Ireland, & Pennebaker, 2010; Mehl & Pennebaker, 2003; Niederhoffer & Pennebaker, 2002). The findings of these studies revealed that individuals with strong social bonds tend to mirror each other's linguistic patterns and word volumes (Ireland, & Pennebaker, 2010; Niederhoffer & Pennebaker, 2002).

Pennebaker (2015) contends that the way we talk and express ourselves not only show explicit motivation or goals and but also reflect our internal thoughts and feelings. There are diverse methods and approaches which can help in assessing cognitions/emotions ranging from basic dictionary-based techniques that categorize words as either positive or negative and count the frequency of their occurrence, to advance approaches that take into account the precise selection and arrangement of words within a text. Such tools groups language naturally into different categories that reveal the speaker's personality traits and psychological states.

One of such tools is Linguistic Inquiry and Word Count, henceforth (LIWC). It is a text analysis software and widely used psycholinguistic lexicon that was developed with the aim of analyzing the emotional, cognitive, and structural components of a text (Thompson et al., 2023). It categorizes both the content of speech and the style of expression into predefined groups.

2.3.1.2 Linguistic Inquiry and Word Count: A Brief History

Linguistic Inquiry and Word Count was developed by Pennebaker who was a social psychologist and interested in examining the therapeutic value of writing. He wanted to use a software that could extract linguistic features from any text. He postulated that it was possible to create lists of words that could identify specific characteristics such as beliefs, fears, thinking patterns, social relationships, and personalities based on the words used by individuals. To test this hypothesis, Pennebaker and colleagues developed this software in 2015, which is a machine tool that analyzes the semantic content of documents such as essays, editorials, novels, and blog comments etc. Later on, he and Martha E. Francis, a student and programmer worked for the development of software.

It works by searching for each word in the text and matching it to a word in the lexicon. The lexicon contains words that fall into categories that reflect the word linguistically, psychologically, and socially, such as pronouns, positive emotions, social processes, and so on. This software adds a word category percentage value if a category is found.

It is based on the analytical assumption that algorithmic methods can reliably recover aspects of the semantic content of text. It has had a significant impact on text analysis, with applications in various domains such as clinical, academic, and financial etc. This software consists of highly selective lists that define categories, which were developed over decades using extensive samples of texts. These lists are referred to as "dictionaries" and contain various categories, including general classifications such as positive emotion, cognition, and biological processes, as well as specific categories such as family, health, anger, and sadness. The LIWC program analyzes the text and reports the proportion of words that fall under each of the 125 categories. These categories are defined by approximately 12,000 words or word stems and are used for analysing the text and determining the cognitive patterns of the users.

It helps provide insight about different aspects of language use by examining the linguistic features. This software has undergone significant changes over time. Machine learning allows the creation of broader dictionaries and more accurate determinations. With the advancement of computational power, researchers have integrated algorithms and statistical models in this software. This purpose of this integration is to create harmony between computational advancements (Approaches) and domain knowledge. That is why the recent release of LIWC-22 has gone through updates and revisions as compared to its earlier versions. One of the significant changes in this software is that the dictionary is classified in two categories namely Basic and Expanded. The basic category comprises incorporates a significant portion of dimensions present in older versions of LIWC, and admits potential modifications. Whereas, the Expanded Dictionary integrates substantially updated versions of traditional LIWC categories, accompanied by a diverse set of categories and variables (Boyd et al., 2021).

It contains dictionaries on several languages, including English, Spanish, German, Dutch, Norwegian, Italian and Portuguese. LIWC researchers employ

categories of these variables and generated four standardized scores, which are Analytic Thinking, Clout, Authentic, and Tone. These scores are defined as follows

2.3.1.3 Analytical Thinking:

This dimension deals with cognitive patterns, assessing the extent to which individuals employ language that indicates logical, formal, and hierarchical thinking processes (Pennebaker et. al. 2014). A higher score on this dimension signifies formal, logical, and hierarchical thought. Analytical skills can be observed in tasks such as pattern recognition, brainstorming, data observation and interpretation, assimilation of new information, theoretical formulation, and decision-making that considers multiple factors and options (Heuer 1999). Heuer emphasizes the integral role of judgment, emphasizing its connection to analytical capabilities. Furthermore, this dimension shows a close association with situational logic, indicating well-structured thoughts and reasoning processes (Heuer, 1999).

2.3.1.4 Clout:

This dimension portrays confidence, status or leadership conveyed through individuals' lexical choices. Empirically, confidence aligns with reduced usage of first-person singular pronouns (I, me) and increased use of first-person plural (us, we) and second-person singular (you) pronouns (Kacewicz, et. al 2014). A higher score on this dimension signifies that the writer is conveying expertise and confidence, while a lower score suggests that writer shows humility, tentativeness, and at times, anxiety. Additionally, increased clout corresponds to a focus on others, whereas lower clout is associated with self-centered language use.

2.3.1.5 Authenticity:

In the context of the Linguistic Inquiry and Word Count (LIWC) tool, authenticity is studied through a dimension that assesses the extent to which individuals present themselves openly in their written expressions. This dimension evaluates the language used to convey qualities such as humility, personability, and personal disclosure. It is derived from an authenticity algorithm developed through studies on honesty and deception, and it draws on distinctions between formal and informal writing styles. Pennebaker (2011) contends that formal writing often appears rigid, occasionally lacking humor, and with a touch of arrogance, marked by high rates of

articles and prepositions but minimal use of first-person singular pronouns (I-words). More formal writing tends to exhibit less personal disclosure (Pennebaker, 2011).

2.3.1.6 Tone:

This dimension evaluates the overall emotional tone conveyed in the text, including both positive and negative tone. A percentage of variable is generated, combining scores for positive and negative words. Text with greater occurrence of positive words indicate a positive tone, while text with greater occurrence of negative words signifies a negative tone (Cohn, Mehl, and Pennebaker 2004). The tone analysis not only measures the emotional orientation of the writer but also considers the formality of the text (Cohn et al., 2004).

2.3.2 Content Versus Style Words

When LIWC was first developed, the focus was to create an efficient system capable of tapping both the psychological processes and the content of written or spoken expressions (Tausczik and Pennebaker 2015). Over subsequent years, it became evident that there exist two broad word categories with distinct psychometric and psychological characteristics. Content words, including nouns, regular verbs, and numerous adjectives and adverbs, serve to convey the content of communication. For example, in the phrase "It was a dark and stormy night," the content words include "dark," "stormy," and "night." However, style words are intertwined among these content words, commonly known as function words. Style or function words consist of pronouns, prepositions, articles, conjunctions, auxiliary verbs, and a few other categories. In the given phrase, examples of style words are "it," "was," "a," and "and."

Nevertheless, approximately 55% of our spoken, heard, and read words consist of style words. Additionally, cognitive processing of content and style words diverges significantly within the brain (Miller, 1995). From a psychological perspective, style words serve as indicators of how individuals communicate, while content words convey what they are saying. Ability of using style words requires fundamental social skills. For instance, consider the sentence, "I will meet you here later." Despite grammatical correctness, the sentence lacks real meaning without contextual knowledge regarding the referents of "I" and "you," "here," and what "later" means. These referents are shared knowledge within a specific conversation at a particular time, highlighting the interdependence of style words (cf. Chung & Pennebaker, 2007). Indeed, such linguistic

analyses reveal social and psychological process and it is supposed that individuals cannot easily hide such emotions.

2.3.3 Language and Psychological States:

Over years, the attention of researchers has been shifted towards examining the significance of language in comprehending psychological states. A limited yet impactful empirical investigations have generated insights into the understanding of individual's behavior. Previous review of literature shows that linguistic expressions serve as a reflective lens into an individual's internal thinking process. Boroditsky (2001) contends the influential role of language in shaping cognitive processes. Moreover, Vaughn's (2018) investigation indicated that individuals tend to narrate positive experiences while thinking about hope. It further implies that words are layered with multiple meanings. Besides, linguistic expressions also have the potential to reveal political ideologies through discourse (Chichoka, Bilewics, Jost, Marrouch, and Witkowska 2016).

Linguistic patterns reflect their influence into students' academic performance. The study conducted by Pennebaker, et. al. (2014) revealed that apparently small and irrelevant words can gauge the academic performance of students. Keeping in view these insights, the present study suggests that linguistic cues may serve as indicators of psychological states. These findings present a method for comprehending the cognitive and behavioral aspects of individuals.

2.3.4 Affect: Positive and Negative Affect

Pennebaker (2015) contends that the extent to which individuals convey their emotions, the way in which they express them, and the tone can offer valuable insights into their subjective experiences. Diverse responses are observed in reaction to significant or traumatic events which highlights coping mechanisms and the potential future impact of such events.

Previous research of Kahn, et al. (2007) indicates that the software Linguistic Inquiry and Word Count (LIWC) identifies emotionality in language usage. For instance, positive emotional expressions, such as "love," "nice," and "sweet," are predominant in text when individuals write about positive events. Conversely, a higher frequency of negative emotion words like "hurt," "ugly," and "nasty" are present in the text describing negative events.

2.3.5 Cognitive Processing:

The indicator of cognitive processing, also known as Cognitive Load, evaluates the linguistic elements that suggest an individual is exerting more mental effort to make sense of environmental or situational challenges. This includes a wide range of words, including specific adjectives (e.g., "obvious," "essential," "specific"), verbs (e.g., "distinguish," "suppose," "consider"), and nouns (e.g., "secret," "question," "findings"), that might indicate increased cognitive engagement.

When people try to comprehend their surroundings, they tend to employ language that reflects this cognitive activity. Continuous or intense mental engagement can lead to an escalation in Cognitive Load. Such an increase might be triggered by the complexity or structure of a task, the urgency of time, a significant life event or alteration, among other variables. Increased cognitive demands can notably detract from analytical reasoning, decision-making capacity, and the efficiency in executing complex cognitive functions.

2.3.6 Cognitive Processes Categories:

The LIWC (Linguistic Inquiry and Word Count) cognitive categories delve into the linguistic markers related to cognitive processes and styles present in written text. Understanding these categories can provide valuable insights into how individuals process information, think, and express themselves through language. Here's a detailed explanation of each LIWC cognitive category:

This category consists of words associated with various cognitive activities, including thinking, reasoning, and understanding. Words such as "think," "know," "believe," "consider," and "understand" fall into this category. Texts with a higher frequency of cognitive process words may suggest a more reflective or analytical style of writing.

2.3.6.1 Insight:

The insight category includes words that indicate introspection, reflection, or understanding. Examples of insight words include "realize," "comprehend," "insight," and "perspective." Texts with a greater occurrence of insight words may suggest a deeper level of self-awareness or introspection by the writer.

2.3.6.2 Causation:

This category involves words that imply causality or the relationship between cause and effect. Words such as "because," "effect," "cause," and "result" are categorized here. Texts with a higher frequency of causation words may indicate a focus on explaining relationships or identifying reasons behind events or phenomena.

2.3.6.3 Certitude

It has replaced the original cognitive processing dimension of certainty. Certitude appears to reflect an understanding of how people express confidence and assertiveness in their language. Words like "absolutely," "definitely," and "clearly" fall into this category. These words reflect a strong sense of certainty and conviction. For example, in a statement like "I am absolutely sure that we will succeed," the word "absolutely" emphasizes complete confidence. Similarly, "definitely" in "We are definitely on the right track" highlights firm assurance.

2.3.6.4 Tentative:

Tentative words convey uncertainty, doubt, or hesitation. Words such as "maybe," "perhaps," "uncertain," and "possible" fall into this category. Texts with a higher frequency of tentative words may suggest a cautious or speculative approach to convey information or express opinions.

2.3.7 Feature Engineering

According to Li (2019), the process of feature engineering involves the transformation of raw data into more optimized encoding methods, facilitating the identification of features present in data. Such identification of features plays a crucial role in enabling researchers to yield interpretable results, and enhance the overall convenience of analysis.

In this section, the researcher explains different psycholinguistic feature sets of written text used in the LIWC software. The categories have been further classified into five main sets as linguistic processes, psychological processes, personal concerns, spoken categories and punctuation.

Feature Set	Categories
-------------	------------

Linguistic Processes	Word count, total pronouns, personal pronouns, articles, prepositions, auxiliary verbs, adverbs, conjunctions
Psychological Processes	positive emotion, negative emotion, social processes, cognitive processes, perceptual processes
Personal Concerns	Work, leisure, home, money
Spoken Categories	Assent, Non-fluencies, fillers
Punctuation	Total punctuation, periods, commas, colons, semicolons, question marks, exclamation marks, dashes

TABLE 1 MAIN LIWC SETS AND CATEGORIES

Since, for the present study the data is been collected in written form and the focus is on psychological processes; therefore, the LIWC is operationalized accordingly.

2.3.8 Metadiscourse Systems Contributory to this Research's Paradigm

Several taxonomies of meta-discourse have been suggested by discourse analysts, such as by Van de Kopple (1985), Crismore, et al., (1993), and Hyland & Tse (2004).

2.3.8.1 Vande Kopple's classification of metadiscourse categories (1985)

His (1985) classification accounts for the following functions of metadiscourse.

2.3.8.1.1 Textual metadiscourse

2.3.8.1.1.1 Text connectives:

These are used to help show how parts of a text are connected to one another. It includes **sequencers** (first, next, in the second place), **reminders** (as / mentioned in Chapter 2), and **topicalizers**, which focus attention on the topic of a text segment (with regard to, in connection with).

2.3.8.1.1.2 Code glosses:

These are used to help readers grasp the writer's intended meaning. These markers are used to reword, explain, define or clarify the sense of use, based on the writer's assessment of the reader's knowledge.

2.3.8.1.1.3 Validity markers:

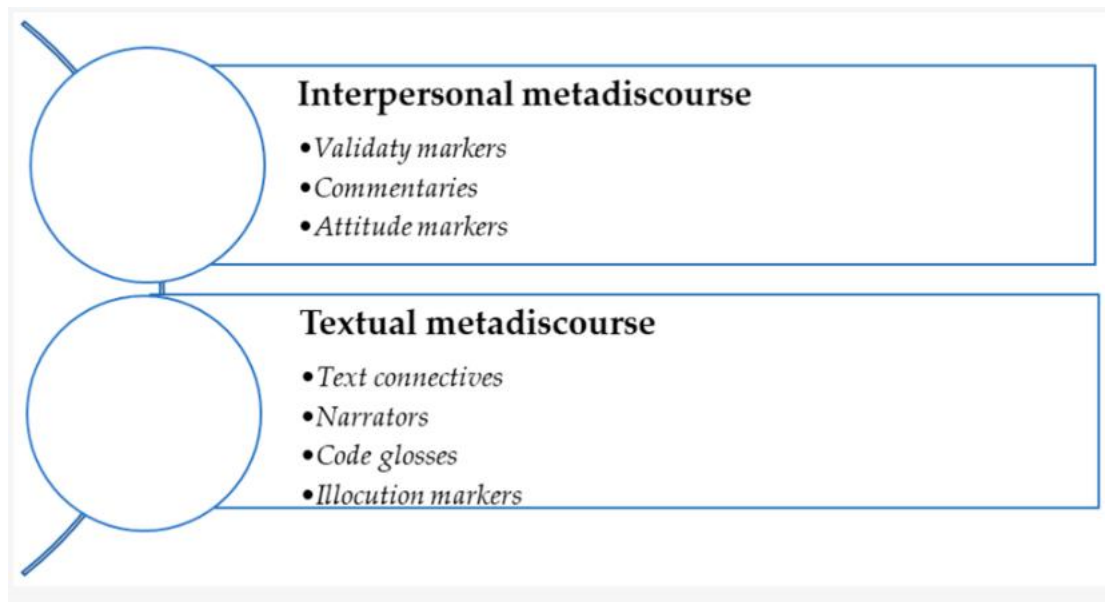
It is used to express the writer's commitment to the probability or truth of a statement. These include hedges (perhaps, might, may), emphatics (clearly, undoubtedly), and attributors which enhance a position by claiming the support of a credible other (according to Einstein).

2.4.5.8.1.1.4 Narrators

These are used to inform readers of the source of the information presented - who said or wrote something (according to Smith, the Prime Minister announced that).

2.3.8.1.1.2 Interpersonal metadiscourse

Illocution markers are used to make explicit the discourse act the writer is performing at certain points (to conclude, I hypothesize, to sum up, we predict). Similarly **Attitude markers** are used to express the writer's attitudes to the propositional material he or she Presents (unfortunately, interestingly, I wish that, how awful that). Whereas, **Commentaries** are used to address readers directly, drawing them into an implicit dialogue by commenting on the reader's probable mood or possible reaction to the text (you will certainly agree that, you might want to read the third chapter first).



Within the proposed classification, illocutionary markers are initially classified as textual metadiscourse. However, it's essential to note that these markers exhibit the potential to function as interpersonal markers as well. Furthermore, challenges arise in the category of attitude markers, as the evaluative nature of various items introduces complexity and diversity within this classification.

2.3.8.2 Crismore et al.'s (1993) System

Crismore (1989) introduces a classification comprising two principal categories: attitudinal and informational. The attitudinal category incorporates hedges, emphatics, and evaluatives, while the informational category includes aims, topicalizers, and pre- and post-plans within the text. Aligned with the interpersonal and textual functions of language, this taxonomy notably distinguishes metadiscourse at both global and local levels. While concise, it omits certain subtypes such as illocutionary markers and code glosses.

Crismore et al. (1993) have proposed an alternative metadiscourse classification, similar to Vande Kopple's (2002), with a focus on two primary functions: interpersonal and textual. This classification represents an effort to enhance and structure Vande Kopple's taxonomy, introducing refined subcategories and reorganization. However, despite these efforts, certain issues persist, particularly in the persistence of the two main types, interpersonal and textual, without change.

Category	Function	Examples
Textual Metadiscourse		
1. Textual markers		
Logical connectives		
Sequencers	Show connections between ideas	in addition, therefore, so
Reminders	Sequence/ordering	first, next, finally
Topicalizers	References to previous information	as we saw previously
	Indicates shift in topic	now, I will discuss ...
2. Interpretive markers		
Code Glosses		
Illocution markers	Further explains text material	for example, that is
Announcements	Name the act performed	in sum, to conclude
	Announce upcoming information	in the next chapter.
Interpersonal Metadiscourse		
Hedges	Show uncertainty to truth of claim	might, possible, likely
Certainly markers	Express commitment to claim	certainly, shows, know
Attributors	Give source or support of claim	Scott claims
Attitude markers	Display writer values	surprisingly, I hope
Commentary	Relationship marker with reader	dear reader, please consider

Crismore et al. (1993, p. 47-54) classification of metadiscourse

2.3.8.3 Mauranen (1993) Classification

Mauranen (1993) introduces a distinct classification for metadiscourse, replacing the term "metatext" to describe discourse features. Her investigation examines metatextual attributes within the domain of Economics in both Finnish and English texts, defining metatext as "text about text itself."

Categories	Functions
Connectors	Propositional links of text are signaled through connectors.
Reviews	Indicate that a prior stage is being summarized or recapped.
Previews	It indicates that the next phase of text discourse is being predicted.
Action Markers	Action markers denote the acts done in the discourse.

Mauranen's (1993) approach exhibits a narrow focus, predominantly addressing the textual metadiscourse function while overlooking the interpersonal dimension. The term "metatext" is specifically employed to organize the text. Furthermore, the category

“connectives” is broad and can be further categorized in code glosses, rationales, and concessives.

2.3.8.4 Vande Kopple's (1997) System

Kopple's (1997) system seems to take more of a pragmatic aspect of discourse into consideration and has already been employed for many studies in the domain. His taxonomy includes sub-classes of metadiscourse such as: text connectives, code glosses, illocution-markers, epistemological, modality- and attitude-markers, evidentials, and commentary, slightly differs from his earlier system of Vande Kopple (1985), wherein in place of epistemological markers that include evidentials and modality markers, he used validity markers and narrators.

	Types	Categories		Types
Textual Metadiscourse	Text connectives	Logical/temporal connectors Sequencers Announcements Topicalizers Reminders	Interpersonal Metadiscourse	Illocutionary markers
	Code glosses	Explaining delimiting Defining		Attitude markers
	Validity Markers	Hedges Emphatics Attributers		Commentaries
	Narrators			

2.3.8.5 Milne's (2003) Classification

Milne (2003) contributes to the ongoing refinement of metadiscourse classification, specifically examining the rhetorical functions within English and Spanish newspapers. Her framework divides metadiscourse into two distinct categories: textual and interpersonal metadiscourse. This classification reflects her attempt to provide a more comprehensive understanding of the functions of metadiscourse markers in journalistic contexts.

Textual Metadiscourse		Interpersonal Metadiscourse	
Category	Sub-types	Category	Sub-types
Logical Markers	Adversatives Additives Consecutives Conclusives	Hedges	Epistemic expressions Probability Epistemic verbs
Reminders		Certainty Markers	
Sequencers		Attributers	Attitudinal adverbs Attitudinal adjectives Cognitive verbs Deontic verbs
Code Glosses	Reformulators Punctuation devices exemplifiers Parentheses	Commentary	Direct address to the reader Rhetorical questions Inclusive expressions Personalization Asides
Illocutionary Markers Announcements			

This model aligns with the frameworks proposed by Crismore (1993) and Vande Kopple (2002) in the classification of metadiscourse. However, Milne's (2003) approach introduces a more acculturated perspective in distinguishing syntactic and functional features. Despite this, challenges persist in the clarification of metadiscourse and propositional content, with particular ambiguity noted in the classification of attitude markers and hedges.

2.3.8.6 Hyland's (2005) System

Hyland's (2005) system of metadiscourse also springs out of the functional approach which considers metadiscourse as the ways the writer refers to the text, to the writer or the reader. His distinctions between interactive and interactional resources (following Thompson & Thetela, 1995) acknowledge the organizational and evaluative features of interaction in discourse. He also includes engagement features, thus further developing Hyland's (2000) model.

Hyland (2005) categorises metadiscourse markers into two groups based on their function. This distinction is made between interactive meta-discourse that is employed as a tool to aid and guide readers throughout the entire text, and interactional meta-discourse used for engaging potential readers in any text. Readers' schema on the subject under discussion, their ability to comprehend, and whether they require

elaboration are all revealed through interactive meta discourse elements and are used to "organize propositional information in ways that a projected target audience is likely to find coherent and convincing" (Hyland, 2005)

Hyland's metadiscourse model has significantly advanced the study of linguistics, moving beyond the earlier perception of discourse that primarily saw texts as expository and a mere straightforward delivery of facts and explanations. This model introduces an approach to communication that is keenly aware of the audience, emphasizing the manner in which thoughts and ideas are conveyed. Such an approach gains even greater effectiveness when it also considers the specific needs and expectations of the participants in the communication. It's important to recognize that metadiscourse clearly differentiates between the propositional content of texts and the distinctive methods used for expressing this content. However, it does not represent different levels of significance or meaning.

Metadiscourse is a kind of study through which we understand that textual statements hold a dual function: they not only reference the reality external to the text but also shape the reader's perception and interaction with that reality through the text presented. This approach highlights the intricate role of language in communication, emphasizing that it does more than just inform. According to Hyland, the use of language is a deliberate act, designed not merely to transmit facts or data about a given subject but to do so in a manner that is meaningful and engaging to the audience. Through this perspective, metadiscourse reveals how texts seek to bridge the gap between the information they convey and the reader's engagement with that information, fostering a more interactive reading experience.

Employing imperative verbs, using second-person pronouns, and incorporating evaluative feedback are strategies writers use to provide a sense of connection and active involvement with the content. These techniques enhance the efficiency of information delivery and establish a relationship with the reader. Eliminating these metadiscourse markers can lead to a more objective tone, potentially making the content harder to grasp and reducing the reader's enthusiasm.

Observing metadiscourse features with attention allows understanding of the methods by which writers and speakers not only present their stance but also strategically align their communication to resonate with their target audience in specific

situations. This strategic alignment involves a dynamic interplay of language and context, enabling the conveyance of messages in a way that is both meaningful and engaging to the audience. By employing this model, writers can more effectively distinguish and fulfill the implicit needs and anticipations of their readers. It helps them craft content that not only informs but also connects on a personal level. This approach not only enhances the clarity and impact of the message but also helps develop a stronger relationship between the writer and the reader. This makes the exchange of ideas more compelling and collaborative.

Hyland (2005) established three essential criteria for identifying metadiscourse:

1. Metadiscourse stands apart from the propositional elements of discourse.
2. Metadiscourse addresses aspects of the text concerning writer-reader interaction.
3. Metadiscourse is limited to relations internal to the discourse.

According to Hyland the interactional markers do not only help writers demonstrate their existence, they also facilitate writer-reader interaction such as showing disbelief or confidence.

His interactive resources consist of transition markers (conjunctions and adverbials), frame markers (text boundaries signals), endophoric markers (references to other text parts), evidentials (representations of ideas from another source), and code glosses (rephrasing, elaborations, explanations). As for the interactional resources, these include hedges, boosters, attitude markers (writer's affective rather than epistemic attitudes to referential material), engagement markers (explicit reader's addresses) and self-mentions (1st person pronouns and possessive adjectives). It is important that the last category of self-mention is the only resource not tapped by Vande Kopple's (1997) model.

Hyland's (2005) Metadiscourse Analysis Model with its both main and sub categories as well as functions and examples are illustrated in the table below.

Category	Function	Example
Hedges	withholding commitment to propositional content	might, perhaps, possible, about
Boosters	emphasizing certainty to close dialog	in fact, definitely, it is clear that
Attitude Markers	expressing writer's attitude toward propositions	unfortunately, I agree surprisingly
Self-mentions	making explicit reference to the authors(s)	I, we, my, me, our
Engagement Markers	explicitly building a relationship with the reader(s)	consider, note you can see

Interactional Metadiscourse Markers (adapted from Hyland, 2005, p. 92)

Category	Function	Example
Transitions	expression of relations between the main clauses	in addition, but, thus, and
Frame Markers	reference to discourse acts, sequences, and stages	finally, to conclude , my purpose is
Endophoric Markers	reference to other parts of the text	noted above, see fig., in section 2
Evidentials	reference to the information from part of the text	according to x, z states
Code glosses	elaboration of propositional meanings	namely, for example, such as, in other words

Interactive Metadiscourse Markers (adapted from Hyland, 2005, p. 92)

2.3.8.6.1 *The Interactive Dimension:*

It emphasizes on the writer's understanding of the audience and how text is organized for their potential knowledge, interest, rhetorical expectations, and comprehension skills. In this category, the indicators revolve around discourse organization strategies rather than personal experiences.

The interactive dimension metadiscourse markers are categorized into five sub-categories.: Transitional Markers, Frame Markers, Endophoric Markers, Evidentials, and Code Glosses.

Transitional markers primarily consist of conjunctions and adverbial phrases. These play a crucial role in helping readers interpret pragmatic connections. They serve to indicate interaction i.e., additive, causative, and contrastive, within the writer's thoughts. The significant purpose of transitional markers is to establish links between ideas within the text versus those external to it, such as adding new information. These markers compare similarities or differences in arguments using expressions like "likewise" or "in contrast to." Additionally, transitional markers can convey a

consequential relationship by providing justification for a conclusion (e.g., "therefore," "in conclusion") or signal that an argument is being countered (e.g., "nevertheless," "anyway").

Frame markers serve to indicate text boundaries and structural elements within the text. These are similar to transitional markers, but they are internal to the text. Unlike transitional markers, frame markers focus on identifying or ordering arguments within the text rather than events in time. These markers are used to sequence label different parts of the text using words or phrases like "first," "then," or "at the same time." Additionally, frame markers explicitly label text stages, announce goals (e.g., "I argue here," "my purpose is"), and indicate shifts in topics (e.g., "now," "let us return to").

Endophoric markers are phrases and these refer to other parts of the text, assisting in the reader's understanding of additional propositional information. The primary objective of an endophoric marker is to enhance comprehension by providing supportive material that clarifies an argument. These markers play a crucial role in directing the reader towards the writer's preferred interpretation of information. By assisting the reader in locating supporting material, endophoric markers contribute to a more comprehensive understanding of the subject matter.

Evidentials play a crucial role in guiding the reader's interpretation and establishing the writer's command of the subject by specifying the source responsible for a particular position or statement. It's important to note that evidentials separate the authority for a position that is separate from the writer's own perspective.

Code glosses refer to words or phrases that offer added information by restating, elaborating, or explaining what has been previously stated. The primary purpose of code glosses is to ensure that the reader comprehends the writer's intended message more clearly. These glosses serve as clarifications, providing further details or explanations to enhance the reader's understanding of the conveyed information.

2.3.8.6.2 The interactional dimension:

Interactional metadiscourse markers aim to highlight how writers actively engage with their audience by commenting on their message, often reflecting the writer's 'voice' or personality. These markers are characterized as evaluative and engaging, with the goal of expressing a sense of harmony between the text and the

reader. The interactional dimension metadiscourse markers are broadly categorized into five subcategories: Hedges, Boosters, Attitude Markers, Self-Mentions, and Engagement Markers.

Hedges include words or phrases strategically inserted by the writer to recognize different viewpoints. By presenting information as an opinion rather than an absolute fact, the writer assigns a degree of uncertainty or probability to it. Common hedge words include "perhaps," "might," or "possible." Overall, hedges are employed to guide the reader toward the conclusion or reasoning preferred by the writer.

Boosters provide writers with means to convey certainty regarding specific positions, even when presented with various alternative views. The use of words such as "clearly," "decisively," and "obviously" is employed to influence the reader and establish a sense of unity with the audience. Additionally, boosters can enhance an argument by encouraging the reader to draw the same conclusions as the writer. According to Hyland, boosters and hedges are significant in expressing commitment in a text while also demonstrating respect for the reader.

Attitude markers convey the writer's influence on information through the inclusion of attitude verbs (e.g., prefer, agree), sentence adverbs (e.g., hopefully, fortunately), and adjectives (e.g., amazing, remarkable, appropriate). These markers serve to express the writer's attitude, whether it be preference, agreement, or other emotional tones. Attitudinal markers can communicate surprise, frustration, or a sense of obligation, providing insight into the writer's intended mood or emotional tone.

Self-mentions involve the use of first-person pronouns and possessive adjectives (e.g., I, me, mine, exclusive we, our, ours). While all writing reflects information about the author, the inclusion of personal pronouns projects the writer into the text in a notable and impactful manner.

Engagement markers serve as devices that actively direct the reader's attention by addressing them directly. These markers meet readers' expectations by acknowledging them as participants of conversation, using pronouns like "you," "your," or inclusive forms of "we." Additionally, engagement markers may take the form of interjected phrases, e.g., "you may notice" or "by the way." Furthermore, they can incorporate rhetorical strategies that position the audience, guiding them towards

specific interpretations. This may involve the use of questions, directives, and obligation modals (e.g., should, must have).

In this study Hyland's (2005) taxonomy is used. It is because this taxonomy is the most frequently used in previous studies. This taxonomy is also the most complete and theoretically acceptable model (Thompson, 2008, as cited in Jiang & Hyland, 2016,).

2.4 Summary and Discussions

In this chapter, the researcher has discussed the most relevant researches conducted in the similar domain. The researcher has also discussed the key terms used in the study. Moreover, the theoretical framework has also been discussed, drawing upon most significant and relevant theories in the field. This includes Pennebaker's Linguistic Inquiry and Word Count (2022) software, and Hyland's Metadiscourse (2005) Model. The next chapter introduces in detail the methodology employed in the present research.

CHAPTER 3

METHODOLOGY

The chapter describes data collection and analysis strategies that have been used in the study. It also describes the focus of the research and discusses sampling technique, sample size, and the demographic of the study. It also describes the process of data collection and analysis. Besides, this section introduces the way Hyland's Metadiscourse Model (2005) and Linguistic Inquiry and Word Count (LIWC) tool have been operationalized in the study.

3.1 Research Approach

Saunders et al. (2016) classifies the research approach into two main categories: quantitative and qualitative. Since the thesis relies on data collection, a deductive approach aligns with the goal of deriving conclusions from large amounts of dataset (Saunders et al., 2016). To build predictive datasets, data underwent systematic processing and analysis, following a structured methodology for importing and exporting data through the Linguistic Inquiry and Word Count (LIWC) software.

Furthermore, this study employs a quantitative research approach, as the frequency of occurrence of metadiscourse markers has been documented and represented through bar. Such approach is used to compile raw data, enabling to derive percentages to extract meaningful results. Quantitative research, as defined by AlHassan and Wood (2015) involves the quantification and analysis of variables to get results.

3.2 Rationale for Using a Mixed-Method Approach

King and Macleod (2015) argued that mixed-method research, which integrates qualitative and quantitative data, is very much in vogue. This approach can be used to deal with linguistic and numerical data in mixed method research. Similarly, in the present study, the researcher has analysed texts from cognitive point of view. Additionally, the frequency of occurrence of metadiscourse markers has also been counted and presented in a tabular form.

3.3 Population and Sampling Method

Undergraduate students' samples of expressive writing have been used in the study. Fifty undergraduates (willing students) from the National University of Modern Languages (Multan Campus) participated in this study, 25 from the English department and 25 from the Management Sciences department. A non-probability convenience sampling strategy has been used in this research.

3.3.1 Ethical Considerations

Prior to the data gathering, the researcher made sure that all ethical standards were taken into consideration. No participant in this study was forced to write the essay. Similarly, this study did not cause any emotional or psychological uneasiness to the participants. All participants were given the freedom to withdraw from participating in the study before, during, and after the data gathering process. Anonymity and confidentiality were assured. Their consent was obtained before assigning the task and to use their data for analysis. Besides, the students were assured that the data would only be used for the research purpose and their identity would not be disclosed.

3.4 Data Sources

The research highlights the significance of expressive writing, where individuals have the freedom to express their emotions, beliefs, and opinions. Pennebaker's (2004) argues that such type of writing plays an important role in analysing an individual's cognitive bent of mind.

The technique of content analysis is used to collect data. It involves systematically analyzing text, audio, video, or visual materials to identify linguistic patterns, themes, and trends. The participants were instructed to express their thoughts/opinions in the form of written task. They were asked to write an essay on "The Current Situation of Pakistan" in English language. It was conducted in a classroom environment so students could comfortably complete the task. The essay had a minimum 350 words.

3.5 Instruments Used

There are several methods available for documenting the frequency of occurrence of metadiscourse markers and analyzing cognitive patterns, which can be

employed to fulfill the objectives of particular research. However, in this regard Linguistic Inquiry and Word Count (2022) and Hyland's (2005) model of metadiscourse markers have been employed in the present study to analyse the data qualitatively and quantitatively.

The models of Hyland (2005) and Pennebaker's (2022) software of Linguistic Inquiry and Word Count have been discussed in the section that follows. The researcher has also discussed in detail the way these mentioned models have been used in the present study.

3.5.1 Linguistic Inquiry and Word Count (2022)

This study adopts a mentioned approach to analyze cognitive patterns in writing, employing primary LIWC categories, with a specific focus on psychological processes. This category serves as feature sets for the research, facilitating the investigation of cognitive patterns. By prioritizing the text, itself, this approach delves into the writer's expression, highlighting cognitive processes within written text by the participants. In addition, the study incorporates Hyland's (2005) interactive model of metadiscourse, employing a non-integrative approach as advocated by Adel (2006).

The software Linguistic Inquiry and Word Count (LIWC) is a computer-based tool that evaluates several dimensions, such as emotional, cognitive, and linguistic aspects, found within a person's spoken and written discourses. Its comprehensive database features a lexicon of almost 12,000 words, organized into categories that include personal pronouns, widely used verbs, expressions of negative emotions, references to family and friends, words denoting swear words, insight, causation, accomplishments, and risk etc. By investigating these categories, the software offers analysis including psychological states and processes reflected through language use. This provides a workable framework for research and analysis in the field of linguistics and psychology.

Firstly, the LIWC (2022) was applied to some of the analytical categories of the devised model have been discussed qualitatively and then have been generalized. It has been done by using qualitative and quantitative methods. In this way qualitative findings have been supplemented with content analysis as well and represented with tables.

Once the data is analysed with the help of LIWC, Hyland's (2005) interactive metadiscourse markers are employed. The data is studied and the frequency of occurrence of metadiscourse markers from the collected data has been documented and represented in tabular form.

3.5.1.1 Data Processing

The dataset has been processed by employing the LIWC software's latest, 2022 version. This psycholinguistic tool is used for assessing multiple textual properties. The functionality of LIWC extends to categorizing words based on their linguistic properties, such as word count and the prevalence of six-letter words, as well as grammatical features, including pronouns, articles, and words associated with various tenses. Furthermore, LIWC explores psychological properties while focusing on elements like emotions and cognitive processing.

The researcher has used LIWC dictionary to extract the features of the collected data. LIWC can automatically detect the links between the words and the psychology-relevant categories. LIWC 2022 contains more than 80-word categories. As far as the analysis of cognitive styles is concerned, the data was collected in form of essays. The software Linguistic Inquiry and Word Count (2022) sorts and categorizes specific words into certain linguistic (e.g., word count, six-letter words), grammatical (e.g., pronouns, articles, tenses, associated words), and psychological properties (e.g., emotions, cognitive processing). It results in an individual's profile of his or her text referring to the proportion of each categorical property within the text.

This software is compatible with Doc, DocX, and PDF files. The data is transformed into .docx files, as per the software's requirements to ensure seamless integration. However, the data collected for the present study from the participants also comprised handwritten documents, and then it was converted into Doc files prior to analysis.

Subsequently, careful manual verification has been conducted to identify and rectify any discrepancies that may have arisen during the conversion process. This step was crucial in ensuring the accuracy and integrity of the converted text. After verification, the files were prepared for processing by the LIWC software.

The result of this processing is a detailed analysis of individuals' text, explaining the distribution of required categorical property within the text. However, given the specific objectives of research, the analysis is directed only towards psychological properties i.e., cognitive processes and affect. This decision has allowed the researcher to delve deep into the cognitive patterns present within the text, without the potential distractions of grammatical or linguistic properties.

3.5.1.2 How Text is Coded in LIWC

The use of affect process words (e.g., happy, cried), positive emotion words (e.g., love, nice, sweet), negative emotion words (e.g., hurt, ugly, nasty), and cognitive words (e.g., think, consider, maybe, definitely) has been analysed by the researcher.

The LIWC output variables are percentages of total words within a text. For example, if a sample is analysed and it is discovered that the Positive Emotions (emo_pos) number was 4.20. That means that 4.20 percent of all the words in the sample were positive emotion words.

3.5.1.3 Quality Standards

The Linguistic Inquiry and Word Count (LIWC) tool is well-known for its extensive application across a variety of research fields, including but not limited to linguistics, psychology, information systems, and marketing, as evident in the studies conducted by Humphreys in 2010, Ludwig and colleagues in 2013, Tausczik and Pennebaker in 2010, and Zhang in 2019. This range of application highlights that the software is adaptable and efficient in analyzing textual data.

Further investigations have demonstrated the high reliability of LIWC's dictionaries in content assessments typically performed by human coders, a point highlighted by Pennebaker and his colleagues in 2007. The effectiveness of employing LIWC within online environments as part of research methodologies has gathered empirical support through confirmation in more than 100 scholarly studies. (Slatcher and Pennebaker's 2006).

This software is designed to accurately and efficiently categorize text data into meaningful psychological and linguistic elements. Its dictionaries are designed to reflect important aspects of human communication, which allow researchers to draw parallels between the output generated by computer and human judgement. The

sturdiness highlights LIWC's position as a basis in the intersection of computational linguistics and psychological analysis. This offers deep insights into the cognitive and emotional states conveyed through language.

3.5.2 Hyland's (2005) Interactive Dimension:

It emphasizes on the writer's understanding of the audience and how text is organized for their potential knowledge, interest, rhetorical expectations, and comprehension skills. In this category, the indicators revolve around discourse organization strategies rather than personal experiences.

The interactive dimension metadiscourse markers are categorized into five sub-categories.: Transitional Markers, Frame Markers, Endophoric Markers, Evidentials, and Code Glosses.

Transitional markers primarily consist of conjunctions and adverbial phrases. These play a crucial role in helping readers interpret pragmatic connections. They serve to indicate interaction i.e., additive, causative, and contrastive, within the writer's thoughts. The significant purpose of transitional markers is to establish links between ideas within the text versus those external to it, such as adding new information. These markers compare similarities or differences in arguments using expressions like "likewise" or "in contrast to." Additionally, transitional markers can convey a consequential relationship by providing justification for a conclusion (e.g., "therefore," "in conclusion") or signal that an argument is being countered (e.g., "nevertheless," "anyway").

Frame markers serve to indicate text boundaries and structural elements within the text. These are similar to transitional markers, but they are internal to the text. Unlike transitional markers, frame markers focus on identifying or ordering arguments within the text rather than events in time. These markers are used to sequence label different parts of the text using words or phrases like "first," "then," or "at the same time." Additionally, frame markers explicitly label text stages, announce goals (e.g., "I argue here," "my purpose is"), and indicate shifts in topics (e.g., "now," "let us return to").

Endophoric markers are phrases and these refer to other parts of the text, assisting in the reader's understanding of additional propositional information. The

primary objective of an endophoric marker is to enhance comprehension by providing supportive material that clarifies an argument. These markers play a crucial role in directing the reader towards the writer's preferred interpretation of information. By assisting the reader in locating supporting material, endophoric markers contribute to a more comprehensive understanding of the subject matter.

Evidentials play a crucial role in guiding the reader's interpretation and establishing the writer's command of the subject by specifying the source responsible for a particular position or statement. It's important to note that evidentials separate the authority for a position that is separate from the writer's own perspective.

Code glosses refer to words or phrases that offer added information by restating, elaborating, or explaining what has been previously stated. The primary purpose of code glosses is to ensure that the reader comprehends the writer's intended message more clearly. These glosses serve as clarifications, providing further details or explanations to enhance the reader's understanding of the conveyed information.

In this research, conventional writing practices including grammar, punctuation, spellings etc. are not a concern. The participants were informed accordingly to ensure that concerns over spelling do not discourage them from providing their responses. The emphasis of the present study is on the clarity and comprehensibility of the words provided, rather than their orthographic correctness. This approach has been designed to create an inclusive environment where the main objective is to understand the intent and content of the participants' contributions, without the pressure of adhering to strict conventional writing standards.

3.6 Summary and Discussions

This chapter includes the methodological perspectives of the study, starting with the rationale for using a mixed-method approach. It also includes the use of Linguistic Inquiry and Word Count and Hyland's Metadiscourse Markers (2005). The chapter also discusses data collection tools, and levels of analysis. The next chapter introduces analysis techniques and in-depth analysis of the data used in the present study.

CHAPTER 4

ANALYSIS

Language acts as an identity marker. It assigns identity to the users and identity comes to be known by the use of language by the users to express his/her feelings to the others. Rehman (2003) asserts that language plays an important role in the construction of identities.

4.1 Linguistic Inquiry and Word Count (Cognitive Analysis)

Cognitive analysis is performed with the software LIWC (2022 version). Psycholinguistic researchers developed this program to analyse human, social, and psychological states through language. (Pennebaker et al., 2015) LIWC calculates the use frequency of certain specific words, word stems, or emoticons that are associated with psychological and cognitive processes, and it compares them against psychometrically validated categories. This process is done by transforming text into numerical values. These values are expressed as the percentage of the total number of words in a text that belong to a specific category or subcategory. (Pennebaker et al., 2003)

4.1.1 Sample 1

LIWC_Measure	Value %
Word Count	397
Analytic	58.86
Tone	8.49

The table above suggests that analytic score is 58.86% which is more than 50%. It indicates that the participant's cognitive pattern is more logical and formal. Similarly, the language used by participant demonstrates critical thought.

Pennebaker (2015) maintains that expressive writing is one of the significant means of probing deep into an individual's cognition. It implies what lies inside of an individual and what could be the possible mindset towards an issue.

4.1.1.1 Cognitive Processes:

Category	Percentage	Examples from Text
Cognition	14.86	<i>The political situation in Pakistan is not very stable</i>
		<i>Overall, I think that Pakistan is going through a tough time, and if not taken care it would become difficult to live.</i>

Table 2

The LIWC category "Cognition" with a score of 14.86 in the text analysis indicates a significant presence of words and phrases related to cognitive processes. This category focuses on cognitive engagement, including discussions, explanations, or descriptions of thoughts and mental processes. It may delve into subjects that require critical thinking, problem-solving, and decision-making.

Furthermore, this high score suggests that the text may be informative, analytical, or educational in nature. It may also indicate a focus on abstract thinking, conceptualization, and the exploration of various perspectives on a topic.

The "Cogproc" score of 13.1 in the provided text, according to LIWC, indicates a significant presence of language related to cognitive processes within the text.

It is evident that the participant is actively processing and analyzing information related to political stability, corruption, poverty, terrorism, and international relations. The text represents a cognitive effort to make sense of these complex issues and how these issues are interconnected.

The table 4.1 illustrates causation by linking political instability to developmental challenges. Statements like

The political situation in Pakistan is not very stable and The government has changed a lot in the past, and this has made it difficult for the country to develop

exemplify this connection. These statement highlights how frequent government changes disrupt progress, suggesting that, the country could not make progress because of unstable government and insincere leadership. The causal relationship between political actions and national outcomes is clear. It demonstrates participant's understanding about Pakistan's problems. The causative analysis

highlights that resolving political instability is significant for growth of the country. It might also emphasize the need for consistent government as for this country to progress.

Certainty emerges in discussions about poverty and corruption, where these issues are described with definitive language. Phrases like "Corruption is also a problem, which means that people in power are not always doing what is best for the country" and "Many people are living in poverty, which means they don't have enough money to live a good life" reflect a strong opinion about the severity of these problems. This certainty highlights that these issues are deeply rooted and convey a sense of urgency in addressing them. By stating these points with confidence, the participant emphasizes the critical need for solutions by highlighting corruption and poverty as significant barriers to development. This kind of language demands attention and action. Besides, the statement also stresses that these challenges are not just obstacles but are fundamental issues that should be resolved for Pakistan to move forward.

The text reflects an insight with a percentage of 2.27% into Pakistan's current challenges. It addresses political instability, corruption, poverty, and external conflicts with a critical eye. It acknowledges the diverse issues and recognizes both internal struggles and external pressures that contribute to the country's difficulties. The participant demonstrates an understanding of the detrimental effects of political instability, by highlighting the frequent changes in government. Moreover, the identification of corruption as a pervasive problem highlights an awareness of its impact on effective governance and national progress.

For example,

Overall, I think that Pakistan is going through a tough time, and if not taken care it would become difficult to live.

The statement above reflects insight by recognizing that Pakistan is currently going through a tough time. This suggests a cognitive process of attributing the country's challenges to underlying causes or factors. Moreover, by mentioning that *it would become difficult to live if the situation is not taken care of*, might reflect an insight of the potential future outcomes of the current challenges faced by Pakistan.

The overall impression which emerges by analysing the data is that Pakistan can only make progress provided stability of government is there. Besides, the data also

connotes that one of the main reasons of miserable condition of Pakistan is the unavailability of sincere leadership. In this way, it can be inferred that the participant is conscious about instability of Pakistan as it is obvious from the language used by them. This is how it is inferred that the cognitive structures used by an individual on one hand connote his/her bent of mind and the sociopolitical context one lives in.

4.1.1.2 Affect

Since the beginning of psychological science, there has been ongoing discussion and inquiry regarding human emotions, a theme explored by foundational figures such as Darwin in 1872, James in 1884, Spencer in 1894, and Wundt in 1897. These discussions are significant to address psychological queries within the domains of social, clinical, and developmental psychology. The adoption of language-analysis techniques has expanded this field.

LIWC "affect" refers to the category that includes words and phrases related to emotions, sentiments, and subjective experiences expressed in language. It analyzes the emotional content of the text based on the presence and frequency of specific affective words.

Category	Percentage	Examples from Text
Affect	7.81	
<i>Sub categories</i>		
tone_pos	3.27	<i>It is crucial for the government, civil society, and the people of this country to work together to address these challenges, promote dialogue, and seize opportunities for progress.</i>
tone_neg	4.53	<i>feels sad</i> <i>miserable state</i>

Table 3

4.1.1.2.1 Affect Positive

The LIWC category "affect_pos" denotes a positive tone within the provided text, signifying instances where positive emotions are expressed. In this analysis, the researcher delves into the occurrences of positive emotional language and its implications within the context of the text.

The text illustrates that positive affect words i.e., *good, promote dialogue, seize opportunities* have a frequency of 3.53% in the overall text. The frequency of positive emotion words suggests a lack of positivity in the text indicating that the participant is not much hopeful or optimistic from the current situation of Pakistan. It is significant to note that the relatively low score in the "affect_pos" category also indicates a limited expression of positive affect within the text. The lack of positive affect language implies the severity of the challenges discussed. It portrays an overall climate of dissatisfaction, apprehension, and sadness. However, the presence of even small positive elements is important, as it indicates that the student acknowledges the possibility for positive change and the importance of collective efforts.

One instance where positive tone is observed at is in the acknowledgment of the need for collaborative efforts among the government, civil society, and the people of Pakistan to address the challenges.

For example,

It is crucial for the government, civil society, and the people of this country to work together to address these challenges, promote dialogue, and seize opportunities for progress.

In the above statement, the idea of working together implies a sense of unity and shared responsibility, which can be construed as a positive approach. The recognition of the importance of cooperation gives an impression of hope, suggesting that positive change may be achievable through collective action.

Furthermore, the use of terms like *opportunities for progress* implies a forward-looking perspective. It introduces an element of positivity amidst the predominantly negative text. The mention of *seizing opportunities* suggests an optimistic outlook, emphasizing the potential for improvement and growth in the face of challenges.

4.1.1.2.2 Negative Affect

Whereas, on the other hand, the frequency of negative emotion words is 4.53% i.e., bad, hate, miserable, sad suggesting that the participant is conveying a certain level of negativity or dissatisfaction. Overall tone of the text is heavily towards the negative side. The prevalence of such language implies the sense of discontent, distress, and dissatisfaction of the student.

Holmes and colleagues (2007) found that frequent use of emotional language suggests a deeper engagement with adverse experiences. Similarly, Tausczik and Pennebaker (2010) observed that increased use of words related to emotions, particularly negative and affective ones could mean that individuals are more emotionally affected and engaged with the negative aspects when they consider the present circumstances in Pakistan.

Throughout the text, there is significant use of negative tone, reflecting a prevalent sense of unease regarding the current state of affairs in Pakistan. Expressions such as "political instability," "poverty," "terrorism," and "conflicts with other countries" summarize the challenges that are being faced by the nation.

For example, the statement,

“It feels sad to see my country in such a miserable state”

used by participant reflects a tone of sadness. They express a feeling of sadness when observing the current state of their country. This suggests a strong emotional connection to the country and concern for its well-being.

The use of the phrase *to see my country* indicates a sense of personal attachment and empathy. The participant feels a deep concern about the country's condition. Moreover, the term *miserable state* implies a significant deterioration or decline in the country's condition. The choice of word *miserable* conveys a strong negative affect and paints a picture of the current situation negatively. It emphasizes the depth of the individual's sadness with regard to country's situation.

The use of term *my country* reflects a strong identification with the nation. This emotional connection highlights the personal concern of the individual in the country's well-being.

Similarly, according to LIWC negative affect category, the phrase,

“No jobs, no money”

implies a sense of adversity and scarcity. It conveys a reality where essential resources like employment and financial stability are absent. It evokes the feelings of frustration and worry. The repetition of "no" emphasizes lack, implying a sense of difficulty and hardship associated with the situation.

Within the context of the phrase, individuals experiencing unemployment and financial insecurity may feel a sense of helplessness and uncertainty. The absence of jobs and money not only signifies material deprivation but also implies a loss of stability and security. This in turn is producing the tone of sadness and anxiety which is negative.

“Oh! and not to forget Terrorism. It is eating Pakistan like a termite and has caused a lot of damage and loss of life. The government is trying to stop these groups, but it's not an easy task”.

Analyzing the text through the lens of LIWC's negative affect category reveals the tone carried within discussions about terrorism in Pakistan. The metaphorical portrayal of terrorism as *eating Pakistan like a termite* summarizes the pervasive and destructive nature of the threat. It also arouses the feelings of fear and vulnerability. This comparison might also signify the gradual loss of stability and security.

Furthermore, the mention of *damage and loss of life* emphasizes the human toll and societal repercussions of terrorist activities. Such language elicits sentiments of sorrow and despair. It highlights the deep suffering that Pakistanis are facing. The portrayal of terrorism as a source of fear and distress highlights the urgent need for effective counterterrorism strategies. It might also highlight the need of support mechanisms for affected individuals and communities.

To conclude, the participant expresses a concern for the current state of Pakistan, emphasizing the challenges the country is facing. The participant recognizes that if these challenges are not addressed, it would become difficult to live. This reflects a cognitive process of problem recognition, evaluation, and future orientation. It also indicates an overall negative tone in the text. The text demonstrates cognitive processes such as insight, cause recognition, and the identification of discrepancies hence

reflecting a cognitive engagement with understanding the situation. It also recognizes the causes behind the challenges, and perceiving inconsistencies.

4.1.2 Sample 2

WC	356
Analytic	23.25
Tone	14.11

4.1.2.1 Cognition

The Linguistic Inquiry and Word Count (LIWC) score (table 2), with a cogproc (cognitive processes) score of 15.21%, shows an emphasis on thoughtful reflection within the context of the text discussing Pakistan's current challenges. The text implies the prevalence of cognitive processes associated with thinking, reasoning, and insight. The cognitive processes in focus contribute to the overall understanding of the country's situation.

Category	Percentage	Examples from Text
Cognition	15.21	"Prices for almost everything are sky-high, and our money isn't worth as much as it used to be".
		"I hope that these elections can bring some change"
		"Our economy is in a bad place"

Table 4

Insight is a dominant cognitive process in the text, reflecting deep understanding and of the participant regarding the current situation of Pakistan. Phrases like "It feels like we're stuck in a storm of big problems" and "It's heart-breaking and makes you wonder how we got here" indicates that participant is concerned to see the country's issues. The use of metaphor ("stuck in a storm") by the participant suggests an emotional and intellectual involvement in the problems.

Causation is another significant cognitive process that helps to explain the connection of various issues. In the given text, the participant has used statements such as "The army has a huge say in who gets to run the country" and "Prices for almost everything are sky-high, and our money isn't worth as much as it used to be". Such

statements by the participant illustrates a clear understanding of cause-and-effect relationships. These expressions link political instability and economic decline. It implies how military influence and inflation are contributing to the overall condition of the country.

Tentativeness reflects the uncertainty present in the text. The use of statements such as "It makes a lot of people worried if the elections will be fair" and "I hope that these elections can bring some change" by the participant reveal a mix of doubt and hope. The tentative language used by the participant ("worried if" and "hope that") suggests a lack of confidence in the immediate future but also an openness to the possibility of improvement.

The participant has also expressed certainty in the text by using definitive statements about the present condition of the country. The phrases like "We're about to have elections on February 8, and it's a big deal" and "Our economy is in a bad place" suggests that participant has stated concrete facts about the political and economic situation of the country

The phrase

“Women and girls often have it really rough with violence and being forced into marriages they don't want”.

connotes that the participant emphasizes a social cognitive orientation, evident through the reference to women and girls. The use of this kind of language reflects a shared identity and solidarity among individuals discussing gender-based challenges. LIWC studies have shown that common language use can evoke feelings of empathy and support, particularly when addressing sensitive topics (Rimé et al., 2010).

The participant expresses concern about "forced marriages they don't want,". By using such statement, the participant wants to highlight that there exists a sense of coercion and the absence of support by the people of this country.

4.1.2.2 Affect

Category	Percentage	Examples from Text
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Affect	7.3	
<i>Sub categories</i>		
tone_pos	3.38	<i>despite all these problems, strong bunch, made it through, hope, I believe we can make it</i>
tone_neg	3.94	<i>tough time, we're stuck, worried, bad, prices are sky-high, our money isn't worth trouble, heartbreaking, violence, dangerous jobs</i>

Table 5

According to LIWC "affect" refers to the category that includes words and phrases related to emotions, sentiments, and subjective experiences expressed in language. It analyzes the emotional content of the text based on the presence and frequency of specific affective words.

A score of *Affect* 7.32% suggests that participant has used significant amount of emotional language. This score indicates that tone plays a significant role in shaping the text, with a range of affective words conveying various emotional states such as distress, anxiety, sadness, anger, resilience, and hope. The relatively high affect score suggests that emotions are central to the themes and tone of the text.

4.1.2.2.1 Tone_pos

The positive tone score of 3.38% within the LIWC analysis has suggested that while the participant used negative affective words more, there is a mention of positivity and optimism. The presence of positive affective words used in the text, may show resilience and hope within the text.

Furthermore, the acknowledgment of resilience in the text highlights of perseverance and strength in the face of challenges. Phrases such as "strong bunch," "made it through," and "I believe we can make it better if we all work together" are used by the participant illustrate a tone of resilience, hope, and determination. This kind of language used convey a belief in the capacity for positive change.

4.1.2.2.2 *Tone_Neg*

Table 2 shows the percentage 3.94% of negative affect words present in the text. The participant has used negative affect words that reflect the numerous challenges faced by individuals in Pakistan. Words related to sadness, fear, and anger are prominent in the text. The mention of "tough time," "worried," "bad place," "sky-high prices," "scary," and "heart-breaking" by the participant illustrate the distress experienced by Pakistani people. Additionally, other negative terms such as "violence," "forced into marriages," "attacks," and "dangerous jobs" used by the participant highlight that there are concerning issues of insecurity and exploitation faced by marginalized groups.

Anxiety is a prevalent theme throughout the text. The uncertainty surrounding the fairness of elections, economic instability, and security concerns contribute to heighten anxiety levels among the population. Words like "worried," "scary," and "attacks" evoke a sense of anxiety and unease about the future.

Moreover, the text implied a tone of sadness, hence making sadness another prevalent theme. It reflects the hardships faced by individuals and communities in Pakistan. References to economic struggles, social injustices, and security threats evoke feelings of despair and sorrow. The mention of "heart-breaking," "rough treatment," and "not safe anywhere" highlights that the participant is deeply impacted by these difficulties.

Frustration and anger are evident in the text, particularly concerning the perceived injustices and inequities within Pakistani society. The mention of political interference in elections, gender-based violence, and economic hardship elicits feelings of indignation and resentment. These sentiments are encapsulated in phrases like "forced into marriages they don't want" and "political mess," reflecting a desire for change and accountability.

For example, the phrase

"Prices for almost everything are sky-high"

used by participant has conveyed financial strain and economic hardship. The use of the term *sky-high* in the above statement has suggested that prices have risen to an exceptionally high level. The participant in this line has tried to emphasize the severity of the situation. This kind of language reflects the economic challenges faced

by individuals in Pakistan, where inflation and rising prices have made it difficult for people to afford basic necessities. The phrase *almost everything* implies that the impact of high prices is widespread. Here, the participant has also highlighted the financial pressure experienced by many people in Pakistan.

The overall impression which emerges by analysing the sample is that Pakistan is facing tough times. There are many problems ranging from political instability and economic struggles to social issues. The upcoming elections are crucial, but there's worry about fairness due to military influence. The data connotes that one of the main reasons for these difficulties is inflation and involvement of militancy in upcoming elections. In this way, it can be inferred that the participant is conscious about instability of Pakistan as it is obvious from the language used by them. This is how it is inferred that the cognitive structures used by an individual on one hand connote his/her bent of mind and the sociopolitical context one lives in.

4.1.3 Sample 3

LIWC_Measure	Value
WC	356
Analytic	98.65
Tone	10.43

4.1.3.1 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	6.6	
		<i>the party tried to unveil the true nature of the establishment, the party tried to unveil the true nature of the establishment, sucked the remaining life out The political and economical are due to its being trapped in the internal global imperialism</i>

<i>There are rumors of the negotiations</i> <i>The victory of the chosen ones is eminent as once shown in the elections of 2018</i>

Table 6

The sample provides an insight into the recent socio-political and economic challenges in Pakistan. The participant has used language that can be analytically categorized into various cognitive processes according to the Linguistic Inquiry and Word Count (LIWC). This software helps in understanding how the choice of words by participants reflected their cognitive process and perceptions of the situation.

The use of language indicates understanding, clarity, cause-and-effect relationships, confidence, or uncertainty by the participant. An example from the text is "the party tried to unveil the true nature of the establishment." This phrase has suggested that the party has reached a significant understanding or has uncovered hidden truths about the establishment. It implies a moment of insight where new, meaningful information has been revealed through the present text.

Besides, phrases like "being trapped in the internal global imperialism" and "sucked the remaining life out" used by the participant has given insight into the causes and consequences of Pakistan's challenges. The phrase "being trapped" suggests an insight of how external forces, possibly geopolitical pressures, are causing a constrain to the development of Pakistan.

The kind of language used in the text has also suggested a cause-and-effect relationship. The use of language, "The programs such as IMF has sucked the remaining life out of this country giving the prosperous dreams under the neo liberal economical trap," by the participant connotes strong causative language to blame IMF programs for the economic hardships of Pakistan. This kind of language has not only shown the negative impact of these programs but also framed them as the direct reason for the country's downfall.

The phrase "There are rumors of the negotiations and old lion to come back on the throne backed by the people with ranks," uses "there are rumors" to indicate that the information is not accurate and can be treated as speculative.

Certainty is found in strong, assertive statements such as "The victory of the chosen ones is eminent as once shown in the elections of 2018." Here, the use of "eminent" by the participant has conveyed a strong prediction and expectation about the outcome of forthcoming elections. The use of language by the participant has indicated a high level of confidence in this prediction. Words like "sucked", "failed", and "defeat" in phrases such as "IMF has sucked the remaining life out of this country", "the experiment seemed to be failed everywhere else where tried", and "the dispute exacerbated to a war ended up in the defeat of khan" has conveyed a strong sense of opinion about the negative impact of IMF programs. Here, the participant has implied the perceived failures of certain political experiments, and the outcome of political conflicts. These words highlight the participant's firm stance on the consequences faced by Pakistan.

Through these LIWC category of cognitive process, it becomes clear how the language in the text has not only described the current state in Pakistan but has also conveyed the participant's attitude and emotional response to these issues. The use of insight and causation terms points to a deep insight into the root causes of crises. Whereas tentative words used in the text show that the participant was uncertain about both current conditions and future prospects. Certainty in the language used has suggested strong opinions about the outcomes of political processes.

4.1.3.2 Affect

Category	Percentage	Examples from Text
Affect	6.27	
<i>Sub categories</i>		
tone_pos	2.64	<i>the status quo has been challenged by the PTI, party tried to unveil the true nature of the establishment</i>
tone_neg	3.63	<i>Worsened, difficulties, the illusional war waged, sucked, failed, dispute, exacerbated to a war, kidnapped and torture, rumors</i>

Table 7

4.1.3.2.1 Positive Affect

Although the text primarily conveys negative emotions regarding Pakistan's challenges, there are references to hope and optimism. For instance, the mention of *challenges to the status quo* and the *emergence of political movements like the PTI* suggests a glimpse of optimism amidst the prevailing sadness. This has implied a belief in the potential for positive change and reform, evoking a sense of hope and possibility among population.

Analyzing the sentence

"Furthermore going specifically, recently the status quo has been challenged by the PTI and the party tried to unveil the true nature of the establishment"

using the positive affect category of LIWC has revealed some that some words/sentences convey a positive and optimistic outlook.

Firstly, the act of "challenging" the status quo by the PTI indicates a desire to improve existing conditions. Challenging established norms or practices often requires

courage and a vision for a better future. This aligns with a positive affect because it represents the belief that improvement is possible and worth striving for. Secondly, the word "tried" has highlighted the effort and determination of the PTI. "Trying" in itself is a positive action and shows that the party is actively engaged in pursuing its goals. The statement has reflected that even in the face of difficulties, the act of 'trying' indicates that the PTI was working towards a meaningful change.

4.1.3.2.2 Negative Affect

The provided text predominantly conveys negative affect, showing a sense of frustration, and anxiety regarding Pakistan's current state. Through the analysis of the language used, the researcher has identified various instances of negative affect words that are present in the text.

One prominent aspect of negative affect evident in the text is a sense of despair and hopelessness. Phrases used by participant such as *condition of Pakistan has worsened* and trapped in *internal global imperialism* has implied pessimism about the country. These linguistic expressions suggested a belief that Pakistan is going through challenges, with little hope for improvement. The use of such language has implied a developing a climate of despair among the people.

For example, the statement,

"The military and bureaucracy still have to be decolonized in their discourses and in their thoughts which is conditional over the eradication or atleast the ungaping of the gap between the social classes of the country".

highlights a critical aspect of Pakistan's socio-political landscape. The participant might emphasize the need for decolonization within its military and bureaucratic institutions. This call for decolonization has referred to the process of dismantling (pulling apart) ideologies and structures that continue to influence the mindset and discourse within these institutions.

The mention of "the military and bureaucracy" by the participant has suggested a focus on two influential pillars of Pakistan's governance and power structure. Historically, these institutions have played significant roles in shaping Pakistan's political path.

Furthermore, the text conveys a sense of *fear* and *uncertainty* about the future. The use of language has implied feelings of *sadness* and *disappointment* in response to political setbacks and betrayals. Phrases like "defeat of Khan" and "history knows what is done to the losers" suggested a sense of loss among those who had placed their hopes in promises of change.

For example, the line

***“There are rumors of the negotiations and old lion to come back on the throne
backed by the people with ranks”.***

refers to a dynamic and uncertain political landscape in Pakistan, marked by rumors and speculation about potential developments. It might imply at a complex interplay of power dynamics, negotiations, and the potential revival of a prominent political figure. According to participant, it has increased a sense of uncertainty among Pakistani people.

The participant has also mentioned *rumors of negotiations*, implying that ongoing discussions or diplomatic strategies are not yet fully transparent or confirmed. The use of the term "rumors" has implied a lack of concrete information, leaving room for speculation and interpretation. This ambiguity creates an atmosphere of uncertainty.

The reference to an "*old lion*" potentially returning to the political stage has added another layer of complexity to the text. The use of term "old lion" in the text has conveyed a sense of authority, experience, and perhaps nostalgia, suggesting that the individual in question holds significant power within Pakistani politics. Their return has signaled a potential shift in power dynamics and political alliances.

The overall impression which emerges by analysing the data indicates that the participant's cognitive framework is influenced by the economic conditions of their environment. Additionally, it can be inferred that Pakistan can progress provided the military and bureaucracy have to be decolonized in their discourses and thoughts. This is how it is inferred that the cognitive structures and tone used by an individual on one hand connote his/her bent of mind and the sociopolitical context one lives in.

4.1.4 Sample 4

LIWC_Measure	Value
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WC	419
Analytic	97.55
Tone	5.24

4.1.4.1 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	12.27	<i>People live in a society where the rule of law is either nonexistent or applied unevenly</i>
		<i>Since criminal elements operate with no consequences, endangering the safety of citizens</i>
		<i>The country is suffering economically as a result of naive policies</i>
		<i>the lack of accountability and transparency in governance, which worsens the general sense of frustration.</i>

Table 8

Analyzing the cognitive processes in the text involves examining how the participant has engaged with various processes such as insight, cause, tentativeness, and certitude. Here is an analysis of the provided text:

Insight refers to the depth of understanding presented in the text. The participant in his text has provided some level of insight into the challenges that are being faced by Pakistan.

For example,

"The need for thorough and successful reforms to clear the path for a more safe, stable, and prosperous future is becoming more and more clear as the country struggles with these complex issues."

The statement written by the participant has highlighted an urgent need for effective reforms to tackle the country's problems. It stresses that these reforms must be well-implemented to truly make a difference. The participant is of the view that the goal should be to create a future that is safer, more stable, and prosperous. This kind of language used signifies that Pakistanis can only prosper if stable reforms are made by the government.

The use of words like "gloomy," "formidable challenges," and "widespread lawlessness" by the participant reflects a perception of threat and instability. These kinds of words used by the participant can be linked to the cognitive process of the situation that emphasizes danger, and difficulty.

Phrases such as "rule of law is either nonexistent or applied unevenly" and "criminal elements operate with no consequences" has suggested a lack of control and predictability. This aligns with the cognitive process of causation, where the participant has implied the existence of significant problems that lead to negative outcomes. These phrases reflect cognitive efforts to understand the causes of the current state of affairs.

The economic issues are described with terms like "naive policies," "high inflation," "stagnation," and "lack of foreign investment." These words indicate failure and mismanagement of Pakistani system. Similarly, these terms can imply that the participant has attributed economic problems to internal factors (e.g., poor governance) rather than external ones.

In summary, the language used by the participant in the text reveals cognitive processes of insight and causation. The text connotes that government and political leadership, systemic failures in law enforcement and judiciary, and ineffective economic policies have collectively contributed to the socio-political and economic challenges faced by Pakistan.

4.1.4.2. Affect

Category	Percentage	Examples from Text
Affect	5.32	
<i>Sub categories</i>		
tone_pos	1.20	<i>need for thorough and successful reforms</i>
tone_neg	4.12	<i>Gloomy, worries, distrust and anxiety, unrest, fear and uncertainty, high inflation, stagnation, and a lack of foreign investment</i>

Table 9

Affect category examines how language reflects the tone of text. In the provided text, the overall tone seems negative. However, the percentage of tone_pos is 1.20%. This might reveal that participant is not much hopeful regarding the current situation of Pakistan.

4.1.4.2.1 Tone Positive

For example, the phrase "the need for thorough and successful reforms to clear the path for a more safe, stable, and prosperous future" implies that there might be some improvement in the future regarding the country's situation. In terms of tone_pos category, the mention of "reforms" and a "prosperous future" may indicate positive affect by introducing the idea that change and improvement are possible. These words used by the participant suggest a forward-looking perspective and optimism.

4.1.4.2.2 Tone Negative

In examining the negative tone of the text with a tone_neg score of 4.12%, it has become evident that the language used by the participant in the text is negative. The participant illustrates the challenges and difficulties faced by Pakistan both socio-politically and economically. The text under analysis reveals severity of the issues that may seem as pessimistic.

One of the areas of concern illustrated by the participant in the text is the lawlessness that can be seen in Pakistan. The analysis of text also highlights that

criminals operate without accountability while risking the safety of individuals and the security of their wealth. Besides, the mention of economic instability also reveals negativity in the text. The participant implies that policies and ineffective economic measures have resulted in high inflation, stagnation, and a lack of foreign investment. People struggle to meet their basic needs.

Political dissatisfaction is also a prominent theme in the text. The use of words by the participant reflects disappointment with political institutions. The lack of accountability and transparency in governance has further weakened public confidence in political leadership.

The use of phrase *brain drain* by the participant serves as an example of the negative consequences of the challenging environment in Pakistan. The participant is of the view that due to this; talented individuals are moving abroad to seek better opportunities.

4.1.5 Sample 5

LIWC_Measure	Value
Word Count	392
Analytic	94.01
Tone	88.06

4.1.5.1 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	12.14	<i>incredible determination and spirit</i>
		<i>nation faces "its own unique set of issues and complexities"</i>
		<i>It's important for the government and the people to work together to address</i>

<i>these challenges and build a better future for everyone.</i>
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Table 10

Analyzing the provided text through the cognitive processes category of the Linguistic Inquiry and Word Count (LIWC) methodology provides an understanding into how cognitive and emotional aspects of language reflect perceptions and attitudes towards the country. The cognitive processes include causation, insight, tentative language, and certainty.

The use of language has suggested causes behind Pakistan's current state, both positive and negative. For instance, the significant progress in education, technology, and infrastructure is implicitly linked to efforts and policies not explicitly mentioned but understood to exist. On the other hand, ongoing issues like poverty, inequality, and security concerns are attributed to underlying challenges not detailed but recognized as areas needing attention.

Insight is evident in the recognition of the resilience and strength of Pakistan's people in the face of difficulties. The mention of Pakistanis showing "incredible determination and spirit" despite challenges by the participant has depicted resilience of the population. This insight into the common psyche has suggested that perseverance is a key for the country's potential and future progress.

Tentative language is used by the participant when discussing Pakistan's future. The participant has indicated hope and potential yet acknowledging the unpredictability of what lies ahead. Phrases like *"immense potential and a bright future"* coupled with a phrase that the nation faces *"its own unique set of issues and complexities"* has illustrated a hopeful yet realistic view, about the challenges and opportunities for Pakistan.

Certainty is expressed by the participant while describing the country's rich culture, hospitality, and strategic geopolitical importance. The use of language has illustrated resilience of Pakistani people, the vibrancy of the arts scene, and the

delicious cuisine. Such kind of words used has reflected a certainty in identifying Pakistan's strengths. It may also depict confidence in the cultural and social capital of the country.

4.1.5.2 Affect

Category	Percentage	Examples from Text
Affect	10.38	
Sub categories		
tone_pos	6.93	<i>Pakistan is a diverse country with a rich history and culture</i> <i>One thing that stands out to me about Pakistan is the resilience and strength of its people</i> <i>I also appreciate the warm hospitality and kindness that Pakistanis are known for</i> <i>Pakistani cuisine is absolutely delicious, with a wide variety of flavors and dishes to savor.</i>
tone_neg	2.24	<i>Pakistan has a strategic geopolitical location, which has both advantages and challenges</i> <i>Like any other nation, it has its own unique set of issues and complexities</i>

Table 11

4.1.5.2.1 Pos_affect

The Positive Affect category includes a range of positive emotional states and attitudes, which is expressed through various lexical choices. This analysis has highlighted specific examples from the text that align with the Positive Affect category. It has illustrated how the participant has conveyed a predominantly positive view of Pakistan, its people, and its culture.

The participant has highlighted the "resilience and strength" of the Pakistani people, emphasizing their ability to overcome challenges. This choice of words demonstrates a positive point of view while recognizing the qualities of Pakistanis. It has suggested that, despite facing difficulties, people have the capacity to prosper, which fits into the Positive Affect category. Words like "resilience" and "strength" used by the participant has conveyed a sense of collective determination and optimism. Moreover, the mention of *significant progress in many areas, such as education, technology, and infrastructure* in the text implied achievements. The word "progress" itself is positive, implying improvement and development. By highlighting advancements in important sectors, the language used has conveyed a sense of optimism and positive change.

Describing the arts and entertainment scene as *"vibrant"* with *"talented musicians, actors, and artists"* making an impact both nationally and internationally, the participant has emphasized the cultural richness and creative energy of Pakistan. The adjective "vibrant" evokes a lively, dynamic picture filled with positive energy.

The *"warm hospitality and kindness"* attributed to Pakistanis, along with the praise for the *"absolutely delicious"* cuisine, serve as powerful examples of positive affect. Hospitality and kindness are directly related to positive social interactions and feelings of warmth and welcome.

While the strategic geopolitical location of Pakistan is acknowledged as presenting both "advantages and challenges," the focus on its significant role in "regional dynamics" and "efforts for peace and stability" highlights a positive aspect of its geographical positioning. This acknowledgment suggests a hopeful outlook on Pakistan's potential contributions to regional peace and stability.

Concluding with the assertion that Pakistan has *"immense potential and a bright future"* implies the main theme of positive affect. These phrases have highlighted a forward-looking optimism and a belief in the country's capabilities and prospects for growth.

4.1.5.2.2 Negative Affect

Analyzing the provided text through the lens of the Negative Affect category of the Linguistic Inquiry and Word Count (LIWC) is a complex task, as the text has predominantly highlighted positive aspects of Pakistan. However, the Negative Affect

category in LIWC includes words related to negative emotions and attitudes, such as sadness, anxiety, anger, and pessimism.

The participant has acknowledged that Pakistan *"faces various challenges, like any other nation does,"* and has mentioned *"ongoing issues that need attention, like poverty, inequality, and security concerns."* These references to challenges, poverty, inequality, and security concerns can be associated with the Negative Affect category as they refer to societal and economic difficulties that imply negative feelings. The acknowledgment of these issues by using such kind of language has implied the struggles and adversities faced by the country and its people.

While discussing Pakistan's strategic geopolitical location, the participant has mentioned that it comes with both "advantages and challenges." The reference to challenges associated with its geopolitical position might show concerns related to regional security, diplomatic tensions, or economic pressures.

The statement

"It's important for the government and the people to work together to address these challenges and build a better future for everyone"

has implicitly suggested that the existing solutions may not be sufficient to overcome the mentioned issues. This has implied a recognition of unresolved problems and the need for enhanced efforts.

The specificity of the issues mentioned—poverty, inequality, and security concerns—has added a layer of negative emotional tone to the text. "Poverty" word used by the participant has implied feelings of lack, need, and desperation faced by the people of Pakistan. It's a condition that is universally understood to be negative, associated with adverse outcomes both for individuals and communities. Moreover, "security concerns" imply both fear and anxiety. The phrase has included threats to personal and national security, from crime and violence to broader geopolitical instability.

4.1.6 Sample 6

LIWC_Measure	Value
WC	397

Analytic	58.86
Tone	10.29

4.1.6.1 Affect

Category	Percentage	Examples from Text
Affect	8.06	
<i>Sub categories</i>		
tone_pos	1.53	<i>Education is the solution to all these problems. Educated people contribute to the progress of the country If more people will get jobs, they will contribute to the progress of the country, and in this way, the government will be able to repay foreign debts</i>
tone_neg	6.53	<i>political and economic instability, flood recovery, high inflation, unemployment, foreign debts, overpopulation, and corruption, people are not getting jobs</i>

Table 12

4.1.6.1.1 Positive Affect

At first glance, the text under analysis implies the various challenges Pakistan is facing which are more associated with LIWC's Negative Affect category due to the focus on problems. However, it can be inferred that there are some remarks which indicates positive affect. The participant in the end discusses education as an important solution to the problems, including unemployment, overpopulation, and poverty. Example concerning the point under discussion:

"Education is the solution to all these problems. Educated people contribute to the progress of the country."

implies a sense of optimism and faith in education which can be used to uplift individuals and the nation itself. The participant's belief in education as a way to progress connotes an optimistic view of the country's future. Such remarks align with the Positive Affect category and imply a hopeful approach to problem-solving.

Moreover, the participant in their text proposes specific reforms, such as the development of "distance education programs for people who cannot afford expensive education." This might convey a vision of inclusivity and accessibility in education. The remarks of participant connote that through such programs more people will become educated. It might also help in making the future of the country secure.

Besides, it can be inferred from the remarks of the participant that text also implies optimistic approach. For example:

"If more people will get jobs, they will contribute to the progress of the country, and in this way, the government will be able to repay foreign debts"

illustrates a positive affect as categorized by the LIWC. The word "progress" implies a positive connotation, suggesting forward movement and improvement. This might also reflect an optimistic view of the future, implying that employment will lead to national development. The participant's remarks "will be able to repay foreign debts" might convey a sense of confidence and assurance. The use of "will" indicates certainty and a strong belief in the positive outcome of increased employment. This confidence is a significant factor of positive affect, which implies that the participant sees a clear and achievable path to economic stability. The sentence as a whole connotes a cycle where employment drives economic growth, which in turn enables payment of debt.

4.1.6.1.2. Negative Affect

The text under analysis presents an illustration of the many challenges faced by Pakistan. The table It highlights issues such as political and economic instability, flood recovery, high inflation, unemployment, escalating foreign debts, overpopulation, and corruption. These words align with the Negative Affect category of the Linguistic Inquiry and Word Count (LIWC), which includes language that indicates negative emotions and sentiments including stress, anxiety, sadness, and anger. The remarks in the text also implies the struggles being faced by Pakistan.

The text implies a tone of concern by considering the examples such as "political instability" and "economic instability". The use of term "instability" by the participant might convey a sense of uncertainty and unpredictability. These linguistic spins might also indicate anxiety and stress. The repeated use of the word "instability" to describe both political and economic conditions highlight the country's struggle with these problems.

The participant also talks about high inflation and unemployment and views that these issues are directly impacting the daily lives of individuals. The participant does not merely state these problems but connects them to consequences such as "people are not getting jobs" and the inflation making it "difficult for poor people to manage their expenses." These remarks by the participants might evoke a sense of frustration and hopelessness, as these they illustrate hardships faced by individuals who are struggling to meet basic needs.

The text also reveals "increasing foreign debt" without a "valid policy that can ensure the repay of this loan." Such remarks might be concerning as these signify financial burden without a strategic framework to address it. Besides, the lack of a clear solution intensifies feelings of insecurity and apprehension about the future. The remarks connote the extreme outcomes of stress—increased mortality rates and suicides among the population. Such kind of language used direct expressions of negative affect within the text highlights hopelessness that can arise from prolonged exposure to the aforementioned adversities. The mention of suicide as a consequence of economic and social pressures might indicate the depth of despair and highlights the psychological impact of the challenges described above.

Moreover, considering the example,

"poor people do not get employment" while the "rich class of Pakistan is becoming more rich and poor class is becoming more poor"

implies injustice. Such remarks illustrate feelings of anger among the population. The participant in their text highlights growing economic inequality that might lead to hopelessness among the lower socioeconomic class. The contrast between the wealth accumulation of the rich and the poverty of the poor might also highlight a lack of equal opportunities and support by the government. This might evoke frustration and powerlessness between rich and poor.

4.1.6.2 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	12.27	<i>From past few years pakistan is facing repaeted changes in government due to allegations of corruption</i>
		<i>And because of instability of government many developmental program to solve problems like unemployment, inflation and illiteracy are compromised in Pakistan.</i>
		<i>One of the major problem that Pakistan is facing these days is increasing foreign debt.</i>

Table 13

The text under analysis includes linguistic spins that indicate cognitive processes, including reasoning, causation and insight.

The remarks of the participant imply cognitive processes through the use of words like "political instability, economic instability, flood recovery, high inflation, unemployment, increasing foreign debts, overpopulation, corruption," and more. Each of these issues is not simply stated. These are presented within a context that shows cognitive engagement, such as insight (understanding the issues), causality (linking causes to consequences), and differentiation (distinguishing between different types of challenges).

The mention of "political instability" and "economic instability" by the participant connotes the instability of government which is the reason of unemployment in the country. Discussing "flood recovery" reveals the cognitive processes related to insight. It reflects that the participant has insight regarding the environmental and infrastructural challenges that arise from natural disasters. These remarks also connote that the government should do strategic planning to overcome these issues. Besides, the

use of phrase, "the government of Pakistan has to take more debts from foreign countries" shows an insight of the chain of events leading to increased foreign debt.

When addressing "high inflation" and "unemployment," the text reveals a cognitive process of causation. It connotes how economic policies and global market forces can lead to increased living costs and lack of jobs. These remarks by the participant reveal that it has become difficult for middle and lower-class families to manage their expenses. The statement

"because of instability of government, many developmental programs to solve problems like unemployment, inflation, and illiteracy are compromised in Pakistan"

reveals that these issues are one of the main causes of social problems. Additionally, the remarks of participant connote certainty in discussing these problems. The use of linguistic spins like "educated people contribute to the progress of the country" reflect a strong degree of certainty about the importance of education among people. The remarks reveal that nation can progress if there are more educated people.

The overall impression which emerges by analysing the data is that Pakistan can only make progress provided government should take steps to overcome poverty, inflation, and unemployment. Besides, the data also connotes that one of the main reasons of miserable condition of Pakistan is the lack of proactive measures by the government. In this way, it can be inferred that the participant is conscious about instability of Pakistan as it is obvious from the language used by them. This is how it is inferred that the cognitive structures used by an individual on one hand connote his/her bent of mind.

4.1.7 Sample 7

LIWC_Measure	Value
WC	412
Analytic	95.14
Tone	43.14

4.1.7.1 Affect

Category	Percentage	Examples from Text
Affect	6.71	
<i>Sub categories</i>		
tone_pos	3.92	<i>Our new generation is taking an active part in it and trying to overcome the frightening issue of unemployment</i>
tone_neg	2.37	<i>It fell from the fastest growing, sharp decline, political instability, corruption, the borrowing of loans</i>

Table 14

4.1.7.1.1 Affect Negative

Analyzing the text according to the Linguistic Inquiry and Word Count (LIWC) negative affect category involves focusing on elements that convey negative emotions, such as frustration, sadness, and anger. This category includes words and phrases that express dissatisfaction, critique, and pessimism. The text about Pakistan's socio-economic challenges and cultural attitudes contains examples of negative affect, highlighting the obstacles and difficulties faced by the country.

The text begins by discussing Pakistan's early economic growth, but quickly shifts to a negative tone by stating that the country ***began dwindling economically*** in the 1990s. The phrase "dwindling economically" reflects decline and disappointment, indicating that the initial promise of economic prosperity was not sustained.

For example,

"political instability, corruption, the borrowing of loans up to 84% against their constitutional laws, and the establishment of modern structures with high-interest loans will never let this nation develop,"

The participant has mentioned political instability and corruption in the text. It reveals a tone of frustration and anger. The use of phrases like "never let this nation develop" highlights a pessimistic view of the future, suggesting that these systemic issues are barriers to progress.

Another example of negative affect is found in the description of attitudes of people towards corruption and education. The text states,

"Pakistanis do not mind corruption committed by the rich and the powerful. We bother not for the new educational policies or international affairs. We are concerned with the basic necessities of life and a luxurious life."

This remark implies a tone of frustration with the lack of concern for important issues. The remarks suggest that a focus on immediate comforts and luxuries overshadows the need for meaningful change and improvement. Here, the participant implies irony. Irony often involves a contrast between what is said and what is meant or a situation where there is a significant discrepancy between what is expected and what actually occurs. In this case, the irony lies in the juxtaposition of accepting corruption and neglecting important social issues while simultaneously striving for basic necessities and luxury.

The text also highlights the lack of visionary leadership in Pakistan, comparing the country unfavorably to others that have transitioned from agricultural to industrial economies. The statement, "there was no visionary leader who could materialize this idea. They did not even bother to introduce the latest methods of boosting agriculture," reflects a sense of disappointment and criticism. This highlights the missed opportunities for progress and the negative impact of inadequate leadership on the country's development. Besides, the statement, "Powerful brainwashing has already been done," conveys a tone of defeat and frustration, suggesting that the country is resigned to its current state and unable to compete on the global stage.

4.1.7.1.2 Positive Affect

The text under analysis reveals Pakistan's social and economic problems and cultural attitudes in a critical way. However, it also includes positive elements, according to the LIWC (Linguistic Inquiry and Word Count) framework. LIWC's

positive affect category includes words and phrases that show optimism, joy, and enthusiasm. Though the text reveals the challenges that hold back Pakistan's progress, it also indicates moments of pride, potential, and hope for the future.

The text highlights national achievements and sources of pride. For example, the mention of Pakistan's entry into the international market of Amazon and the production of the JF-17 Thunder combat aircraft imbues the text with a sense of achievement. These examples symbolize Pakistan's ability to participate in global commerce and defense innovation, illustrating national pride and progress. Such achievements reveal positive affect, illustrating the participant's recognition of Pakistan's potential to excel and contribute meaningfully to the global community.

The text connotes a vision for Pakistan's future, particularly in its potential to use natural resources for energy production. Phrases like "this is doable" and the assertion that generating more electricity could lead Pakistan out of "the abyss of degradation" reveal hope in solving the economic and infrastructural problems. These expressions of hope and potential solutions reflect a positive affect, revealing the belief in Pakistan's capacity for improvement and development despite current challenges.

The text under analysis refers to the Pakistani people's spiritual contentment and belief in a better afterlife.

For example, the statement

"Pakistan follows the teachings of Islam"

The text suggests that this spiritual perspective provides a form of strength, enabling individuals to overcome life's challenges with a sense of peace and contentment. This aspect of cultural resilience and spiritual optimism can be interpreted as a form of positive affect, reflecting an inner joy and satisfaction derived from faith.

The acknowledgment of human development's significance towards the end of the text, where it mentions that ***"Gradually Pakistan is realising the importance of human development,"*** suggests a shift towards positive engagement with development issues. Despite past failures, this recognition implies an awareness of the need for a holistic approach to development, encompassing education, health, and societal well-being. This shift towards valuing human development represents a positive perspective.

4.1.7.2 Cognition

Categories	Percentage	Examples from Text
Cognitive Process	10.62	<i>no visionary leader; Israel has managed an Iron Doom for its defense,</i>
		<i>Powerful brainwashing has already been done</i> <i>Atomic energy is a wonderful source</i>

Table 15

The text provided highlights various issues facing Pakistan, combining both a critique of its current state and a reflection on its historical journey. To analyze this using the Linguistic Inquiry and Word Count (LIWC) cognitive process category, the researcher has focused on the thought processes reflected in the text, such as causation, insight, tentativeness, and certainty.

The passage begins by noting Pakistan's initial economic success, as mentioned by participant in the line stated below

5% growth in GDP and a 2% per capita income increase per year during the first 50 years of independence.

This indicates a recognition of cause and effect: economic policies and efforts initially led to growth. However, the text then highlights a downturn in the 1990s, with Pakistan falling from a fast-growing economy to one in the Medium Human Development Category. This shift suggests a cognitive process of discrepancy, where the reality diverged from earlier expectations of continuous growth.

From the year 2000, the text points out a sharp decline in various sectors. Economists believe Pakistan has the resources to develop but is hindered by political instability, corruption, and high-interest loans. This involves insight and causation, as the text identifies specific reasons behind the country's economic struggles. For example, the statement, "borrowing of loans up to 84% against their constitutional laws,

and the establishment of modern structures with high-interest loans will never let this nation develop," highlights a direct cause-and-effect relationship.

The text also reflects on the attitudes and beliefs of Pakistanis, suggesting that a cultural and ideological mindset contributes to the nation's issues. The statement,

"Pakistanis strongly believe that we are the best in the world and would relish the fruit of our prayers in the eternal life that waits hereafter,"

indicates a cognitive process of certainty in religious and cultural beliefs, which might detract from practical efforts to address present challenges. This is further exemplified by the rhetorical questions, "Why should we build dams, huge structures of steel and cement, or cut rocks and dig tunnels?" These questions reflect tentativeness, questioning the need for proactive development efforts.

Furthermore, the text critiques the passive acceptance of corruption and lack of focus on educational and international policies. The statement, "We are concerned with the basic necessities of life and a luxurious life," suggests insight into societal priorities that may hinder long-term development. The lack of visionary leadership is highlighted by comparing Pakistan with countries like Britain, China, and America, which transitioned from agricultural to industrial economies. This comparison demonstrates a cognitive process of discrepancy, recognizing the gap between what could be and what is.

The text also mentions the technological and scientific advancements of other countries, contrasting them with Pakistan's current state. The statement, "But, why should we make a comparison? Powerful brainwashing has already been done," suggests a sense of recognition of the psychological barriers to progress. The focus on immediate necessities over long-term goals is evident in the passage discussing energy resources. For instance, "Even if the nation has to skip a one-time meal, we must generate more electricity," underscores the necessity of prioritizing energy generation to spur development.

The passage ends by reflecting on cultural attitudes and the celebration of independence. The behaviors described, such as "we reel and dance, and we do all those things that reflect our joy and happiness," illustrate a focus on short-term pleasure rather than long-term progress. The text concludes with a poignant statement about learning

from history: "And we have consumed 75 years in reading and listening to fairy tales." This reflects insight into the continuous cycle of inaction and the consequences of not addressing underlying issues.

4.1.8 Sample 8

Word Count	381
Analytic	96.24
Tone	1.56

4.1.8.1 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	13.6	<i>Pakistan is currently going through the phase for which we can say the worst phase of its history since its inception</i>
		<i>Country has badly stuck in the neo imperialism being practiced by the key players of the world through international monetary institutions including International Monetary Fund (IMF), World Bank and others</i>
		<i>Economic betterment of any country depends upon the political stability in that country.</i>
		<i>Pakistan Tehreek-e-Insaf (PTI) which is supposed to be the party of the youth-60% of the total population-</i>

Table 16

The table illustrated above reveals cognitive process category. It provides an insight into cognitive process reflected by the participant in their text. The cognitive process category includes linguistic markers related to cognition.

The participant begins by giving remarks with an assertion about Pakistan's condition, describing it as *"the worst phase of its history."* This statement indicates insight as it reflects an understanding or analysis of the situation. Moreover

"Getting loans from these institutions is not something limited to Pakistan only."

This statement by the participant reflects an insight that many countries take loans, indicating an awareness of international economic practices. This statement might also imply that taking loan may help in economic management and development. The participant might also imply that other countries use loans for long-term economic growth and development, whereas Pakistan uses them for short-term gains. Such kind of language used might imply that the effective use of borrowed funds is significant as the development of country may depend on the use of loans.

Similarly, the statement

"Country has badly stuck in the neo-imperialism being practiced by the key players of the world through international monetary institutions including International Monetary Fund (IMF), World Bank and others"

has been analyzed according to the LIWC cognitive categories. It implies the reason for Pakistan's economic difficulties. It reflects insight as the remarks of the participant show recognition of the broader geopolitics. It might further imply that the influence of these institutions extends beyond mere financial transactions to a form of control or dominance over Pakistan. Besides, the text also suggests certainty as the participant has asserted that Pakistan is "badly stuck" in this situation. It indicates a firm belief in the pervasive effect of these institutions' practices.

4.1.8.2 Affect

Category	Percentage	Examples from Text
Affect	7.13	
<i>Sub categories</i>		
tone_pos	1.53	

tone_neg	4.65	<i>worst phase, economic crisis, has badly stuck, trap country would be defaulted, worst political instability, was toppled, stability in the country cannot be expected, terrorism factor, unemployment, brain drain, inflation</i>
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Table 17

4.1.8.2.1 Tone_Neg

The text begins with a portrayal of Pakistan's condition, described as "the worst phase of its history." This phrase carries a tone of despair. The use of superlatives like "worst" by the participant implies sense of extreme distress and pessimism about the country's situation.

The remarks of the participant such as

"Country has badly stuck in the neo imperialism" and

"Country's economy is so much dependent on these institutions,"

shows hopelessness and dependency. The choice of words like "badly stuck" and "dependent" imply tone of helplessness. Other remarks of the participant like

"The government of former Prime Minister Imran Khan was toppled"

imply frustration. The term "toppled" implies a sudden and forceful change, that illustrate feelings of instability and insecurity. It might also imply instability and destruction, as if the government was physically knocked over. The participant might also connote that the removal of Imran Khan's government was the reason of political crisis in Pakistan. The text also reveals that ousting of former Prime Minister Imran Khan was due to his straightforwardness towards the West. This implies political manipulation and external pressures that contribute to injustice.

The use of terms by the participant such as "the stability in the country cannot be expected even after the elections," might illustrate fear and anxiety. The phrase "cannot be expected" directly communicates a lack of hope and confidence in future improvement, implying the continued and possibly worsening instability.

Overall, analyzing the text through the negative affect category of LIWC illustrates the emotional confusion experienced by those affected by Pakistan's crises. The tone of despair, frustration, fear, and helplessness not only reveals the current socio-political and economic climate but also have significant psychological implications on the people.

4.1.8.2.2 *Tone_Pos*

The positive affect category as illustrated in the table above is 1.53% of the overall text. Analyzing the provided text through the Linguistic Inquiry and Word Count (LIWC) with a focus on the positive affect category is a challenging task, given the dominant occurrence of negative themes and tone used by the participant. The remarks of the participant were heavily towards the negative tone regarding Pakistan's current socio-political and economic crises. The positive affect category in LIWC is concerned with words and expressions that convey happiness, joy, love, and optimism. However, the text reveals the difficulties faced by the nation, including economic dependency, political instability, and societal issues.

4.1.9 Sample 9

LIWC_Measure	Value
WC	398
Analytic	97.08
Tone	12.1

4.1.9.1 *Cognition*

Categories	Percentage	Examples from Text
Cognitive Process	13.97	Well there is nothing new in Pakistan
		It is not about the political and military leadership. Even not any single department is loyal to the state either its NAB or security agencies neither Civil services

	though Pakistan is democratic country but it's more like autocratic state
	"maybe Quaid lived more time Pakistan will be able to get right dimension."

Table 18

The LIWC category "Cognitive Process" with a score of 13.97% in the text analysis indicates a significant presence of words and phrases related to cognitive processes. This category focuses on cognitive engagement, including discussions, explanations, or descriptions of thoughts and mental processes. It may delve into subjects that require critical thinking, problem-solving, and decision-making. Furthermore, this high score suggests that the text may be informative, analytical, or educational in nature.

The participant frequently illustrates the root causes of Pakistan's crises. The remarks of the participant imply a pattern of opportunism and self-interest among the country's leadership. Phrases such as "it's quite unclear which is lacks by leadership policies" and the mention of leaders as "opportunistic hierarchy" reveal a critical perspective. Such remarks imply that the leadership of this country is the reason for the country's dysfunction. The text reveals an analytical approach to understand the country's predicaments as it is evident from the remarks of the participant.

Besides, the text under analysis implies the potential reasons behind challenges that Pakistan is facing. Example concerning the point under discussion is:

"maybe Quaid lived more time Pakistan will be able to get right dimension."

Such expressions of uncertainty underscore the complex interplay of historical, political, and social factors contributing to the current state of affairs, reflecting a cautious approach to attributing causality and envisioning potential alternatives.

Another statement:

"Well there is nothing new in Pakistan, this diaspora in Pakistan since its inception"

implicitly illustrates cognitive processes, revealing understanding and recognition of ongoing challenges within the country. By stating that there is "nothing new," the participant employs insight to highlight a historical continuity of issues. Such remarks imply that the problems faced today are not new and were there since Pakistan came into existence. The use of the term "diaspora" in this context might be metaphorical, and reveal a dispersed state of affairs within the country, rather than referring to the traditional meaning of a community living outside their native country. This choice of word indicates an understanding of the participant's perception of the nation as a divided one in focus and unity.

4.1.9.2 Affect Category

Category	Percentage	Examples from Text
Affect	7.01	
<i>Sub categories</i>		
tone_pos	1.7	I can say that Pakistan survived 75 years just because of Allah Almighty.
tone_neg	5.31	concerned about their personal benefit, nothing new, unfortunate, opportunist hierarchy, not any single department is loyal, are not allow people to talk about their rights, people of Pakistan get nothing in return

Table 19

4.1.9.2.1 Tone_neg

The text under analysis reveals Pakistan's current socio-political and economic challenges according to the negative affect category of LIWC. This category includes words associated with emotions such as sadness, anxiety, anger, and fear and provides insight into the tone of the text.

The participant in their text starts with an uncertainty and criticism towards leadership policies and signifies a negative tone of disappointment. The remarks of the participant illustrate dissatisfaction and mistrust towards the political and military

leadership. They connote that leadership is prioritizing personal gains over national welfare. Such expressions imply negative affect and show the emotional state of frustration. The phrase as under:

not any single department is loyal to the state

implies that sadness and despair are evident probably because of systemic failures across various state departments, from the National Accountability Bureau (NAB) to security agencies and civil services. The excerpt mentioned above connotes not only betrayal but also reveals a tone of sorrow by implying that the institutions have lost their integrity.

Anxiety and fear are the common themes in the text. The remarks of the participant imply that oppression is being faced by marginalized communities, particularly in Baluchistan and Sindh. The text also implies the insecurity experienced by people living in the above-mentioned areas. This implication is evident from the excerpt:

"they are not even safe in their own houses due to the suppression by state security forces

and

"political leaders and local authorities are not allowing people to talk about their rights,"

Such remarks illustrate fear, revealing the existential threats faced by individuals from supposed protectors. The use of term "suppression" implies that state security forces are actively engaged in actions that restrict individual freedoms and rights. It might also imply that such actions could include arrests, or physical violence. The participant here might imply that people are facing an oppressive environment where basic human rights are being violated. Besides, the second phrase, "not allowing people to talk about their rights" implies a deliberate and systematic effort to use coercive measures against freedom of speech. This can be done through various means, such as censorship, or legal penalties against those who attempt to speak out. Anger can be seen through the remarks of participant on political and local authorities. The participant implies that such suppression of dialogue about rights is a serious violation

of democratic principles and human rights. It undermines the ability of individuals to engage in meaningful discourse about their own conditions.

4.1.9.2.2 Tone_Pos

The text provided for analysis, centered on Pakistan's socio-political and economic challenges, is predominantly characterized by expressions of negative affect, focusing on issues such as leadership failures, societal injustices, and systemic flaws. The positive affect category as illustrated in the table above is 1.7% of the overall text. Analyzing the provided text through the Linguistic Inquiry and Word Count (LIWC) with a focus on the positive affect category might be difficult given the dominant occurrence of negative tone used by the participant. The remarks of the participant were heavily towards the negative tone regarding Pakistan's current socio-political and economic crises. The positive affect category in LIWC is concerned with words and expressions that convey happiness, joy, love, and optimism. However, the text reveals the opportunist hierarchy of leaders, and not any single department is loyal to the state. This is how it is inferred that the cognitive structures used by an individual on one hand connote his/her bent of mind and the sociopolitical context one lives in.

4.1.10 Sample 10

Word Count	433
Analytic	97.77
Tone	1.66
cogproc	10.62

4.1.10.1 Cognitive Processes

Categories	Percentage	Examples from Text
Cognitive Process	10.62	
		Pakistan continues to face multiple sources of internal and external conflict
		The inability of state institutions to reliably provide peaceful ways to resolve grievances has

	encouraged groups to seek violence as an alternative . The country saw peaceful political transitions after the 2013 and 2018 elections Pakistan continues to face multiple sources of internal and external conflict
--	--

Table 20

To analyze the provided text through the lens of the cognitive process category in the Linguistic Inquiry and Word Count (LIWC), the researcher focuses on identifying specific examples from the text that illustrate cognitive processes. Given the content of the text, which reveals the challenges faced by Pakistan, the analysis discusses how cognitive processes are reflected in the text.

The text presents numerous instances of causal reasoning, linking causes to their effects. For example, the statement "Every year thousands of students got their degrees but there is not a single job of rank 4th in this country" illustrate a clear cause-and-effect relationship. The lack of job opportunities (effect) is directly linked to the issue of unemployment among educated youth (cause). Besides, insight is evident in the text by the remarks of participant on the political and social dynamics within Pakistan.

For example, the line

"If they are all loyal for the country, they should be at one platform"

suggests an insight into the political division that might be the reason for restricting national progress. The example mentioned above connotes that loyalty to the country should naturally lead to unity. Loyalty to the country implies a sense of patriotism, commitment to national values, and prioritising the country's interests above personal or group interests. The participant puts forward the concept of "one platform." It implies a common ground where all loyal individuals come together. This could mean political unity, a collaborative approach to national issues, or a strategy to address common challenges. The analysis reveals that those loyal to the country will share similar goals and values, leading them to work together. However, there could be

several implications in this statement. The remarks illustrate that the participant assumes that loyalty to the country is universally understood and agreed upon. In reality, different groups may have varying interpretations of what loyalty is, leading to differing views on what is best for the country. Additionally, the statement assumes that unity is always achievable and desirable.

The above statement might also imply a call for a collective effort towards national goals, suggesting that personal or group interests should be secondary to the country's well-being. This can foster a sense of solidarity and common purpose. However, it also raises questions about the balance between unity and diversity. While a unified platform can strengthen a nation's resolve, it is essential to recognize and respect different viewpoints to ensure that the country's path forward is inclusive and representative of all its citizens.

Besides, the participant has written the issues that are being faced by Pakistan with certainty. Tentative language can be inferred in the expressions of hope or concern for the future, implicitly questioning what will happen next or how issues will be resolved. However, explicit examples of tentative language are less prominent in the text under analysis, as the focus is on describing the current state rather than speculating about the future. The participant in this text differentiates between various factors contributing to the state of affairs, such as political parties, educational institutions, and external conflicts. This differentiation helps in understanding the complexity of the issues faced by Pakistan.

4.1.10.2 Affect

Category	Percentage	Examples from Text
Affect	10.04	
<i>Sub categories</i>		
tone_pos	2.83	<i>No doubt it is a good step for poor people, The country saw peaceful political transitions after the 2013 and 2018 elections.</i>

Tone_neg	5.89	<i>very bad, they are not patriot, totally corrupt, Every political party say worst points about rest, fragile economy, Robbery cases, Medical facilities are not available, I am sadly saying these words that Love Pakistan but leave Pakistan.</i>
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Table 21

The text is heavily loaded with affective language that illustrates a broad range of emotions. The themes of political disloyalty, systemic corruption, unemployment, extremism, intolerance, and vulnerability to climate disasters reveal tone of despair and frustration. The frequent use of words associated with societal and political challenges indicates a high level of emotional engagement with these issues and reflects a deep concern for the country's current state.

4.1.10.2.1 Negative Tone

Analyzing the statement

"Extremism and intolerance of diversity and dissent have grown, fuelled by a narrow vision of Pakistan's national identity, and are threatening the country's prospects for social cohesion and stability"

reveals the emotional and psychological implications of the text. This data under analysis reveals how linguistic expressions relate to the tone of the text. The line stated above conveys a tone of negativity within the social fabric of Pakistan. It is marked by an increase in extremism and intolerance. The use of terms such as "extremism" and "intolerance" illustrate negative affect and imply fear, anger, and frustration among the population. These words indicate conflict, social disharmony, and unease, which make the tone of text negative. The remarks of the participant as mentioned above "narrow vision of Pakistan's national identity," imply that a limited understanding of what it means to be Pakistani is contributing to social divisions and hostility. This not only worsens feelings of isolation among groups but also implies injustice and resentment.

The above statement indicates various negative emotions, such as anxiety, anger, and sadness. The linguistic spins e.g., "threat to social cohesion and stability," reveal fear about the future and the uncertainty of the country's ability to maintain unity

and peace. Anger can be inferred from the terms "extremism" and "intolerance," which often arise from frustrations that have turned into aggressive attitudes and behaviors. The latter part of the statement indicates a threat to the country's prospects for social cohesion and stability. On a broader level, this statement illustrates an atmosphere that reveals negative tone. Such an environment can lead to a decrease in trust among community members, and a general decline in mental well-being.

The remarks that "mostly the public of Pakistan is not educated" and adheres to "old and awkward tradition" connote resistance to progress. This, along with the increasing crime rate and inadequate medical facilities, intensifies decline and neglect, where basic needs and security are not being met.

The statement

In the end I am sadly saying these words that Love Pakistan but leave Pakistan.

The statement "Love Pakistan but leave Pakistan" connotes a complex mix of emotions that fall within the affect category. It reveals a blend of love, sorrow, and resignation, with tones of frustration and disappointment.

The phrase "Love Pakistan" conveys a deep emotional attachment and patriotism towards the country. It implies a genuine affection for Pakistan, rooted in a sense of identity, culture, and heritage. This sentiment could be influenced by personal experiences, memories, and connections to the land and its people. However, juxtaposed with the phrase "leave Pakistan," the sentiment becomes negative. The decision to leave one's country imply feelings of sadness, loss, and longing. It might connote a sense of defeat as the individual feels compelled to seek opportunities elsewhere due to the challenges and hardships faced in Pakistan.

The remarks of the participant:

“Other countries are deciding to go out of earth and Pakistan is doing Who will next PM of Pakistan”.

illustrate the negative tone in the text. These remarks connote that the participant is not hopeful regarding the political situation of Pakistan. The choice of words as mentioned in the above example reveal a significant disparity between Pakistan and other countries. It reveals a contrast between advanced scientific ambitions of some

countries with the political preoccupations in Pakistan. On one hand, countries have been investing in space exploration and showing a forward-thinking approach. Those countries are focusing on scientific advancements, technological innovation, and long-term goals. Whereas, on the other hand, the focus in Pakistan is on determining the next Prime Minister. Political stability is essential but there is an implication that more attention should be given to other areas of development.

4.1.10.2.2 Tone Positive

The text provided is a description of the challenges facing Pakistan, indicating strong sentiments and critical observations. Moreover, the kind of language used reflects that the tone of text is negative.

However, the mention of the peaceful political transitions after the 2013 and 2018 elections connotes a positive tone. It implies a moment of democratic success and potential stability. The remarks of the participant reveal that despite ongoing issues, there were periods marked by stability and smooth changes in government. In 2013, the peaceful transition of power following the elections indicate a maturing political process, when the electoral outcomes were acknowledged. This not only validates the legitimacy of the democratic process but also helped in building public confidence in the political system. Similarly, the 2018 elections continued this trend of peaceful transitions. The absence of significant political unrest or violence during and after the elections demonstrated the resilience of the country's democratic institutions. It also highlighted the commitment of politicians to maintain stability and respect the will of the people.

Another instance is the description of the PEF school system. Although the remarks are negative, the acknowledgment that the system "is a good step for poor people" connotes a positive aspect. This suggests that the initiative was intended to improve and make education accessible for underprivileged. It highlights a positive intention behind the policy, even if the implementation and outcomes have been less favorable.

4.2 Frequency of Hyland's Interactive Discourse Markers

Interactive metadiscourse refers to the textual features that organize the discourse, making it easier for the reader to follow the writer's arguments and understand the structure of the text. These markers include transitions, frame markers, endophoric markers, evidentials, and code glosses. Analyzing the text for interactive metadiscourse involves identifying these features and their functions within the text.

4.2.1 Quantitative Analysis

The table mentioned below provides answer to the second research question:

INTERACTIVE	Frequency of Use	Percentage
Transitions	916	18.32
Frame Markers	94	1.88
Endophoric Markers	9	0.18
Evidentials	35	0.7
Code glosses	3	0.06
Total Number	1068	21.36

Table 22

First of all, the frequencies of metadiscourse markers (markers to words ratio as used in the whole discussion or per essay) have been analyzed with simple descriptive statistics. The results have been further documented and illustrated with graph below showing the patterns holding for each category separately.

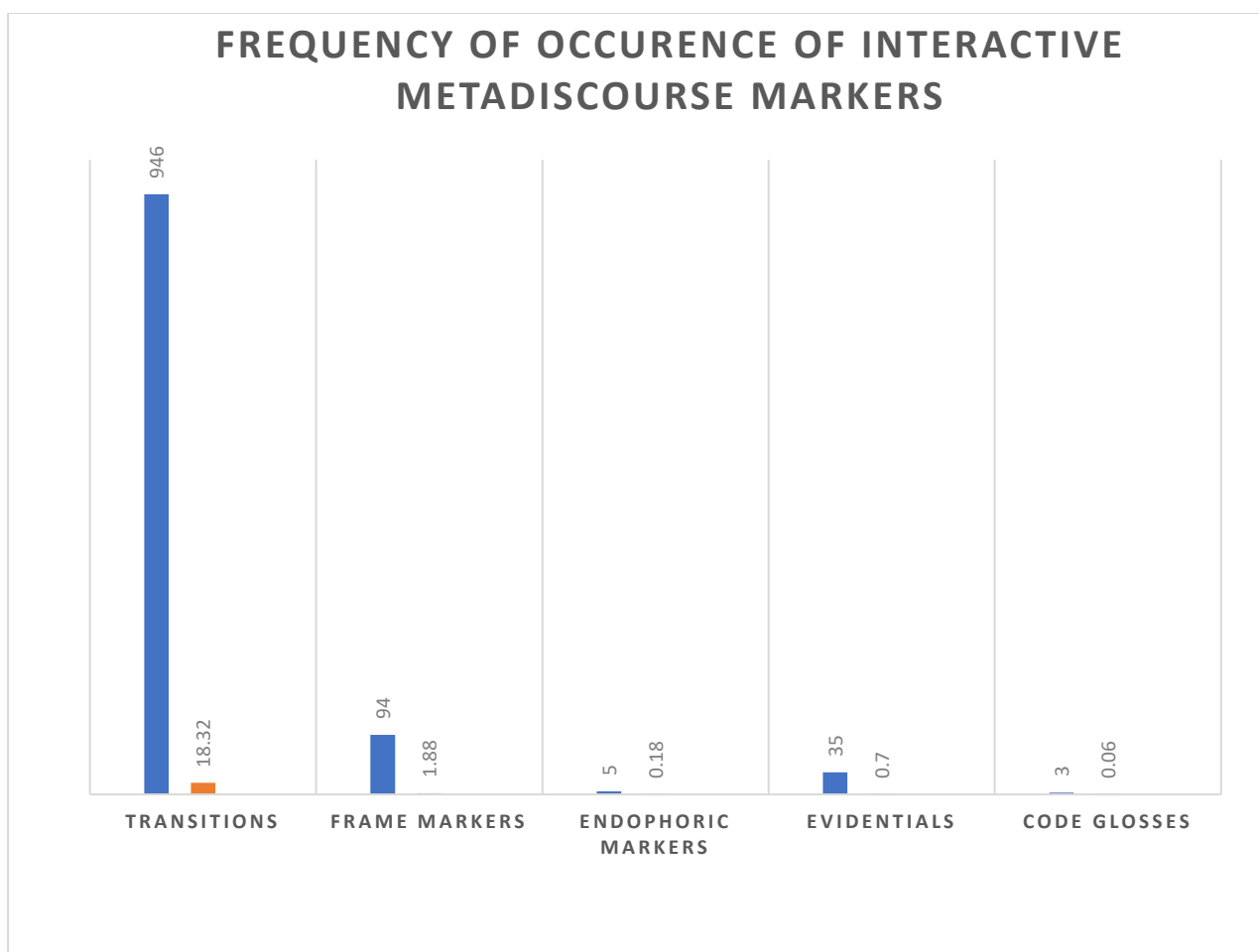


Fig.1

The analysis of data reveals that the participants have used the interactive metadiscourse category in their samples. The highest use of category was transition markers with 946 occurrences. The second-highest category was frame markers with 94 occurrences. The third-highest category was evidentials with 35 occurrences. The fourth-highest category was endophoric markers with 9 occurrences, and the last category was code glosses with 3 occurrences only.

The transitions were used 18.2 % of all metadiscourse in the text. The transitions found in the samples were mainly conjunctions (i.e., and, also, but, so, etc.), and adverbs (likewise, similarly, therefore, yet, etc.)

4.2.1.1 Transitions

The analysis of the data reveals that transition markers were the most commonly used type of interactive metadiscourse, supporting Hyland's 2005 observation. He described their prevalence to writers' desires to ensure that their writing is clearly

understood by readers. This widespread use among all participants might stem from the fact that students frequently employ these markers in their writing. Transition markers help participants link between sentences and indicate shifts in topics, facilitating easier comprehension for the audience. Without these markers, texts might become unclear and the flow of arguments is difficult to follow. Thus, their use is significant for maintaining clarity.

Similarly, transition markers have been found in the samples of expressive writing collected by the researcher. It might be due to their essential role in intertwining together personal texts and thoughts in a coherent and manner. This style of writing, which focuses on sharing personal experiences and emotions, consists of these markers to maintain a logical flow and to guide through the emotional and cognitive structure of the text. Transitions like "however," "meanwhile," "subsequently," "and", "therefore" "but", "if", "with", were used by the participants. The reason for using transition markers by the participants ensured that their text progresses smoothly from one point to another.

In the data, several frame markers have been used to structure the argument. For example,

"The military and beaurocracy still have to be decolonized in their discources and in their thoughts **which** is conditional....

Relative pronouns e.g., **which** is also used frequently in the texts to add explanatory or descriptive information. The participant has used this to clarify and elaborate on the preceding idea and provided the additional information as a necessary condition for the main action or idea.

For example, in the sentence

"the political and economical are due to its being trapped in the internal global imperialism, **and** historical....

Here, "and" was used by the participant to link the two clauses, indicating a continuation of thought.

For example,

Furthermore going specifically, recently the status quo has been challenged by the PTI..."

This transition marker has been used by the participant to add an additional point about the political challenges Pakistan is facing. After discussing how economic and political issues are intertwined with global imperialism and historical status quo, the participant has used "Furthermore" to introduce another aspect—the immaturity of the political apparatus due to the establishment's dominance. This addition builds on the previous points, adding to the overall argument about the country's issues.

Transition markers used by the participants in expressive writing samples may also highlight the importance of maintaining a conversational tone. The use of transitions also reflects the writer's intention to create a text that is not only expressive but also easy to understand. By effectively using transitional phrases, participants have ensured that their personal insights and tone are organized. This linguistic form used by the participants to express his/her ideas reveals their bent of mind

Thus, the results reveal that frequent use of transitions is not only a stylistic choice but a functional necessity in expressive writing. It enables writers to construct text that is emotionally rich and structurally organized while ensuring that their personal expressions are effectively conveyed.

4.2.1.2 Frame Markers

These are linguistic tools used to organize text and guide through the structure of a text. These help in clarifying the writer's argument and make the text more coherent. Examples include words and phrases that indicate the sequence, emphasis, contrast, and conclusion of ideas. These markers are particularly prominent in analytical, expository, and argumentative writing, where clarity and logical progression are crucial.

For example,

"Another major problem of Pakistan is unemployment"

This marker has introduced an additional point to the ongoing discussion. The participants used this marker to present a new issue, adding to the previously mentioned problems. Using transition markers like "Another" by the participant has helped to

organize the text and guide the researcher through different points. By clearly indicating the introduction of a new problem, the participant has made it easier for the researcher to follow the argument and understand the various issues being discussed.

Because people are not getting jobs

In this context, "Because" explains the reason behind an issue, linking the cause (people not getting jobs) to its effect (unemployment). This transition marker used by the participant has helped to clarify relationships between ideas, particularly cause-and-effect relationships. The participant has tried to make the argument more logical and understandable by explicitly stating why something is happening.

But now a days Pakistan is facing many problems like political instability, economic instability.....

The use of discourse marker by the participant indicates a shift from discussing the historical context and ideological foundation of Pakistan to the current problems it is facing. By using this marker, participant has conveyed background information and the present situation.

The findings drawn from the descriptive analysis show that frame markers were the second most common type of interactive metadiscourse marker used by all the participants. This prevalent use has highlighted that the role of frame markers is in organizing the structure of the text, as noted by Hyland in 2005. Consequently, it is apparent that establishing a clear framework early in the text serves as an effective rhetorical strategy for many participants. This approach helps in setting the overall structure of text.

4.2.1.3 Endophoric Markers

Endophoric markers, which refer to other parts of the text, are used to ensure coherence and guide the reader. The examples include noted above, see figure, in section 1 etc. However, these are relatively less in frequency in the samples. It may be due to the nature and goals of this kind of writing. Expressive writing primarily serves to convey personal experiences, emotions, and perceptions. It focuses more on the expression of the participant's internal thoughts.

One of the main reasons for the limited use of endophoric markers in expressive writing can be its inherent text style. Unlike academic or highly structured writing, where coherence and clarity are achieved through explicit textual references, expressive writing often adopts a more text or stream-of-consciousness technique. This method mirrors the natural flow of personal thought and emotion, which does not typically require frequent referrals back to previously stated ideas within the text.

Expressive writing aims to engage the reader on an emotional level rather than an intellectual one. Similarly, in the present study the focus is to share a personal insight, which relies on the content of the text rather than on the logical structuring of arguments. The present research focuses on finding out the cognitive structures used by the participants to express their ideas rather than focusing on the linguistic forms employed by the participants.

Moreover, the personal nature of expressive writing means that the participants may not feel the need to employ endophoric markers. Since the writing is a personal reflection or essay, the participant may not aim for the structural complexity that would require such markers.

4.2.1.4 Evidentials

Evidentials are metadiscourse markers that provide an idea about the origin of the information of the discourse that has source outside of the text. They function as referential markers that act as a reference to the origin of the discourse that is present outside of the text. Evidentials are markers that are employed by writers that act as directional features for readers and allow them to understand the intent of the writer. Evidential metadiscourse markers function as interlinks between a writer's statements with those of the statements of other writers. This creates a form of intertextuality that allows writers to establish their reputation as it depicts the fact the discourse that is created by the writer aligns with the more significant field of knowledge that exists outside the realm of the present discourse. Therefore, in comparison to other types of interactive metadiscourse markers, the use of evidentials in the text by participants appears to be relatively low. This might be primarily because evidential markers are less common in expressive writing. Evidentials are used to cite sources from other texts to strengthen the writer's claims. However, expressive writing style focuses on sharing personal experiences and emotions, which requires less external validation. The

purpose of expressive writing is to articulate the participant's own thoughts and feelings rather than to make an argument or present scholarly evidence.

4.2.1.5 Code Glosses

Code glosses may be referred to as words that act as signals for readers to understand and internalize the ideational materials' principles and concepts. Examples of code glosses include words and phrases like, such as, as an instance. Code glosses allow the reader of a particular writer to understand and appreciate the intended purpose and meaning of a particular discourse.

In expressive writing, the use of code glosses is minimal. Code glosses are used to clarify, explain, or elaborate on a previous point. However, in expressive writing code glosses seem out of place, as this kind of writing primarily aims to capture the participant's personal thoughts, feelings, and experiences.

The total number of code glosses that have been searched is 5 in all the samples.

“in other words, the country is facing ongoing issues that impact its overall stability.”

In the sentence about Pakistan's current situation, the meta-discourse marker "in other words" used by the participant plays a crucial role in enhancing comprehension. This marker functions to rephrase or restate the information provided in a simpler or more accessible manner. By using "in other words," the participant has tried to offer a clearer or more straightforward explanation of the previously mentioned details. In this context, "in other words" helps to clarify that the political instability and economic challenges faced by Pakistan are impacting the country's overall situation.

Expressive writing is largely introspective, focusing on personal reflection rather than analytical explanation. The primary goal is to convey personal experiences and emotional truths rather than to instruct or guide the reader through complex arguments or academic theories. This subjective and introspective nature may reduce the need for clarifying that would otherwise help a reader navigate through scholarly arguments or technical material. Furthermore, the simplicity and directness in expressive writing make the extensive use of code glosses unnecessary. If the writing is clear and the texts are personal, there is less need to guide the readers or to elaborate extensively.

The analysis of the data reveal that, all the interactive metadiscourse features are less frequently used in expressive writing. The participants have used interactive metadiscourse in the text that primarily involve transitions and frame markers, which serve to organize the text and guide through the sequence of arguments and topics discussed. The less use of endophoric markers and evidentials by the participant suggests a text style focused on the participant's observations and analyses rather than on engaging with or referring to external sources or other parts of the text.

Interactive discourse markers are linguistic expressions that facilitate interaction, engagement, and dialogue between the writer and the reader. However, in the text, the frequency of interactive discourse markers is low suggesting a potential lack of interactive or dialogic elements within the discourse. It might also indicate that text exhibits a more monologic or one-sided nature, with limited opportunities for interaction or dialogue. Another finding may be is that the participant has a more authoritative or didactic communication style, where the focus is primarily on transmitting information or making assertions rather than engaging in interactive or collaborative written text.

4.3 Summary

In this chapter, the researcher has examined the linguistic profiles used by the participants to express their thoughts. It analyses how ideologies are propagated in expressive writings of students. To achieve this, Linguistic Inquiry and Word Count (LIWC 2022) and Hyland's (2005) metadiscourse model have been employed. A mixed-methods approach is used to combine linguistic strategies with quantitative analysis. The frequency of occurrence of metadiscourse markers has been illustrated with graph.

CHAPTER 5

CONCLUSION

The current purpose of research is to explore the cognitive structures and frequency of occurrence of interactive metadiscourse markers in expressive writing texts, based on the software Linguistic Inquiry and Word Count and Hyland's model (2005). Mixed method approach is used. Some of the samples were analysed qualitatively in order to explore the cognitive structures through the use of language. The motivation for this study comes from Pennebaker and King (1999) who proposed that the way people write about things reveal important information about them. Humans use language to communicate their thoughts, emotions, and biases. With the development of tools for analyzing and interpreting language, researchers now have the means to delve deeper into these aspects.

Some samples are analysed qualitatively in order to explore the cognitive processes propagated through language. The motivation for this study has come from Pennebaker and King (1999) who proposed that the way people write about things reveal important information about them. Humans use language to communicate their thoughts, emotions, and biases. Writing plays a crucial role in expressing our personal experiences and social identities. Understanding how metadiscourse functions in our writing can significantly enhance these aspects.

Results and discussions have been presented according to the research objectives. The first objective was to explore cognitive structures that are propagated through the linguistic profiles used in students' expressive writing at BS level in NUML Multan. The second objective was to document the frequency of occurrence of interactive metadiscourse markers used by students in their expressive writings.

The answers to these questions are as under:

In this study, the researcher has analysed the predictive performance of psychological features obtained by LIWC. For this purpose, one main LIWC category namely psychological processes, was taken.

Linguistic Inquiry and Word Count is able to identify significant word choices, cognitive structures and affect from written texts. Subjectivity is anticipated, as these

words reflect the participants' opinions on the current situation in Pakistan. The participants have shown more analytic language, and frequent use of affection words in the written texts. The analysis conducted using the Linguistic Inquiry and Word Count (LIWC) tool has revealed that the majority of the texts show a significant prevalence of negative affect. This category, which includes words related to sadness, anxiety, and anger, has suggested that participants are not optimistic about the current situation in Pakistan. The high frequency of negative affect words indicates a tone of pessimism and concern among the students' population.

The LIWC affect category has provided an understanding of the emotional tone present in the participants' writings. This negative affect not only reflects their personal feelings but may also highlight broader social and economic issues that may be contributing to worsen the situation of Pakistan.

The findings from this LIWC analysis also highlights the importance of addressing the emotional and psychological well-being of students. The prevalence of negative emotions in the samples has suggested that there may be underlying factors, such as political instability, economic hardship, or social unrest, that are shaping the perspectives of the participants. They also suggested that educators, policymakers, and community leaders should work towards creating a more supportive and positive environment for the citizens of this country.

Besides, it demonstrates the power of language as a window into the collective psyche of a population. The use of LIWC to analyze affect categories has provided valuable insights into the emotional state of participants.

Conversely, the examples of positive affect language used by the participants have suggested that not everyone has lost hope entirely and there remains a hope for positive change. The positive tone of language in some of the samples has suggested that some participants are hopeful and are able to recognize potential for improvement and growth. This positive affect, although less frequent, has highlighted the importance of promoting initiatives that can increase these positive sentiments.

Moreover, while analysing the texts through the lens of LIWC's cognitive process category, several recurrent themes and cognitive patterns have emerged. The cognitive process category including various dimensions such as insight, causation,

certainty, and tentativeness have signified how the information is processed and perceived by the participants.

Firstly, the prevalence of words associated with insight suggests that participants have been actively engaged in introspective thinking and reflective analysis of the current situation in Pakistan. They are attempting to gain deeper understanding and insight into the complexities of the issues.

Secondly, the frequent use of words related to causation, certainty, and tentativeness has indicated that participants are trying to identify the root causes of problems and understand the connection of various societal, political, and economic factors. The presence of such words has highlighted their recognition of inconsistencies within the current situation.

Furthermore, the analysis reveals the students' perceptions and conclusions. While they have expressed certain beliefs about the situation, there has also been an acknowledgment of uncertainty and ambiguity surrounding certain aspects. Their use of such kind of language has also reflected a thoughtful and critical approach to understanding, analysing, and making sense of the challenges prevalent in Pakistan.

The analysis of the data also reveals several recurrent themes, prominently highlighting emotions such as despair, hopelessness, anxiety, anger, frustration, and sadness. These themes indicate a sense of dissatisfaction among the participants regarding the current situation in Pakistan. Despair and hopelessness are reflected in their texts, suggesting that they see little scope for improvement. Anxiety shown in the texts has highlighted a state of unease and uncertainty. The feelings of anger and frustration are expressed through their writing. Sadness highlights a deep sense of disappointment. Together, these themes have highlighted a population that is struggling with significant emotional and psychological distress, while emphasising the urgent need for supportive interventions, effective policies, and positive changes by the authorities, leaders and policy makers to address these concerns and develop a more hopeful and stable environment.

In order to answer the second research question, the researcher has analysed that a limited range of metadiscourse markers are employed by the participants. Majority of them have preferred the use of transitions and frame markers in their expressive writing. Transitions, such as "however," "therefore," and "moreover," has played a role in the

logical flow and coherence of their writing. By employing these transitional phrases, participants have demonstrated their ability to guide the researcher through their thought processes. This has not only made their writing more engaging but has also helped in effectively communicating complex arguments and narratives. The frequent use of transitions has indicated that participants recognize the importance of structuring their writing in a way that is both accessible and persuasive to the researcher.

In addition to transitions, the prevalent use of frame markers—such as "in conclusion," "to begin with," and "firstly"—further illustrates the participants' proficiency in organizing their writing. The use of frame markers indicates that participants are mindful of the importance of structure in expressive writing. By employing frame markers, they have ensured that their writing has a well-defined framework, making it easier for researcher to follow and understand the progression of their ideas. This strategic use of markers has not only enhanced the overall clarity and organization of their writing but has also demonstrated the students' ability to control the structure of their text to better convey their intended message. Overall, the combined use of transitions and frame markers has signified a high level of writing competence, showing the students' understanding of how to effectively manage both the content and the structure of their writing to achieve clear and compelling communication.

5.1 Recommendations for Future Researches

Future research could benefit from exploring the linguistic profiles of undergraduate students across various academic disciplines. This comparative analysis would reveal how cognitive structures in expressive writing differ between fields such as humanities, social sciences, natural sciences, and engineering. By understanding these variations, policy makers can develop more tailored writing support programs that address the unique needs of students in each discipline, hence enhancing their overall academic experience and writing proficiency.

Another promising area for future studies is the examination of cultural and linguistic diversity's impact on cognitive structures in expressive writing. Research could focus on how students from different backgrounds approach writing and how their distinct perspectives and language skills contribute to their linguistic profiles. This knowledge would ensure that all students receive the assistance they need to succeed. Additionally, the role of technological tools in shaping the cognitive structures of

students' expressive writing is a promising area for future research. Studies could evaluate the impact of digital writing platforms, grammar and style-checking software, and online collaborative writing tools on students' writing processes and outcomes.

Future researches can also explore the use of interactional metadiscourse markers in expressive writing. Additionally, teachers can employ the technique of expressive writing in their classrooms to gather feedback from students, enhancing communication and understanding.

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