ORIENTING GREEN DISCOURSE: A CORPUS-BASED ECOLINGUISTIC STUDY OF ECONOMIC DISCOURSE ON THE CHINA-PAKISTAN ECONOMIC CORRIDOR (CPEC)

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Candidate of **Doctor of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **Orienting Green Discourse: A Corpus-based Ecolinguistic Study of Economic Discourse on the China-Pakistan Economic Corridor (CPEC)** submitted by me in partial fulfillment of Ph.D. degree is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in the future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Orienting Green Discourse: A Corpus-based Ecolinguistic Study of Economic Discourse on the China-Pakistan Economic Corridor (CPEC)

This research explores the economic discourse produced around China-Pakistan Economic Corridor (CPEC) by analyzing a corpus of 1.2 million words to find cognitive structures and linguistic patterns representing socioeconomic and ecological/environmental areas in the discourse of CPEC. In addition, this research also determines how identified linguistic patterns and cognitive structures develop six stories by following Stibbe's (2015) story framework of eco-critical discourse perspective and Sen's (1999) sustainable development approach. The data for this research is taken from the official website of CPEC, and the unofficial data comprising Pakistani and Chinese English newspapers (2016-2020) from online e-paper websites. The theoretical framework of this research includes theories from cognitive linguistics and discourse analysis. The corpus analysis provided frequencies and statistical significance scores to find frames, metaphors, salience, appraisal, and facticity patterns that helped discover the type of discourse/ideologies. Seventeen Sustainable Development Goals (SDGs) provided a word list for corpus analysis.

The findings indicate that the representation of socioeconomic areas (5719 hits) and (CPEC-socioeconomic collocation =7.59442 MI score) in CPEC discourse is found to be more frequent as compared to the eco-environmental (1807) hits and (CPEC-eco-environmental collocation= 2.64534 MI score) representation in the CPEC discourse. The story of frames is developed through 55 socioeconomic frames (22 problem or extrinsic frames, 34 predicament or intrinsic frames) and 66 eco-environmental frames (40 problem or extrinsic frames, 26 predicament or intrinsic frames). The story of conceptual metaphors is developed through 12 metaphors for CPEC, 11 for socioeconomic, and 4 for eco-environmental areas of Pakistan. Some examples include: Nature is a resource, CPEC is a human being, poverty is a war, and Pakistan's environment is a patient. The story of salience is employed in CPEC discourse with the help of verbs of focus, vitality, and

significance such as explore, implement, accelerate, and promote. The most salient verb is ‘promote’, with salience stats 7.36823.

Similarly, CPEC has been appraised well for bringing socioeconomic uplift to Pakistan using 51 positive appraisal items, primarily adjectives. In comparison, it has been appraised as bad for the environmental health of Pakistan by using 18 negative appraisal items. Facticity or conviction patterns have been employed using expert authorities’ opinions, such as environmentalists, economists, ministers, and field experts. Moreover, modal verbs such as: *will* are used most frequently with eight areas, and hedging words like believe/s and think/s, are also used in the collocation ‘environmentalists-believe’ (11.23230) and policy makers -- think (7.49041) to validate descriptions of socioeconomic and eco-environmental areas of CPEC discourse. The CPEC discourse is ambivalent due to the combination of 5 areas with anthropocentric ideologies and four areas with ecocentric ideologies. The Ecosophy of the CPEC discourse starts with anthropocentric ideologies and ends with ecocentric ones.

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LIST OF ABBREVIATIONS

BRI	Belt and Road Initiative
CPEC	China-Pakistan Economic Corridor
CL	Corpus Linguistics
CDA	Critical Discourse Analysis
ECDA	Ecological Discourse Analysis
EDA	Ecological Discourse Analysis
EIA	Environmental Impact Assessment
EMMP	Environmental Mitigation and Monitoring Plan
EPAs	Environmental Protection Agencies
EPRF	Environmental Protection Regulatory Framework
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IT	Information Technology
KCFR	Karachi Council on Foreign Relations
LNG	Liquefied Natural Gas
NDRC	National Development Reform Commission
NEQs	National Environmental Quality Standards
OBOR	One Belt and One Road
OECD	Organization for Economic Cooperation and Development
PDA	Positive Discourse Analysis

SEZs	Special Economic Zones
SDGs	Sustainable Development Goals
IUNC	International Union for Conservation of Nature
UN	United Nation
WCED	World Commission on Environment and Development
WWF	World Wildlife Fund

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DEDICATION

Dedicated to my late father and the late brother

CHAPTER 1

INTRODUCTION

The Earth's ecological systems have been compromised by unbounded economic expansion, advancement, growth, prosperity, consumerism, individualism, and Gross Domestic Product (GDP). They have eroded their ability to sustain both themselves and human well-being (Stibbe, 2015). In this way, Ecology and the environment have become some of the most significant issues of this century requiring solutions. Many organizations worldwide, voluntarily or involuntarily, are taking initiatives to preserve natural balance and save biodiversity, oceans, air, and wildlife (Chen, 2016). However, how does language play its role in maintaining this equilibrium makes a different point to deal with this overarching contemporary issue? Therefore, Ecolinguistics, as an interdisciplinary approach to ecology and linguistics, seems to be the field of interest for future studies (Wu, 2018) that may play its role in dealing with these issues. In this way, by widening the role of sociolinguistics, where language deals with social contexts, started to include the broader physical contexts such as environment and helped in giving birth to a relatively new field of Ecolinguistics or Ecological Linguistics during 1990s (Zhou, 2017).

Ecolinguistics, a branch of linguistics, explores the relationship between language and the environment. It delves into how language and communication impact our understanding of ecological and environmental issues. There are some key aspects that connect linguistics with Ecolinguistics.

Ecolinguistics examines how language employs metaphors and frames to shape our perceptions of the environment. Metaphors like nature as a resource or ecosystem services influence how we view the natural world. Understanding how metaphors and frames work can shed light on our attitudes and actions regarding environmental issues. Similarly, other linguistic expressions such as verbs, nouns, adjectives and adverbs can also be explored for the function they perform to encapsulate Ecolinguistic aspects of a certain study. In this regard, Eco-critical discourse analysis is a specific approach within Ecolinguistics that applies critical discourse analysis to environmental or economic texts. It scrutinizes the power dynamics, ideologies, and hidden meanings within texts related to the environment by exploring linguistic patterns and cognitive structures used in them.

Moreover, Ecolinguists analyze how the meanings of words related to the environment have evolved over time. For example, the word green has taken on new meanings associated with environmental consciousness, and the word sustainability has become a central concept in discourse about ecological well-being. It also explores how language contributes to the formation of environmental identities. The language we use can signal our connection to Nature and our role in environmental advocacy. Different linguistic choices may reflect various environmental worldviews and affiliations. The use of different linguistic patterns and the cognitive structures relates this field with cognitive linguistics and rhetoric studies because it studies the rhetoric of environmental communication, including how arguments are constructed and how persuasive strategies are employed to address ecological issues. This aspect involves analyzing how language can be used to motivate environmental action. Ecolinguistics doesn't limit its focus to verbal language alone but also examines how other modes of communication, such as visual elements, play a role in shaping environmental discourses.

The study of toponyms (place names) provides insight into the historical, cultural, and ecological significance of a region. Ecolinguists examine how place names reflect the connections between people and the environment, as well as the values and beliefs associated with specific locations. Moreover, Indigenous languages often contain rich ecological knowledge, including terms for specific plants, animals, or ecological processes. Ecolinguists work to document and preserve this knowledge, recognizing the value of

indigenous languages in understanding and managing ecosystems. It also plays a role in critiquing and analyzing environmental discourse and policies. Similarly, being a branch of linguistics, researchers of ecolinguistics examine how governmental and organizational language influences environmental regulations, activism, and decision-making which is concerned with how language is used in environmental activism. It studies the rhetoric of environmental movements, including slogans, protests, and campaigns, to assess their linguistic impact on society and policy.

Ecolinguistics in this way, is an interdisciplinary field located at the intersection of language and ecology, disclosing as to how our words and discourses shape our perceptions and behaviors toward the environment. It critically weighs the role language plays in reinforcing or challenging environmental norms, emphasizing the power of discourse, metaphor, and contemporary stories of GDP, consumerism and profit maximization in cultivating ecological awareness. This field advocates for a linguistic shift towards sustainability, aiming to reshape the collective consciousness and promote a worldview that acknowledges our integral connection with the natural world. By fostering a language that aligns with ethical environmental stewardship, ecolinguistics seeks to steer societies towards more responsible interactions with our planet, thereby contributing to the global effort to mitigate ecological challenges.

In addition to this, during 1990s, Michael Halliday, a renowned linguist, gave away his famous speech on *New Ways of Meaning: The challenge to applied linguistics* marked his way to put forward the challenge posed by the use of simple language expressions which leads towards widespread environmental destruction. In those examples, Halliday (2001) as cited in LeVasseur (2015), mentioned how that how countless texts repeated daily worldwide contain a simple message: growth is good. Many is better than few, more is better than less, big is better than small, grow is better than shrink. He also asserts that language system according to Halliday does have certain language patterns which are unecological and carry the message of environmental destruction. Therefore, the ecological use of language/language expressions can save ecosystems, the natural environment, habitats and ecology from destruction by exposing anti-environment language patterns and mental constructs through linguistic analysis. Thus, the present study makes linguistic analysis on exploring ecological and unecological language use by finding cognitive

structures and linguistic patterns that emphasize orienting more ecological use of language, henceforth called green discourse. So this research conducts a corpus-based Ecolinguistic study of economic discourse produced around the China-Pakistan Economic Corridor (CPEC).

Nowadays, the world is facing a great challenge of environmental degradation. Many disciplines are trying to contribute to this challenge by making various efforts, such as conducting research and implementing practical projects that can help bring awareness on how to save the natural environment and ecology (Laurdini et al., 2019). In linguistics, according to Huang (2016), the research can be conducted by analyzing language patterns and cognitive structures employed to construct a helpful discourse that may contribute in removing or lessening environmental problems by triggering pro-environmental frames in people's minds. The field that does so is Ecolinguistics, which is a branch of linguistics that involves multiple methods such as discourse analysis, ecological critical discourse analysis, positive analysis, thematic discourse analysis, and various other methods or tools such as corpus linguistics in order to reveal discursive practices behind the creation of rhetoric (Hogben, 2009) in those discourses. Therefore, a significant number of scholars have contributed to analyzing the texts that surround Ecolinguistics under three paradigms; one of them is Haugen (1972), then Halliday (1992 & 2001), and later Stibbe (2015) and Huang (2016). Following these three paradigms, so far, most studies in China are focusing on the theory construction of Ecolinguistics (Sun, 2017); for example, Zhang (2016) assesses in this regard that some languages in China are becoming endangered and some are becoming extinct; the issue is so grave that it has been evaluated through the lens of the theory of language ecology that the balance in their diversity is not easy to be maintained. Similarly, Ruijie and Wei (2018) have shed light on the overall theoretical status of Ecolinguistics, whereas empirical studies are rare to see, as reported by Zhao (2016).

Shedding some light on the background of Ecolinguistics; it is a combination of two words: ecology and linguistics as defined in dictionaries like Merriam-Webster, Cambridge Chambers, Oxford, and the American Heritage Dictionary of English Language. From its name, the two fields, ecology and linguistics, seem to be quite different

from each other as elaborated by Wirasanti (2018) that Ecolinguistics examines, on one hand, languages and their relationship with each other while on the other hand, a conceivable relationship of language with ecological as well as environmental issues. Concerning the ecology of languages as one way of understanding Ecolinguistics, the concept establishes the relationship of languages with one another where the loss or death of one language is put under ecological problem. From this perspective, Sreenathan (2017) used the terms ecocide and linguicide for those languages that were forced to die because of the dominance of one language over others under language ecologies.

Opposite to language ecologies, Ecolinguistics also identifies the un-ecological use of words and terms (Halliday, 1992) such as coining the phrase economic growth and industrial parks. This kind of language use triggers people's minds that economic growth and construction of industrial parks are good because of the inherent nature of growth and parks as ecological terms. However, they promote the degradation of the environment. In this way, Stöckl and Molnar (2017) propound that lexical choice has a profound impact on people's minds in influencing their thoughts, which in turn influence their actions. According to them, such ideas and words indirectly harm the ecological balance by encouraging anthropocentrism; giving humans the legitimacy to destroy or dominate other creatures on Earth. Therefore, following the basic notion, Ecolinguistics condemns those actions that tend to lead towards language endangerment, extinction of the species or cultures, and the demise of the ecosystems and environment (Yuniawan et al., 2017). According to the diachronic study by Genua, Simpen and Mbete (2017), Ecolinguistics is an evolving field recognized in early 1990 due to economic development as also endorsed by Fill (2001) that economic growth, pollution and biodiversity loss are not only the issues of biologists and physicists but also relate to applied linguists and ecologists. So linguists may try to criticize, analyze and challenge unecological use of language and discourage anthropocentric discourse.

In short, for this research, the word 'eco' in Ecolinguistics covers three parts: Firstly, the sense of ecology with which this research is concerned or the sense of ecology taken along with environmental aspects included in it. Secondly, what is Ecosophy, and how is it relevant to this research? Thirdly, the ecological equilibrium in the relationship

of humans with other species by applying sustainable development theory. Language can either reinforce unsustainable behaviours and mind sets or inspire positive change by promoting ecological awareness, responsible consumption, and conservation efforts. Through the analysis of linguistic patterns, metaphors, and discourses, Ecolinguistics illuminates the power of language to influence collective consciousness, drive policy shifts, and cultivate a deeper connection with the natural world. In this way, Ecolinguistics serves as a valuable tool for advancing sustainability by raising awareness, facilitating meaningful conversations, and encouraging the adoption of eco-friendly behaviours for the well-being of both present and future generations. It is where Ecolinguistics connects with the ethical theory of sustainable development proposed by Amartya Sen (1999). Amartya Sen's sustainable development approach, outlined in 1999, emphasizes a broader understanding of well-being beyond mere economic growth. It centres on the idea that sustainable development entails enhancing people's capabilities and freedoms, enabling them to lead lives they value. Sen's approach underscores the importance of addressing social inequalities, promoting participatory decision-making, and ensuring equitable access to resources, thus creating a framework that integrates economic, social, and environmental dimensions to achieve lasting human development. Language plays a crucial role in connecting Amartya Sen's sustainable development approach of 1999 to practical implementation and understanding. Through language, the various dimensions of well-being and human capabilities, as emphasized by Sen, can be articulated and communicated. Additionally, language shapes narratives around sustainability, influencing public awareness and encouraging shifts in societal attitudes and behaviours. The ‘linguistics’ of Ecolinguistics in this research is also applied to conduct linguistic analysis by using theories of Cognitive Linguistics and Discourse Analysis that Stibbe (2015) mentioned in his framework of doing ecological analysis of the economic discourse of the CPEC.

According to Stibbe (2015), Ecolinguistics is a detailed account of the ‘Stories We Live’ By, where stories are not narratives in their literal sense; instead, stories refer to frames and worldviews that people have in their minds based upon their cultural inputs. Cultural inputs he refers are perceptions that profoundly influence how people act. In other words, actions show how we think. For instance, if we plant trees to save the environment, we must have perceived the story of environmental hazards caused by deforestation. In

turn, we start thinking about planting more trees, and most effectively, we start planting trees. This example shows how and why greenery and planting trees trigger positive frames in people's minds. This kind of discourse can be called green discourse, which is positive and constructive in nature. If the green discourse is constructive, the attitudes, actions or behavior are also constructive (Yuniawan et al., 2017). Generating, speaking and writing green discourse this way is one effective solution for handling ecological crises such as climate change, species extinction, biodiversity loss, land desertification and plastic pollution and habitat loss. By using inclusive and accessible language here green discourse, policymakers, researchers, and communities can engage in meaningful dialogues that bridge gaps in understanding and facilitate the identification of priorities for equitable resource allocation and decision-making. This research also explores green discourse in economic texts written on the China-Pakistan Economic Corridor (CPEC). The texts include CPEC's long-term plan, official reports, official magazines, fact books and press releases named as official data in this research. In contrast, unofficial data includes Pakistani and Chinese English newspaper articles and student research articles written on the CPEC from an environmental perspective.

1.1. Ecolinguistics and Economic Discourse

For establishing the relationship between economic discourse and Ecolinguistics, the research conducted by Caimotto (2020) will be referred to establish the connection between economics, language, and ecology. He analyzed economic discourses from an Ecolinguistic point of view where he included the discourses of consumerism and profit maximization and found out how they promote the behavior of environmental destruction in contrast to economic prosperity brought on the cost of Nature. The broadest manifestation of economic discourses involves discourses that have possible significance for the impending ecosystems, such as neo-liberal economic discourse and the conversational consumerism construction, the issues regarding gender, power and politics, farming and Nature. In the same way, Economic discourse is intertwined with consumer culture, promoting consumption and growth as indicators of prosperity. Ecolinguistics investigates how language fosters consumerist ideologies and how it might be repurposed to encourage sustainable consumption patterns. By analysing advertising language and

marketing strategies, ecolinguistics highlights how linguistic choices can either reinforce or challenge unsustainable consumption behaviours. According to Sarkar and Chakraborty (2018), the core objective of economic development in economic texts is human development but meanwhile the development also is considered destructive to the environment and ecology. According to him, economic discourses expose destructive ideologies and discursive depictions that promote an environmentally sustainable society.

For further relevance between Ecolinguistics and economic discourses, the topic can be further taken on by discussing two significant metaphors in Ecolinguistics, the metaphors of Nature and economics. According to the study conducted by Sadykova (2018), the first is an example of destructive metaphors such as nature is a competition and nature is a mechanical device. The second is uncertain metaphors such as the earth is a spaceship and nature is an organism. The third one refers to the more constructive metaphor such as nature is an individual (Poole, 2018). Therefore, it is essential to justify the element of constructiveness in these metaphoric expressions, which are inherently destructive in nature because they promote the destruction of Nature.

Similarly, according to Caimotto (2020), the metaphors of economics potentially have a damaging aspect, such as economic growth is a surge. In contrast, the advantageous version is that consumerism is a problem. Talking about an economic term like, a corporation is a person shows how an area of life is personified in front of people by using metaphoric expressions to be viewed positively (Wu, 2018). So Ecolinguistic analysis can reveal the underlying values and assumptions embedded in economic language, shedding light on whether these metaphors align with or hinder ecological consciousness.

However, due to the importance of economics as a dominant contemporary discourse, its concepts have a strong and legitimate relation with society and Nature (Gare, 1996, p. 144). For instance, economics primarily focuses on quantification, consumption, unlimited economic growth, economic development, better production, expanded industrialization and profit maximization. So economic growth and its focus have put pressure on the ecosystems and environment by overexploiting natural resources, causing biodiversity loss, air and water pollution, species extinction, land desertification, and climate change to satisfy human needs and satisfaction (Chawla, 2001, p. 120). Hence

economic discourse as a dominant contemporary discourse, embedded with metaphors, destructive ideologies and human development at the cost of Nature has become the point of concern for this research.

1.2. Cognitive Structures, Linguistic Patterns, and the Concept of Stories

The relationship of economics with environment and ecology is understood when we go through linguistic expressions and patterns in which this relationship is encapsulated, such as metaphors, focus verbs, adverbs, adjectives and nouns (Pratiwi et al., 2021). The field of cognitive linguistics emerged in the 1970s, but in the 1980s, it produced the bulk of research by focusing on semantics, morphology, and syntax (Croft & Cruse, 2004). Cognitive linguistics as an approach, and theory can be used to organize, process and convey information (Geeraerts, 2006). The principles of prominence and attention allocation (Ungerer & Schmid, 2013) can be fixed in language use or discourse by using cognitive structures such as metaphors, frames, trigger words, focus verbs and appraisal items. Yanqing and Hui (2002) assert that within the scope of cognitive linguistics comes the use of language patterns, otherwise called linguistic representations or mental models, such as lexical items of categorization, metaphors, frames and ideological constructions. Therefore, cognitive structures and linguistic patterns are significant in analyzing language and ideologies in general. So, considering the significance of frames, metaphors and their categorization into different types based on the target and source domains is an effective tool for identifying ideologies by describing them as language representations or cognitive structures.

Stibbe (2015) also views cognitive structures as mental models and cognitive constructions that human beings construct and internalize to influence the ways we think. Therefore, he emphasizes prevailing those patterns of language or stories in the discipline of Ecolinguistics, which promote the protection of the environment and preservation of ecology and ecosystems. Stibbe borrowed the concept of stories from the book *Metaphors We Live By* written by Lakoff and Johnson in 1980. But the stories, according to Stibbe, are ideologies, frames, metaphors, salience, appraisal, facticity and erasure patterns. These stories structure our conceptual system and influence our thought processes. The linguistic

patterns include lexical items, grammatical constructs, metaphoric expressions, verbs, adjectives, modifiers and adverbs, appraisal items, modal verbs and hedging words. In this way, the stories are cognitive structures and linguistic patterns that can influence people's perceptions of their physical environment. Taking frames, conceptual metaphors, salience patterns established by verbs of focus and vitality, positive and negative appraisal items, and facticity patterns, including modal verbs and hedging words, as considered cognitive structures and linguistic patterns, they are explored in this research.

Then, establishing the role of cognitive structures and language patterns in producing either beneficial discourses/green discourses, destructive discourses/red discourses, and ambivalent discourses/yellow discourses is also one of the research questions of this research. Extending the concept of cognitive structures that conceptualize the kinds of these three discourses in people's minds, positive or negative appraisal patterns are identified that evaluate specific areas of life, either positive or negative. In this way, more neutral terms or euphemistic terms, such as green business green investments, and contrasting expressions, such as high and low, are identified in this research to see the kind of discourse that they develop. Similarly, conceptual metaphors and frames are also the cognitive structures used to identify these three discourses inside the CPEC discourse. For instance, if we talk about frames, apocalyptic and problem frames generate destructive discourses, and solution frames generate beneficial discourses. In contrast, predicament frames produce ambivalent discourses because predicament framing aims to communicate specific problems at first and causes, evaluations, recommendations and solutions later (Entman, 1993, 2007).

Metaphors as cognitive structures and a story in Stibbe's framework are explored in this research through lexical realizations of conceptual metaphors. According to Chilton and Schaffner (2011), metaphors are descriptions taken from one field of knowledge and applied to another. In this research, metaphors are categorized into their conceptual domains by correlating them with their target and source domains after following the cognitive theory of metaphors proposed by Lakoff and Johnson (1980) as mentioned by Stibbe in his framework. A considerable range of metaphors was identified with words such as CPEC, development, economy, etc. Some examples of metaphors found for the

CPEC in this data include a catalyst of development, game changer, a silver bullet, and a Trojan horse. In contrast, the metaphors used for Pakistan's economy are Pakistan's crippled economy and sluggish economy. In short, metaphors showing a positive image produce ambivalent discourse, negative images are destructive, while eco-metaphors produce beneficial discourse in this way.

Salience patterns refer to the cognitive structures in which certain aspects of the environment are emphasized or foregrounded through language. In Ecolinguistics, researchers such as Haas and Hunston (2018) have identified specific types of verbs commonly used to highlight different aspects of the natural world. Verbs of focus, such as gaze, inspect, and scrutinize draw attention to a particular object or aspect of the environment. Verbs of vitality, such as *grow*, bloom, and flourish emphasize the life and vibrancy of living things. Verbs of prominence, such as tower, loom, and dominate highlight the size, power and importance of natural features. According to Maffi (2010), these salience patterns and associated verb types can reveal how speakers conceptualize and value the natural world through language. This research also identifies salience patterns in socioeconomic and environmental areas through verbs of focus, vitality and prominence. As an example, positive connotation verbs, such as promote and accelerate produce ambivalent discourse, while negative connotation verbs, such as harm/s produce destructive discourse.

Facticity patterns are language patterns that develop a story in Stibbe's framework with the name of 'Facticity'. In Ecolinguistics, researchers have identified specific linguistic structures and patterns that emphasize certainty or uncertainty of an area (Ibarretxe-Antuñano & Valenzuela, 2018). Three patterns that show facticity are explored in this research to validate the truthfulness and falseness of descriptions about the social, economic and natural world.

So based on the framework of the ecocritical discourse perspective used in this research, the above-given stories and their relevant linguistic patterns, along with cognitive structures such as frames, metaphors, salience, appraisal, facticity ideologies and discourse are considered for analysis.

1.3. Ecosophy

Relevant to the ecocritical discourse perspective and use of story framework through cognitive structures and linguistic patterns, Stibbe (2015) borrowed another notion, i.e., the concept of Ecosophy is also explored in this research. Etymologically, Ecosophy is a Greek word that is a combination of 'ikos' (Earth) and 'Sophia' (wisdom). This implies how people and their actions influence treating the Earth. This radical philosophy was introduced to bring more sustainable actions that can challenge the anthropocentric approach of using natural resources and the exploitation of the life of other species on Earth compared to human beings (Gare, 2018).

There were two variants of Ecosophy before Stibbe expanded on this notion -- one of Naess (1973) and the other of Guattari (1992). Naess, being a mountaineer and summiteer of Tirchmir Mountain in Pakistan during the 1960s, has been known as a father of 'Deep Ecology' who is a proponent of the protection of the environment to be catered by every action of human beings who cause its destruction, so can help in preserving it by maintaining the balance between the relationship of humans and other than humans. On the other hand, the concept of Ecosophy proposed by Guattari is similar to one given by Naess (2001). However, he classified it into mental, social and environmental ecologies. According to these three ecologies, Guattari (1992) emphasizes that the balance will only be maintained in any ecology until social responsibility and material limits are not modified.

Hence, following the concept of ecology from both scholarly notions, Stibbe integrated Ecosophy into his framework by using the values of well-being, care, resilience, social justice and environmental limits. The term that he used was valuing living.

In this research, Ecosophy is seen by investigating the kinds of ideologies that emerge from the CPEC discourse and judging them to determine if the anthropocentric (pro-human) ideologies are more dominant or ecocentric (pro-environment). The analysis of ideologies and Ecosophy is based on corpus analysis, where collocation analysis provides insight into dividing the discourse into three kinds and then judges the Ecosophy of the discourse produced around CPEC.

1.4. Corpus-Based Critical Discourse Analysis

According to Flowerdew (2013), Critical Discourse Analysis (CDA) can typically be applied to various areas and domains using analysis tools, such as corpus tools. In this way, by connecting CDA and Corpus Linguistics (CL), critical discourse analysis allows the researcher to analyze the text subjectively, whereas, corpus linguistics is used to analyze an extensive number of texts, adopting quantitative and qualitative methodologies by giving objective analysis (Malamatidou, 2017).

Recently, many studies have emphasized the approach of utilizing corpus-based discourse analysis. However, the approach can be divided into three sets: textual, critical and contextual. The three approaches are distinct in Nature, purpose and usage. The textual approach is mainly adopted when particular research focuses on linguistic choices and their meanings and identifies different patterns in a study (Rachman et al., 2016). For this purpose, different models can be applied for conducting a textual corpus discourse analysis, which includes lexical priming, lexical bundle and meta-discourse modeling. The second approach that is also relevant for this particular study is the corpus-based critical approach, as the most distinguishable element of the CDA deals with analyzing discourses rather than conducting discourses.

Another dimension where corpus linguistics is involved in conducting Discourse Analysis (DA) is the research study by Mulderrrig (2012), who suggests different tools and models that can be adopted for conducting a corpus-based discourse analysis. They are Corpus-Assisted Discourse Studies (CADS) and corpus-informed critical discourse studies. These tools relate to the third approach, which is a corpus-based contextual approach -- applying a sociolinguistic analysis and conversational analysis.

A vast amount of literature is witnessed to have used Corpus Linguistics (CL) based Critical Discourse Analysis. Wodak and Meyer (2009) used CL and CDA interchangeably to refer to new and scientific methodologies for conducting critical discourse analysis, while Orpin (2005) suggested using large corpora to make generalizations about language use, such as he did while conducting a study where he saw the positive and negative connotations related to the word corruption inside or outside the British context. Based on

the concordance and collocational analysis, the study's findings assert more negative connotations associated with these words outside the British context than inside. Similarly, Baker, Gabrielatos, Khosravinik, Krzyżanowski, McEnery and Wodak (2008) emphasized effectively using a set of corpus approaches to do critical discourse analysis. Baker (2012) believes that CL-based CDA brings objectivity to the analysis, while Cheng (2013) uses the empirical methods used in linguistic analysis using corpus-driven approaches. Stubbs (1996) analyzed corpus data to discover how meanings are encoded in different parts of speech, such as modal verbs, adjectives and nouns. He remained keen towards endorsing the idea of getting out of stance by using corpus data to collect the meaning, an organizing principle of a language. Corpus construction and compilation, tagging, annotation and evaluation of the corpus is an essential methodological part of the process of critical discourse analysis, which was elaborated by Biber and Reppen (2015) in their book *The Cambridge Handbook of English Corpus Linguistics.* Related to corpus analysis, Reppen (2015) identifies the importance of *keywords* and their role in interpreting the text and discourse analysis. According to her, keywords point out texture, structure and the writer's relationship with the text during text production. In Pakistan, Afzaal et al. (2019) examine Pakistani news media on the CPEC discourses by using keyword analysis. The methodological approach used in this study was CDA, which mainly helped to explore ideologies through lexical choices, vocabulary, metaphoric expressions and collocations.

Considering the bulk of data on CPEC undertaken for this research and exploring cognitive structures and language patterns following Stibbe's story framework, the research has conducted a corpus-based Ecolinguistic study of economic discourse produced around the China-Pakistan Economic Corridor (CPEC). First, it gets the frequencies and MI score within collocations of relevant cognitive structures and linguistic patterns through concordance and collocation analysis. Then the figures and quantities are used to extend the analysis qualitatively.

So, the analysis has been done by combining Discourse Analysis (DA) and Corpus Linguistics (CL). For this purpose, words, their patterns and language features that identify ideologies, frames, metaphors, salience, appraisal and facticity patterns are explored under the headings of socioeconomic and eco-environmental areas of the CPEC respectively. In

the meantime, Sen's sustainable development (1999) approach has also been used to conduct this study on a socioeconomic and eco-environmental level where the wordlist of these is made from 17 Sustainable Development Goals (SDGs). Hence ecological analysis of the discourse produced around CPEC has been added to the corpus-based analysis, making it Ecological Critical Discourse Analysis (ECDA). The exploration of anthropocentric and ecocentric ideologies has made this study fall into CDA.

1.5. Anthropocentric Ideologies in Eco-Critical Discourse Analysis

In ecolinguistics, anthropocentric ideologies refer to perspectives, beliefs, or worldviews that prioritize human interests and well-being above all other species and the environment. These ideologies often underlie linguistic and discursive patterns that reinforce human dominance, exploitation of nature, and the subordination of non-human entities. Anthropocentrism can manifest in language use and discourse, reinforcing the idea that nature and non-human life exist primarily for human benefit. In this regard, Stibbe has extensively discussed anthropocentrism in his works. For example, in his book *Ecolinguistics: Language, Ecology, and the Stories We Live By* (2015), it delves into the linguistic and discursive aspects of anthropocentrism and its implications for environmental attitudes and behavior. Another Ecolinguistic work that has explored the impact of anthropocentric ideologies on language and discursive patterns is Fill's (2002) twelve axioms that highlight the relationship between language, ecology and environmental issues. Following their notion of anthropocentric ideologies, and linguistic and discursive aspects, anthropocentric ideologies in this research are explored where supremacy of human beings in relation to environment is seen through collocation analysi

1.6. Sustainable Development and Sustainable Development Goals (SDGs)

This research combines Stibbe's (2015) Ecocritical discourse perspective and Sen's (1999) sustainable development approach as a theoretical framework. The United Nations Organization (UNO) considers sustainable development as the central thought of deliberating sustainability of economic growth on three levels: social/human, economic/capital and environmental/natural resources (Schoolman et al., 2012). The same

approach was developed by economist and philosopher Amartya Sen in 1987. The approach emphasizes economic growth, social development and environmental protection interdependence. It views sustainable development as a goal and a means to achieve greater well-being for all people, now and in the future. Sen's approach (2013) focuses on the importance of broad-based participation and democratic decision-making in achieving sustainable development. It highlights the need to balance economic growth with social progress and environmental protection while also considering the distributional effects of development policies on different groups of people, particularly the most vulnerable. Sen's (2018) Sustainable Development Approach has influenced international discourse on sustainable development and remains relevant today in addressing our planet's complex challenges.

So, based on Sen's (1999) sustainable development, the current study explores the controlling idea of sustainability constituting three pillars of sustainable development: economic, social and environmental in the CPEC discourse. To include these three aspects of sustainable development, Sustainable Development Goals (SDGs) are taken to analyze the data because the 17 SDGs include socioeconomic and environmental areas that could be found suitable to conduct an Ecolinguistic study of CPEC. The rationale behind using SDGs in this research is that it aligns with Sen's sustainability approach and Stibbe's Ecocritical discourse perspective. Thus, the analysis would highlight how this concept of sustainable development, together with an Ecolinguistic approach, can expose specific cognitive and linguistic patterns that show the salience of socioeconomic and environmental goals to be attained by an economic project like CPEC. The analysis would also help us find out how these areas of life are framed inside the texts through metaphors, appraisal items, salience patterns, facticity patterns, and anthropocentric or ecocentric ideologies.

In any research, especially done in economic domains and considering the environment at its heart, the 17 goals proposed by UNO are mostly considered (Gambette et al., 2019) -- such as Sustainable Development Goals (SDGs) as an analytical framework. These goals seventeen in number that the United Nations (UN) has added to its chief priority list in order to achieve favourable outcomes such as quality of life, poverty and

hunger eradication, promotion of educational and employment opportunities, environmental sustainability and economic development. Due to their future benefits for human beings, other beings, and the environment, the goals are becoming the central focus of all the fields of life and the worldwide research arena. Countries, including developed nations such as the USA and China, developing countries such as India, and underdeveloped countries such as Pakistan, have been making utmost efforts to achieve the indicators of SDGs (Li & Zhu, 2019). Against the backdrop of SDGs and their achievement, the CPEC is presupposed to have met these goals by the governments of China and Pakistan to create sustainability on all three levels: economic, social, and environmental. So, how do they help decipher the language patterns related to social, economic and environmental levels? This is why 17 SDGs are used as the wordlist for corpus analysis in this research.

1.7. Problem Statement

The discourse surrounding green initiatives and sustainable development has gained significant attention in recent years due to the accelerating loss of biodiversity and the environmental crisis which necessitated urgent action to address the underlying drivers such as language and then Ecolinguistics that plays a vital role in shaping attitudes, values and behaviors towards saving the environment. One area of interest where ecological analysis along with the notion of sustainable development could bring awareness about subjective well-being through language, is the economic discourse on China-Pakistan Economic Corridor (CPEC). The CPEC aims to promote economic growth and connectivity between China and Pakistan. However, there is a lack of comprehensive research examining the Ecolinguistic aspects of this economic discourse known as destructive discourse (Stibbe,2015) particularly in terms of its orientation towards socio-economic practices and environmental implications coined by certain cognitive structures and language patterns. By addressing this gap in the literature, the study sheds light on the extent to which CPEC discourse explores socio-economic and environmental implications by revealing ideologies, frames, type of discourses, metaphors, appraisal items, salience patterns and eco-centric Ecosophy to orient green discourse within the framework of ethical side of Sen's (1999) sustainable economic development.

The objectives of the research are:

- To explore cognitive structures and linguistic patterns employed to represent socioeconomic and ecological/environmental areas in the discourse produced around the CPEC
- To perform concordance and collocation analysis to examine cognitive structures and linguistic patterns in the CPEC discourse from the critical discourse perspective
- To analyze the CPEC discourse in order to identify the beneficial/green, destructive/red, and ambivalent/yellow discourses according to Stibbe's ecocritical discourse perspective
- To unravel ideologies and develop an Ecosophy of the project of the CPEC

1.8. Research Questions

The research questions are as follows:

1. What cognitive structures and linguistic patterns are employed to represent socioeconomic and ecological-environmental areas in the CPEC discourse?
2. How do the cognitive structures and linguistic patterns in the discourse surrounding the CPEC incorporate elements of the ecocritical discourse perspective from the selected framework for this research?
3. To what extent does the CPEC discourse construct destructive/red, beneficial/green and ambivalent discourses following the ecocritical discourse perspective?
4. How do the identified cognitive structures and linguistic patterns help to unravel ideologies and develop an Ecosophy of the CPEC?

1.9. Significance of the Study

Most research on the China-Pakistan Economic Corridor (CPEC) focuses on its economic aspects, with limited attention given to its environmental impact and Ecolinguistic analysis. (Ali & Mahmood, 2018). The research conducted on Orienting

green discourse: A corpus-based Ecolinguistic Study of economic discourse on the CPEC holds significant importance for several reasons:

Environmental Awareness: The research contributes to raising awareness about the environmental implications of the China-Pakistan Economic Corridor (CPEC). By focusing on green discourse and employing Ecolinguistic methods; the study sheds light on how the economic discourse surrounding the CPEC project impacts environmental attitudes and perceptions. This heightened awareness can lead to informed decision-making and policies prioritizing sustainability and ecological conservation.

Ecolinguistic Methodology Advancement: The research demonstrates applying corpus-based Ecolinguistic methods to analyze economic discourse. By utilizing language to understand ecological perspectives and the portrayal of environmental issues, the study advances Ecolinguistics as an interdisciplinary field, providing new insights into the relationship between language, economics and environmental concerns. Although these areas seem dissimilar, one is related to ecology/environment and other economics, and the third is linguistics. The methodological approach of ecological discourse analysis following theories of cognitive linguistics and discourse analysis has given a unique dimension to analyze language patterns and cognitive structures employed in CPEC discourse.

Policy Implications: The findings of the research have practical policy implications. Policymakers and stakeholders can better understand how language shapes environmental narratives by identifying linguistic patterns and discursive strategies related to the CPEC economic discourse. This understanding can guide the formulation of policies integrating sustainable practices and green initiatives into developing large-scale projects like the CPEC.

Sustainable Development: The research underscores the importance of considering ecological factors in economic development projects. By highlighting green discourse and its representation in economic discussions, the study emphasizes the need for a balanced approach considering economic growth and environmental preservation. It can promote

sustainable development practices prioritizing the well-being of both present and future generations.

Academic Contribution: The research enriches the academic discourse by providing empirical evidence and insights into the role of language in the environmental discourse on economic projects. The corpus-based Ecolinguistic approach offers a valuable methodology that can be applied in other contexts to explore the relationship between language, society and environmental issues. The corpus approach is used to see discursive structures and patterns of discourse organization working in the text. The research provides ample content on the economic discourse of the CPEC by forming a corpus of archival data from 2016-2020. The discourse incorporates official and unofficial data such as the project's long-term plan, reports, press releases, magazines, fact books, and various newspaper articles to develop an effective research validation (Upton & Cohen, 2009).

Public Awareness and Advocacy: The research can increase public awareness about the environmental impact of the CPEC. The study can empower environmental advocates and civil society to engage in informed dialogues and advocate for sustainable practices in large-scale development projects by uncovering green discourse and its orientation in economic discussions.

In conclusion, this research holds significant importance in enhancing environmental awareness, advancing Ecolinguistic methodology, influencing policymaking for sustainable development, and enriching the academic understanding of language's role in shaping environmental narratives. By contributing to these aspects, the research can promote greener and more ecologically sensitive approaches in economic projects like the CPEC (Ponton & Larina, 2017).

1.10. Scope of the Study

The research examines the economic discourse surrounding the China-Pakistan Economic Corridor (CPEC) from an Ecolinguistic perspective. It focuses on the linguistic choices and structures embedded in the discourse that identifies ideologies and frames. By applying Stibbe's framework of six stories and using theories of cognitive linguistics and discourse analysis, the research has explored the link between ecology and language by

uncovering words, collocations, metaphors, nouns, adverbs and adjectives that represent sustainable or unsustainable actions of human beings. This interdisciplinary research holds significance in linguistics, Environmental Sciences and Economics, shedding light on the paradoxical nature of economic discourse and offering insights into the potential for developing greener economies through language.

1.11. Delimitation of the Study

This research is delimited to the ecological analysis of economic discourse produced around the CPEC. CPEC is an economic project between Pakistan and China to undergo economic growth and benefit each other to progress by making the best use of natural resources. This research has used texts categorized as official and unofficial discourse produced around this project. For official data, the long-term plan, press releases, fact book of the CPEC, official magazines, and official reports made by the Ministry of Planning Development and Reform Pakistan and think-tanks working on the CPEC have been taken, while for unofficial data, newspaper articles from three Pakistani English newspapers and three Chinese English newspapers along with some research papers written from an environmental point of view are taken. The data constitutes these texts from 2016 to 2020. This research uses six stories from Stibbe's (2015) ecocritical discourse framework for theoretical delimitation. They include ideology, discourse, framing, metaphors, salience, appraisal and facticity. Amartya Sen's (1999) approach to sustainable development is also used that emphasize the importance of promoting human well-being and enhancing people's capabilities to live fulfilling lives at three levels, i.e. social, economic and environmental. This research uses 17 SDGs to cover economic, social and environmental areas. These areas require addressing poverty, inequality, environmental degradation, climate change, education, healthcare and social justice. In this way, sustainable development can be seen as a means to achieve economic and social development while safeguarding the natural environment for future generations.

1.12. The Structure of Study

The structure is the outline that is followed for the entire thesis. The structure is divided into various chapters, each focusing on a specific aspect of the study. This thesis consists of six chapters.

Chapter one presents an overall view of the entire study. The first chapter of the research is where the researcher provides a detailed topic background. The reason for providing a background in the initial chapter is to let the reader have an idea about the research topic. This chapter also proposes a problem statement that lets the reader know about the problem stated in this study. The research questions have also been provided in the chapter along with the objectives. Similarly, this chapter also includes the study's rationale, delimitation, significance and scope.

Chapter two is produced to provide a review of the literature. The researcher discusses previous researches carried out by the researchers in the same field and similar topics. The chapter is included to create relevance from previous researches conducted explicitly on this topic or anything similar to this context. The chapter has also included the theoretical framework to enrich the study's information.

Chapter three is about the methodology, where the researcher provides a detailed methodological design adopted by the researcher for the study. Research philosophy, approach, and design have been explained in the initial sections of the chapter. However, data collection methods chosen by the researcher have also been stated along with reasons for choosing that particular data collection method. Moreover, the chapter also talks about data sampling methods, analysis techniques, limitations of the study, and ethical considerations.

Chapter four describes and analyzed the collected data using qualitative and quantitative methods. The chapter includes a discussion of objectives and justifying the hypothesis formulated earlier by the researcher. This is often regarded as the most crucial part of the research because this is the chapter that leads to the findings or results of the study.

Chapter five is about findings and discussion displaying the findings in a tabular form to give a comprehensive view of data analysis. The discussion part gives a detailed view of findings by linking them to research questions.

Chapter six is a concluding chapter of the study that provides a conclusion of the entire research that has been carried out. The findings of chapter five are the basis of the conclusion in chapter six. This chapter also includes some recommendations for future researchers; hence, this chapter is titled Conclusion and Recommendations.

CHAPTER 2

LITERATURE REVIEW

This chapter sheds light on the existing body of research related to corpus-based ecolinguistic study of economic discourse produced around the China-Pakistan Economic Corridor (CPEC), with a particular focus on exploring cognitive structures and linguistic patterns by following the story framework of Stibbe (2015). This review aims to provide a comprehensive understanding of the current state of knowledge in the field, identifying gaps in the literature, and highlighting areas for further research. Through a critical analysis of the relevant literature, this review intends to contribute to developing a theoretical framework that would inform the research design and methodology of the current study. Within the domain of Ecolinguistics, corpus approaches to CDA and some research on environmental and economic discourse have also been given. Further, the study illustrates different studies on the stories taken for analysis in this research such as frames, metaphors, salience patterns, appraisal and facticity patterns. In addition to the linguistic analysis, eco-critical discourse studies have also been highlighted to view the three types of discourses such as beneficial/green, destructive/red and ambivalent discourses that produce anthropocentric or ecocentric ideologies. Finally, it draws the whole research toward the main objective of the present study. It builds a rationale behind locating the un-investigated territory in the interdisciplinary domains of linguistics, economics, ecology and environment.

Starting from the research done in the field of linguistics in connection with Ecolinguistics, the notion of Ecolinguistics, its importance, and its associated concepts of ecology and language, will be elaborated. Ecolinguistics, a relatively new field, has gained massive attention among researchers and has emerged as an interdisciplinary field of environmental and linguistic studies (Norton & Hulme, 2019). Since the 2000s, there has been a series of significant developments in the research area of Ecolinguistics. According to Karmakar (2020), Ecolinguistics explores the relationship between language and the environment by examining how language reflects and shapes our perceptions of the natural world. The introductory part of the literature review provides an overview of the current state of research in Ecolinguistics, focusing on key themes and trends in the field.

Yuniawan (2018) believes that the field of Ecolinguistics is primarily based on ecological orientation and holds enormous potential for making a valuable contribution towards interdisciplinary collaborative research among different fields of environmental research, including environmental communication, ecology and environmental studies. However, the existing body of literature on Ecolinguistics has established considerably limited practical and analytical implications on the contingent of social, economic and environmental areas. Therefore, it will be worthwhile to carry out further investigations into this field. Therefore, during the first stage of understanding the theoretical approach of Stibbe (2015) described in his book, I found how a researcher can include the present trajectory of growing social and gender inequalities, poverty, justice, economic development, economic growth, and environmental problems such as pollution, over-consumption of natural resources, biodiversity loss and loss of ecosystems into their research to reverse or hold back the tide of ecological destruction through the use of language. In this regard, it was felt that the kind of changes required to stop environmental destruction is not just restricted to some minor technical fixes like inventing more efficient cars for eradication of pollution, construction of smart cities, closing animals and extinct species into zoos; instead, it requires to introduce new stories to be introduced, criticized and promoted, and it should be based on sustainable relationships evolving more ecocentric ecosophies and ideologies.

Similarly, Huang's (2016) idea of examining inter-human, inter-language and human-nature associations from the ecological perspectives by analyzing different texts was viable for conducting this research. Following him, the data selection and texts from an economic discourse produced around CPEC were done as a first step for this research. The next step was to analyze the data from an Ecolinguistic point of view and decided to undertake an ecological analysis of the economic discourse of the CPEC. Stibbes framework explores cognitive structures and linguistic patterns from an eco-critical discourse perspective.

Therefore, in line with Stibbe's (2015) story framework and following Huang's idea (2016) of analyzing different texts through an ecological perspective, this study had been designed to investigate exploring different stories present in the data through corpus-based ecological analysis of economic discourses written on the CPEC. So the eclectic framework of Stibbe and Sen's theory of sustainable development (1999) has also been applied, which Mensah (2019) called as inter- and intra-generational equity approach anchored essentially on three-dimensional but interconnected pillars, namely the environment, economy and society.

So, the sustainable development approach of Sen (2013) inherently linked with the social, economic and environmental areas, could be seen in 17 UN Sustainable Development Goals (SDGs) as Wenjuan (2018) in his study highlighted some of the significant social and environmental challenges such as threatened ecosystems and biodiversity, inappropriate waste management and carbon emission, climate change, and climate action, inequalities and poverty to be researched by applying SDGs. Similarly, in some other studies, the growing ecological concerns resulting from economic development, for instance, the growing inequalities among nations, climate change, biodiversity loss, consumerism, the increase in construction of infrastructure and alienation from Nature were found to be the starting point of including these areas in this research. For instance, the study by Korten (2006), analyzing some stories of human development in his research, evaluates that the notions in this modern era such as individualism, progress, economics and anthropocentrism, have penetrated the process of building these stories. For

example, the story of advertising can push an individual to an extent where the outcome of advertisements implicitly involves environmental damage (Zhou, 2017).

To counter the challenges faced due to the stories given above, people must reconsider their thoughts and actions; they need to change those stories where individuals are now just focused on the story of economic growth rather than ecological growth (Luardini et al., 2019). Here comes the role of Ecolinguistics, which aims to expose unsustainable stories and revisit them to convert them into sustainable stories that would further encourage people to perceive this world differently and act sustainably. Those stories encourage respect, well-being and care for the ecosystems and produce green discourses supporting human and other human beings' lives. Then, these stories need to be promoted if the language constructs beneficial discourses and ecocentric ideologies. They must be resisted if they encourage ecological/environmental destruction and degradation by producing destructive discourses (Chen, 2016).

2.1. Research in Ecolinguistics

The historical development of Ecolinguistics started with the work of Wilhelm Humboldt (1999), who got inspiration from Comparative Linguistics, a branch of linguistics that encourages interdisciplinary research on environment and language. A unique relationship between language and environment has been encouraged by Ecolinguistics because of having a deep link with the theory of linguistic relativity known as the Sapir-Whorf hypothesis cited in Hussein (2012). This hypothesis relies on the concept that language influences thought processes, is one way of viewing Ecolinguistics that is also relevant to this research, while the other way of viewing Ecolinguistics is to relate it with language ecology, where languages remain in contact with each other in the same way as organisms living in the physical world live and influence one another (Steffensen & Fill, 2014).

There are three traditions in which Ecolinguistics developed itself as a field. They include the Haugenian tradition, biological tradition and Hallidayan tradition. Below are all three traditions and the relevant research done on those traditions.

2.1.1. Research on Haugenian Tradition of Ecolinguistics

The Haugenian tradition is about the work of Haugen (1972) and has generated a significant amount of research in recent years, exploring the complex relationship between language and the environment. In a study by Skutnabb-Kangas and Phillipson (1994), the authors examined how language loss contributes to biodiversity loss, highlighting the importance of preserving linguistic diversity to protect the natural world. Similarly, Maffi (2005) argued that linguistic diversity is crucial to cultural diversity and that preserving both is essential for sustainable development. Other researchers have focused on the role of language in environmental discourse, with Schlosberg (2013) exploring how environmental movements use language to frame their messages and promote social and political change. Additionally, Blommaert and Collins (2018) have examined how language is used in environmental governance practices, highlighting how language legitimizes certain forms of environmental action while marginalizing others. Overall, the research conducted within the Haugenian tradition provides valuable insights into the complex and multifaceted relationship between language and the environment and offers essential contributions to linguistics, environmental studies and sustainability.

2.1.2. Research on Biolinguistic Tradition of Ecolinguistics

Just like the Haugenian tradition, the biolinguistic tradition also considers a more practical approach to understanding terminologies like language and ecology, considering the current multilingual system around the globe as the system of ecology. The idea of the destruction of minority languages is considered to be similar to biodiversity loss. This tradition is similar to the Haugenian tradition since it links the language with ecology, where a language lives like an organism with other languages in the natural environment. In this context, the elimination of minority languages involves the languages that are spoken at a regional level and are mostly neglected at the national level. It is argued that languages must be diverse (Chen, 2016).

Nettle (2009) and Romain (2013) have thoroughly researched this tradition and coined linguistic diversity to preserve the minority languages in the increasingly dominating world due to globalization, where English is a lingua franca for communication

purposes. The biolinguistic tradition is the most familiar offshoot of Ecolinguistics that is used to compare the ecology of languages metaphorically and has been adopted widely by researchers operating in the language planning faculty and anthropological linguistics (LeVasseur, 2015). The bio-linguistic tradition has proposed the perspective of diversity in languages, which has also faced many critiques.

2.1.3. Research on Hallidayan Tradition of Ecolinguistics

Lastly, the Hallidayan tradition is traced back to the work of Halliday in 2001, which correlates the link between the use of language and the degradation of the environment. As mentioned previously, Halliday (2001) considers the functional approach to language use. Hence for him, the anthropocentric Nature of the language of human beings makes it at least partially responsible for the conduct of human beings that is not ecological. The anthropocentric Nature of language reflects that language is linked with the use of words that show human domination. The researchers that follow the work of the Hallidayan tradition have their research based on the connection between Ecolinguistics and critical discourse studies (Stibbe, 2014).

The Hallidayan tradition of viewing Ecolinguistics has led to a significant amount of research exploring the role of language in shaping our understanding of the natural world. In a study by Matthiessen (2012), the author applied Halliday's systemic functional linguistic framework to the analysis of environmental discourse, demonstrating how language is used to construct and convey information about the natural environment. Similarly, Martin and White (2005) applied Halliday's framework to analyze climate change discourse, revealing how language frames the issue and constructs different perspectives and narratives about it. Other researchers have focused on the role of language in shaping our attitudes and beliefs about the environment, with Gee (2001) arguing that the stories we tell about the natural world can influence our understanding of and relationship to it. Additionally, Kress (2010) explored how visual and multimodal language can be used to construct meaning about the environment, highlighting the importance of considering non-verbal modes of communication in Ecolinguistic analysis. Just similar to this, Nerlich, Koteyko and Brown (2010) have addressed the significance of language in the recent efforts of communication to the changes in the climate and how the terms like

greenhouse effect and carbon footprint lock into the definition, thinking and understanding about the changes in the climate from the risk analysis and management perspective rather than viewing it as complex, multifaceted and cultural terminology. The typical example used with the Hallidayan tradition is of unecological use of language that helps create anthropocentric frames in people's minds as the terminology of 'economic growth'. In contrast, I found other terms of the same kind in this research, such as 'industrial parks', 'green economy', 'green investment', etc. The current research is closer to this tradition regarding the involvement of language patterns and cognitive structures to be explored and their impact on our understanding of the natural world.

2.2. The Role of Grammar in Ecolinguistic Discourses

Stibbe (2017) states that we must generate more beneficial and ambivalent discourses to protect Earth's ecosystems. However, we must amend our speaking and writing mechanisms to address grammar mechanisms promoting green discourses. In this way, the core aspect of a language, which constrains reality, is the lexico-grammar that consists of the 'lexis' and 'grammar'. Both contribute to shaping our experiences and transforming them into meaning. Therefore, language construes them to us -- a process of intersection between the materials with the symbols. In this regard, Halliday (2001) firmly adheres to the potential of grammar, which is both enabling -- opens meanings and constraining -- restricts. Hence, language has the power to shape our thoughts which consequently proves the Sapir-Whorf Hypothesis.

Does language and grammar affect our thinking to save our environment and ecosystems that human beings and other species depend on? A question was raised by Halliday (2001) for Applied Linguists at the 9th World Conference on Applied Linguistics in 1990. He gave many examples, such as growth is good, de-growth is terrible, more is good, and less is bad; big is good, but small is bad. It is how our use of words that has an impact on our thinking. According to him, when we start criticizing language use, which is about the degradation of our environment, we can think of saving it from degradation.

In this regard, Chawla (2001) examines the relationship between language, philosophy and the natural environment. He divides reality into two dimensions: a

cognitive reality based on the human perception that modifies an objective reality that encompasses the natural environment. The dilemma of the English language is that it uses similar linguistic structures for the imaginary and the natural world and perceives resources in isolation rather than holistically. Therefore, Humans need to become aware of the unconscious habit of fragmenting reality into individual items through language because these habits profoundly influence their natural world. Halliday (2001) and Chawla (2001) criticize the individualization of mass nouns in English such as 'sugar' and 'sand' phenomena that can never be measured in terms of individual objects.

The researchers who came up with further works, such as Mühlhäusler (2001) highlighted various concerns about how language plus grammar serve as a tool to marginalize the environment, the ecosystem, and ecologies from the human race. According to him, the present grammatical constructions of language have eventually encouraged certain language habits, which are unconsciously contributing to the environmental degradation which Goatly (2000) condemns by saying that the ordinary language, especially the 'transitive clauses' in the discourses of economic development are highly inadequate to the representation of the world.

In connection with what Mühlhäusler and Goatly talked about, the role of language in construing reality is the formation of language habits, and among them, one is the objectification of time in terms of the number of days as seven and their names just as Saturday, Sunday, Monday and so on (Chawla, 2001).

So attaching the role of grammar in construing reality and building world views, Stibbe (2014) refers to study linguistic mechanisms and frameworks to analyze language. According to him, Ecolinguistics can be viewed for this purpose, which has two main functions. The 'linguistics' side of Ecolinguistics is based on the promise of providing an analysis of the linguistic mechanisms through which worldviews are constructed, produced, reproduced and resisted; the 'eco' side contributes to establishing an ecological framework to examine the role of those worldviews in sustaining or marginalizing the conditions that support life.

This idea is very crucial to the present research because, on the one hand, it examines the operating linguistic system through which the ecosystem is constructed; on the other hand, it challenges those linguistic mechanisms that have been internalized in the human cognitive pattern so that they no more appear unnatural. So language or grammar may internalize some cognitive patterns as acceptable and thus promote to be used in a typical fashion while rejecting others not to be used as language habits. In this way, more green language may generate green realities, and green use of language habits can save the environment from degradation. Considering the importance of green language and its role in making language habits, this research aims to explore green, red and yellow discourses in the discourse produced around CPEC. At the end of this research, it highlights the importance of promoting green discourses so that they may help internalize them as functional cognitive structures in people's minds for developing green language habits.

2.3. Stibbe's Story Framework and Research on Stories

Following the idea of promoting constructive linguistic structures about the environment, Stibbe (2015) puts forth the fundamental premise of Ecosophy; the ecosophical representations that encourage ecocentric ideologies by negating anthropocentric ideologies through generating more favorable terms and green discourse. According to him, Ecosophy of any discourse is based on the stories we involve and with which we live. In the framework he proposed for eco-critical discourse analysis, he explains eight stories we live in now.

2.3.1. The Story of Framing, Frames and Reframing

The notion of 'frames' has been approached frequently by many academic disciplines, such as artificial intelligence, sociology, linguistics, communication studies and cognitive sciences; the disciplines considered by most scholars aim to bring social change. According to Tannen as cited in Stibbe (2015), frames are unique to every individual because they are the "constellations of their particular experience" and their expectations. Frames are primarily interpreted as 'schemata', 'idealized cognitive models and 'scripts'.

According to Stibbe (2015), frames are like ‘stories’ that tell us about a particular area, and ‘framing’ is how we conceptualize that area of life, while reframing is like nuances that are different from the original frame developed in a society. Suppose frames are mental representations and cognitive structures. In that case, framing occurs when the frames are employed in a particular area of life using trigger words such as metaphors and the most frequently occurring words in a specific text (Stibbe, 2015). Another extended term of frames is reframing, which means employing a new cognitive structure different from the original meaning of the old structure, also called a nuance, mainly used to ‘evoke a desired frame’ (Lakoff, 2010, p. 73).

Ecolinguistics, like other disciplines, is equally influenced by the notion of frames, framing and frame analysis by exploring the issues of biodiversity (Christmas, 2013) such as frame of climate change (Brewer & Lakoff, 2008), frame of development in economics (Darnton & Kirk, 2011) frame of conservation (Blackmore & Holmes, 2013) and various other ecological issues (Crompton, 2010).

Frames can be analyzed in a discourse in many ways, such as by looking at images, analyzing trigger words and metaphors, the role of participants in exploring stereotypes, etc. Frame analysis as a research method is being used in many social science disciplines to investigate how people perceive and act in the world around them. The central aim of frame analysis is to probe into the factors that govern how things happen and how they are conceptualized by people (Matthes, 2009).

Analyzing a frame requires the identification of the source and target domains. The target domain is the general area being talked about, and the source domain is the constitution of a frame that is brought to mind through the trigger words. Thus, the source domain is a resource frame, a story drawn to conceptualize or discuss the target domain.

According to Stibbe (2015), frames are divided into three major types:

- Problem Frame: one that requires a solution to a problem so that once the solution is found, the problem no longer exists.

- Predicament Frame: This type of framing is slightly contrastive to the previous one in which there is no problem but a predicament. It consists of a predicament and a response based on the belief that as much as people may do to a particular phenomenon, the predicament continues to exist and never disappears.

- Tragic Apocalyptic Frame: This type of framing presents the phenomenon as inherently unresolvable; thus, nothing can be done about it.

The story named Framing is how a particular area of life is conceptualized by trigger words such as climate change versus climate action. The former triggers a problem frame, and the latter triggers a solution frame. This story tells us what kind of frame is developed in people's minds and how it affects their thinking and cognitive patterns. One of the seminal works in Ecolinguistics is the book *Linguistic Ecology: Language Change and Linguistic Imperialism in the Pacific Rim* by Peter Mühlhäusler (1996). Mühlhäusler examines how the dominant language, English, frames environmental issues in the Pacific Rim. He argues that the English language and its associated cultural values significantly impact how we understand and respond to environmental problems. This study provides an early example of using corpus-based methods to investigate language use about environmental issues.

Another notable study in this area 'Framing Climate Change: A Corpus-Based Analysis of US Newspaper Coverage, 1998-2007' (Nerlich et al., 2010) used a corpus of newspaper articles to examine how climate change is framed in the US media. They identify several key-frames, including scientific uncertainty, policy debate and environmentalism, and analyze how these frames shape public perceptions of climate change. The study highlights the importance of language in shaping public opinion on environmental issues.

A recent study in this area 'Framing Plastic Pollution in the News: A Corpus-Based Critical Discourse Analysis' (Klein et al., 2020) used a corpus of newspaper articles to examine how plastic pollution is framed in the media. They identify several frames including individual responsibility, corporate responsibility and governmental regulation, and analyze how they are used to construct different narratives about the causes and

solutions to plastic pollution. The study highlights the need for a nuanced understanding of how different frames shape public understanding of complex environmental issues.

2.3.2. The Story of Metaphors and Research Work on Metaphor Studies

Then the story named ‘Metaphors’ is about how similarities and differences in an area of life make us conceptualize the identity of one thing in terms of another; for instance, nature is a mother where nature is compared with how a mother nourishes us (Lakoff & Johnson, 1980).

One of the seminal works in this field is *Metaphors We Live By* by George Lakoff and Mark Johnson (1980). The authors argue that metaphors are not just linguistic devices but are deeply embedded in our cognition and shape how we perceive and think about the world. They provide examples of several conceptual metaphors related to the environment, such as Nature is a mother and Nature is a machine. This study provides a foundational framework for understanding metaphors in Ecolinguistics.

Another notable study in this area is on metaphors and environmental discourse by Markotic (2003). The author uses a corpus of environmental policy documents to examine the use of metaphors in environmental discourse. She identifies several key metaphors, such as sustainability is a balancing act and nature is a fragile ecosystem, and analyzes how these metaphors are used to construct arguments and shape policy decisions. The study highlights the importance of metaphors in shaping environmental policy and underscores the need to analyze their underlying assumptions critically.

A recent study in this area is Mapping the “Metaphors of Climate Change” (Semino et al., 2017) used a corpus of texts related to climate change, including scientific reports, news articles, and political speeches, to identify and analyze the use of metaphors in discourse about climate change. They identify several key metaphors, such as climate change is a global threat and climate change is a ticking time bomb and examine how these metaphors are used to construct different narratives about climate change. The study highlights the importance of understanding how metaphors shape our understanding of complex environmental issues.

Overall, corpus-based studies have provided valuable insights into the role of metaphors in shaping our understanding of the environment. These studies have demonstrated the importance of metaphors in environmental discourse and underscored the need for critical analysis of their underlying assumptions. As in Ecolinguistics, corpus-based methods will likely become increasingly crucial for investigating metaphors and other linguistic devices that shape our understanding of the environment.

2.3.3. The Story of Salience and Research Studies on Salience Patterns

The story 'Salience' is about how a particular domain of life is essential to address such as economic growth and GDP being more critical for developing countries. Hence, it is viable to make the best use of more and more natural resources by exploiting them (Stibbe, 2015). Several research works have explored the use of salience patterns in Ecolinguistics. For example, Haas and Hunston (2018) conducted a corpus-based analysis of verbs used in environmental discourse, finding that verbs of vitality were particularly prevalent in climate change and environmental activism discussions. Similarly, Maffi (2010) analyzed indigenous languages to explore how different cultures conceptualize and express knowledge about the natural world. She found that some languages emphasize the interconnectedness and agency of living things through verbs of vitality and focus. In contrast, others emphasize the power and dominance of natural features through verbs of prominence. These studies and others demonstrate the importance of examining language as a reflection of cultural values and attitudes towards the environment.

Some of the corpus-based studies that have also been conducted in this area include Boyd's (2018) study, based on corpus-based analysis of British Nature writing that explores the salience patterns of different aspects of the natural environment. She uses quantitative and qualitative methods to examine the frequency of key terms and identify metaphors related to the natural world. Her analysis strongly focuses on specific aspects of Nature, such as landscapes and animals, while other aspects, such as plants and ecosystems, are less salient.

Davey (2020) focused on the salience of carbon in climate change discourse. She uses a corpus of newspaper articles and government reports to examine how the concept of

carbon is represented and prioritized in language use. Her analysis shows that carbon is often used as a shorthand for climate change and is highly salient in the discussions of mitigation and adaptation strategies.

De Silva (2019) studied the salience patterns of environmental issues in political discourse in Sri Lanka. She uses a corpus of parliamentary speeches and media reports to explore how different environmental issues are represented and prioritized in language use. Her analysis shows that specific issues, such as deforestation and pollution, are highly salient, while others such as biodiversity and conservation are less salient.

García-Riaza (2019) examined the salience patterns of ecotourism discourse. She uses a corpus of travel guides, websites and brochures to explore how different aspects of ecotourism are represented and prioritized in language use. Her analysis indicates that certain aspects such as wildlife and natural landscapes are highly salient in the discourse, while others such as cultural heritage and sustainable development are less so.

These four studies demonstrate the value of corpus-based methods in exploring salience patterns in Ecolinguistics. They show that certain aspects of the natural environment are more salient than others in different contexts. Language use can shape our perceptions of the natural world due to the degree of salience of the environmental issue. Further research in this area could inform environmental education and policy-making by highlighting the salience patterns that are most prevalent in different contexts.

2.3.4. The Story of Appraisal and Evaluations and Research Studies on Appraisal Patterns

Another story named ‘appraisal’ is how good or bad a particular domain of life is to choose one and reject others, such as industrial development should continue because it raises lifestyle by providing more products of ease and facilitation. Appraisal patterns/items form an essential story in Ecolinguistics because of the power they have to shape the minds of the readers towards a specific direction and influence whether people think of something as good or bad, thus constituting stories we live by (Stibbe, 2015). The way appraisal patterns are constructed in the economic discourse is crucial because it offers a means of interpreting Nature and hence constitutes specific evaluations regarding the

ecosystems, biodiversity, habitats, and how they are being harmed. When interacting with Nature, we tend to pass through a cognitive process comprising viewing, evaluating and categorizing (Bednarek, 2008). Thus, when a phenomenon such as a climate change goes against the norms of an existing idea about sustainable human life, human language tends to categorize it as a negative evaluation for its destructive causes. As a result, the short-term evaluation then turns into a long-term value with time and becomes an internal part of the cognitive patterning of the human mind. Appraisal patterns have also been defined as the studies of self-expression, the expressions of the speaker's attitudes, beliefs, emotions and judgments (Lyons, 1982). However, what makes a difference between Stibbe's (2015) notion of appraisal patterns and evaluations and other authors (Bednarek, 2006; Lyons, 1982; Thompson & Hunston, 2010) is the fact that ecolinguists address the universal appraisal patterns which have been assigned to the ecosystem that surrounds life. Thus, Ecolinguistic appraisal patterning looks at how linguistic items have been collocated with an ecological phenomenon to assign a value of either positivity or negativity.

Analyzing appraisal patterns can reveal the underlying evaluations, which comprise assumptions, ideologies and schemata regarding ecology in the readers' minds. Martin and Rose (2003) state that appraisal patterns "realized through lexis and grammar are great resources for constructing schemata regarding a phenomenon" (Martin & Rose, 2003, p. 58). Appraisal patterns can be divided into two main categories: (i) explicit patterns, which use direct appraisal patterns such as the terms good, bad, positive, negative, etc. (ii) implicit patterns, on the other hand, use appraisal items that have either positive or negative connotations such as fresh, natural, threatening, etc.

Implicit lexis such as grow, more, rise usually form more positive appraisal patterns in economic discourse. However, it is essential to mention that there is no intrinsic positivity about going forward; however, moving backward definitely gives a sense of negativity (Stibbe, 2012). Thus, it is vital to notice that the lexis that triggers appraisal patterns such as grow, move, rise are not always positive appraisal patterns. They can signify the growth of damage. However, the collocation analysis of the appraisal item with other terms determines a positive or negative appraisal pattern. Hence, the positive items amplify positive appraisals, and the negative items amplify negative appraisals. Moreover,

words usually marked with prefixes like un, dis, and in are frequently appraising items (Stibbe, 2015). Appraisal patterns are thus formed when we collocate positive or negative expressions with the phenomenon we discuss.

The method of investigating cultural evaluations is to employ the appraisal theory, which states "how writers/ speakers approve and disapprove, enthuse and abhor, applaud and criticize, and how they position their readers/listeners to do likewise" (Martin & White, 2003, p.1) and the way these appraisal patterns set up a tone or mood is known as "prosodic patterns of appraisal choices" (Martin & Rose, 2003, p. 54). These prosodic patterns are vital because they construct the voice/stance of the appraiser who defines the community and the audience positioned to appraise an area of life as positive or negative. Stibbe (2015) argues that appraisal items are highly crucial concerning ecology.

For ecology, appraisal patterns are important because they could be tied to one or two texts, but as Halliday (2001) claims, they are being repeated in countless texts daily worldwide. It is crucial to mention how the language system has assigned a permanent intrinsic value to linguistic items as positive or negative (Stibbe, 2015). Therefore, we need to find out the beneficial, ambivalent and destructive evaluations regarding ecology and describe the detailed workings with their associated appraisal patterns to examine the meanings they convey.

2.3.5. The Story of Facticity and Conviction and Research on Facticity Patterns

The last story here is named 'facticity and conviction', which brings people to the point about what is true, false or in-between. The vivid example of this story is that the capitalist model is better than the communist model because it gives people more opportunities to earn money. This story allows people to make judgments because it involves subjectivity. The story from Stibbe's (2015) framework applied in this research is 'convictions and facticity' patterns. These patterns are used to make claims and validate particular descriptions as true or false (Stibbe, 2015). Critical discourse analysis has provided various techniques to analyze linguistic features that build facticity patterns, such as the use of modal verbs (Martin & Rose, 2003), expert's authority and authority of

consensus (Van Leeuwen, 2008), quantifiers, hedges (Machin & Mayr, 2013) and presuppositions (Martin & White, 2005). In this research, the approach of Leeuwen (2008), which includes an expert's authority or opinion, use of modality, and hedges, has been used to identify convictions and facticity patterns.

There are some vital corpus-based studies on facticity patterns in Ecolinguistics. One of the seminal works in this field is 'A Corpus-based Analysis of the Use of Epistemic Modality in Environmental Discourse' by Hunston and Francis (2000). The authors analyze a corpus of environmental texts and identify epistemic modality patterns, a linguistic device used to express degrees of certainty or uncertainty. They find that environmental discourse speakers and writers use more tentative language when making claims about the natural world, often employing modal verbs like 'may' or 'might' to express uncertainty. This study highlights the importance of linguistic analysis in understanding how speakers and writers construct knowledge about the environment.

Another critical study in this area is conducted by Geluykens and Geeraerts (2005) on linguistic markers of uncertainty in environmental discourse. The authors analyze a corpus of environmental texts and identify linguistic markers of uncertainty such as hedging devices and vague expressions. They find that these markers signal the complexity of environmental issues and highlight the need for caution in making claims about the natural world. The study emphasizes the importance of linguistic analysis in understanding how knowledge about the environment is constructed and communicated.

A more recent study in this area is a corpus-based study of modal verbs in climate change reports written in English by Fang and Zhao (2016), who analyze a corpus of climate change reports and identify patterns of modal verbs, focusing on how they are used to express certainty or uncertainty about climate change. They find that modal verbs are used in complex ways, with different verbs expressing different degrees of certainty or uncertainty, such as 'may' and 'might' as highly uncertain while 'will' and 'shall' as less uncertain. The study highlights the importance of understanding the nuances of linguistic devices like modal verbs to interpret claims about the natural world accurately.

The facticity patterns involved in this research will also highlight the importance of these patterns and the critical analysis of people's claims about the environment and human behavior towards the environment.

So all these stories from the eco-critical discourse perspective of Stibbe (2015) have given a set layout of the theoretical framework to researchers to decipher anthropocentric or ecocentric ideologies embedded with explicit or implicit ecosophies relevant to the topic chosen for analysis through identifying cognitive structures and linguistic patterns. Therefore, the research works mentioned in each story have helped shape the theoretical framework for this research and establish a niche by exploring the economic discourse on CPEC.

2.4. Ecolinguistic Discourses and Ideologies

In Ecolinguistics, three types of discourses are involved according to the classification given by Stibbe (2015) -- beneficial, ambivalent and destructive discourses. All these three types need to be explained here for a better understanding of each one and their involvement in this research on the exploration, analysis and findings.

2.4.1. Beneficial Discourses and Ecocentric Ideologies

In Ecolinguistics, beneficial discourses are called helpful because they are commonly accepted and promoted rather than resisted (Martin, 2004). They are pro-environment and oppose instability, oppression and exploitation of the outer environment because they support those systems that life depends upon (Stibbe, 2015). For example, the discourses of Wordworth's poetry on Nature are beneficial, while the newspaper articles on consumerism are destructive discourses (Goatly, 2000). They advocate ecocentric ideologies and intrinsic frames, which favor the ethical values of well-being, care and resilience for not only human beings but also other than humans.

2.4.2. Ambivalent Discourses and Green Ideologies

Ambivalent discourses from the Ecolinguistic perspective of Stibbe (2015) are positive in *nature* because they encourage positive aspects of particular discourse and have

an ability to reject the negative aspects in them by triggering intrinsically valued discourses based on caring for other species, the ecosystems, encouraging afforestation and conservation of natural resources. These are often about green actions but simultaneously involve economic gains through environmental destruction and are explored in the data, which has a significant portion of mainstream green discourses and the green Ecosophy. For instance, the discourses of environmentalism and sustainability reports (Kowalski, 2013) represent this kind. The ambivalent discourses promote sustainable economic growth by condemning economic growth only.

2.4.3. Destructive Discourses and Anthropocentric Ideologies

According to Stibbe (2015), these discourses frame the environment as a resource to be exploited for human use and economic gain. They often prioritize short-term gains over long-term sustainability and perpetuate a dominion over nature mentality. Examples of destructive discourses include economic discourses, advertising promoting consumerism, political rhetoric supporting resource extraction industries, and corporate communications prioritizing profit over environmental concerns.

2.5. Ecosophy and Research on Ecosophy

As mentioned above the types of discourses and ideologies in Ecolinguistics, it is found to have a very close relationship between the type of discourse and Ecosophy. The integration of the notion of Ecosophy is included in the research questions. The debate by Guattari (2008) starts with the disequilibrium and imbalance which are continuously threatening the lifestyle of human beings, the existence of other than humans, shortage of natural resources, natural disasters due to climate change and deforestation, degradation of land and water, and economic crisis. Being the subjects of the entire system of interdependency, humans, and non-humans are living a compromised life, which is quite an appalling state at this time of the 21st century. At this stage, when the capitalist trajectory of destruction blinds the political influence to take destructive environmental activities, we need an ethical-political theory or Ecosophy that can be integrated into the discourses of all fields of life; the Ecosophy which can form a new connection between human and non-humans.

Similarly, after Guattari, the scholars of Ecolinguistics may recognize the pioneer figure of Naess, as cited in Tinnell (2011), and his view of Ecosophy, which is different from Guattari (2008). Naess (1973) coined this term first time to identify human's relationship with Nature and puts up the great responsibility on human beings to preserve the environment by making a personal commitment and responsibility. In the backdrop of people's responsibility to save the environment, he, in his notion of Ecosophy, still gives privilege to humans and their dominance to destroy Nature for their survival, which Guattari (2008) opposes and calls instability of relationship, instability of identity and connections. Similarly, he pushes away the work of Bowers (2014), who prefers human agency for every kind of change.

Next to Guattari and Naess in Ecolinguistics, the work of Stibbe (2017) attracts our attention towards searching out new positive discourses and encouraging them to revisit the notion of Ecosophy. According to him, Ecosophy is developed by the researchers after reading the data very closely, and he has the liberty to move around different texts and discourses to explore the values embedded in them. His values include well-being, care, equity, social justice, resilience and equality in any discourse in the relationship between humans to humans or humans to the environment. According to Stibbe (2015), Ecosophy may involve anthropocentric, ecocentric or a combination of both ideologies. The discourse undertaken for the research can be from any field according to him. It can be evaluated based on the presence or absence of well-being, care, social justice, resilience and equality.

Following the distinctive nature of the concept of Ecosophy given by Guattari, Naess, and Stibbe, some significant research has been found that has included Ecosophy on various levels. First, Bornett (2002) has advocated for incorporating environmentalism as an Ecosophy in the educational domain by introducing students to the status of relationships that humans have with non-humans. Neither does his idea of Ecosophy bend towards anthropocentric nor towards ecocentric, instead compelled towards making the world a better place. It generates an ambivalent Ecosophy that promotes environmental protection but is underhand involved in destructive activities. Another critical application of Ecosophy has been employed by Greenhalgh-Spencer (2014) in his research by

condemning the oppressive practices towards environment and ecology exercised in school teaching, highlighting its pedagogical implications, which is more inclined towards Ecosophy of environmental well–being. Contrary to this research, exciting research can also be referred to Bhattacherjee and Sinha (2020) who evaluated the famous tales of Jataka to conclude that these tales are representative of beneficial discourses and hence ecocentric Ecosophy and can be used to trigger the frames of ecological awareness in the minds of people. Similarly, another exciting research to connect the idea of creating ecological awareness among people has been done by Astawa (2020) on TRI HITAKARANA, the concept based on stories we live by. He concludes that the content of textbooks and newspapers can easily be used to destroy or save our environment because it involves a great effort to change readers' perceptions about the outer world.

To conclude, Ecosophy and research on it, the works mentioned above, finally provide this research an opportunity to develop the Ecosophy of the discourse produced around CPEC based on ideologies and the type of discourse it has involved. In the next section, some studies relate how the natural environment is constructed in environmental discourse.

2.6. Environmental Discourse

The seminal work of Muhlhausler and Peace (2006) is a popular reference of research conducted to find out anthropocentric ideologies -- the ideologies that encapsulate the endangerment of Nature due to human activities to exploit it for their survival. In this regard, Beck (1992) criticizes the relationship of the environment with human beings and other beings in his study. He suggests conducting future research on environmental policies, environmental risk assessments, environmental laws, advertisements, and discourse on environmental politics, sustainable development efforts, reports, environmental protection laws, Greenspeak literature, and Environmental Impact Assessments (EIAs).

A bulk of research can be found on environmental discourse based on discourse analysis and critical discourse analysis. These studies range from the discourse analysis in environmental policies and planning (Feindt & Oels, 2005), environmental politics

(Benjaminsen, 2021), images and myths found in environmental discourse (Hajer & Versteeg, 2005), ideology found in environmental and sustainable development reports (Buhr & Reiter, 2006), urbanization and climate change (Burke et al., 2015), greening the environmental laws (Gellers, 2015) to environmental assessments (Runhaar et al. (2013).

A corpus-based environmental discourse analysis has also been the subject of many research studies. This literature review includes some critical studies conducted in this field.

One study that has significantly contributed to this field is a corpus-based analysis of the use of epistemic modality in environmental discourse conducted by Hunston and Francis (2000). This study analyzes a corpus of environmental texts and identifies epistemic modality patterns, a linguistic device used to express degrees of certainty or uncertainty. They find that environmental discourse speakers and writers use more tentative language when making claims about the natural world, often employing modal verbs like may or might to express uncertainty. The authors conclude that understanding epistemic modality is crucial for interpreting environmental discourse.

Another essential research in this area is also a corpus-based study to explore the use of metaphors in environmental discourse conducted by Lee (2011). In his research, he uses corpus linguistics to investigate metaphors used in environmental discourse. The study reveals that metaphors make abstract and complex environmental concepts more accessible to the general public. The author argues that a better understanding of the metaphors used in environmental discourse can help promote more effective communication about environmental issues.

Discourse analysis of environmental sustainability in newspaper texts has been done by Kuo and Lu (2013). In their study, the authors use corpus linguistics to analyze newspaper articles about environmental sustainability. They find that journalists use a variety of linguistic strategies to convey messages about environmental sustainability, including metaphors, framing and modality patterns. The authors conclude that these linguistic strategies can help shape public perceptions and attitudes about environmental sustainability.

2.7. Economic Discourse

Gare (2002) asserts that in the dark ages, the discourse that dominated that entire period was theology. In contrast, in the modern world, the prime position is taken up by scientific discourses, and now in the present world, is the economic discourse which tends to define reality for most people living simultaneously. In a way, it turns social reality into physical reality.

Although the economic discourses directly do not refer to Nature and environment, rather economic growth, gained through the destruction of ecosystems such as in order to set industries in those places where crops were grown first, now emission of smoke from factories destroying oxygen level and Ozone layer in the air occupying that place. Suppose we analyze economic discourse from a linguistic point of view. In that case, the work of Halliday (2001) describes how language is degraded due to its false representation, such as using the words economic growth as one of the most important goals of society. The attainment of growth is done through the exploitation of natural resources and the destruction of ecosystems. Similarly, Goatly (2000) criticizes language, which promotes growth. Based on the conclusion of his research, he suggests replacing the word growth with the metaphoric expression cancer for mature economies such as Japan, Switzerland or Singapore (p. 278). He believes that the word growth, which is taken as positive, actually threatens the planet's life support system. This kind of discourse is destructive due to its grammatical construct and unlimited quantity of economic growth at the cost of ecological destruction. However, it is the favorite term in the economic discourse because it defines the reality of development and progress.

2.7.1. Linguistic Features Peculiar to Economic Discourse

Before conducting the present research, it was pertinent to know the linguistic features of economic discourse and some previous research on it catering to those features. Economic discourse is a specialized discourse whose lexical, textual, morpho-syntactic, and pragmatic features differ from other discourses (Gotti, 2003). Following the same argument, Serianni, as cited in Gotti (2003) asserts that we can notice a considerable and different lexical items inside any specialized discourse relevant to that field and function

to bring precision to the discourse. In his book *Specialised Discourse, Linguistic Features and Changing Conventions*, Gotti (2003) says that *biunique word meaning* in specialized discourse such as economic and legal discourses, the conciseness, semantic uniqueness, and a high number of same lexical items bring clarity to those discourses. Some other features of these discourses include using compound nouns, juxtaposition, acronyms, abbreviations and zero derivations as linguistic devices. These devices bring simplicity, exactitude, clarity, objectivity, abstractness, generalizations, information density, brevity, emotional neutrality, unambiguousness, impersonality and logical consistency to the economic discourses.

As a science of language, linguistics is expected to explain language structure, linguistic patterns, components, how knowledge is gained, and how it combines with other cognitive processes (Cartwright, 2014). As cited in Gotti (2003), Malthus believes that economic discourse is different from general discourse because it provides definitions of terms to make its discourse clear and unambiguous. According to McCloskey (1983), another feature that is quite prevalent inside economic discourses is the use of metaphors as a rhetorical device, which not only helps the argument to be more convincing but also indicates the apparent attitude and stance of the author. This is what McCloskey asserted: using metaphors beautify economic writing and clarifies the concept and content of the topic in the text.

The linguistic feature of collocation about the economic discourse is quite peculiar as an analysis technique (Schmid, 2012; Caldwell & Coats, 1984; Samuels, ed., 2013). The following heading sheds light on this linguistic feature and the analysis technique.

2.7.2. Collocation and Collocation Analysis in Economic Discourse

The term collocation is a usual association of a word with another word that could be connected and have a greater chance of frequency (O'Dell & McCarthy, 2011). Although, the concept of collocation relied upon the idea that each word in the language preferred to be in context with the lexical map, which determines that each word tends to co-occur with other words that are more often used by Kheovichai (2014) as cited in Mautner (2020).

According to White (2003), Collocation analysis helps to analyze language patterns and relationships between words. It involves identifying frequently occurring word pairs or clusters, known as collocates, within a given text or corpus. This technique has been widely used in various fields, including economics, to explore patterns in language use and gain insights into the subject's discourse. For example, corpus-based research on economic discourse could use collocation analysis to identify common collocates of economic terms, such as economic growth or market volatility. This could help researchers understand how these terms are used in different contexts and identify the underlying themes and concepts associated with them. Additionally, by examining the collocates of certain words, researchers could uncover any biases or ideological leanings in economic discourse, providing a valuable tool for critical discourse analysis. This analysis technique has been used in conducting a corpus-based Ecolinguistic study of economic discourse on CPEC.

2.8. The CPEC

Pakistan, as an underdeveloped nation, is facing numerous challenges on the socioeconomic level such as poverty, poor health and education, lack of employment opportunities, lousy infrastructure, high tax rates, low-skilled labor and poor residential assets. For that purpose, policymakers and government authorities are designing different development projects to overcome major economic crises and strengthen the country's economic position. The China-Pakistan Economic Corridor (THE CPEC) is considered one of Pakistan's most significant projects, about the launch of the economic project of the CPEC. Shapiee and Idrees (2017) state that the project, CPEC was first initiated by President General Pervez Musharraf and President Hu Jintao in 2003. Later on, it became a part of One Belt One Road (OBOR) in 2013.

The project of OBOR is a vast project which connects Asia with Europe and Africa as mentioned by Kanwal, Chong and Pitafi (2019). The project of the CPEC is one of the most significant projects between China and Pakistan that connects Xinjiang and Kashgar with Gwadar Port of Balochistan, Pakistan. The mega project of the CPEC covers a wide range of projects in different fields, including health centers, energy projects, several economic zones, education institutes, train tracks and road infrastructures all over Pakistan.

The China-Pakistan Economic Corridor (CPEC) is a multi-billion-dollar infrastructure and energy project that aims to connect Gwadar Port in southwestern Pakistan to China's northwestern region of Xinjiang via a network of highways, railways and pipelines. CPEC has been described as a game changer for Pakistan's economy, potentially boosting economic growth, creating jobs and attracting foreign investment. However, there are concerns about the project's environmental impact, its potential to exacerbate Pakistan's debt burden, and how much it will benefit local communities. As Such, CPEC is an example of a complex economic discourse that involves trade-offs between economic benefits and environmental and social costs (Hussain, 2017). What language patterns are used to represent the environmental impacts of this project is the primary concern of this research, which also includes the aspect of conducting an Ecolinguistic study of the discourse produced around CPEC.

2.8.1. Research on CPEC from a Socioeconomic Perspective

According to Abid and Ashfaq (2015), the CPEC project was dreamed up by the government of China. It is to be materialized by the Pakistani government, which promises to influence the local Pakistani community positively. Similarly, the study argues that the CPEC project is highly beneficial for residents of Pakistan as this project holds the potential to uplift the living standards of local communities. As per the study of Javaid (2016), over the years, both China and Pakistan have been enjoying cordial relationship, and the recent permission of Pakistan to use Gwadar port by China under the initiative of the CPEC is viewed as a valuable prospect for both the countries, as it is to strengthen the investment bonding between both the countries and is also significantly increasing trade in the future perspective of Gulf and South Asia. Due to close diplomatic relationships and better mutual understanding between Pakistan and China, bilateral trade has been highly promoted and has increased positively over the years. In this way, the CPEC has marked a novel step in establishing the relationship between China and Pakistan by increasing economic connectivity and cooperation to two-way outcomes between both the countries. The core aim of the CPEC project is to promote cooperation between both countries in the development, planning, and support to intensify economic activities along the corridor.

According to Hussain and Hussain (2017), the president of China signed agreements and MOUs for projects worth around $46 billion during his visit to Pakistan in 2015. The significance of the CPEC project for Pakistan has been widely recognized in previous research. According to Alam, Li and Baig (2019), the CPEC aims to provide a connectivity platform for more than three billion people in South Asia, the Central West, Africa and the Middle East. In this regard, the increase in investments, financial flows and trade will bring prosperity and peace to the region by enhancing the countries' economic competitiveness, contributing to declining social inequalities and regional disparities by enhancing the quality of life and life expectancy.

According to Kanwal et al. (2020), Pakistan is considered to be the key beneficiary of the CPEC as this project is likely to open up several opportunities for the country to overcome socioeconomic issues and strengthen the poor economic condition of the country by uplifting the people's standard of living. Initially, the total cost set for the CPEC project was $46 billion; however, this amount increased to $62 billion in 2017. Shapiee and Idrees (2017) are of the view that some of the projects that are in progress under the CPEC include an 870-MV energy project in Khyber Pakhtunkhwa, 1000-MW solar power in Punjab, and three different wind power projects in Sindh. According to Hussain and Khan (2017), one of the CPEC projects' critical objectives is constructing an effective land trade route by joining Gwadar with Kashgar. This aim will be accomplished via a strong network of pipelines, railway tracks, and highway projects. The research presented by Kanwal et al. (2019) confirms that the mega project of the CPEC is declared a game changer on the grounds of a geo-strategic and economic boost.

According to Hadi, Batool and Mustafa (2018), Pakistan and China have shown a strong inclination and firm promise towards the execution of the CPEC projects to attain all the potential benefits associated with socioeconomic areas. As per the same study, the CPEC project is expected to contribute towards an additional 2 to 2.5% economic growth at the gross rate for Pakistan and is also likely to establish job vacancies indirectly or directly, improve health and education, infrastructure development and intelligence residential colonies between the period of 2015 to 2030. Moreover, under the project of the CPEC, the amount of $16 billion on the transportation of infrastructure development, $ 34$

billion for the energy sector, $ 44$ million for miscellaneous but related projects, and $793 million for the Gwadar seaport are dedicated. All these heavy investments are anticipated to grab several socioeconomic benefits for both China and Pakistan.

Similarly, various researchers have analyzed the CPEC from an environmental and ecological point of view as well. Malik, Tariq and Maliki (2017) talked about the environmental aspects of the CPEC road networks and that the road system constructed under this mega project will impact the ecosystem and the components of ecosystems like habitats, water quality, and animal species. Moreover, mitigating actions were also suggested as part of this study, including water sprinkling and wet scrubbers to prevent deterioration of air quality, afforestation and plantation from conserving the fauna and relocation of people where needed. Similarly, Kouser and Subhan (2020) also raise environmental concerns over the project. One of the significant aspects that the CPEC is the energy sector; however, most of the projects are be operated through traditional means that are on the power of fossil fuels that are not only non-renewable but harmful to the environment.

The previous research has been seen so far towards the socioeconomic side of the CPEC; this research provides the representation of socioeconomic areas of the CPEC by analyzing the texts by applying 17 SDGs, including poverty, hunger, education, infrastructure, industry, gender equality and energy.

2.8.2. Research on the CPEC from an Environmental Point of View

In light of the socioeconomic benefits reaped through the CPEC, the project remains to ignore the environmental aspect for some time, especially in its early development phase. Considering the importance of the environmental aspect of the CPEC, a case study was undertaken by Awais, Samin, Gulzar and Hwang (2019), an exciting nexus of social, economic and environmental factors was developed to declutter the overall speculations about the CPEC for the attainment of sustainable development. This case study concludes with the significance that the CPEC, ensuring the provision of economic opportunities without compromising environmental damage because economic and social sustainability is directly dependent on environmental sustainability.

Emphasizing the implications of the CPEC from an environmental perspective, Saad, Xinping and Ijaz (2019) suggest that the policymakers of Pakistan formulate a set of environmental strategies to follow during the implementation of this project to avoid the difficulties inflicted on local people of Pakistan living along the CPEC route. Khan and Chang (2021) expressed grave concern about the anthropogenic effects of infrastructure development and tree-cutting activity under the CPEC project. They warned the public to take some initiatives by generating academic discussions to avoid environmental disasters due to different projects of the CPEC that are not eco-friendly such as coal-based energy projects. Another critical study done by Mirza, Fatima and Ullah (2019) observed climate change over the CPEC corridor and route by extracting data on temperatures from 48 stations between 1980-2016 and found many types of climatic changes such as the rise of night temperatures, fewer day temperatures, severe winds and uncertain weathers in their analysis to identify that changes had taken place on faster pace since the year the CPEC project started.

In conclusion, the environmental impact of the CPEC has some implications that assert that CPEC is more of a developmental project and tends to ignore its environmental impacts, which can be destructive in the long run. Does the language used in the discourse around it also show this implication? This is shown by conducting a corpus-based Ecolinguistic analysis of the texts on CPEC from socioeconomic and eco-environmental points of view.

2.9. Green Growth in Economic Projects

Green growth has gained massive significance over the years and has been extensively discussed in economic and environmental research discourses. The global financial and economic crisis generated the idea of green growth, which has caused a temporary decline in human impact on the environment (Kasztelan, 2017). Moreover, due to growing global environmental concerns, green growth has emerged, also considered a strategy for ecological economic growth or development. As per the definition of OECD, green growth is defined as taking some essential measures conducive to economic growth while ensuring that natural assets must endure, offering the essential environmental services and resources crucial for realizing a country's prosperity (Wanner, 2015).

According to the same study, green growth emphasizes accelerating innovations and investments that underpin sustainable development and offer new economic opportunities. According to Kasztelan (2017), the growing emphasis on green economic growth articulates the country's intent to direct the economy towards the consumption patterns and technologies that generate jobs and foster economic growth but also reduce the harmful impact of economic development on our environment.

According to Stevenson (2019), green growth discourses play a crucial role in fostering a synergetic view of economic projects such as the CPEC by including the pillars of environmental sustainability. In this regard, green growth emphasizes using different ways to reduce negative environmental pressure. The study by Bergius and Buseth (2019) argues that strategies for green growth need to be developed by adopting greener operations in any business.

Viitanen and Kingston (2014) assert that two of the significant challenges that the world has faced so far include the increasing global population and the associated pressure on the environment, which requires to be immediately stopped through appropriate measures to maintain their economic development by handling the issues of exhausting natural resources and environmental pollution (Faccer et al., 2014). Hence, this situation has been one of the primary reasons behind the emergence of green growth. The study by Kasztelan (2017) concludes that green growth is an approach towards sustainable development that prevents environmental degradation, biodiversity loss and carbon gas emissions while promoting clean energy, a green economy, smart cities and green jobs. In this research, green growth is included in the analysis by taking it as one area of the eco-environmental domain and as one goal of 17 UN sustainable development goals under economic growth.

2.10. Research: Sustainable Development and Sustainable Development Goals (SDGs)

A sustainable economy considers social and environmental aspects to meet today's needs without compromising future generations' needs (Sauvé et al., 2016). Looking at the relationship of the sustainable development approach with Ecolinguistics, the main

element in this link is if the language has substantial importance and contributes towards the development of destructive and constructive discourse regarding ecosystems, then it can be said that the language which is used to depict environmental degradation, can be used to develop a pro-environment or green discourse about the well-being of the environment and how well it can be integrated to set as a policy is quite significant towards evolving green ideologies and green practices.

Sustainable development and Sustainable Development Goals (SDGs) are critical global issues studied from various perspectives, including Ecolinguistics. Ecolinguistics is the study of the relationship between language and the environment, and it can provide valuable insights into how language is used to shape our understanding of sustainable development and the SDGs.

One study by Alimoradi and Khodadady (2018) examined SDGs' 14th and 15th goals about life below water and life on land through Ecolinguistic analysis. They argue that the language used in these goals reflects a human-centered perspective, which may limit progress towards sustainable development.

Another study exploring literature reviews by Adala and Ogada (2019) was to see the role of language in promoting sustainable development and found that a more environmentally-focused language is required to promote sustainable development. Similar findings are presented by Stibbe (2019) in exploring language to investigate the connection between Ecolinguistics and Sustainable Development Goals (SDGs) and argue that the language used in the SDGs reflects a human-centered perspective and prioritizes economic growth over environmental sustainability.

Sen's sustainable development approach (1999) and the Sustainable Development Goals (SDGs) have also been studied from an Ecolinguistic perspective. Below are some works done on this topic.

One study by Lessmann & Rauschmayer (2016) connected Sen's capability approach with SDGs because human beings can sustain their relationship with each other and the environment to progress in economic and sustainable development. To achieve this, the ethical side of economic development is using language that should promote pro-

environmental terms. Another research done by Iwelunmor and Opara (2019) studied the language used in SDGs and found that a more environmentally-focused language is needed to promote sustainable development that reconciles environmental sustainability and human development, which is consistent with Sen's approach.

These studies highlight the importance of language in promoting sustainable development and Sen's (1999) approach that encourages the social, economic and environmental factors in promoting sustainable development. So looking at the burgeoning issue of sustainable development and the SDGs, the research also includes Sen's sustainable development approach and SDGs in its analytical framework.

2.11. Eco-Critical Discourse Studies

Stibbe (2012) takes his reader further to illustrate the power of discourse organization in creating new ways of speaking and writing, which constantly construct the shape of the objects being spoken of. Hall (1997) generalizes the concept of discourse as a mode of referring to or constructing knowledge through a cluster of ideas, images, or symbols that provide a way of talking on a particular topic or any social activity. In this regard, Stibbe (2012) highlights the power of destructive discourses such as economism, characterized by promoting inhuman treatment and environmental damages, which counter-discourses such as environmentalism fail to emit.

Stibbe (2012) argues that language is anthropocentric and treats all other non-humans as existing in isolation. Just as in the structuralist philosophy, language is a closed system; sociolinguistics studies the interrelation between human society and language; critical discourse analysis focuses on power distribution among humans, addresses human language and human relations. Therefore, recently linguistics began to view language not only as something beyond an isolated system or a socially constructed phenomenon rather it is adding physical environment in its discourses. According to Stibbe (2014) ecological issues have long been neglected in mainstream critical discourse studies. Stibbe (2011) also critically examines how ecological destruction is part of an oppressive relationship between humans and other humans, influencing other than humans at the most basic level of the ability to continue living.

This is how ecology and environment are being included in overall contemporary discourses such as in eco-critical discourse studies where the primary focus is to pinpoint all the linguistic and cognitive patterns such as metaphorical terms which are employed in the text about the ecosystem because it is these metaphors that carry behind them a history of frames and continue the process of triggering framing in the minds of the reader. Scholars pay a great deal of attention to metaphors, such as Myerson and Rydin (1996) and Harre et al. (1999), who distinguished types of metaphors in environmental discourse. They criticize the mechanist metaphors (Bullis, 1992) such as using ecodefence and ecowarrior to achieve harmony in human relationship with environment. These metaphors, which a group of people lives by, play a significant role in shaping their environmental actions. The commodification of Nature (Mulhausler & Peace, 2006) as a sign of value was investigated such as language of ecotourism tends to anthropomorphize animals, considering Nature as a battlefield where non-humans struggle for survival. Some studies are mentioned below which include eco-critical discourse perspective in them.

Larson (2011) for instance, conducted an eco-critical discourse study of metaphors and tried to examine whether these metaphors would contribute to ecological development or destroy the ecosystem. According to him, what is of significant importance to ecolinguists is not to create a set of metaphors for a sustained ecological system without human interruption but for socioecological sustainability that would address the relationship between humans and the natural world.

Huque (2000) questions the worsening degradation of the environment and how sustainable developments have been taken as measures to develop a friendlier environment with nature. The radical development of metaphors such as economic growth, modernization, political stability and order, entrepreneurism culture and personality, modes of production, production relations tend to overlook the question of environmental disorder and ecological degradation through means of capitalist industrial expansion. The paradox of sustainable development is constrained by economic growth, which proposes environmental harm (Reid, 1995; Reed, 2013).

Collins (2008) brought significant work into the field of eco-critical discourse studies. He talks about politicized ecology, where ecological concerns are useless in the

first-world countries whose main agenda is rapid industrial expansion. This essence of building an urbanized land causes excellent harm to the third-world countries, which, being deprived of their rights, have to bear the harm of ecological destruction. Thus, the least potent societies experience the most hazardous environment. Milligan and Binns (2007) conducted similar research in Savanna-Sahel and found that the narratives of ecological discourse are already written as if people are waiting for the catastrophe. Hence, the inhabitant is perceived as a passive subject whose role is environmentally destructive. The crisis narratives have a predetermined plot (beginning, middle, end) involving those phenomena that cannot take action.

Priest (2016) highlights the role of communication in discourse. The transmission of information regarding climate change is marked by linguistic signs that have been unequivocal in reflecting humans' responsibility for causing the Earth distress. However, since environmental policies have been advocated, the mode of communication has given climate change a stronger position in political public media agendas. Climate change is now a communication emergency, suggesting the paradigm shift's critical role from persuasion to engagement.

What can be noticed from the above discussion is the fact that Ecolinguistic theorists have a range of views and philosophies regarding the relationship between language and the ecosystem. However, one may notice that their main agenda is to create a harmonious interrelation between humans and other living organisms, thus emitting the centrality of human agency (Naess, 1993). Since various ecosophies may differ in their norms and value priority announcement, there is no single ecolinguistic theory on which a study is based.

Eco-Critical Discourse Studies pay a great head towards the ways members of a group, such as environmentalists, agriculturalists, economists and politicians convey ideas in a group (Locke, 2004). Beckett (2013) studied the discursive ideologies in the United Kingdom's Conservative Party, which through terms such as defeat, race, keep up, promote international competitiveness. Most ecolinguists prefer not to examine an ideology as being truthful or false in its assumptions but pay a great deal of attention to finding out whether it encourages or discourages the safety of the ecosystem through language.

In this regard, Gare (2002) studied the discourse of economics and its relative position in a global market. He found that economics has been the prime interpreter of the world, which only gives agency to the growth of human beings and engenders diverse means of development using exploiting the natural world to be considered a set of resources instead of being a living part of the ecosystem. However, what Halliday (2001) criticizes the most lies in the fact that the manipulative nature of language has given rise to unlimited economic growth in a relatively finite world, which has significantly become dangerous; this fact has consistently been emphasized by Goatly (2000) who states that the rapid growth of industrialism can be metaphorically understood as cancer, which is characterized by negative rapid growth.

Cook (2001) investigated a similar phenomenon in his research. He examined the discourses of advertisements that promote the buying and selling products under the mask of ensuring a healthy life. What is paradoxical of human nature is that it ensures the well-being of the human species in their need to purchase products. At the same time, a healthy domain of life is sustained by a primary natural world that revolves around us. One may notice the paradoxical nature of language and its manipulative tools that even a metaphor such as natural is no more natural. Within the domain of agriculture, Fairlie (2012) carried out a study on the discourse of industrial agriculturalists. These discourses are so paradoxical in nature as they claim a small-scale farming system that would cease to cause ecological destruction. However, the number of resources would ultimately produce significant pollution.

Similarly, Glenn's (2004) research identified a range of linguistic devices that construct animals as commodities, a technique which he defines as 'double speak' in which a less profitable animal would be called euthanasia, and an iron deficit formula used to keep the liver white is called milk-fed or special fed. These linguistic metaphors contribute to a discourse that is environmentally damaging and misleading. Trampe (2001) argues that the discourse of economism portrays living beings as objects following the economic ideologies, which seek to address them in metaphors such as produced, utilized, managed, optimized, thus endangering their survival.

Several eco-linguists have numerously analyzed the paradoxical discourses. Harre (1999) gives the collective term Greenspeak, a term borrowed from George Orwell Sinister's concept of Newspeak. The central tenets of this theory contribute to representing living organisms as objects to be exploited, representing solutions to the environment in terms of activities that do not hinder the more considerable developmental technologies, and hiding agency to disguise blame for ecological destruction.

Metaphors have been criticized for being more anthropocentric (Garrard, 2012) because the less wisely we choose metaphors, the more danger we create concerning the environment. Nerlich, Hamilton and Rowe (2002) examined metaphors in the investigation of Foot and Mouth Disease discourse in the United Kingdom, in which metaphorical terms were used, such as battle, energy, defeat, thus presenting the disease as a war that has to be fought to overcome its consequences. In doing so, with the help of these metaphorical choices, the legalization, the burning, and the killing of thousands of animals appear to be an integral part of a healthy society without realizing that this process may lead to drastic destruction.

The rapid degradation of the ecosystem reflects how discourse is planned and practiced in the social construction of Nature. Whatmore and Boucher (1993) evaluated from their research how the powerfulness of planning gain mechanism to generate environmental benefits has been seen as a crucial idea rather than a practice because they tend to portray the natural environment as a product and these mechanisms as bargaining processes. Similarly, Schemit (1971) and Smith (1984) criticize the Marxist political economy in their research. According to the Marxist politicized economy, Nature no longer exists outside the means of social production but is reproduced as a social nature consistently manipulated by human power. Following a poststructuralist approach, the meaning of Nature is therefore not constituted by itself but by the discourse of representation, which acts as a mode of representation. Representation of Nature is, therefore, a political act.

The only means of unraveling these identities and the ideologies that lie behind them is through linguistic analysis. As mentioned above, a considerable amount of theoretical body has been produced within this field. However, there is a dire need to look

for practical implications. For this purpose, the present research seeks to address the ecological issues in Pakistan due to development through economic projects like CPEC. As mentioned earlier, several modes of discourse, such as newspapers and billboards, have consistently addressed Pakistan's ecological crises and environmental degradation. However, one needs to be aware of the linguistic choices employed in those texts because, as defined earlier, these discourses that advocate nature security are products of a human-made language that still cannot resist its anthropocentric nature. Thus, by finding out the anthropocentric ideologies through collocation analysis, this research intends to look at how these ideologies are produced in CPEC texts compared to the ecocentric ideologies. This all includes eco-critical discourse perspective in its analysis and findings.

2.12. Corpus Linguistics (CL) based Studies Combined with CDA

Detailing Corpus Linguistics (CL henceforth) based studies combined with Critical Discourse Analysis (CDA) in this section gives this research some relevance to its methodology. CL is an empirical method of linguistic analysis (Teubert & Krishnamurthy, 2007, p. 6), which is claimed to have a suitable relationship (Baker et al., 2008) with CDA, being a little subjective and fragmentary (Fowler, 1996, p. 8) in its nature of analysis. Relying on the compelling argument in favor of CL used for looking at the extensive collection of texts taken through random sampling and then making generalizations about language norms strengthens CDA (Stubbs, 1997). Similarly, Sinclair (1996) has also admired this marrying relationship of CL and CDA while emphasizing CL as analyzing lexical choices, grammatical relationships, collocational patterns, and keyword concordances which help researchers to decide to adopt the relevant CDA approach to be taken for the research. So, considering this combination, the current study uses CL-based Ecological Critical Discourse Analysis (ECDA).

To include examples of many research works that have beautifully used CL approaches to CDA effectively by using concordance analysis, putting up keywords in different corpus software, collocational analysis to see collocation patterns, words that occur together, and syntactic patterns such as repetition and parallel structures (Orpin, 2005) are mentioned below.

The first and foremost reference to CL combined with CDA is of Stubbs (1992), who investigated the use of pronouns about sexism in language use. In another research, he looked at transitivity patterns used in geography textbooks to show ideological patterns. Similarly, Caldas-Coulthard (1993) analyzed the representation of women in the news to show gender differences and power relations.

The second reference given here is analyzing political discourse to explore modality patterns in general and interpersonal choices in particular; Simon and Vandenbergen (1997) identified through CL-based analysis that modality can be expressed through using modal auxiliaries and adverbs such as (will, going to and would*)*, lexical verbs such as *(*think and *s*uppose*)*, nouns such as *(*chance, likelihood, and possibility*)*, through evaluative adjectives such as *(*constantly, ever, continuously), through quantifiers such as *(*all, none, some, very few*)* and syntactic constructions such as parallelism and repetition.

Extending the references on corpus analysis and CDA, some more studies use words and concordances frequently to unveil specific interpretations that are impossible otherwise. Firstly, Sotillo and Wang-Gempp (2004, p. 91) analyzed the corpus of 46,300 words of online political discussions to explore discursive practices such as social class, power relations and political ideologies by examining epithets, hyperbole, collocations, word choices and pronouns. Secondly, Orpin (2005) undertook a corpus of 800 texts from the British News sub-corpora to find eight words that were semantically related to corruption and found out that the negative connotation words were associated with Pakistan, Italy, India, South Korea and Malaysia. In the end, he also appreciated the CL-based methodology that, according to him, complements CDA. Another example of research makes a relevant point about how CL helps examine metaphors to discover ideologies under CDA. For this O'Halloran (2007) conducted a study on the metaphorical use of words such as erupt, simmering and swept through inside the corpus of 260 million words from 6 newspapers (1999-2003) of *The Bank of English* and concluded that metaphorical interpretation of the above-given words at register level had been associated with human beings rather than volcanoes. This is because this involves the reader's perspective as an ideology based on the fact that the reader is routinely exposed to the

newspaper language or text. Koteyko, Nerlich, Crawford and Wright (2008) also used corpus techniques of wordlists and collocations under CDA for frame analyses.

Towards concluding this section, when we talk about combining CL and CDA, we cannot ignore Baker et al. (2008), who conducted corpus assisted study on the British press (1996-2005) to derive migration-related information by focusing on the words such as immigrants, asylum seekers, migrants, and refugees. Some other studies are corpus-informed studies where the corpus is used as data to inform a researcher; It does not include them here but intends to refer to them in the discussion chapter. Here, the research includes more references to the research carried out on environmental discourse from an Ecolinguistic point of view that used corpus linguistics.

Based on the exploration of corpus-based, corpus-informed and corpus-assisted works, the most relevant work based on the Ecolinguistic perspective is Richards J. Alaxander's book *The Routledge Handbook of Ecolinguistics,* published in 2017. His chapter explores texts including environmental degradation, such as Coca-Cola and its partner WWF. He used CDA and CL to question neo-liberal economic ideologies for making unsustainable things natural and inevitable with the help of specific linguistic devices such as words. According to him, they use this strategy to hide the agency of actors continuously degrading the environment. Another research carried out by Alaxander (1999) was the exploration of business texts for ecological discourse analysis.

Another study that involves corpus analysis in combination with Geographical Information System (GIS) to explore the blog posts (2010-2014) on Rosemont copper mine company for specific linguistic features by Poole (2017) asserted that certain places like Arizona have been discursively used to represent the place of life sustainable processes.

All the above-given research works that involve corpus linguistics in combination with critical discourse analysis such as in the field of environmental studies, economics, media, newspapers and blog posts. Linguistic analysis may help in criticizing the destructive discourses produced in these fields and can construct green discourse by triggering the minds of people for saving the Earth's ecologies and environment. Such efforts are encouraged by the field of Ecolinguistics. One of the aims of this field is to

produce the sense of well-being of not only human beings but other beings as well, which can be seen in eco-critical discourse studies. The current research follows the same lines by adopting the eco-critical discourse perspective of Stibbe (2015). It conducts a corpus-based analysis of this perspective by exploring six stories and the relevant theories from cognitive linguistics and critical discourse analysis.

2.13. Ecological Analysis of Discourse vs. Analysis of Ecological Discourse

The research by Alexander and Stibbe (2014) marked the difference between two streams of analysis, such as ecological analysis of the discourse and analysis of the ecological discourse. Analysis of ecological discourse refers to discourse analysis about ecology and the environment. The typical example of this discourse selected for analysis is environmental policies because it involves environmental discourses. Over the past three decades, various themes and approaches have been involved in analyzing ecological discourse. For instance, Fill and Mühlhäusler (2001) mentioned numerous significant contributions to the field of Ecolinguistics that discussed the involvement of the language system in shaping the opinion of several ecological issues. Many studies involved the lexical choices and the implications of these choices. Critical Discourse Analysis has been used to discuss various issues regarding ecology and biodiversity. Among all ecological discourses are discourses of environmentalism, biological conservation, and ecology, and even though these are the primary discourses, they are not the only ones.

On the other hand, there is a type of ecological analysis of any discourse, which can be economic, as in this case, the primary focus of Ecolinguistics has always been to identify the influence of human beings over other beings on the Earth. For instance, how people treat extinct species either protecting them from extinction or kill them for their interests. These discourses include some examples, such as health magazines of men, advertising, neoclassical economics and financial institutions. Texts found in textbooks, magazines and handbooks also come under this category because they impact human behavior, the environment and ecology. Concluding, all these discourses significantly influence human behavior, and human behavior has, in turn, an influence on the environment which supports human life and other organisms.

In this research, the researcher has taken an economic discourse for analysis, which draws on ecological analysis by using Eco-Critical Discourse Analysis (ECDA) based on the story framework of Arran Stibbe, for which I consulted his book *Stories We Live By.* In his story framework, he has included eight stories, and every story has had one single chapter where he analyzed each story by using one theory as one story named Ideology is analyzed by considering the theory of critical discourse analysis of Fairclough's model in 1999 and similarly another story named Metaphors has been analyzed with the help of the theory of conceptual metaphors proposed by Lakoff and Johnson in 2003. So, he used eight theories to analyze eight stories to do ECDA. Related to this research, the researcher has taken six stories from his story framework and has used six theories accordingly to do ECDA. For instance, framing theory has been used for identifying socioeconomic and ecological frames at a conceptual level, theory of critical discourse analysis for finding out ecocentric and anthropocentric ideologies that further helped in deciphering the Ecosophy of the CPEC, metaphor theory proposed by Lakoff and Johnson for picking up a wide range of metaphors and linking them to their conceptual domains, Martin and White's theory proposed in 2005 for finding out salience and Kress and Leuwen's theory proposed in 2008 for exploring appraisal and evaluation patterns. The idea of picking up all the above-given theories and applying them to CPEC data to undertake ecological analysis of economic discourse had been taken from Stibbe's book, where he employed these theories to do ECDA of various kinds of discourses such as economic discourse in this case.

2.14. Chapter Summary and Stating Niche for this Research

The chapter has provided the literature review and has highlighted the relevant works and research belonging to different authors and researchers who have given their inputs on Ecolinguistics. It has been observed that Ecolinguistics has different approaches with various aims and goals, and it explores the patterns of language and the way people think and treat the world. Furthermore, it investigates the stories people live by and the mental models associated with protecting the environment that influences the behavior linked with the challenges faced. The researcher has found that ecological issues are rising in the twenty-first century, for example, growing inequality, climate change, biodiversity loss, alienation from Nature and loss of community.

It has been further observed that this concern is being addressed by the researchers studying the subjects of social sciences and humanities for augmenting overarching ecological challenges that humanity is facing in the twenty-first century, such as biodiversity loss, chemical contamination, alienation from Nature, the social justice, food security, climate change, water depletion and energy crisis.

According to Mühlhäusler (2001), two leading approaches are used in Ecolinguistics: Haugen's and Halliday's approaches. Haugen's approach falls under linguistic ecology, which holds that every language has its ecological environment, where the living condition of a language depends on the status that it gains from society and the users of that language (Haugen, 1972). The Hallidayan approach focuses on the unecological use of language, how language plays an essential role in developing world-views, and how a linguist can contribute to environmental protection (Halliday, 2009). How language affects the environment that lies at the heart of Halliday's approach.

The researchers have undertaken various approaches within these two, typically to carry out their study by ecologically examining specific linguistic characteristics or language patterns or analyzing ecological texts and discourses from an environmental perspective. Many examples can be found in the literature such as using the systemic functional linguistics perspective; some scholars have examined discourses and found exciting findings. For instance, the analysis of natural poetry for meta-functions and grammatical metaphors (Huang, 2016); the analysis of ecological evaluation reports for register, semantics and lexical grammar (e.g., Zhao & Yang, 2016), and the analysis of the transitivity patterns in eco-discourses (e.g., Gong & Liu, 2018; Fan & Chen, 2019). Similarly, critical discourse analysis as a method is chosen by other scholars. For instance, with the aid of corpus linguistic methods, Alexander (2018) analyzes the euphemisms, nominalizations, purr-words and future tense forms in Coca-Cola's replenish report; Moser (2015) investigates the value of conceptualizing language from the ecocentric perspective; Ponton (2015) in a UK government white paper analyzes several metaphors used for Nature. In addition, there is a controversy about the analysis done from the perspective of Positive Discourse Dnalysis (PDA) versus Critical Discourse Analysis (CDA). For analyzing negative discourses, CDA is involved mainly, while PDA focuses more on

discourses promoting environmental conservation. In other words, when PDA seeks to demonstrate the beneficial discourses supporting environmental conservation, CDA appears to disclose the problematic discourses that promote the destruction of the environment (Stibbe, 2017).

So touching upon the burgeoning challenges due to economic growth and looking forward to the benefits of sustainable development, the primary objective of this study has been carved out to examine economic discourse produced around China-Pakistan Economic Corridor (CPEC) while carrying out a corpus-based Ecolinguistic study. Several studies have already been carried out on Ecolinguistic and economic discourses (Stegemann & Ossewaarde, 2018; Stibbe, 2014; Stibbe, 2015); however, in the context of the CPEC, there is found to be a lack of evidence in the existing literature. Hence, the fundamental rationale of this research is to fill the research gap by investigating the discourse about the CPEC.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the theoretical and methodological underpinnings for conducting this research. It first describes the theoretical framework, adopted methods, selected texts or data, and the primary tools that have been taken as support for carrying out the linguistic/corpus analyses. Followed by a theoretical framework, it delineates the significant theories that have been incorporated to carry out the analysis. It further sheds light on the research philosophy and paradigm of this research.

3.1. Theoretical Framework

In this research, the combination of the theories of cognitive linguistics and discourse analysis given in the story framework proposed and devised by Stibbe (2015) is used. Arran Stibbe presented the story framework in his book, *Ecolinguistics: Language, Ecology, and the Stories We Lived By* in 2015. The story framework given by Stibbe in his book is eclectic framework because it includes eight stories named ideology and discourse as the first story, frames, and framing as the second story, metaphors as the third story, evaluations and appraisal patterns as the fourth, identities as fifth, convictions and facticity patterns as sixth, erasure as seventh while salience and reminding as eighth story. Six stories have been taken out of the above given eight stories from this framework for this research. All these stories include the eco-critical discourse perspective.

Stibbe's (2015) eco-critical discourse perspective asserts how language and discourse shape our attitudes and behaviors towards the environment. It draws on ecocriticism, which explores the relationship between literature and the natural world, and applies this approach to studying discourse and communication.

According to Stibbe (2017), language plays a crucial role in shaping our understanding of the environment and our attitudes and behaviors towards it. For example, certain words and phrases (such as natural resources or environmental impact) may promote a utilitarian or instrumental view of nature, in which Nature is seen primarily as a resource to be exploited for human benefit. Other words and phrases (such as ecosystem or biodiversity) may promote a more ecological or holistic view of Nature, in which it is seen as a complex web of interdependent relationships requiring protection and stewardship.

Stibbe argues that analyzing language and discourse in this way can better understand how environmental problems are constructed and framed and how different discourses can support or hinder efforts to address these problems. This perspective has important implications for environmental communication and activism, highlighting the need for the more conscious and deliberate use of language in these contexts.

All eight stories in the story framework involve Stibbe's eco-critical discourse perspective, which highlights the analysis of discourse by using theories of discourse analysis and cognitive linguistics to cover the stories of discourse and ideology, conviction and facticity patterns, salience and reminding. In contrast, cognitive linguistic theories cover the stories of frames and framing, metaphors, appraisal and evaluation. Stibbe has proposed that linguistic analysis of each story can be done using discourse analysis and cognitive linguistic theories. He used the theory of CDA given by Fairclough (2003) to analyze the story of ideology and discourse, the theory of discourse analysis given by Van Leeuwen (2008) to analyze the story of conviction and facticity, the linguistic approach given by Stibbe (2015) to analyze the story of salience and reminding. Similarly, he used theories of cognitive linguistics given by Lakoff (2004) to analyze the story of framing, while the theory of conceptual metaphors given Lakoff & Johson (1980) for analyzing the

story of metaphors and appraisal theory given by Martin & White (2005) for analyzing the story of appraisal and evaluations.

Six stories named discourse and ideology, frames and framing, metaphors, conviction and facticity, salience and the last story as appraisal patterns from Stibbe's story framework are used for this research. Stibbe has referred to all the above theories from CDA DA and cognitive linguistics for doing ECDA. In this way, each story helped explore cognitive structures such as frames and metaphors while linguistic patterns such as appraisal patterns, salience patterns, and facticity patterns to examine ideologies and develop the Ecosophy of the economic discourse produced around CPEC.

3.2. Stibbe's Framework of Stories We Live By and its Employment in this Research

An eclectic framework for Eco-Critical Discourse Analysis or ECDA proposed by Stibbe is taken from his book *Ecolinguistics: Language, Ecology and the Stories We Live By (2015)*. Before it is explained what each story is about, the concept of the story needs to be elaborated first. He did not take the story in its literal meaning; instead, in this book, he puts forward the concept of the story and the stories we live by in these words:

"Stories are cognitive structures in the minds of individuals which influence how they perceive the world. Stories-we-live-by is stories in the minds of multiple individuals across a culture" (Stibbe, 2015, p.6).

Stibbe includes eight forms of stories in his book: ideology, framing, metaphor, appraisal and evaluation, identity, facticity and conviction, erasure and salience. Out of eight, six stories are taken for this research. Two stories that are not taken include identity and erasure due to overlapping of story of ideologies and discourse with identity and story of erasure with appraisal and Evaluation respectively. If taken both of them would have made the research more complex and overly extensive.

Before applying these stories for analysis, a brief overview is given in this section for each story.

Table 3.1 Six forms of stories and their linguistic manifestations used for this research

Chapter	From the story (Cognitive, i.e. in people's mind)		Manifestation (In language)
1	Ideology	A story of how the world is and should be which is shared by members of a group	Discourse, i.e. clusters of linguistic features characteristically used by the group
2	Framing	A story that focuses on a frame or worldview (a pack of knowledge about an area of life) used to compose another area of life	Trigger words mostly structure a frame in our minds
3	Metaphor	a story that uses a frame to develop a concept of different areas of life distinctly and clearly	Trigger words which bring a specific and distinct frame of mind
4	Appraisal and Evaluation	a story about whether an area of life is good or bad	Appraisal patterns, i.e. patterns of language which show an area of life either positively or negatively.
5	Facticity and Conviction	a story about whether a particular description of the world is true, uncertain or false	facticity patterns, i.e. patterns of linguistic features which represent description of world as true, uncertain or false

6	Salience and Reminding	a story that an area of life is important and worthy of consideration	patterns of language which give prominence to an area of life

Note. Adopted from *Ecolinguistics Language, ecology and the stories we live by* by Arran Stibbe, 2015, p. 17.

3.3. Sen's (1999) Sustainable Development Approach and its Employment in this Research

Due to the pervasiveness of a buzz and fashionable term in economics, Sustainable Development has become a ubiquitous catchphrase and rhetorical device for researchers in interdisciplinary contexts (Mensah & Enu-Kwesi, 2018). Although the cliché nature of the catchphrase sustainable development has some entailments with development theory and practice (Montaldo, 2013; Shahzalal & Hassan, 2019), many people have defined this phrase in different ways. However, relevant to this study, it has been taken into consideration that human development should continue but not at the stake of compromising the Earth's ecosystems and environmental balance. This approach allows future generations to enjoy their rights to use natural resources upon which society and its economics depend but if they are saved. From this angle, there is a need to bring awareness among the societies where the environment, ecology and economics must balance their relationships (Gossling-Goidsmiths, 2018; Zhai & Chang, 2019). The awareness of this relationship has been found in Amartya Sen's theory of sustainable development (1999), and revised by him in 2018 with the name of the capability approach where human beings can maintain the balance between this relationship.

Moreover, Amartya Sen's approach (1999, 2018) to sustainable development shares a strong connection with the United Nations Sustainable Development Goals (SDGs). Sen's perspective underscores the importance of expanding human capabilities and freedoms as a central goal of development, aligning closely with the overarching aim of the SDGs to promote well-being and equity for all. Sen's framework emphasizes that development should not be solely measured by economic growth but should also consider the empowerment of individuals and communities to lead more fulfilling lives. This aligns with several specific SDGs, such as SDG 1 (No Poverty), SDG 3 (Good Health and Well-

being), SDG 4 (Quality Education), and SDG 10 (Reduced Inequalities), which focus on eradicating poverty, ensuring access to healthcare and education, and reducing disparities. Moreover, Sen's emphasis on participatory decision-making and the expansion of human freedoms resonates with SDG 16 (Peace, Justice, and Strong Institutions), which seeks to promote inclusive governance and accountable institutions. In essence, Sen's sustainable development approach provides a valuable philosophical foundation for understanding and pursuing the multidimensional goals of the SDGs, emphasizing the importance of not only economic development but also the enhancement of people's capabilities and choices in achieving a sustainable and equitable future on three levels such as social, economic and environmental. The environmental protection aspect of Sen's sustainable development approach can be found in SDG 10,13,14 and 15. So his approach combines three levels of sustainability as given below.

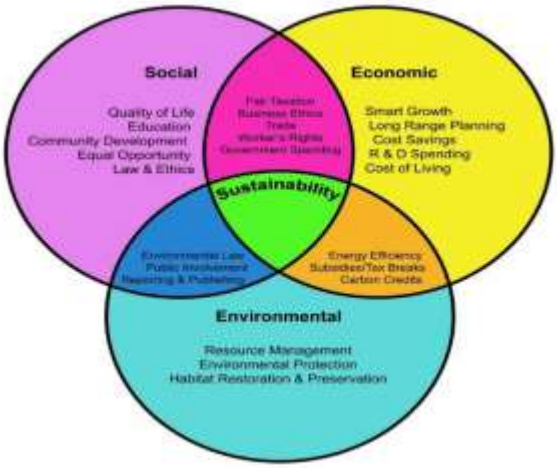


Figure 3.1 Showing three levels of Sustainable Development/ Sustainability adopted from the Source: Wanamaker (2018)

The above given three levels of the theory can be found in Sustainable Development Goals, and the key terms of these goals are used to identify the relationship of human beings with other human beings, with other organisms and environment, which also conjoin with the eco-critical discourse perspective of Stibbe.

3.3.1. Rationale for Using Sustainable Development and the SDGs

The approach of sustainable development as an interdisciplinary evaluative framework views concerns for well-being, equity, rights, agency and participation, freedom and justice as central to the theory and practice of development (Sen, 2018). According to him, the ethical side of sustainable development theory contends that human beings are capable enough to save the environment if they opt to consider the mentioned framework of sustainability (social sustainability, economic sustainability and environmental sustainability) not only to sustain the economics but also to sustain the society and environment. Sen (1999) introduced the idea of sustainable development, referred to as 'sustainable freedom.' This approach places a strong emphasis on allowing individuals to choose their way of life, rather than having one imposed upon them, all while ensuring that the freedom of future generations to use natural resources is preserved (Demals & Hyard, 2014).

So Sen's sustainable development approach (1999 & 2018) and Sustainable Development Goals (SDGs) seemed to be making viable combinations to be used in this research not only on a theoretical level but also as an analytical basis because all 17 SDGs are used as search terms while doing corpus analysis of the data.

Furthermore, sustainable development seemed to be a comparatively new approach to be used in multiple fields because of its eclectic nature as we see that the concept of sustainable development emerged at that time when the subject of the environment sounded in the corridors of political debates (Trindade et al., 2017). The international community had decided to address environmental issues by chalking out global collaborative action plans and frameworks that could be used as an International framework. One of the prominent examples of this kind of framework could be the UN sustainable development goals of 2030, which were proposed in 2015 and were presented to countries all over the world to implement. Pakistan also tried to sort out ways to incorporate SDGs during the planning stage of the economic project of the CPEC, which triggered the idea of including them in this research at the analytical level.

It was the reason that seventeen Sustainable Development Goals (SDGs) embedded with the ethical side of the theory of sustainable development by Amartya Sen were taken for this research. The SDGs used as search terns for corpus analysis helped to determine

the representation of socio-economic and eco-environmental areas in the discourse produced around CPEC. Moreover, the cognitive and linguistic patterns also deciphered ideologies, frames, metaphors, appraisal items, salience verbs and facticity patterns constituting six stories. So they proved to be the analytical framework in this research.

3.4. Eco-Critical Discourse Perspective of Stibbe (2015) used for ECDA

In this research, we aim to gain deeper insights into utilizing Stibbe's eco-critical discourse analysis framework and the core principles of Ecolinguistics. The study focuses on elucidating the fundamental objectives of Ecolinguistics, which explore how language shapes the interconnected, life-sustaining bonds among humans, their interactions with other beings, and their relationship with the surrounding environment. Ecolinguistics considers preserving these intricate levels of human connections as a norm, often called Ecosophy. Due to its nascent emergence as a discipline in the late 90s, Ecolinguistics combines the disciplines of ecology and language on the basis that words and language patterns influence thought processes and, therefore, human actions. Language and ecology are unrelated disciplines. However, it is becoming a buzz issue increasingly because, according to Stibbe, how Humans treat each other, and the natural world is influenced by our thoughts, concepts, ideas, ideologies and worldviews, which are shaped through language.

Moreover, Ecolinguistics, according to an Ecolinguistic association, tends to study the impact of language on the life-maintaining interactions of human beings on three levels, which include humans with each other, other organisms and the natural environment. (Ecolinguistics Association 2015)

There are two parts of the term Ecolinguistics: ecology and language. Ecology has numerous meanings. For instance, Steffensen & Fill (2014, p.7) describe four language ecologies: the first holds that language occurs in a specific area along with its specific symbol system; the second says that languages exist in a natural ecology composed of ecosystems and interact with each other in the same way as organisms live in their biological circumstances; the third considers that the circumstances of language speakers and discourse groups are influenced by cultural and social factors relevant to language; and

the fourth takes a cognitive viewpoint that language is shaped by the environment in which people live and the behaviour of people is facilitated by the vigour of the environment and language use. In addition, from the perspective of the essential relationships between human beings, all life on the Earth, and the natural world on which they depend, Stibbe (2015, p. 9) describes ecology about language in light of the above three levels of relationships.

Language has influenced our way of thinking by conceptualizing the world in the form of how we perceive it such as according to Stibbe (2015, p.2), thereby deciding how we communicate with others about nature. To elaborate, take the example of the metaphor we frequently use in everyday life: the earth is our mother, which may be a typical example. This metaphor forms our relationship with the Earth to some degree that humans are the Earth's descendants. It further affects our relationship with the world, implying that our mother should be valued and cherished and not tainted by the environment. In other words, how we handle the concept of Mother Earth and similar concepts of Nature or ecosystems would be affected by the vocabulary we are exposed to.

In other words, the discourse studied by Ecolinguistics may be any type of discourse, such as economic discourses, which are not limited to being inherently related to environmental issues. Nevertheless, within those discourses, they seek to reveal what kind of human relationship humans maintain towards each other and others living on land and in water. This relationship has been explored by using another theory with Ecolinguistic theory, which is the theory of Sustainable development taken from economic theories with a particular focus on sustainable development proposed by Amartya Sen (1999) in the revised version (2018) of the capability approach.

3.5. Research Design

The research design explains the entire research plan or strategy and all the essential components of the study that the researcher has incorporated in a more coherent manner to conduct the research (Schoonenboom & Johnson, 2017).

In this research, the methodological framework has been taken from corpus linguistics to explore cognitive structures and linguistics patterns that are used to represent the ecological-environmental and socio-economic areas present in the CPEC discourse.

According to Baker (2006), corpus linguistics can be used as a methodology in research to explore discourse due to its ability to analyze extensive collections of machine-readable data or corpora through computational tools and software. It involves researching authentic and representative data through quantitative and qualitative research approaches (Baker et al., 2008). They called it methodological synergy. Moreover, the idea of using corpus linguistics as a methodology is quoted by Biber (1995), who used a wide range of corpus-based methods to analyze linguistic phenomena such as register and syntax. Therefore, this research has used corpus-based Ecolinguistic analysis of economic discourse on the China-Pakistan Economic Corridor (CPEC), where a corpus is developed by taking many texts written on CPEC.

Biber, Conrad and Rippen (1998) assert that corpus linguistics when used as a methodology involves both quantitative and qualitative methods. Word frequencies through concordance analysis and MI scores showing statistical significance, taken by collocation analysis, can be interpreted and exemplified qualitatively for the functional outcomes (as cited in Davies, 2009). It means that starting with quantitative analysis, one can elaborate on the frequency hits and MI score to extend the analysis for qualitative analysis. Leech, Hundt, Mair and Smith (2009) call this shift from quantitative to qualitative analysis a cyclic process where the researcher can interpret frequently occurring patterns quantitatively analyzed to reason out and to make meanings of what they imply for qualitative analysis. Hence, the corpus-based analysis starts with a quantitative approach and ends with a qualitative approach.

This research analyzes the texts or discourse, i.e., official (texts taken from the official website of CPEC) and unofficial texts (three Pakistani and three Chinese English newspaper articles and some student research articles) from an eco-critical discourse perspective by following the story framework of Stibbe (2015). So in this research, the data has been analyzed quantitatively through concordance analysis and collocation analysis and then has been categorized into different cognitive structures and linguistic patterns to see what and how those patterns can answer the research questions.

As mentioned earlier, this research has taken six stories from the story framework proposed by Stibbe (2015), which has several theories in it such as cognitive theories of linguistics, including conceptual frame theory and metaphor theory proposed by Lakoff

and Johnson (1980), Critical Discourse Analysis (CDA) by Fairclough (2003), appraisal theory by Martin and White (2005) and facticity (Van Leeuwen, 2008) and salience by Kress and van Leeuwen (2008).

This study's inductive research approach addresses the objectives using some of the above theories. According to Hasko (2012), the inductive approach is used mainly by researchers who exhibit corpus analysis to expand numbers and figures qualitatively. It also entails the research philosophy, another essential methodology element, regarding how the research data should be collected, interpreted and used (Ryan, 2018). In this study, the use of pragmatism as a research philosophy or research paradigm has been used in the process of data collection and analysis. Since this study is based on corpus linguistics as a methodology that promotes more freedom of using qualitative and quantitative approaches, therefore, the use of pragmatism research philosophy is considered more suitable as it integrates the use of corpus analysis software AntConc, which initially provides concordance hits in concordance analysis and MI score in collocation analysis to expand results further.

3.5.1. Type of Investigation

The type of investigation followed in this study is exploratory. The key reason for using this research investigation is its suitability with corpus linguistics as a methodology involving quantitative and qualitative methods. As mentioned in Hunter, McCallum and Howe's (2019) study, quantitative and qualitative research can be used for exploratory investigation. In this way, the use of exploratory research investigation has enabled us to have an in-depth view of data on the CPEC and explore relevant cognitive structures and linguistic patterns based on the story framework proposed by Stibbe (2015).

3.6. Data/Texts

The data/texts consist of the following:

3.6.1. Official data (2016-2020)

The official data constitutes the long-term plan of the CPEC, official reports, press releases, magazines, fact books, appraisal CPEC, policy briefs, reports, reviews, working

papers and available Environmental Impact Assessments (EIAs), which were taken from the official website of the CPEC (CPEC.gov.pk) from the year 2016 to 2020.

3.6.2. Unofficial Data (2016-2020)

The unofficial data/texts constitutes Pakistani and Chinese English newspaper reports and articles written on the CPEC and were taken from online newspaper websites. Three Pakistani English newspapers include The Dawn, The News and The Express Tribune, while three Chinese English Newspapers include The China Daily, Xinhua, and The Beijing News. The newspapers are selected on the basis of readership statistics available on their websites. Some available research papers from environmental and ecological perspectives on the CPEC are also taken from Google Scholar as an unofficial data from year 2016 to 2020. The data collected from multiple resources helped in data triangulation. In the end, all the data collected for analysis is referred as discourse produced around CPEC throughout this research.

3.6.3. Data Sampling

In this section, the data gathering sources, data selection, population and data sampling technique employed for the research is described which involves the use of stratified sampling to form a specialised corpus on the China-Pakistan Economic Corridor (CPEC) for analysis. The population for this study comprises diverse resources of texts obtained from official website of the CPEC, news reports from three Pakistani English newspapers and three Chinese English newspapers; however, for further resources, student research papers are also used. Dividing the corpus into subpopulations (strata) based on the criteria, such as source, time period, and genre (Baker & Egbert, 2016), and then selecting samples from each stratum was done. Stratified sampling ensures representation from various subcategories. For example, the genre is economic discourse produced around CPEC; the time of the collection of the texts is from 2016 to 2020, and written texts such as official and unofficial data sets. The subpopulations or strata taken on the basis of source, time and genre further helped classifying the data into two main categories such as official data and unofficial data by following stratified sampling technique.

3.6.4. Stratified Sampling

Stratified sampling was chosen as the primary data sampling technique for this thesis to account for the heterogeneous nature of the CPEC corpus. This approach allows for the representation of various subcategories or strata within the larger population of CPEC-related texts. In this case, the population consisted of texts from the official website of CPEC and news reports from six distinct newspapers: three Pakistani newspapers and three Chinese English newspapers. The stratified sampling process was executed as follows:

3.6.5. Creation of Strata

The corpus was divided into several strata, with each stratum representing a distinct source or category of texts. The strata included the texts taken from official website of CPEC named here as official data, and three Pakistani newspapers, as well as three Chinese newspapers named as unofficial data including the third source which was student research papers written from environmental point of view.

3.6.5.1. Random Sampling within Strata

Random sampling was conducted within each stratum. For the official website of CPEC, a random selection of 10 available documents was made which are shown in the table given under:

Table 3.2 Official Data Sources

Serial No.	Name of the official document	Total number
1.	Appraisal CPEC	01
2.	Policy Briefs CPEC	02
3.	CPEC Long Term Plan (LTP)	01
4.	Environmental Impact Assessments (EIAs)	04
5.	Fact Books CPEC	02
6.	Magazines CPEC	03
7.	Press Releases CPEC	180

8.	Review CPEC	01
9.	Working Papers CPEC	02
10.	Reports CPEC	09

For the unofficial data, news reports were randomly selected based on their publication date (between 2016-2020) and topical relevance to the CPEC. The total number from each newspaper was different that is shown in the table given below.

Table 3.3 Unofficial Data Sources

Pakistani English Newspapers		Chinese English Newspapers	
The Dawn News	195	The China Daily	143
The News	155	Xinhua	121
The Express Tribune	200	The Beijing News	64
Student Research Papers	25		

The samples obtained from each stratum named here as official data and unofficial data were combined to form the specialized corpus for analysis. The use of stratified sampling ensured that the sample encompassed a diverse range of texts from both official and media sources, representing various viewpoints and reporting styles related to CPEC. This approach is instrumental in minimizing bias and enhancing the generalizability of research findings. Using stratified sampling, the study sought to provide a detailed portrayal of the discourse on CPEC, drawing from a diverse selection of sources for a richer and more precise evaluation of the intricate economic initiative. The corpus for analysis comprised 62 text files, amounting to a total of 1,222,144 words.

3.7. Data Analysis Procedures

As this research is a corpus-based Ecolinguistic analysis of economic discourse produced around CPEC, the data analysis procedures involves corpus analysis carried out through the software of AntConc version 3.5.7.

3.7.1. Corpus Analysis

A corpus is a collection of texts stored in an electronic database (Kennedy, 1998). The purpose of creating a corpus is to carry out linguistic analyses on grammar and lexis as well as beyond that, i.e., syntax, semantics, discourse, register and linguistic variations which help in finding out the ideologies, frames and pragmatic functions of language patterns (Hunston, 2002). So considering the techniques described above analysis includes corpus linguistics, exploring linguistic phenomena like lexico- grammatical structures that help explore specific linguistic patterns, cognitive structures and ideologies, the corpus-based analysis is a data analysis technique for this research.

3.7.2. Corpus Compilation

As this research is corpus-based Ecolinguistic analysis of the economic discourse on the CPEC, therefore, the corpus has been compiled by taking official and unofficial texts written on the CPEC. As explained above, the texts on CPEC are divided into two types, i.e., official and unofficial data. The data was taken from the years 2016-2020. Some texts were in pdf form, and some online available material needed to be copied and pasted into separate Word files for cleaning. Pdf files and Word files at the end were converted into text files, a feature of MS Word, and saved with two names of folders, i.e., official data and unofficial data, for cleaning before it was run in AntConc software for corpus analysis. In the end, there were 62 text files in total ready for corpus analysis.

3.7.3. Data Cleaning and Management

The data from the above resources were copied and pasted into separate Word files, and some texts were converted from PDF format to Word files. Aid was taken from the website https://www.pdf2text.org/ and all texts were converted into Word files and all Word files into text files. Once the data were compiled, the next step was to clean the data. Cleaning data was significant as it helped the corpus users achieve better results than usual. Initially, line and paragraph breaks were cleaned through the Text Cleaner website: www.textfixer.com/. After cleaning the texts, they were run through AntConc (version 3.5.7) for corpus analysis.

3.7.4. Identification of Search Words for Corpus Analysis

The list of search terms is 17 Sustainable Development Goals (SDGs), which represents socio-economic and eco-environmental areas to be explored in the discourse of CPEC. The 17 SDGs-based search words have helped to decipher the cognitive structures and linguistic patterns that construct six stories from Stibbe's story framework. These SDGs, the search words for the corpus analysis, are analyzed concerning the right and left collocations they occur with. For instance, words like development, economic development, socio-economic development, socio-economic development, and sustainable development. So, SDGs were mainly used to provide an analytical framework for the study and to know what other linguistic terms are associated with them and what meanings they could generate.

For further elaboration, there is given a dashboard of 17 Sustainable Development Goals (SDGs), agreed upon by 193 UN member countries to gain a sustainable world, a transition from economic development to sustainable development based on three metrics: (1) human and ecosystem well-being (2) relationship of human beings with the natural world and (3) the well-being of future generations (Costanza et al., 2016). These goals are as follows:

1. No poverty
2. Zero hunger
3. Good health
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Clean energy
8. Suitable employment and economic growth
9. Industry and infrastructure
10. Protect the planet and sustainability
11. Smart cities
12. Responsible consumption and production
13. Climate action

14. Life underwater
15. Life on land
16. Peace and justice
17. Partnership

Figure 3.2 Showing the Image of Sustainable Development Goals (SDGs)

3.7.5. Rationale behind Sustainable Development Goals (SDGs) in this Research

The rationale behind SDGs used as the search word for corpus analysis is due to the theoretical framework taken for this research, which combines Stibb's (2015) Ecolinguistic perspective and the sustainable development approach of Amartya Sen (1999, 2010 & 2013). After reading through Eco-Critical Discourse Analysis (ECDA) and the story framework proposed by Stibbe in his book *Ecolinguistics: Language, ecology and the stories we live by* published in 2015, and Sen's ethical side of the idea of sustainable development valuing life-sustaining relationships on a socio-economic and environmental level in his book *Development and Freedom* published in 1999, and also in his book *A survey of sustainable development: social and economic dimensions* published in 2013 and notes of his meeting on 'Sustainable development and our responsibility pdf published in 2010, and most of all his capability approach seemed to have coherence between Ecolinguistics and sustainable development. The linking point between the two approaches asserted that it was essential to sustain not only human-to-human relationships but also the

human to other than human relationships, which can be the relationship of human beings with animals, plants and the entire environment around them. The relationship of humans to humans may include areas such as poverty, peace, justice, education, health and gender. In contrast, human beings to other beings may include ecosystems, land degradation, biodiversity, pollution and environmental degrading activities like cutting trees. Both theories are referred to make this link more straightforward. Ecolinguistics encapsulates the way how:

"Ecolinguistics is the analysis and critique of the stories beneath our language, and it uncovers how language can contribute to ecological displacement or destruction" (Stibbe, 2015, p.44).

The concept of sustainable development is also equated with Ecolinguistics as, according to Sen (2010), it is the development that meets the needs of the present generation without compromising the capability of future generations to have similar or more freedoms.

To add to the UN Sustainable Development Goals (SDGs) and its inclusion in this research, the United Nations General Assembly (UNGA) adopted the idea of sustainable development in 2015. It included the life-sustaining relationships in the formulation of SDGs to address the global challenges in general and challenges faced by economic development in particular. Moreover, SDGs encapsulating sustainability at three levels, i.e., social, economic and environmental, need to be included in academics (Scoones, 2007) as has also been reiterated by Chau et al. (2022) that ecolinguists need to incorporate these real-world issues in their research for thinking about sustainable future. Therefore, using SDGs played a significant role in becoming search word terms to initiate corpus analysis firsthand. Further, they are used to determine the representation of socio-economic and eco-environmental areas in CPEC discourse. Thirdly, they are used to explore cognitive structures and linguistic patterns of conceptual frames, conceptual metaphors, ideologies and other patterns under investigation, such as appraisal, salience and facticity patterns that form the story framework.

3.7.6. Concordance and Frequency Analysis

Concordance and frequency analysis is commonly used in research that undertakes corpus analysis. Concordance analysis provides patterns by displaying them in a concordance window by creating a list of occurrences of a particular word or phrase in a corpus. On the other hand, frequency analysis involves counting the times each word appears in a corpus and ranking them in order of frequency.

Concordance and frequency analysis can expose many language patterns, vocabulary use and collocations. For example, Taylor (2017) saw the representation of immigration in British news media and found out how immigrants are represented as a threat to British society through frequency and concordance analysis. Therefore, he says that both these corpus analysis techniques can provide insights into the representation of content in a particular area or domain by identifying the most common words and phrases used in a corpus related to that area.

So AntConc (version 3.5.7) is used for exploring concordance (hits) and word frequency to provide insights into the representation of socio-economic and eco-environmental areas present inside the CPEC discourse, which addresses the first research question. The concordance analysis starts by typing the words economic, socio-economic, 'environmental, and ecology to see their representation. Then similar pattern is adopted to find out frames such as development frame by typing the search words development and sustainable development. Under the sustainable development frame, the name of each SDG as a search term was typed to see the frequency of the economic, socio-economic and environmental-ecological areas in the discourse.

Meanwhile, these frames also provide concordance windows in this research with concordance views and text files for exploring other cognitive structures such as metaphors, salience patterns, appraisal and facticity as linguistic patterns. In concordance analysis, metaphors are mainly taken by typing the keyword ‘CPEC is’, but some are found randomly inside the development and sustainable development frames. In the data analysis chapter, they are presented as highlighted in bold form. The conceptual metaphors were derived from the abovementioned list based on their source and target domains. They are

written in italicized form following the tradition of writing them in a capital case as suggested by Lakoff and Johnson (1980).

Similarly, salience patterns are focus verbs found inside the concordances taken for 17 frames plus one development frame. They are highlighted in the italicized form in the examples given in the data analysis chapter. Appraisal patterns are adjectives and adverbs in the frames and highlighted in bold form. In contrast, facticity patterns are words like said, think, and so on used by institutions, organizations and the people in authority. They are given in single quotation marks in the examples given in the data analysis chapter. The number of occurrences of all these linguistic patterns is counted, and salience metrics are notified to expand the analysis qualitatively. So concordance analysis provided the quantitative results in numbers and instances to further build on the qualitative analysis. The subsequent headings elaborate how ideologies and Ecosophy, frames and metaphors as cognitive structures, salience, appraisal and facticity patterns have been explored in CPEC discourse by using concordance analysis and frequencies to expand afterward for qualitative analysis. It is to be noted that all theories consulted for analysis are taken from Stibbe's (2015) story framework. They are part of it and are suggested as all or some of them do ECDA. In this way, the research fulfilled its aim to make the ecological analysis of the economic discourse of CPEC from an Ecolinguistics perspective.

3.7.7. Collocation Analysis

The second valuable method to conduct corpus analysis is collocation analysis, which reveals word patterns and their relationships in language. Collocations are those words that occur together in a speech or writing and, therefore, can be explored in a particular discourse. This research also uses this technique to examine the relationship of words co-occurring in the CPEC discourse. The relationship among words has provided a close association of search words in terms of the Mutual Information (MI) score, interpreted as semantic relationships or preferences (Vessuer, 2017). Generally, a higher MI score indicates a stronger association between the two items and suggests they are likely to be collocated. A low or negative MI score suggests that the two items are unlikely to be collocated (Church & Hanks, 1990).

The subsequent headings shed light on how this research addressed the research questions about exploring cognitive and linguistic patterns used to further investigate this research's ideologies and Ecosophy by following six stories of Stibbe's (2015) story framework.

3.8. Exploration of Frames

Using theoretical insights of conceptual framing proposed by Lakoff (2004) and mentioned in Stibbe's framework, the 17 SDGs are used to determine the high frequency (hits) trigger words and their relationship with other words. The words development and sustainable development, along with 17 SDGs, have been used for finding ecological and socio-economic frames. The target domains and source domains are also mentioned in the analysis. In order to categorize frames, they are further divided into predicament (intrinsic frames) and problem (extrinsic frames) based on the intrinsic and extrinsic values they promote. Frames explored through high frequency or concordance hits of one SDG making a main frame also have sub-frames, which are presented inside the tables of each frame in the chapter on data analysis.

3.9. Exploration of Metaphors

Using theoretical insights from the conceptual metaphor theory of Lakoff and Johnson (1980) and mentioned in Stibbe's story framework, the identification of metaphors is also done through concordance analysis. The keywords for finding metaphors are CPEC is, Pakistan, Pakistan is, economy, and environment. After concordance analysis, the output files are consulted to see the full metaphoric expressions and are presented in the examples given in the chapter on analysis. After that, they were categorized into conceptual metaphors such as war and weather metaphors.

3.10. Exploration of Appraisal and Evaluation Patterns

Using insights of appraisal theory given by Martin and White (2005) and mentioned in the story framework of Stibbe, appraisal patterns such as marked and unmarked expressions, nouns, contrasting words, adverbs and adjectives are found to reveal particular features that appraise and evaluate certain areas as positive or negative. These are found

by doing a collocation analysis of SDGs, and their output files were further consulted to take examples from the texts. The collocations with the highest MI score are considered significant for presenting them in the table. In the chapter om data analysis, they are given in single inverted commas.

3.11. Exploration of Salience Patterns

Using insights from Stibbe's concept of salience patterns to be identified through linguistic devices, identifying expressions that show an area of life worthy of importance and call attention were explored. In this research, those linguistic devices are verbs because they have multiple linguistic features, including focus, vitality and transitivity. Verbs, as focus verbs, are found with each SDG by doing collocation analysis, and then the most frequent verbs occur as a left collocation to mention in the analysis. The highest MI score signifies the area as the most salient. They are highlighted by italicizing the verbs in examples given in the data analysis chapter.

3.12. Exploration of Facticity Patterns

Using insights of Van Leeuwen (2008) and as stated by Stibbe (2015) in his story framework, linguistic devices that build facticity patterns involve the names of expert authority and authority of consensus, including the names of field experts, organizations and institutions. Another linguistic device is modal verbs such as will, would, may, should and many others. Furthermore, hedging words such as think and believe are explored to have an affinity with each SDG. They are also found by collocation analysis and are taken from the concordance window of each sustainable development goal. Those words that had the highest MI score in that area were taken for presentation in the table. They are identified with a single quotation mark in the examples given in Chapter 4.

3.13. Exploration of Ideologies and Ecosophy

This research explores ideologies according to Stibbe's (2015b) eco-critical discourse perspective of dividing ideologies into two types, i.e., anthropocentric and ecocentric. Anthropocentric ideologies represent the dominance of human relationships with the eco-environment, while ecocentric ideologies represent the sustained relationship

between humans and to environment and ecology (Revell & Blackburn, 2007). In this research, this relationship has been explored by doing collocation analysis where each SDG is typed as a search term in the search term bar of the software to click on the collocation key to see the MI score. For example, the collocation analysis for the collocation of (CPEC-human) and (CPEC-environment/ecology) is seen to investigate the association of this relationship in terms of their statistical significance. The statistical significance is based on the MI score value, which shows how tight the association of words that occur together is. It is further used for interpretation such as if the MI score of collocation CPEC-human is more than CPEC-environment, it shows the existence of anthropocentric ideologies and vice versa. So anthropocentric ideologies, within the context of my research on the China-Pakistan Economic Corridor (CPEC), refer to belief systems and perspectives that prioritize human well-being, economic development, and societal progress as central concerns, often at the expense of ecological and environmental considerations.

Similarly, Ecosophy depends upon ideologies. If more ecocentric ideologies are generated in a discourse, the Ecosophy will be ecocentric, and if ideologies are more towards generating anthropocentric ideologies, it will be anthropocentric Ecosophy. As the term Ecosophy refers to certain ethical principles and standards of ecological considerations against which an analyst analyzes the texts (Naess, 1973), where the job of an ecologist is to find out the ecosophies according to the judgment he makes out of ecological consideration by remaining within an ecological framework chosen for analysis.

The Ecosophy, or ecological philosophy, underpinning this research is premised upon a hybrid theoretical and analytical framework. It merges the sustainable development principles of Amartya Sen with the Sustainable Development Goals (SDGs) to forge a robust foundation for examining the progress. Additionally, it integrates Stibbe's story framework derived from the ecolinguistic theory, which emphasizes the narratives we construct about our relationship with the environment. These theoretical benchmarks are woven together to elucidate the complex interplay between ecological systems and human societies.

The study also seeks to categorize discourse into three distinct types: beneficial, ambivalent, and destructive, which are then examined through the lenses of either anthropocentric ideologies, prioritizing human needs, or ecocentric ideologies, which place

intrinsic value on all aspects of the ecosystem. This consolidated approach seeks to investigate and understand the various ways in which language shapes our environmental engagements.

3.14. Chapter Summary

Chapter 3, Research Methodology, provides the theoretical framework, research design, type of investigation, research philosophy and research paradigm used for this research. It also describes the data collection method and rationale for selecting the data. In addition to this, the chapter delineates how data has been analyzed using philosophical and theoretical underpinnings used for it. The theoretical framework used for researching this study is a combination of Stibbe's (2015) eco-critical discourse perspective and Sen's (1999) sustainable development approach. His story framework includes philosophical underpinnings of Stibbe's eco-critical discourse perspective. At the same time, Sen's sustainable development approach on three levels, i.e., social, economic, and environmental, 17 United Nations Sustainable Development Goals (SDGs) are taken to analyze the representative data of economic discourse produced around CPEC. Data stratification technique has been used as data sampling method where official text is taken from CEPC official website and unofficial texts are collected from three Pakistani and three Chinese English newspapers, i.e., e-papers websites. Corpus linguistics is a research methodology, including quantitative and qualitative methods. The analysis starts with the quantitative method, taking concordances and frequencies as hits and Mutual Information (MI) scores through collocation analysis. The word frequency hits, and the MI score are further used to interpret the results for qualitative analysis. The data for corpus analysis consisted of 62 text files to run in AntConc software version 3.5.7.

CHAPTER 4

DATA ANALYSIS

This chapter presents a detailed analysis of the discourse produced around China-Pakistan Economic Corridor (CPEC) by taking official and unofficial texts from 2016-2020. The analysis of the data is done from the eco-critical discourse perspective, here referred to as Eco-Critical Discourse Analysis (ECDA) of the CPEC. The data has been analyzed under the combination of two theoretical approaches, i.e. Sen's sustainable development approach (2010 & 2013) and Stibbe's framework of eco-critical discourse perspective (2015). In order to apply Sen's sustainable development approach in this research, UN Sustainable Development Goals (SDGs) presented by United Nations General Assembly (UNGA) in 2015 for addressing global challenges such as biodiversity loss, environmental degradation, water and sanitation, poverty, health, education, energy, industry, infrastructure and smart cities are taken into consideration while for applying Stibbe's (2015) framework of Ecolinguistic discourse perspective, his story framework has been used for doing ECDA. Six stories are taken from his story framework to conduct a corpus based Ecolinguistic study on China-Pakistan Economic Corridor (CPEC).

4.1. Analysis

To explore the cognitive structures and linguistic patterns that represent socio-economic and environmental-ecological areas in the CPEC; frames, metaphors, salience

patterns, facticity patterns, appraisal and evaluation patterns are first explored through collocation analysis, that in turn helped in exploring ideologies, and the Ecosophy of the CPEC discourse. A brief overview of the theoretical framework chosen for the analysis of economic discourse of the CPEC has already been given in chapter 3. But to elaborate on it in this chapter, the metaphors are explored by using Lakoff (2004) & Lakoff & Johnson's theory (1980) on conceptual frames and conceptual metaphors respectively, salience verbs using Stibbe's approach for taking verbs of focus, vitality and importance, appraisal items using Martin & White's theory (2005) to take adjectives, nouns and verbs while facticity patterns by using Martin and Rose (2003) and van Leeuwen's theory (2008) to see the use of modal verbs, hedging words and names of expert authority. All the given theories are the part of Stibbe's story framework and eco critical discourse analysis and are used for analyzing the CPEC discourse. So eclectic story framework embedded within these theories is used for analyzing the socio-economic and ecological-environmental areas of CPEC discourse by considering seventeen Sustainable Goals (SDGs).

In the beginning of the analysis, the overview of the economic and environmental/ecological aspect is given to interpret the frequency of these two areas in terms of the extent to which the quantity of content from these areas is included in the entire data involved for analysis. The keyword of 'economic' was put in the search term bar of the software to explore economic aspect, socioeconomic for socio-economic content while the keywords of 'ecology', 'ecological' and 'environmental' were used as search terms to explore environmental/ecological aspect or content included in the discourse of the CPEC. Another strategy used to see the association of the CPEC with socioeconomic and environmental-ecological areas is done by seeing MI score through collocation analysis. This MI score value implicates the key-ness factor of the search terms within the significant collocations. The results are presented in Table 4.1 given below. The concordance screenshots of the search terms and collocation analysis are given in the appendices.

Table 4.1 Showing the Total Corpus

Total Word Tokens	1222144	
Word Types	31067	MI-Score of collocates
Frequency of 'economic'	5719	CPEC-Economic= 4.66286

Frequency of ‘socioeconomic’	91	CPEC-socio-economic= 2.93156
Frequency of ‘environmental’	1683	CPEC-Environmental= 2.64536
Frequency of ‘ecology’	33	CPEC-Ecology= 0

In the entire corpus, total word tokens or running words in the text are 1222144 or almost 1.2 million where word types or distinct words are in 310167. The frequency of the word ‘economic’ showing content from economic areas constitutes 5719 and ‘socioeconomic’ as 91 in comparison to the frequency of environmental-ecological areas constituting 1716. If the percentage is taken of these areas in the entire corpus, it tells us that the ecological analysis of the economic discourse of CPEC represents more content from economic (0.4679) and socioeconomic areas (0.0074), while it represents less content from environmental-ecological areas (0.1404). The collocation analysis, on the other hand, also validates these results showing that the word CPEC has closer association with economic (4.66286) and socioeconomic (2.93156) as compared to environmental-ecological (2.64536). This implicates that CPEC has taken ‘economic’ and ‘socioeconomic’ as its semantic preference more than ‘environmental-ecological’.

Now Table 4.2 provides the comprehensive view of each socio-economic and environmental-ecological area based on 17 Sustainable Development Goals (SDGs) taken as an analytical framework for analyzing the discourse of the CPEC. For this, the discourse of CPEC is explored through collocation analysis where the relationship of each area is found out with CPEC by giving the collocates with their rank, frequency and the Mutual Information (MI) score to indicate the statistical significance of the area with the word CPEC. The statistical significance shows the representation of socio-economic and environmental-ecological areas in the CPEC discourse.

Table 4.2 Representing significant collocates of Economic, Socioeconomic and Eco-environmental areas in CPEC

Total number of collocate tokens: 105561				Total number of collocate types: 7110	
Collocates	Rank	Frequency	MI Score	Area	SDG
CPEC-Industry	3249	158	4.30330	Socio-economic	9
CPEC-Sustainability	6269	21	3.77910	Socio-economic & eco-environmental	10

CPEC-Life on Land	991	2	3.75060	Environmental-ecological	15
CPEC-Energy	2110	275	3.64536	Socio-economic & eco-environmental	7
CPEC-Poverty	4839	38	3.63064	Socio-economic	1
CPEC-Employment	2076	55	3.33197	Socio-economic	8
CPEC-Infrastructure	3271	177	3.32693	Socio-economic	9
CPEC-Life under water	746	2	3.14099	Environmental-ecological	14
CPEC-Economic growth	1979	299	3.04703	Socio-economic & eco-environmental	8
CPEC-Partnership	4620	17	3.04098	Socio-economic	17
CPEC-Education	2006	33	2.84621	Socio-economic	4
CPEC- Smart Cities	1069	12	2.65493	Socio-economic & eco-environmental	11
CPEC-Justice	3530	2	2.15395	Socio-economic	16
CPEC-Peace	4651	13	2.08315	Socio-economic	16
CPEC-Climate	1103	12	2.02572	Environmental-ecological	13
CPEC-Consumption	1356	2	1.11292	Environmental-ecological	12
CPEC-Gender	2725	1	1.09950	Socio-economic	5
CPEC- Water	6917	19	0.86152	Socio-economic & eco-environmental	6
CPEC-Health	2943	5	0.68446	Socio-economic	3
CPEC-Hunger	0	0	0	Socio-economic	2
CPEC-Sanitation	0	0	0	Socio-economic & eco-environmental	6

Table 4.2 shows 17 SDGs used to analyze socio-economic and environmental-ecological areas in the discourse of CPEC through collocation analysis where the first

column shows the rank of collocate in the software, frequency in the second column, statistical significance in the third column, representation of the area in the fourth column and the number of SDG in the last column to be addressed. If we take MI score or statistical significance of the collocates, this research follows Vessey (2017) who recommends 3.0 and above, the MI score as significant. So according to his recommendation the significant collocates which are either 3.0 or above include from highest to lowest in this data as 4.30330 for the collocate (CPEC-Industry), 3.77910 for the collocate (CPEC-Sustainability) 3.7505 for the collocate (CPEC- Life on land), 3.64536 for the collocate (CPEC-Energy), 3.63064 for the collocate (CPEC-Poverty), 3.33197 for the collocate (CPEC-Employment) and so on. This implies that CPEC has prioritised the areas of its focus in this way where it focuses industry the most and hunger and sanitation the least. Industry is the most important area and then sustainability of communities both from socioeconomic and eco-environmental areas and on the third number lies environmental-ecological area of life on land. Although the total corpus has less representation of environmental and ecological areas in its frequency of running words or tokens but the MI score in the above table signifies almost equal distribution of these areas to be focused by the project of the CPEC as they are located in the beginning, middle and towards the end in the given table.

Now the next section provides the analysis on the use of those cognitive structures and linguistic patterns that have been employed by the official and unofficial data for the representation of socio-economic and environmental-ecological areas. These patterns also highlight the name of the story which relates to the Stibbe's story framework of eco-critical discourse perspective. First is given the cognitive structure of frames and framing followed by metaphors, and then linguistic patterns of salience, appraisal and facticity patterns which form the story with the same name. The last story is about ideologies and Ecosophy. The analysis is divided into six parts.

4.2. Part-1: The Story of Frames and Framing in the CPEC

The analysis starts with the story of 'Frames' and more specifically 'conceptual frames' based on Lakoff's (2004) cognitive theory of framing and is used in this research for the analysis of the frames of 'development' and 'sustainable development'. According

to Lakoff (2010), words can trigger the minds of people to think about the areas which call attention to, that in turns may produce more positive or negative frames to activate the desired frames in their minds. The frame of development in general and economic discourse in particular is viewed to be the problem frame because of its impacts on the environment (Stibbe, 2015). This is why the frame of 'development' is of particular importance to Ecolinguistics due to its impact of ecological destruction (Stibbe, 2015). In this research, the frame of development is analyzed first but with special reference to delimit the frame of development; the frame of sustainable development is mainly explored in detail because of integration of Sen's sustainable development approach by applying 17 UN Sustainable Development Goals (SDGs). Frames are explored in the corpus on the basis of high frequency of search words.

Before analyzing both the above given frames in CPEC discourse, it is important to shed some light on how the original frame of 'development' has transformed into 'sustainable development' over time. The frame of development started with the particular frame generated by the comparison of 'developed' and 'underdeveloped' countries as Manji and O'Coill (2002, p. 574) illustrated in their research carried out on the collection of political documents. Then, this frame changed into 'equitable development' (Sachs, 2010, p. 28). This frame was little different from its original frame but as it was leading towards ecological destruction, hence proved not to be equitable. As a result, Brundtland issued a report named *Brundtland commission report* in 1987, where a new frame was introduced that was named as frame of 'sustainable development'. This frame was found more promising towards the goal of helping the poor and limiting environmental/ecological destruction. The World Bank combined the frame of development with another inclusive frame, i.e. 'green growth'. This rhetorical move turned the frame of sustainable development into a process of frame displacement, where a new frame takes over the place of the older one but without replacing it entirely. So the frame of 'development' as an original frame along with its displaced framing as 'Sustainable Development' have been used for analysis.

The analysis starts with exploring how the frame of development has been addressed within the data of this research on the CPEC followed by the sustainable development frame by applying the analytical framework of this research in the form of 17

goals of sustainable development. During the analysis of the framing of development and the other relevant frames that contribute to develop this story, Stibbe's (2015) framework of eco-critical discourse analysis is used. In order to present analysis, concordance views are clipped from the software window providing the results and then they are used to present the results in this section. Each frame is followed by the relevant examples taken from the output files to give at the end of every frame. For instance, in the examples, frames and the sub-frames are underlined and inside them the salience patterns in terms of verbs are italicized; 'appraisal patterns' such as modifiers and nouns are enclosed in single quotation mark, while 'facticity patterns and metaphors' are given in bold form.

The story of frames in the discourse of the CPEC is presented by giving the frame of development first and then the frame of sustainable development. The concordance view of main frames is given in the chapter's text while sub-frames are given in tabular form but their concordance views are given in the appendices.

4.2.1. Frame of 'Development' in the Discourse of the CPEC

Frames in this research are found to be the trigger words (Blackmore & Holmes, 2013) that conceptualise an area in a discourse such as in this research trigger words are taken from two areas that include economic, socioeconomic and environmental-ecological areas from the discourse produced around CPEC. Therefore, first the socio-economic frames are explored and then environmental-ecological frames are explored through concordance/frequency analysis for which the keywords are based on the list of 17 SDGs (see section 3.7.2).

In this way, the frame of development from economic area of the CPEC discourse is important frame to analyse in this research due to its significance that it occupies when analysed from an ecolinguistic point of view because of its strong impact on ecology and environment (Stibbe, 2015). Trigger words used to explore this frame include: development and sub-frames as economic development, socio-economic development, equitable development, sustainable development and green development. These are found to be the modifiers of the keyword of 'Development'. After finding out the frames from the two areas given above, the frames are categorised into two types following Stibbe's (2015) division into 'intrinsic' or solution frame vs extrinsic or problem frames. According

to him, intrinsic or solution frames have beneficial discourses that describe values of wellbeing of human beings and the other beings while extrinsic or problem frames have destructive discourses that describe environmental and ecological destruction. The details of frequencies of sub-frames (trigger words) of development are given below.

Table 4.3 The Frame of Development (5190 concordance hits)

Sub-frames	Frequency/Concordance hits
Economic Development	439
Sustained Economic Development	05
Socio-economic Development	105
Sustainable Development	202
Green Development	25

The concordance view of the main frame is as follows. The frame of development is highlighted in blue coloured font.

Development

Figure 4.1 A concordance view of 'Development'

The frame of development with 5190 concordance hits refers to the overall development that may take place in Pakistan under the project of the CPEC and seems to be dependent on other forms of developments such as agricultural development, infrastructure development, transport and tourism development, business development, economic development, socio economic development, equitable development, urban development, community development and green development. All these forms of development make sub-frames in the frame of development and are accorded salience -- the area of life that is worthy of importance, by the use of certain verbs (linguistic expressions) such as *achieve, promote, ensure, bring about, accelerate, enhance, foster and work* etc. The facticity patterns noticed include the names of politicians as an expert authority such as **chief ministers, the spokesperson radio Pakistan, and the planning secretary**, the modal verbs showing facticity patterns are like 'will', and 'would' whereas the hedging words as the facticity pattern include 'think' 'added'. The metaphoric expressions include: **'a platform to achieve development' and 'development revolution'.**

Some of the instances showing these patterns taken from the text output files and are given below. In order to identify these patterns separately by the readers, the salience expressions are italicized, metaphoric expressions and expressions showing facticity are shown in bold form while appraisal items are enclosed in single quotation marks. The source of each example is given at the end of it in small parenthesis.

The previous **Prime Minister** of Pakistan **Shahid Khan Abbassi said** that the CPEC has become a 'reality' and provided Pakistan with **a platform** to *achieve* development. (XN)

The chief minister Balochistan think that the CPEC would *bring* a **development** revolution in Pakistan. (TDN)

The spokesperson Radio Pakistan said that the CPEC projects will *accelerate* development in the country, boosting its economic growth and ushering in prosperity for the people. (TDN)

Hassan, the planning secretary added that the second phase of development would *focus on* agricultural development and the establishment of an oil refinery in Gwadar. (TET)

The screenshots of the sub-frames of the frame of 'Development' are given in appendices. The sub-frame of 'Economic Development' occurs in the data with 439 concordance hits which is the highest frequency in all sub-frames of development and describes economic development in Pakistan, very low as compared to China and China suggesting some ways to boost it under the project of the CPEC. This sub-frame is an extrinsic frame because it involves the discussion on finances, EPZs and investments to be done on infrastructure and industrial development. Some examples from the texts are as follows:

Pakistan is in *dire need* of economic development. (MG1)

China is a living example before our eyes where she has *made* 'remarkable' progress in economic development in the last few decades but has also *inflicted* an 'irreparable damage' to its environment. (RP11)

CPEC as being a **game changer** for economic development can *bring* 'more harm' than good and can *end up* inflicting 'irreversible damage' to the environment. (RP11)

The importance to this sub-frame is assigned by some salience patterns that include verbs: *bring, bringing, boost, boosting, enhancing, explore, exploring, foster, to further, facilitate, focus on* etc., while metaphoric expressions used for this are **'harbinger of economic development' and 'recipe of economic development' CPEC as a Game changer** etc. Some of the appraisal patterns include words such as 'rapid' and 'remarkable' etc. The facticity pattern that influenced this frame is the statements given by **the prime minister of that time, researchers and joint working groups** made for the CPEC projects. These are some details quoted from the data to give a brief review of these patterns. Others are mentioned in the table given at the end of all these sub-frames.

The sub-frame of socioeconomic development occurs with 105 concordance hits and describes socio-economic development needed for Pakistan by addressing the areas of poverty, unemployment and initiating socioeconomic development projects. This frame is a mix of both intrinsic values of well-being and extrinsic, environmental and ecological destruction. There are some instances of socio-economic development taken from the texts.

In its earlier pursuit in Balochistan, **FWO** successfully undertook the construction of the 650 km long Makran Coastal Highway which proved to be a **catalyst** for the socio-economic development of the coastal belt. (FB)

CPEC will focus on improving the basic public services for people of Pakistan, all-round cooperation through different CPEC projects would show a preference for local residents in employment, and the exchange and cooperation in different areas concerning people's livelihood would *lead* to the socio-economic development and poverty alleviation in Pakistan. (MG2)

CPEC, as a pioneering project of the BRI, had entered a new phase of 'high-quality' development. They agreed to continue to firmly push forward the construction of CPEC, complete its ongoing projects in a timely manner, and realize its full potential by *focusing* on socio-economic development, job creation and better livelihood and accelerating cooperation in **industrial parks** and agriculture. (DN)

Qureshi said that the start of the second phase of China-Pakistan Economic Corridor (CPEC) will initiate a 'new era' of socio-economic development in Pakistan. (DN)

Minister Mir Saleem Ahmed Khosa has said that the China-Pakistan Economic Corridor (CPEC) will play a key role in strengthening ties between Pakistan and China and it will **open doors** for socio-economic development and prosperity of the province and the country. (TDN)

In the examples given above, the salience attributes used for this sub-frame include verbs such as: *promote*, *ensure, lead*, *facilitate* etc. Some metaphors are also used to emphasize the importance of socioeconomic development under the project of the CPEC such as the CPEC **as a catalyst** of socioeconomic development. This sub-frame is intrinsic because it tends to generate an ambivalent discourse by embedding the benefits and care for human beings in terms of poverty alleviation, green energy projects and agricultural reforms, although the aspect of economic development is also considered on the same level by discussing revenue generation through industrial development and other economic projects.

The sub-frame of equitable development occurs with 4 concordance hits that describes its importance for Pakistan as a developing country. According to the examples taken from the texts, the overall development of the country would bring further

development to all the provinces of Pakistan. The salience to this area has been accorded by the use of verb working. The facticity patterns include the name of two institutions such a National Development and Reform committee (NDRC) and Joint Cooperation Committee (JCC), the modal verb 'will' and hedging word 'said' with the name of expert authority, used here as names of institutions. One example from the text is given below:

NRDC and JCC said that 'This is the CPEC philosophy *for working towards* an equitable development of the country'. (Mg 1)

Now is the sub-frame of sustainable development which later becomes the source of all socio-economic and environmental-ecological frames explored for this research.

Sustainable Development

Figure 4.2 A concordance view of 'Sustainable Development'

The sub-frame of sustainable development occurs with 202 concordance hits and has been discussed separately at the end of the frame of development. This sub-frame is an intrinsic frame because it has the intrinsic values of saving the environment and the equitable relationship of human beings with each other. The phenomenon of reframing can be seen in this frame which converts the name of the frame from 'economic development' to 'sustainable development'. Reframing is

"The act of framing a concept in a way that is different from its typical framing in a culture". (Stibbe, 2015, p. 47)

The salience is assigned to this sub-frame by the use of verb *seek* and has been appraised by using 'crucial'.

Having seen the immense potential in Pakistan, what should be our *focus* to the 'most' of this opportunity for *seeking* sustainable development and *securing* our socioeconomic future; improvement and development of requisite infrastructure is 'absolutely essential'. (R9)

The sub-frame of 'Green Development' (appendices) in sustainable development has occurred in the data with 25 concordance hits that describes the importance of environmentally sustainable and green development to be implemented under the economic project of the CPEC in Pakistan. The salience words used in this sub-frame are: *promote, implement, achieve and advocate.* The metaphoric expression, **green development** is used here, which is the name of this sub-frame also. Green development is a perfect example of 'Reframing' as well. This sub-frame is intrinsic as it involves the intrinsic value of promoting eco-friendly and green development under the CPEC project. Some examples are given below.

The president of China said that China would work with other parties to *promote* a coalition of sustainable cities and an international coalition for green development under BRI. (TDN)

China and other developing countries have a good foundation of cooperation, and have *advocated for* global and regional green development. (R2)

In the frame of development, there are five sub-frames used and employed predominantly in the discourse on development. Out of five sub-frames, only one sub-frame called 'economic development' has extrinsic value of development carried out through destroying the ecosystems and the environment. The use of trigger words and phrases of infrastructure and industrial development contribute to making this sub-frame as extrinsic. So this serves as a problem frame according to Stibbe's eco-discourse perspective. Other four sub-frames employ intrinsic values of saving environment and ecology by using trigger words such as sustained, sustainable, green and equitable to develop intrinsic frames among the minds of people. So four of these frames are predicament frames that suggest pro-environment solutions.

4.3. Frame of 'Sustainable Development' in the Discourse of the CPEC

Sustainable development according to Brundhtland commission report (1987) can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This idea coincides with Sen's (2010) sustainable development approach which says that it is people's ethical responsibility to adopt such values that can make life long systems sustainable on three levels that includes social, economic and environmental such as poverty, inequality, climate change, environmental degradation, peace and justice etc. So in order to integrate Sen's sustainable development approach as a part of theoretical framework of this research, seventeen Sustainable Development Goals (17 SDGs) have been used to analyse the data as they include three levels of Sen's sustainable development approach, i.e. social, economic and environment.

Framing of sustainable development in the discourse of the CPEC has been analyzed by considering seventeen UN Sustainable Development Goals (SDGs). The units of analysis are official data, i.e. long term plan, press releases, official reports, environmental Impact assessments, policy briefs and unofficial texts which include three Pakistani English newspapers -- The News, The Express Tribune and Dawn News while 3 Chinese English newspapers -- The Daily China, Xinhua and The Beijing News. The analysis combines concordance analysis with eco-critical discourse analysis in order to set out how different linguistic patterns and features uphold a frame on three levels such as social, economic and environmental. Before analyzing each SDG and its employment in the data, I have first explored the frame of sustainable development by inserting it as a keyword to see the concordance hits and its association with other frequently occurring words.

The total concordance hits for the key word of sustainable development are 202 in the data of this research. The concordance view of the screenshot of 'sustainable Development' is given in the text while all screenshots of the sub-frames of sustainable development are given in appendices.

Sustainable Development

Figure 4.3 A concordance view of 'Sustainable Development'.

In the above frame of sustainable development, the salience is attributed to it with the use of verb *achieved* along with the facticity pattern by using modal verb *can* which shows that sustainable development is achievable and highly important for the project of the CPEC but with the integration of the intrinsic frame of environmental protection. The frame of environmental protection is emphasized in it.

Sustainable development cannot be *achieved* if economic development is not integrated with social and environmental objectives from the start at the strategy stage. (R2)

4.3.1. Sub-frames of Sustainable Development

The sub-frame of ecological civilization in appendices constitutes 258 concordance hits and asks to achieve sustainable development through ecological civilization. China has been presented as the best example of greening the environment and emphasizes developing countries to take action to save their environment too. It is called here as 'Ecological Civilization' or 'South South Cooperation'. The following examples describe the concept of this and relate its importance with achieving sustainable development for the economic project of the CPEC.

In sum, ecological civilization is *largely consistent* with the concept of sustainable development on which the global Sustainable Development Goals (SDGs) are based. (R3)

It (ecological civilization) is mainly used with a 'more' narrow focus on ecology and environment, including the ideas of "sustainable development", **"green development"**, "low-carbon development" and "environmental protection" (R2)

The shared foundation of ecological civilization and sustainable development is the *promotion* of 'innovative development' pathways to *reduce* reliance on natural resources, and *minimize* 'negative' impacts on the environment. (R4)

In the examples of this frame cognitive structures and linguistic patterns are used such as the salience is attributed to the frame of the ecological civilization with the verbs such as *redefine, establish, including, shared, accelerating, reduce, minimize and implement* and nouns such as promotion and foundation, while appraisal patterns are developed by the use of adverbs or modifiers such as largely consistent, mainly, more narrow focus. These word patterns are used to represent sustainable development as an area of worth and of great importance from an ecological point of view referred here as ecological civilization.

South-South cooperation for ecological civilization aims to support implementation of SDGs in other developing countries and transforming South-South cooperation into a green priority that will become China's contribution to the improvement of global governance towards sustainable development. (R6)

In this frame, the intrinsic value for supporting environment has been employed by the use of appraisal patterns of positive trigger words such as 'low carbon development', 'green transformation', 'ecological civilization', 'green priority' and sustainable development, while salience is attributed to the word sustainable development by using the verbs *lending, building, improvement, implementation and promoting* to show the urgency and scope of this frame to be included at the earliest. Ideologically, China as a developed country has taken responsibility to help developing countries to achieve sustainable development by presenting a model of ecological civilization and green transformation under the umbrella of their own interests to improve its economic benefits.

Another sub-frame of including SDGs into CPEC describes the importance of sustainable development and its goals to be achieved under the economic activities of the CPEC. The following examples adhere to this sub-frame.

The CPEC aims to unclog **bottlenecks** for Pakistan's economic growth while helping the country *build* a sustainable development with an 'improved' industrial system and in turn, to become a **driving force** in regional growth. (PR)

The meeting, *focusing* on the theme of "towards steady and sustainable development of the CPEC: mission and responsibility of political parties", also attracted **representatives** from **think tanks**, the **business community**, **media** and **non-governmental organizations** from the two countries. (PR)

All indicators of sustainable development, including economic, social and environmental will be given *due importance* in its *implementation*. LTP has mentioned it and stressed to make CPEC sustainable development oriented and consider climate change as a vital element. Investments in the areas of renewable energy, eco-tourism, climate resilient agriculture, and water sector clearly spell the priority of both governments for sustainable development. (TET)

Detailed analysis of the Long Term Plan (LTP) shows that climate change and sustainable development have been *embodied*. (LTP)

As mentioned earlier, in its first phase, the CPEC focused on the priority areas of infrastructure, energy and port building. As the Belt and Road Initiative moves ahead, the need for a comprehensive framework for third-party cooperation will further increase. *More emphasis* will be *laid* on environmentally friendly, sustainable development. (TCD)

This frame describes the priority areas of the CPEC to be consistent with sustainable development goals. The first instance builds up extrinsic frame by supporting economic development and regional growth through a better industrial system, which is not in the interests of ecological and environmental protection thus causing destructive discourse but with the use of intrinsic frame of sustainable development has transformed it to ambivalent discourse which is according to Fairclough (2002) an effective way of thinking about the less destructive ways of exploiting the natural resources, which in other words the ideology of economic growth changes into sustainable growth or sustainable development goals. The salience pattern to establish sustainable development representing an area of life as worthy of attention is attributed with verbs such as *build, bring, focusing, promote, implementation and embodied*, while one metaphoric expression is also used such as **spell the priority**.

Some appraisal items can also be seen in this frame that are described by Martin and White (2005) as lexical items used to project an area of life either positively or negatively. In this frame, sustainable development is appraised positively by associating it

with ‘steady’ process, ‘prosperity’ and ‘environmentally friendly’. Other than the inclusion of environmental protection and SDGs, the goal of infrastructure and transport industry, agriculture, tourism and renewable energy are also mentioned which have intrinsic nature and necessarily be included to show the development of the CPEC.

The sub-frame of global sustainable development tends to emphasize the 2030 agenda of sustainable development to be included in the CPEC for the betterment of Pakistan, China, and the entire region with particular interest in embedding it for global sustainable development. Following examples encapsulate this frame.

The **minister said** that the CPEC is a great opportunity for Pakistan to *achieve* the goal of sustainable development. The corridor project **will** prove to be an **economic revolution** for the entire region. (PR)

Pakistan believes that the ‘most powerful’ impact of OBOR **will** be on the lives of poor and marginalized people, who **should** have higher incomes, better education and more health facilities. It **would** help in eradicating poverty and *achieving* Sustainable Development, leaving no one behind. (PR)

The stated aims of the BRI are to promote peaceful cooperation and common development around the world, where all countries can participate on an equal footing. It claims to target a new system of global economic governance, promoting an efficient flow of materials and in-depth integration of markets, to *achieve* ‘diversified’, ‘independent’, ‘balanced’ and sustainable development. (RP11)

This frame is employed in this data to ensure how economic growth for Pakistan is important and significant in order to improve its economic condition but at the same time it is emphasized that sustainable development should be an integral part of the overall economic development fuelled by the CPEC. The importance of sustainable development for Pakistan, China and the entire region has been assigned to it by the salience pattern through the use of verbs such as *achieve, keeping, support, conform, achieving, ensure*, which shows how important is the notion of sustainable development to be integrated within the projects of economic growth (Arrow et al., 2004) because they can be helpful for turning the destructive discourse into ambivalent and beneficial discourses.

The frame of sustainable development is a positive area to focus, and has been evaluated by the use of appraisal items such as ‘diversified’, ‘independent’ and ‘balanced’

‘sustainable’ development in one example, whereas it is associated with ‘long term’, ‘inclusive’ and ‘absolutely essential’ sustainable development in another example. This frame is also crowded with a number of linguistic devices that show facticity patterns in order to validate the descriptions of this area of life as true and certain (Potter, 1996). The examples of those resources are UN Sustainable Development Goals (SDGs), Belt Road Initiative (BRI), One Belt One Road (OBOR), Xia O Kang, AIIB, IUCN president Xinsheng, Pakistan National Conservation Strategy (NCS) and the ministers.

The frame of sustainable development is purely intrinsic because it emphasizes the prevention of environmental degradation in all instances repeatedly. In the last frame, it also includes the goal of sustainable development to achieve human health and rational use of natural resources. As asserted by Nahman, Wise and de Lange (2009) this kind of interdependency of different frames coinciding on one point to achieve sustainability needs to be recognized for taking legislative decisions against imbalance in relationships between human beings and environment, and this is quite evident in the employment of facticity patterns. We can also see some facticity patterns in this frame with the presence of concrete references mentioned in the instances such as, article 48 of Morocco agreement, global players and the current political regime to authenticate claims. The salience is attributed to the frame of sustainable development by using lexical items such as *achieve, boost, ensure and promote* to meet sustainable goals presented in 2015 by the UN.

So concluding this part, it can be seen that all sub-frames make the frame of sustainable development intrinsic and predicament where there can be seen some problem frames occurring such as due to industrial and infrastructure development but at the same time they are responded with the involvement of solutions. This frame became the source of exploring the representation of socio-economic and environmental-ecological areas of the CPEC basing on Sen’s sustainable development levels of his approach.

4.4. Representation of Socio-Economic and Environmental-Ecological areas in the CPEC

The representation of socio-economic and environmental-ecological areas in the CPEC discourse come under the frame of ‘sustainable development’ and are explored by

using 17 SDGs. The list of 17 SDGs is given below against which the frequency of each frame has been seen:

1. No poverty
2. Zero hunger
3. Good health
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Clean energy
8. Good employment and Economic growth
9. Industry and infrastructure
10. Protect the planet and sustainability
11. Smart cities
12. Responsible consumption
13. Climate action
14. Life under water
15. Life on land
16. Peace and justice
17. Partnership

The SDGs that adhere to the socio-economic areas include: poverty, hunger, health, education, gender equality, employment, industry and infrastructure, peace and justice and the last is partnership. The SDGs that address environmental-ecological areas include: economic growth, clean water and sanitation, clean energy, responsible consumption, climate action, life under water, life on land and smart cities, etc. There are some areas that adhere to both the socio-economic and eco-environmental SDGs that include economic growth and smart cities.

4.4.1. Framing of Socio-Economic Areas in the CPEC

Socio-economic areas are based on those sustainable development goals that build a relationship of human beings towards one another. They include the philosophical values of Ecosophy such as caring for each other, equity, equality, social well-being and justice

(Stibbe, 2015). The SDGs that address social values in the CPEC discourse include poverty alleviation, good health and education, gender equality, affordable housing, justice and peace while economic frames include infrastructure development through road construction and industrialization, economic growth and international cooperation. First, the socio-economic area of poverty and hunger is explored in the CPEC data. All the areas are explored through concordance analysis. The sub-frames are also found out that relate with the area and are found out to be most frequent in the data. Another important thing in the exploration of frames is that each SDG including the main frame and the sub-frames are used to form conceptual frame. The conceptual frames are formed on the basis of theory of conceptual frames proposed by Lakoff in 2004. In cognitive linguistics, the notion of 'frame' is the mental structure that helps people to know reality. Frames are conceptual constructs that help us comprehend the world and reality (Lakoff, 2006). So following Lakoff, the conceptual frames formed out of the sub-frames present in each frame are given in the interpretation by providing target as well as source domain. They are not written in capital case although the tradition of writing a frame or a metaphor is same that they are written in the capital case but in this research only conceptual metaphors are written in the capital case. This will also differentiate between both of them in terms of their written presentation.

The frames in the entire data for socio-economic and environmental-ecological areas are explored with the help of frequency analysis or concordance analysis where in every area, the results are shown in the tabular form for the main frames and sub-frames. The sub-frames are also found out on the basis of concordance hits which according to Vessey (2013) has the tendency to indicate the typicality of the most frequent topics or frames used in the texts. At the same time, for exploring other stories like salience, appraisal, facticity and ideologies, the concordance as well as the 'stats score' in collocation analysis has also been notified which according to Vessey (2017) can be used to explore the relationship of words that form ideologies in a collocational environment. So for the story of 'framing', I have focused on the concordance analysis to explore frames and sub-frames. An important point to be notified here is that each SDG with its key words is first entered into the corpus tool and then was found with the words occurring with it or collocates to see how the entire frame has been developed with the contribution of those collocations referred here as sub-

frames. The table given below shows the frequency analysis/concordance hits for the frames emerged inside the area of poverty and hunger.

4.4.1.1. Frame of Poverty and Hunger in the CPEC

The frame of poverty and hunger being a socio-economic area in this research addresses the first SDG of the UN sustainable development goals which calls for no poverty and zero hunger. The conceptual frame according to the framing theory of Lakoff (2004) becomes 'sustainable development is poverty alleviation' in the CPEC. In this conceptual frame, the target frame is poverty and hunger, while the source frame is sustainable development. The conceptual frame developed from this SDG is explored through the presence of most frequently occurring words with poverty and hunger. Poverty mostly occurred with alleviation, reduction, eradication and line during the analysis. So there is one main frame of 'poverty' and 'hunger', while four sub-frames as given in Table 4.4 below.

Table 4.4 Frame of Poverty and Hunger in CPEC

Sub-frames	Concordance Hits/ Frequency
Poverty	355
poverty Alleviation	90
Poverty Eradication	04
poverty Reduction	49
poverty Line	12
Hunger	05

The frame of poverty (355 hits) according to the story framework of Stibbe is categorized as a problem frame because of Pakistan's half population is below the poverty line (12 hits), and increasing day by day especially in rural areas according to the Chinese newspaper 'Xinhua' and 'Dawn' given in the unofficial data used for this research. The other three sub-frames of poverty include poverty alleviation (90 hits), poverty reduction

(49 hits) and poverty eradication (04 hits) which are categorized as 'solution frames' according to the Stibbe's categories mentioned in the story of frames and framing.

The frame of 'no poverty' in the CPEC discourse has been employed with different synonyms such as poverty reduction, poverty eradication and poverty alleviation, and poverty line. The screenshots of the frames are given in the main text while sub-frames are available inside the appendix 1.

Poverty

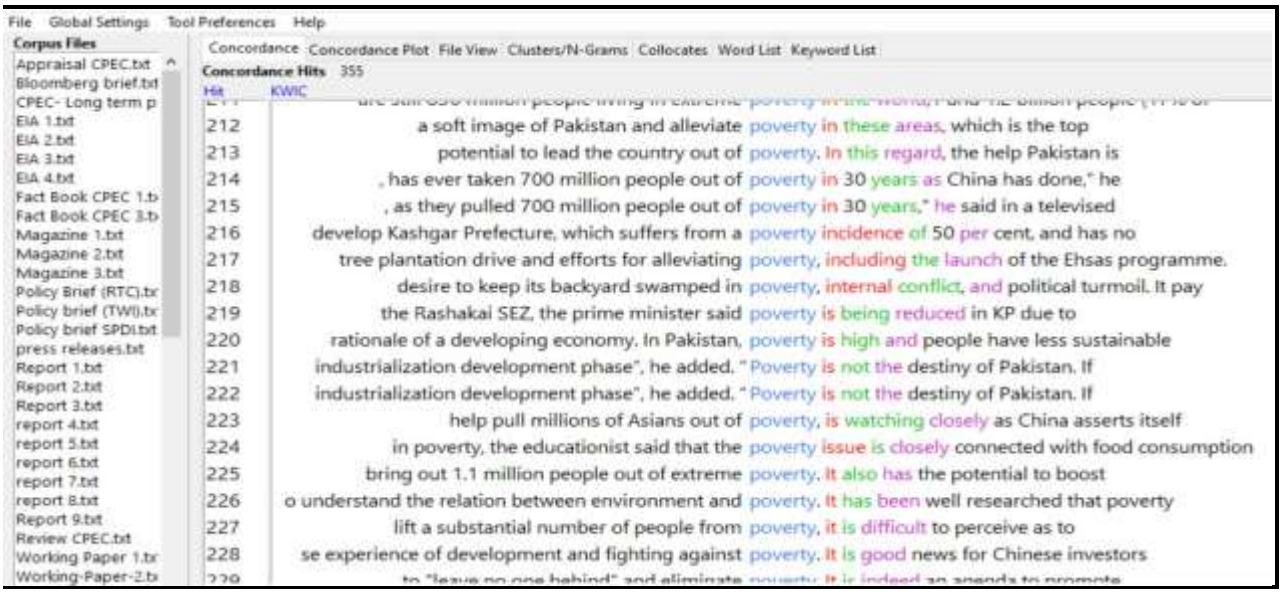


Figure 4.4 A concordance view of 'Poverty'

The concordance views of sub-frames of 'poverty' are also given in appendices that imply that the project of the CPEC is more solution oriented because this frame has three solution frames as compared to one problem frame which is poverty line. This also indicates that for socio-economic development of the people of Pakistan especially in the rural/less developed areas of the country as shown in the given example from the policy brief and the press release, the CPEC may play a significant role in reducing poverty.

The China-Pakistan Economic Corridor (CPEC) is a key project … and it has created opportunities for <u>poverty alleviation</u> for the local people, **said former Prime Minister.**

(PR)

Other socio-economic frame associated with poverty is hunger, which is given below.

Hunger

Figure 4.5 A concordance view of 'Hunger'

Only 5 concordance hits develop this frame as a part of the Poverty frame. In this frame, poverty is occurring with hunger for two times, one with the focus word of 'reducing' the other is attributed to 'increase'. Other instances are not relevant to the original frame, but it is used as metaphoric expression used for China's hunger of resources and energy hunger of Pakistan. This frame is also a problem frame that suggests alleviating hunger by 'reducing' and 'decreasing' it. Some instances taken from the texts are given below.

> In another place, **the policy says** all this is being done to advance the Sustainable Development Goals, in particular the one that *relates* to hunger, to which it says the government has a 'strong' commitment. (PB2)

Finally, the conceptual frame becomes 'sustainable development is poverty and hunger alleviation'. It includes four predicament frames and one problem frame. As it has been discussed before that solution frames are intrinsic because they involve well-being and equity of human beings, while one problem frame has extrinsic value of people below the poverty line.

4.4.1.2. The frame of Health in the CPEC

The socio-economic area of health and education adheres to the 3rd and the 4th sustainable development goal of the UN 2030 agenda. The conceptual frame for this area becomes 'Sustainable development is health and safety' in the CPEC. These two goals ask to ensure good human health and equitable quality education for all. First the goal of ensuring good health is discussed in the analysis of this conceptual frame and then the goal

of equitable quality education has been discussed. The composition of the frame of 'Health' includes further sub-frames such as 'Human Health', 'Public Health', 'Environmental Health' and one more dominant sub-frame within the health frame is found to be the 'Health collocated with Safety'. The frequency is given below in Table 4.5 for these sub-frames. In this conceptual frame, the source frame is sustainable development, and the target frame is health and education. Below is given the details of sub-frames making the frame of health in CPEC.

Table 4.5 Frame of Health

Sub-Frames	Frequency or Concordance Hits
Health	366
Good Health	02
Public Health	24
Human Health	15
Environmental Health	12
Health and Safety	67

Health

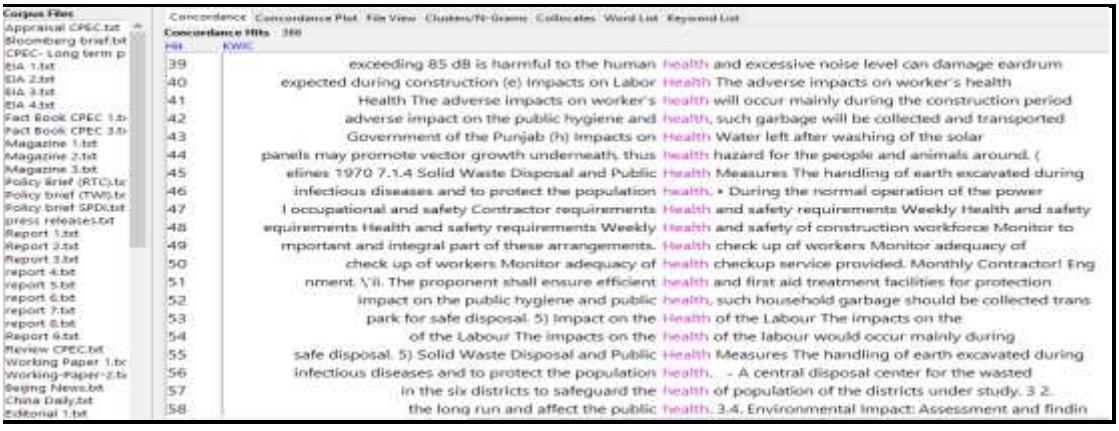


Figure 4.6 A concordance view of 'Health'

The frame of ‘Health’ occurs with 366 concordance hits and includes sub-frames of ‘Good Health’, ‘Public Health’, ‘Human Health’, ‘Environmental Health’ and one dominant collocation of ‘Health and Safety’. According to the concordance lines present inside the screenshot, this frame describes the health issues of people caused by environmental hazards in Pakistan. This frame describes human to human relationship and also the relationship of human beings with the environment. So the frame has an intrinsic value of not only protecting the health of human beings but also saving the environment.

The sub-frame of ‘good health’ constituting 2 concordance hits given in the appendices is about the general features of good health of human beings and emphasizes maintaining good health for the future along with other facilities such as education and good job opportunities under the project of CPEC. Another sub-frame of ‘human health’ constitutes 15 concordance hits. According to the concordance lines, it mainly describes the harms to be inflicted to human health due to environmental hazards, thus tends to generate destructive discourse about human health. This sub-frame is an intrinsic value regarding human health to be so important because it affects how much we enjoy life and what work we can perform. The following instances from the data also depict this frame as a problem frame.

Even the minor concentrations which are released from the vehicles may remain in the environment forever and *damage* the human health. (Ed. 4)

Pollution may worsen the air quality and *impac*t human health ‘negatively’ during the CPEC project. (MG 2)

Vehicles move nonstop day and night through the CPEC route which will ‘adversely’ *affect* human health, wildlife and even social life in the region. (Ed. 4)

Another sub-frame of ‘Health and Safety’ occurring with 67 concordance hits has been developed with the presence of a collocational pattern: health and safety. This sub-frame according to concordance lines available in screenshots and appendices describes occupational as well as environmental health and safety management, policies and requirements that make it a solution frame. This frame is also intrinsic in nature because it highlights the safety of human beings and triggers the minds of people to maintain their general health by taking good measures of safety. At the same time, it seems to be a

problem frame due to the CPEC project activities that are adding to the problems of health and safety as given in the example below.

The CPEC mega projects can **threaten** the environment, but policy makers need to *consider* health and safety management. (TN)

Finally, the frame of health is triggered by the conceptual frame of 'sustainable development is health and safety' in the CPEC. There are four problem frames that include bad impacts of the CPEC on human health, public health, environmental health and safety while one solution frame that includes 'good health' to be thought of**.**

4.4.1.3. The Frame of Education in CPEC

The frame of 'Education' occurs with 531 concordance hits. Sub-frames based on the frame of education include: 'Quality Education' (13 hits) 'Good Education' (01 hit), 'Standard Education' (14 hits), 'Better Education (06 hits)', 'Higher Education' (49 hits), 'Technical Education' (14), 'Basic Education' (02), 'Primary Education' (2 hits). The frequencies of these sub-frames are given in Table 4.6.

Table 4.6 Frame of Education

Sub-frames	**Concordance hits/Frequency**
Education	531
Quality Education	13
Good Education	01
Standard Education	14
Better Education	06
Higher Education	49
Technical Education	14
Basic Education	02

Education

Figure 4.7 A concordance view of 'Education'

The frame of 'Education' occurs in the data constituting 531 concordance hits and describes different kinds of education such as scientific education, maritime education, vocational education, higher education, agricultural education, basic education and primary education, etc. to be given to the students living in Pakistan. Out of all significant frames given in the table, the sub-frame of 'higher education' gains most of the hits with 49. The entire frame is intrinsic in its nature as it emphasizes the promotion of lifelong learning opportunities for all and has called as China-Pak Education door.

The China Pak Economic Corridor (CPEC) must have a mirror **China – Pak Education Corridor** that ensures full *integration* of economic growth and education. (MG 1)

Mega projects like CPEC can enhance economic growth and create job opportunities, building new schools and universities will enable people to *get* higher education. (RP 23)

The conceptual frame formed from the most frequent sub-frame is 'sustainable development is higher education' in the CPEC. There are eight sub-frames which have

intrinsic value of providing good, quality, basic, primary, standard and technical education. They are predicament frames which are suggestive and ask to promote education.

4.4.1.4. The Frame of Industry and Infrastructure in the CPEC

This frame is derived from the 5th SDG of sustainable development that asks for installing a resilient industry and infrastructure for achieving sustainable development. In this conceptual frame, the target frame is industry and infrastructure, while the source frame is sustainable development. In this research, the keywords 'resilient industry' did not have any direct hits; rather, it had two dominant concordance hits out of total 926 hits that comprise 'Industry in Pakistan' with 23 hits, and 'Chinese Industry' with 19 hits. The frame also includes local industry, textile industry, tourism industry and automotive industry in Pakistan. The following table gives the overview of these details.

Table 4.7 Frame of Industry

Sub-frames	Concordance hits/Frequency
Industry	926
Chinese Industry	19
Pakistani Industry	06
Industry in Pakistan	26
Local Industry	40
Textile Industry	25
Automotive Industry	15
Tourism Industry	27

Industry

Figure 4.8 A concordance view of 'Industry'

The frame of 'industry' with 926 concordance hits according to the concordance lines includes construction industry, garment industry, information industry, logistics industry, textile industry, energy efficient industry and tourism industry which the project of the CPEC intends to develop and expand for improving socio-economic conditions of Pakistan. This frame is extrinsic frame in which each industry of Pakistan needs some more development through exploitation of natural resources for which the examples are given such as construction industry will be improved with the help of Chinese expertise; energy efficient industry needs low carbon and renewable energy, garment industry can be attracted by some renowned brands and can have vast set ups in three important cities such as Sialkot; information industry can be enhanced by building IT industrial parks; logistic industry cannot be materialized without transport infrastructure; textile industry needs expansion and tourism industry would need to have some safety measures from terrorist activities to prosper. These measures are suggestive to the sustainable industry with more resilience. The frame of industry in Pakistan has been shown as a problem frame as it is called as a crippled industry in Pakistan.

Building special Economic Zones in order to *promote* industrialization is the key to the **government deciding** to include the development of the nine Special Economic Zones under the project of the CPEC. (RP2)

A rapidly growing country of some 207 million people -- has been **battling** to *get* its ***shaky economy*** **back on track** and end a year-long chronic energy crisis that has ***crippled*** **industry**. (TN)

So the conceptual frame developed on the basis of most frequent frame becomes 'sustainable development is promoting local industry' in the CPEC that shows that local industry of Pakistan needs to be promoted under the project of the CPEC. All seven sub-frames are extrinsic and problem frames likewise.

Table 4.8 Frame of Infrastructure

Sub-Frames	Concordance Hits/ Frequency
Infrastructure	2041
Infrastructure Development	289
Infrastructure Projects	210

The frame of 'infrastructure' has 2041 concordance hits that according to concordance lines present inside the sub-frames whose screenshots are given in the appendices that describe different types of infrastructures such as transport infrastructure, road infrastructure, energy infrastructure, railway infrastructure, construction infrastructure, logistic and agricultural infrastructure under the project of the CPEC. In this conceptual frame, the source frame is infrastructure and the target frame is sustainable development. This frame is a problem frame where problems with Pakistan's infrastructure development are found to be frequent. The sub-frame of 'infrastructure development' has the highest frequency of 289 hits displaying this trend.

Following is the concordance view of the frame of infrastructure.

Infrastructure

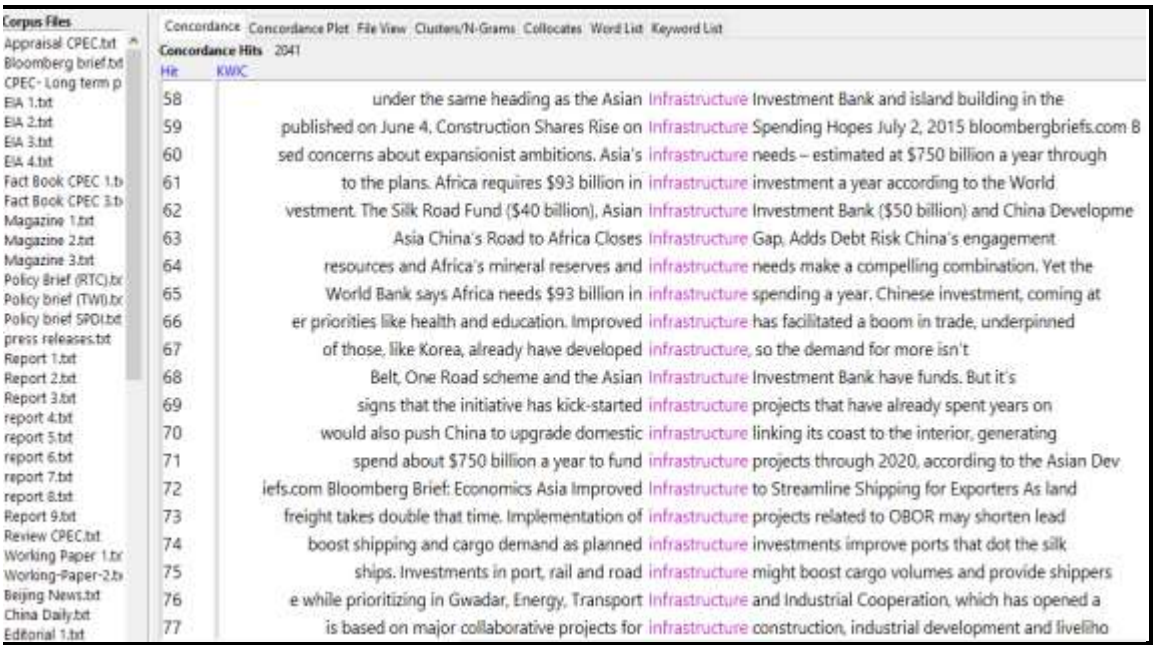


Figure 4.9 A concordance view of 'Infrastructure'

In the second last step, Pakistan with 'poor' infrastructure and 'bad' business environment should set up special economic zones or **industrial parks** to *overcome* barriers to firm entry, *attract* foreign direct investment and *encourage* industrial clusters. (PR)

While another frequent sub-frame is of 'infrastructure projects' with 210 hits according to the table given above shows that this sub-frame is also a problem frame. One example from this sub-frame is as follows:

The 'expulsion of locals' from their homes, 'the land reclamation cases' (like Gwadar), the 'destruction of property' as well as 'environmental degradation' caused by various the CPEC energy and infrastructure projects, *lead* to further tensions. (R1)

The conceptual frame based on the most frequent sub-frame becomes 'sustainable development is an infrastructure development'. There are two frequently used sub-frames such as 'infrastructure development' and 'infrastructure development' that make this entire frame as extrinsic frame which promotes exploitation of environment and ecology.

4.4.1.5. Gender Equalities and Women Empowerment in the CPEC

This frame addresses the 6th SDG of sustainable development goals that is about achieving gender equalities and empowering women. The conceptual frame for this area

becomes ‘Sustainable Development is no gender equality and less women empowerment’ in the CPEC. The source frame is sustainable development while target frame is gender equality and women empowerment. In this data it occurs with 2 concordance hits for ‘gender equality’ and 4 concordance hits for ‘women empowerment’, while with the keyword of ‘women’, it has 120 concordance hits.

Table 4.9 Frame of Gender Equality

Sub-Frames	Concordance Hits/ Frequency
Gender Equality	02
Women	120
Women Empowerment	04

Gender Equality

Figure 4.10 A concordance view of the frame of ‘Gender Equality’

The sub-frame of ‘Gender Equality’ with 2 concordance hits describes the importance of gender equality as a whole and for the development of the CPEC in particular. This sub-frame is less frequent than women empowerment in the discourse. Two examples taken from the texts are:

Although there has been progress for women in securing jobs in the garments sector over the years, the ‘wide’ gender disparity largely reflects Pakistan’s ‘low’ female labour participation driven by cultural barriers and stereotypes, lack of safe transportation services as well as factors such as lack of affordable child care facilities (Huynh, 2017). (R1)

Out of these 19 districts, almost 11 have enrollments less than 80% and learning levels below 50% of grade 5 children tested for grade 2 level competencies with ‘major gender gaps’! These girls and boys will be the human capital for CPEC, clearly unable to match with the aspirations of the “economic corridor”. It is imperative to *upgrade* the human

resources, facilities and opportunities for their development through a dynamic 5 year CPEC. (MG 1)

The given above two examples are from gender equality and the women empowerment according to the concordance lines which show the entire frame as a problem frame having the extrinsic values of not considering the gender gaps.

4.4.1.5. The Frame of Decent Work and Economic Growth in the CPEC

This conceptual frame addresses 8th SDG of sustainable development goals. The conceptual frame for this area becomes 'sustainable development is economic growth and generating employment'. This goal asks for promoting sustainable economic growth, productive employment and decent work for all. In this research data, it has been employed by the existence of the keywords of 'Economic Growth' with 301 concordance hits, 'Sustained economic growth' with 7, 'sustainable economic growth with 14, green growth with 9, decent work with 5, employment with 632 and productive employment with 1 concordance hit. In this conceptual frame, the source frame is sustainable development, and the target frame is decent work and economic growth.

Table 4.10 Frame of Economic Growth

Sub-Frames	Concordance Hits/ Frequency
Economic growth	301
Sustainable Economic Growth	14
Sustained Economic Growth	7
Green Growth	9
Decent Work	5
Employment	632
Productive Employment	1

Following is the concordance view of this frame.

Economic Growth

Figure 4.11 A concordance view of 'Economic Growth'

Development of roads, railways and airways infrastructure in CPEC **will** *improve* connectivity, which is supposed to be 'fundamental' for economic growth. (TET)

"It will integrate and coordinate the institutions engaged in implementing CPEC by ensuring excellent research, utilizing modern techniques to help us in policy making and *achieving* our goal of sustainable growth and development", **said Ahsan Iqbal**. (PR)

The second part of the conceptual frame of 'Sustainable Development is economic growth and decent work' includes 'Decent Work' and 'employment'. Below are given these sub-frames and their concordance views.

Decent Work

Figure 4.12 A concordance view of 'Decent Work'

The sub-frame of 'Decent Work' has 5 concordance hits and describes descent work the importance of it to be provided to the people of Pakistan under the project of the CPEC.

The CPEC infrastructure projects… **will** *generate* 'new' employment and labour markets to *provide* the host community with decent work where the local community can find a 'good' job and *enhance* the income. (RP1)

The sub-frames of 'Employment' occurs with 632 concordance hits and 'Productive Employment' with one concordance hit which contribute to develop this frame.

Employment

Figure 4.13 A concordance view of 'Employment'

The frame of decent work and employment, according to the concordance lines present inside the screenshots suggest it to be the predicament frame. The conceptual frames developed from the most frequent sub-frames inside this frame gives rise to 'sustainable development is economic growth and generating employment'. There are two problem frames and 5 predicament frames present inside this frame.

4.4.1.6. The Frame of Smart Cities with affordable Housing in the CPEC

This conceptual frame adheres to the 11th SDG of the UN sustainable development goals. This goal asks for making sustainable, smart cities with affordable housing. The

conceptual frame for this area becomes ‘Sustainable development is smart cities with affordable housing’. In this research data, it has been identified with the presence of keywords such as ‘sustainable cities’ with concordance hits of 02, smart cities with 09 and affordable housing with 07 concordance hits. The source frame in this conceptual frame is sustainable development while the target frame is smart cities and housing.

Table 4.11 Frame of Smart Cities

Sub-Frames	Concordance Hits
Sustainable Cities	02
Smart Cities	09
Affordable Housing	07

Smart Cities

Figure 4.14 A concordance view of ‘Smart Cities’

This sub-frame has 9 concordance hits and describes the need for smart cities to be made for achieving sustainable development goals.

Affordable housing

Figure 4.15 A concordance view of ‘Affordable Housing’

The sub-frame of 'Affordable Housing' with 7 concordance hits according to the concordance lines describes provision of cheap and affordable housing facilities through designing and planning under the CPEC. The entire frame of smart and sustainable cities is a predicament frame according to Stibbe's eco-critical discourse perspective.

4.4.1.7. Frame of Peace and Justice in the CPEC

This conceptual frame for this area becomes 'Sustainable development is promoting peace and justice for all'. It addresses 16th SDG of UN sustainable development goals and has been identified in this research data by the presence of the keywords of 'Peace' with concordance hits of 355, 'peace and development' with 15, 'peace and security' with 20 concordance hits, and 'justice' with 52 concordance hits. Astonishingly, the words of peace and justice as collocations were not found. The source domain in this conceptual frame is sustainable development while the target domain is peace and justice.

Table 4.12 Frame of Peace and Justice

Sub-frames	Concordance Hits
Peace	355
Justice	52
Peace and Development	15
Peace and Security	20

Figure 4.16 A concordance view of 'Peace'

The frame of 'Peace' occurs with 355 concordance hits according to the concordance lines describing different forms of peace to be maintained under the influence of the CPEC. These include: global peace, regional peace and world peace. According to the concordance line 13, CPEC is declared to be the corridor of peace. One example from Dawn also supports the given argument and triggers this frame in the minds of people.

The BRI, she said, would play a key role in *promoting* peace and stability in the world. (TDN)

Justice

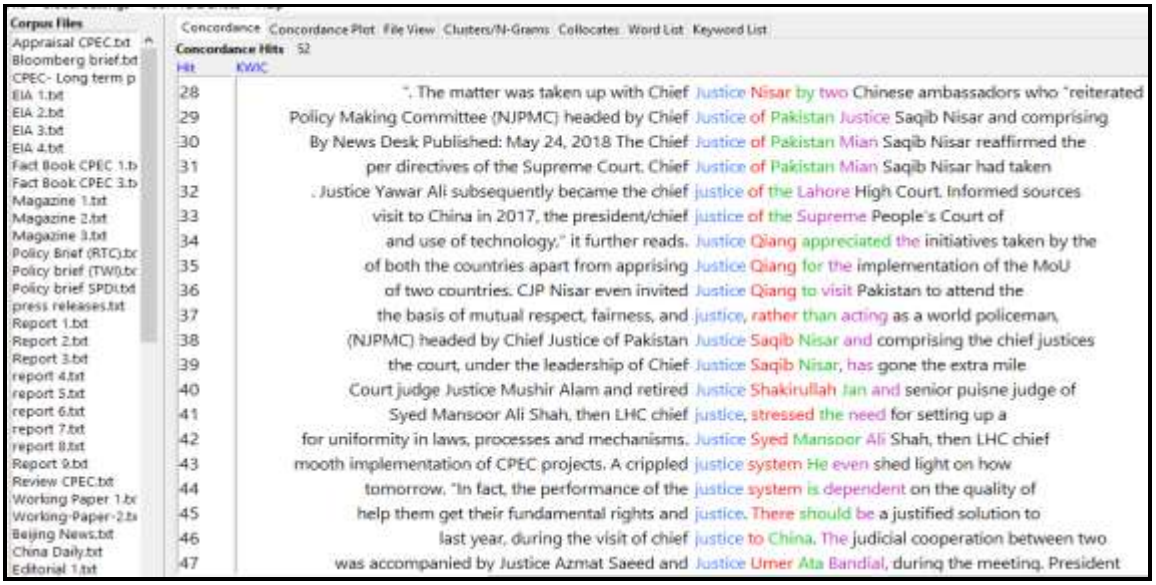


Figure 4.17 A concordance view of 'Justice'

The sub-frame of 'justice' occurs with 52 concordance hits and the relevant entry of justice with regard to the CPEC is concordance line 43 describing the justice system of Pakistan by using a negative appraisal item as 'crippled' justice system. This frame is a problem frame according to Stibbe's eco critical discourse perspective.

The **chief justice** of Pakistan said that the judiciary fully supports the CPEC and is committed to take measures for easing out commercial disputes for smooth implementation of the CPEC projects as we have a **'crippled' justice system**. (TET)

4.4.1.8. The Frame of International Partnership and Cooperation

This conceptual frame has been developed by the presence of some dominant sub-frames based on international partnership and cooperation. It becomes 'Sustainable development is international partnership and international cooperation'. It addresses the 17th SDG of UN sustainable development goals and comes under socio-economic frames to be discussed in this research. This goal asks to achieve SDGs by all countries where international partnership and cooperation is vital. The sub-frames are identified by the presence of keywords 'Partnership' with 239 concordance hits, 'Cooperative Partnership' with 28, 'Economic Partnership' with 28, 'Strategic Partnership' with 43, 'Private Partnership' with 26 and 'International Cooperation' with 65 concordance hits. In this conceptual frame, the source frame is international partnership and cooperation, while the target frame is sustainable development.

Table 4.13 Frame of Partnership

Sub-frames	Concordance Hits/Frequency
Partnership	239
Cooperative Partnership	28
Economic Partnership	28
Strategic Partnership	43
Private Partnership	26
International Cooperation	65

The Concordance screenshot of this frame is given below.

Partnership

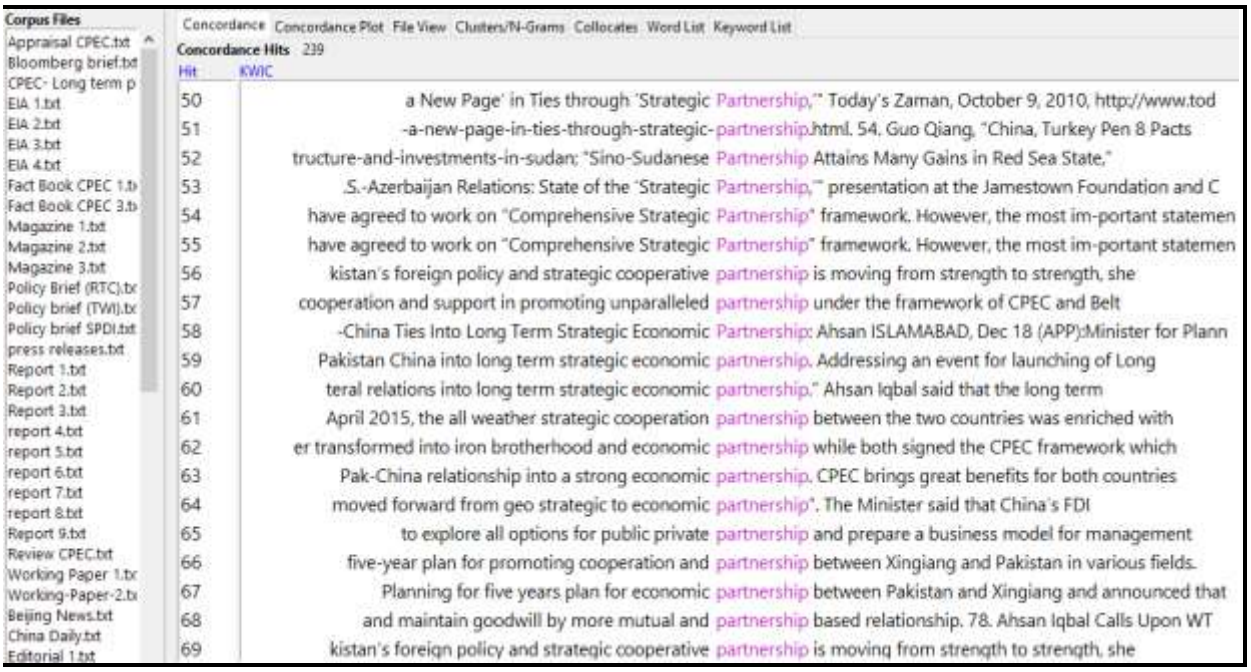


Figure 4.18 A concordance view of 'Partnership'

The frame of 'Partnership' occurs with 239 concordance hits in this data and describes the partnership of China, Pakistan and other countries on different levels such as 'strategic partnership', 'economic partnership', 'public- private partnership' under the flagship project of the CPEC. The most frequent sub-frame in this entire frame is 'International Partnership'.

Dr. Shamshad reassured China of full cooperation and support in promoting 'unparalleled' partnership under the framework of the CPEC and Belt and Road Initiative (BRI). (PR)

4.4.2. Environmental and Ecological Frames

The environmental-ecological frames are based on those SDGs which are related to life, ecology and environment on land as well as life, ecology and environment in water. They are also explored on the basis of most frequent sub-frames that contribute to build up the one entire frame.

4.4.2.1. The Frame of Clean Water and Clean Sanitation in the CPEC

This frame addresses the 6th SDG of UN sustainable development goals and asks for safe, affordable and clean drinking water along with having good awareness of clean sanitation. This frame has been found out by the presence of sub-frames such as 'clean water' with concordance hits of 8, 'water quality' with concordance hits of 31, 'safe water' 01 and 'drinking water' with 71 hits. In this conceptual frame, the source frame is sustainable development while the target frame is water and sanitation.

Table 4.14 Frame of Clean water and Sanitation

Sub-frames	Concordance Hits
Clean Water	08
Water Quality	31
Safe Water	01
Drinking Water	71
Sanitation	16

The concordance screenshot is given under.

Clean Water

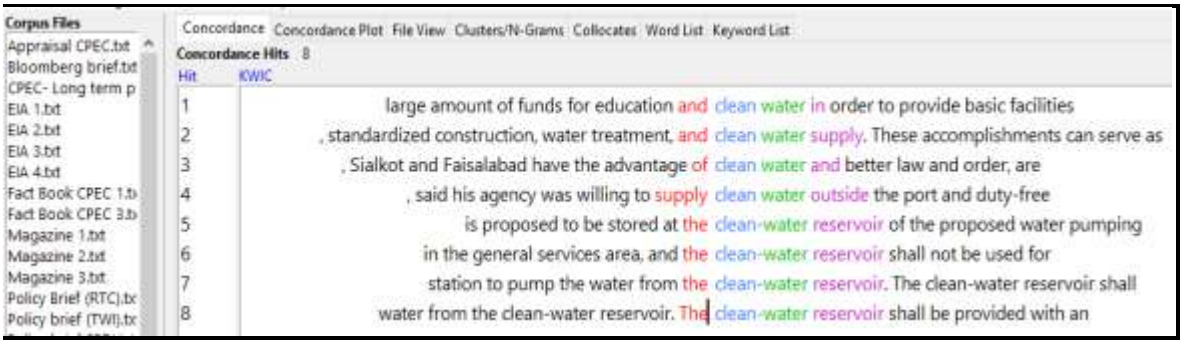


Figure 4.19 A concordance view of 'Clean Water'

The conceptual fame for this area becomes 'Sustainable development is clean drinking water and clean sanitation' which is employed in the data by the use of certain linguistic devices and expressions collocating water with 'clean', 'safe', 'drinking' and

'quality'. The frame has some other sub-frames with the name of above given collocates. The entire frame constitutes clean water problems, shortage of clean water, water quality and solutions to avoid the issues of drinking water. Some instances given below display these elements of this frame. In these examples, we can clearly see that some words and collocations trigger two types of frames that include 'problem frame' with respect to the condition of water quality, quantity and supply of clean and drinkable water for the people of Pakistan and other likely underdeveloped countries. The second visible sub-frame is predicament or solution frame that suggests solution to the dirty and unclean water in the form of providing better services, rehabilitation of existing desalination plants and standardized construction and water treatment and clear water supply. First, there are some examples that trigger problem frames and then are given the examples that trigger solution or predicament frames.

'Drinking water *problems* in Quetta and Gwadar' (PR)

Developing countries to *improve* the safety of drinking water. (R2)

It may be safely assumed that all these developments will have a 'major' i*mpact* on the ecology, biodiversity, air quality, water quality, habitat of flora and fauna, wildlife and agriculture all across Pakistan. (RP 24)

The water quality map prepared by the irrigation department for Bahawalpur Zone shows that the project area lies in the area where water is 'unfit' for drinking -- in view of 'poor' water quality. (EIA-2)

Unchecked pollution can *worsen* the situation and *impact* water. (RP 24)

Almost half of the population is functionally illiterate *without access* to safe water and sanitation or adequate healthcare. (TDN)

At the macro level, Pakistan remains a desperately 'poor' country with around a third of its population struggling to survive below the poverty line. Almost half of the population is functionally illiterate *without access* to safe water and sanitation or adequate healthcare. (TDN)

Now there are some examples of solution frames.

'*Provide* clean water to Peshawer and Mansehra'(R2)

'Standardized' construction of rural drinking water projects'. (R2)

Tasked with protecting the CPEC project -- *providing* better services, including clean drinking water, is seen as a way of helping win local support for the **development push**. (TN)

Minister PD & R also issued directions for early rehabilitation of existing desalination plants in Gwadar to *avoid* drinking water problems in coming summers. (PR)

Sanitation

Figure 4.20 A concordance view of 'Sanitation'

'Sanitation' part in this conceptual frame occurs with 16 concordance hits and describes the importance of sanitation as necessary as other basic facilities such as clean drinking water. Sanitation collocates frequently with healthcare, hygiene and safety of public health for prevention of diseases. There is one important trigger word used with sanitation and i.e., 'environmental' sanitation, which is used to prevent the spread of infectious diseases and this also serves the function of assigning intrinsic value to this frame.

Meanwhile, proper management of dietetic hygiene, domestic drinking water and environmental sanitation should be *ensured* to *prevent* the spread of infectious diseases and to *protect* the population health. (EIA2)

Extreme weather events exacerbate the poverty of people who are *facing* a shortage of clean drinking water, sanitation services, and educational opportunities. To *achieve* ecological civilization, humanity must take action towards greening the economy. (FB)

Along with other challenges such as water security, clean water and electricity, the sanitation has also been called as a challenge which can be solved with the help of providing sanitation services, small water treatment devices and hydropower stations.

4.4.2.2. The Frame of Clean Energy in the CPEC

This frame adheres to the 7th SDG of UN sustainable development goals and asks for ensuring access to clean, affordable, modern and sustainable energy. It is formed with the presence of sub-frames such as 'clean energy' with 38 concordance hits, 'affordable energy' with 03, 'modern energy' 01, 'reliable energy' 03, 'renewable energy' 121 and 'sustainable energy' with 09 concordance hits. In this conceptual frame, the source frame is sustainable development while target frame is clean and affordable energy. The most frequent sub-frame is of renewable energy in this frame.

Table 4.15 Frame of Clean Energy

Sub-Frames	Concordance Hits
Clean Energy	38
Affordable Energy	03
Modern Energy	01
Reliable Energy	03
Renewable Energy	121
Sustainable Energy	09

Clean Energy

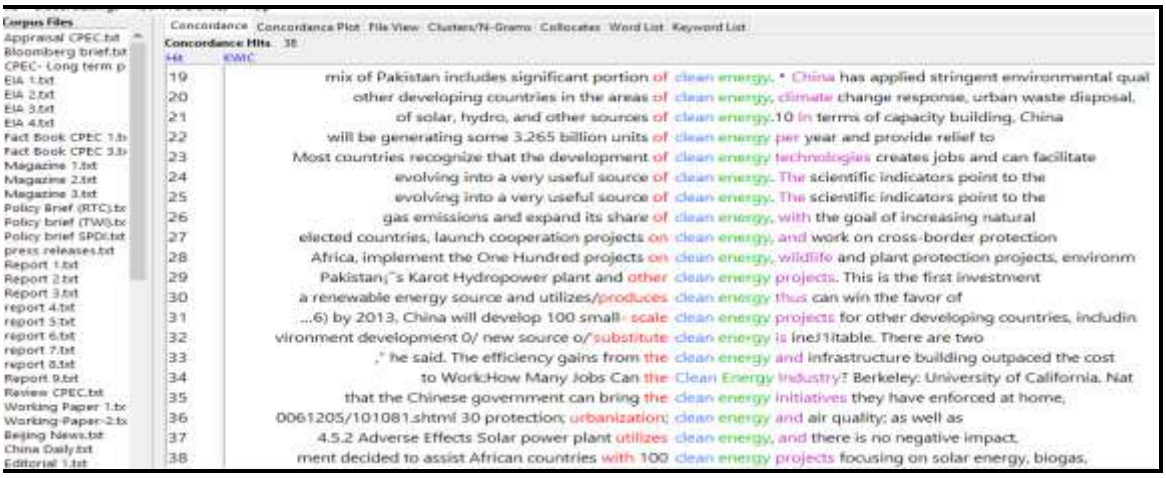


Figure 4.21 A concordance view of 'Clean Energy'

In all the sub-frames given above, energy is collocated with the trigger words having intrinsic value of clean, affordable, sustainable, renewable and green that make this frame an intrinsic frame and solution frame. The area of energy has been appraised by the use of these positive appraisal items such as 'sustainable', 'modern', 'affordable' and 'green' energy used as trigger words in these sub-frames. The salience has been accorded to these sub-frames by using verbs such as *develop, evolve, expand, bring, utilize, focus, produce, access, provide, include, invest, integrate, support and promote*. If we see right collocation in these sub-frames, the non-renewable energy has been evaluated as costly, while renewable energy has been said to be a cheap form of energy. Facticity patterns and a metaphoric expression is highlighted in bold. Some examples representing these patterns are given below.

In the short term, 'most pressing' issues like <u>energy</u> and infrastructure development **will** be tackled. Coal **will** be used to overcome the energy crises. It is in Pakistan's benefit to *produce* <u>cheap energy</u> for enhancing industrial competitiveness. (TET)

Finally, the conceptual frame on the basis of the most frequent sub-frame 'renewable energy' becomes 'sustainable development is producing renewable energy'. The frame is predicament frame as it is resting more on promoting cheap, clean and renewable energy.

4.4.2.3. The Frame of Responsible Consumption and Sustainable Production

This frame addresses the 12th SDG of UN sustainable development goals that asks for responsible and sustainable consumption and production of natural resources such as

water, fuel, energy and coal. The source frame in this conceptual frame is sustainable development while the target frame is consumption and production. This frame has been employed in this discourse by using trigger words which later on form sub-frames including ‘consumption’ with 107 concordance hits, ‘water consumption’ with 16, ‘fuel consumption with 5, ‘energy consumption with 27, coal consumption with 10, ‘natural resources with 98, waste with 165, ‘environment friendly production’ with 01 and ‘recycling’ with 11 concordance hits. The following table shows these details.

Table 4.16 Frame of Consumption, disposal and Production

Sub-Frames	Concordance Hits
Consumption	107
Water consumption	16
Fuel consumption	05
Energy consumption	27
Coal consumption	10
Natural Resources	98
Waste	165
Waste Disposal	23
Environment Friendly Production	01
Recycling	11

Consumption

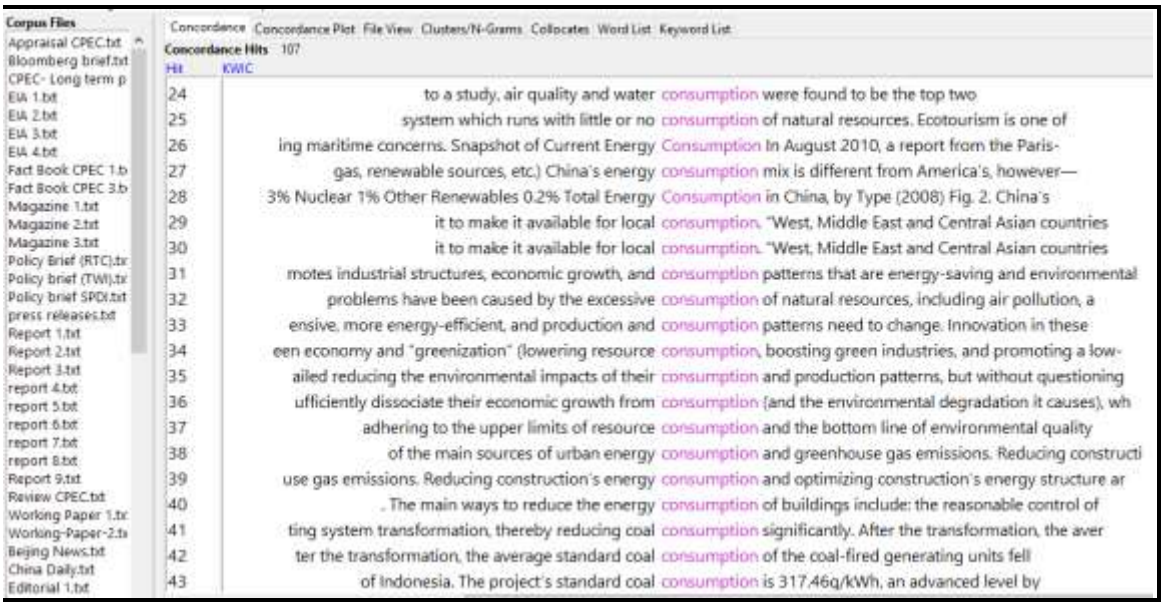


Figure 4.22 A concordance view of 'Consumption'

The most frequent sub-frame in this frame is 'waste' which constitutes 165 concordance hits (screenshot given in the appendices). The examples of this frame are given below.

The **government should** also *develop* policies to control human activities regarding the consumption of natural resources to control environmental degradation. (RP17)

Environmental Impact Assessment (EIA) is the requirement of national environmental legislations of both Pakistan and China as well as the Declaration on Environment and Development, ratified by both countries. (RP8)

Environmental Friendly Production

Figure 4.23 A Concordance View of 'Environment Friendly Production'

The sub-frame of 'Environmental Friendly Production' is also a part of the frame of consumption. This sub-frame exists with only one concordance hit that describes environment friendly production as a priority area of green investments.

Any future investment incentives by Pakistan to promote industrial cooperation under the CPEC, **will** *give* priority to **green investments** -- those that *use* environmentally friendly production and those that *produce* products that are environmentally friendly. (R1)

The most frequent sub-frame of 'waste' makes this frame a problem frame whose conceptual frame is developed like 'sustainable development is a waste management'.

4.4.2.4. The Frame of Climate Action in the CPEC

This frame is about combating climate change and its impacts by taking urgent climate action. It falls under the 13th SDG of UN sustainable development goals. The source frame is sustainable development and the target frame is climate action. In this research, this frame is formed with the presence of sub-frames such as 'Climate Change' with 188 concordance hits, climate change collocation with 'cope' 7 hits and with 'address' having 4 hits. It is observed that using the keyword of 'climate action', there was found no concordance hit, for that reason collocations of 'cope' and 'address' were noticed as ways for climate action.

Table 4.17 Frame of Climate Action

Sub-Frames	Concordance Hits
Climate Change	188
Cope with Climate Change	07
Address Climate Change	04

Below is given the concordance screenshot of the main sub-frames.

Climate Change

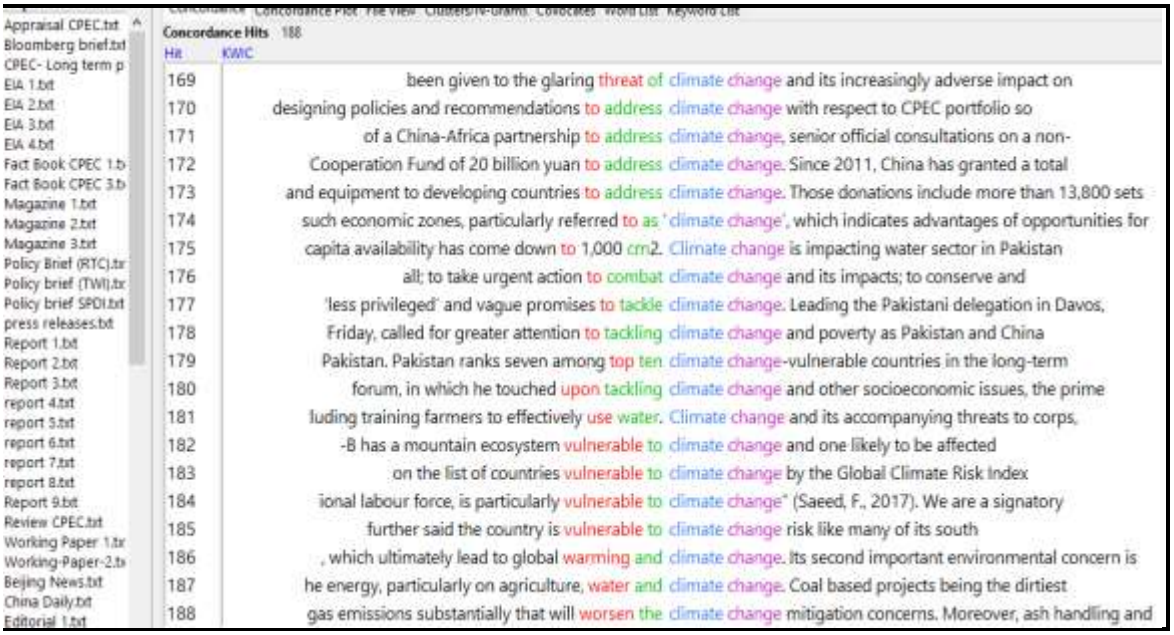


Figure 4.24 A concordance view of 'Climate Change'

The frame of climate action includes 'Climate Change' with 188 concordance hits which is found to be the most frequent sub-frame in it and according to the concordance lines it describes one of the important global affairs to be addressed because of its threat to ecosystems and agriculture sector especially in Pakistan. The sub-frame of 'Cope with Climate Change' and 'Address Climate Change' occurs with 7 and 4 concordance hits respectively and describe the ways to cope with climate change. Some examples of this frame are given under:

Area-specific **local action plans** may be developed to *address* CPEC specific issues related to pollution, environmental degradation, and climate change and biodiversity loss. (MG2)

Countries around the world are *adopting* measures and *implementing* policies to *minimize* the *impact* of climate change. Pakistan, despite being a low GHG emitting country, is being *severely impacted* by climate change for the last four decades. In Pakistan, out of the 15 recurring natural disasters, 13 were *triggered* by the changing climate. The impacts of recurrent floods, flash floods, glacier lake outburst floods, landslides,

avalanches, drought, seawater intrusion and cyclones have resulted in significant damage to life, property, and natural ecosystems as well as to the economy of the country. (PB3)

In the above examples and concordance screenshots likewise, the frame of climate change is triggered as a problem frame in the minds of people by using the appraisal items of 'challenge' and 'issue' for not only Pakistan but for the entire world. This has been collocated as a problem within other sub-frames used in this research such as pollution, environmental degradation, biodiversity loss and recurring natural disasters as seen in the screenshots given in appendices. The conceptual frame according to the most frequent sub-frame becomes 'sustainable development is combating climate change'.

4.4.2.5. The Frame of Life below Water

This conceptual frame falls under the 14th UN sustainable development goal that asks to conserve oceans, seas and make sustainable use of the marine resources for sustainable development. In this research, it is formed with the presence of sub-frames such as 'marine' with 70 concordance hits, 'conserve collocated with oceans and seas' having 10 hits, 'water pollution' with 12, 'water conservation' with 9 and 'water ecosystem' with 2 concordance hits. The following table shows these sub-frames. The source frame in this conceptual frame is sustainable development while the target frame is life below water.

Table 4.18 Frame of Life under Water

Sub-frames	Concordance Hits
Marine	70
Marine Fish	02
Fishery	29
Conserve collocated with oceans and seas	10
Water Pollution	12
Water Conservation	09

Below is given the concordance screenshot of the most frequent sub-frame given above.

Marine

Figure 4.25 A concordance view of 'Marine'

The sub-frames of 'Marine' occur with 70 concordance hits, 'marine fishing' with 2, 'fishery' with 29 and water pollution with 12 concordance hits in the data under the conceptual frame of 'Sustainable development is conserving life under water or marine life' in the CPEC. This frame describes marine ecosystems, marine pollution, marine activities, marine development, maritime research and learning, and marine fish farming and water pollution. Some examples taken from the texts are given below.

There is also an 'increased' risk of oil spills in deep-sea Gwadar Port and consequent harm to marine life. Similarly, the connecting wetlands with the CPEC activities may face destruction and thus the dependent livelihoods, biodiversity, and migratory birds may face the impacts. Also, there may be a possible loss of endangered biodiversity along the CPEC corridor due to habitat fragmentation, deforestation, diversion of rivers in dam construction, groundwater and soil pollution. In case of 'large-scale' infrastructure development under the CPEC, displacement of communities may also exacerbate the

environmental problems adding pressure on the natural resources, including forest, water, biodiversity and the concerned ecosystems along the CPEC alignments. (MG2)

Beyond the impacts described above, BRI infrastructures **will** boost the extraction and use of raw materials, such as sand and limestone for production of concrete and cement and fossil fuels. Sand extraction has already exceeded its natural renewal rate, 'severely' *affecting* river deltas and coastal and marine ecosystems. (RP16)

Industrial pollution through the establishment of nine 'prioritized' Special Economic Zones (SEZs) under the CPEC may also *contribute* to air emissions, wastewater, land pollution, coastal and marine pollution, solid waste and hazardous materials. (MG2)

The printing and dyeing process in manufacturing of garments uses toxic chemicals, which enter nearby water bodies through a drainage system, contaminate the water and 'adversely' *impacts* the air, water ecosystem and human life. Therefore, activities undertaken in the garments industry under CPEC should promote environmental sustainability. (R1)

The examples given above and concordance views show that the problem frame is triggered in people's minds about threats to life under water by using expressions such as extraction of fossil fuels from seas, water and marine pollution, sand extraction, etc. The destructive discourse has also been produced by using advanced technology and sophisticated systems to enhance fishery production and industry which means that human need is more important to be fulfilled on the stake of loss of biodiversity and life of marine resources. This problem frame is followed by 2 sub-frames of 'conservation', which is the next part of this conceptual metaphor and acts as a predicament frame.

The sub-frame of 'Conserve Oceans and Seas' occurs with 10 and 'water conservation' with 9 concordance hits and describes conserving oceans, seas and water reserves as natural resources. Some examples from the texts display these patterns.

These five goals are: to *ensure* the availability and the sustainable management of water and sanitation for all; to *ensure* access to affordable, reliable, sustainable, and modern energy for all; to 'take urgent action' to *combat* climate change and its impacts; to *conserve* and sustainably *use* the oceans, seas, and marine resources for sustainable development; and to *protect*, *restore*, and *promote* the sustainable use of terrestrial

ecosystems, sustainably *manage* forests, *combat* desertification, and *halt and reverse* land degradation and *halt* biodiversity loss. (R2)

4.4.2.6. The Frame of Life on Land

This conceptual frame addresses the 15th SDG of UN sustainable development goals that asks to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt biodiversity loss. In this conceptual frame, the source frame is sustainable development and the target frame is life on land. The sub-frames that have contributed to form this conceptual frame are given in Table 4.19 below.

Table 4.19 Frame of Life on Land

Sub-frames	Concordance Hits
Ecosystems	48
Ecology	33
Ecological Protection	12
Ecological Environment	21
Desertification	12
Land Degradation	06
Habitat	59
Wildlife	101
Forests	40
Forest Collocates	01
Biodiversity	124
Biodiversity Loss	09

Below are the concordance screenshots of the above given sub-frames which are most frequent.

Ecosystems

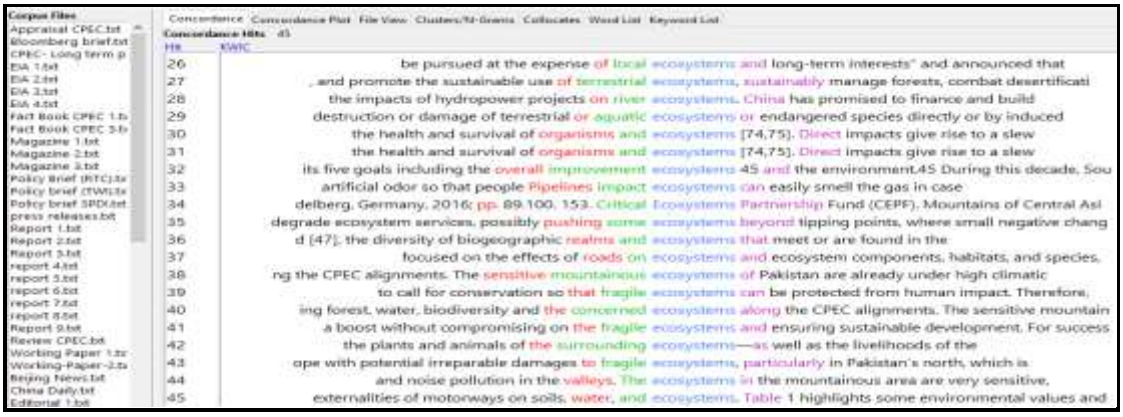


Figure 4.26 A concordance view of 'Ecosystems'

The sub-frame of 'Ecosystems' exists in the data with 45 concordance hits and describes terrestrial, aquatic, river and mountainous ecosystems of Pakistan. The salience has been assigned to this frame by using verbs such as *ensure, get, protect and compromise* to depict the importance of the area of ecosystems. The ecosystems of Pakistan have been appraised by using one appraisal item i.e. 'fragile' ecosystems which shows that they are highly sensitive and have become fragile due to many reasons such as aquatic and terrestrial ecosystems are mainly impacted by hydro-power projects and road infrastructure and mountainous ecosystems, and it is because of high climatic changes. These reasons make this sub-frame a problem frame that is followed by a predicament frame which triggers minds of people by promoting sustainable use of ecosystems and protecting them from human activity called anthropogenic activities. The use of expressions such as 'irreparable damage to fragile ecosystems' of Pakistan's north and 'The CPEC as environmental disaster' tends to express the concern of saving and protecting the natural ecosystems which are under threat due to the infrastructure development of CEPC. The examples given below present these patterns.

Given the scale of the CPEC unrolling and its 'potential adverse effects' on the natural environment, Strategic Environmental Assessment is crucial to *ensure* that the impacts are minimal, *ensuring* sustainable development in the area while the community awareness, capacity, resilience and livelihoods *get a boost* without *compromising* on the **'fragile' ecosystems** and ensuring sustainable development. (MG2)

Against the backdrop of the CPEC, ecotourism can open up the door to opportunities and usher in economic prosperity for the GB region of Pakistan. This land is endowed with great natural beauty and resources in addition to optimal physical conditions. However, climate change and global warming have become a very real threat across the globe. The area is prone to the natural hazards which can be accelerated due to the anthropogenic activities such as deforestation of the forests, a threat to the biodiversity and endangered species by over exploiting, causing land degradation which is sometime beyond repair. This has roused the public to call for conservation so that fragile ecosystems can be *protected* from human impact. Therefore, it seems very timely for the initiative to develop sustainable tourism in GB. (MG2)

The sensitive mountainous ecosystems of Pakistan are already under 'high climatic stress' due to climate change; they may be subject to avalanches, glacial melt, soil erosion and landslides. (MG2)

In the frame of 'life on land', the 'Ecology' part constitutes many other sub-frames such as ecological environment, ecological protection, habitat, deforestation, desertification, land degradation, biodiversity and its loss. The sub-frame of 'Ecology' happens to occur with 33 concordance hits and describes the ecology from an environmental point of view. It also relates it with the negative impact of environmental hazards on ecology. The entire sub-frame includes ecology as an umbrella term for deforestation, soil and water degradation, industrial pollution and city planning as the threats to it. Here are some examples from the texts to look at and will be followed by the analysis of types of frames and patterns employed to develop this frame. The problem frames are represented inside the examples given below.

The highways and railway lines will pass through the valleys of the Northern Areas which will have an "immense" *impact* on the ecology and the natural habitat of a vast number of species of wildlife as well as the flora and fauna. Due to the relative close

proximity of these sources of pollution and residential areas in Northern Areas, coupled with the high altitude environment, the 'negative impact' on the human environment will be *intensified*. Air contamination and noise pollution will be a natural by-product of the surge in transport density which will create 'several problems' in the area for humans and wildlife as well as the overall ecology. (RP24)

There are *'particularly' five indicators* of environmental degradation: Greenhouse gas emission, air contamination, water contamination, deforestation and land degradation that *directly damage* the environment through human actions. Environmental degradation like land degradation, CO2, NOx, water pollution and soil. (RP17)

Overall, the expansion of transportation networks in CPEC will *increase* habitat loss, the 'overexploitation' of resources and the degradation of surrounding landscapes. Such impacts, which are already 'high' in some regions, will *degrade* ecosystem services, possibly *pushing* some ecosystems *beyond tipping points*, where small' negative changes' can *lead* to abrupt changes in ecosystem quality and functionality. Recently, the **World Wildlife Fund (WWF)** carried out an initial spatial analysis of the overlap between the proposed **BRI terrestrial corridors** and important areas for biodiversity and natural resources. The report shows that those corridors overlap with the range of 265 **threatened species**, including 39 critically endangered and 81 endangered species. In addition, the corridors overlap with 1,739 Important Bird Areas or Key Biodiversity Areas and 46 biodiversity hotspots or Global 200 ecoregions. The report suggests that BRI corridors will potentially *impact* all the protected areas they will cover. As a result, there is a 'clear risk' of 'severe' *negative environmental impacts* from infrastructure development. (RP16)

Biological Environment (natural vegetation trees, shrubs, herbs, scrub, grasses, medicinal plants, others; fauna mammals, birds including migratory birds, reptiles, amphibians, insects, fish and red listed species (in all the cases include the conservation status); biodiversity including carrying capacity; protected and non-protected areas including hunting, poaching, illegal fishing; wetlands; fish; benthic flora and fauna; and others). Given the linear nature of the proposed infrastructure, and the potential interference in the ecosystems (potential fragmentation of ecological corridors, etc.). (RP14)

The forest cover in Pakistan remains lower than 2.23% of total land. The major outcome of deforestation is the biodiversity 'loss'. Habitat conservation is *very important* for stemming this loss. The reduction in the forest area *resulted* in the *reduction* in the woody biomass. It shows the long-term relationship with environmental 'degradation' and social disharmony. (RP17)

In this industrial era, a series of environmental problems have been *caused* by the 'excessive' consumption of natural resources, including air pollution, a worsening of water quality, 'excessive' heavy metals in the soil, species extinction, deforestation, energy shortages, desertification, and climate change. These impacts have not only *led* to environmental crises; they have *changed* the quality of human life. (R3)

The examples given above highlight deforestation, habitat loss and biodiversity loss, fragmentation of ecosystems, environmental degradation, threatened species, air and water contamination, land degradation, desertification, threats to wildlife and ecology as problems of urgency that need to be addressed as quickly as possible. There are 13 problem frames present inside the frame of 'life on land'. All of them generate destructive discourses. On the contrary there some examples of the predicament frames as given below.

The **government and the policy makers** should be *implementing* the rules to *avoid* carbon dioxide gas emissions greater than the prescribed maximum amount. Every industry should i*mplement* **the National Environmental Quality Standards (NEQs)** prescribed by the environmental **legislators.** Waste from factories should be *dumped* with proper treatment, as per the guidelines, so that they do not *harm* the aquatic life or air and the overall ecology. (RP24)

In order to *preserve* the ecological environment during construction, the construction operations should be arranged in accordance with the environment management system requirements to *shorten* the construction period, and *reduce* the environmental impacts on surrounding landforms. (EIA3)

Afforestation must be kept in mind that the future of our earth can be secure if we plant more trees. As we know that most of the development of the CPEC is in the northern areas, therefore, the government *must formulate* a **policy** that is specifically linked to the growth and protection of plants and trees. With the removal of each tree for the

development of the project, more trees must be *planted*. This will *help* to filter the air and also *save* the land. (RP24)

Biodiversity assessments along the CPEC alignments need to be *initiated* in coordination with the relevant institutions. Biodiversity concerns may also be addressed by establishing the '**The CPEC biological corridors**' across the highways for facilitation of the animal movement across and to maintain the 'threatened' biodiversity, to *mitigate* the impact of habitat fragmentation. (MG2)

Area-specific local action plans may be developed to address the CPEC specific issues related to pollution, environmental degradation, climate change and biodiversity 'loss'. (MG2)

Prioritize **environmental impact assessments** for large infrastructure, energy, mining, and agriculture projects. Also, *embed* ecological protection as an important post-evaluation indicator along with economic effects and social impacts. Consider the interaction of ecological, economic, and social impacts throughout project approval, monitoring, and evaluation. (R2)

Based on the traditional philosophy of the unity of man and nature, China reflects deeply upon ecological problems brought about by industrialization and advances the ideas that underpin ecological civilization, *including respecting* nature, *adapting* to nature, *protecting* nature, and *promoting* harmony between man and nature. (R2)

In the above examples and the concordance views, predicament frames are developed that promote solutions to the environmental problems. The conceptual frame on the basis of most frequent sub-frame of 'biodiversity' becomes 'sustainable development is protecting biodiversity'.

4.4.2.7. The Frame of Environmental Sustainability

This frame adheres to the 11th goal of sustainable development goals. The SDG asks for environmental and ecological sustainability and overall protection of the environment from pollution and other factors of degradation. Some of the sub-frames contribute to making it a predicament frame by developing beneficial as well as ambivalent discourse. Some sub-frames are problem frames that generate destructive discourses. In this conceptual frame, the source frame is sustainable development while the target frame

is the environment. The sub-frames that develop this conceptual frame are given in Table 4.20 below.

Table 4.20 Frame of Environmental Sustainability

Sub-frames	Concordance Hits
Environment	863
Natural Environment	19
Environmental Challenges	10
Environmental Concerns	17
Environmental Conservation	19
Environmental Damage	07
Environmental Degradation	91
Environmental Effects	19
Environmental Factors	62
Environmental Impacts	145
Environmental Issues	23
Environmental Problems	19
Environmental Pollution	16
Environmental Management	52
Environmental Policies	19
Environmental Assessment	32
Environmental Projects	07
Environmental Regulations	18
Environmental Resources	06
Environmental Strategies	03
Environmental Sustainability	25

Environmental Sustainability

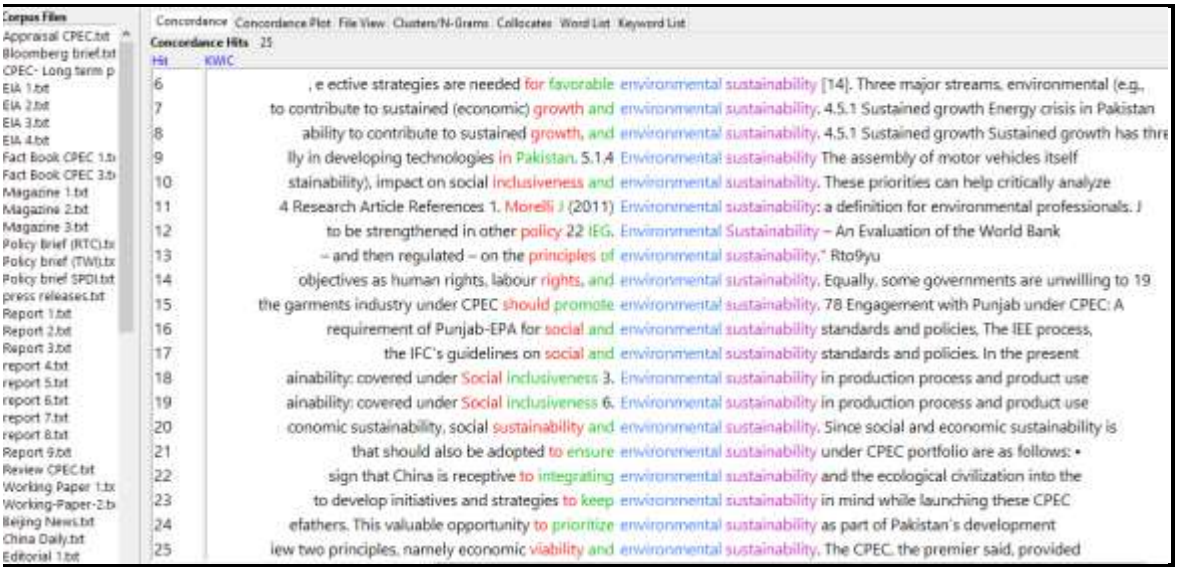


Figure 4.27 A concordance view of 'Environmental Sustainability'

Some examples that form predicament frames about environmental sustainability in the data are given below.

China is moving very fast and has already initiated an environmental protection policy for the CPEC while Pakistan is in the initial stage to build and formulate certain strategies. Various projects under the CPEC can significantly affect the environment but meanwhile, effective strategies are *needed* for favourable environmental sustainability. (RP24)

For a **project spanning** from the high mountains in the north to sandy beaches in the south, it is a shame that the government has *failed to conduct* a proper environmental assessment so far. While the government has assured that it would work with its Chinese partners to make the CPEC environmentally sustainable, experts argue the project will have a far-reaching impact on the environment as trees and glaciers are destroyed in the pursuit of making way for the economic corridor.

The recommendations to the respective representatives of **the Government of Pakistan** and the **National Development Reform Commission (NDRC)** of China would be provided so that the safeguard measures are *adopted* for conserving natural resources, biodiversity and safeguarding the livelihoods of local communities in particular. This

may further strengthen the CPEC portfolio and *ensure* environmental sustainability. (MG2)

Society **should** not only *address* the environmental challenges posed by the overuse of resources, but it should also take poverty and social issues into account. In the industrial era, a series of environmental problems have been caused by excessive consumption of natural resources including air pollution, worsening of air quality, excessive heavy metals in soil, species extinction, deforestation, energy shortage, desertification, and climate change. These impacts have not only led to environmental crises; they have charged the quality of life. (R2)

The most frequent sub-frame among all the sub-frames given in the table is 'environmental impacts with 145 concordance hits. The conceptual metaphor for this frame becomes 'sustainable development is dealing with environmental impacts'. There are 9 problem frames and nine predicament frames present inside the entire frame.

4.5. Part II- The Story of 'Metaphors' in the Discourse of the CPEC

Metaphors used to represent the CPEC are the cognitive structures that represent how story of metaphors in the discourse of the CPEC has been employed. This is explored by typing these search terms in the software such as 'CPEC is', 'Pakistan is', 'China is', and 'Development' first and then names of all areas from socioeconomic areas based on SDGs. Following the framework of analyzing metaphors from Stibbe's eco-critical discourse perspective and by adopting theory of conceptual metaphors of Lakoff and Johnson (1980), the texts consulted through file view in AntConc software were explored thoroughly and found a range of conceptual metaphors relevant to socioeconomic and ecological/environmental areas. While presenting the lexical realizations of the conceptual metaphors in this research, some screenshots are given from the AntConc analysis with examples quoted from the data.

There are many kinds of conceptual metaphors emerging from the lexical realizations or metaphoric expressions used for the CPEC, Pakistan, economy, growth and development, etc. Given below are the conceptual metaphors under which examples taken from socio-economic and environmental-ecological areas of the CPEC or SDGs are given. The conceptual metaphors are written in the capital case as it has been a tradition initiated

by Lakoff (1987). First the analysis is given for the conceptual metaphors for the representation of the CPEC.

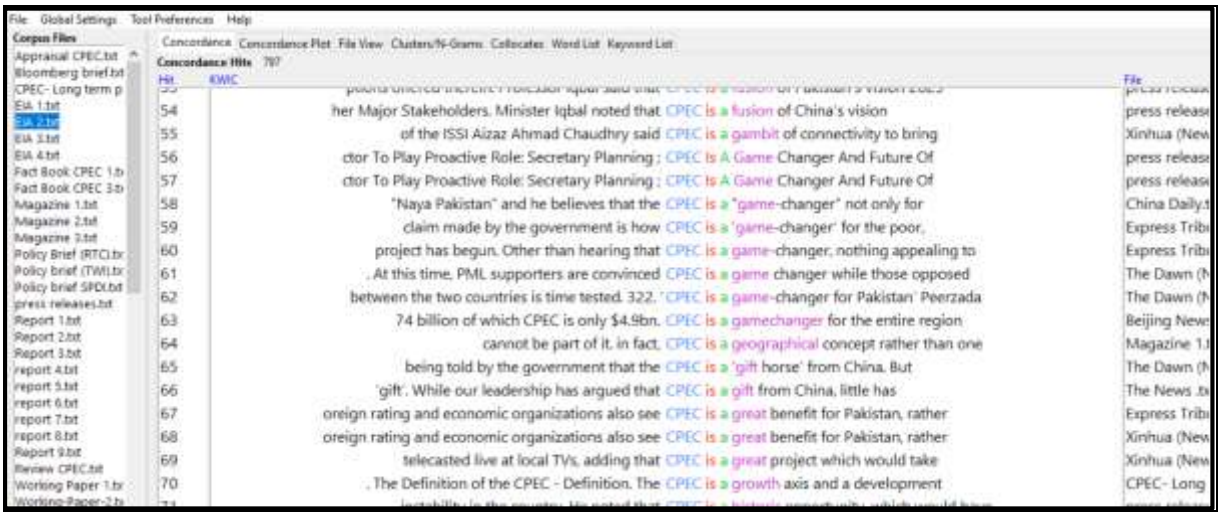


Figure 4.28 A Concordance view of CPEC 'Metaphors'

The following conceptual metaphors are found out that represent the CPEC.

1. CPEC IS A GAME.

i) CPEC is a game changer for Pakistan… (TDN)

ii) Win-win partnership…

1. CPEC IS A GIFT.

iii) CPEC is a gift horse from China… (TDN)

iv) CPEC is a gift from China…(TN)

2. CPEC IS A HUMAN BEING

v) Pakistan and China are **entering** the next phase of the CPEC.

vi) CPEC is **focusing**.

vii) CPEC would **help**…

viii) CPEC will **improve** general health and safety management practices.

ix) CPEC **faces** a big issue of…

x) Pakistan **believes**….

3. CPEC IS A GIANT.

i) The CPEC is a **giant** project.

ii) The CPEC is an economic giant.

4. CPEC IS A THREAT.

i) Mega projects of the CPEC are **threatening** the environment.

5. CPEC IS A FABRIC.

i) New schools, colleges and universities to be **stitched** in the **fabric** of the CPEC routes…

6. CPEC IS A BASKET.

i) The CPEC is a **basket** of development projects.

7. CPEC IS A BEACON.

i) The CPEC is a **beacon** of peace and justice.

8. CPEC IS A DISASTER.

i) The CPEC is an environmental **disaster**.

9. CPEC IS A COLOR.

i) **Green** the CPEC…

10. CPEC IS A SCIENCE.

i) The CPEC is a **biological** corridor….

ii) The CPEC will act as a **stimulus** for Pakistan's economic growth.

11. CPEC IS A WEATHER.

i) The CPEC is an **environmental** disaster.

ii) The CPEC is a **fresh breath of air**…

iii) All-weather partnership…

iv) Time-tested all-weather strategic partnership between Pakistan and China…

The examples given above of conceptual metaphors and their lexical realizations are about the representation of the CPEC in this research. The target domain in all the metaphors is the CPEC, while the source domains are different such as game, human being, colour, fabric, giant, threat, basket and weather. What do they implicate? This is discussed in the chapter of findings.

The next conceptual metaphors are about representation of China in the discourse of the CPEC. The concordance screenshot of the search term for exploring the conceptual metaphors about China is given below.

Figure 4.29 A Concordance View of 'Metaphors for China'

1. CHINA IS A GIANT.

i) China is an economic **giant**.

2. CHINA IS A HUMANBEING.

i) China is a friend which has put…

ii) China is a friend and a neighbour.

iii) China is an iron-brother of Pakistan.

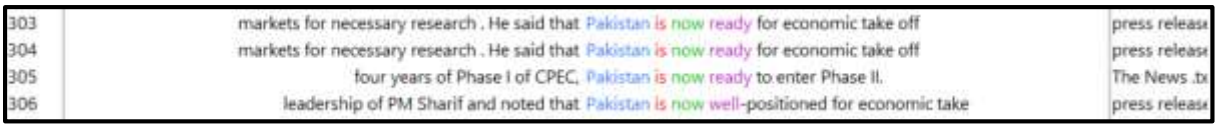
3. CHINA IS A JOURNEY.

i) China is a highway of hope.

In the conceptual metaphors for China mentioned above, the target domain is China while source domains are different such as in CPEC IS AN ECONOMIC GIANT, the Source

domain is a giant; in CHINA IS A FRIEND, CHINA IS A NEIGHBOUR, CHINA IS A BROTHER, the source domain is human being; CHINA IS A HOPE, the source domain is hope. The next section identifies conceptual metaphors for the representation of Pakistan in the discourse of the CPEC. It was explored by typing the phrase 'Pakistan is' in the software for corpus analysis.

The screenshot provides two metaphoric expressions for Pakistan.



303	markets for necessary research . He said that Pakistan is now ready for economic take off	press releas
304	markets for necessary research . He said that Pakistan is now ready for economic take off	press releas
305	four years of Phase I of CPEC, Pakistan is now ready to enter Phase II.	The News .t
306	leadership of PM Sharif and noted that Pakistan is now well-positioned for economic take	press releas

Figure 4.30 A Concordance view of 'Metaphors for Pakistan'

1. PAKISTAN IS AN AEROPLANE.

i) Pakistan is now ready to **take off**…after CPEC

2. PAKISTAN IS A HUMAN BEING.

i) Pakistan is now ready to enter the phase II of the CPEC.

ii) Pakistan is working… (XN)

iii) Pakistan is eyeing on… (XN)

iv) Pakistan is taking initial steps… (XN)

v) Pakistan is an iron-brother of China. (TDN)

2. PAKISTAN IS A TOOL.

i) Pakistan is a key to CPEC's success. (TN)

4. **PAKISTAN'S INDUSTRY IS A PATIENT.**

i) Pakistan's **ailing** industry…

ii) **Crippled** industry of Pakistan…

iii) Pakistan has been battling to get its **shaky** economy on **track.**

iv) Pakistan's **fragile** finances

5. PAKISTAN'S INDUSTRY IS A JOKE.

i) Industrialization in Pakistan is a cruel **joke** through the CPEC.

6. PAKISTAN'S INDUSTRY IS A JOURNEY.

i) Pakistan is the best **destination** for Chinese industry.

The conceptual metaphors used for Pakistan are given above, where the target domain is Pakistan, Pakistan's industry, justice system, etc., while source domains are different such as destination, aeroplane, joke, patient, tool and human being. These conceptual metaphors are used to represent Pakistan and Pakistan's socio-economic areas in the data.

4.5.1. Conceptual metaphors for the area of 'Development' in the CPEC

Following are the examples or lexical realization of the conceptual metaphors related to the area of 'Development' in the CPEC and are taken from the text. The search term to explore the relevant metaphors was 'development'.

i. Pakistan is on the **roadway** to socioeconomic development.
ii. THE CPEC has correctly focused on reaching a higher **plane** of human development.
iii. Gilgit-Chitral-Dir road under the CPEC to put on **track** of development
iv. **green** development
v. development **pathways**
vi. **recipe** for economic development
vii. supplies to **feed** its economic development
viii. to remove the **bottlenecks** to its economic development
ix. **harbinger** of economic development
x. new **paths** of economic development
xi. the **engine** of economic development
xii. economic **corridor** of economic development
xiii. **fruits** of economic development
xiv. open **door** for socio-economic development
xv. socio-economic **ladder**
xvi. open up new **chapter** of socio-economic development
xvii. **paving way** to socio-economic development, the **corridor** of development
milestone on the **path** of economic development

The metaphoric expressions given above are used for development in general and socioeconomic development in particular. Following the theory of conceptual metaphors

proposed by Lakoff and Johnson (1980), the target domain becomes development and the source domain becomes journey in most of the lexical realizations of metaphors such as:

i. Pakistan is on the **roadway** to socioeconomic development…
ii. Gilgit-Chitral-Dir road under the CPEC to put on **track** of development…
iii. Provincialism should not be given the chance to **hijack** the development agenda…
iv. development **pathways…**
v. to remove the **bottlenecks** to its economic development…
vi. **harbinger** of economic development…
vii. new **paths** of economic development…
viii. the **engine** of economic development…
ix. paving **way** to socio-economic development…
x. **milestone on the path** of economic development…

According to the lexical realizations given above and words in bold are related to journey, i.e., metaphor, for which the conceptual metaphor becomes, DEVELOPMENT IS A JOURNEY. In this conceptual metaphor, the target domain is development and the source domain is journey. This shows that the development on socioeconomic levels is in progress under the project of the CPEC. This metaphoric pattern shows the presupposition that Pakistan would achieve socio-economic development if it continues its journey on pathways of development with the CPEC as an engine and harbinger.

In the same way some metaphoric expressions represent other conceptual domains such as food, building and human beings.

1. **recipe** for economic development
2. supplies to **feed** its economic development
3. **fruits** of economic development

In the metaphoric expressions mentioned above, the source domain is food while the target domain is economic development. The conceptual metaphor becomes: ECONOMIC DEVELOPMENT IS A FOOD. This shows that economic development under the CPEC will bear fruits at the end if it is continuously facilitated by the CPEC.

4. open **door** for socio-economic development

5. socio-economic **ladder**
6. economic **corridor**

In the lexical realizations of building metaphor mentioned above, it can be said that SOCIOECONOMIC DEVELOPMENT IS A BUILDING, where the source domain is building and target domain is socio-economic development. This conceptual metaphor represents the inherent nature of the CPEC project in terms of its main objective to develop infrastructure which involves construction.

4.5.2. Conceptual Metaphors for Socio-economic Areas of the CPEC

Now are given the conceptual metaphors with their lexical realizations for the socio-economic areas of the CPEC. Many conceptual metaphors are found under those categories which are related to Pakistan such as justice and peace, weather, colour and human being. The one which could not be found under Pakistan and the CPEC are directly explored through search terms of those areas.

In the area of poverty and hunger, these metaphoric expressions are found in the given examples from the text.

i) Poverty alleviation as one **door** of prosperity…
ii) …Combating poverty and hunger

From the metaphoric expressions about poverty and hunger, it is seen that the target domain in both metaphors is poverty and hunger while source domain is building in the first and war in the second. The conceptual metaphors become; POVERTY IS A BUILDING and POVERTY AND HUNGER IS A WAR respectively.

Similarly, in the area of education, these metaphoric expressions are found.

i) Some projects are specially **tailored** to encourage education.
ii) To **stitch** new schools and universities into the **fabric** of the CPEC routes
iii) Education as flagship chapter of the CPEC…
iv) China-Pak is an education corridor

The metaphoric expressions above show that the target domain in them is ‘Education’, while the source domains are different such as fabric, book and building. The conceptual

metaphors become: EDUCATION IS A FABRIC, EDUCATION IS A BOOK, and EDUCATION IS A BUILDING respectively. The conceptual metaphors used for the socio-economic areas of 'health', 'poverty' and 'education' represent these areas in Pakistan and how the CPEC is helping to trigger and conceptualise these areas to improve. In this regard, Lakoff and Johnson (1980) can be quoted here who argue that the education as metaphor can be used to guide our future actions.

4.5.3. The Conceptual Metaphors in the Environmental-Ecological Areas of the CPEC

These metaphoric expressions are found in the environmental-ecological areas of the CPEC.

i) **Green energy** projects…
ii) **Green investments**…
iii) Green growth…
iv) Green industry…
v) Green investment…
vi) Green economy…
vii) Green activities…
viii) Green CPEC…
ix) Industrial parks
x) overexploitation of **natural resources**
xi) **Combating** climate change
xii) **Championing** green growth…
xiii) **Fragile ecosystem** of Pakistan
xiv) **Threatened species** along CPEC biological corridors
xv) The CPEC is an **environmental disaster…**
xvi) CPEC is a **breath of fresh air…**

There are seventeen metaphoric expressions related to the environmental-ecological areas in the discourse of the CPEC. They can be called as eco-metaphors because they are about environment and ecology as said by Liu (n.d.). The most frequent

eco-metaphors in this research are occurring with the word 'green'; energy, growth, economy, investments, industry, activities and the CPEC. The conceptual metaphor formed from these expressions becomes CPEC IS A GREEN COLOUR. It shows that growth, energy, industry, investments, economy, and activities under the project of the CPEC have ecological and environmental applicability (Liu n.d.) and should be green in colour. The purpose is that it has an appeal that can make people think ecological and green (Stibbe 2015). The target domain is CPEC while the source domain is green colour.

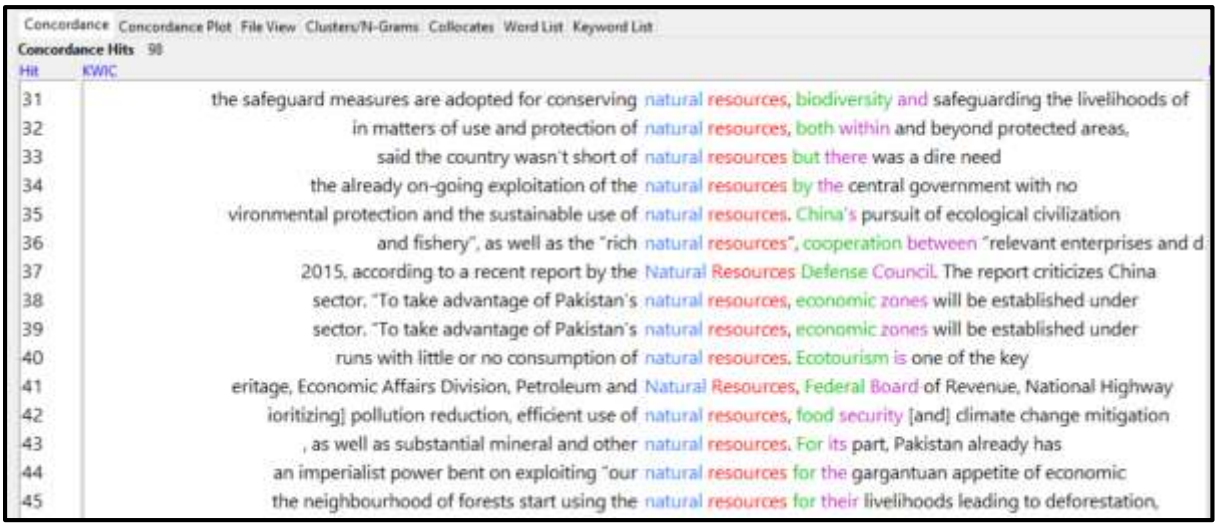


Figure 4.31 A Concordance view of 'Nature Metaphor'

Another conceptual metaphor that develops from 'natural resources' becomes: NATURE IS A RESOURCE where target domain is nature and source domain is a resource. In the CPEC discourse, the *nature* metaphor has been shown as a resource which is used with the words such as:

i) 'overexploitation of the **natural resources**…' (TDN)
ii) 'consumption of the **natural resources**…' (RP17)
iii) 'utilizing the **natural resources**…' (TXN)
iv) '…a sudden rush for the grab of **natural resources**…' (MG1)
v) 'Baltistan is stripped away of their **natural resources**… (TBN)

The lexical realizations mentioned above (consumption, overexploitation, utilization, grab and stripped away) indicate *nature* as a resource that generates destructive

discourse and anthropocentric ideologies. This kind of anthropocentric discourse provokes us not only to think about *nature* as a resource but also how to act (Keulartz, 2007).

4.6. Part III- The Story of 'Salience' in the Discourse of the CPEC

The third story taken for analysis is the concept of salience and reminding based on the story framework of Stibbe who adapted the theoretical approach of Kress and Leeuwen (2008) which was used in many studies for the analysis of visual representations such as images of something, the colour, size, backgrounding and foregrounding of that image (Kress & Leeuwen 2006, p. 210). While in his book, Stibbe (2015) suggested that in linguistic analysis there are certain linguistic patterns and features that function together to give prominence, focus and vitality to the particular area (Stibbe, 2015). For identifying salience/reminding patterns in this research according to Stibbe's approach, the linguistic devices or words that depict an area of worthy importance are found to be verbs such as *promote, achieve, ensure,* etc. As argued by Gelderen (2017), verbs act as a salient word in a sentence that helps in presenting internal and external arguments of the clauses.

For the socio-economic areas as well as environmental-ecological areas present in the discourse of the CPEC; verbs of focus, vitality and the importance are explored and are presented separately under these areas. They are italicized inside the examples which are taken from the text.

The salience attributive verbs are given in the table with their MI score that shows the significance of the verbs having degree of salience with 12 socio-economic areas of the CPEC. It is found out through collocation analysis that all the verbs are considered with their first form or ing-form and occurring as a left collocate of the search terms. There were many salience attributive verbs found out in each area but only one verb which had the highest significance score or Mutual Information (MI) score is sorted out to present in the table. The collocation analysis is done to see the strength of relationship that the verb has it with that specific socio-economic area which in turn makes that area either most or least salient.

Table 4.21 Showing Significant Collocates for Salience Patterns in Socio-economic areas of CPEC

Collocates	MI score or significant stats
Hunger-relates	13.82867
Partnership-solidify	9.73515
Poverty-reduce	7.71368
Peace and Justice-bring	7.64650
Health-affect	7.23280
Women empowerment-encourage	6.59985
Economic growth-stimulating	6.56951
Education-get	6.31496
Infrastructure-focusing	5.95290
Gender Equality-focus	5.64592
Affordable housing-work on	5.39290
Industry-promote	5.22218

It can be seen in Table 4.21 that the salience attributive verb that has highest MI score or significance score is with the area of hunger co-occurring with 'relates' constituting 13.82867. This shows that the area of hunger has taken the semantic preference of the verb 'relates' to draw the attention of readers towards hunger in Pakistan and role of CPEC in alleviating hunger in Pakistan. Very less number of verbs are seen in this area. Generally during the analysis of salient verbs, the relevant entries of verbs with the specific area in the CPEC are seen as left collocates. Similarly, the significant verb used with poverty is 'reduce' constituting 7.71368 MI score. The area of 'health' takes 'affect'; education takes 'get'; industry takes 'promote'; infrastructure and gender equality takes 'focusing' and 'focus'; women empowerment takes 'encourage'; economic growth takes 'stimulating'; affordable housing takes 'create'; peace takes 'bring'; justice takes 'bring' and partnership takes 'solidify' as their semantic preferences for making these socioeconomic areas salient in the discourse of the CPEC. Table 4.21 shows a descending order in terms of the use of the salient verb with the socioeconomic areas given in the discourse of the CPEC. Hunger can be found the top most priority as the least salient area in the CPEC. Then we can find partnership on the second, poverty on the third, peace and justice on the fourth, health on the fifth, women empowerment on the sixth, economic

growth on seventh, education on eighth, infrastructure ninth, gender equality tenth, affordable housing eleventh, industry on twelfth. This shows that more the MI score gained by the area, least salient it is. It also indicates how the use of salience attributive verbs have helped to prioritize the CPEC in these socioeconomic areas.

Although it is found that 'hunger' is the least frequent area in the data with only 5 hits yet the verb 'relates' has gained the highest MI score in the collocation 'hunger-relates'. Similarly, the verb 'promote' has the least MI score in the collocation of 'Industry-promote', where the area of 'industry' in the data appears with the frequency of 926 hits which is much higher as compared to 'hunger'. This implicates that the area of hunger is the least salient and 'industry' is found to be the most salient in the CPEC. This also leads to evaluate that the discourse on hunger has been developed in less quantity which is called by Stibbe (2015), the process of erasure, while the discourse about industry is included in more quantity which shows the focus, vitality and significance of the area with regard to the CPEC.

So, according to Stibbe (2022), we need to explore new stories that can help us figure out the relationship of human to human and humans to non-humans in those areas which are salient and important. Following his approach of finding out salience of an area, words of focus, prominence and importance came out to be verbs in this research. The verb focus/focusing has been found in two areas, i.e., 'gender equality' and 'Infrastructure'. Following are the examples taken form the text that show the use of these verbs which are now called salience attributive verbs. Although more verbs have been found out with the area but the one that had a significant effect with highest MI score is mentioned in the table.

In the area of hunger, the most significant collocate was found to be used with the verb 'relates' as given in the example below.

The establishment of agricultural economic zones along CPEC routes…is being done to advance SDGs specially the one that *relates* to hunger. (TDN)

In the area of poverty, the salience attributive verb is 'reduce' as given below.

CPEC has a great potential to boost Pakistan's economy and help *reduce* poverty in the country. (TXN)

The salience has been attributed to the area of 'Health' by the verbs used with health. These include: damage, affect, consider, improve, safeguard, protect and develop.

The verb ‘affect’ has been found to be the most collocated with health achieving highest MI score as it is given below in the example.

Water pollution caused by the project in the longer run *affect* the public health. (EIA 4)

The traffic throughout this route will adversely *affect* human health and the wild life… (ED 4)

The salience provided to the area of ‘gender equality’ is by the use of verbs such as *focus on, tap and include*. The highest association is found to be in the verb ‘focus’ with gender equality. The following example shows this.

Economic growth and social development to *focus* on …gender equality… (TDN)

The salience has been attributed to ‘women empowerment’ by using verbs such as *empower, encourage, ensure, employ,* etc. The most significant verb found with it is ‘encourage’ with MI score 6.59985. The example is given below.

The project has to *encourage* the participation of women in economically-strategic industries… (RP21)

The most significant salience attributive verb found with ‘affordable housing’ is ‘*work on’* which has MI score of 5.39290. The example from the text is given below.

The project must *work on* reliable, transit and affordable housing arrangements… (TDN)

Then in the area of education, the most significant salience attributive verb is found to be ‘get’ with MI score 6.31496. The following example is as follows:

Many Chinese companies are working here and people in villages and other sectors are working with them to improve their life ... It is automatically helping children to *get* good education, good opportunities and good health for the future. (TX)

The next area is peace where the most significant salience attributive verb is ‘bring’ with MI score as 7.64650. The following example from the text shows this patterns.

CPEC would *bring* peace and prosperity and mark an era of affluence as both countries would strengthen economic ties. (TDN)

The socio-economic area of industry is collocated with ‘promote’ as a salience attributive verb with MI score of 5.22218. The example is as follows:

The **government** should impose a carbon tax on industries under CPEC to regulate the emission of greenhouse gases and the government design policies to *promote* the **green industry**. (PB2)

The area of economic growth is found to have been significant with the verb 'stimulating' constituting MI score of 6.56951. The example from the discourse is given below.

This would happen by paying 'more' *attention* to the quality and efficiency of economic growth, restricting the development of industries with a high degree of negative environmental impact, and constantly *stimulating* sustainable economic growth. (R2)

The area of international partnership has the most significant salience attributive verb as 'solidify' with MI score of 9.73515. Although salience has been attributed to this area by the use of verbs such as *proceed, improve, build, solidify, establish, form, promote, push, enrich, transform, develop and enjoy.* But it can be seen that the highest association is found with 'solidify'. The example given below shows this pattern.

Areas under the CPEC will not only solidify Pakistan-China strategic partnership… (FB)

Now is given the story of salience in the environmental-ecological areas of the CPEC by doing the collocation analysis on the similar pattern as done for exploring story of salience in socio-economic areas.

Table 4.22 Significant Collocates Showing Salience in the Eco-environmental areas

Collocates	MI Score or significant stat
Climate change-cope	10.70782
Clean energy-produce	6.03642
Life on land-affect	5.58736
Life below water (aquatic life)-impact	5.19862
Water and Sanitation-expand	2.54556
Production & consumption-need to change	1.75117
Environmental Sustainability-promote	1.55288

Table 4.22 above displays salience patterns employed in environmental-ecological areas of the CPEC. Salience to all these areas has been accorded by using salience attributive verbs such as verbs of focus, prominence and vitality as mentioned by Stibbe in his story framework for finding out salience patterns. The significant collocations with

these types of verbs are seen and are given with their highest MI score gained with those areas. The strength of the relationship between the area and the verb has been arranged in descending order in the table signifying from highest to lowest. The highest association in terms of salient relationship is found between 'climate change' and the verb 'cope' (10.70782) in the scenario of the CPEC. The lowest MI score is found between 'environmental sustainability' and the verb 'promote' (1.55288). This implicates that the project of the CPEC is trying to cope with the climate change during the execution of the project, whereas it generates harmful effects onto the environmental sustainability. This further indicates that in the CPEC discourse within environmental-ecological areas, the least salient area is 'climate change' and the most salient area is 'environmental sustainability'. The higher the MI score, the lowest is the salience of that area in CPEC. The least is the MI score; more is the salience of that area in CPEC.

Another pattern that has been observed is of semantic preference. The verb 'cope' is taken as a semantic preference by climate change while the verb 'promote' has been taken as a semantic preference for 'environmental sustainability'. The verb 'cope' leads us to think of constructive discourse, ambivalent/green discourse. Following examples are taken from the text to show the salience patterns in all these areas related to environmental-ecological discourse of the CPEC.

According to the Daily Times, the CPEC developmental projects will have consequences on aquatic life (life under water) and will *impact* the aquatic biodiversity as there is no proper water disposal system in Pakistan. (RP24)

Coal projects in the CPEC need heated waste water from nuclear plants *impacts* life below water… (EIA 2)

In order to sustain CPEC, government is to expand the infrastructure like water and sanitation… (TET)

It is expected that the CPEC will *promote* 'substantial adverse effects' for environmental sustainability in Pakistan, which is a 'very serious matter'. (RP24)

CPEC should *promote* environmental sustainability. (R1)

The new projects will help *produce* cheap and clean energy. (TET)

CPEC helping *cope* with climate change that threatens agriculture threats. (TET)

Traffic day and night on this route will adversely *affect* human life, wild life and even social life…(ED4)

Consumption and production methods *need to be changed* in such developmental projects… (R2)

4.7. Part-IV: The Story of 'Appraisal and Evaluation' in the Discourse of the CPEC

The story of 'Appraisal and Evaluation' has been explored by looking at the statistical significance of all socio-economic areas in the discourse of the CPEC through collocational analysis. The story of appraisal and evaluation is explored by taking out the words that describe certain areas as bad or good under the project of CPEC. They can be explicit or implicit appraisal items, positive or negative expressions (Martin & White, 2005) as also mentioned by Stibbe. Significant collocates that appraise the socio-economic areas are given inside Table 4.23. The collocations are three tier in this story and the reason behind it is that the appraisal patterns were mostly appraising Pakistan's socio-economic conditions rather appraising them under the project of CPEC. Therefore, to create relevance with CPEC, the following patterns are observed.

Table 4.23 Significant Collocates Showing 'Appraisal Patterns' in the CPEC

Collocates	MI Score or Significance stat score
Poverty-CPEC-alleviation	11.16435
Poverty-CPEC-reduction	7.84242
Health-CPEC-general	4.23768
Health-CPEC-better	5.77455
Education-CPEC-quality	7.29647
Industry-CPEC-new	2.68945
Industry-CPEC-expanding	3.97380
Industry-CPEC-adversely	5.84255
Industry –CPEC-dirty	10.52228
Infrastructure-CPEC-improve	5.56930
Infrastructure-CPEC-massive	6.29519

Infrastructure-CPEC-upgrade	6.08544
Infrastructure-CPEC-major	4.25360
Gender equality-CPEC	0
Gender equality-CPEC	0
Economic growth-CPEC-rapid	4.28000
Economic Growth-CPEC-sustainable	2.81028
Economic Growth-CPEC-sustained	5.28000
Economic Growth-CPEC-unprecedented	3.65197
Economic Growth-CPEC-consistent	3.15744
Economic Growth-CPEC-global	0.72183
Economic Growth-CPEC-steady	3.54304
Economic Growth-CPEC-boost	2.90149
Economic Growth-CPEC-green	0.36440
Employment-CPEC-good	2.47426
Employment-CPEC-better	5.57143
Smart cities-CPEC-inclusive	6.86178
Smart cities-CPEC-modern	6.28361
Smart cities-CPEC-sustainable	5.17548
Affordable housing-CPEC-reliable	9.23372
Affordable housing-CPEC-suitable	9.09622
Peace-CPEC-long lasting	8.33427
Peace-CPEC-complete	3.87279
Peace-CPEC-durable	10.74931
Justice-CPEC-fundamental	8.63790
International partnership-CPEC-cooperative	10.83825
Internationalpartnership-CPEC-unparalleled	9.61968
International partnership-CPEC-strong	6.86068
International partnership-CPEC-equitable	7.99819
International partnership-CPEC-beneficial	5.14021

International importance	partnership-CPEC-	4.15049
International partnership-CPEC-inclusive		5.17037

The appraisal patterns mentioned above are used to appraise different socio-economic areas of the CPEC. According to Martin and White (2005), the appraisal theory is used in Ecolinguistic analysis for investigating tone and mood of the text while considering prosodic patterns or words that evaluate the area good or bad. Following their theory, the analysis of socio-economic areas shows that the area of poverty in Pakistan is bad and its 'alleviation', and 'reduction' should be the top 'priority' under the project of CPEC. The highest MI score is found out by the positive prosodic expression of 'alleviation' of poverty as given in the example below. Three prosodic expressions clustered with poverty such as 'alleviation', 'reduction' and 'priority' given in the table create positive cumulative effect (David, 2009) of the CPEC about this socio-economic area.

Poverty alleviation is the **top priority** in the CPEC… (TDN)

The socio-economic development and poverty alleviation are on the **'top'** of the agenda of the CPEC projects in the next phase of development. It will further consolidate the bilateral relationship between the two countries under the CPEC and enhance cooperation in socio-economic development and poverty alleviation in **'less developed'** areas of Pakistan. (PB2)

In the area of 'health', the prosodic expressions 'general' and 'better' have been used to appraise this area which is positive about the CPEC. The prosody of 'better' has gained more MI score (5.77455) to show tight association with the area of health and is given in the example.

The CPEC will *improve* **'general'** health and safety management practices to make them **'better'**. (RP 23)

The CPEC has been appraised as good for the area of education because of helping to provide quality education. The prosodic expression used with education is 'quality' with highest 7.29647 MI score.

A primary school has been established in Gwadar where 498 students including 348 girls are *provided* quality education to enable them to **reap the benefits of the CPEC**-related projects in the Gwadar port. (TX)

Industry in the CPEC has made its cumulative effect of being good by having two prosodic expressions such as 'new', and 'expanding', while 'dirty' and 'adversely' show bad because of CPEC's adverse effects on the environment.

A similar readiness would also be required for the local workforce under the CPEC, so that they are suitably skilled to take advantage of opportunities *offered* by 'new and expanding' industries. (R1)

China may bring in dirty industries to Pakistan, resulting in environmental degradation… (TET)

The CPEC has been appraised as good for the infrastructure development by four positive prosodic expressions such as 'improve', 'massive', 'upgrade' and 'major'. The highest MI score is gained by 'massive' with 6.29519 among four expressions. The examples are given as under:

The project intends to rapidly expand and **upgrade** Pakistan's infrastructure. (TDN)

CPEC is based on **major** collaborative projects for infrastructure construction (LTP)

The area of economic growth under CPEC has been appraised as good by using eight most significant prosodic expressions such as rapid, sustainable, sustained, unprecedented, green, boost, steady, global and consistent. Among them, the highest MI score is gained by 'sustained' having 5.28000, which shows how all prosodic words happen to appear in cluster to give positive prosody and thus appraising the CPEC positively adding to economic growth.

Local economists believe that the second phase of the CPEC will act as a stimulus for Pakistan's **sustained economic growth**. (TX)

In the area of employment, the CPEC has been appraised as good to provide 'good' and 'better' opportunities. There are two positive appraising words used as semantic prosody, but the expression 'better' has gained more association with MI score of 5.57143.

Employment wages will become **better** in CPEC jobs. (RP1, 23)

CPEC has been appraised to be good in designing 'modern', 'inclusive' and 'sustainable cities' under its project with the highest MI score (6.86178) gained by the

prosodic expression of ‘inclusive’ with smart cities. The following example shows this appraisal pattern.

…the need for Pakistan to build inclusive and smart cities to achieve sustainable development. (TXN)

The CPEC has been appraised well in promising the ‘durable’ peace (10.74931) and ‘fundamental’ justice (8.63790) in Pakistan. The highest score is attained by the positive term ‘durable’.

The CPEC will also help in paving the way for **durable** peace in the region. (TDN)

There are seven prosodic terms used with the area of international partnership which include cooperative, unparalleled, string, equitable, beneficial, important and inclusive. The highest MI score is gained by ‘cooperative’ having 10.83825 MI score.

CPEC is a strategic and **cooperative** economic partnership to *transform* Pakistan into a geo-economic hub. (FB)

Table 4.24 Significant Collocates for ‘Appraisal’ patterns in the Eco-environmental areas of the CPEC

Collocates	MI Score or Significant stat score
Water & Sanitation-CPEC-safe	3.06133
Water & Sanitation-CPEC-sustainable	1.14414
Water & Sanitation-CPEC-priority	1.56234
Energy-CPEC-renewable	8.95001
Energy-CPEC-green	4.53363
Energy-CPEC-sustainable	4.59618
Energy-CPEC-affordable	6.85804
Consumption & production-CPEC-patterns	8.43512
Consumption & production-CPEC-impacts	4.27006
Climate change-CPEC-substantially	8.10692
Climate change-CPEC-mitigating	9.39232
Climate change-CPEC-hampered	7.90046
Climate change-CPEC- threatens	9.48543
Life under water-CPEC-harm	12.41363
Life under water-CPEC-consequences	9.29025

Water and land ecosystem-CPEC-adversely	10.11246
Water and land ecosystem-CPEC-apocalyptic	14.63602
Water and land ecosystem-CPEC-threat	9.02131
Water and land ecosystem-CPEC-fragile	11.89905
Life on land-CPEC-biodiversity	5.63561
Life on land-CPEC-conservation	5.27390
Life on land-CPEC-contamination	7.85284
Life on land-CPEC-deforestation	6.50234
Life on land-CPEC-degradation	6.79279
Life on land-CPEC-negatively	7.26788
Life on land-CPEC-pollution	4.78891
Life on land-CPEC-natural	5.53748

There are twenty-seven significant appraisal items used with environmental-ecological areas in the discourse of the CPEC. In the area of water and sanitation, the appraisal items as prosodic expressions include ‘safe’, sustainable and ‘priority’. The highest MI score has been acquired by ‘safe’ with 3.06133 as a positive appraisal item. This shows that the area of sanitation and water in Pakistan is unsafe and CPEC is good to make it safe.

The area of ‘energy’ in the CPEC has been appraised with four prosodic expressions that include ‘renewable’, ‘green’, ‘sustainable’ and ‘affordable’ out of which ‘renewable’ has attained the highest MI score of 8.95001. This shows that the area of energy in Pakistan is not using renewable energy and the project of CPEC is good to provide renewable energy under it.

The area of consumption and production in the CEPC has been appraised with two prosodic expressions that include ‘patterns’ and ‘impacts’ in which ‘patterns’ has taken the most significant MI score 8.43512. This indicates that the CPEC is good to change the patterns of consumption and production.

Another area of environmental-ecological aspect of the CPEC is climate change which has been appraised by the use of four prosodic or appraisal items that include ‘mitigating’, ‘substantially’, ‘threat’, and ‘hampered’. Of all, ‘threat’ has gained the highest

association with climate change having 9.48543. This shows that CPEC is bad because it may cause a climate change.

Life under water has taken ‘harm’ and ‘consequent’ as appraisal items to appraise CPEC and it is found out that the word ‘harms’ has close association with MI score of 12.41363. This shows that the CPEC is bad because it is harmful for the aquatic life.

Although ‘challenges’ to developing countries' ecologies are diverse, there is clear agreement that deforestation, soil and water degradation, industrial pollution, and bad city planning are issues of ‘great urgency’ as they are ecological issues that may directly *harm* the economy and the quality of life of citizens during the construction of the CPEC. (R2)

Water and land ecosystems is another area that has been appraised of having four prosodic expressions such as ‘adversely’, ‘apocalyptic’, ‘potential threats’ and ‘fragile’. The significant association is found with ‘apocalyptic’ having MI score of 14.63602. This shows that CPEC is bad because it is a total destruction for water and land ecosystems.

The area of life on land has been appraised with eight prosodic words that include halt biodiversity, conservation, contamination, degradation, deforestation, negatively, pollution, and natural resources. The appraising term of ‘contamination’ has the most significant score having 7.85284, which shows that CPEC is bad because it is the source of contamination for the life on land.

'The CPEC biological corridors' across the highways for facilitation of the animal movement across and to maintain the ‘threatened’ biodiversity, to *mitigate* the impact of habitat fragmentation. (MG2)

4.8. The story of ‘Facticity’ in the Discourse of the CPEC

The story of ‘Facticity’ is an important aspect of Stibbe’s story framework; Stibbe has mentioned Martin and Rose (2003) in his book for exploring facticity patterns by considering modality patterns or use of modal verbs to show probability in the description. So in this research, the significant modal verbs are explored which are used with the socioeconomic areas such as ‘will’, ‘would’, can’, and ‘could’, ‘may’ and ‘might’. Similarly, the second methodology used to identify facticity patterns is the use of hedges such as ‘thinks’, ‘believes’, ‘argue’, etc., and the third strategy is the use of expert authority (van Leeuwen 2008). In this regard, the word ‘minister’ and ‘ministry’ have been explored.

The highest statistical significance of these words has been considered for the exploration of the facticity patterns. Table 4.25 below shows the facticity patterns in the socio-economic areas.

Table 4.25 Significant Collocates Showing Facticity Patterns in Socio-economic areas of CPEC

Significant collocates	MI score	Significant collocates	MI score
Poverty-will	3.96071	Poverty-argue	7.16435
Poverty-policy makers	11.74931	Health-would	3.70952
Health-ministers	5.70528	Health-appears	6.57600
Education-will	2.27290	Education-minister	1.91457
Industry-could	1.58148	Industry-minister	0.69723
Infrastructure-will	1.38485	Infrastructure –minister	-0.02793
Infrastructure-seem	3.61121	Gender-may	4.01385
Economic growth-will	-3.27156	Economic growth-minister	-3.51441
Employment-will	1.49117	Employment-believe	3.92852
Employment-minister	0.66335	Affordable housing-will	2.76705
Peace-can	4.147714	Peace-would	3.97593
Peace-minister	0.49546	Justice-believes	9.47615
Justice-may	5.06830	Partnership-minister	4.06627
Partnership-could	3.53548		

The facticity patterns are employed in socio-economic areas of the CPEC in three ways as described above. In the area of the poverty, the facticity patterns are employed by using the modal verb of ‘will’, the hedging word ‘argue’ and the expert authority like ‘policy makers’. Similarly, in the area of health the modal verb ‘would’, the hedging word ‘appears’ and the expert authority like ‘ministers’. In education, the modal word ‘will’ and expert authority ‘minister’ is used, while there is no hedging word found in it. In the area of industry, the modal verb ‘could’ and expert authority like ‘minister’ have been employed. In the area of infrastructure, the modal verb ‘will’, hedging word ‘seem’ and expert authority as ‘minister’ is used. In the area of gender, only modal verb ‘may’ could be found while in the area of economic growth, the modal verb ‘will’ and expert authority ‘minister’ are used. In the area of employment, the modal verb ‘will’, hedging word

‘believe’ and expert authority ‘minister’ are employed, while in the area of affordable smart cities and housing only modal verb ‘will’ can be found out. In the area of peace, modal verbs ‘can’ ‘would’ and expert authority ‘minister’ can be found as facticity patterns. In the area of justice, the modal verb ‘may’ and hedging word ‘believe’ while in the area of partnership the modal verb ‘could’ and expert authority as ‘minister’ have been employed. According to the analysis, the modal verb ‘will’ has been used with the most of socio-economic areas which are six in number, while the modal verb ‘would’ is used with two areas; the modal verb ‘could’ is used with two areas, and ‘may’ is used with two areas. The hedging words are also used to employ facticity pattern in the discourse of the CPEC which include ‘believe or believes’ with two areas, ‘seem’ with one area, ‘appears’ with one and ‘argue’ with one area also. The third criterion used to explore facticity patterns shows the evidences of the use of expert authority which includes ‘ministers’ in eight areas and ‘policy maker’ in only one area. The most significant facticity patterns include modal verb ‘will’ in six instances, the hedging word ‘believes’ in two instances and expert authority ‘ministers’ in eight instances. On the other hand, if we see Table 4.25, the highest association of the modal verb ‘may’ (5.06830) is found with justice, the hedging word ‘believes’ (9.47615) with justice and the expert authority ‘policy makers’ (11.74931) with poverty. So this shows that there are three kinds of linguistic devices that are used to construct the factual account of these areas in the discourse of the CPEC. The next section presents the facticity patterns in the environmental-ecological areas of the CPEC.

Table 4.26 Significant Collocates for Facticity Patterns in the Environmental-Ecological areas in the CPEC

Significant collocates	MI score	Significant collocates	MI score
Energy-ministry	3.99523	Natural resources-ministry	4.92133
Energy-minister	2.86427	Climate change-minister	0.55351
Energy-appears	4.77938	Ecosystem -policies	6.16841
Natural resources-minister	1.45538	Energy-will	3.53188
Climate change-can	2.03587	Climate change-argued	6.25277
Ecosystem-could	5.52946	Pollution-may	3.96784
Natural resources-could	2.92460	Aquatic life-will	3.62503
Environmentalists-believe	11.23230	Experts-believe	9.24879

Economists -believe	9.02284	Policy makers-think	7.49041
Economists-think	7.38948	Ministers-think	1.30384

In the environmental-ecological areas of the CPEC, the facticity patterns are employed by using modal verbs, hedging words and the names of expert authorities according to the theoretical framework. The highest MI score 11.23230 is gained by the hedging word 'believe' used with environmentalists having highest association, then it is used 9.24879 with 'experts' and 9.02284 with 'economists' on the third number. This shows that environmentalists are more concerned about giving the factual account of the descriptions for the awareness of environment and ecology. One example is given below for the environmentalists/believe collocation for employing facticity patterns.

Environmentalists believe that environmental policy dialogue is an alternative or complementary instrument that *aims* to strengthen public, political, and civil society actors in the partner country. The rationale behind this approach is to *raise* awareness of environmental issues in all areas of society during the activities in the CPEC. (R2)

It can be seen in Table 4.26 above that four modal verbs 'can', 'could', 'may' and 'will' and 'would' have been used which show the degree of certainty or uncertainty in the descriptions about environment and ecology. The example shows this patterns.

The minister said the projects under the CPEC **would** be *implemented*, keeping in view two principles, namely economic viability and environmental sustainability. (TN)

The third facticity pattern is the name of expert authority such as 'ministry', 'ministers', 'economists' and 'environmentalists'.

The Ministry of climate change along with the federal and provincial Environmental Protection Agencies (EPAs), **should** *prepare* plans to seek support... for new climate-compatible and climate resilient projects in the country under the overall umbrella of the CPEC in the future. (MG2)

4.9. Part VI- Ideologies and Ecosophy

Stibbe (2015) mainly draws his concept of ideologies and discourse from Fairclough's (2003) work on discourse and ideology. According to him, we as human beings represent the world around us through discourse and discourse in turn helps

construct ideologies about how we understand the world in different possible manners within a certain social group. Although Stibbe, in his framework proposes ideology as one story and assigns discourse as determiner of ideologies through identifying a set of linguistic features and patterns such as lexical items, vocabulary, grammatical choices and salience patterns yet trigger words, facticity, appraisal items and metaphorical expressions can also help to explore ideologies in any discourse. This also helps to identify the type of discourse and categorize it into beneficial/green, destructive/red and ambivalent/yellow discourses that these patterns tend to develop.

Therefore, following Fairclough's notion of ideologies and discourse, Stibbe has included the concept of anthropocentric and ecocentric ideologies in his eco-discourse perspective. According to him, there are three types of discourses that ecologists take into consideration while doing analysis which include, destructive discourses, beneficial discourses and ambivalent discourses as already mentioned above. In this research, they are identified by a type of discourse as mentioned above (e.g., a story) or a group of discourses (e.g., all six stories) that are employed by using different linguistic features and patterns if promote completely environmental and ecological protection, and are beneficial discourses because they encapsulate eco-centric ideologies. If discourses involve environmental and ecological destruction, they are called destructive discourses encapsulating anthropocentric ideologies by keeping the human beings as primary beings who can destroy the ecosystems and exploit natural resources for their survival. Moreover, if they promote ecological protection for the purpose of raising people's awareness for protecting environment, they are called ambivalent discourses (Stibbe, 2105). Although ambivalent discourses somewhere objectify and articulate Nature as a commodity, still they have some positive aspirations about the safety of environment (Istianah & Suhandano, 2022).

For the exploration of ideologies and Ecosophy of the CPEC, the main emphasis is on finding out ecocentric and anthropocentric ideologies. These two types of ideologies are explored in the data by finding out the co-relation of significant collocations with the word 'environment' and 'human'. This showed how significantly all the socio-economic and environmental-ecological areas are associated with 'environment' to generate ecocentric ideologies and with 'human' to generate anthropocentric ideologies. After finding out the

ideologies, the next step is to identify destructive/red discourse, constructive/green discourse and ambivalent discourse. Table 4.27 below presents the collocation analysis to see the relationship of each environment based SDG with the word ‘environment’ and ‘human/s’. More the MI score is, the more is the type of the relationship with the area.

Table 4.27 Significant Collocates Showing Anthropocentric vs Ecocentric Ideologies

Collocates	MI Score	Collocates	MI Score	Ideology
Industry-environment	1.97122	Industry-human/s	0	Ecocentric
Infrastructure-environment	3.46330	Infrastructure-human/s	3.93232	Anthropocentric
Economic growth-environment	0.34450	Economic growth-human/s	-0.72409	Ecocentric
Energy-environment	3.40338	Energy-human/s	4.76707	Anthropocentric
Natural resources-environment	2.57737	Natural resources-human/s	4.2457	Anthropocentric
Ecosystems-environment	5.91920	Ecosystems-human/s	7.17250	Anthropocentric
Climate change-environment	5.505414	Climate change-human/s	4.34383	Ecocentric
Aquatic life-environment	0	Aquatic life-human/s	0	NA
Pollution-environment	5.47422	Pollution-human/s	4.95656	Ecocentric
Ecology-environment	7.42337	Ecology-human/s	7.71306	Anthropocentric

The MI score values in each area with the word ‘environment’ and ‘human/s’ in Table 4.27 show the semantic preference taken by each area. The anthropocentric ideologies according to Stibbe (2015) mainly rest on the notion of human beings’ supremacy over Nature to exploit it for their own benefits, while ecocentric ideologies promote the protection of environment and ecology. This is investigated on the basis of MI

score value assigning semantic preference to the word ‘human’ and the word’ environment’. If the MI score with the word ‘humans’ is more than the word ‘environment’, the ideologies will be anthropocentric, while score value with the word ‘environment’ is more than the word ‘humans’, ideologies will be ecocentric. According to the analysis, the areas of infrastructure, energy, natural resources and ecosystems, the significance score or MI score is higher with ‘human/s’, which implicates that human beings are using them for their own benefits, hence producing anthropocentric ideologies. The MI score with ‘environment’ is higher in the areas of industry, economic growth, climate change and pollution which implicates that ecocentric ideologies are attempted to be employed in these areas to stop human activities that destroy the environment and ecology. This analysis is also supported with the help of examples taken from the data which are given below.

The area of industry has taken semantic preference of ‘environment’ with 1.97122 MI score to ‘human/s’ with no occurrence. This implicates that more destructive discourse has been produced by showing the bad impact of industry on environment, hence ecocentric discourse has been seen in this area. The example is given below.

Therefore, activities undertaken for the garments industry under CPEC should promote environmental sustainability. (R1)

Infrastructure has close association with ‘human/s’ 3.93232 as compared to ‘environment’ with 3.46330. This implicates that the CPEC is working more on development of infrastructure for humans and considering least the impacts on environment hence generating anthropocentric ideologies by producing destructive discourses. The examples given below show them.

Four new schemes to be part of CPEC Development of roads, railways and airways infrastructure will *improve* connectivity, which is supposed to be fundamental for economic growth, development and poverty alleviation along with other factors. Both Pakistan and China have strong resolve to *develop* infrastructure. (ETN)

In case of large-scale infrastructure development under the CPEC, displacement of communities **may** also *exacerbate* the environmental problems adding pressure on the natural resources, including forest, water, biodiversity and the concerned ecosystems along the CPEC alignments. (MG2)

In the area of economic growth, the semantic preference of 'environment' has more MI score 0.34450 than 'human/s' with -0.72409 which shows the adverse effect of economic growth on environment by producing destructive discourses and anthropocentric ideologies as shown in the example.

Therefore, **policymakers** should be knowing a 'positive and significant' association between economic growth and environmental degradation …so the **government should** *devise* policies for **green growth** rather than economic growth. (RP1)

The **government** should also *develop* policies to control human activities regarding the consumption of natural resources to control environmental degradation. This investigation also found that industrialization increases environmental degradation, but no doubt the developed economies made rapid development after the industrial revolution, which recommends that industrialization is a 'prerequisite' of economic growth. (RP17)

At the same time, energy is occurring more strongly with environment which shows predicament discourse by promoting renewable energy frame as given in the example.

Through the use of renewable energy, human beings can gradually reduce their dependence over fossil fuels. An effective transition to renewable energy would protect the environment without compromising social well-being and economic development. (R2)

The minister said the next stage of the CPEC **will** *focus* on cooperation in diverse sectors *including* industrial, agriculture, science and technology and renewable energy and hydro-power that would give a **new momentum to the future development of Pakistan's economy**. **(**TDN)

From the example given above, the area of energy in Pakistan is triggering a problem frame in the minds of people. In the above sub-frames, one metaphor is used to highlight the importance of the CPEC in the area of energy that triggers the frame of future development of Pakistan dependent on the use of renewable energy. The facticity pattern has been developed by the use of minister's words to validate the use of cheap, renewable and green energy. Similarly, the area of energy in Pakistan has been appraised as the 'most pressing issue' and energy 'crisis' that is causing hindrance to the infrastructure

development in Pakistan and industrial competitiveness. So it can be seen that predicament frame arises as a result of problem frame that means when problem frame about ecological issues is triggered in the minds of people, it is pacified at the same time by introducing predicament or solution frame such as it can be noticed in the last example, the energy crises in Pakistan is said to be the most pressing issue which hinders development process but at the same time the solution frames of cheap energy production is triggered. Other predicament or solution frames employed in the discourse that have intrinsic value, are modern energy, affordable, reliable and green energy.

Now onwards are given the correlation of environmental-ecological areas with both words: 'human' and environment'. In this way Natural resources have taken the semantic preference of 'human' with MI score of 4.2457 more than 'environment' with 2.57737. This implicates human supremacy in terms of the exploitation of natural resources.

We need to control human activities regarding the consumption of the natural resources to control environmental degradation. (PR17)

This example shows anthropocentric ideologies by generating the destructive discourse of human activities causing consumption of natural resources but at the same time the discourse has used the 'need to control' leading us towards solution oriented initiatives.

Similarly, in the area of ecosystems, 'human' with MI score 7.17250 has taken a preference over 'environment' with 5.91920 which shows anthropocentric ideologies that human beings have the right to exploit natural ecosystems for human development and prosperity. This leads to generate destructive discourses such as:

Human prosperity is on its dependence on the environment and on ecosystem functions… (R2)

CPEC: melting glaciers is a potential threat to ecosystem and biodiversity …. (RP1)

BR1 undoubtedly provides economic opportunities that said, if implemented without taking into account the environmental needs and ecosystem services to local communities, it can cause environmental degradation an unprecedented scale to many protected areas, key landscapes, eco-regions and key flagship species with outstanding biodiversity features and representative value. (R2)

China has proposed a new approach to secure life–supporting eco-system services for human benefit…. (RP15)

The area of climate change is closer to 'environment' with 5.05414 than 'human' with 4.34383 MI score which implicates that climate change is a natural phenomenon though the factor of human development has also great impact on it. This factor leads to generate anthropocentric ideologies due to human activities such as construction and cutting of trees as mentioned in the examples.

Impact of development on environment and climate change … (R2)

Deforestation due to CPEC projects in the area and large scale construction activities will contribute to accumulate greenhouse gases which cause global warming and climate change … (RP24)

The third assessment report will inform about climate change and human health risks and response …. (RP17)

It can be seen in the table that there is no co-relation of this collocation aquatic life-environment = 0 and aquatic life – human = 0. So presence of no ideologies and discourses could be found out in this area.

In the area of life on land, environmental pollution has much more importance due to its involvement in the process of economic development. It has taken semantic preference of 'environment' with 5.47422 while with 'human' 4.95656. The closeness of pollution with environment leads to generate destructive discourse due to dependence on coal as given in one example, while in other examples it is warned that CPEC may cause and destroy environment by polluting it. Further, in example 2 it is being presupposed to have the pollution reduced due to the CPEC.

over dependence on coal causes …… air pollution and other environmental impacts …. (RP24)

CPEC will reduce environmental pollution in the area …. (RP23)

CPEC may cause pollution to the environment … (EIA2)

CPEC and its impact on the environment and pollution after the development of CPEC … (RP24)

The last collocation is ecology-environment with MI score 7.42337 less than ecology-humans with 7.71306, which implicates that human beings are destroying ecology

for their own advantages, while environment and ecology are found to be in danger due to the CPEC. The examples illustrate these ideologies:

> The new energy plants, grids, use of fossil fuels, additional infrastructure, and the huge industrial zones along these routes will have additional environmental fallouts. It may be safely assumed that all these human developments will have major impact on ecology, biodiversity, air quality, water quality, habitat of flora and fauna, and wildlife in Pakistan. (RP24)

> The CPEC project may have long lasting negative impact on country's ecology and environment. (MG1)

There is another corpus analysis technique used in this research to evaluate the type of discourses used for environmental and ecological areas, where the correlation of the word CPEC is used to see its impact on environment based SDGs. Table 4.28 below is given to present the relationship of the word CPEC with those words which are taken from the frames of environment and ecology. First is seen the MI score value used with the collocation of CPEC-human and CPEC–environment.

Table 4.28 Significant Collocates Showing Association of Eco-environmental Areas with the Word CPEC

Significant Collocates	MI Score	Significant Collocates	MI Score
CPEC-Environment	2.77360	CPEC-Human	2.39086
CPEC-Biodiversity	2.48515	CPEC-Ecosystems	2.94750
CPEC-Desertification	0	CPEC-Forests	0
CPEC-Pollution	2.86084	CPEC-Habitat	0.97174
CPEC-Natural	1.51256	CPEC-Water	0.86152
CPEC-Quality of life	2.71562	CPEC-Aquatic Life	0
CPEC-Wild life	0	CPEC-Ecology	0
CPEC-Sustainability	1.54331	CPEC-Waste	-0.51193
CPEC-Environmental degradation	1.73545		

It has been found out that there are sixteen areas from environmental-ecological areas, where the impact of CPEC has been observed through collocation analysis. The MI score value was seen after uploading 62 files of the data. The co-relation of the CPEC with 'environment' has significance value of 2.77360 as compared to its association with 'human' as 2.39086 which implicates that CPEC has more impact on environment than on human beings. This also suggests that it has a negative impact on environment more than humans. The comparatively clearer picture is given by presenting its significance with other areas of environment and ecology below.

As we see the highest MI score is gained by 'ecosystems' with CPEC constituting 2.94750 and the least value is -0.51193 found with 'waste'. There are five areas where there is no occurrence of the association of CPEC which includes desertification, wild life, forests, aquatic life and ecology. This indicates that there has not been any kind of discourse developed in those five areas in relation to the CPEC. It is to be noticed that the effect of association of these areas with CPEC is determined on the basis of the score value such as -- higher the score value is; more is the negative effect of the CPEC on that area. In addition to the MI score, the existences of frames and sub-frames, salience attributive verbs, appraisal items such as adjectives, adverbs and nouns, metaphoric expressions and facticity patterns will also be included to identify ideologies.

Ecosystems have gained the highest MI score value which according to the analysis under five stories has triggered a problem frame generating destructive discourse and anthropocentric ideologies in the minds of people by using verbs such as affect river deltas and marine ecosystems, contribute to marine pollution, harming marine life. The appraisal patterns used in this frame depict reasons for the problems to marine life which include 'large scale' infrastructure development, nine 'prioritized' SEZ's, 'increased risk' of oil spillage, use of 'toxic' chemicals in manufacturing garments and 'high value-added fishery'. For example:

The Fishery Production Demonstration Project says, according to Pakistani river, ocean and desert farming methods, the *focus* is to *build* marine fish farming and fishing facilities and *use* 'advanced' fishing and 'aquaculture technology' to create a 'high value-added' fishery. (FB)

It can be clearly seen that the solutions to marine water ecosystems and the related life under water has also been suggested by using predicament frames, using patterns of salience and appraisal. The appraisal pattern is used to provide solutions such as 'sustainable use' and the salience attributive verb *conserve, manage, reverse, halt, protect, remote and restore*. The ambivalent discourse using ecocentric ideologies have been employed by giving solutions using expressions such as water treatment plants and sustainable use of oceans and seas.

Similarly, in the area of natural environment, the destructive discourses are produced by giving examples of negative impacts or problem frames of the CPEC, affecting natural environment such as road construction, noise, excessive economic growth, carbon emissions, and unsustainable coal consumption. This is done by triggering problem frames, negative appraisal items and verbs of focus which together help in developing anthropocentric ideologies. The examples are taken from different aspects of the environment.

Road and transportation under CPEC has a 'significant' 'negative' effect on the environment of the area, as the existing literature has exposed that road and transport 'negatively' *affects* the environment. Transportation produces carbon, makes noise and *mitigates* natural environment, congestion and traffic in the region, which 'causes' stress, frustration and diseases of lungs, heart and many other body parts. (RP21)

Generating energy through coal is 'not sustainable': coal, being a non-renewable resource, will not last forever; 'more importantly', it is an 'impure' way to produce energy that *damages* the environment. 'Cleaner ways' of producing energy must be encouraged, such as through solar power. (R1)

Pakistan is already suffering due to ineffective, or half-hearted, implementation of environmental conservation policies and laws over the last few decades, and as a result is facing the consequences of unsustainable ways of energy production through pollution, smog, and other health related issues. As the magnitude of the CPEC projects is greater than any development Pakistan has undertaken till date, it is absolutely essential to understand, at the initial stages, that the 'negative consequences to the environment' of this development will also be equally great. As Pakistan is already in the top seven nations *facing* environmental challenges going into the future. (RP24)

Urbanization …*produces* environmental challenges, and thus needs to be integrated with the concept of ecological civilization. (RP2)

It is expected that the CPEC will also *lead* to industry relocation from China to Pakistan. While this is good news, as it would lead to more investment and greater employment opportunities, there is a need to *look for* any environmental concerns due to 'relocation of dirty industry' and accordingly the government should think through any necessary safeguards regime. (R1)

Before discussing the CPEC, there is a need to understand the relation between environment and poverty. It has been well researched that poverty has a 'positive relation' with environmental degradation and climate change. The poor try to consume whatever is available for their survival, so **natural resources** become the first victim. People living in the neighbourhood of forests start using the natural resources for their livelihoods leading to deforestation, which is one of the *major causes* of environmental degradation and climate change. Deforestation also leads to soil erosion impacting watersheds and water shed management. Pakistan has lost a huge forest cover due to poverty. (TET)

There are 'particularly' five *indicators* of environmental degradation: Greenhouse gas emission, air contamination, water contamination, deforestation and land degradation that directly *damage* the environment through human actions. (RP17)

Identification of environmental impact factors, it is *anticipated* that excavation, compaction and other disturbances during construction are likely to loosen the earth, which may *cause* blowing of sand and dust and may *result* in some water and soil loss. (EIA3)

It is expected that the CPEC will *generate* 'substantial adverse effects' for environmental sustainability in Pakistan, which is a 'very serious matter'. (RP24)

Identification of environmental impact factors, it is *anticipated* that excavation, compaction and other disturbances during construction are likely to loosen the earth, which may *cause* blowing of sand and dust and may *result* in some water and soil loss. (EIA3)

In the examples mentioned above, anthropocentric ideologies are produced by tapping the problem frame triggered in the minds of people about environment and

environmental related concerns such as environmental degradation, environmental impact factors, environmental concerns, environmental problems and the environmental challenges. These sub-frames are triggered by using different salience patterns such usage of verbs for this include: *generate, identify, anticipate, cause, look for, face and produce*. These salience attributive verbs are used to draw the attention of readers towards these environmental problems which have very serious consequences of environmental sustainability in future. The CPEC has been evaluated as bad in this regard and certain appraisal patterns such as 'substantial adverse effects', environmental degradation of 'unprecedented scale', 'relocation of dirty industry' under the CPEC and poverty resulting tree cutting and victimization of natural resources due to human activities, etc. So according to these appraisal patterns, the evaluation can be coined as '**THE CPEC IS BAD'**. Another frame triggered in this frame is the relationship of environmental degradation with poverty which calls our attention towards not only environmental problems occurring by human activity but also the extinction of forests due to their cutting causing loss of forest cover of Pakistan and adding to the extinction of natural resources. On the basis of Nature used as a resource, a metaphor is developed that becomes: **NATURE IS A RESOURCE**, **NATURE IS A VICTIM**. In the areas of waste and waste disposal collocated with the CPEC, destructive discourse is generated by the presence of the expression 'no proper waste disposal system in Pakistan', 'consequences on aquatic life', 'impact on aquatic biodiversity', 'disastrous impacts on the health of people and aquatic and terrestrial life'. The discourse used in this area is still ecocentric which implicates the importance of lives of human beings as well as life below water and life on land.

The CPEC developmental projects will have 'consequences' on aquatic life and will also *impact* aquatic biodiversity, as in Pakistan there is 'no proper' waste disposal system. Incinerators are installed to dispose waste and a large community *dumps* their waste in the water bodies. (RP24)

There should be proper waste dumping sites and the latest technology should be used to *dispose* of the toxic waste from hospitals rather than dumping them in water bodies and in soil which would ultimately *create* 'disastrous impacts' on the health of people of Pakistan as well as the aquatic and terrestrial life of the plants and animals. (RP24)

On the other hand, in environmental-ecological areas, there can be found some predicament frames; the ones that suggest solutions by responding to the problems as suggested by Fransson (2020). In the examples given below we can see them.

We can only use impact assessment as the tool to check the effect of new projects on quality of environment and equity in social life. Hence one of the objectives of **EIA (Environmental Impact Assessment)** is to *identify* the future environmental effects of planned projects. (RP20)

One of the six economic corridors under China's ambitious **Belt and Road Initiative,** CPEC has been made part of China's 13th Five-Year Plan. Due to rampant flooding in the CPEC region, in 2016 senior Pakistan officials called for making an **action plan to green CPEC** to *reduce* environmental degradation and secure Chinese investment. R2

To *raise* employees' safety awareness and environmental protection consciousness through training; to transform from "require me to be safe" into "I want to be safe"; to *reduce* environmental pollution in operating activities; and to develop health, safety. (EIA1)

Chinese and Pakistani governments are both advised to *focus on* environmental safety and **green activities** to create a pleasant environment. They need to reduce environmental pollution in the connected areas and care about their health and safety. Generally, environmental policies are *lacking* in Pakistan in the private and public sector. The Pakistani government needs written policies for environment protection to *grab* the attention of local communities in terms of environmental safety. (RP23)

The CPEC which will serve as a **breath of fresh air** for the **sluggish economy of Pakista**n. Apart from the traditional fossil fuels, the CPEC will also help in **strengthening cooperation** in nuclear, solar and biomass energy, which would *prevent* environmental damage and unnecessary pollution of the atmosphere. (FB)

Institutional Arrangements and EMMP Having well defined implementation arrangements, with specific assigned responsibilities, and adequate monitoring of the implementation and performance of mitigation measures, are *critical* to environmental management. The presence of a good and functional institutional framework and monitoring entities e*nsure* that mitigation measures are an important and integral part of these arrangements. (MG2)

Credible and reliable **Environmental Impact Assessments** of these projects are of *considerable significance and need*. It is important to note that 60% of these projects under the CPEC have been completed yet EIAs or SEAs of the projects have not been conducted, nor has any of the project documentation been shared with the public or other stakeholders. This should be a matter of 'grave concern' not only for the Government of Pakistan but the citizens as well. (RP23)

Implement on-the-ground **environmental protection projects** that are closely related to people's livelihoods in developing countries. (R2)

This research recommends policy makers to build new educational institutions, encourage investors to invest in the industrial sector, and *formulate* **environmental strategies** to unleash maximum benefits of the CPEC. (RP23)

Although most countries understand that environmental preservation and protection of natural resources are *important*, they do not distinctly *recognize* the opportunity for **green growth** (i.e., the fact that economic growth can be achieved in ways that also *promote* environmental sustainability and social inclusiveness. (R2)

Environmental policy dialogue is an alternative or complementary instrument that *aims* to … *raise* awareness of environmental issues in all areas of society. (R2)

A **green economy**, as encouraged by the **United Nations Environment Program**, results in improved human well-being and social equity, while significantly *reducing* environmental risks and ecological scarcities. In its simplest expression, a **green economy** can be thought of as one which is low-carbon, resource-efficient, and socially inclusive. (PB2)

Although most countries understand that environmental preservation and protection of natural resources are *important*, they do not distinctly *recognize* the opportunity for **green growth** (i.e., the fact that economic growth can be achieved in ways that also promote environmental sustainability and social inclusiveness. (R2)

In the examples given above, ecocentric ideologies are produced by triggering the predicament in people's mind, and by giving solutions to the problems occurring due to environmental degradation. The facticity patterns are predominantly seen in this frame used to develop facts about saving our environment. The references quoted in these examples range from Environmental Impact Assessments, environmental sustainability

projects, environmental protection policies and dialogues, environmental preservation, green growth, to environmental management strategies etc. The reference of institutions is also given as a facticity patterns by quoting Pakistan's government, National Development Reform Commission (NDRC), and United Nations Environment Programmes, etc. Moreover, the facticity patterns used in these frames are modal verbs such as 'will', 'would', 'should' etc.

The metaphors of **'green economy', 'green activities' 'green growth', and 'greening the CPEC'** are used to emphasize the importance of saving our environment. The importance to the area of a green and pleasant environment has been assigned by using salience patterns such as using verbs of implement, *raise, aim, recognize, focus on, ensure, conduct, formulate* and a modifier of importance.

Concluding this section of the research, it can be seen that in all environmental-ecological areas except environmental sustainability, destructive discourse has been used which leads to highlight the anthropocentric ideologies highlighting human activities to exploit nature, environment and ecology. Most affected area under the project of CPEC is 'ecosystems' of Pakistan. The collocation of CPEC-sustainability produces predicament frames and likewise ambivalent discourses. In this area, it is quite visible from the examples from the text, that there are two kinds of frames being triggered by some cognitive structures or words used; one is problem frames and the other is predicament frames. In the problem frames occurred in all collocations except CPEC-sustainability, we can see the frame of dirty and unclean drinking water, poor sanitation, use of non-renewable energy, non-friendly consumption and production patterns such as mismanagement of garbage and waste, hazards and consequences of climate change such as flooding, land sliding, excessive rains and change of weather, threats of animal and plant extinction, harms inflicted to water and mountain ecosystems, biodiversity loss, pollution and land desertification. On the contrary in predicament frames, there can be seen numerous solutions to the problems existing in all ecological frames. They are triggered in the form of better services, desalination plants, standardized constructions, water treatment strategies and plants, clean water and supply management, producing renewable, cheap and affordable energy, recycling of waste, better waste and garbage management by installing incinerators, fishery production and demonstration projects, more plantation of plants,

afforestation, avoiding land degradation, preserving natural resources through less consumption, pollution free environment, less hunting of animals to avoid animal and birds extinction, etc. For the implementation of the solutions given above, facticity patterns are involved by mentioning the names of organizations, institutions and projects that can help in maintaining a sustainable relationship of human beings with other-than-humans. So all the frames given above are intrinsic in nature and employ green discourses especially in predicament frames, while in problem frames, destructive discourse has been developed that shows the environment of Pakistan is vulnerable to have ecological and environmental threats.

Finally, in socio-economic and eco-environmental areas of CPEC discourse, it is seen that anthropocentric ideologies are unravelled through problem frames, CPEC metaphors which are anti-environment, focus verbs as salience attributive verbs occurring as left collocates, negative appraisal items which are anti-environment, caution by facticity patterns of economists along with the use of hedging words of 'think' and 'believe' and modality patterns by the use of modal verb 'will'. Similarly, the eco-centric ideologies are unravelled through predicament frames, eco-metaphors, focus verbs, positive appraisal items and facticity patterns having descriptions of environmental safety.

4.10. Chapter Summary

Chapter 4 demonstrates how corpus analysis has addressed research questions of this research. Concordance/frequency analysis along with collocation analysis techniques are undertaken to explore the representation of socio-economic and eco-environmental areas in the discourse produced around CPEC. The analysis also involved the exploration of cognitive structures and linguistic patterns employed to develop the six stories, i.e. frames, metaphors, salience, appraisal and facticity following Stibbe's story framework (2015). The analysis of stories carried out by concordance analysis for the story of 'framing' only and collocation analysis carried out for the rest of five stories further helps to unravel anthropocentric vs ecocentric ideologies and the Ecosophy of the CPEC. All of this leads to the findings of the study which are given in the next chapter.

CHAPTER 5

FINDINGS AND DISCUSSION

This chapter presents findings of the research conducted on the discourse produced around CPEC from an eco-critical discourse perspective, followed by discussion in order to address the research questions. The findings are presented under corresponding research question to address it and provide some insights into the key findings after interpreting results of data analysis in light of Stibbe's (2015) framework of ecological critical discourse analysis and Sen's (1999) approach of sustainable development. As, this has been mentioned in the theoretical framework, the areas representing socio-economic and eco-environment are based on Sen's (1999) sustainable development approach which includes three levels, i.e. social, economic and environment. Therefore, to include his approach into this research, 17 Sustainable Development Goals (SDGs) from United Nations website are taken because they do have all three levels of Sen's sustainable development approach. It starts with providing findings of the first research question.

1. Which cognitive structures and linguistic patterns are employed to represent socio-economic and ecological-environmental areas in the discourse of the CPEC?

According to the analysis done in Chapter 4 to address first research question, it has been found that the entire corpus consisted of total word tokens of 1222144 or almost 1.2 million words along with word types (31067) where the representation of socio-economic areas in the CPEC discourse (5719 concordance/frequency hits) is more than ecological-environmental representation with 1807 (concordance/frequency) hits. The

amount of more socio-economic areas in the CPEC discourse is due to what has been said by Kleinnijenhuis, De Ridder & Rietberg (2020) who suggest that in economic texts, the relevance of discourses lies in the heart of relations that a network of related terms creates by occurring frequently for meaning making purposes. So with relevance to the discourse type, this research is conducted on the economic discourse produced around CPEC which has been found to have more content on economic and social areas than ecology and environment as shown in the frequency or concordance hits given above.

Another way of putting up the findings given above is to validate the representation of socio-economic and eco-environmental areas in the CPEC discourse through collocation analysis. The Mutual Information (MI) score value was the criterion of finding out association of socio-economic and ecological-environmental area, henceforth called as eco-environmental areas with the word 'CPEC'. Greater the score value was; more was the association of the areas with the CPEC. The results showed the MI score of the word CPEC with the given areas as given below:

CPEC-Economic= 4.66286

CPEC-Socio-economic= 2.93156

CPEC-Environmental= 2.64534

CPEC-Ecology= 0

This shows that CPEC discourse holds more association (MI score) with socio-economic (7.59442) while less with eco-environmental (2.64534) areas. Following the idea of Vessey (2017), the semantic preference of the words can be seen through collocation analysis that gives us the statistical significance of search term with the words that co-occur with it. Hence, the word socio-economic has been taken as a semantic preference by the word CPEC rather than ecology and environment. The next section sheds light on the cognitive structures and language patterns that are employed in the discourse of CPEC for the representation of socio-economic and eco-environmental areas.

The cognitive structures and linguistic patterns that are employed to represent socio-economic and eco-environmental areas in the discourse produced around CPEC include frames, metaphors, salience attributive verbs, appraisal items and words showing facticity. There are 17 conceptual frames and 55 socio-economic sub-frames out of which 22 sub-frames are problem frames while 33 sub-frames are predicament frames that

represent socio-economic areas of the CPEC. Similarly, there are 66 eco-environmental sub-frames in the CPEC discourse where 40 sub-frames are found to be problem frames, and 26 are found to be the predicament frames. It can be clearly seen that the number of problem frames in eco-environmental frames is more than socio-economic frames. This shows how the project of CPEC is viewed by people as the source of well-being of human beings more than the environment. The problem frames are being triggered in the minds of people like how the CPEC affects the environment. On the contrary the number of predicament frames in socio-economic areas also present some optimism and promotion of relationship of human towards human and tend to produce anthropocentric ideologies against weak relationship between human and nature (Zinaikin, 2022).

In the discourse of CPEC, there are found 12 conceptual metaphors about CPEC, 11 conceptual metaphors about socio-economic domain and 4 conceptual metaphors for eco-environmental domain. In a nutshell, metaphors in this research are found to be the strong linguistic devices that encompassed ideologies which directly triggered the minds of the readers to make assumptions through their vivid images about CPEC as a giant, mega project, and a game changer. However, human being metaphors used for CPEC such as CPEC thinks, CPEC goes a long way to…etc. It is due to this reason that Fill (2006) calls metaphors to be explored as the 'stories we live by' due to their power in setting up permanent cognitive patterns in the minds of the readers. Language, being a tool of communication, can be highly manipulative because when describing an economic issue, nature is separated from human beings as we have seen in the metaphor of 'threat', 'disaster' and a 'war' such as CPEC IS A THREAT, CPEC IS AN ENVIRONMENTAL DISASTER and CPEC IS A WAR. On the other hand, when the matter is about human benefits such as promoting business, nature is considered as a crucial aspect for development and a medium to reach the sustainable development such as NATURE IS A RESOURCE, INTERNATIONAL PARTNERSHIP IS A WEATHER and DEVELOPMENT IS A GREEN COLOUR, etc. It is, therefore, this research brought forth the conceptual metaphors about CPEC, development, Pakistan, China, and socio-economic and ecological domains that promote harmony between human beings and the ecosystem, which should not be measured in terms of benefits and loss or threats and protection, but

instead help conceptualize the abstract notions with the ones that are more familiar (Zhou, 2017).

From an Ecolinguistic perspective, there are specific ecological metaphors that are used to define ecology. They are the metaphors that are constituted about/ against or in favour of the ecosystems. These metaphors can be defined as 'eco-metaphors' or 'Green metaphors' because they are constantly being employed to talk about the ecosystem. Such metaphors are also examined in order to know the underlying assumptions/myths that they have been carrying in unmasking certain ideologies. The conceptual metaphor of CPEC IS A GREEN COLOR and ECONOMY IS A GREEN COLOR are used to trigger ecocentric ideologies. As Verhagen (2008) claims that such metaphors:

> "Contribute to the unmasking of myths, assumptions, ideologies that underlie… notions of nature. It is particularly in the linguistic devices of metaphors that these assumptions are constructed" (Verhagen, 2008, p.1).

In the same way, the next cognitive and linguistic patterns used to represent socio-economic and eco-environmental areas in the CPEC include salience attributive verbs. All these verbs are found to be the verbs of focus, vitality and prominence according to the theoretical framework of Stibbe (2015). They include '*accelerate', 'alleviate', 'get', 'provide', 'promote' 'focus' and 'work on'*, etc. During the collocation analysis, it is found that 12 significant verbs are used for indicating salience of socio-economic areas, while 7 verbs were found to be used to show the salience of eco-environmental areas. The most frequent verb found in both the domains is 'promote' with 495 concordance hits and with MI score of 3.36253. The most salient socio-economic area which needs focus and attention is poverty and hunger and similarly, the most salient area in eco-environmental domain is environmental sustainability. So it can be said that verbs tend to influence the activation of frame either problem/solution or predicament in the minds of people by drawing their attention towards the area that calls attention in any ways. The similar finding can be seen in the research carried out by Ferrretti, Kutas and McRae (2007) who assigned the importance to the use of verbs and their aspect in the activation of desired knowledge and frame in the minds of people. So verbs in this research occurring as left side collocates are found to be salience attributive verbs.

Appraisal items are also the linguistic devices that represented socio-economic and eco-environmental areas in the CPEC discourse. There are 42 significant appraisal items in collocation analysis found to be present in the socio-economic areas which are positive in appraising these areas such as ‘general’, ‘better’, ‘new’, ‘expanding’, ‘dirty’, ‘massive’, ‘major’, ‘rapid’, ‘sustainable’, ‘sustained’, ‘unprecedented’, ‘consistent’, ‘global’, ‘steady’, ‘green’, ‘good’, ‘inclusive’, ‘modern’, etc. They include four nouns, two verbs, one adverb and thirty adjectives. All are positive appraisal items used with the areas under CPEC except one that is used with ‘dirty industry’ to be shifted from China to Pakistan under the project of CPEC. Similarly, 27 appraisal items appraise the eco-environmental areas of the CPEC, where 12 nouns, 12 adjectives and three verbs are found to be significant. Most of them are negative appraisal items that appraise CPEC as bad for the environment of Pakistan. The appraisal patterns in the CPEC discourse are used to make evaluations and reactions about different domains as said by Istaia’nah (2019).

In the same way, another cognitive and linguistic pattern used to represent the socio-economic and eco-environmental areas in the CPEC is the use of facticity patterns. The facticity patterns in this research are used to see the factual account and descriptions included to represent the socio-economic and eco-environmental areas. According to the results, three kinds of facticity patterns are found to be significant in this research which include the use of modal verb ‘will’, the hedging word ‘believes’ and the expert authority ‘ministers’ and in eco-environmental area, the expert authority as ‘environmentalists’. So, the cognitive and linguistic patterns employed to represent socio-economic and eco-environmental areas in the discourse produced around CPEC are frames, metaphors, salience attributive verbs, appraisal items and words showing facticity. The next part addresses the research question 2.

2. How does the cognitive structures and linguistic patterns in the discourse produced around the CPEC develop stories taken from Stibbe’s story framework (2015)?

As this research is an Ecolinguistic study of the economic discourse produced around CPEC, Stibbe’s story framework is also used in combination with sustainable development approach that helped in exploring cognitive and linguistic patterns present inside all three areas mentioned above. Therefore, to address the second research question, the cognitive structures and linguistic patterns which are explored in the CPEC discourse include:

frames, metaphors, salience, appraisal and facticity patterns. All these patterns and structures are taken from Stibbe's story framework which finally help in unravelling ideologies and the Ecosophy of the CPEC. The findings are presented in the parts (I-VI) following the same pattern as used in the analysis chapter. The first cognitive structure and linguistic pattern is about the findings of frames and framing followed by four more structures and patterns.

5.1. Part-I: Frames

Table 5.1 Development Frames (5190 concordance hits)

Economic Development	439	Extrinsic frame (apocalyptic Frame)
Sustained Economic Development	05	Intrinsic frame (predicament Frame)
Socio-economic Development	105	Intrinsic frame (predicament Frame)
Sustainable Development	202	Intrinsic frame (predicament Frame)
Green Development	25	Intrinsic frame (predicament Frame)

In Table 5.1, the frame of development occurs with 5190 concordance hits as a relevant frame to be found in the economic discourses of the CPEC. Inside the frame of development there can be seen some other sub-frames which include 'economic development' as found most frequent than other frames such as 'sustainable development' the second frequently occurring frame, 'socio-economic' on third number with 105 concordance hits, while 'sustained development' on fourth number and 'green development' with less frequency of 25 hits. In these examples of frames, it can be easily seen that how a frame of development has undergone a process of frame modification; a process of changing a frame which has some qualities of the previous frame but also has

some changes such as an altruistic frame of sustainable development (Stibbe, 2015). In the sub-frames given above except 'economic development', the altruistic or intrinsic element can be found which can be achieved by triggering the frame of economic development modified into sustainable development, sustained and green development as well.

So there is one extrinsic sub-frame which can be interchangeably called as problem frame and four intrinsic sub-frames or predicament frames having solutions inside the frame of development. The use of more intrinsic or predicament sub-frames in the frame of development leads to more intrinsic motivation which is robust than extrinsic motivation caused by extrinsic frames because intrinsic motivation and solutions encourage people to act positively towards the environment (Neuteleers & Engelen, 2015). Moreover, intrinsic frames are more tilted towards environmental safety and protection, thus producing either beneficial or ambivalent discourses while extrinsic frames give rise to profit maximization and handle environment as a commodity, thus producing destructive discourses (Stibbe, 2015).

Moving forward from the findings of the development frame, socio-economic and ecological frames also are given, which are extracted from the data by using sustainable development goals as 17 in number to explore the socio-economic and environmental/ecological aspect present in the data.

Table 5.2 Socio-Economic Frames

S.no.	Socio-economic Frames	No. of Frames	Frequency	Type of Frame
1	Poverty	5	350	Problem = 1 Predicament= 4
2	Hunger	1	5	Problem=1
3	Health	5	366	Problem=4 Predicament=1
4	Education	8	531	Problem=0 Predicament= 8
5	Gender Equality	3	126	Problem=2 Predicament=1
6	Economic Growth	6	301	Problem=2 Predicament= 4
7	Industry	7	926	Problem=7 Predicament=0

8	Infrastructure	2	2041	Problem=2 Predicament=0
9	Decent work and Employment	6	632	Problem=2 Predicament=4
10	Smart housing	3	18	Problem=0 Predicament=3
11	Peace and Justice	4	442	Problem=01 Predicament=3
12	International Partnership	6	329	Problem=0 Predicament=6

In Table 5.2, there are twelve socio-economic frames found in the data in which three frames are extrinsic or problem frames that include the frame of 'economic growth', 'infrastructure' and 'industry' with total frequency of 978 concordance hits. There are 9 frames that are intrinsic in nature or predicament and are found with concordance hits of 1929. All socio-economic frames are embedded in the data for building up a relationship of human beings with other human beings in order to bring equality and equity at all levels. The perspective of building equitable relationships among human beings for each other triggers an altruistic frame of care. Hence socio-economic frames having altruistic motivations of care are triggered in the minds of people to encourage them to work as a community, where all people have an equal opportunity of social acceptance (Swartz & Colvin, 2015).

Table 5.3 Environmental/Ecological Frames

S.no.	**Frames**	**No. of Frames**	**Frequency**	**Type of Frame**
1	Climate Change	3	199	Problem= 1 Predicament=2
2	Clean Water and sanitation	5	127	Problem= 5 Predicament=0
3	Clean Energy	6	265	Problem= 0 Predicament=6
4	Responsible Consumption and production	10	463	Problem= 7 Predicament=3

5	Life on Land	17	517	Problem= 13 Predicament=4
6	Life under water	7	134	Problem= 5 Predicament=2
7	Environmental Sustainability	18	609	Problem= 9 Predicament=9

In Table 5.3 of ecological/environmental frames, it can be seen that all the frames which are predicament come under intrinsic frames because they encapsulate the intrinsic value of preserving water, energy and precious species of animals, of avoiding overexploitation of natural resources and pollution, of managing garbage, waste and production of recycled materials. All these frames are triggered to adopt sustainable behaviours and sustainable actions (Crompton, 2010). For the purpose of triggering desired frames in the minds of people, environmental advocacy is very significant (Friedlander, 2019) which can be incorporated through intrinsic frames that favour environmental sustainability. It has been noticed during analysis of ecological frames (see chapter 4), the intrinsic value of environmental sustainability has been highlighted through triggering problem and predicament or solution frames which are presented in the analysis under separate headings. Although the number of ecological/environmental main frames (07 in number) is less than the number of socio-economic frames (10 in number), but the number of sub-frames is higher than the sub-frames of socio-economic frames. This large number of ecological frames shows the concern of Stibbe (2017) who emphasizes changing the usual stories from the story of economic development to sustainable development by strengthening the frames with more intrinsic frames which generate more beneficial and ambivalent discourses having ecocentric ecosophies. So this shift can be seen in the use of frames that is moving from anthropocentric to ecocentric in this research which leads us to conclude that more ecocentric frames are being included inside the economic discourses which are primarily destructive discourses and are based on explicit anthropocentric ecosophies. Concluding with the remarks by Poole (2017), ecological frames are dominant frames that may change the already existing perceptions of environment and ecology. Stibbe (2017) is also of this opinion that problem and predicament frames in ecological

discourse analysis need to be exposed and be criticized to be reframed with solutions which can be done through language used in the solution oriented frames.

5.2. Part II: Metaphors

Metaphors or more specifically conceptual metaphors are cognitive structures according to Lakoff and Johnson (1980). This is the second story taken from Stibbe's story framework which can be seen in almost all the areas from socio-economic to eco-environmental discourse produced around the CPEC. During the process of exploring metaphors, the extraction of lexical realizations of metaphors was found to be little difficult but taking the idea from Strzalkowski, Broadwell, Taylor, Feldman, Shaikh, Liu & Elliot (2013) that the corpus provides the researcher to read the lager text in one window when concordance analysis is done. Following this idea, lexical realizations for various conceptual metaphors could be seen during the corpus analysis. The lexical realizations were seen in the socio-economic and eco-environmental areas, CPEC, Pakistan and China as typed in search term bar of the software.

First are given the conceptual metaphors of CPEC. The 12 conceptual metaphors that are used as follows:

CPEC IS A GAME, CPEC IS A GIANT, CPEC IS A FABRIC, CPEC IS A GIFT, CPEC IS A THREAT, CPEC IS A BASKET, CPEC IS A HUMAN BEING, CPEC IS A DISASTER, CPEC IS A COLOUR, CPEC IS A SCIENCE, CPEC IS A BEACON, and CPEC IS A WEATHER.

In the given conceptual metaphors, the target domain is CPEC while the source domains are different. They are used to represent the scope and importance of CPEC in general but according to Allbritton (1995), they serve the function of a schema in the reader's mind that has the ability to structure an area of importance either in a negative or a positive way. For instance, CPEC is a game changer, a Chinese gift, a basket of development, a human being, a green colour, a beacon, and a weather are used to structure CPEC's importance in the minds of people. Similarly, CPEC is a giant, a fabric, and a science are used to show the scope of the project. At the same time, CPEC is an environmental threat, an environmental disaster and a green colour are shown to trigger bad impact of the project of CPEC on environment, air quality and ecosystems of Pakistan.

In this way, conceptual metaphors used for CPEC (Lakoff & Johnson, 1980) play the role of communicating a message of something to the recipients such as a humanly structure, bodily experiences through language cosmetics.

In the similar way, some other conceptual metaphors have been found out in the CPEC discourse under socio-economic and eco-environmental areas of Pakistan. They are from different domains given below.

1. Disease Metaphor

i) Pakistan's **sluggish** economy…

ii) Pakistan's **ailing** economy…

iii) Pakistan's **ailing** industry

iv) **Crippled** industry of Pakistan

v) Pakistan has been battling to get its **shaky** economy on track.

vi) **Crippled** justice system of Pakistan

vii) **Fragile** ecosystems of Pakistan....

This disease metaphor is used for comparing Pakistan's economy, industry, justice system and ecosystems with a patient who is weak and sluggish because of diseases and cannot move quickly and actively. The source domain in this conceptual metaphor is disease and the target domain is Pakistan's economy, industry, justice system and ecosystems. Here the lexical realization of this metaphor is used for the imagery used for displaying a bad plight of Pakistan's industry and justice system which needs to gain health as soon as possible.

The disease metaphors are also used to describe the condition of Pakistan's ecosystems that have grown so weak and thin due to the environmental hazards and prevalence of industry and infrastructure. A bulk of road construction due to connectivity under the project of the CPEC has destroyed mountain, land and water ecosystems. According to Lakoff and Johnson (1980), disease metaphor is a common rhetorical strategy that aims to convey the severity and urgency of economic problems. In economic discourse, disease metaphors are often used to highlight the contagious nature of economic problems, the need for rapid intervention, and the potential for long-term damage if left untreated.

2. Colour Metaphor

i) **Green** growth and **green** economic growth

ii) **Green** economy…

iii) **Green** economic activities

iv) **Green** investments

This conceptual metaphor is used to emphasize the importance of green colour that signifies balance and peace; here focusing on adding green activities, economy and investments in order to transform the approach of overexploitation of natural resources and environmental deterioration caused by economic activities. This metaphor is used to make an emphasis, visualise and also trigger a new frame of transformation from traditional to new and green approach towards economy (Teleb, 2007).

3. War Metaphor

i) **Combating** poverty and hunger

ii) **Threatened** species

iii) **Combating** climate change

The war metaphor is used to show the severity of a war like situation (Caldwell, 2011), where poverty and hunger have prevailed in Pakistan so much that they need to be removed and to be fought against on an urgent basis. This conceptual metaphor is used to describe the warlike situation depicted for ecology and climate change occurring in the world in general and Pakistan in specific. The source domain in this conceptual metaphor is war and the target domain is ecosystem and climate change. War metaphors are commonly used in economic discourse to frame the urgency of the situation in the minds of people ((Eichengreen, 2018).

4. Building Metaphor

i) Poverty alleviation as one **door** of prosperity.

ii) CPEC on the roof of development…

The building metaphor has been used to identify prosperity as a building which has many doors and one of them is poverty alleviation. The source domain in this conceptual metaphor is building and the target domain is poverty alleviation. According to the lexical realization of this metaphor, it seems to be used for presupposition purposes because in Pakistan prosperity would be achieved if poverty and hunger are reduced and eradicated. Similarly, building metaphors are commonly used in economic discourse to describe the

growth and development of economies, as well as the stability and resilience of economic development as in second lexical realization. The use of these metaphors can help to emphasize the importance of planning, investment (Glaeser, 2011), and effort in achieving economic growth, as well as the need for a solid foundation to support economic activity (World Bank, 2019).

5. Weather Metaphor

i) **all-weather** partnership

ii) Time-tested all **weather** strategic partnership between Pakistan and China...

The conceptual metaphor given above is used to show international partnership and cooperation as a source of friendship among countries in all weathers. Here this kind of friendship has been shown between Pakistan and China so strong that it does not construe the effects of weather. The source domain in this conceptual metaphor is weather, while the target domain is partnership. In conclusion, weather metaphors are commonly used in economic discourse to describe the volatility and unpredictability of economic conditions and trends, as well as to emphasize the need for adaptation and resilience. The use of these metaphors can help to illustrate complex economic concepts in a more accessible and relatable way, as well as to emphasize the importance of proactive economic policies between nations (Holtz-Eakin, 2008).

6. Game Metaphor

i) Win-win partnership

ii) CPEC is a game changer

In this conceptual metaphor, the source domain is game while the target domain is international partnership, which shows the inherent nature of game in terms of competition. This metaphor is used to persuade countries to win the game of international partnership by taking part in projects such as the CPEC. So this metaphor is used as a persuasive device in the given data. In conclusion, game metaphors are commonly used in economic discourse to describe competition, strategy and decision-making in economic systems (Besley & Persson, 2011).

7. Nature Metaphor

i) To preserve **natural resources**

ii) Overexploitation of **natural resources** should be prevented.

The Nature metaphor is used to show how one concept such as Nature and the other concept such as economics are intertwined and dependent on each other and can be compared. The source domain in this conceptual metaphor is resource and the target domain is nature. Here this metaphoric expression is used to emphasize the importance of natural resources and preserving them from overexploitation. They are often used to describe the environmental impact of economic activity, implying that economic systems are inherently linked to the natural environment (Wackernagel & Rees, 1996).

8. Journey Metaphor

i) CPEC is on the road of development

ii) Socio-economic development in the CPEC travelling safely…

The journey metaphor given above are from the area of 'development' where the target domain is development of CPEC while the source domain is journey. They are used to portray development, a good, positive and something showing progress but according to Kopnina (2014), the journey of economic development is done on the basis of exploitation of nature where nature is used as a commodity. Journey metaphors are commonly used in economic discourse to describe the process of economic development, change and progress (Kuznets, 1995).

In light of metaphors discussed above, it can be noticed that metaphoric expressions are not only used to compare and contrast but also are used to emphasize a particular aspect of life which is the protection of environment and ecology in this research, while in some other places, it is used as persuasive devices or rhetorical devices, personification in human being metaphor, exemplification as in game and Nature metaphor and presupposition in building and journey metaphors.

In this research, the metaphor of 'green business' and 'ecological corridors', 'green investments' and 'green economy' are highly anthropocentric terms since they reflect human concerns, where Nature is seen as a medium to a transparent establishment of business and marketing. The term 'green business' itself is problematic because nature is now seen as entering the market of business where everything is measured in terms of benefits and loss. In other words, by using these terms, human beings have projected all

means of life including nature in terms of business that supports progress and development. Larson (2011) shows how progress and development are "powerful, ideological metaphors that justify how we act in relation to the natural world and towards one another" (p. 86). Just as Glenn (2004) criticizes the animal discourse for projecting animals as commodities whose usefulness is only centred upon human needs, the environmental discourse projects the whole ecosystem as a 'business' that remains a source for human benefits. These metaphors are therefore destructive because they create a strong separation of human beings and nature that nature is inert and is there for human exploitation. In general, as we see eco-metaphors are powerful lexical items that define ecology, ecological problems or human concerns in relation to ecology. A positive eco-metaphor such as the '3Rs' is highly recommended because it advocates ecological sustainability. On the other hand, a destructive metaphor such as 'green business' is a highly anthropocentric metaphor for promoting the worldview that everything including nature live for business. So eco-metaphors in this research are used to employ how Ecolinguistic view of a destructive discourse like economic discourse can trigger the mind of people for respecting Nature. In this research, metaphors are used not only to compare and contrast but also for the purpose of triggering the personified visual image of CPEC and Pakistan through human being metaphor, condemnation through disease metaphor, exemplification through war and building metaphors, scope through eco-metaphors. Eco metaphors are also used to orient green discourse inside the CPEC discourse.

5.3. Part III: Salience

The 'salience and reminding' is taken as a third story from Stibbe's story framework of eco-critical discourse perspective where the collocation patterns of only 'verbs' was explored and was found out on two bases. One was to see the MI score of all the areas with the most frequent verb occurring with them and the second pattern which was observed was that verb as a semantic preference taken by that area on the basis of the highest and the lowest MI score through collocation analysis.

First it was found that salience has been assigned to the socio-economic area of the CPEC in this research by using verbs and their present, and -ing forms in the similar way as was seen in a work produced by Dauda and Hassan (2018) in their research on Malaysian

online news. It was found out verbs as focus words and suggested that it can be used to frame sustainable development goals to achieve desired frames to be triggered in the minds of people. His work seemed to be in line with Stibbe's concept of salience explored through words of focus, prominence and vitality. In this research, they are referred to be salience attributive verbs such as eradicate/eradicating, eliminate/eliminating, mitigate/mitigating, tackle/tackling, combat/combating, end/ending, minimizing, curb/curbing, decrease/decreasing alleviate/alleviating, reduce/reducing, exacerbate/exacerbating used for poverty and hunger alleviation which show that the goal of poverty alleviation from Pakistan is in progress and is presupposed to be alleviated in future under the project of the CPEC. The verb 'alleviate' is found to be the most frequent verb in the collocation of poverty and hunger-alleviate, used in the area of poverty with frequency of 91 and the salience stats as 11.68725, while the most frequent verb for hunger is also *'alleviate'* with frequency of 1 and salience stats for it are 13.46610 according to the results from AntConc software. The salience patterns employed depict that people such as stakeholders involved in this project of the CPEC still need to draw their attention towards the attainment of this SDG. Another aspect which is found to be highlighted by the use of salience patterns employed through verbs inside the poverty/hunger is that the elimination of poverty and hunger is the least salient area in CPEC although it gained the highest MI score or salience stat.

The use of verbs in the frame of health include *damage, affect, consider, improve, safeguard, protect, develop, effect, highlight, focus, invest, affect, eliminate, threaten, risk and safeguard*. The significant collocation is health-affect with MI score of 7.23280. Some of these verbs assign salience to the health of people of Pakistan by identifying the impact of bad health and reasons of the bad health such as environmental impacts on human health, while some verbs for example 'affect' are used to attribute the importance of protection of health to avoid diseases and keep safe.

Similarly, in education, verbs such as *encourage, receive, spread, regard, get, revive, pursue, include, introduce, promote, improve, develop, upgrade, equip, access, provide, increase, promote, establish, enrol, get, rely on, set up* are used. Among all of them the verb '*get*' is the most frequent and has the highest 6.31496 salience statistics. The verb patterns show the inability of people of Pakistan to access either basic, primary,

technical or higher education. So all of them indicate to get and receive the relevant educational level in order to achieve this particular area of importance to life.

Infrastructure and industry has been represented an area of worth by using the salience patterns in the form of using verbs such as *implement, to shape, expand, bring boom, affect, hit, safeguard, impact, impede, grow, uplift, build, bolster, improve, hamper, develop, prepare, promote, relocate, respond, focus, lead to, transform, facilitate, increase, revive, implement, upgrade, impact, emphasise, place on, focus on, harm, support, and establish*. This verb pattern makes the area of industry and infrastructure a focus area in Pakistan that needs more development and the CPEC can contribute to this development by implementing One Belt One Road (OBOR). The highest MI score is gained by the collocation of infrastructure-*focusing* with its salience stats 5.95290 and in the field of industry is industry-*promote* with 5.22218.

Gender equality and women empowerment under sustainable development goals aims to provide equal and fair participation of both the genders in jobs, earnings, education and other opportunities. According to the analysis of this research, Pakistan is lagging behind in creating balance among gender equalities because the salience patterns are indicators of calling attention to this area. The use of verbs such as to *encourage participation, ensure increased participation, employ, raise, enter, secure jobs, aim, provide, empower, for, hire, offer, take part in, focus on, include, and improve* present a dismal picture of gross inequalities still found in terms of wages, women's participation in education, decision making and workplace discrimination. The most frequent verb in collocation gender equality-focus with salience stats of 5.64592, while in women empowerment is *'empower'* as its semantic preference with 6.59985 salience stats.

The area of economic growth and decent work has been assigned salience by the use of following focus verbs: *stimulate, accelerate, boost, sustain, achieve, hamper, fasten, ensure, emphasize, start, encourage, promote, increase, enhance, support, find, obtain, safeguard, generate, open, affect, create, need, increase, provide, generate, promote, get, and give*. All these verbs show the tendency of promoting and achieving the goal of providing more jobs to all men and women as a part of economic growth which can be achieved under the project of the CPEC. The most frequent verb in the collocation economic growth-*stimulating* with salience stat of 6.5695. Similarly, the area of peace and

justice indicates that this aspect needs to be restored and ensured, showing that there is still unrest and turmoil which seeks attention to address in a proper way. The most frequent verb showing salience of this area is '*bring'* that has salience stats of 7.64650. This means the CPEC can play an important role in bringing peace and justice to Pakistan which has a crippled peace and justice system.

The goal of building sustainable cities and affordable housing asks for planning and designing smart cities with green spaces and affordable housing. This area has been assigned salience by using verbs such as implement, promote, plan, design and formulate, ensure and build. The most frequent verb in this area of the CPEC is '*work on*' as its semantic preference with 5.39290 salience statistics. This shows that Pakistan as an underdeveloped country needs to work on and design for sustainable, smart cities with affordable housing schemes for the achievement of this goal.

In the same way, the goal of international partnership and cooperation has also been accorded importance by using verbs such as *nurture, strengthen, seek, extend, make, experience, join, defend, develop, broaden, establish, sustain, build, form, create and promote move forward, transform, plan, boost, offer, proceed, improve, build, solidify, establish, form, promote, push, enrich, transform, develop, enjoy, explore, encourage, include, emphasize, reinforce, require, coordinate, facilitate, expand and increase*. The most frequent verb used in this area of the CPEC is '*solidify'* as its semantic preference with 9.73515 salience stats. This shows that the CPEC is playing a major role in developing and improving international cooperation and partnership not only between Pakistan and China but also with other countries in the world. This also shows that the achievement of this goal is under progress and needs more promotion.

The ecological and environmental areas under sustainable development goals are assigned salience by employing two types of verb categories for building frames, i.e. problem frames as destructive discourse and the predicament frames as a part of ambivalent discourse. The problem frames are triggered in the minds of people by using these verbs and verb aspects: *impact, worsen, affect, avoid, dispose, dump, produce, generate, produce, contribute, harm, create, cause, damage, degrade, develop, deteriorate, destroy, lead to, exasperate, indicate and fail.* The most frequent verb used for creating problem frame is *'damage'* with 7.67335 salience. Similarly, the predicament frames are triggered

in the minds by using following verbs and their aspect*: improve, provide, focus on, include, address, resolve, ensure, prevent, access, manage, evolve, expand, utilize, invest, integrate, support, promote, collect, handle, process, ensure, prepare, conserve, implement formulate, establish and prioritize*. The most frequent verb used for triggering solution frame is *'protect'* with 7.36823 salience. It has been noticed that some of the verbs such as develop, provide, produce, contribute, etc. not only trigger problem frames but also solution frames.

The area of consumption and production under ecological aspect in this research has been assigned salience by using the verbs given above such as *conserve, consume, use sustainably, focus on, prevent and prioritize* in order to avoid excessive use of our natural resources and the consume them responsibly so that future generations can also enjoy them. This has also been important to dispose of and dump toxic waste to recycle and adopt more clean consumption and green production patterns. The highest MI score 1.75117 has been gained by the verb *need to change* as its sematic preference.

Climate change being a salient area has been addressed by using verbs such *as combat, tackle, cope, minimize* and take action to avoid the drastic effects of climate change such as loss of life and property due to earthquakes, tsunami, tropical cyclones and flooding. These verb patterns also suggest some measures to meet this urgent challenge and take action against the worst effects of climate change to become more resilient. The MI score is gained by the verb 'cope' as its semantic preference with 10.70782.

Similarly, the area of marine, seas and life below water has been made salient by using verbs such as *affect, contribute, harm, combat, address, improve, conserve, use* sustainably. This pattern of verb usage in examples from the text shows how life under water like fish and water ecosystems is being affected by overexploitation and unsustainable use of marine resources and at the same time by acidifying with Co_2 and littering with industrial waste and other garbage along with oil spillage. This needs a serious note of managing and protecting life under water. The MI score is gained by the verb 'harms' as its semantic preference with 5.19862. This salience pattern displays the destructive discourse produced in this area by generating problem frames.

In the same way, life on land is also assigned salience by using verbs such as *protect, promote and restore* the terrestrial ecosystems, combat desertification, sustainably

manage forests, halt biodiversity loss and reverse land degradation. The MI score is gained by the verb 'affect' as its semantic preference with 5.58736.

Environmental sustainability is another salient area which has been provided importance by using verbs such as *damage, degrade, deteriorate, affect, take for, mitigate, destroy, adverse, lead to, major, create, recognize, exasperate, cause, indicate, conserve, address, safeguard, reduce, diminish, protect, anticipate, result, generate, priorities, raise, focus on, prevent, ensure, need, fail, implement, formulate, adopt, preserve and recognize*. This verb pattern in the examples given in the analysis chapter shows the preservation of the natural environment and focuses on its sustainability by highlighting the ways of avoiding pollution and adopting greenization of industries. The MI score is gained by the verb 'promote' as its semantic preference with1.55288.

To conclude this part, it can be evaluated on the basis of collocation analysis carried out for exploring salience attributing verbs, that the socio-economic area of 'hunger' is the most salient area in the CPEC discourse, while the area of 'industry' is the least salient area in it. In eco-environmental areas, the most salient area is found to be the 'environmental sustainability', while the least salient area is 'climate change'.

In a nutshell, it can be said as Oppermann and Spencer (2013) concluded that salience and metaphors are two cognitive approaches that can be used for 'priming' of the issue which can be identified as words that show importance, significance and focus while 'framing' of the issue by using metaphoric expressions.

5.4. Part IV: Appraisal and Evaluation

Appraisal patterns are linguistic features which assign an entity the value of good or bad (Stibbe, 2015). They are also known as 'appraising items' because they, as linguistic resources, appraise certain area of life as good or bad (Martin & White, 2005). According to the collocation analysis, the words appraising the areas under the project of CPEC are found to be the adjectives, nouns and verbs mostly. The significant collocations are taken with more than 3.0 MI score in the corpus analysis. The findings about areas from socio-economic domain are given first.

Poverty and hunger have the highest MI score in the collocation used for appraising Poverty-CPEC-alleviation 11.16435 which indicate that poverty and hunger are bad while

their alleviation and reduction is good. Maintenance of human health, public health and environmental health is good and environmental pollution is bad. Similarly, diseases are bad for health. Similarly, the area of education has been appraised well if it is provided in the form of quality education, technical education, vocational education and higher education. In Pakistan, education is evaluated as 'poor education'. The highest MI score in the area of education is achieved by Education-CPEC-quality with 7.29647. The more emphasis is on providing quality education under CPEC.

According to the appraisal items used for Industry and infrastructure, new and expanding industry needs to be promoted for industrialization and infrastructure development. Pakistan's industry and infrastructure are appraised 'poor', while Chinese industry and infrastructure are appraised 'competitive' but 'dirty'. The highest MI score10.52228 has been taken by the prosodic preference of 'dirty' in this collocation (Industry –CPEC-dirty) which has been used for China's aim to relocate their dirty industry to Pakistan under the project of CPEC.

A 'highly competitive' Chinese industry with 'improved connectivity' but 'dirty industry' will further ***strain*** Pakistan's domestic industry, already **reeling** under the pressure of the China-Pakistan Free Trade Agreement. (RP10)

Another relevant collocation (Industry-CPEC-adversely) has been used with regard to the impact of industry on the environment, which implicates the negative effects of the industry on the environmental health. The adverb 'adversely' has a negative connotation. Similarly, in the area of infrastructure, the collocation of Infrastructure-CPEC-massive has taken the semantic preference of 'massive' with 6.29519 MI score which indicates that CPEC helps to develop massive infrastructure during its development. The adjective 'massive' has been used with this area which can be taken in positive term for the development of the infrastructure but be taken in negative appraisal term for the environment.

Similarly, there are found to be nine collocations appraising the area of economic growth. Economic growth in all its forms such as sustained growth, green growth, sustainable growth has been appraised well for the development in Pakistan. The highest significant collocation is: Economic Growth-CPEC-sustained with 5.28000 under the CPEC. This implicates that the development under CPEC needs to be sustained which

implies that currently, it is not sustainable. On the contrary, economic growth is found to have a bad relationship with environmental safety. The semantic preference of the adjective 'sustained' is positive here.

Decent work has been appraised as providing employment opportunities and skilled work to the people of Pakistan through the CPEC. The concept of smart cities with modern and affordable housing schemes has also been introduced to have linked with sustainable development. The highest MI score was taken by the collocation (Smart cities-CPEC-modern) with 6.2836, which implies that CPEC has a plan to construct modern cities. The adjective modern gives positive connotation.

The area of peace and justice has been appraised by emphasizing full and long lasting peace and justice systems by strengthening Pakistan's 'crippled justice system'. The CPEC is regarded as a beacon of peace and justice in Pakistan. The collocation (Peace-CPEC-durable) has taken the highest MI score which implicates that the CPEC is give a durable peace to Pakistan.

The area of international cooperation and partnership has been considered as an 'effective and positive' for economic growth and sustainable development. The partnership and cooperation between Pakistan and China through the CPEC has been regarded as cooperative, strategic and time tested by using all positive appraisal items. The adjective 'cooperative' has been taken as a semantic preference by this area. The collocation (International partnership-CPEC-cooperative) has taken the highest MI score 10.83825, which implicates that partnership required by the CPEC is on cooperative basis.

The ecological and environmental areas in this data have been appraised by using positive and negative appraisal items which include adjectives, adverbs and nouns. According to the results, all the areas relevant to this aspect are calling attention to respond. Starting with the area of clean water and sanitation, Pakistan has been appraised to have a 'poor' quality of water and bad sanitation, while it has been considered as highly important for the health and hygiene of the people of Pakistan. The collocation (Water & Sanitation-CPEC-safe) has attained the highest MI score and the adjective 'safe' has been taken as a semantic preference which implicates that the water and sanitation in Pakistan are not safe and need safe systems to be implemented under the project of CPEC.

Clean energy is good. The CPEC should provide clean forms of energy such as green energy, sustainable and renewable energy which are very important for underdeveloped countries. The collocation (Energy-CPEC-renewable) has taken the highest MI score 8.95001 which implicates that the adjective 'renewable' has been taken as a semantic preference by energy.

Similarly, the collocation (Consumption & production-CPEC-patterns) has taken the highest MI score 8.43512 to appraise this area by suggesting clean ways of production and consumption if they include proper waste management, water disposal systems and recycling processes.

Climate change is bad while climate action is good according to examples given in the data analysis chapter. The collocation (Climate change-CPEC- threat) has the highest MI score 9.48543 with this area which implicates that the project of CPEC may bring more threat of climate change to the environment. Similarly, the area of ecosystems has been appraised by many adjectives such as adverse, potential threats, fragile and apocalyptic, where the collocation (Water and land ecosystems-CPEC-apocalyptic) has gained the highest MI score 14.63602 with the area of ecosystems. This implicates that the adjective 'apocalyptic' has been used as a semantic preference and has a negative connotation having total destruction of the ecosystems due to the CPEC.

The area of life below water, fishes, marine life and water ecosystems and life on land are appraised to be very weak in Pakistan which need sustainable use of natural resources and avoid overexploitation of endangered species, deforestation and pollution caused by soil erosion, land degradation, biodiversity loss, oil spillage, waste and environmental degradation. Following appraisal items have been used to appraise the area of life on land such as the verb halt, the nouns; degradation, deforestation, contamination, pollution and adverbs 'adversely' and 'negatively' while one positive term can also be used which is 'conserve'. The highest MI score is gained by (Life on land-CPEC-contamination) with 7.85284 which implicates that the life on land is being contaminated by the CPEC which is bad.

So concluding the findings about the story of appraisal and evaluation in the CPEC, of all the socioeconomic areas, the highly appraised area (11.16435) in the discourse of the CPEC is poverty alleviation and reduction as the top priority of the aim of the project. The

lowly appraised area is found out to be the gender equality having zero appraisal items with it in the data. Moreover, the appraisal expressions in all the areas are used to show a cumulative effect of that area which is created by the use of prosodic expressions and have been found as semantic preferences taken by each area. It can also be noticed that all prosodic expressions except 'adversely' used with industry are positive connotation appraisal items. The appraisal items used with all socio-economic areas fall into different syntactic categories such as nouns, adjectives, verbs and the adverbs. The nouns include 'alleviation', 'reduction', 'priority' and 'quality'. The adjectives include 'general', 'better', 'new', 'expanding', 'dirty', 'massive', 'major', 'rapid', 'sustainable', 'sustained', 'unprecedented', 'consistent', 'global', 'steady', 'green', 'good', 'inclusive', 'modern', 'reliable', 'suitable', 'long lasting', 'complete', 'durable', 'fundamental', 'cooperative', 'unparalleled', 'strong', 'equitable', 'beneficial' and 'important'. The adverbs include 'adversely'. The verbs include 'improve' and upgrade'. So there are four nouns, thirty adjectives, one adverb and two verbs, which are used to appraise socio-economic areas of the CPEC. All the given prosodic expressions used to appraise CPEC in these areas have positive connotations except one which is 'dirty'.

Similarly, there are 27 significant appraisal items used to appraise different environmental-ecological areas of the CPEC. Most of them are negative appraisal words that marks that the project of CPEC is bad for environment and ecology, ecosystems and the life under and above water. The highest MI score has been achieved by the collocation of (Water and land ecosystems-CPEC-apocalyptic) as 14.63602, which implicates that the CPEC has taken the semantic preference of adjective 'apocalyptic' to appraise the project of CPEC in eco-environmental areas. There can be found 12 adjectives, three verbs and 12 nouns as appraisal items used to appraise the CPEC in eco-environment areas.

In general, appraisal patterns have a very strong relation to Ecolinguistics because the way language is employed to construct positive or negative appraisal patterns form strong evaluations (Korenek & Simco, 2014). Indriyanto (2021) is of view that human beings, given the blessing of language, tend to knit linguistic items so as to construct views about the environment. As examined in this research, what constitutes environment has been divided into either negative or positive matters. A positive view of environment under CPEC would consist of safe water supply and sanitation, forestry, biodiversity, renewable

energy, promoting good patterns of consumption and production, and climate action. A negative environment would on the other hand, comprise pollution, waste supply, deforestation, climate change and ozone layer depletion, contamination, land degradation and apocalyptic ecosystems.

5.5. Part V: Facticity and Conviction

Facticity patterns are another linguistic pattern that Ecolinguistic studies attempt to analyze in texts to show how they proclaim the truth or falsify the key descriptions of the area of life that are important for the future of humanity (Stibbe, 2015). For finding out facticity patterns in the data of this research, names of experts and expert's opinions, authority along with institutions and organization's names as authority of consensus (Leeuwen, 2008, p. 107) are focused whose statements are found to be validating the importance of a certain area as true to be highlighted or false to undermine. This has been seen on the spectrum of facticity, identifying from the range of absolute truth to uncertainty level and then falsehood (Stibbe, 2015). The element of certainty and uncertainty in terms of modality patterns is also attached to expert authority opinion as found in the examples given in the analysis chapter. Modality is a very useful concept according to Richardson (2006) who has defined it as 'a degree to which a speaker or writer is committed to the claim he or she is making'. So the modal verbs are used by people for claiming with a degree of low commitment to high one.

In this research, it is found that the modal verbs of 'will', 'shall', 'may' 'must' and 'would' have been used with expert authority opinions. Another facticity pattern explored in the data is the use of hedges such as 'think' and 'believe' which according to Machin and Mayr (2012), are used to detract from what others hold to be the case. The examples from this research are the expressions such as 'Environmentalist believe', 'Economists argue', 'policy makers think' and 'ministers think'. So the linguistic devices that establish linguistic patterns in this research include modal verb/s, hedging words and names of expert authority.

In socio-economic areas, the most significant modal verb is 'may' with MI score of 5.06830; the hedging word is 'believes' with (9.47615) and; expert authority is the 'policy makers' with MI score of 11.74931. These three linguistic devices are used significantly to

make the discourse of the CPEC factual and credible that bring rhetoric and social construction of these areas in it (Potter 1996: 1). The use of modal verb ‘may’ and hedging word ‘believe/s’ has been used in the social area of justice, while policy makers has been used as an expert authority in the socio-economic area of ‘poverty’. This implicates that the facticity patterns are used to construct convictions (Ain, Ahmad, Gilzai and Asim 2023) and bring validity to what CPEC can do to socio-economic well-being in Pakistan. Another aspect why facticity patterns are used in the discourse of the CPEC through modal verbs, hedging words and specially the names of expert authority show that they bring credibility to what has been described about socio-economic to environmental-ecological areas. In other words, according to Nerlich (2010) the names of experts of the area or their works such as projects and books bring credibility to the descriptions about the world.

5.6. Part VI: Ideologies, Discourse and Ecosophy

This part addresses last two research questions of the study. The research questions to be answered are as follows:

3. To what extent does the CPEC discourse construct destructive/red, beneficial/green and ambivalent discourses?
4. How does the identified cognitive structures and linguistic patterns help to unravel ideologies and develop an Ecosophy of the CPEC?

Building upon the Fairclough’s notion of discourse and ideologies, Stibbe (2015) included in his eco-critical discourse perspective the idea to divide the discourse into three kinds, i.e. beneficial, destructive and ambivalent discourses. Therefore, the CPEC discourse was explored to find out these three kinds which further helped in deciphering the Ecosophy of the CPEC and also helped to unravel the anthropocentric and ecocentric ideologies. The answer of both the research questions is interwoven.

The correlation of economic and eco-environmental areas was seen with two words 1) human/s 2) environment in order to explore ideologies and discourse. In the areas of infrastructure, energy, natural resources and ecosystems, the MI score has been found more with ‘humans’ than ‘environment’ such as:

Infrastructure-environment = 3.46330 Infrastructure-human/s = 3.93232

Energy-environment = 3.40338 Energy-human/s = 4.76707

Natural resources-environment= 2.57737 Natural resources-human/s= 4.2457

Ecosystems-environment= 5.91920 Ecosystems-human/s= 7.17250

Ecology-environment = 7.42337 Ecology-human/s = 7.71306

So in these areas, anthropocentric ideologies are found to be produced and hence the destructive discourse can be seen where the human beings are held in supremacy over other beings to exploit Nature and environment for their own survival. The ecological injustice (Acha, 2022) has been revealed by exposing the issues of human activity in the form of construction, tree cutting, biodiversity loss, and destruction of fragile ecosystems.

Similarly, in the collocations of areas such as industry, economic growth, climate change and pollution with the words 'human' and 'environment', the MI score is found to be more with environment than human/s, which implies that these areas have taken semantic preference of the word 'environment' to produce ecocentric ideologies and hence attempted to develop ambivalent discourses. The collocational environment after analysis is found to be as follows:

Industry-environment =1.97122 Industry-human/s = 0

Economic growth-environment = 0.34450 Economic growth-human/s = -0.72409

Climate change-environment = 5.505414 Climate change-human/s = 4.34383

Pollution-environment = 5.47422 Pollution-human/s = 4.95656

Ambivalent discourses have been produced by promoting the optimistic view (Stibbe, 2014) of protecting environment from its destruction by human activities. For this purpose, ecological justice has been put up by using the nouns, adjectives and verbs of focus such as green investments, green economy, green CPEC, green industry etc. One significant aspect is observed during analysis of ecocentric ideologies that the correlation of areas with human beings was less or in some collocations as zero, may imply that human agency was to be hidden (Acha, 2022). Another observation is that to hide human activity, ecocentric discourse was one of the attempts to trigger solution frames, positive appraisal items to appraise these areas and to highlight more salience of these areas in the minds of the people about CPEC.

In order to address the last research question specifically and the second last question generally, the discussion of all six stories and their relevant cognitive structures and linguistic patterns are given in detail. As it has been discussed earlier in the beginning of this chapter, ideologies are explored through the type of discourse each frame tends to generate. In the socio-economic frames, it has been seen how socio-economic sustainable development goals are employed in the data of this research. These frames include poverty and hunger alleviation, health and education, industry and infrastructure, gender equalities and women empowerment, employment, work and economic growth, smart cities and affordable housing, peace and justice, international partnership and cooperation. The two socio-economic frames -- economic growth, industry and infrastructure tend to develop anthropocentric ideologies and Ecosophy by employing the extrinsic frames of maximum economic development and growth although employment of some sub-frames such as 'green growth', 'sustainable growth', 'sustained growth' and 'industry greenization' help people draw their attention towards intrinsic value of saving and protecting environment from high level of economic growth through environmental and ecological destruction. These intrinsic sub-frames are employed by 'reframing' after adding the metaphor of 'green'. Following the frame of poverty and hunger, it can be seen that the relationship of human beings with other human beings has been established by generating an intrinsic frame of 'equitable development' in which everyone should have the equal opportunities by elimination, reducing and eradicating both of them. Identifying the terms used in this frame, such as 'combating poverty', 'poverty and hunger alleviation' as one door of prosperity, 'curbing poverty and hunger' suggest that the discourse on poverty and hunger comes under beneficial discourses. Similarly, the frame of health and education also describes socio-economic well-being of people of Pakistan to be achieved through providing good, public and human health and quality education at all levels by generating beneficial discourses and Ecosophy of well-being of people. Although we can find some discourses on the poor health and education system in Pakistan especially in remote areas that portrays problems as well as solution frames triggered in the minds of people.

Another significant sub-frame present inside the health frame is 'environmental health' of Pakistan by using a metaphor of 'The CPEC putting a heavy toll on environmental health of Pakistan', indicates the intrinsic value of environmental protection

and thereby generates negative effects of the CPEC on environment and develops Ecosophy of well-being of the environment of Pakistan as well. Talking about the use of metaphoric expression for Pakistan's health, the conceptual metaphor developed from its lexical realization becomes **'PAKISTAN's ENVIRONMENT IS A PATIENT',** where the source domain is 'diseases' and the target domain is 'environment of Pakistan'. Similarly, the justice system of Pakistan is also described as **'PAKISTAN'S JUSTICE SYSTEM IS A PATIENT'.** So such metaphors display a negative image of the environment and the justice system of Pakistan by triggering a problem frame but alongside the solution frame by drawing the attention of policy makers, government, chief justice, lawyers and ministers to ponder on these issues of intrinsic value of correcting them for the human well-being.

The use of salience patterns in the form of verb usage also contribute to develop an ecosophical ethics to be included in further proceedings of the project on socio-economic level such as in 'education'. The verbs used to highlight the importance of the area include: receive, spread, get, revive, pursue, promote, improve, develop and have. Similarly, the frames can also be seen dependent on each other for prevailing wellbeing and resilience in the relationship of human beings to one another. For instance, education can provide better employment opportunities, better health and a good future. Identifying the future living in a better way, getting education, improving health and eradicating poverty and hunger can be the ethical solutions for people of Pakistan to be promoted under the project of the CPEC that help to develop the Ecosophy at socio-economic level.

Ideology in ecological analysis of discourses such as economic discourses has been seen from the employment of linguistic patterns and features that exhibit these three kinds of discourses: beneficial discourses, destructive discourses and ambivalent discourses. In the frame of 'development', intrinsic sub-frames such as equitable development, socio-economic development, sustainable development, green development and sustained development tend to develop either beneficial or ambivalent discourses, while extrinsic sub-frames such as economic development develop destructive discourses.

In order to promote either beneficial, ambivalent and destructive discourses, salience patterns are employed by using verbs such as *implement, advocate, promote, achieve, ensure, bring about, accelerate and enhance,* etc., while the area of development

has been appraised by using the lexical expressions such as ‘highly important, most empowering, broad based, ultimate scope and a new era’, etc. It shows the destruction of ecosystems and environment on one hand and the preservation of ecology and environment on the other hand. Similarly, metaphors that promote destructive discourses of economic development include: development pathways, recipe of economic development, remove bottlenecks to economic development, new millennium of economic development, harbinger of economic development, prioritizing new paths of economic development, the engine of economic development, economic corridor of economic development and fruits of economic development. These metaphors are used for economic development to be prevailed in Pakistan through the CPEC. Metaphors that encapsulate beneficial and ambivalent discourses include: green development, roadway to socio-economic development, socio-economic ladder, open doors and new chapter of socio-economic development, and paving way to socio-economic development, etc.

The beneficial and ambivalent discourses generated by metaphoric expressions are also used to signify social and economic development in Pakistan through the CPEC. The facticity patterns are employed by giving references to what presidents, prime ministers and ministers say about development. They are employed to establish the fact that development in its beneficial and ambivalent form is the story that can trigger a positive and beneficial image of development, while its destructive form triggers the positive image of economic benefits gained through economic development under the umbrella of ecological and environmental destruction. So the type of discourse in the discourse produced around CPEC is ambivalent, where the ecocentric ideologies are produced and destructive or red where anthropocentric ideologies are produced. There are five areas where anthropocentric ideologies and four areas where ecocentric ideologies are produced, while the area of life under water or aquatic life there could not be found any correlation between the word ‘environment’ and the word ‘human/s’.

As this research is an Ecolinguistic study of economic discourse produced around the CPEC, it was pertinent to unravel the hidden anthropocentric and ecocentric ideologies through exploring cognitive structures and linguistic patterns which is done through collocation analysis. Yet there was a need to investigate the impact of the CPEC on those areas of it which come under ecological discourse such as those SDGs that relate to

environment and ecology in this case. These areas include life on land and life under water such as pollution, ecosystems, biodiversity, natural environment, land desertification, waste habitat and water, etc. For this purpose, collocation analysis carried out is discussed below. The relationship of the CPEC was first seen with two words: 'human/s' and 'environment'. This relationship has helped further to develop an Ecosophy of this research.

CPEC- Environment = 2.77360 CPEC-Human = 2.39086

The MI score of CEPC is more with environment than human/s which shows that the project of CPEC is impacting the environment of Pakistan more than human beings. It has been also found out by seeing this relationship with other areas of environment as given below. It displays that more is the MI score; more is the negative impact of the CPEC. Moreover, this also implies that the more is the MI score, the more ecological discourse has been produced by discussing that area on more number of instances.

CPEC-Biodiversity = 2.48515, CPEC-Ecosystems = 2.94750, CPEC-Desertification = 0 CPEC-Forests = 0, CPEC-Pollution = 2.8608, CPEC-Habitat = 0.97174, CPEC-Natural Resources = 1.51256, CPEC-Water = 0.86152, CPEC-quality of life = 2.71562, CPEC-Aquatic Life = 0, CPEC-Wild life = 0, CPEC-Ecology= 0, CPEC-Sustainability1.54331, CPEC-Waste = -0.51193, CPEC-Environmental degradation = 1.73545

There can be found that the CPEC has the most negative impact on ecosystems of Pakistan 2.94750 and the least impact on waste which is -0.51193. Now the details are given how different cognitive and linguistic patterns have been employed to produce ideologies and Ecosophy. Ecological and environmental ideologies embedded with different linguistic and cognitive patterns are of main interest of this research especially when we talk about the atrocities inflicted to other-than-humans (Bhattacherjee, 2020) due to economic growth and infrastructure development. The suppression of other-than-humans by the human beings leads us to generate anthropocentric discourses which are destructive and oppose ecocentric Ecosophy. So there is a need of changing destructive discourses into constructive ones to be provided as an alternative because of the power of language that has the ability to change and influence perceptions of people about their surrounding environment (Stibbe, 2015).

The salience patterns involved in establishing ideologies and Ecosophy of ecological/environmental areas are verbs of focus such as *improve, impact, worsen, affect, access, provide, focus on, include, avoid, address, resolve, remove, dump, dispose, process, recycle, develop, evolve, expand, bring, utilize, focus, produce, integrate, support, promote, establish, manage and implement.* Therefore, all the above given salience patterns in the form of verbs are positive, negative and verbs of focus and vitality which indicates that the ecocentric and intrinsic values are included and emphasized in the CPEC discourse by using positive connotation verbs which produce ambivalent discourse as found in this research.

The appraisal patterns involved in forming ideologies and Ecosophy in eco-environmental areas, lets the reader view the area, either positively or negatively. The appraisal items of 'poor', 'weak', 'less', 'bad', 'underdeveloped', 'crippled', 'threatened', 'crisis', 'fragile', 'degradation', 'overexploitation', 'loss' and 'unhealthy' are negative appraisal items which are used for energy, consumption, production, ecosystems, natural resources, life on land and below water, and the environment of Pakistan that make the discourse destructive and is likely to produce anthropocentric ideologies. Similarly, the positive appraisal items such as 'green', 'good', 'affordable', 'renewable', 'recycling', 'proper management', 'dumping', and 'prioritized' are used to develop ambivalent discourses by producing ecocentric ideologies and Ecosophy.

Some metaphoric expressions can also be observed that construct ambivalent discourse by priming the issue. They include:

- **GREEN ECONOMY IS AN ENVIRONMENTAL PROTECTION TOOL.**
- **GREEN GROWTH IS A GAME.**
- **CLIMATE CHANGE IS A CHALLENGE.**
- **CLIMATE CHANGE IS A WAR.**
- **THE CPEC IS AN ENVIRONMENTAL DISASTER.**
- **PAKISTAN'S ENVIRONMENT IS A PATIENT.**
- **PAKISTAN'S ECONOMY IS A PATIENT.**

Therefore, it can be evaluated from the analysis and findings that anthropocentric ideologies and Ecosophy in this research has been established in the areas of natural resources, infrastructure, energy and ecosystems, while ecocentric ideologies are employed

in the areas of industry, climate change, economic growth and pollution. Anthropocentric ideologies are employed in these areas by using negative appraisal items such as nouns, verbs, adjectives and adverbs, the facticity patterns by using the hedging words of 'think and argue', modal verbs of 'will', 'would' and 'may' which show the uncertainty of expert authority. Ecocentric ideologies and Ecosophy is employed in these areas by the use of salience patterns such as verbs of focus and vitality, the positive appraisal items used in favour of the protection of ecology and environment, and by pro-environmental metaphors signifying eco-metaphors that according to Sen (2018) condemn those actions which are unsustainable.

In addition to this, Ecosophy in this research is realized by looking at the relationship between human beings with each other and human beings with other beings such as unending development for the betterment of human beings tends to develop anthropocentric Ecosophy in many types of discourses; however, in ecological discourses, the Ecosophy mostly remains to be ecocentric (Ruiji and Wei, 2018). In this research, the Ecosophy differs in its nature as it can be noticed in the analysis of frames having 55 socioeconomic frames, 22 problem frames and 34 predicament frames, 66 eco-environmental frames, 40 problem frames and 26 predicament frames. In the analysis of metaphors, 11 socio-economic metaphors and 3 eco-metaphors, 42 positive appraisal items are used to appraise the CPEC in boosting socio-economic areas; 27 appraisal items are used to appraise the CPEC in eco-environmental areas, where 10 are positive appraisal items and 17 are negative appraisal items for environment. In the same way, there could be found 12 salience attributive verbs in socio-economic areas, while 7 in the eco-environmental areas, where the most frequent verb is 'promote'.

In addition to this, the facticity patterns used to hold the account of descriptions about CPEC as false and true are found to be the modal verbs, hedging words and the names of expert authority. The most frequent modal verb is 'will', hedging word 'believe/s' and the most frequent expert authority is 'ministers' in socio-economic areas. Contrarily, in eco-environmental areas, the most frequent modal verb 'will', hedging word 'believe' and the most frequent expert authority is 'environmentalists'. So based on the findings of the study, the cognitive and linguistic patterns given above expose certain grammatical constructions and lexical items that are used to judge the Ecosophy (Astawa, Budiarsa and

Simpen; 2018). So based on the results of concordance and collocation analysis, it can be said that the Ecosophy is neither fully ecocentric nor completely anthropocentric. It is lying in the middle that seems to be the combination of both and can be said to start from anthropocentric and end towards ecocentric philosophy. This also indicates that the effort has been made to employ those cognitive and linguistic structures such as more predicament frames, salience attributive verbs such as focus verbs, positive appraisal items and more certainty showing facticity patterns with names of expert authority such as 'environmentalists' to orient green discourse in the CPEC discourse.

5.7. Chapter Summary

This chapter is written for the key findings of the research which also include some discussion on the findings to relate them with other relevant works carried out in this field. The findings have been discussed keeping in mind the research questions 1 to 4. The chapter is also divided into six parts to give overview of the findings of all stories that are developed according to the story framework of Stibbe. Somewhere tables are also included in the chapter to present accumulative view of findings. According to the findings, socio-economic representation of the CPEC is more than environmental representation. There are 17 conceptual frames developed according to the 17 SDGs. There can be seen more predicament frames in socio-economic frames, while more problem frames are found in environmental areas. Predicament frames on one hand promote environmental sustainability but also have some elements of environmental destruction to gain economic benefits.

Similarly, conceptual metaphors are employed in the discourse to develop the rhetoric and eco-metaphors are employed to trigger environmental safety among people. Salience patterns are developed through salience attributive verbs. They occurred as a left side collocation. Appraisal patterns are employed with nouns, verbs, adverbs and adjectives to appraise certain area. Adjectives are found to be having highest collocation MI score with socio-economic as well as eco-environmental areas. Facticity patterns employed include the highest MI score with names of expert authority 'environmentalist', use of modal verb 'will' and the hedging word 'believe'. All these patterns established ideologies and Ecosophy of the CPEC, and it is found that anthropocentric ideologies are employed

more than ecocentric ideologies, which shows that human beings have the supremacy over Nature to exploit it for their own benefits. The Ecosophy of the CPEC has been explored on the basis of all linguistic patterns and the ideologies embedded in the discourse. According to the finding, the Ecosophy starts with anthropocentric ideologies and ends with ecocentric ideologies which display that it included the ethical values of care, well-being, social justice and peace.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

This chapter concludes the results and findings of the entire research, answers the research questions and presents some directions for future researchers. The purpose of this research was to explore the language patterns and cognitive structures used to represent the ecological/environmental and economic areas of the CPEC which were further analyzed to explore Stibbe's six stories from his story framework, such as frames, metaphors, salience, appraisal, facticity and ideologies, discourse and Ecosophy. The framework of Ecological Critical Discourse Analysis (ECDA), having a nexus of theories of discourse analysis and cognitive linguistics proposed by Stibbe (2015), has been used in this research as a theoretical basis. In addition to Stibbe's story framework, sustainable development goals led by a sustainable development approach focusing on Sen's (1999) sustainable development approach have also been used as a complementary theoretical basis for this research. The capability approach of sustainable development is the ethical theory of sustainable development. It asserts that humans can uplift the economy if they maintain three sustainability levels: economy, society and environment (Domalds & Hyards, 2014). In order to look at all three levels of sustainability present in the CPEC, which is primarily an economic discourse, a dashboard of 17 sustainable development goals was used as an analytical framework.

The language, economics and environmental trajectory is the most crucial concern in developing adequate economic prosperity due to joint projects such as the CPEC

(Yuniawan et al., 2017). In order to achieve the research objectives and answer research questions, a corpus was compiled from official and unofficial texts/data written on the CPEC. This corpus was specially compiled for this research, which constituted 62 text files to run in the software (AntConc: version 3.5.2) for concordance and collocation analysis. In this way, corpus linguistics as a methodology and a tool for analysis is undertaken for this research. This chapter summarizes the essential findings and results, throws some light on the implications of this research, describes some limitations of this study, and offers some recommendations for future research.

6.1. Key findings of the study

The key findings of the study are as follows:

The corpus consisted of 1222,651 words and 62 text files in total. It was a specialized corpus made for this research. This research aimed to explore cognitive structures and linguistic patterns through corpus-based analysis, using corpus linguistics as a research methodology. These patterns were examined by applying Stibbe's (2015) eco-critical discourse perspective and Sen's sustainable development approach. For the eco-critical discourse perspective, six stories are taken from Stibbe's story framework, while 17 SDGs are taken to apply Sen's (1999) three-tier sustainable development approach. The stories include:

- Frames and framing
- Metaphors
- Salience
- Appraisal and Evaluation
- Facticity and Conviction
- Ideologies, Discourse and Ecosophy

Seventeen conceptual frames were found to be employed in the CPEC discourses based on 17 UN Sustainable Development Goals (SDGs). These frames are divided into two

categories: one represents socio-economic areas, and the second represents the ecological/environmental areas present in the CPEC discourse. Following are the conceptual frames for the two categories given above:

6.1.1. Socio-economic Frames

● Sustainable development is poverty and hunger alleviation in the CPEC.

● Sustainable development is health and safety in the CPEC.

● Sustainable development is getting higher education in the CPEC.

● Sustainable development is no gender equality and fewer women empowerment in the CPEC.

● Sustainable development is economic growth and generating employment in the CPEC.

● Sustainable development is building smart cities with affordable housing in the CPEC.

● Sustainable development is promoting local industry and infrastructure development in the CPEC.

● Sustainable development is promoting peace and justice for all in the CPEC.

● Sustainable development is international partnership and cooperation in the CPEC.

Ecological/environmental Frames

● Sustainable development provides clean drinking water and sanitation in the CPEC.

● Sustainable development is renewable energy in the CPEC.

● Sustainable development is waste management and sustainable consumption and production in the CPEC.

● Sustainable development is combating climate change in the CPEC.

● Sustainable development is conserving life below water in the CPEC.

● Sustainable development is protecting, restoring and promoting biodiversity in the CPEC.

● Sustainable development deals with environmental sustainability in the CPEC.

In the conceptual frames above, the source domain in every frame is ‘sustainable development’ while the target domain is the relevant, sustainable development goal. These frames are found to be employed by some trigger words that have been referred to as sub-frames in this research. The total number of socio-economic frames constitutes 2944 trigger words that frequently occur in the data and represent socio-economic areas present in the CPEC discourse, while trigger words for representing ecological/environmental frames include 2115 in their frequency, which show that the socio-economic frames are found to be more dominantly triggered than ecological/environmental frames. It exhibits that socio-economic areas represented in the CPEC discourses are more than ecological/environmental areas to be triggered in people’s minds. In this way, the relationship of human beings towards human beings is more vital in these discourses than the relationship of human beings towards the environment. Thus, these discourses generate an anthropocentric Ecosophy rather than the ecocentric Ecosophy of the CPEC, or anthropocentric ideologies are little more than ecocentric ideologies. There are five areas such as infrastructure, energy, natural resources, ecosystems and ecology, where anthropocentric ideologies could be found as analyzed through collocation analysis.

Similarly, there are four areas where ecocentric ideologies are found: industry, economic growth, climate change and pollution. Here, Poole and Spangler (2020) are quoted who assert that we need to include in our texts and simulations more and more ecocentric ideologies because they have powerful green beliefs that can be turned into actions. Similarly, MA and Stibbe (2022) have appreciated the new story of China’s ecological civilization in the lectures, which can also be found as one sub-frame of sustainable development that emerged in this research. In this way, in CPEC discourse, the four ecocentric ideologies, in contrast to the five anthropocentric ideologies, are employed to orient ambivalent discourses that promote a green economy, green investments and green CPEC.

Another critical finding regarding frames is the division of frames into intrinsic and extrinsic frames, which were examined based on intrinsic and extrinsic values in the conceptual frames and sub-frames. According to Stibbe's (2015) eco-critical discourse perspective, these two values, present or absent inside the discourse, helped form the Ecosophy of the CPEC discourses. In his book, *Ecolinguistics: Language, Ecology, and Stories We Live By* (2015), he has given word-based terms to determine the Ecosophy of the discourses, which include: valuing living, well-being, now and future, care, environmental limits, social justice and resilience. The intrinsic value in socio-economic frames is the equity, care and better future perspective in education, gender equality, women empowerment and poverty, where all human beings should have equal care and a better future perspective regarding opportunity and facility. In contrast, well-being, valuing living and care are found to be intrinsic values in the frames of health, education and women empowerment. The intrinsic values of resilience and social justice are present in the frames of peace, social justice, innovative housing, industry and infrastructure. In all environmental frames, these intrinsic values are present.

On the contrary, the extrinsic values, although not given explicitly in Stibbe's book, are inferred from the chapter on frames and reframing, including crossing environmental limits, profit maximization, use of Nature as a resource, inequalities, injustice and exploitation of natural resources. The frames of economic development, infrastructure, industrial development and economic growth are extrinsic because the above-given extrinsic values encapsulate them. All of these extrinsic frames involve destructive discourses and, somewhere, include ambivalent discourses by adding intrinsic frames such as green growth, green industry, green economy and sustainable development to resist destructive discourses and develop more of an ecocentric Ecosystem. The CPEC discourses, However, consist of economic discourse, which is destructive. However, efforts have been made by adding more green frames to be triggered into people's minds to show that some actions are being taken to protect our environment and ecology.

Another important finding for frames and framing is that inside ecological and environmental frames, it can be seen that first, the problem frames are employed in the data, such as poor sanitation, non-renewable energy, environmental and water pollution,

deforestation, land degradation, biodiversity loss, and species extinction under the effect of the CPEC. However, at the same time, solutions are also suggested and employed in predicament frames such as afforestation, ways to produce renewable energy, and safety procedures taken to protect species and recycle the products.

So more intrinsic frames, including 14 intrinsic and three extrinsic, are employed in an overall discourse on the CPEC to orient green discourses. In the same way, in socio-economic areas, 33 predicaments and 22 problem frames are employed where the number of predicament frames is more than problem frames, whereas in eco-environmental areas, 40 problem frames and 26 predicament frames are used. The number of problem frames in eco-environmental areas exceeds the predicament frame. The end purpose of frames is to persuade and construct norms as they resonate with the audiences and people to get the desired outcome by changing their thinking style (Sicoli et al., 2015). In this research, intrinsically valued predicament frames are triggered to persuade and construct the norms of protecting Nature, the environment and ecology, even if the discourses are about infrastructure development and economic growth. Including more intrinsic frames and green discourses also need to be introduced when an overall view of a particular discourse is to be taken. According to Bednarek (2005), frames can bring coherence to the knowledge of an area such as in my research when conceptual frames of sustainable development were developed based on SDGs, the source domain of sustainable development was coherently identified with different sustainable development goals. For example, the conceptual frame 'sustainable development is poverty and hunger alleviation in the CPEC' provides the reader with a coherent view of target and source domains by putting two concepts in one frame. Another purpose of frames and framing is the exaptation, which denoted an idea of 'hijacking' the existing cognitive mechanisms (Kolodny & Edelman, 2018) to opt for more significant cognitive structures that move us from being involved in anthropogenic activities to ecocentric activities. In an Ecolinguistic study of an economic discourse like CPEC, conceptual frames specifically provide underlying values, ideologies and assumptions which surface level messages cannot put across (Philipson, 2012), so the conceptual frames and sub-frames enlighten us with how language pattern inside them help to reinforce the particular economic ideologies and policies (Fairclough, 2009). The concept of framing, as proposed by George Lakoff, refers to the way language and

communication shape our perception of issues and influence how we understand and interpret them. In the context of the China-Pakistan Economic Corridor (CPEC) as an economic discourse, framing plays a significant role in shaping public opinion, policy decisions, and overall perceptions of the project.

Metaphors, as linguistic devices and cognitive structures to develop a second story, were employed in bulk in the CPEC discourse to compare socio-economic and environmental/ecological areas with more familiar ones through source and target domains found out by following the conceptual metaphor (Lakoff & Johnson, 1980). The metaphoric expressions used in these discourses triggered a particular frame in the minds of people by drawing their attention towards unique kinds of comparisons such as the CPEC IS A HUMAN BEING, CPEC IS A WAR, PAKISTAN'S ECONOMY IS A PATIENT, CHINA IS A GIANT, and NATURE IS A RESOURCE, CPEC IS AN ENVIRONMENTAL DISASTER. These are some of them, and similar conceptual metaphors can be seen in the analysis chapter. They include personification, presupposition, description, comparisons, exemplification, condemnation, prediction and triggering a particular frame. For example, the CPEC is personified to show that it has human characteristics such as thinking, moving and speaking. It makes CPEC (Saffer, 2005) more approachable and usable economic projects.

Similarly, CPEC is condemned because it is an environmental disaster that may harm Pakistan's environment and has been presupposed to turn Pakistan into a patient. The metaphor of NATURE IS A RESOURCE has also been used to encourage the overexploitation of the natural resources of Pakistan. So, the most important finding that can be seen in all the uses of metaphors is that metaphors are used for priming the issue (Kemper, 1989). They also change human behaviors (Gilead et al., 2015). According to Allbritton (1995), conceptual metaphors may be able to trigger schemas in human minds so that their desired effect can be achieved. So, the desired behaviors and effects caution us to be responsible and caring towards the natural environment and ecology, which can be achieved using conceptual metaphors. Furthermore, identifying and analyzing conceptual metaphors in economic discourse can also reveal the limitations and biases of economic thinking (Ivanic, 1998). For instance, economic development is a journey, or it

is a building that shows how much economic development is vital for Pakistan even if it is bad for the environmental health of Pakistan.

Overall, including conceptual metaphors in an Ecolinguistic study of an economic discourse is important because it allows us to understand how people conceptualize economic concepts, how this conceptualization shapes their beliefs and actions, and the limitations and biases of economic thinking (Ivanic, 1998).

Considering salience patterns as one of the linguistic patterns employed in the CPEC discourses, the purpose was to explore them and why they have been used to relate them with ideologies, discourse and Ecosophy. Salience is the importance of an area that needs attention (Stibbe, 2015). In this research, the areas of significance include all 17 SDGs according to the theoretical and analytical framework used for achieving research objectives. Verbs are found to be the linguistic devices that serve the function of establishing salience patterns in the CPEC discourses. The verbs used with keywords of the sustainable development goals occurring on the left side collocation were considered for collocation analysis. They are referred to as focus words, according to Stibbe (2015) that draw people's attention towards the significance of a specific area. The most frequently occurring salience attributive verbs are *implemented, achieve, enhance and promote*, which have been found to have linguistic features of focus and vitality. They perform the function of reminding by bringing more action-oriented features of language use. This research extracts them from the examples in the 'Salience Patterns' section (see Chapter 4).

The salience patterns that arise from verbs serve as focal point I order to meet research objectives. It can be seen that salience patterns act as a verbalized form of action words that can draw people's attention towards an area of worthy importance, which in turn tends to develop salient beliefs and attitudes among them (Higgins, 1996). They are also found to be persuasive devices (Schulman & Worrall, 1970) to evoke people for some desired action. They are also used to measure the attitude of people (Elmore et al., 1975). Moreover, the salience patterns through the use of words having linguistic features of focus and vitality, such as those used in this research, also suggest that they are used to show the seriousness of some issues such as poverty and hunger, poor health and education, unemployment and gender inequalities, environmental degradation, biodiversity loss,

pollution and ecological imbalance. In a study on Africa by Justesen (2015), it was seen that low salience was attributed to poverty as one cause of AIDS suggesting that if the issue is grave, the salience level or MI score attributed to that issue is also high. Thus, salience in this research has been seen to be given to all SDGs as significant collocations with those verbs. The most salient verb is 'promote', with the highest MI score value in the socio-economic area of 'Industry' and the eco-environmental area of 'environmental sustainability'.

Overall, including salience attributive verbs in an Ecolinguistic study of an economic discourse like CPEC is crucial because it allows us to identify the values and attitudes that shape people's thinking and actions towards the environment and how language is used to legitimize or delegitimize certain environmental practices (Fernández-Amaya, 2014).

Appraisal and evaluation patterns were developing another story focusing on Ecolinguistics because they influence readers to visualize certain areas as good or bad. The research has concluded that CPEC is good for uplifting the socio-economic conditions of Pakistan because it has been called a game changer and economic engine for Pakistan. In contrast, it has been called an environmental disaster. So, the positive appraisal items with the word CPEC are used to have the project accepted (Devonport & Lane, 2006) by the people of Pakistan. In socio-economic areas, 42 significant appraisal items are found in the collocation analysis, where 41 are positive appraisal items, and one is negative, which is used as a 'dirty industry'. Ten positive and seventeen negative appraisal items can be found in eco-environmental areas. These items are verbs, nouns, adjectives and adverbs. They are explicitly positive connotation words, including adjectives and adverbs as modifiers. These appraisal items include **concrete, most empowering, rapid, broad-based, most immense, high, enormously, primary, stable, bilateral, vital and significant.** These examples evaluate the area of 'development' as vital under the project of the CPEC and, most importantly, needed for Pakistan, which can be adopted by following the footsteps of developed nations because their economies are competitive (Fairclough, 2003). Negative appraisal items are also used such as for the environment of Pakistan that trigger negative feelings and emotions (Choi et al., 2011) in people about the CPEC.

So Pakistan, as an underdeveloped country, has been appraised negatively in this research because of acute poverty, poor health and education system, justice and peace, poor infrastructure and industry. Pakistan's environmental and ecological standards are also evaluated with negative appraisal items such as poor quality environment because of pollution, fragile ecosystems, poor quality of water and inadequate sanitation. In addition, Pakistan has an energy crisis, improper waste disposal system, faulty consumption and production and the disastrous impact of oil spillage on aquatic life.

The positive appraisal items used with the words 'development' and 'CPEC' make people visualize both of these area'' good and negative appraisal items used with Pakistan and Pakistan's environment to give a wrong impression. The appraisal patterns are employed in the CPEC discourse to present an accurate picture of Pakistan's socio-economic and environmental areas. In contrast, the CPEC is a good area that can uplift socio-economic conditions but might have a destructive impact on Pakistan's environmental and ecological conditions. The negative appraisal items used with the word 'Pakistan' and some socio-economic areas generate destructive discourses, while positive appraisal items generate beneficial and ambivalent discourses.

Overall, including appraisal patterns in an Ecolinguistic study of an economic discourse like CPEC is vital because it allows us to understand how language is used to evaluate and express attitudes towards environmental issues and economic policies, the underlying values and ideologies that shape people's attitudes towards environment, and the distribution of power and interests at play in environmental decision-making (Martin & White, 2005). Furthermore, analyzing appraisal patterns in economic discourse can also reveal the distribution of power and the interests at play in environmental decision-making (Jiang, 2019). For instance, modal verbs such as must or should to express obligation or necessity may be used by those in positions of power to promote specific environmental policies or practices. In contrast, the use of modal verbs such as might or could to express possibility or uncertainty is used by those with less power to express doubt or skepticism.

Concluding the facticity patterns employed in this research, it can be seen that three facticity patterns are used: one was the use of names of expert authority and their opinions. Second, the names of organizations and institutions are also relevant to the socio-economic

and ecological/environmental areas. The examples can be seen in the discussion chapter. The third attribute found in these patterns is the presence of modality patterns used by the experts to make the descriptions accurate to accept and to reject. Truth and falseness have not been judged only on an absolute scale; instead, they are spread over the spectrum of facticity, signifying there is a scale from absolute truth to the falsehood that can be identified from modal verbs. This research finds that experts mostly used the modal verbs of 'will' with 411 concordance hits, 'would' with 182 hits, 'should' with 38, and 'must' with nine hits. If we go through the collocation analysis, it is found that the modal verb of 'will' has been taken as a semantic preference by the number of areas in the socio-economic areas such as Poverty-will (3.96071), Education-will (2.27290), Infrastructure-will (1.38485), Economic growth-will (-3.27156), Employment-will (1.49117) and Affordable housing-will (2.76705). In eco-environmental areas, the modal verb 'will' has been used with Energy-will (3.53188) and aquatic life-will (3.62503). The experts who used these facticity patterns are the politicians, prime ministers, ministers and the experts of their relevant areas who used hedges such as think with 13 hits and believe with 127 hits. These two hedging words dominate the CPEC discourse, but the hedging word believe is the most dominant. The highest MI score has been gained by the collocation 'environmentalists-believe' (11.23230), and then 'economists-believe' (9.02284), ministers-think (1.30384), and policy makers-think (7.49041). The facticity patterns under these three categories are found more in socio-economic representations and less in ecological/environmental representations. This pattern concluded that anthropocentric ideologies, which further are inclined towards building low ecocentric Ecosophy of the CPEC discourses, prevail in the entire discourse. Low ecocentric refers to human dominance in undermining Nature while caring for more of each other.

So it can be said that the names of the experts and their opinions, such as 'environmentalists' and 'economists', use of modal verbs such as 'will' and hedging word 'believe' can play an essential role in authenticating the status of descriptions as true, sure, uncertain and false (Ain, Ahmad, Ghilzai & Asim, 2023) emphasizing the high level of facticity built by the modal verb 'will' in their research on commercial discourse. The overall function of this pattern in this research remains to hypothesize and assess it by using the word (think), differentiate and summarize (think, believe, appears), agree and disagree

(argue), suppose and presuppose (belief, assume), etc. So using these three facticity patterns in this research connects with what Hyland (1998) evaluated about them by calling them the patterns of caution and saying that they are used differently in different discourses. He conducted his study on the use of hedging words in academic discourse. So the linguistic patterns of facticity, most notably the modal verb 'will' with the highest frequency and 'environmentalists believe' with the highest MI score as collocation, are employed in this research to generate more beneficial and ambivalent discourses inside the economic discourse produced around CPEC.

Overall, including facticity patterns in an Ecolinguistic study of an economic discourse is important because it allows us to examine how language is used to construct and convey knowledge and understanding of environmental issues, how scientific evidence and expertise are used in environmental decision-making (Breeze, 2018), and the role of certainty and uncertainty in shaping attitudes and behaviors towards the environment through modality patterns and epistemic adverbs (Tian, 2019).

In conclusion, the employment of more cognitive structures and linguistic patterns such as intrinsic and predicament frames, eco-metaphors, positive appraisal items, focus verbs as salient attributive linguistic resources such as 'promote', use of modality patterns such as 'will' by experts of relevant areas like environmentalists and economists that can promote environmental protection and ecological preservation should be included in the economic discourses which are predominantly considered as destructive discourses (Stibbe, 2015). In this way, social sciences research, particularly Ecolinguistic studies as interdisciplinary research may play its role in orienting green discourses, green economies and green environments. As stated by Lazarus (2015), "Linguistic analysis can shed light on how people frame environmental issues and can therefore help to identify effective communication strategies for engaging the public on environmental issues" (p. 91). Additionally, "linguistic research can contribute to developing a new language that more accurately reflects environmental concerns and values" (Lazarus, 2015, p. 91).

6.2. Contribution of the Study

This research has contributed to the existing literature in different ways. First, this study provides an insight into the CPEC, as an economic discourse to be analyzed from an Ecolinguistic perspective. Although economic discourses tend to be destructive discourses (Stibbe, 2015), this study concludes that economic discourses like the CPEC discourse, when analyzed by applying a framework of sustainable development goals SGDs, the results might have different perspectives, according to which the economic discourses can have ambivalent discourses because they speak about protecting environment, ecology and economy at the same time. Much research has been conducted on the CPEC from an environmental view. However, this research has contributed to the previous literature differently by examining the linguistic and cognitive patterns employed to represent socio-economic and ecological environmental areas. The study bridges the gap between linguistics, economics, and environmental studies. It encourages interdisciplinary research that considers the intricate interplay between language, economics, and environmental concerns. This can pave the way for more holistic approaches to development projects, taking into account not only economic benefits but also environmental repercussions.

Moreover, this research has contributed to the existing corpus-based studies conducted to get an overall view of data by concordance and collocation analysis. The research is a unique contribution to the ecological analysis of economic discourse rather than the analysis of ecological discourse. This research also included 17 SGDs taken as search terms to explore linguistic patterns that align with sustainable development goals and Sen's (1999) perspective of attaining sustainable development and economic growth on three levels such as economic, social and environmental. The compilation of an Ecosophy of the CPEC has given a new dimension to Ecolinguistic studies. The research has followed the story framework of Stibbe (2015) by choosing six stories that Stibbe himself used and referred to eclectic nexus of theories from discourse analysis and cognitive linguistics. His critical discourse perspective of anthropocentric and ecocentric ideologies has helped to conduct Ecological Critical Discourse Analysis (ECDA) of the economic discourse produced around the CPEC. By conducting a corpus-based analysis, the research identifies and categorizes linguistic patterns, metaphors, salience patterns,

appraisal patterns, frames and discursive strategies used in the economic discourse on CPEC. It highlights how certain linguistic choices, such as metaphors, verbs, adjectives, adverbs, hedging words and modal verbs related to growth, progress, and development, shape the perception of CPEC's impact on the environment and sustainability.

The research contributes by employing ecolinguistic analysis methodologies to economic discourse, specifically focusing on the CPEC project. Ecolinguistics explores the relationship between language, discourse, and the environment. This study extends ecolinguistic analysis into economic contexts, providing a novel approach to understanding how economic projects are framed and discussed in terms of their environmental implications. The research contributes to increasing awareness about the framing of economic projects like CPEC in terms of environmental sustainability. It points out how different stakeholders in the discourse, such as government officials, economists, environmentalists, and media outlets, employ language to present their perspectives. This awareness can foster more informed discussions and decisions regarding the balance between economic growth and environmental concerns.

The research offers a critical lens through which to evaluate instances of "greenwashing" – a practice where projects are presented as environmentally friendly without substantial evidence. By dissecting the language used in economic discourse on CPEC, the study can potentially identify cases of greenwashing or overemphasis on environmental aspects. In conclusion, the research on "Orienting Green Discourse: A Corpus-based Ecolinguistic Study of the Economic Discourse on CPEC" significantly contributes to the fields of ecolinguistics and discourse analysis by analyzing how language constructs perceptions of environmental sustainability within the context of the China-Pakistan Economic Corridor. Its findings have the potential to influence policy discussions, promote interdisciplinary collaboration, and foster more balanced and informed public discourse on economic development and environmental concerns. In the end,

- Frames are used to view the project positively, critically and for framing the notion of sustainability and development where problem frames used to warn and predicament frames used to suggest solutions, also are used to advance the view point of the actors.

- By using salience patterns, CPEC involves highlighting often marginalized or overlooked aspects of the project, thereby enriching the discourse surrounding it. By diversifying the narratives, a more comprehensive understanding of the project's impact can be achieved, which contributes to a more informed and balanced public discourse.

- Appraisal patterns in the discourse of CPEC, engage a more comprehensive and critical analysis of the project, moving beyond the dominant narratives to explore alternative perspectives and considerations. This approach fosters a more informed and well-rounded discourse about the multifaceted impacts of CPEC as an economic endeavour.

- Facticity patterns engage in a rigorous examination of the factual foundations of the descriptions surrounding the project. This approach aims to provide a more accurate and evidence-based understanding of the project's impact, outcomes, and implications, fostering a more informed public discourse and decision-making process.

6.3. Research Implications

The research is significant because it analyzes economic discourse on the CPEC from an eco-environmental perspective, an interplay of language that tends to determine thoughts that influence actions. This research may instigate people to internalize and revisit those cognitive patterns that promote the environment’s safety. This research can act as a guide to analyze any discourse from an Ecolinguistic perspective focusing on Stibbe’s story framework of eco-critical discourse analysis and Sen’s (1999) sustainable development approach. The research may bring awareness among policymakers and economists about greening the environment and economy. Moreover, the Government and all institutions engaged in running such economic projects as the CPEC can have a good insight into the role of language and linguistic structures that play an essential role in discourses generated about a project at all levels. It may benefit the environmental policy institutions and the discipline of ecological economics by clarifying the kind of ideologies that the language of these disciplines use for conveying knowledge. During the planning stage of such projects,

the stakeholders may work on producing texts such as Environmental Impact Assessments (EIAs), which are found to be only four in number for different projects of the CPEC. These texts are important because they are ecologically sound and less anthropologically centered.

6.4. Methodological Implications

This research has used Corpus linguistics as a methodology that future researchers can adopt to explore language patterns and cognitive structures in any discourse. The study also affects some ways of designing a corpus primarily based on archival data. Collecting archival data provides the researcher with the idea of data triangulation. Corpus-based studies bring objectivity to the research, where frequency or collocation analysis provides an initial overview of the data with which obtained frequencies can help analyze the data qualitatively.

6.5. Limitations

This research has examined and analyzed official and unofficial written texts taken as the CPEC discourse to undergo analysis with the help of Corpus analysis software (version 3.8.2). It has yet to take up any spoken discourses. Only six stories have been taken from Stibbe's (2015) eco-critical discourse perspective framework, which includes ideology and discourse, frames and framing, metaphors, salience, appraisal and facticity. The CPEC discourses fall under economic discourse. The results may not be generalized to other discourses or economic discourses. This research is a nexus of language, ecology and economics. It may be considered interdisciplinary research. It can also be noticed that the analysis of the CPEC discourses has been done by using several cognitive and linguistic theories, so the methodological and theoretical network is thick, and this research can only be one way to analyze discourses by using different theoretical and methodological underpinnings as proposed by Stibbe in his critical discourse perspective and Amartya Sen in his sustainable development approach based on ethical side of it, which he refers to the sustainable use of language.

6.5.1. Limitations of Stibbe's Story Framework

During this research, there were found to be some potential limitations in Stibbe's (2015b) story framework that can draw attention of future researchers before using this framework. His story framework may oversimplify complex ecological issues. Eco-critical discourse often deals with multifaceted and interconnected problems, and a simple framework may not adequately capture the nuances of these issues. The framework may risk reductionism by categorizing texts and discourses into binary oppositions of 'red stories' and 'green stories.' This reductionist approach might overlook the intricate ways in which ecological themes are embedded within narratives. Story framework may not sufficiently consider cultural variations in eco-critical discourse. Different cultures and contexts may interpret ecological narratives differently, and a universal framework might not account for these variations. The fixed categories of 'red' and 'green' stories might not accommodate the evolving and dynamic nature of eco-critical discourse. Discourses and narratives change over time, and a rigid framework may not adapt well to these shifts.

Stibbe's (2015b) framework may not fully address the complexity of linguistic elements in eco-critical discourse. It might not adequately consider subtler linguistic features, metaphors, or rhetorical strategies that contribute to eco-critical meaning. It may not fully address intersectionality, such as how ecological issues intersect with issues of social justice, race, gender, and class. A more comprehensive eco-critical analysis should account for these intersections. Challenging Stibbe's (2015b) framework might lead to the development of more robust eco-critical models that bridge the gap between theoretical analysis and practical application. It's essential to address how eco-critical discourse can influence real-world environmental action.

Stibbe's (2015b) framework might favor specific methodological approaches, potentially overlooking valuable insights from diverse research methods and fields. Challenging the framework may prompt the exploration of cross-cultural eco-critical discourse, encouraging researchers to analyze how ecological narratives and discourses vary across different cultural, linguistic, and geographical contexts. By identifying and addressing these limitations, one can contribute to a more comprehensive understanding of eco-critical discourse and potentially develop a more nuanced and adaptable framework for analyzing environmental narratives and discourses. This process of challenging existing

frameworks and theories is an integral part of academic discourse and the development of knowledge in any field.

6.6. Recommendations

This research has been a challenging task due to a thick mix of cognitive and linguistic theories used as theoretical framework. The research would offer a gateway to further research within this field since it is a relatively new analytical framework named eco-critical discourses analysis. The research would contribute to the existing language, ecology and economic literature by analyzing economic discourse from an Ecolinguistic perspective. In addition to this, the research has come up with several recommendations.

6.6.1. Recommendations drawn from the Official Data

The first recommendation leads the stakeholders of the project of the CPEC to inculcate more ecocentric frames and ideologies within the texts they generate. Feeling the sensitivity of the role of linguistic patterns and cognitive structures that are involved in compiling and planning such projects need to have produced, if not beneficial discourses, may focus on ambivalent discourses which are neutral towards economic benefits not only on the over-exploitation of natural resources but also cater for the negative impacts of economic development and economic growth. In this way, more intrinsic frames encapsulating human well-being, resilience and respecting Nature can be embedded, producing ecocentric ideologies. All of this can be planned to embed in an economic discourse by applying the concepts of sustainable development, green growth, green development and SDGs. The same idea is endorsed by Gong (2019), who asserts that project practitioners and executioners must develop a sense of environmental concern while planning a mega-economic project such as the CPEC to save the environment.

Given that the frames constructed within the texts tend to centralize the human benefits while projecting Nature as a source of human development as seen in the analysis part where the frame green development and green economy is a favorable ideology. The text, however, does not set up the frame of reduce mere economic growth and provides us with a more docile frame that could encourage more positive ecological behavior. Hence, what could be considered by environmental policymakers is an attempt to correlate the role

of Nature in human development while also framing human development as solely dependent on nature. Therefore, Nature should not be framed as an unlimited entity that human beings could exploit but as a limited living resource. It is, therefore, necessary to be constantly aware of the tendency of environmental frames to be affected by any extrinsic force. If it is vital, we must promote frames that refocus their role on the original intentions.

Similarly, the negative metaphors such as nature is a threat or nature is a resource constructed within the texts should be diminished or replaced with other metaphors. It is, therefore, the role of Ecolinguistics to encourage positive metaphors that promote harmony between human beings and the ecosystem, which should not be measured in terms of benefits and loss or threats and protection but it should employ metaphors that define the role of Nature and human beings as a whole without any form of separation or othering.

6.6.2. Recommendations Drawn from Unofficial Data

News reports from three Pakistani English newspapers and three Chinese English newspapers along with student research papers showed that the data taken from multiple resources encapsulated diverse views of the CPEC when explored from Ecolinguistic point of view. As news reports provide up to date information and diverse perspective capturing the latest developments, policy decisions and events related to the CPEC, the inclusion of environmental factor consistently with the use of green metaphors, positive appraisal patterns and focus verbs can change the perception of the readers to think of more ways of saving environment. It was found that unofficial data is easy to access so becomes more effective in conveying the green message with array of analysis, commentaries and expert insights to make people understand the importance of maintaining the balance of economic as well as ecological concerns of the infrastructure project of the CPEC. Student research papers were deemed significant as well, owing to the academic oversight and peer scrutiny they receive, which guarantees a degree of scholarly thoroughness and quality. These papers offer meticulously researched and systematically presented analyses on multiple facets of the CPEC. They present new viewpoints and studies grounded in essential local knowledge, addressing community issues like noise and air pollution. Moreover, they contribute concrete data and statistics on the impact of the project on local communities and areas. Therefore, it is recommended that more research should be done from interdisciplinary point of view which can inform the students and scholars writing in the

disciplines of economics, international relations and environmental studies. Based on this fact, this research also recommends some more ideas for future researchers that are as follows:

1. Following Stibbe's (2015b) story framework, other research can be conducted in areas such as environmental policies, newspaper articles, and economics and environmental sciences textbooks.
2. As this research involved economic discourse, future research may involve other discourses, such as environmental discourses in health magazines and advertisements.
3. From the perspective of Ecosophy, the above given discourses and texts can be analyzed to develop it by following the concept of Ecosophy given by Naees, Guattari and others.
4. Following the corpus-based study, the corpus can be used to compare discourses of different fields such as economic and environmental in different dimensions ranging from the eco-critical discourse perspective to pedagogical aspects.

6.7. Chapter Summary

The conclusion and recommendation chapter is the last chapter of this research that includes crucial findings, implications, limitations and recommendations. According to the research findings, it is concluded that the discourse produced around CPEC represents more socio-economic areas than eco-environmental areas. The six stories taken from Stibbe's story framework have specific cognitive and linguistic patterns that develop those stories. The story of frames/framing in the discourse of CPEC is primarily used to trigger the desired frames of environmental safety and social values in people's minds through predicament frames. The story of metaphors generates 17 conceptual frames employed to exemplify, compare, presuppose and elaborate socio-economic and environmental issues in the discourse. War metaphors, human being metaphors, weather metaphors, health metaphors and eco-metaphors are used to develop the rhetoric of the project of the CPEC. The story of salience has been employed through verbs of focus, vitality and prominence such as *promote, accelerate* and harm/s to draw the attention of people towards the most salient areas of industry in socio-economic areas and 'environmental sustainability' in eco-environmental areas. The story of appraisal is employed by using adjectives mostly to

appraise the socio-economic and eco-environmental areas. According to the findings, the positive appraisal items are mainly used with the word CPEC.

In contrast, negative appraisal items are used with the words included in eco-environmental areas under the project CPEC. The story of facticity is developed in the discourse of CPEC through the names of expert authority like 'environmentalists', the modal verb 'will' and the hedging word 'believe' to make descriptions of environment and economics and social areas so that people can judge the description about them as false or true. It is also concluded that anthropocentric ideologies are more as compared to ecocentric ideologies. Based on ideologies, ethical values are included in the discourse for social, environmental and economic well-being and care as the difference between these ideologies is small. Another aspect that adds to this conclusion is the production of ambivalent discourses, which are the combination of beneficial discourses that promote environmental sustainability, and destructive discourses that are about those discourses that encourage economic gains on the cost of environmental destruction. Finally, it is concluded that more predicament frames, more eco-metaphors, more salience attributive verbs, more positive appraisal items for the environment, and more reliable and particular descriptions through facticity patterns can be employed to orient green discourse and Stibbe's (2015) stories we live by in an economic discourse which also shows Sen's (1999) sustainable development approach to be accomplished on three levels such as social, economic and environmental.

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Appendix 1

Appendix 1 (Table 4.1)

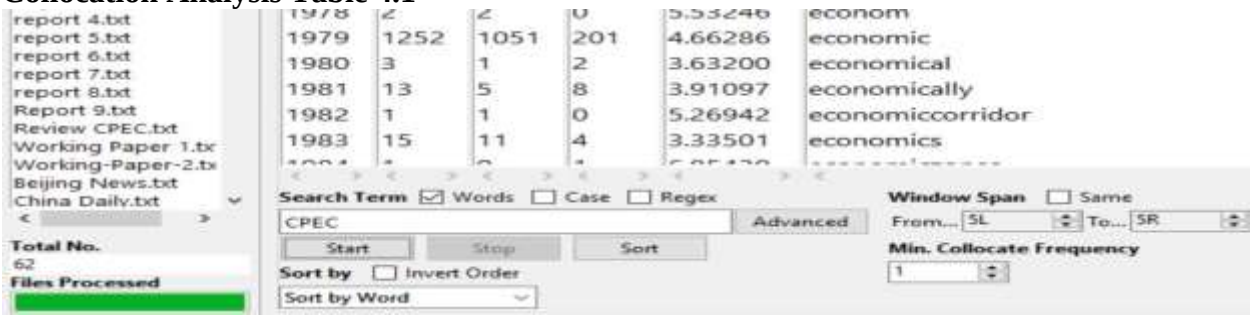
Frequency of the Word 'Economic'

Frequency of the Word 'Socio-economic'

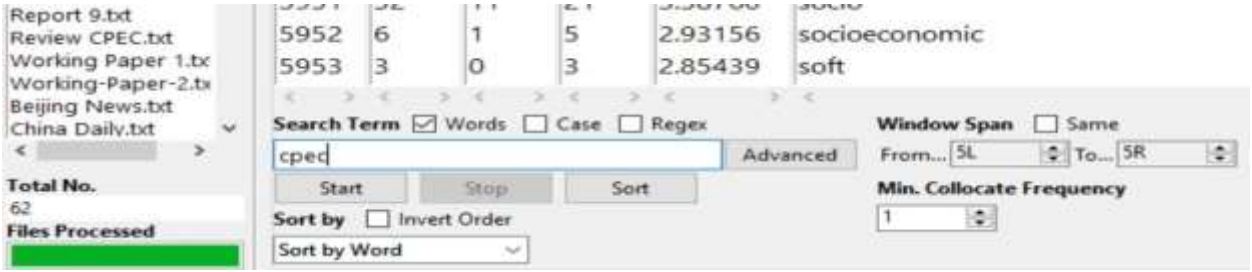
Frequency of the Word 'Environmental'

Frequency of the Word 'Ecology'

Collocation Analysis Table 4.1



CPEC-Economic MI score



CPEC-Socio-economic MI score

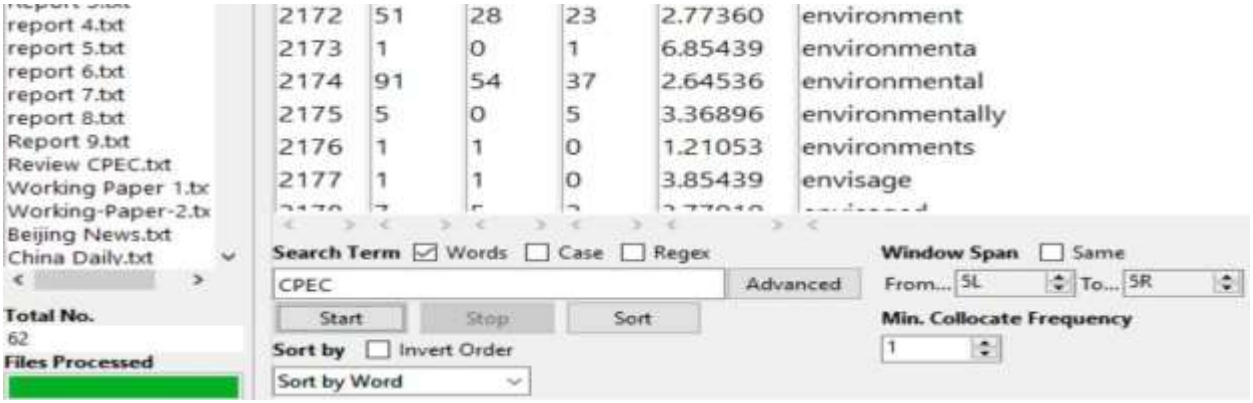
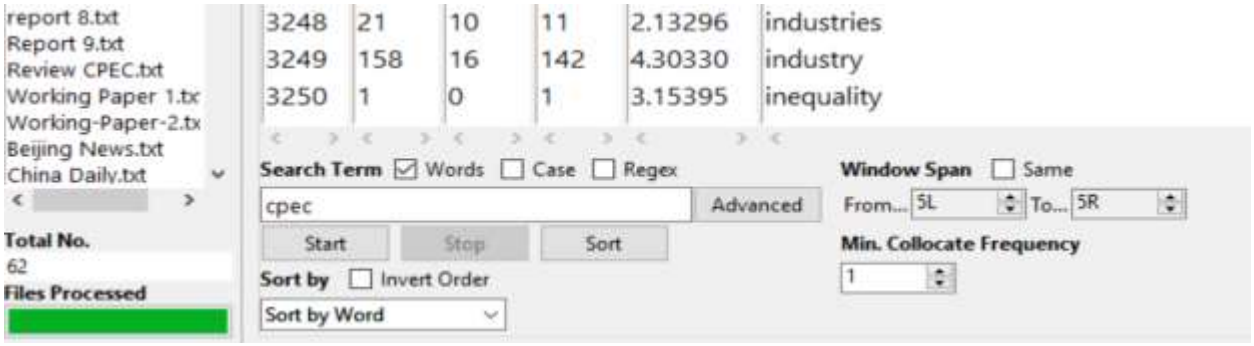


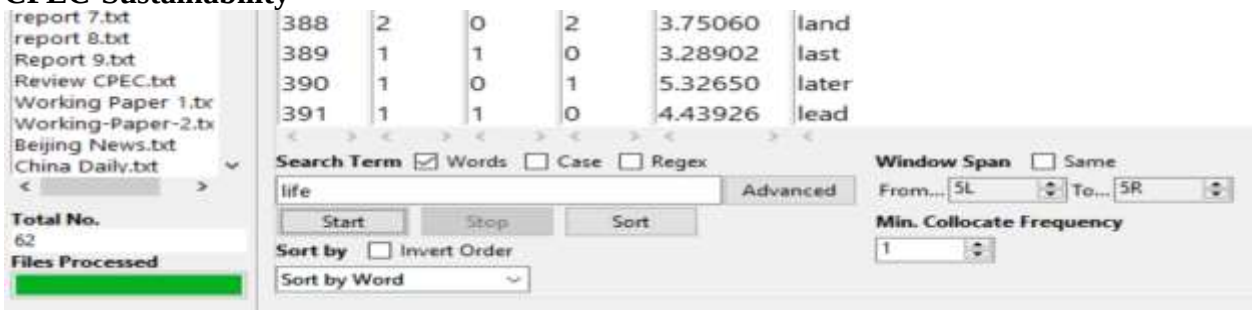
Figure 3: CPEC-Environmental MI score

Table 4.2

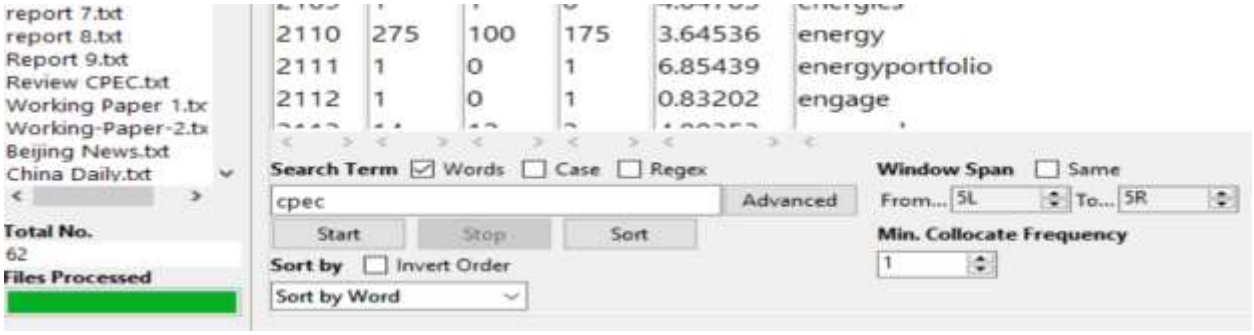


CPEC-Industry

CPEC-Sustainability



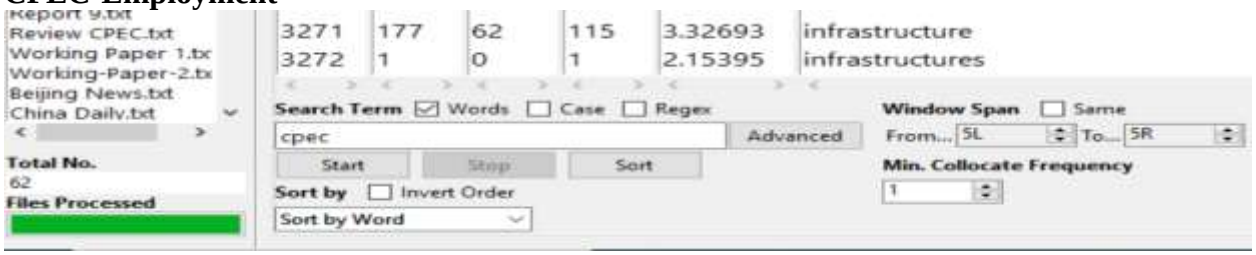
CPEC-Land-life



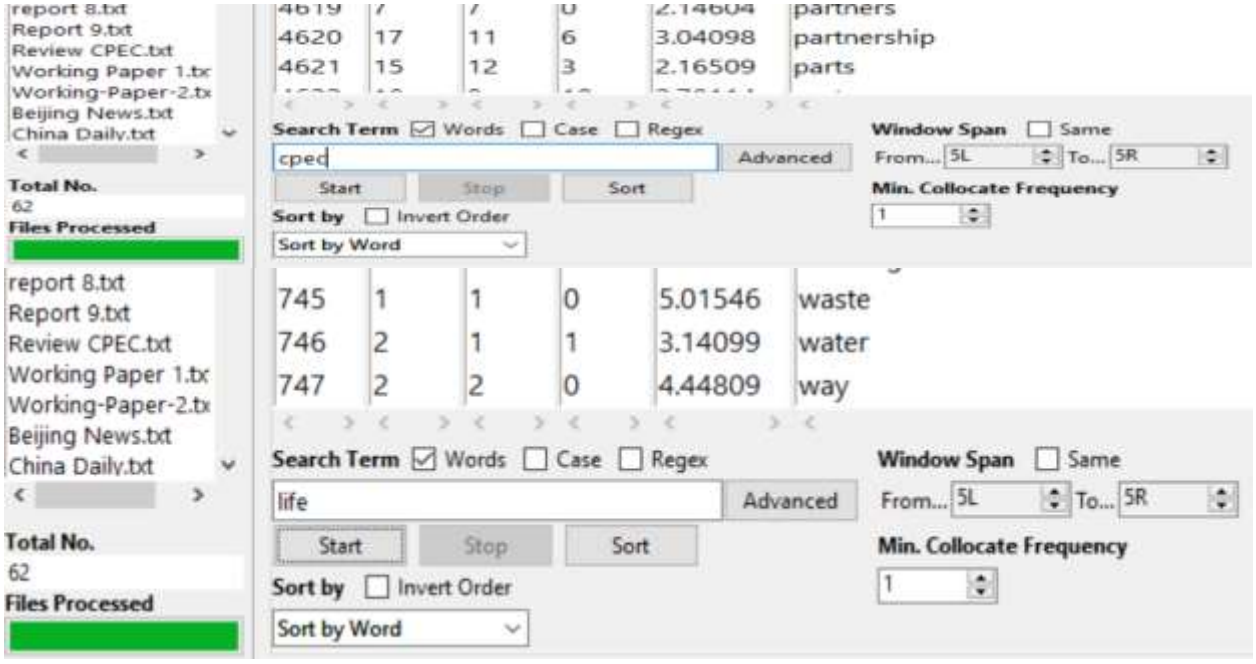
CPEC-Energy

CPEC-Poverty

CPEC-Employment



CPEC-Infrastructure

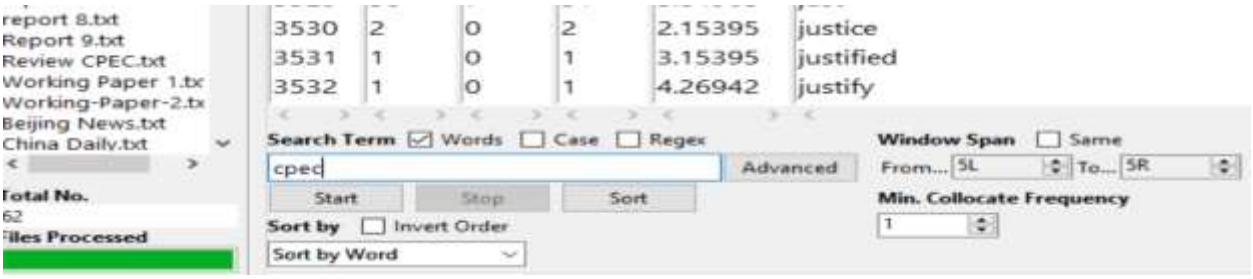


CPEC-Life under water

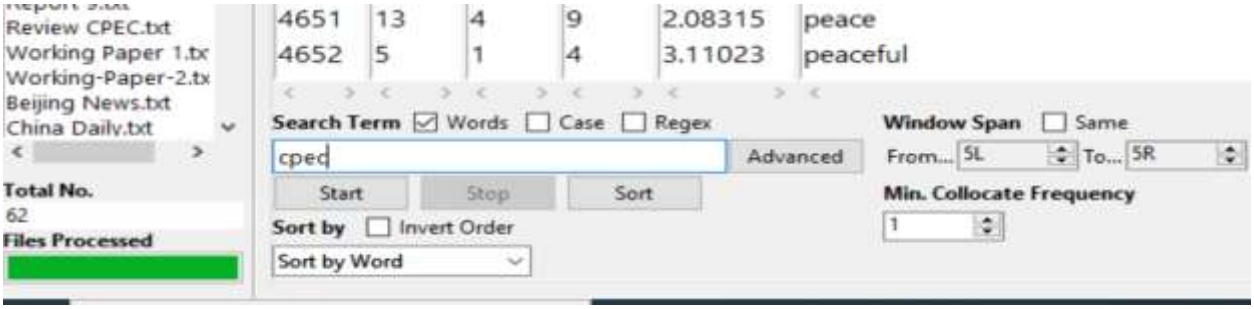
CPEC-Partnership

CPEC-Cities

CPEC-Education



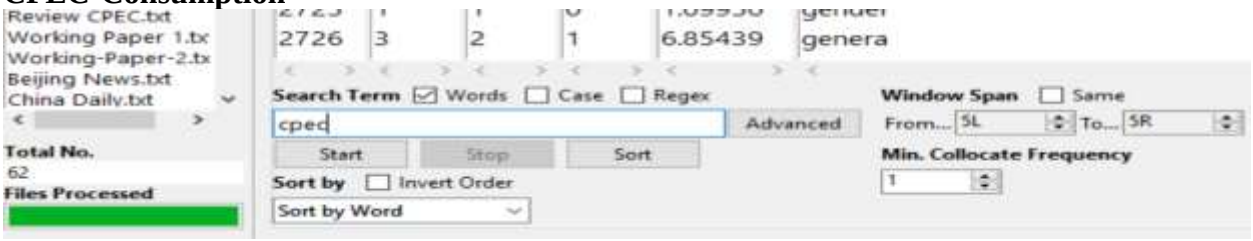
CPEC-Justice



CPEC-Peace

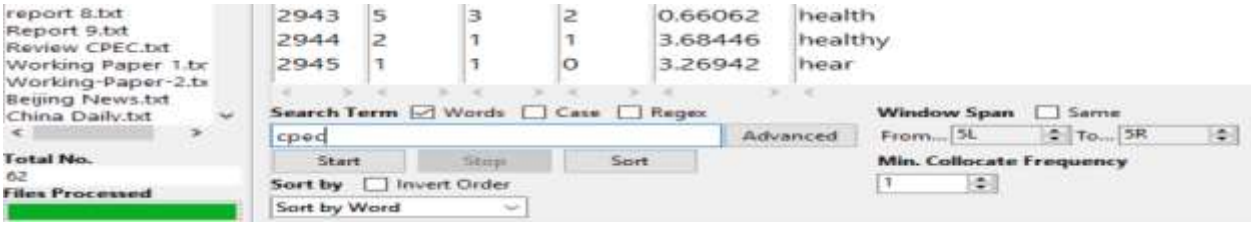
CPEC-Climate

CPEC-Consumption



CPEC-Gender

CPEC-Water

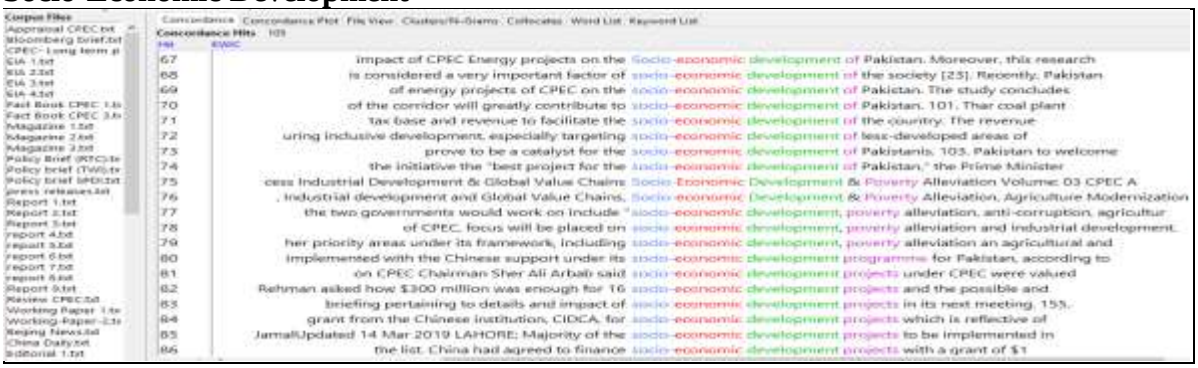


CPEC-Health

CPEC-Hunger= 0 CPEC-Sanitation=0

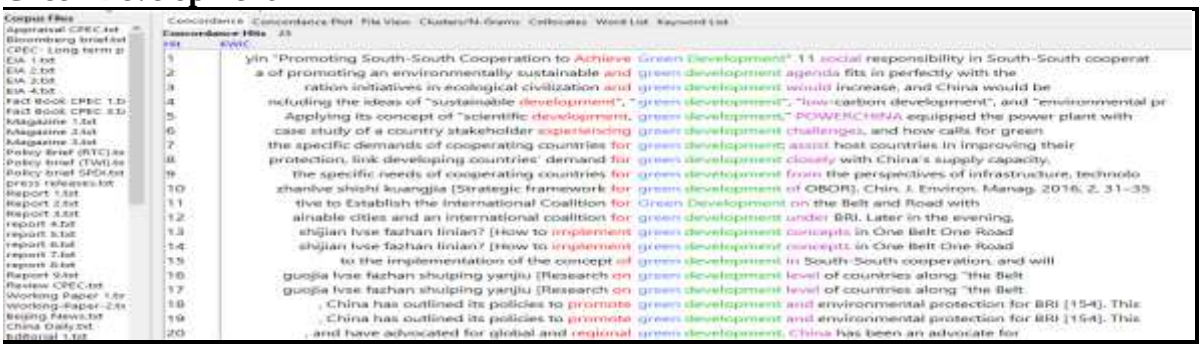
Part-1: The Story of Frames and Framing in the CPEC Economic Development

Socio-Economic Development



Equitable Development

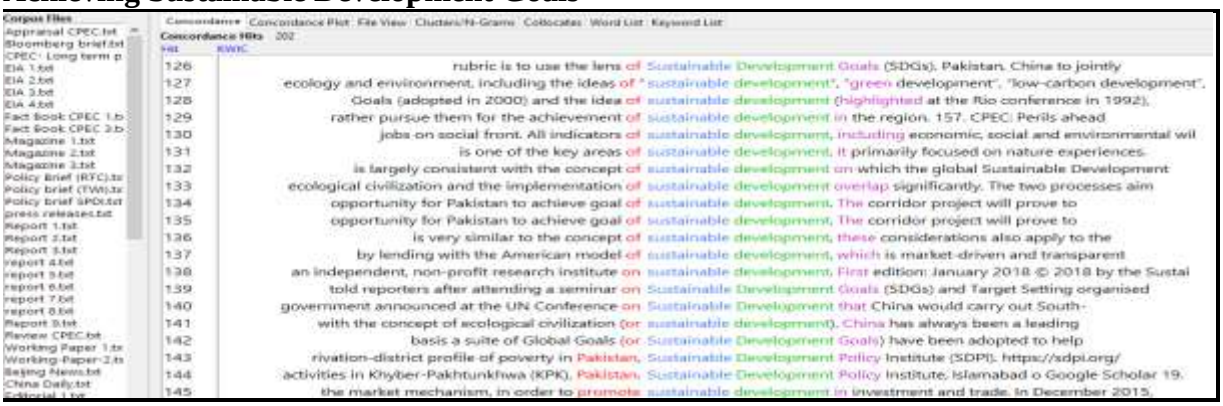
Green Development



Ecological Civilization

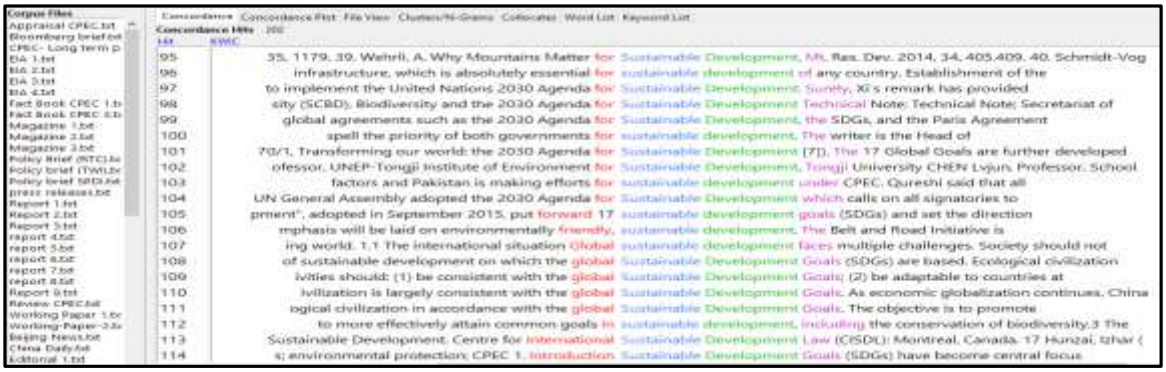
Sustainable Development Goals (SDG's)

Achieving Sustainable Development Goals



The CPEC to Focus on Sustainable Development

Global Sustainable Development



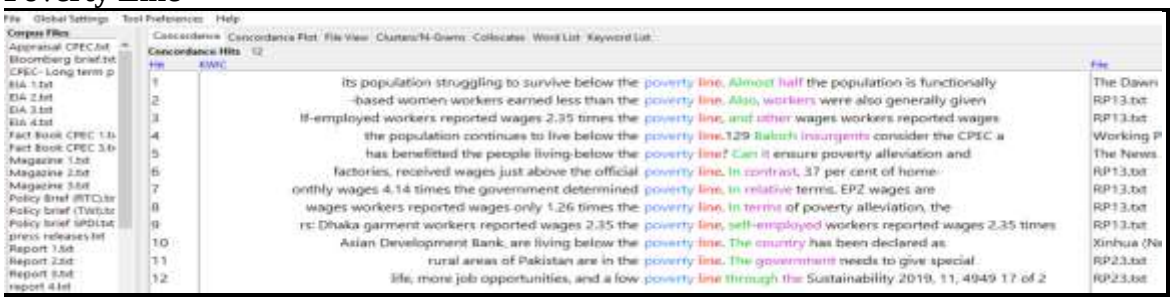
Poverty Alleviation

Poverty Reduction

Poverty Eradication

Socioeconomic development and poverty alleviation

Poverty Line



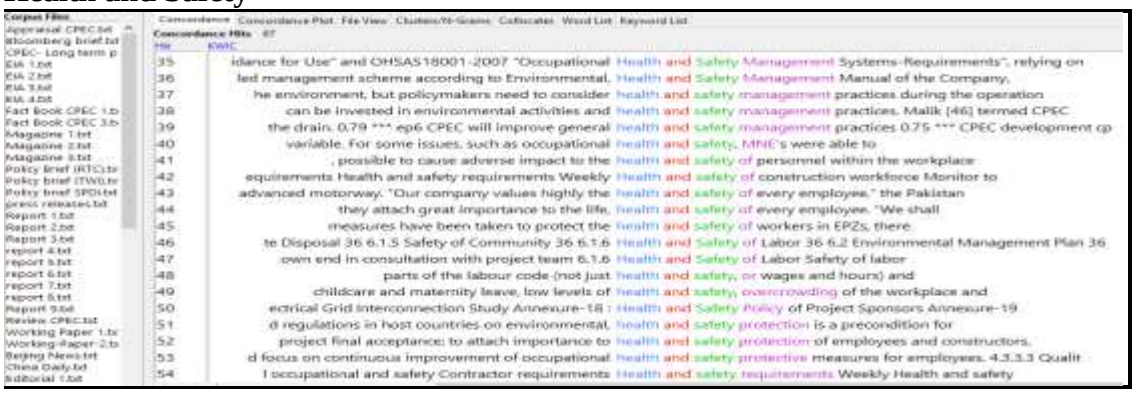
Good Health

Public Health

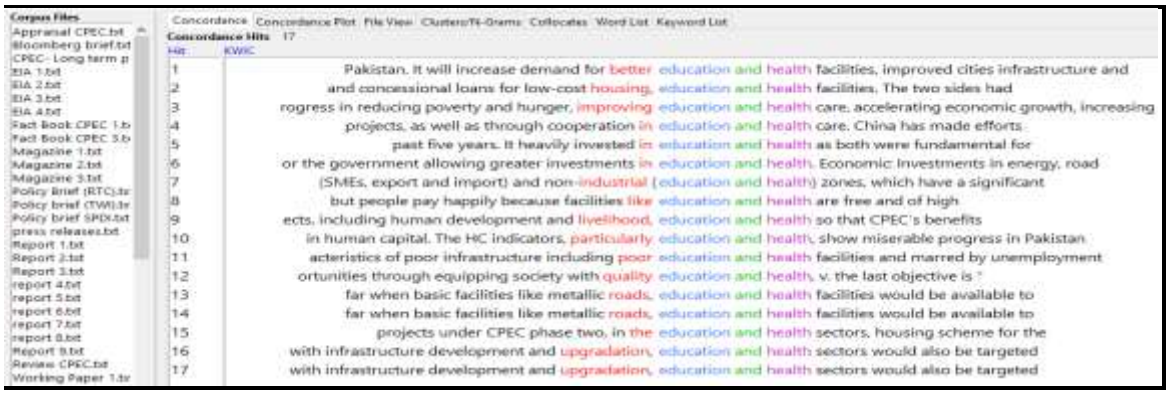
Human Health

Environmental Health

Health and Safety



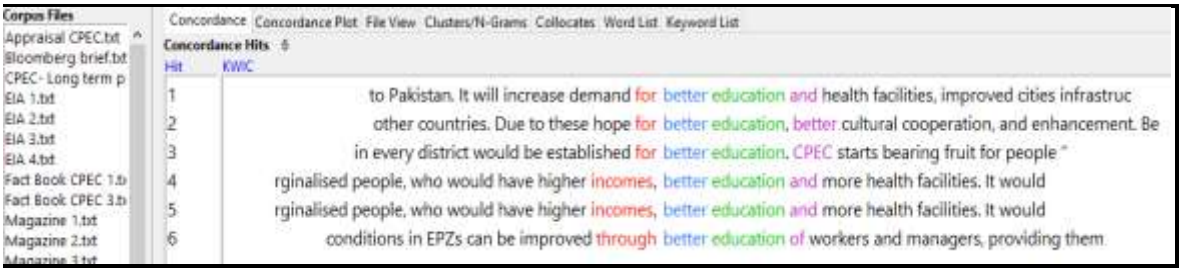
Education and Health



Good Education

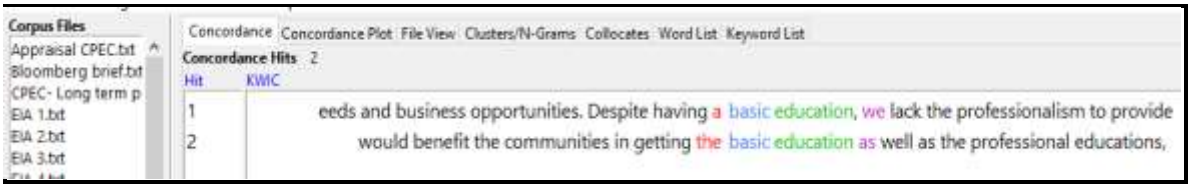
Quality Education

Better Education



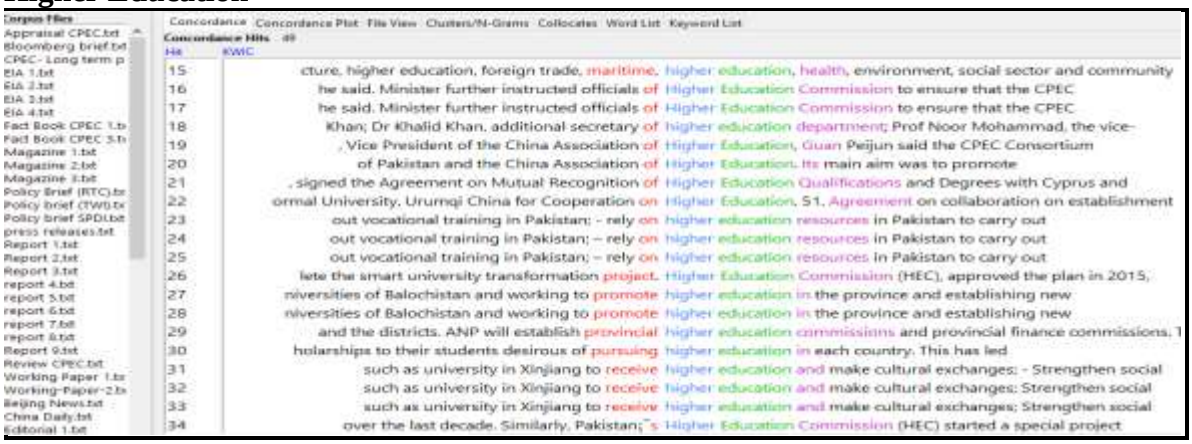
Standard Education

Basic Education

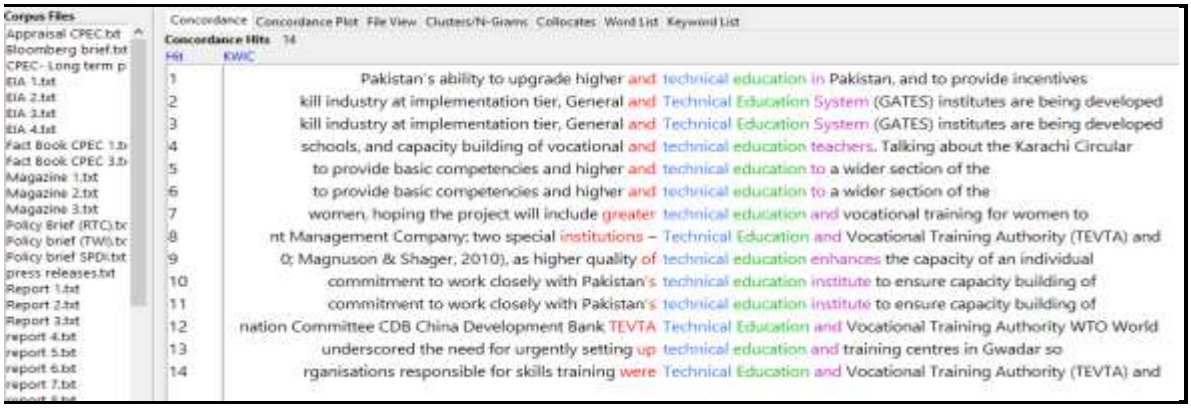


Primary Education

Higher Education



Technical Education

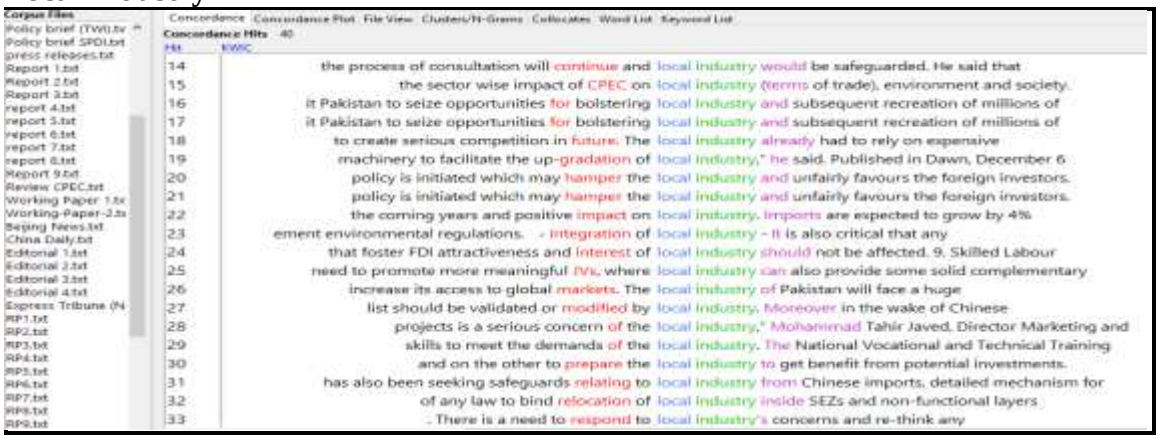


The Chinese Industry

Pakistani Industry

Industry in Pakistan

Local Industry



Textile Industry

Concordance Hits 25

Hit	KWIC
6	be seriously concerned about their future. The textile industry, for instance, fears the glut of
7	mentions the importance of its garment and textile industry in Kashgar Economic Development Zone in
8	ustrial Parks ➢ Textile Industry. The garment and textile industry will be greatly developed in the
9	ustrial Parks ➢ Textile Industry. The garment and textile industry will be greatly developed in the
10	to the cost advantages, the garments and textile industry seems to be a good choice
11	agricultural sector as well as in the textile industry between 2015 and 2016. Although, the analysis abo
12	counterparts for possible joint ventures in the textile industry (Dawn, October 2016). 3.2.7 Does Punjab have the
13	ities. Building Industries and Industrial Parks ➢ Textile Industry. The garment and textile industry will
14	ities. Building Industries and Industrial Parks ➢ Textile Industry. The garment and textile industry will
15	Pakistan destined for international markets. The textile industry already had to rely on expensive
16	garment industry, expand the size of the textile industry, and increase the supply of high
17	garment industry, expand the size of the textile industry, and increase the supply of high
18	garment industry, expand the size of the textile industry, and increase the supply of high
19	ends to transfer production related operations in textile industry (One already in Faisalabad) worth $300 billion
20	urning into finished goods entering Pakistan. The textile industry is already facing with a domestic
21	coarse cloth to feed Xinjiang's growing textile industry. Some structural problems will need to
22	to female employment ratio shows that the textile industry of Pakistan employs more male workers
23	it availability, putting pressure on the domestic textile industry. Pakistan looks forward to a concessionary
24	and Faisalabad (besides Karachi) to transform its textile industry by means of introducing foreign capital.
25	from the US In recent years, the textile industry has increased its dependence on imported

Auto Industry

Concordance Hits 15

Hit	KWIC
1	situation for a country with a domestic auto industry. However global carmakers including those operati
2	situation for a country with a domestic auto industry. In the absence of standards, the
3	e competition in the highly concentrated domestic auto industry. In addition, the auto sector is
4	of not allowing banks to finance the auto industry, Pakistan needs to modernise its trucking
5	emographic bulge productively. 4.4 Innovation The auto industry in Pakistan is currently producing largely
6	stitutions that support R&D. 5.1.3 Innovation The auto industry in Pakistan is currently involved in
7	chain. China in particular, with its large auto industry and demonstrated commitments to investing in
8	losing industries, in the case of the auto industry, there is a clear argument for
9	ports. . Focus will also be on the auto industry, one of the fastest growing in
10	Ghandhara Industries Ahmed Kuli Khan said the auto industry is ready to face the Belt
11	6 Development, Vol. 7, No. 3, September 1998 The auto industry has a carbon footprint of 720kf
12	ations. Fierce competitive pressure in the global auto industry coupled with increasingly stricter international
13	signal a faster relocation of the global auto industry towards growing Asian markets, particularly China
14	an MOT certificate in the UK. The auto industry is globally a heavily regulated industry,
15	resource match The extent to which the auto industry can create inclusive employment i.e.

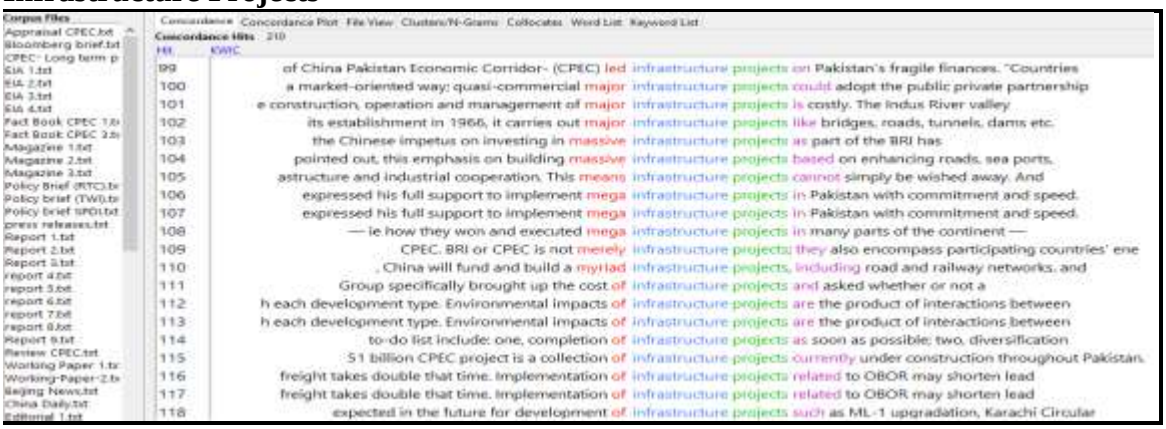
Tourism Industry

Concordance Hits 27

Hit	KWIC
8	tourists in the future by developing the tourism industry of Pakistan, but this will only
9	of Nepal, Foreign Direct Investment (FDI) in tourism industry has swelled more than four-fold
10	nerable districts to monsoon flooding (Ali 2017). Tourism industry of these districts has also badly
11	of Pakistan's economy and help bring tourism industry back on its feet. Although terrorism
12	-fold reflecting rising investor interest in the tourism industry of Nepal after the end of
13	growth in the Chinese investment in the tourism industry.30The end of conflict has provided
14	. He wanted to directly challenge India's tourism industry. Bhutto fell in a reactionary coup
15	awakened a growing interest in its flagging tourism industry. After the restoration of peace in
16	the impact they can have on the tourism industry. Gilgit-Baltistan (GB) relies heavily on
17	centre.pk CPEC – VOLUME 3 - 2019 in Pakistan, the tourism industry has developed rather slowly. Tourism companies
18	people. Along with the CPEC, Pakistan's tourism industry, too, is developing at a rapid
19	attacks, mob lynchings, etc.) in Pakistan, the tourism industry was almost completely eroded and all
20	world a global village. Therefore, promotion of tourism industry and encouraging the student and teachers
21	overall development of Chitral like promotion of tourism industry and exploitation of mines and minerals.
22	may be attracted back to revive the tourism industry in Pakistan. Although in the post 18
23	enormous potential to revive Pakistan's ailing tourism industry, the multi-billion dollar joint venture
24	to promote the development of the local tourism industry. Meanwhile, it will also develop local
25	to promote the development of the local tourism industry. Meanwhile, it shall also bring along
26	its feet. on top of this the tourism industry in Pakistan has been facing continues
27	has provided a tremendous boost to the tourism industry of Nepal. According to a report

Infrastructure Development

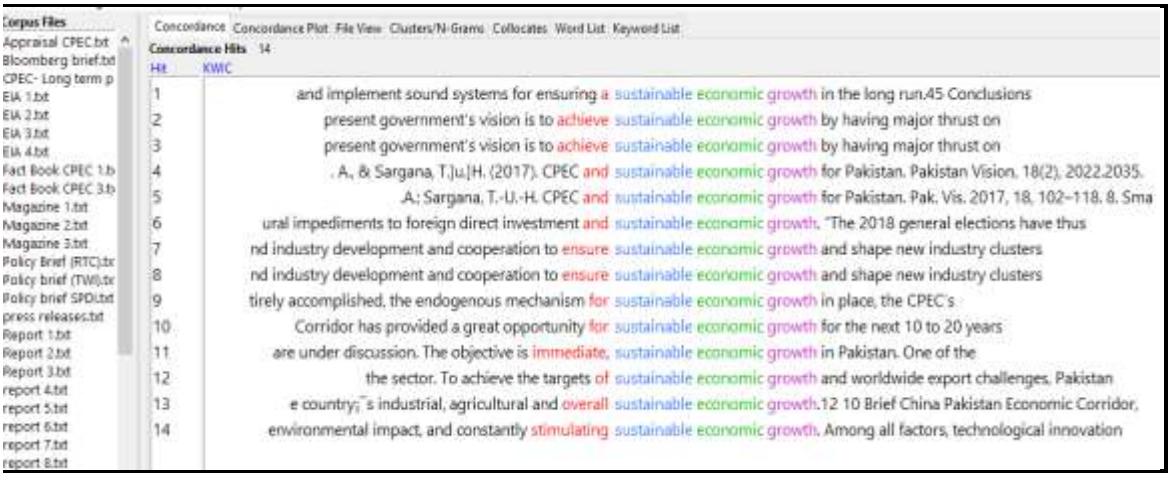
Infrastructure Projects



Women Empowerment

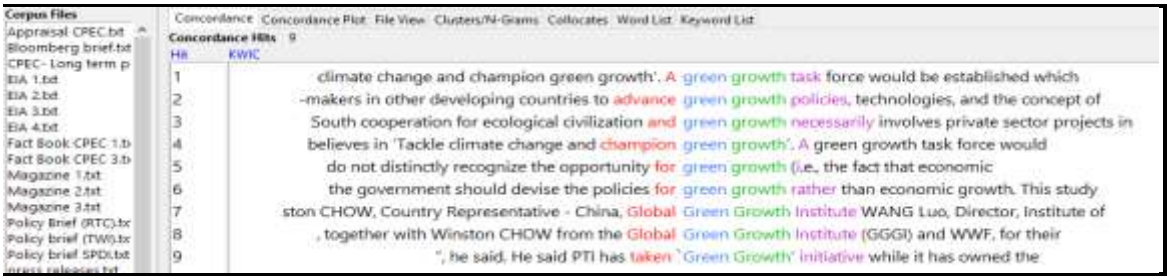
Women

Sustainable Economic Growth



Sustained Economic Growth

Green Growth



Productive Employment

Sustainable Cities

Peace and Development

Peace and Security

Concordance Hits 20

Hit	KWIC
1	through road and modern airport. As for peace and security, a requirement for industrial investment
2	through road and modern airport. As for peace and security, a requirement for industrial investment
3	ties and shared goals of economic development, peace, and security across the region. Joint statement
4	, paid special attention to the restoration of peace and security along these routes. As one
5	all collectively need to work and promote peace and security and greater harmony in the
6	all collectively need to work and promote peace and security and greater harmony in the
7	Sindh and it negatively affected its economy. Peace and security are the key factors deteriorated
8	host the next round of a trilateral peace and security cooperation dialogue with Beijing and
9	of the United Nations (UN) in maintaining peace and security. Hinting at India, the foreign
10	Asian states¡¯ access to the Gwadar Port. Peace and security in Balochistan are absolutely imperative
11	, and agreed to make coordinated efforts for peace and security in the region. President Xi
12	on regional developments including the state of peace and security in South Asia arising from
13	l affairs has sections and subsections, including peace and security, judicial and police reforms, human
14	threat to security forces and also to peace and security of tribal areas and also
15	and Iran borders on priority to ensure peace and security. Pakistan on Tuesday asked China
16	on following recommendations are made; Ensure the peace and security situation in the area. It
17	mmense contribution to regional and international peace and security through its achievements and successes."
18	SYNERGY OF POLICIES NEEDED TO PROMOTE REGIONAL PEACE AND SECURITY UNDER BELT & ROAD INITIATIVE: PROF.
19	SYNERGY OF POLICIES NEEDED TO PROMOTE REGIONAL PEACE AND SECURITY UNDER BELT & ROAD INITIATIVE: PROF.
20	need to strengthen the foundation for shared peace and security. We need to actively implement

Economic Partnership

Concordance Hits 28

Hit	KWIC
1	and more. Tehran may offer an alternative economic partnership and corridor; Iran's main argument
2	the Belt and Road Initiative, is an economic partnership project with the potential to transform
3	Jing spoke in appreciation of collaboration and economic partnership between Pakistan and China through CPEC
4	was further transformed into iron brotherhood and economic partnership while both signed the CPEC framework
5	was further transformed into iron brotherhood and economic partnership while both signed the CPEC framework
6	h will boost cooperation and strengthen bilateral economic partnership between the two countries, he added.
7	Minister Planning for five years plan for economic partnership between Pakistan and Xingiang and announced
8	Minister Planning for five years plan for economic partnership between Pakistan and Xingiang and announced
9	China Pakistan Economic Corridor (CPEC); a geo-economic partnership framework, CPEC was translated into US $46
10	China Pakistan Economic Corridor (CPEC); a geo-economic partnership framework, CPEC was translated into US $46
11	a balance through a China-Pakistan-Iran economic partnership. To balance the Iran-Afghanistan-India
12	to Asia's century. 7. Pakistan defends its economic partnership with China AFP August 8, 2018 Islamabad - Pakista
13	2018 Islamabad - Pakistan Wednesday defended its economic partnership with China, amid fears that the
14	between Pakistan China into long term strategic economic partnership. Addressing an event for launching of

Strategic Partnership

Concordance Hits 43

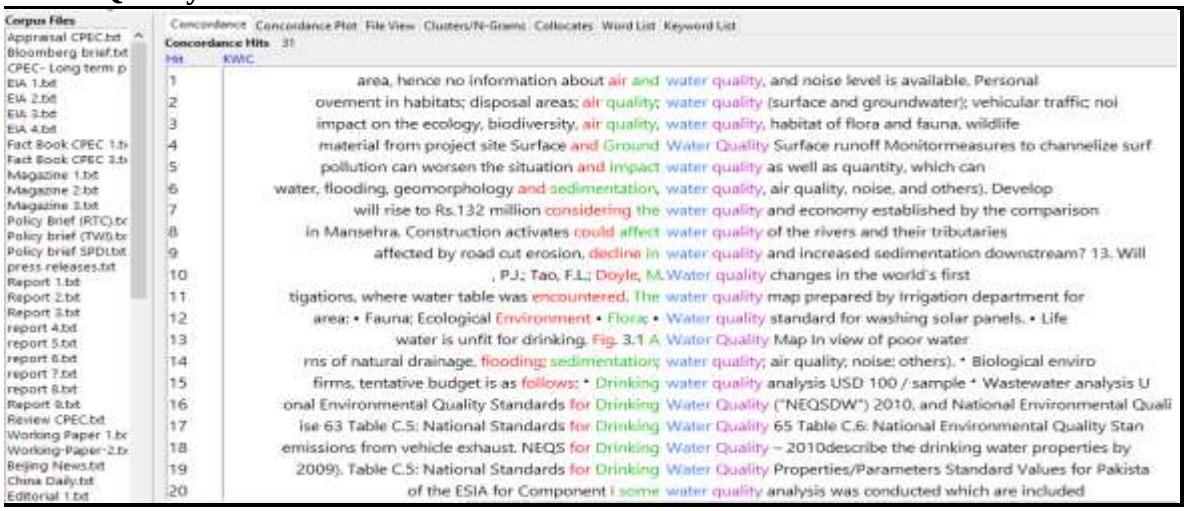
Hit	KWIC
24	latest stage in the process of strengthening strategic partnership through investment, increased trade, and economic
25	Economic Corridor is an example of the strategic partnership between the two brotherly countries. Under
26	, "U.S.-Azerbaijan Relations: State of the "Strategic Partnership,"" presentation at the Jamestown Foundation and
27	oblems. (Small., 2015) Final announcement of this strategic partnership came in March 2015 from NDRC (National
28	-turn-a-new-page-in-ties-through-strategic-partnership.html. 54. Guo Qiang, "China, Turkey Pen 8
29	'Turn a New Page' in Ties through "Strategic Partnership,"" Today's Zaman, October 9, 2010, http://www.
30	with each other. This unique ¡°all-weather strategic partnership¡± and relationship is reputed ¡°as a
31	to strengthen the China-Pakistan all-weather strategic partnership and build a new era of
32	, "China and Pakistan enjoy an all-weather strategic partnership and cooperation. China-Pakistan brotherly friends
33	promote new progress in the all-weather strategic partnership between the two countries". The question
34	influence China and Pakistan's all-weather strategic partnership. Four disputes surround CPEC Disputes surrounding
35	at present, China-Pakistan's all-weather strategic partnership has developed very well. 14. 'Shahbaz, my
36	nhancement of relationship towards an all-weather strategic partnership (Lu, 2015). But the initiative announced official
37	. Guidelines We shall proceed with all-weather strategic partnership of cooperation, concepts of harmony, inclusivenes
38	the economic base of the all-weather strategic partnership of cooperation between China and Pakistan,
39	projects, let alone affect the all-weather strategic partnership of the two countries. Four disputes
40	projects, let alone affect the all-weather strategic partnership of the two countries. Four disputes
41	policy and the nature of 'all-weather strategic partnership of cooperation has lived up to
42	key point for developing the all-weather strategic partnership of cooperation between China and Pakistan,"
43	friendship and push China-Pakistan all-weather strategic partnership to a new level. The chairman

Strategic Partnership

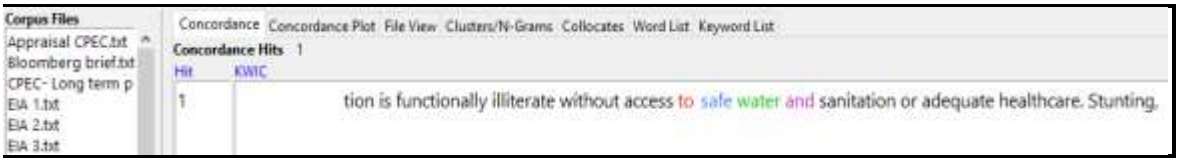
International Cooperation

Environmental-ecological Frames

Water Quality



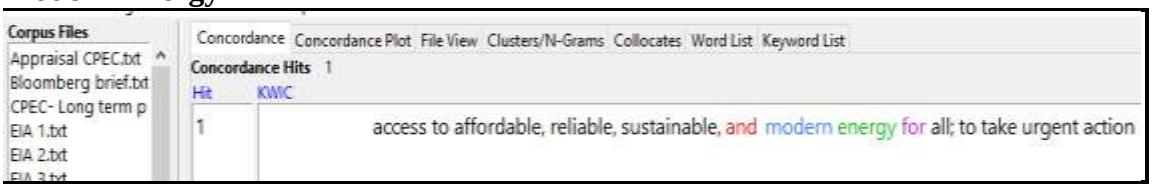
Safe Water



Drinking Water

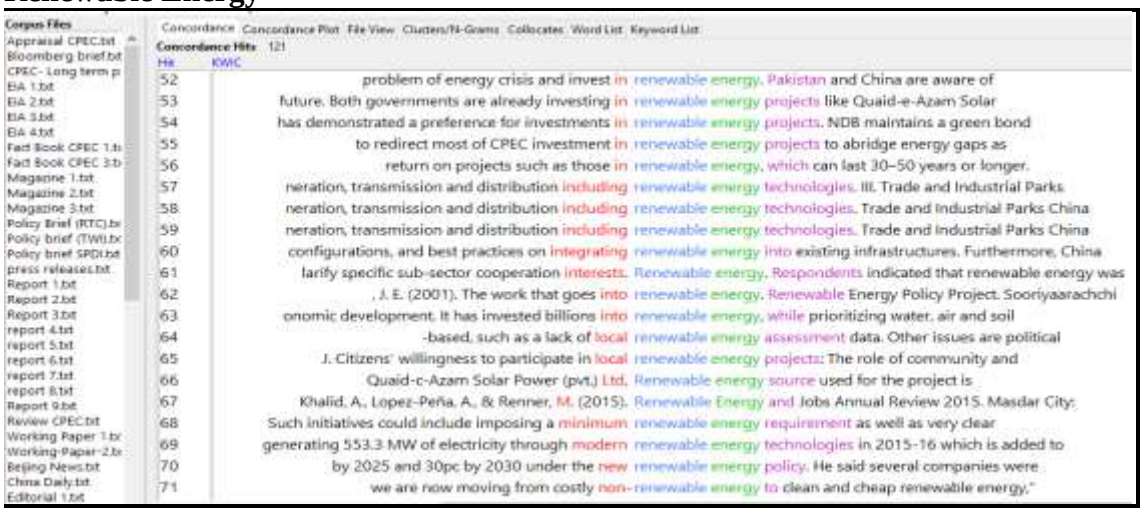
Affordable Energy

Modern Energy

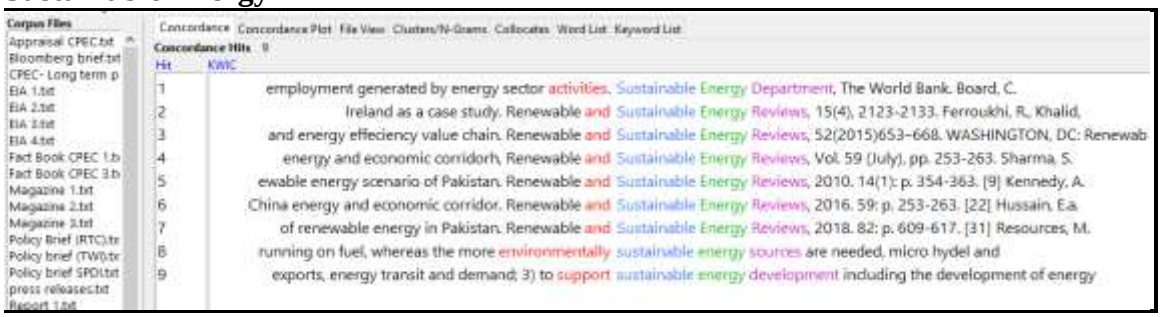


Reliable Energy

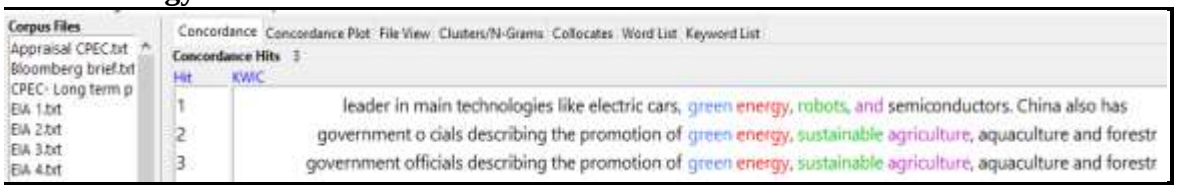
Renewable Energy



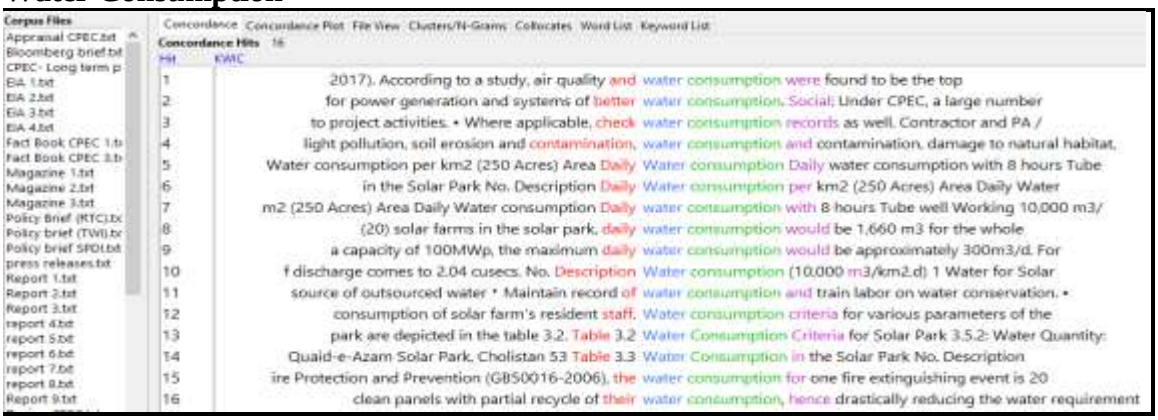
Sustainable Energy



Green Energy

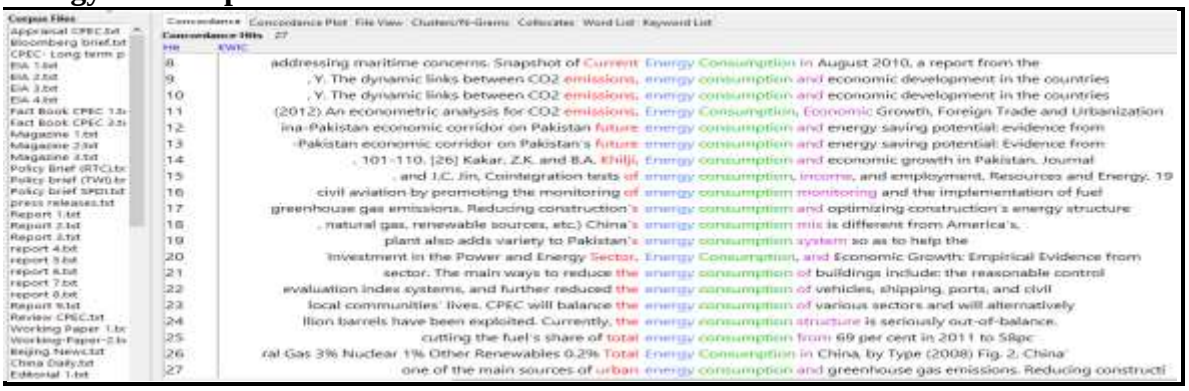


Water Consumption



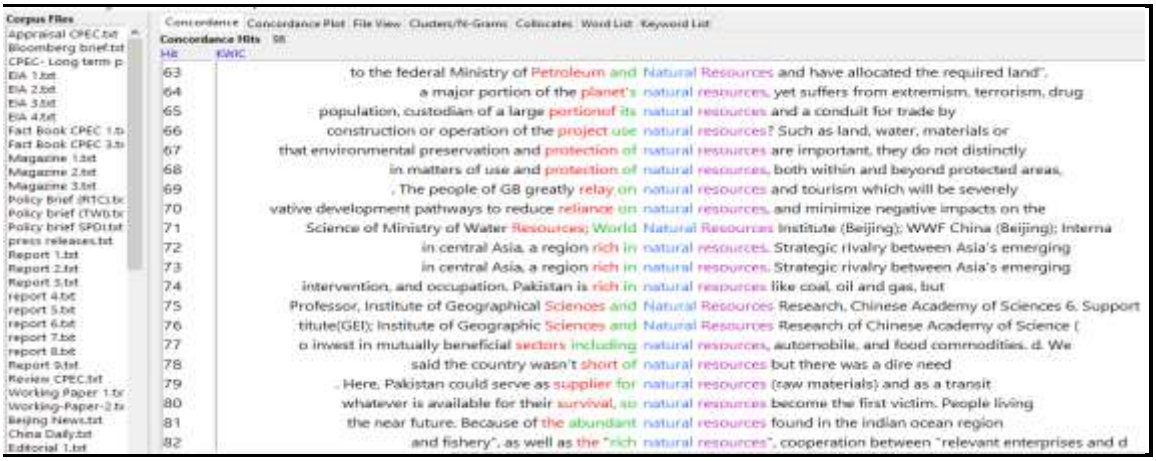
Fuel Consumption

Energy Consumption



Coal Consumption

Natural Resources



Waste

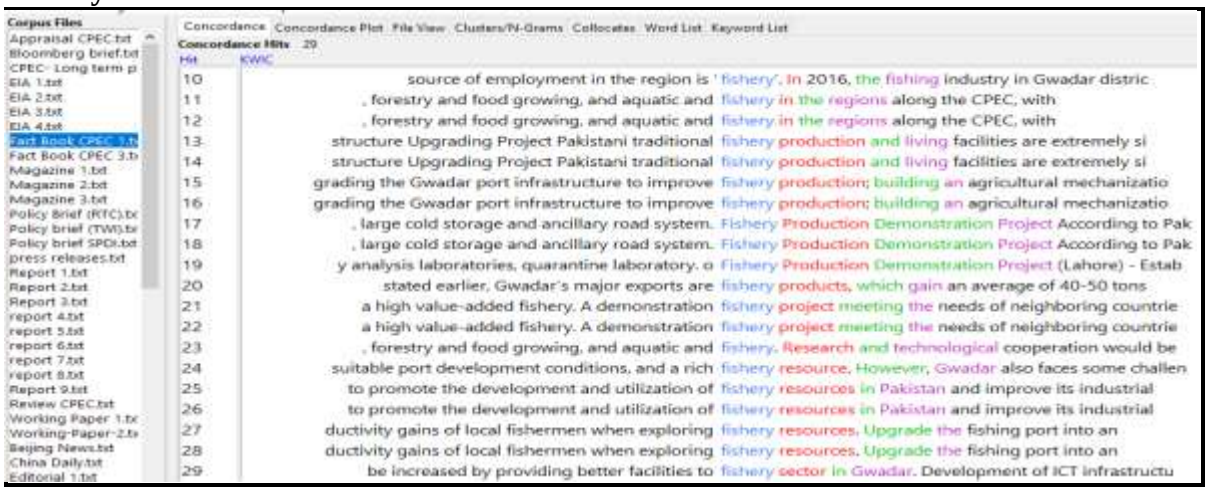
Waste Disposal

Recycling

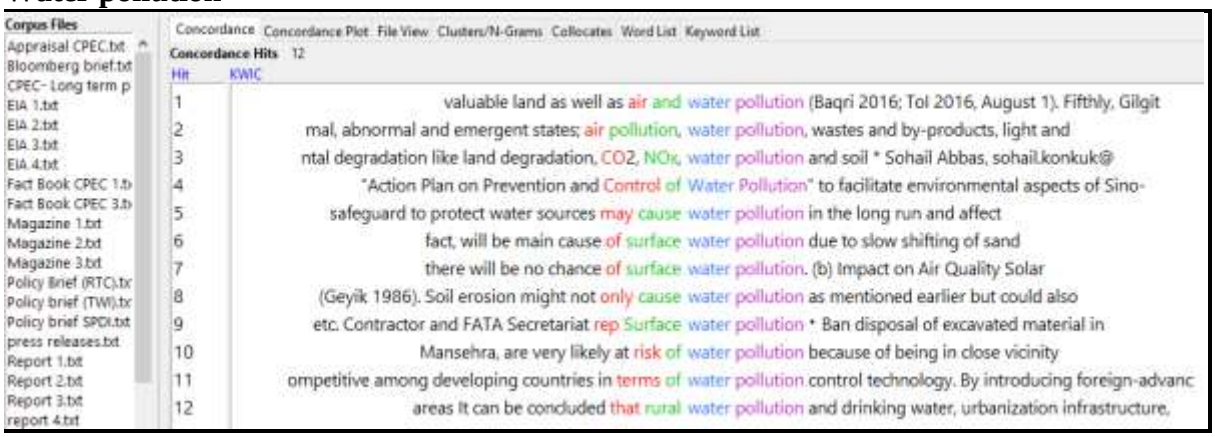
Cope with Climate Change

Address Climate Change

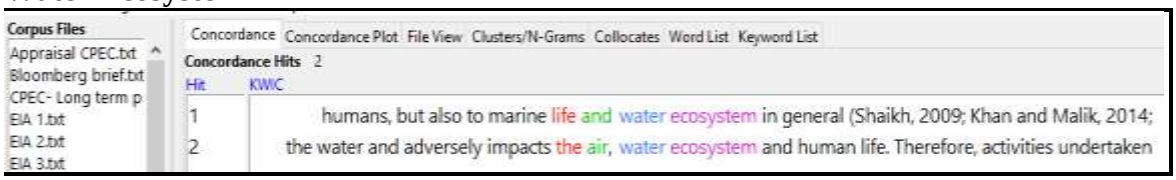
Fishery



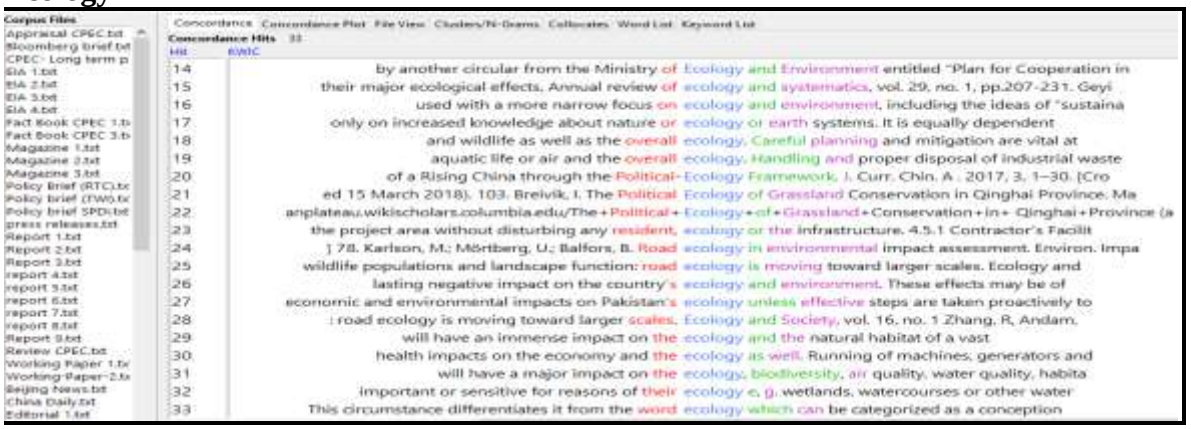
Water pollution



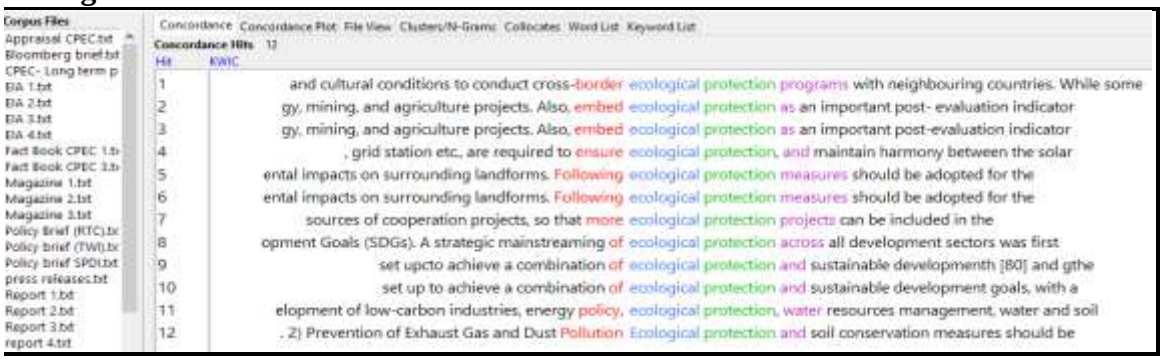
Water Ecosystem



Life on land
Ecology

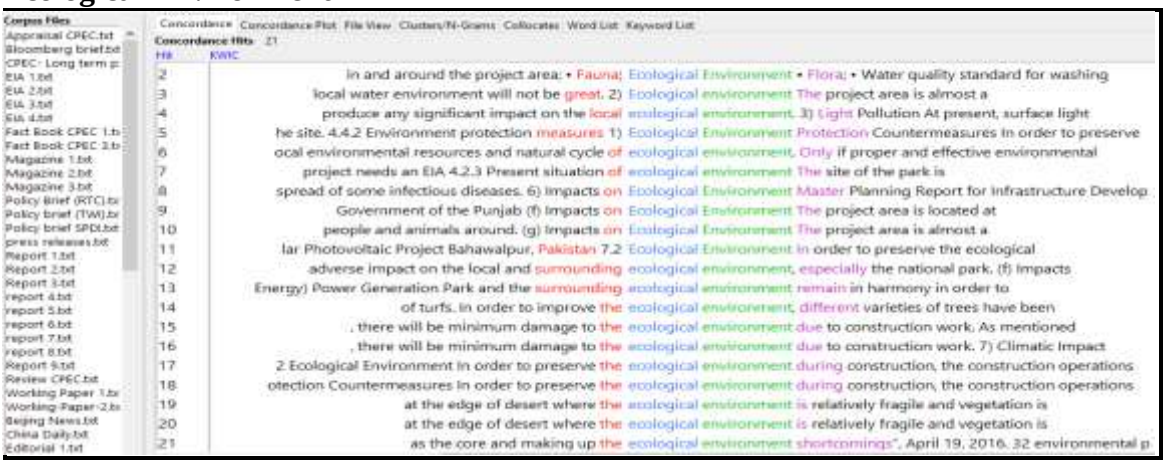


Ecological Protection



Biodiversity

Ecological Environment

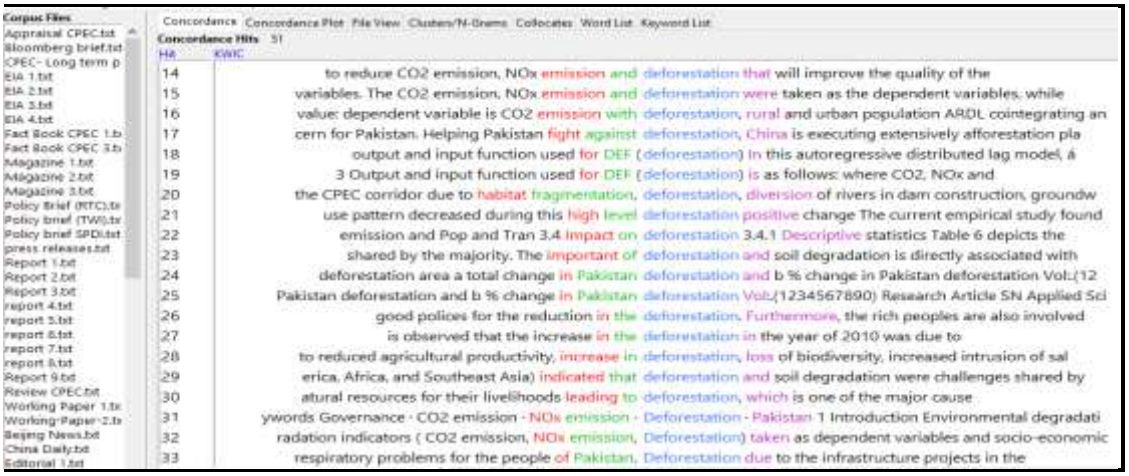


Desertification

Land Degradation

Forests

Deforestation



Environmental Sustainability
Environment

Natural Environment

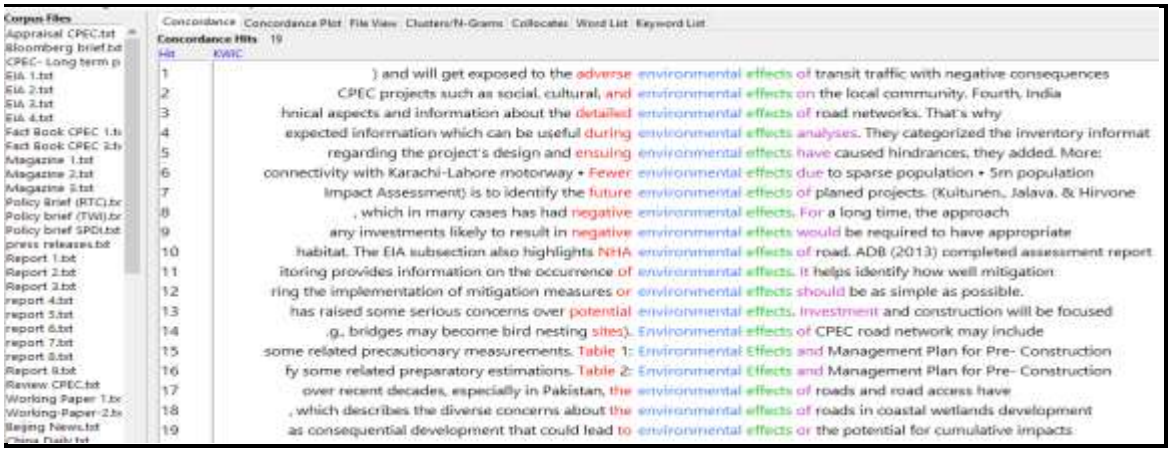
Environmental Challenges

Environmental Concerns

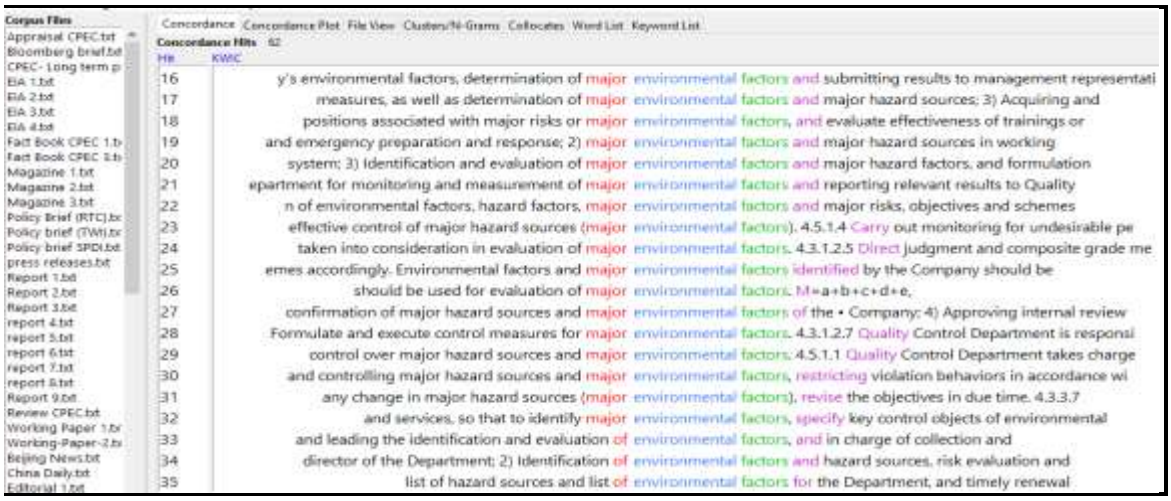
Environmental Damage

Environmental Degradation

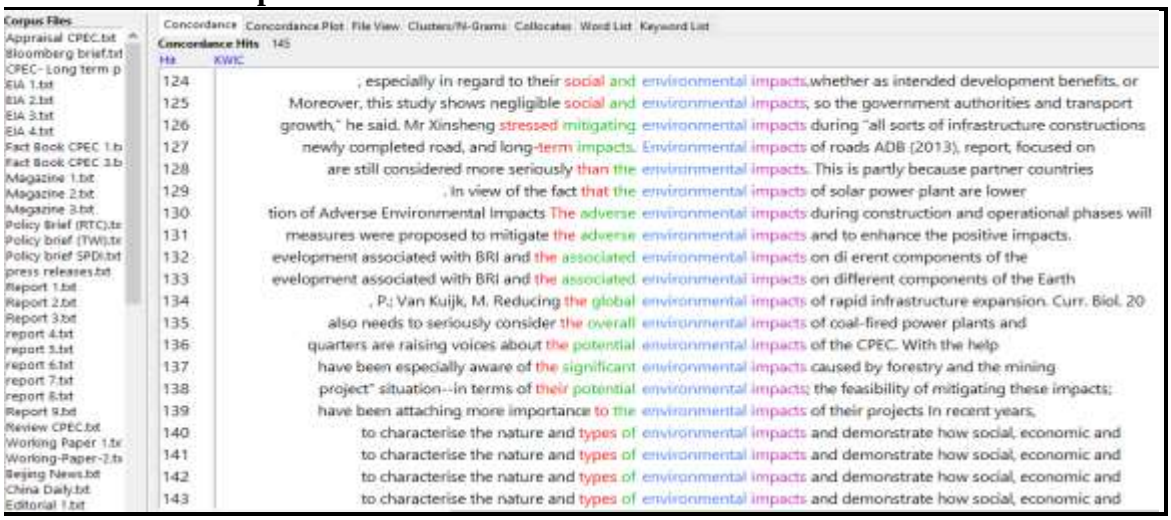
Environmental Effects



Environmental Factors

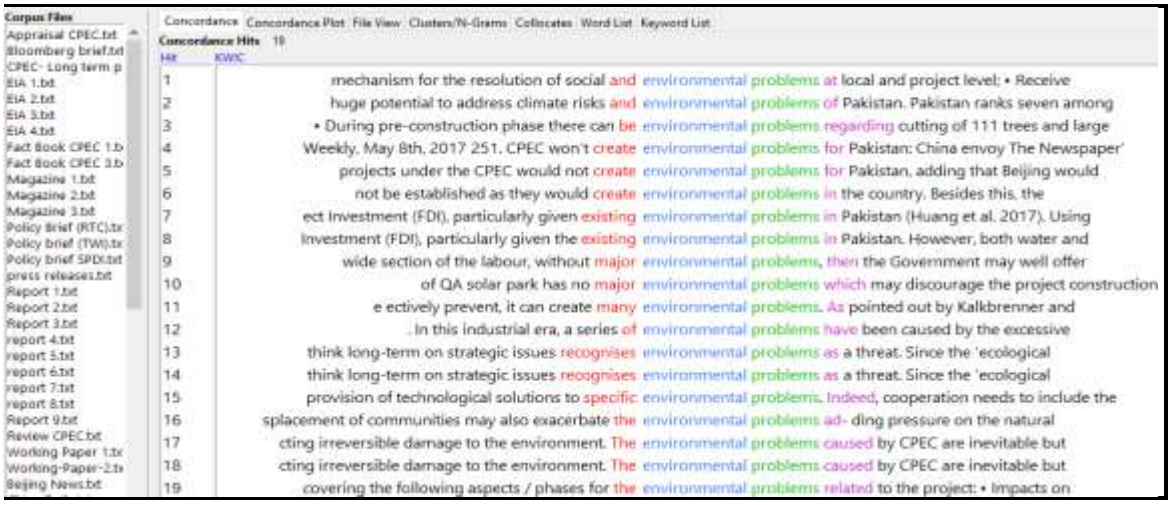


Environmental Impacts

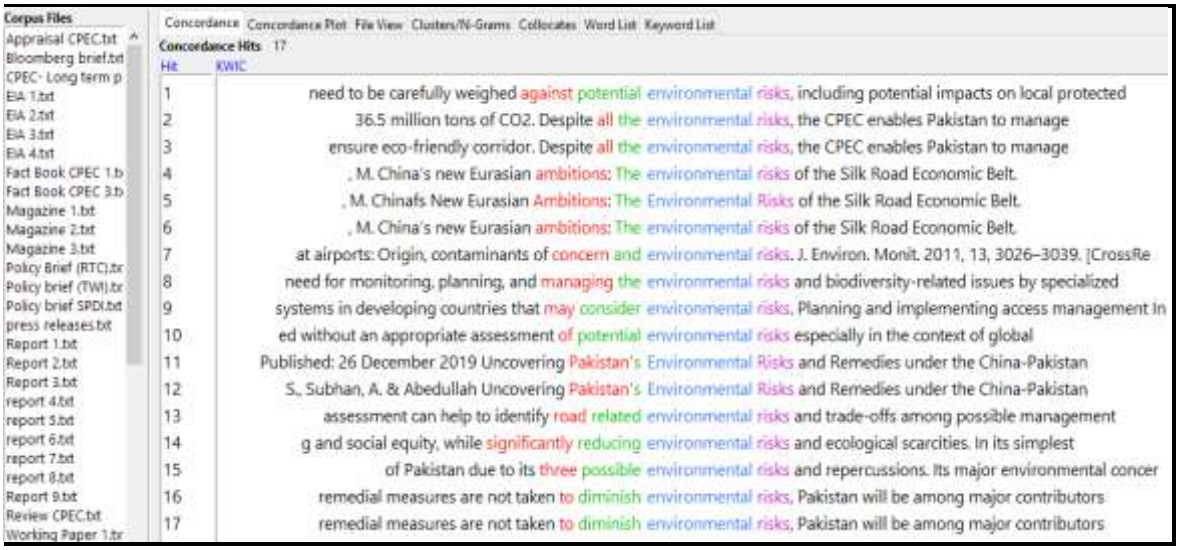


Environmental Issues

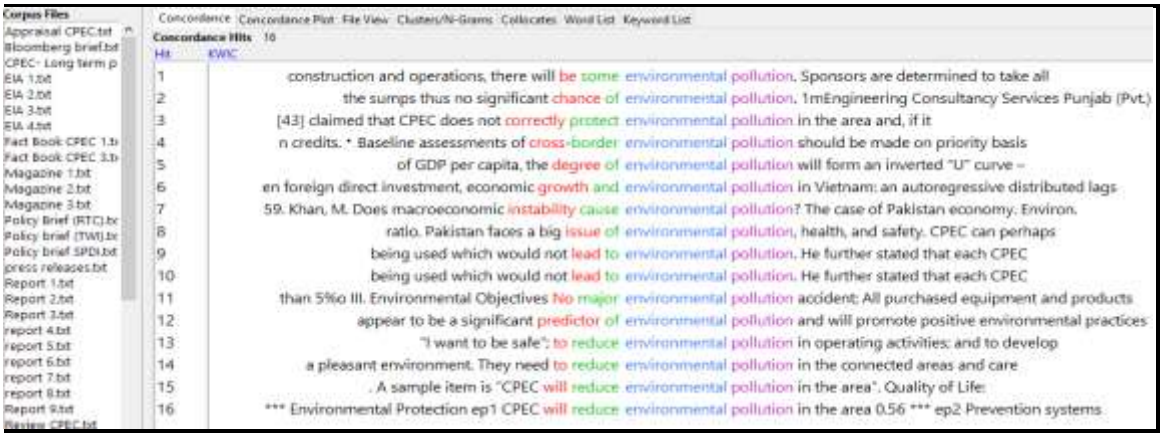
Environmental Problems



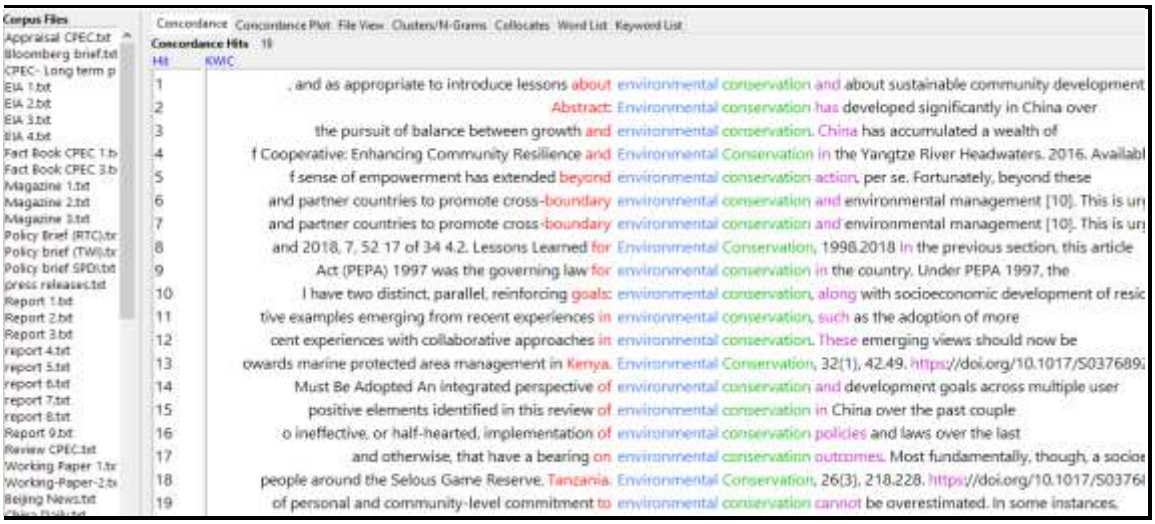
Environmental Risks



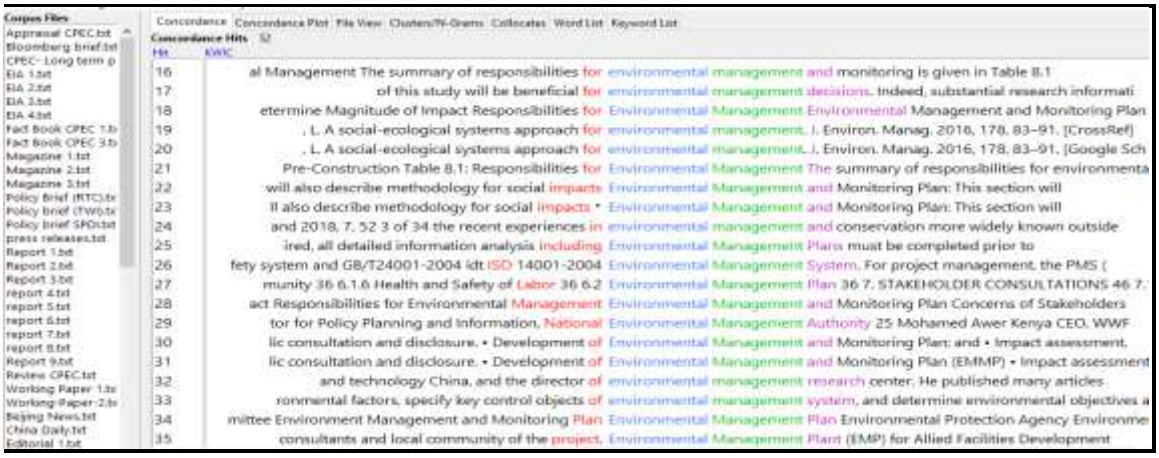
Environmental Pollution



Environmental Conservation

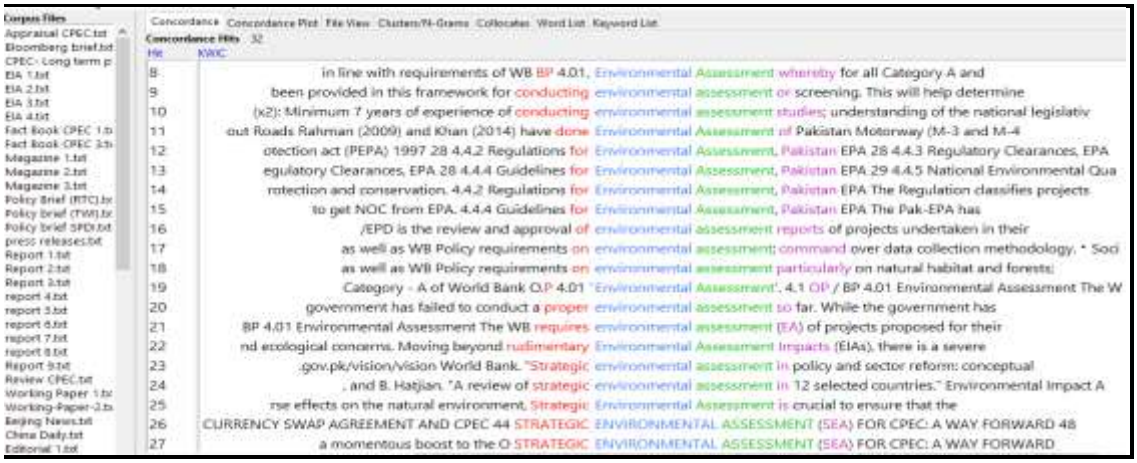


Environmental Management



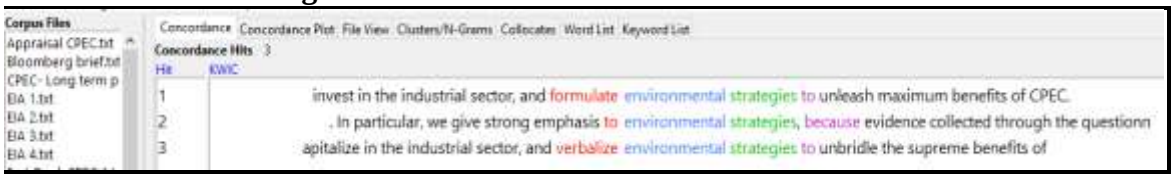
Environmental Policies

Environmental Assessment

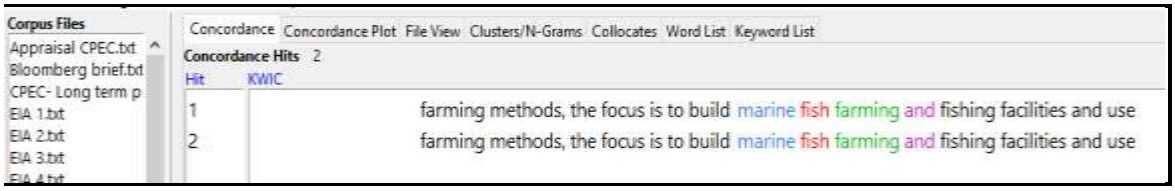


Environmental Projects

Environmental Strategies



Marine Fish

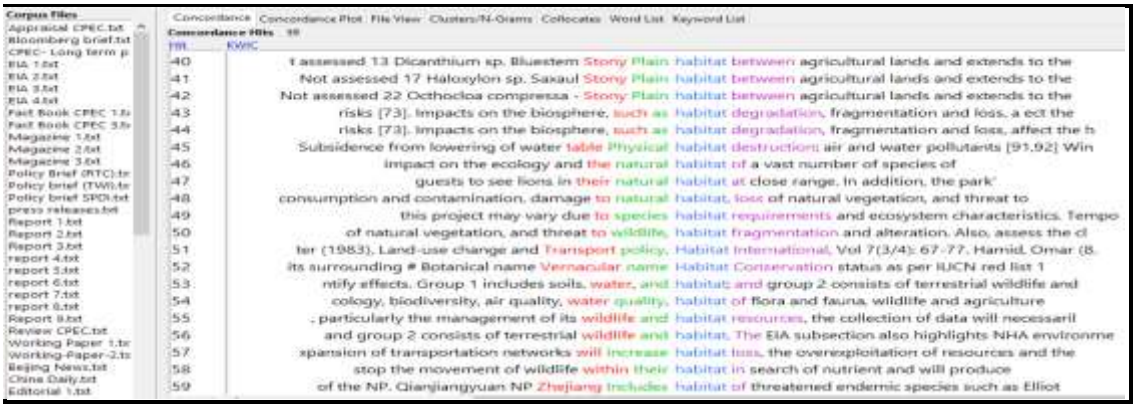


Conserve

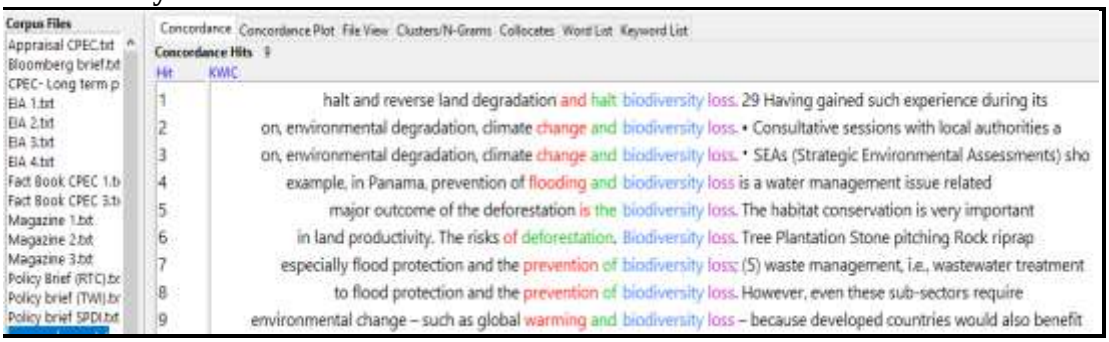
Water Conservation

Wildlife

Habitat



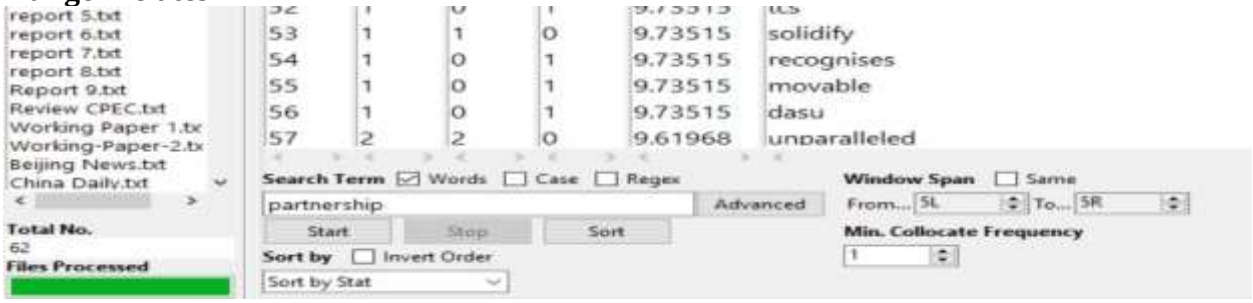
Biodiversity Loss



Part III- The Story of 'Salience' in the Discourse of the CPEC

Table 2.21 Significant Collocates for Salience Patterns

Hunger-relates

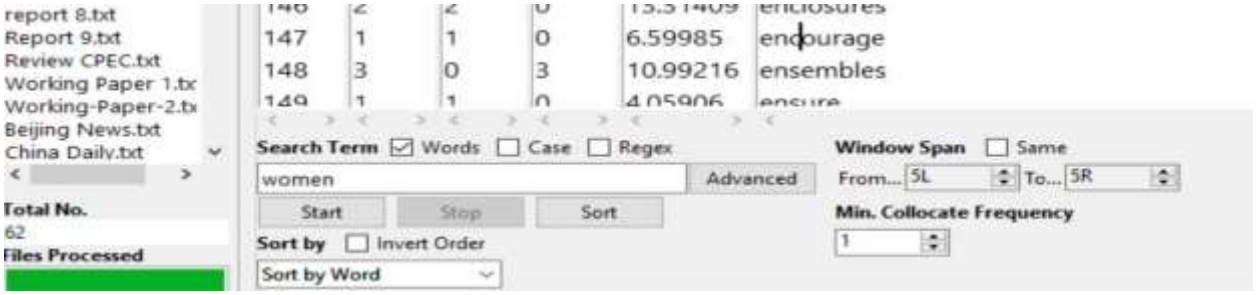


partnership-solidify

Poverty-reduce

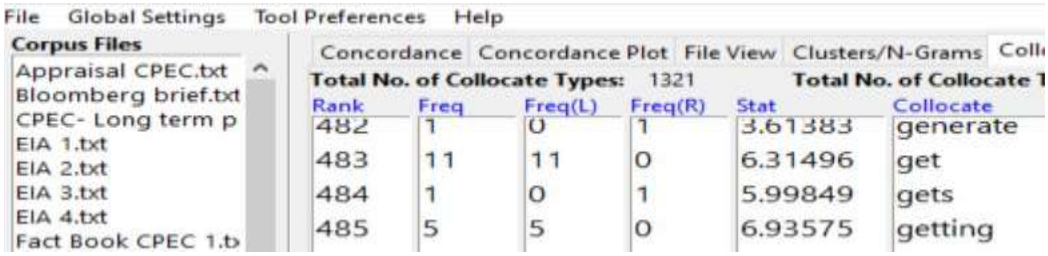
Peace and Justice-bring

Health-affect

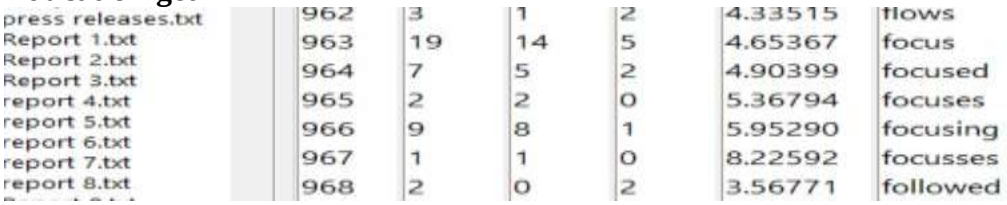


Women-empowerment-encourage

Economic-growth-stimulating



Education-get



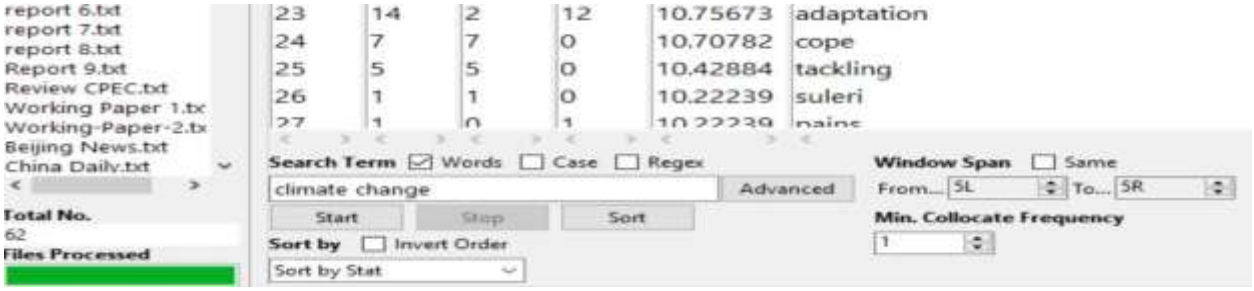
Infrastructure-focusing

Gender equality-focus

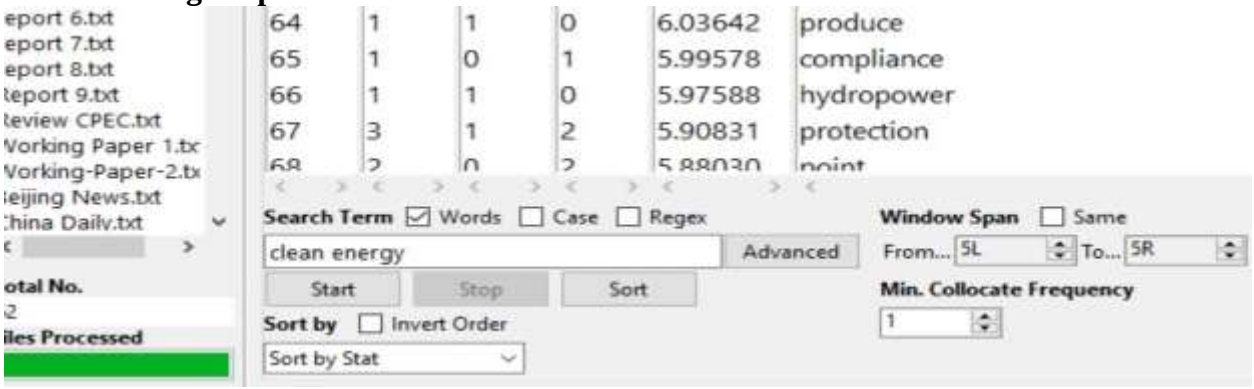
Affordable housing-work on

Industry-promote

Table 2.22 Significant collocates showing salience pattern in Eco-environmental areas



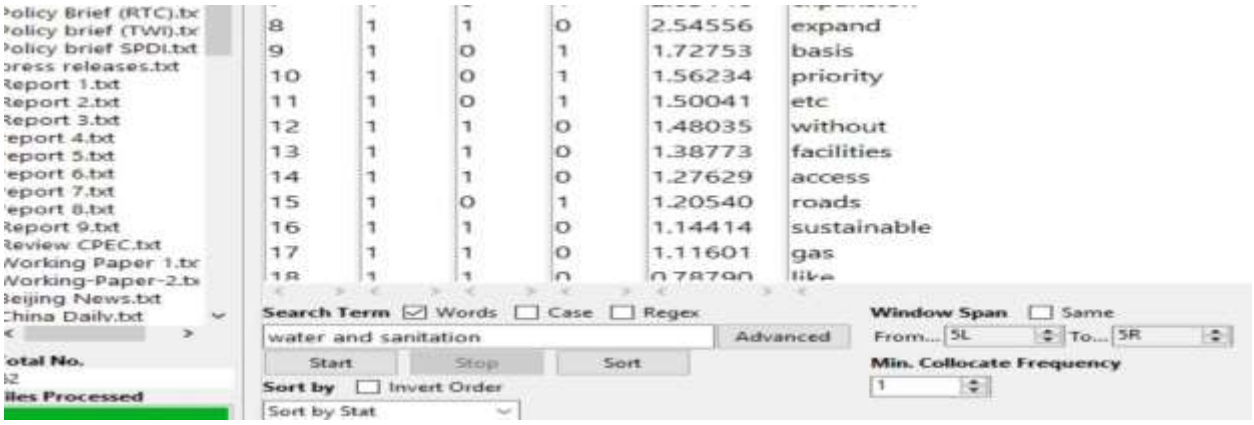
Climate change-cope



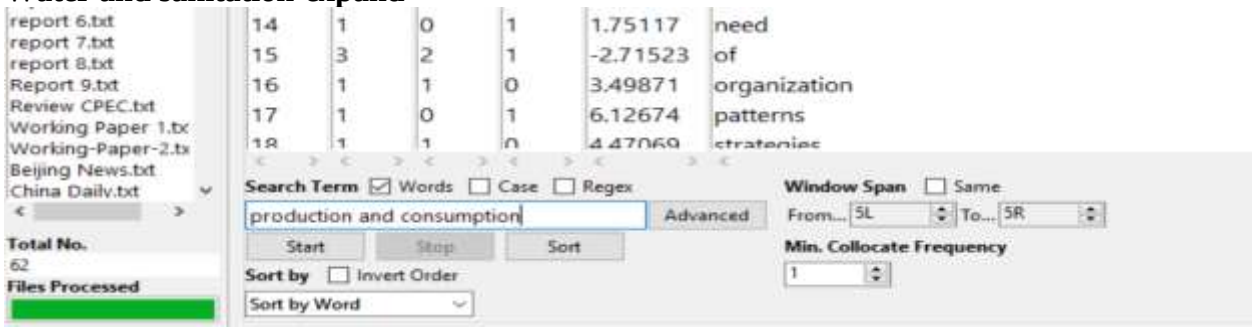
Clean energy-produce

Life on land-affect

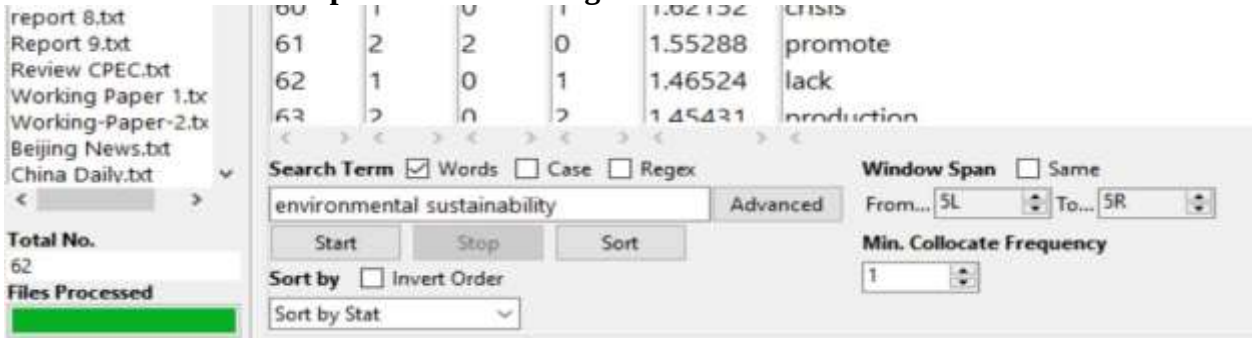
Life under water-impact



Water and sanitation-expand

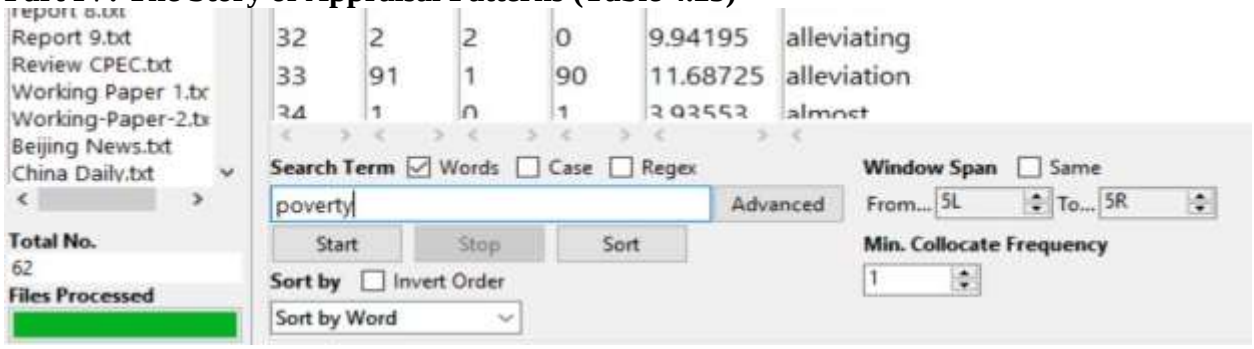


Production and consumption-need to change

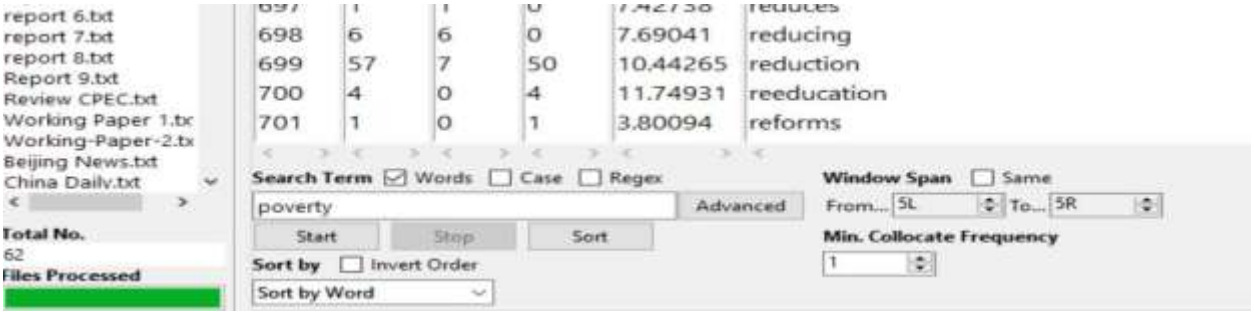


Environmental sustainability-promote

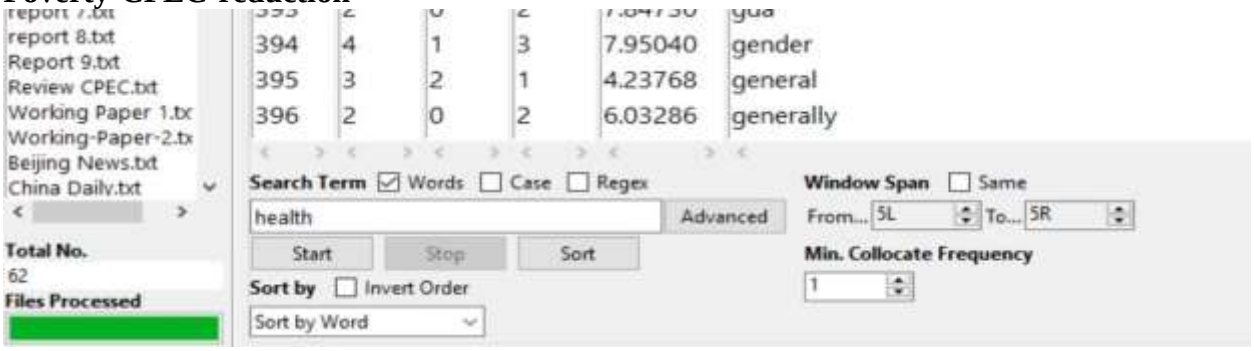
Part IV: The Story of Appraisal Patterns (Table 4.23)



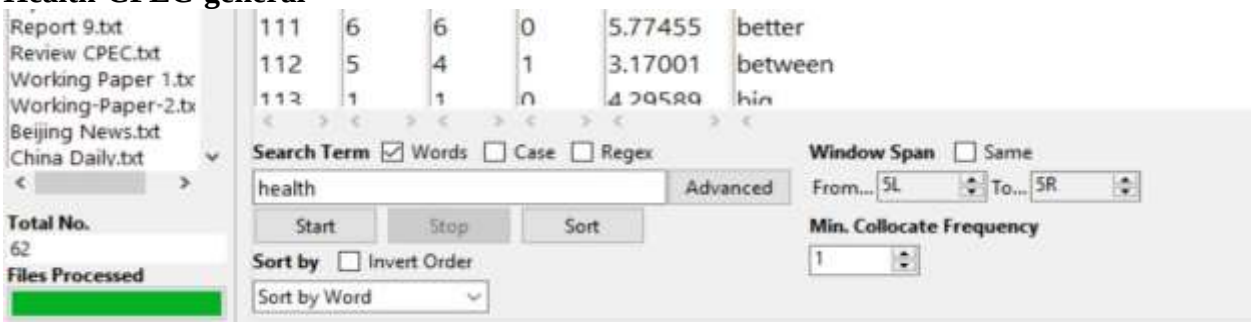
Poverty-CPEC- alleviation



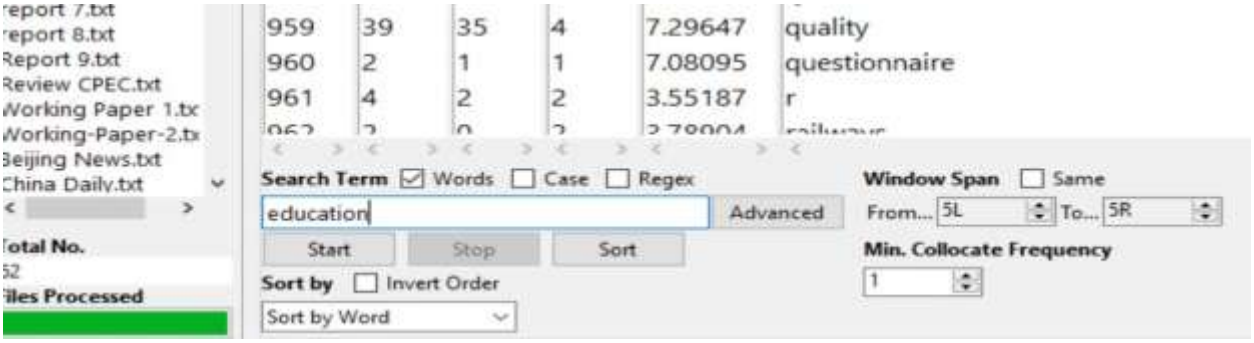
Poverty-CPEC-reduction



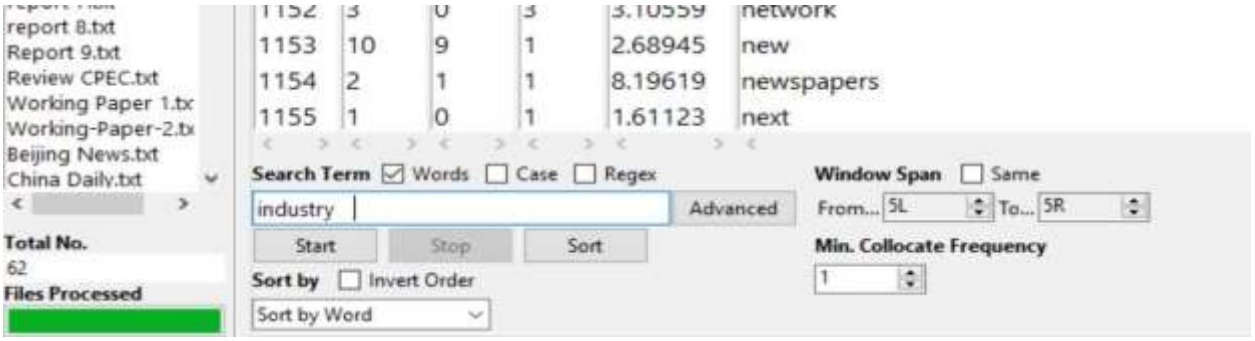
Health-CPEC-general



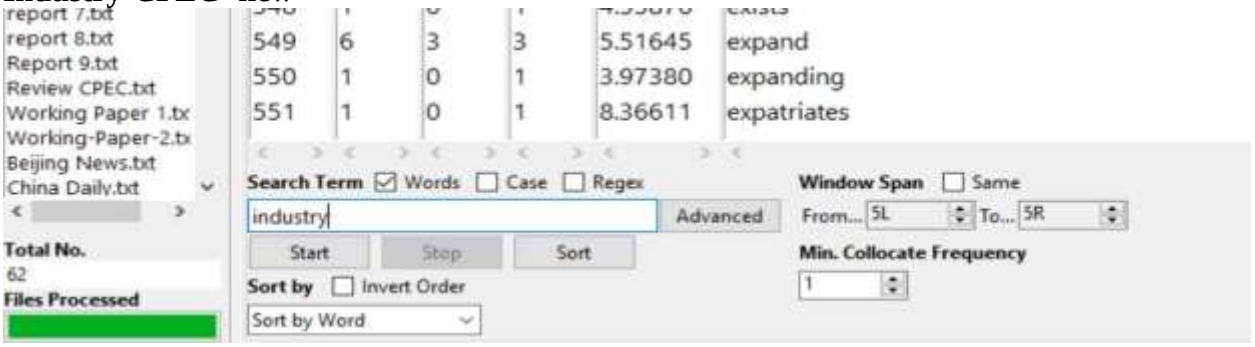
Health-CPEC-better



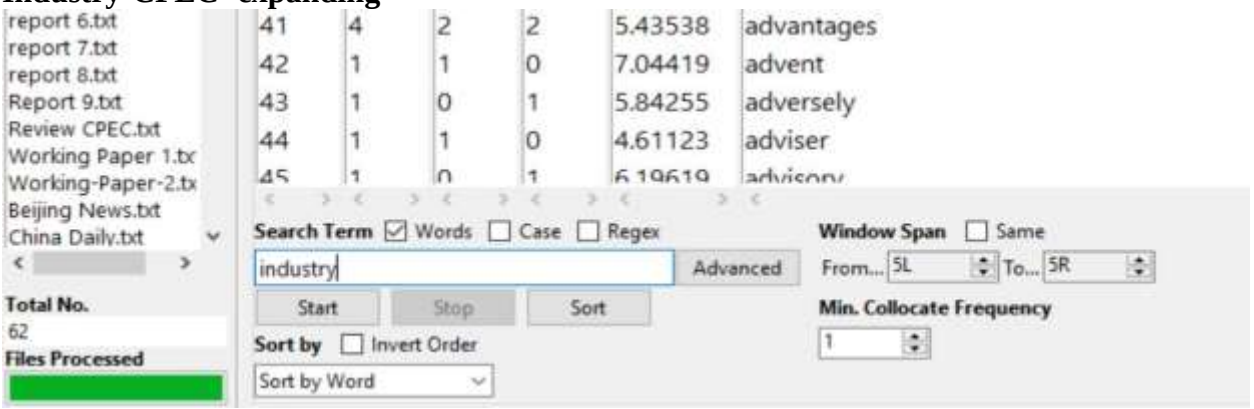
Education-CPEC-quality



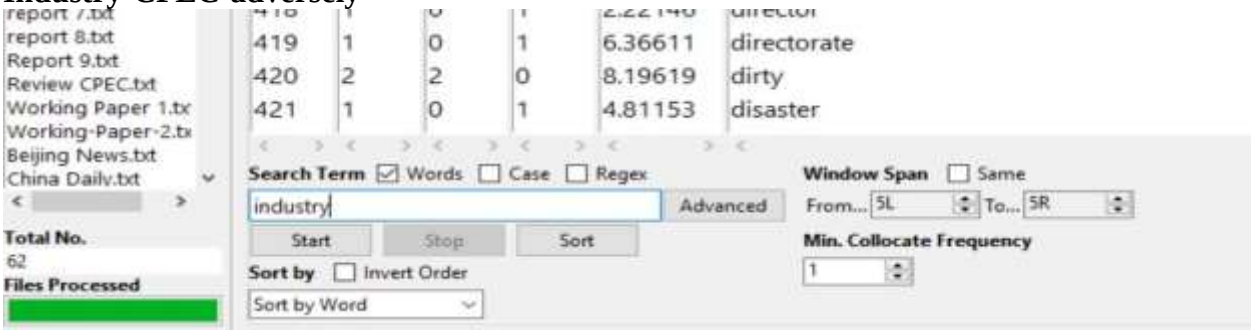
Industry-CPEC- new



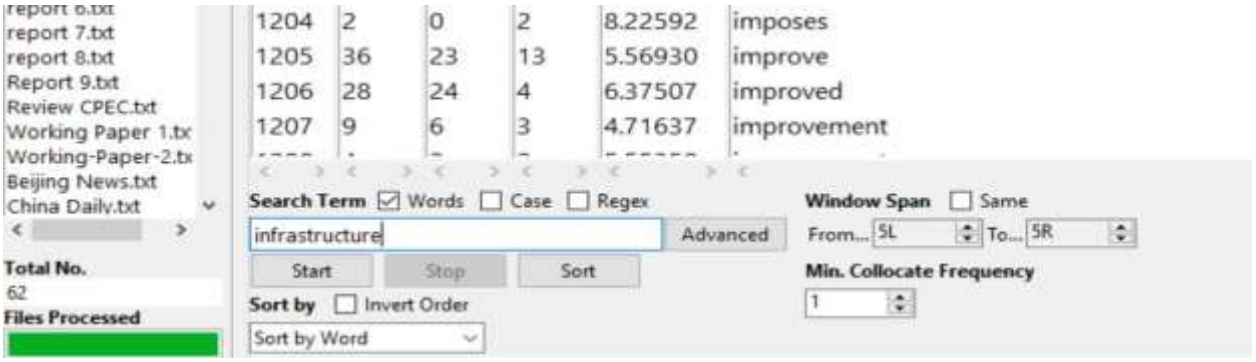
Industry-CPEC- expanding



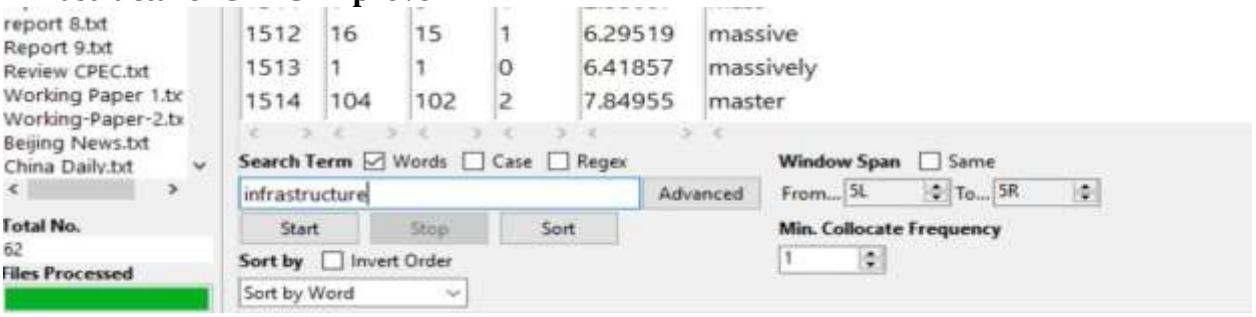
Industry-CPEC-adversely



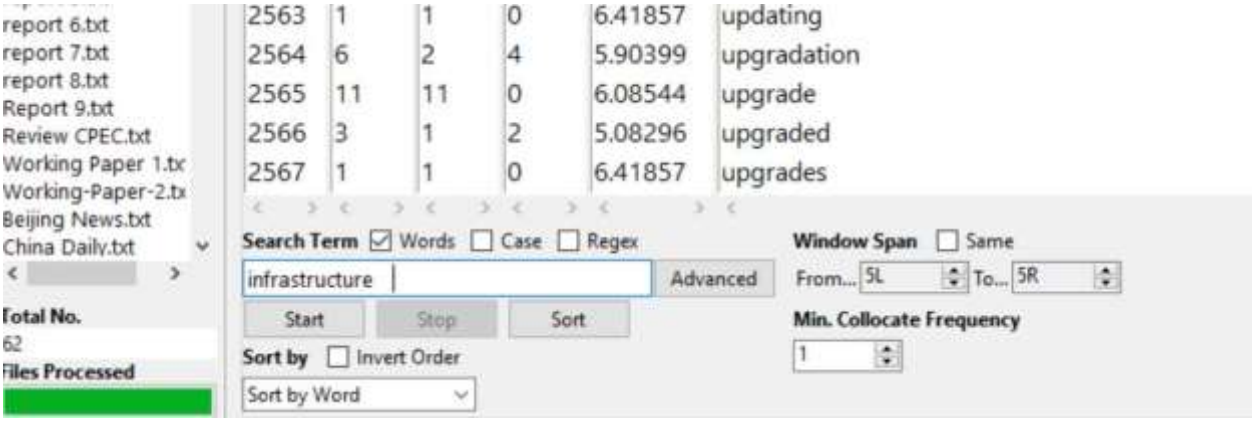
Industry- CPEC-dirty



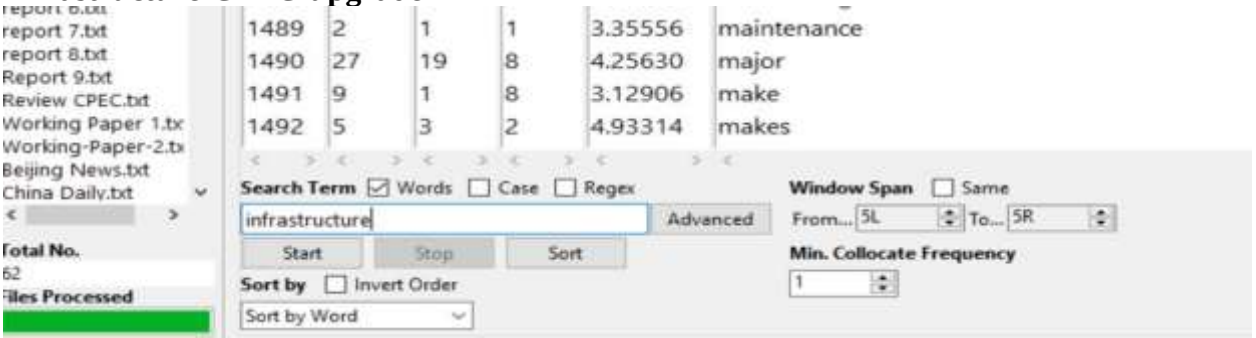
Infrastructure- CEPC-improve



Infrastructure-CPEC-massive

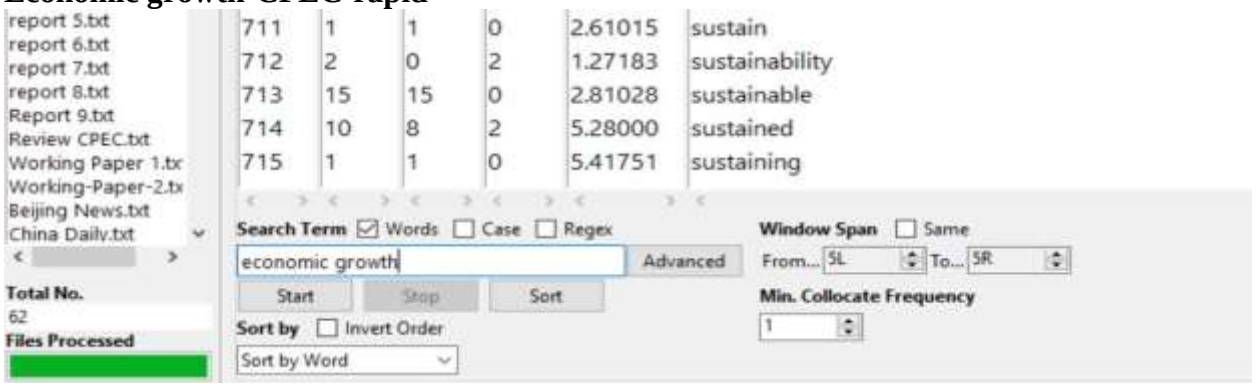


Infrastructure-CPEC-upgrade

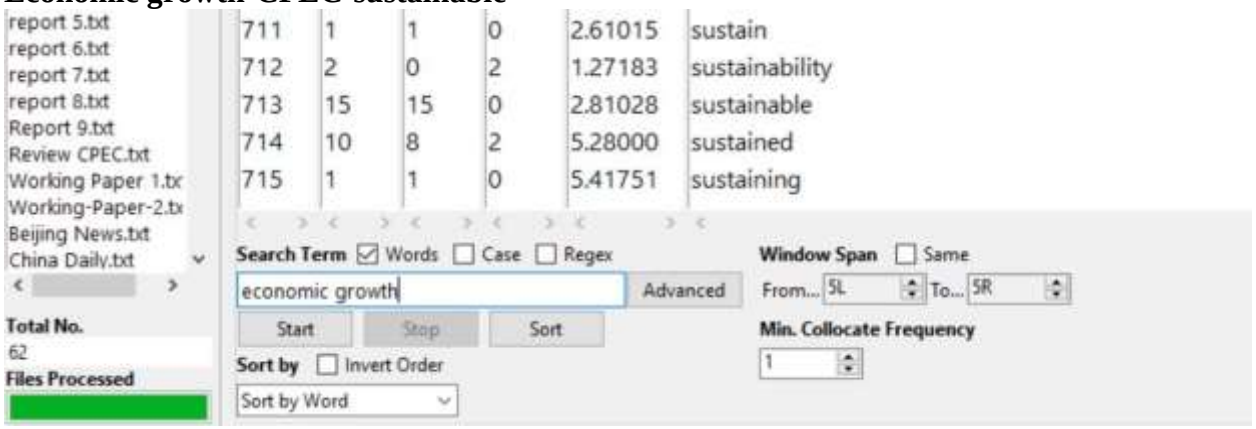


Infrastructure-CPEC-major

Economic growth-CPEC-rapid

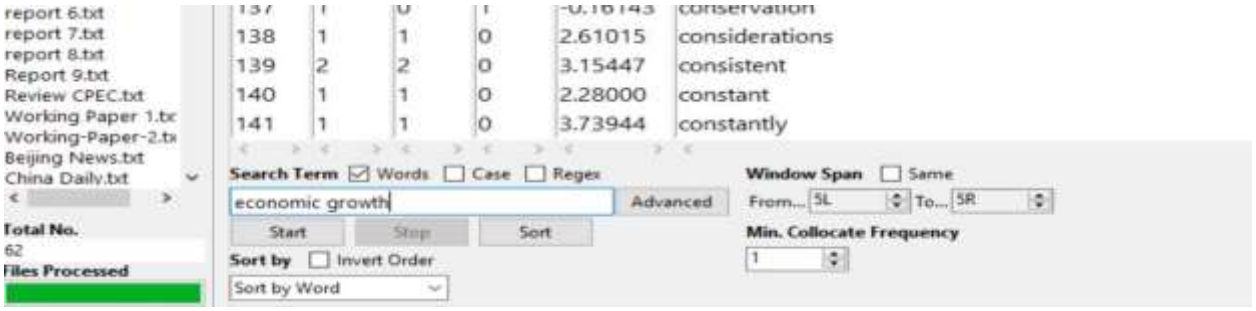


Economic growth-CPEC-sustainable

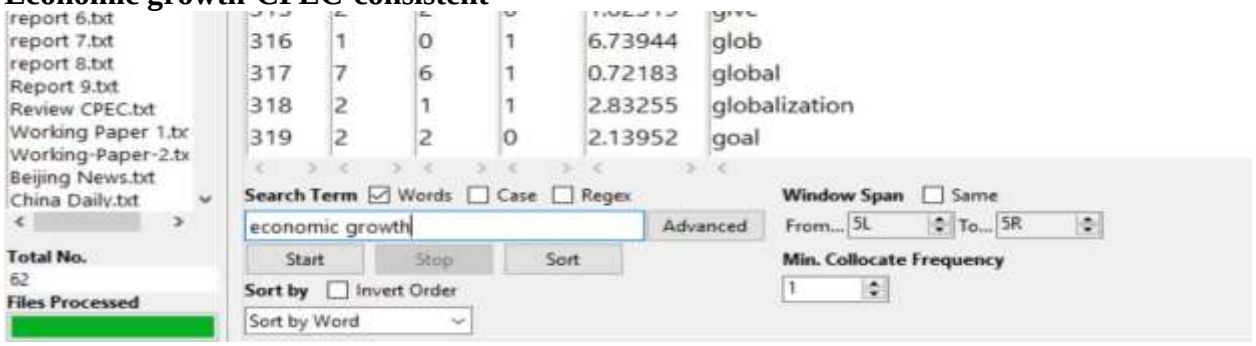


Economic growth-CPEC-sustained

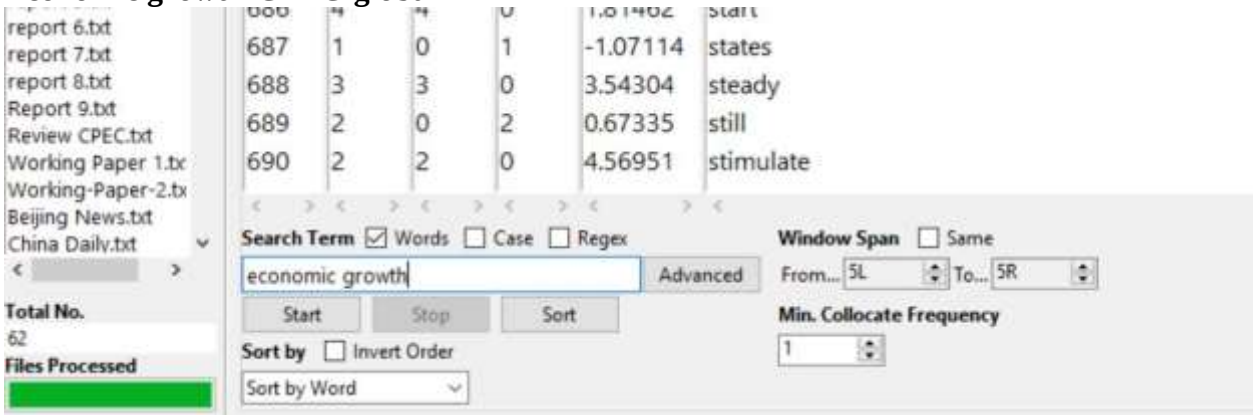
Economic growth-CPEC-unprecedented



Economic growth-CPEC-consistent

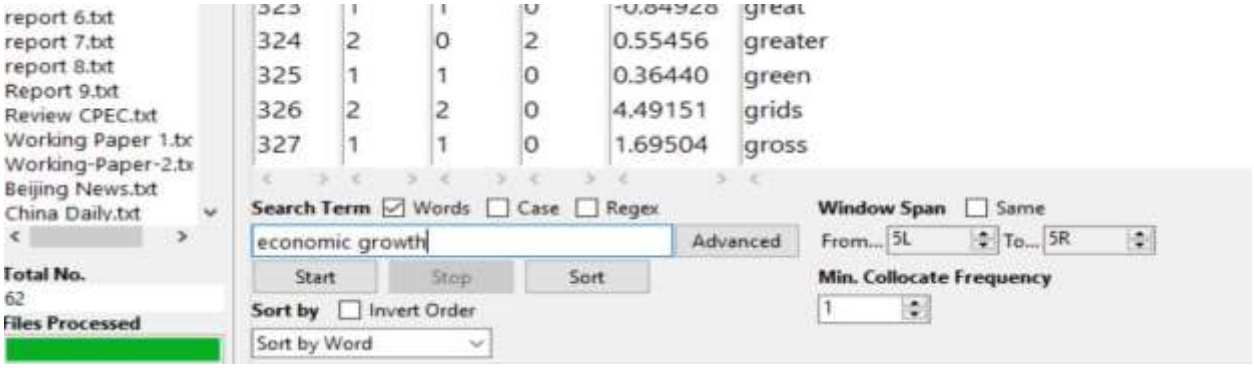


Economic growth-CPEC-global

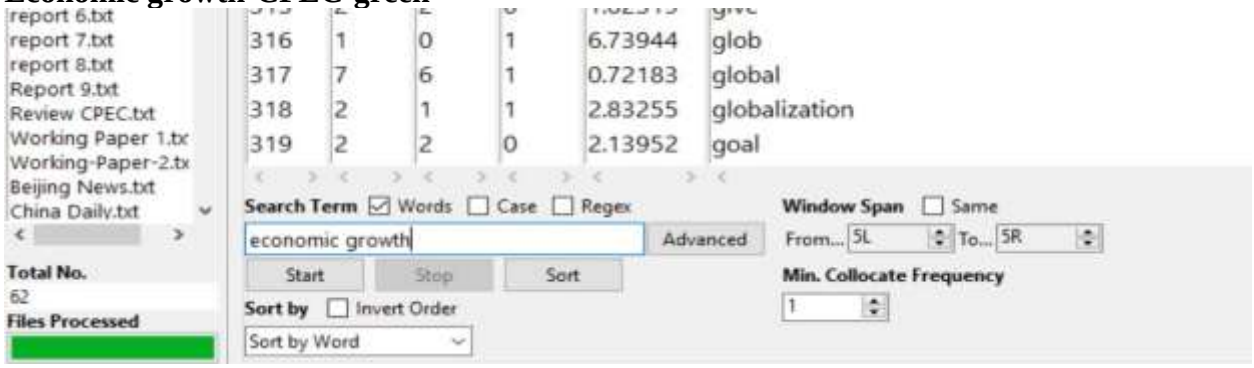


Economic growth-CPEC-steady

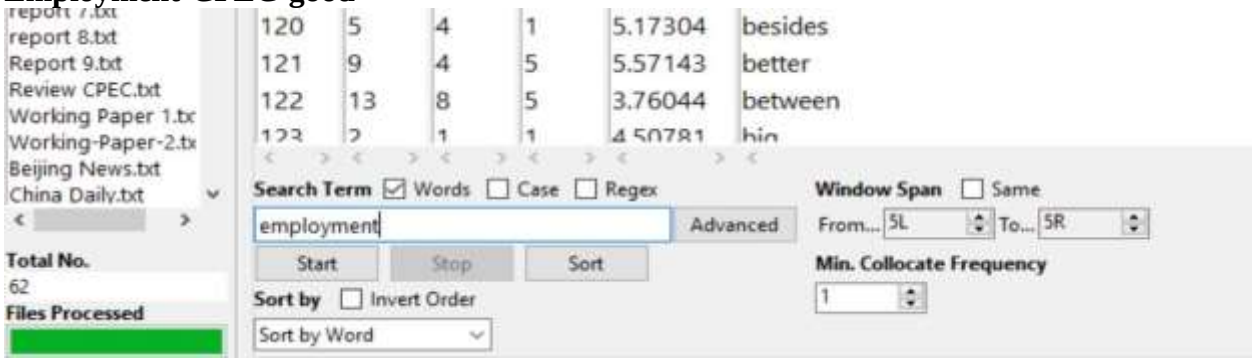
Economic growth-CPEC-boost



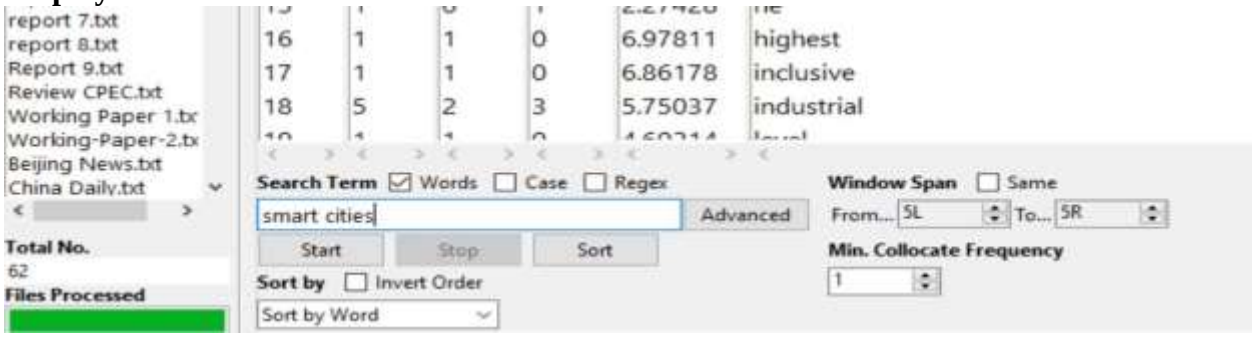
Economic growth-CPEC-green



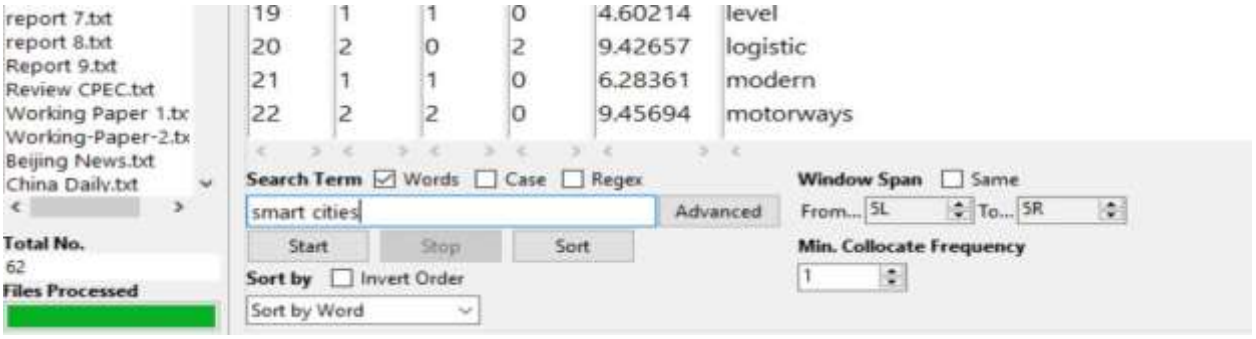
Employment-CPEC-good



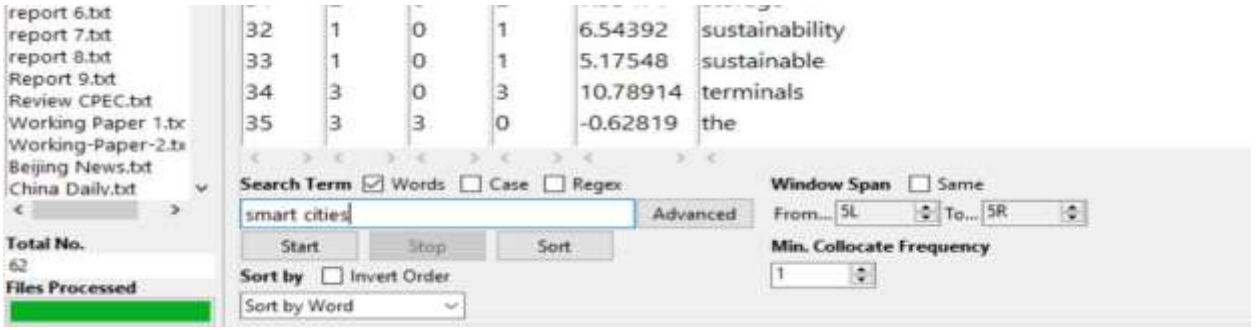
Employment-CPEC-better



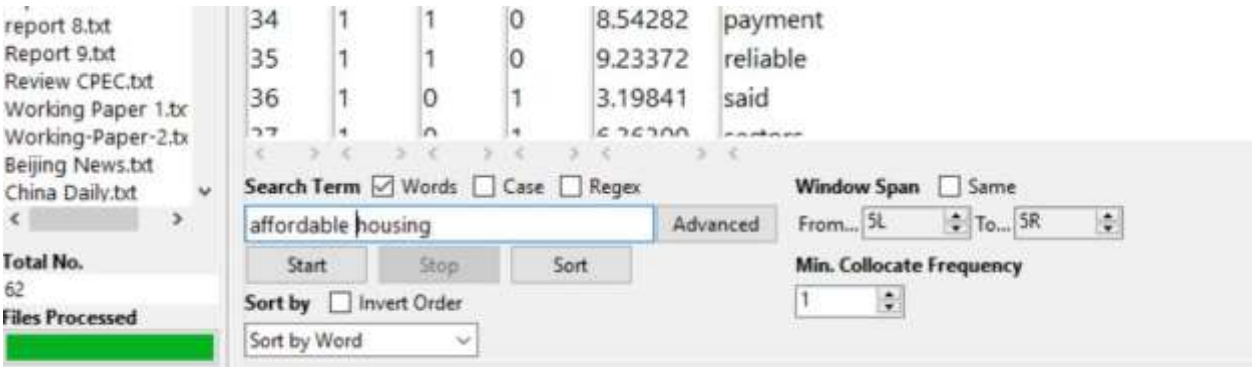
Smart cities-CPEC-inclusive



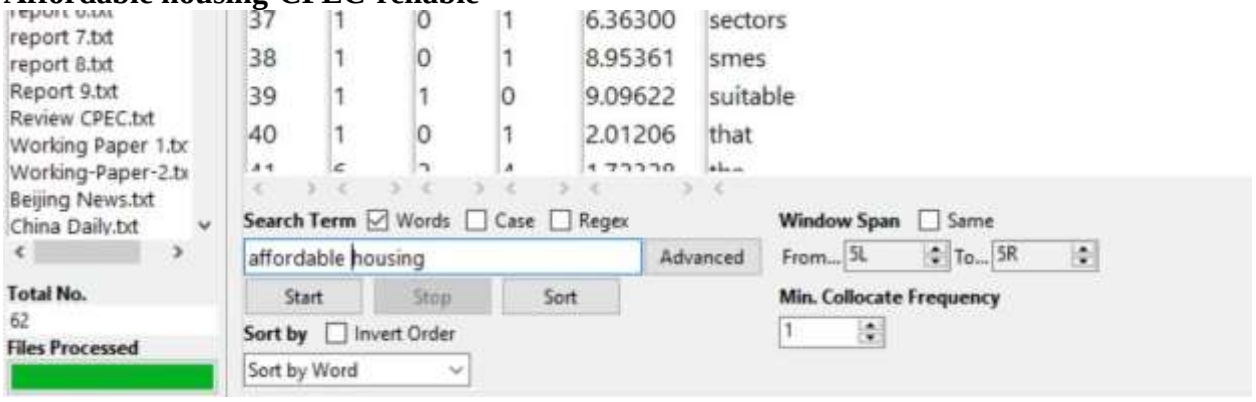
Smart cities-CPEC-modern



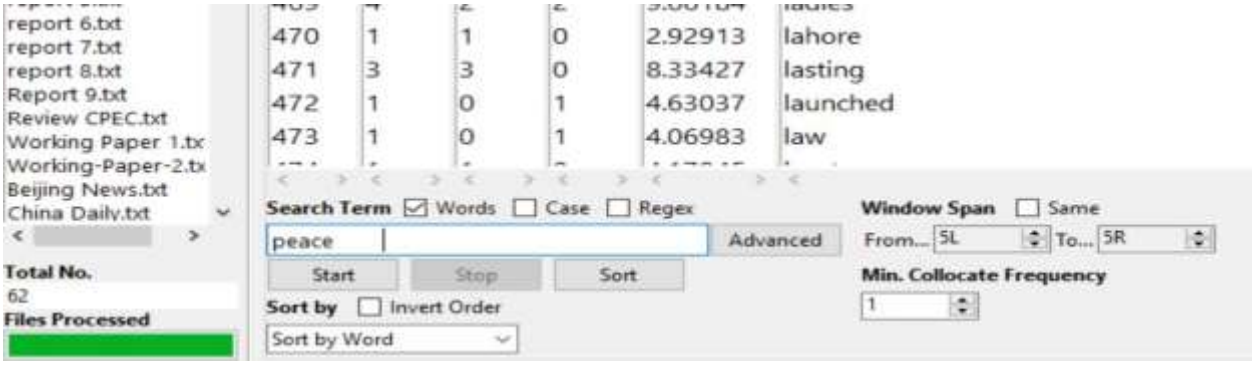
Smart cities-CPEC-sustainable



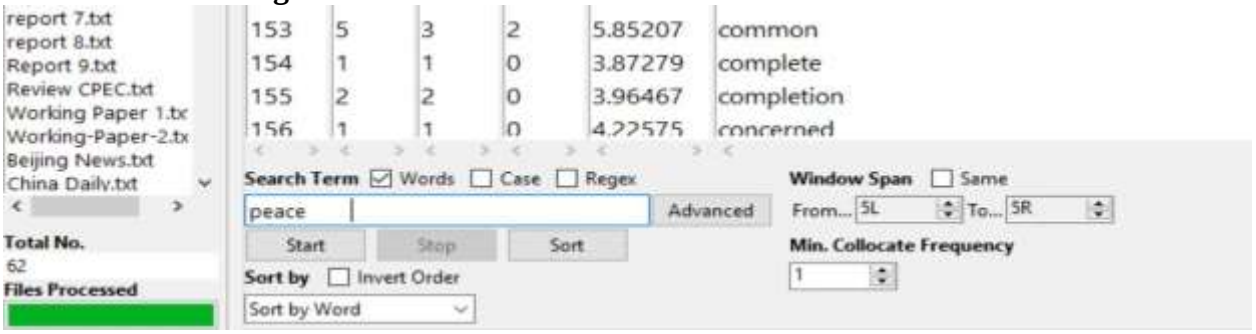
Affordable housing-CPEC-reliable



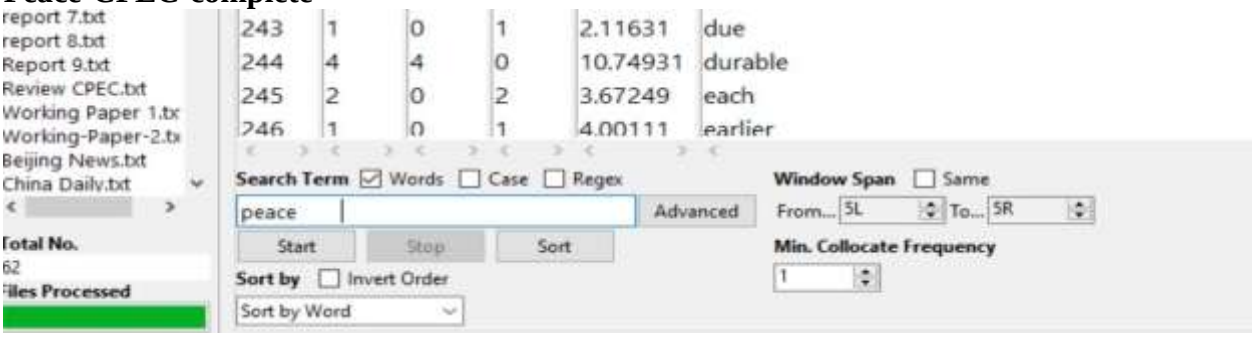
Affordable housing-CPEC-suitable



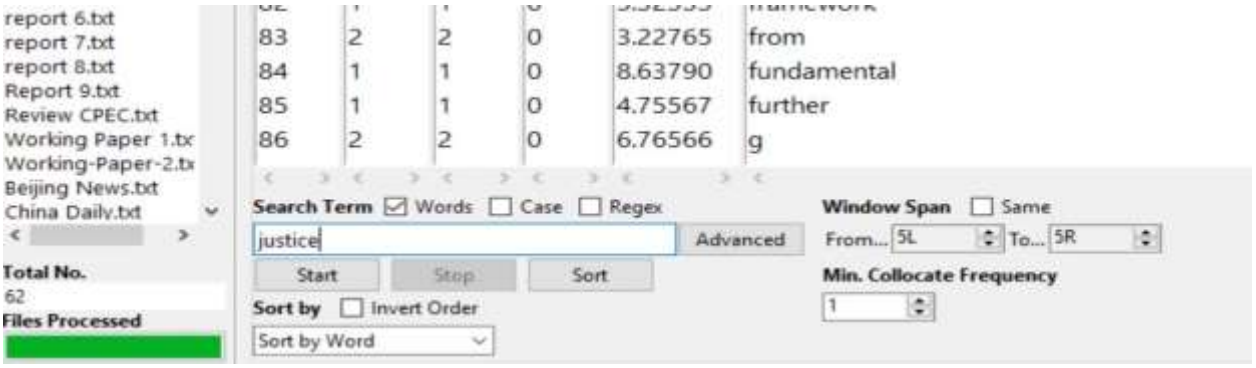
Peace-CPEC- lasting



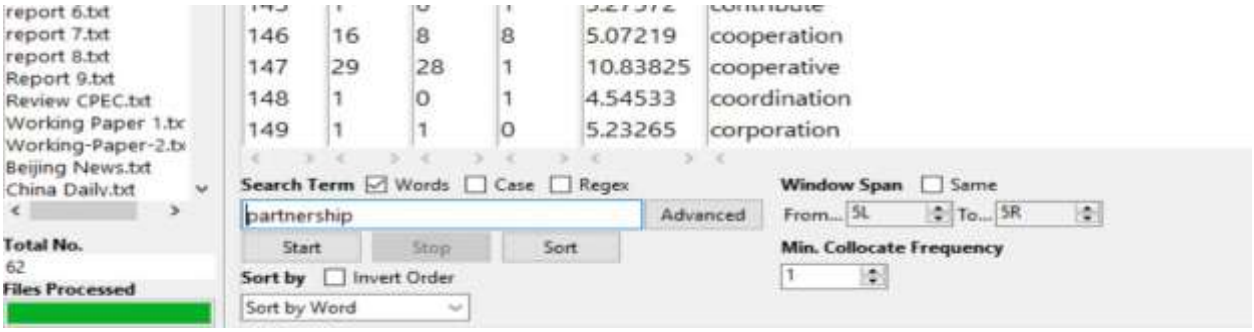
Peace-CPEC-complete



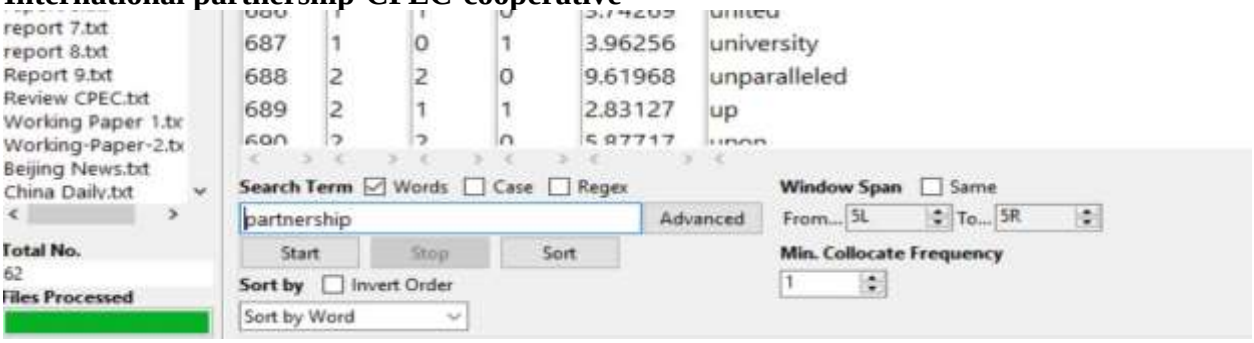
Peace-CPEC-durable



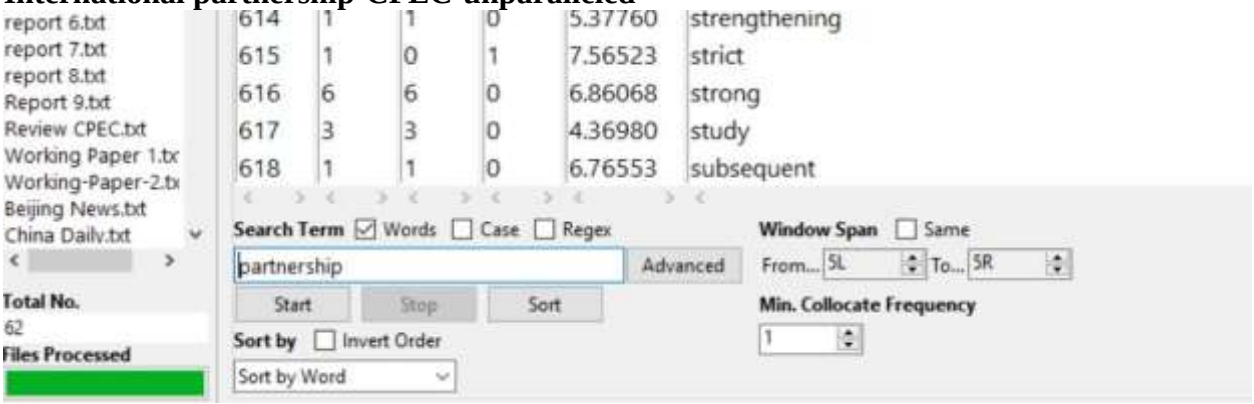
Justice-CPEC-fundamental



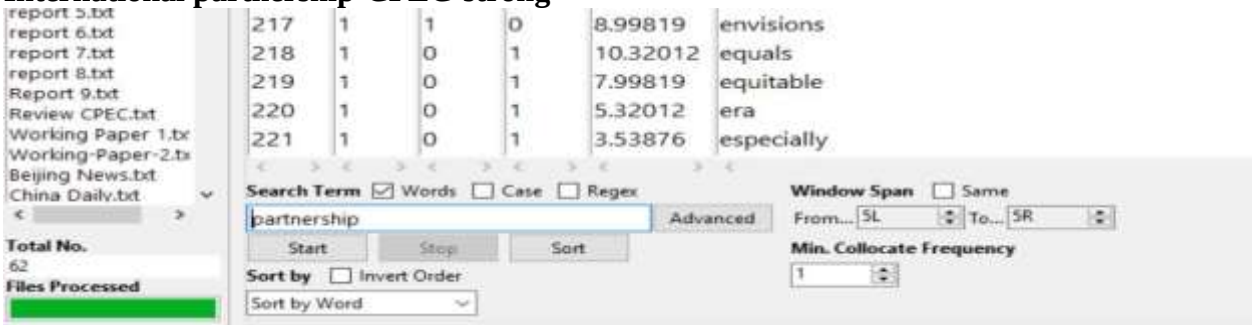
International partnership-CPEC-cooperative



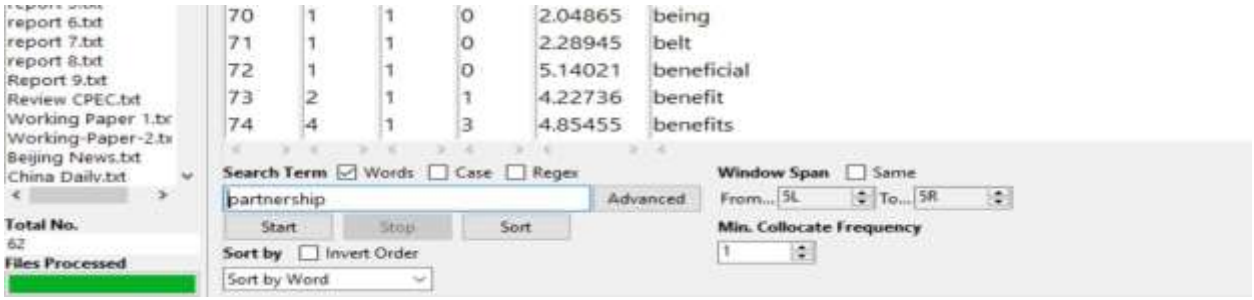
International partnership-CPEC-unparalleled



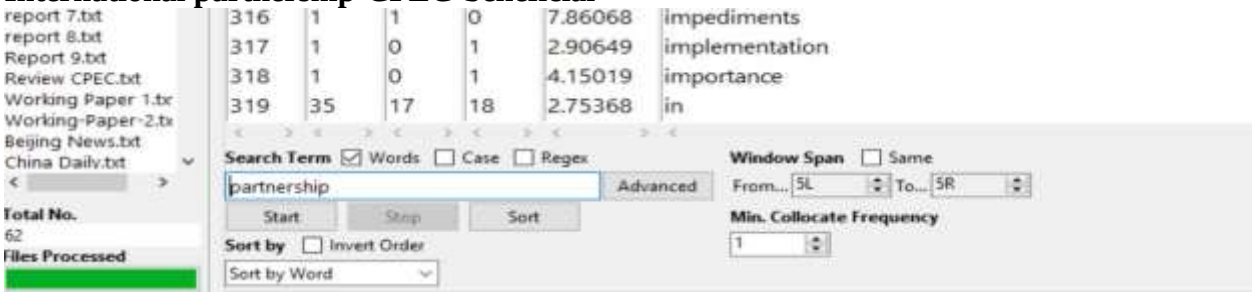
International partnership-CPEC-strong



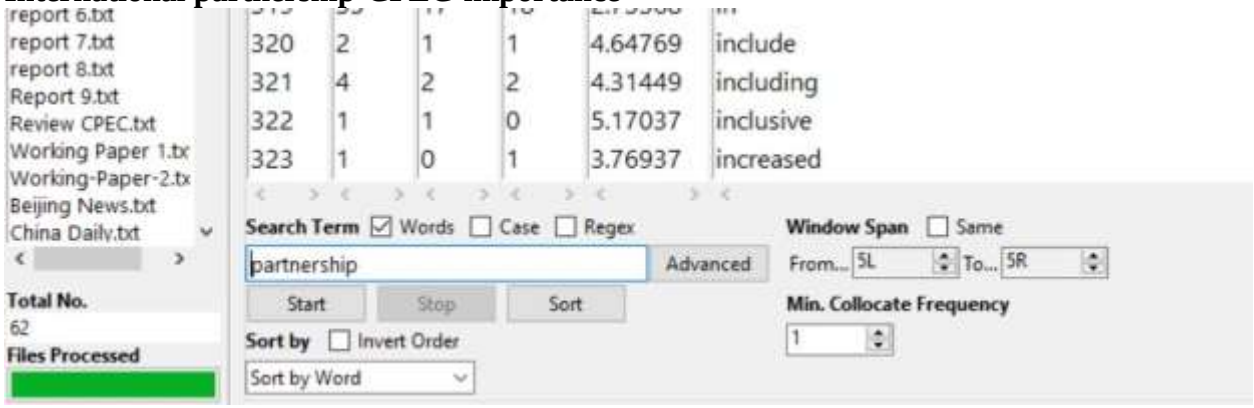
International partnership-CPEC-equitable



International partnership-CPEC-beneficial

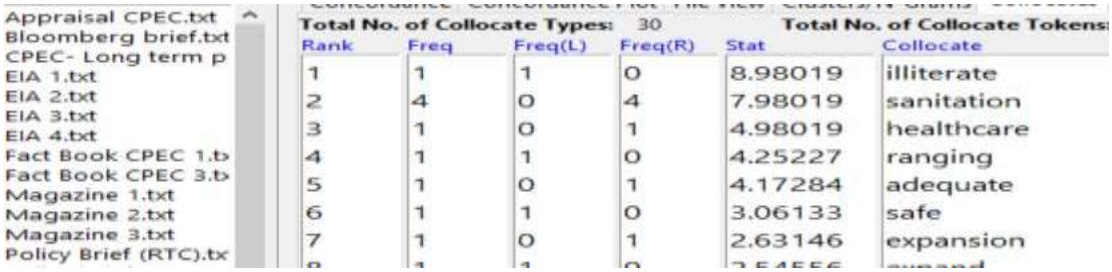


International partnership-CPEC-importance

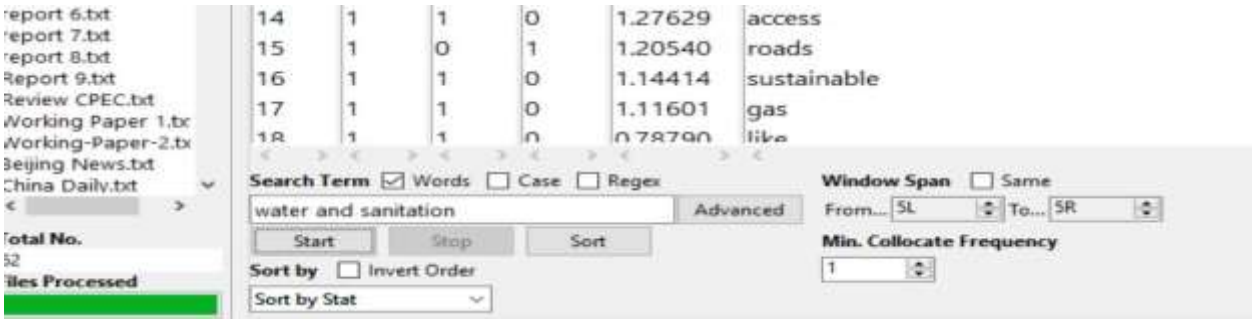


International partnership-CPEC-inclusive

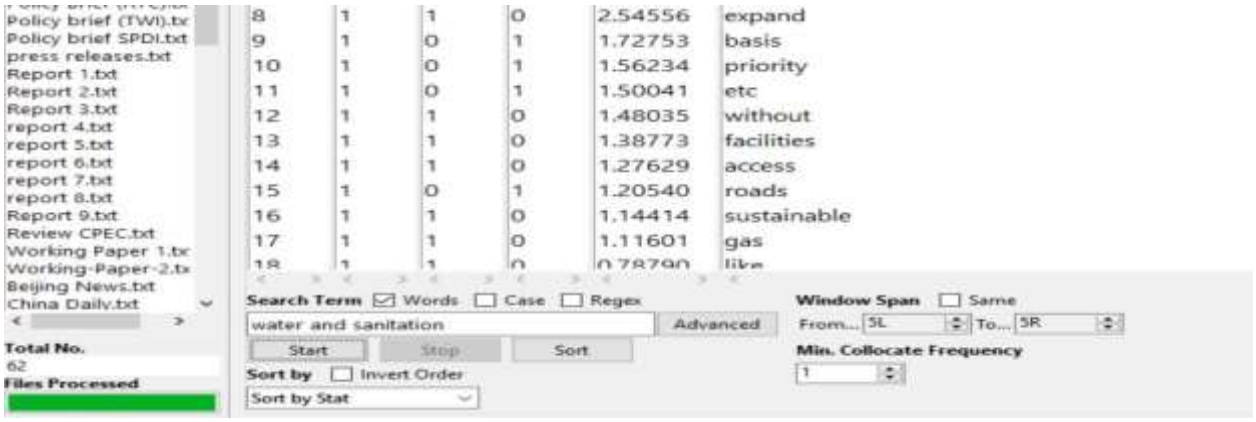
Table 4.24 Significant Collocates for 'Appraisal' patterns in the Eco-environmental areas of the CPEC



Water and sanitation –safe



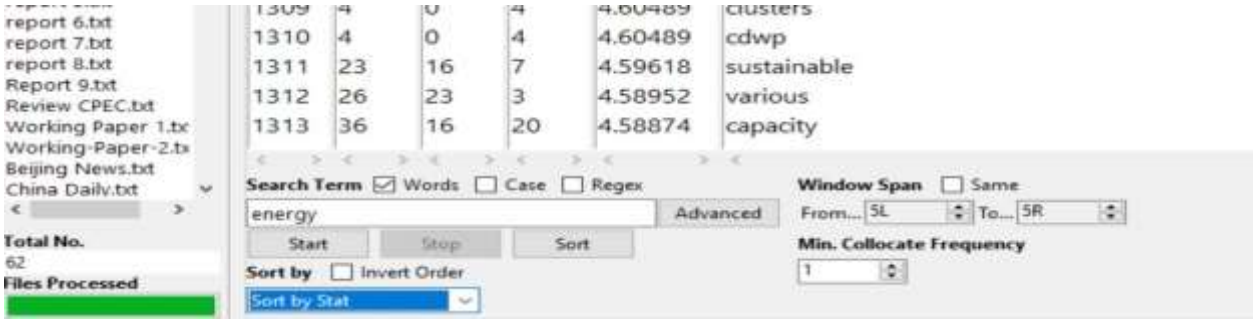
Water and sanitation-sustainable



Water and sanitation-CPEC-priority

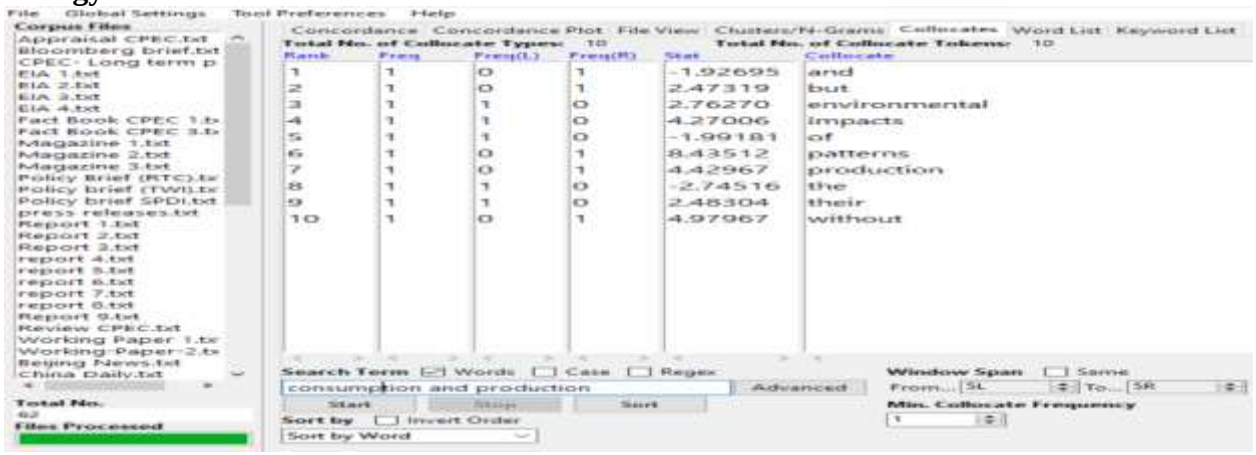
Energy-CPEC-renewable

Energy-CPEC-green

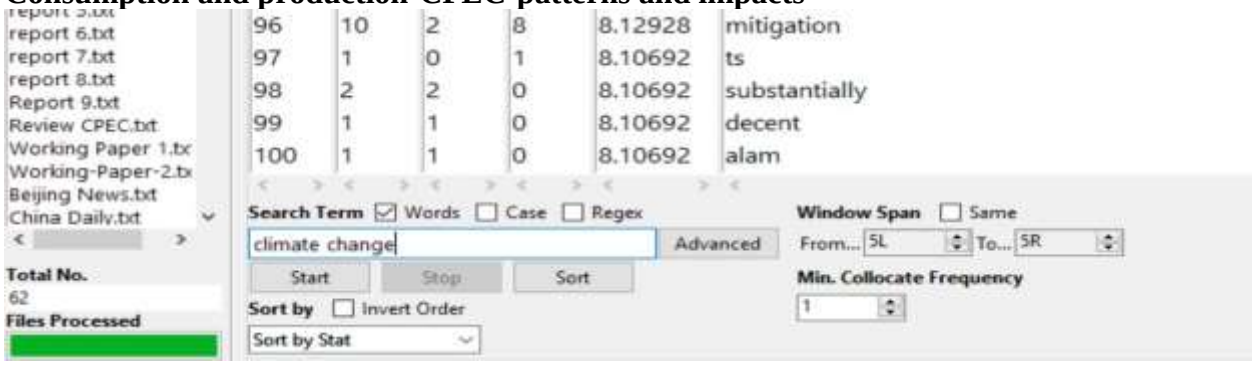


Energy-CPEC-sustainable

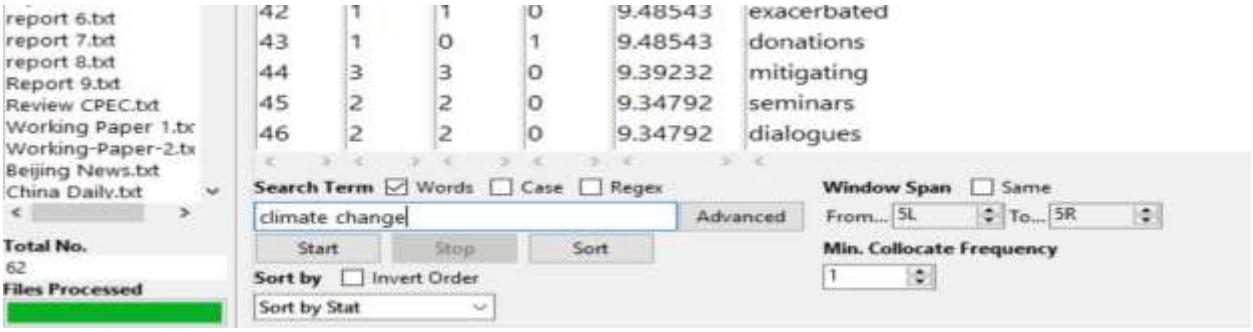
Energy-CPEC-affordable



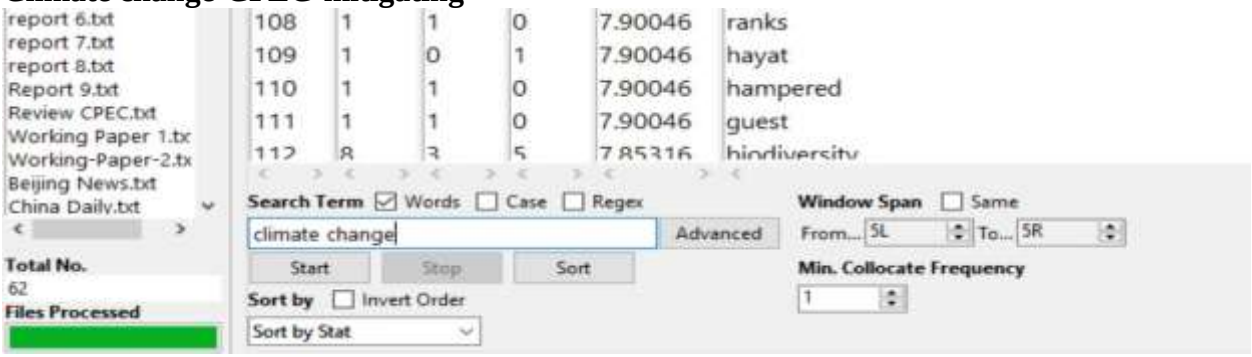
Consumption and production-CPEC-patterns and impacts



Climate change –CPEC-sustainability

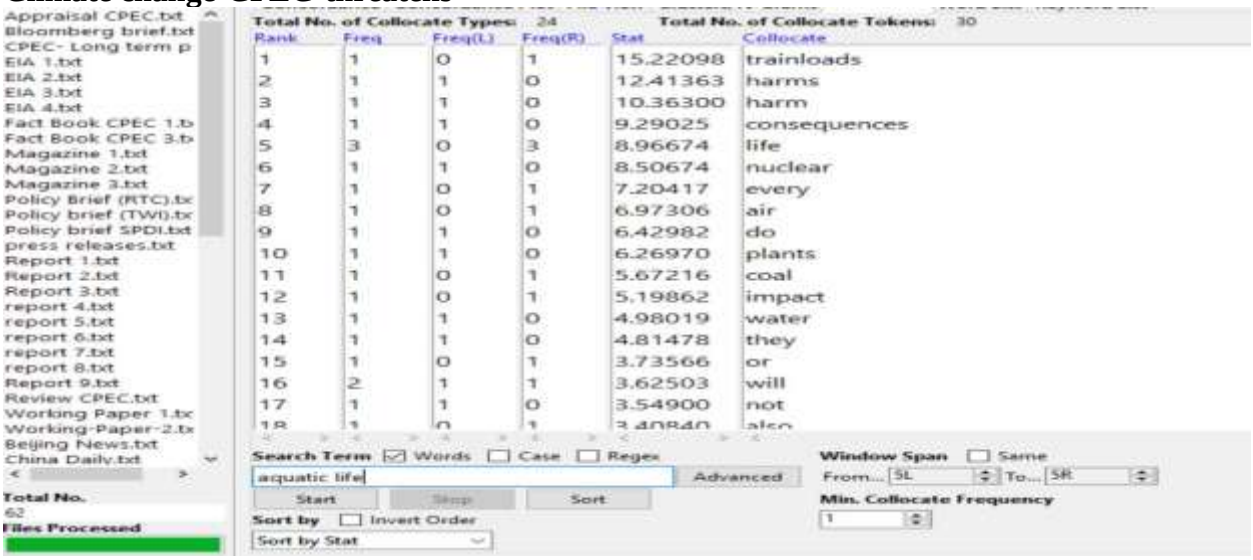


Climate change-CPEC-mitigating

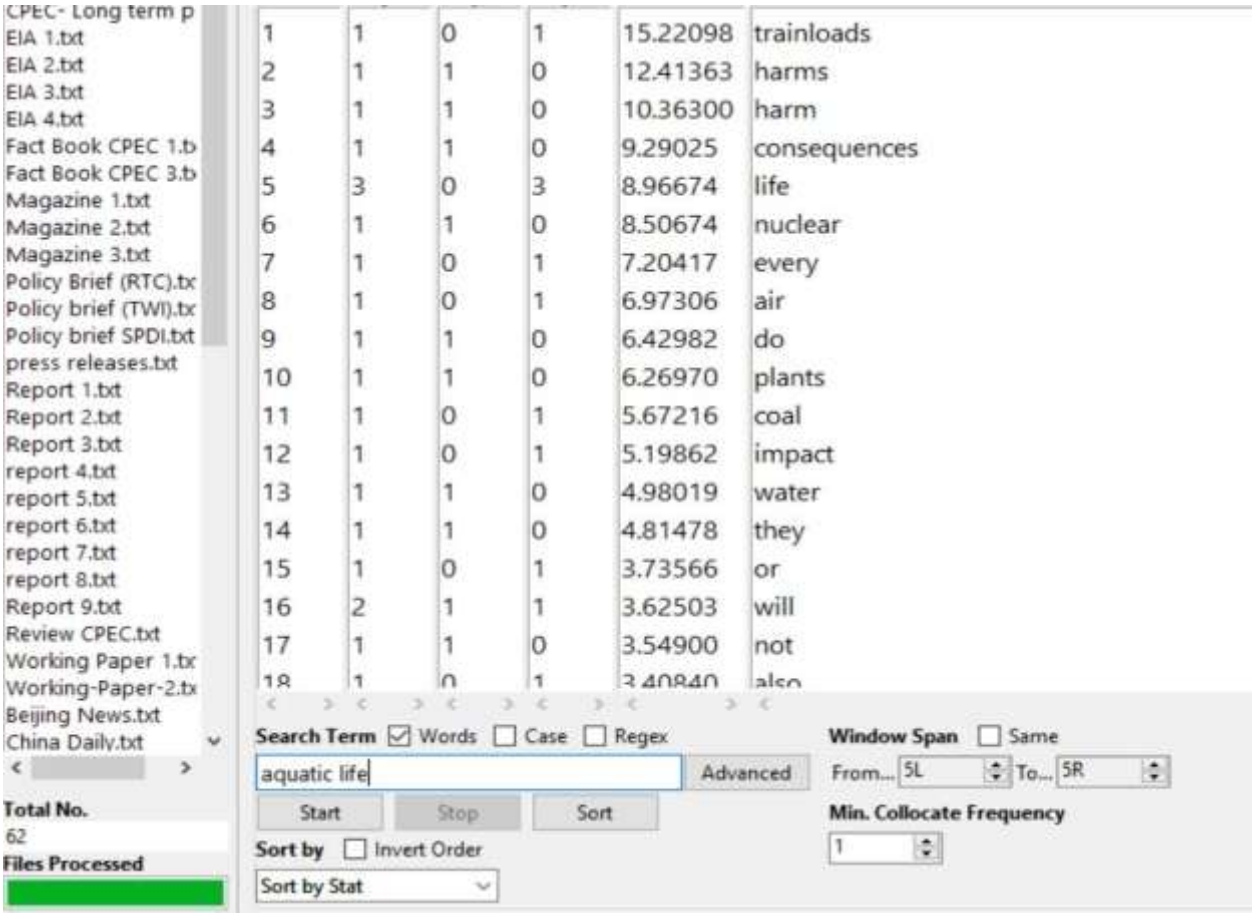


Climate change-CPEC-hampered

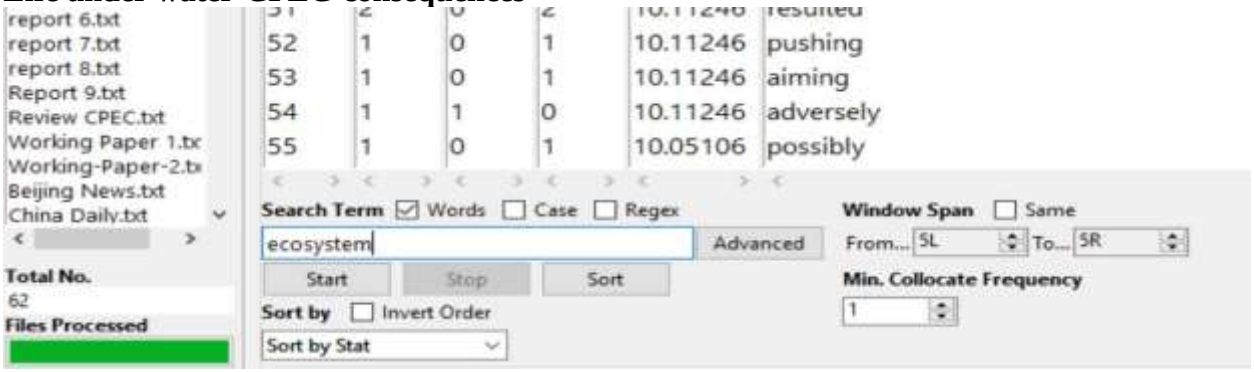
Climate change-CPEC-threatens



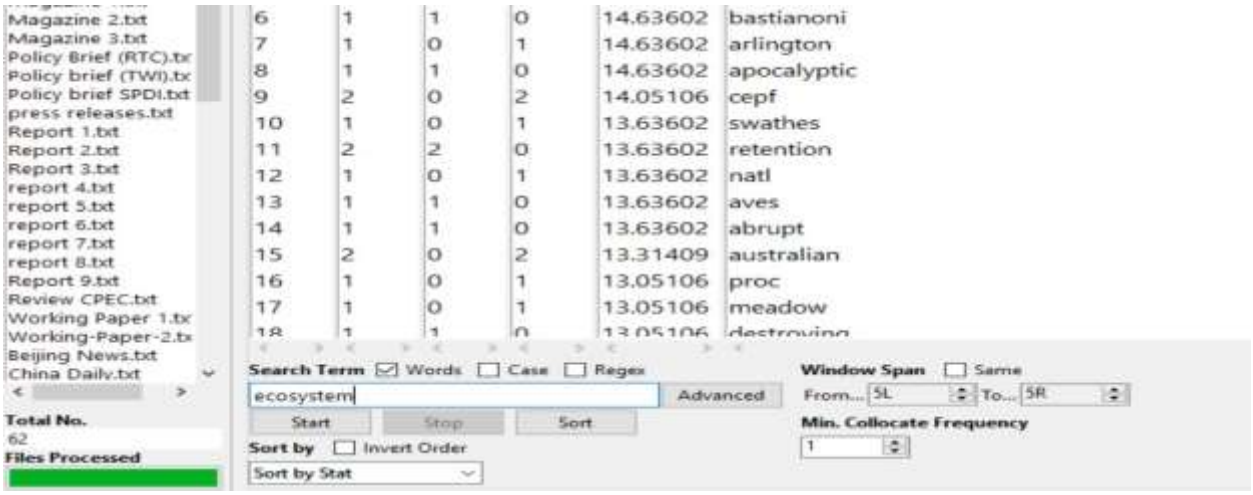
Life under water-CPEC-harm



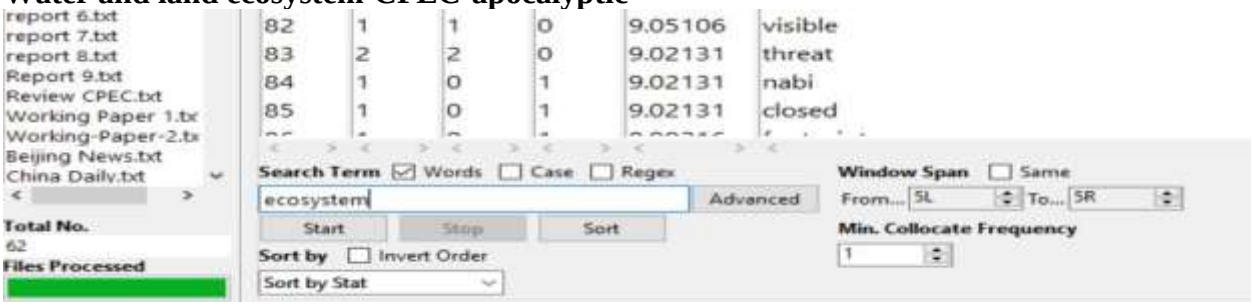
Life under water-CPEC-consequences



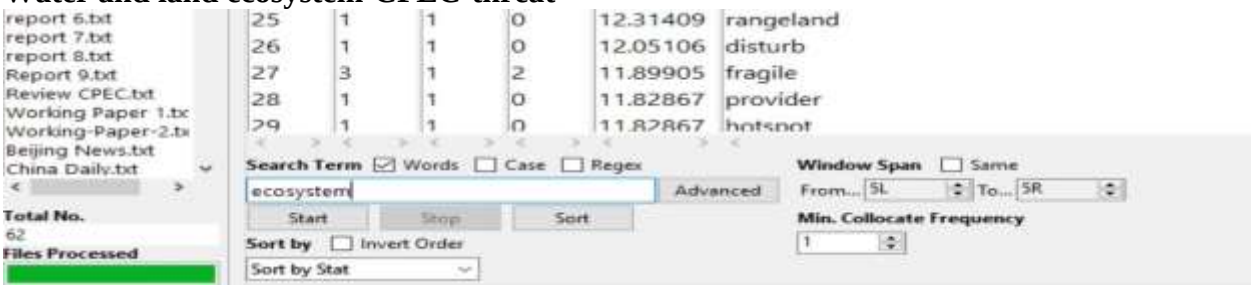
Water and land ecosystem-CPEC-adversely



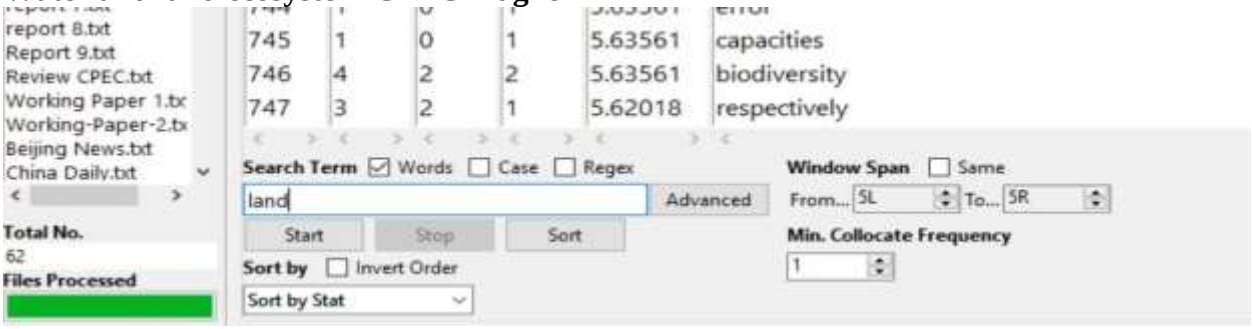
Water and land ecosystem-CPEC-apocalyptic



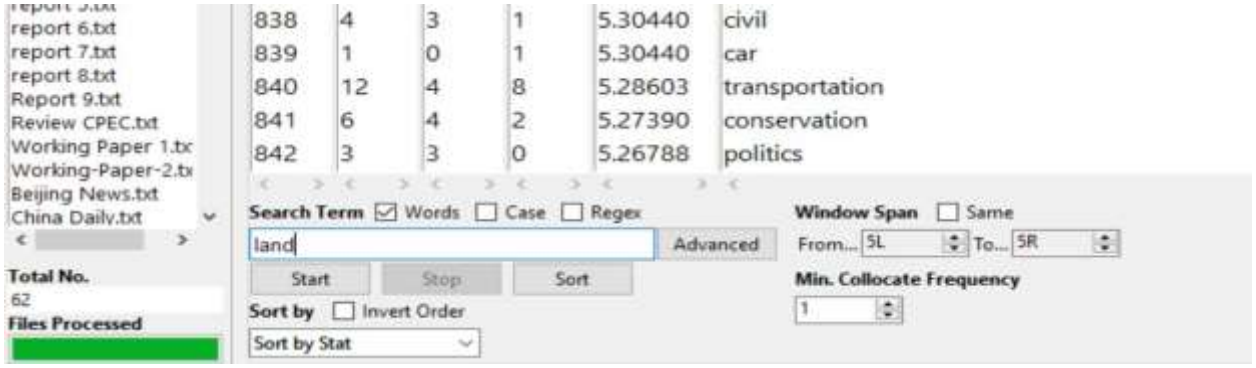
Water and land ecosystem-CPEC-threat



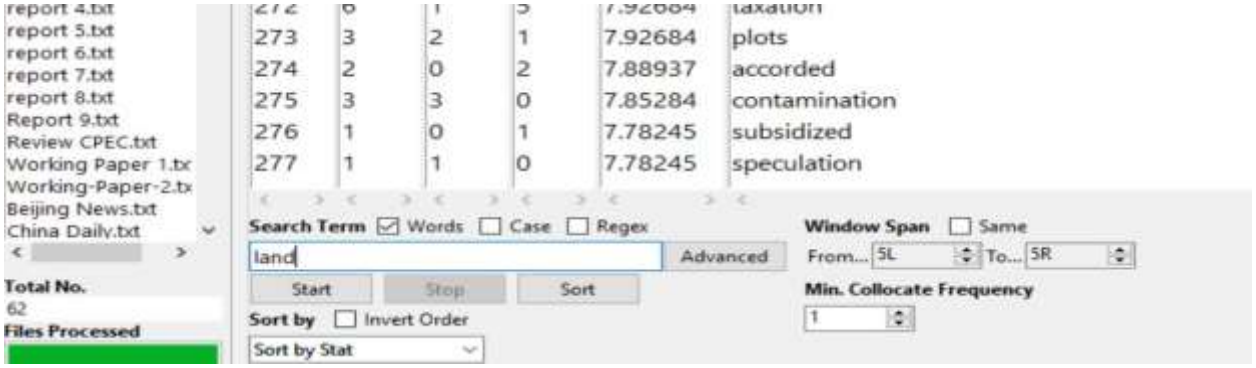
Water and land ecosystem-CPEC-fragile



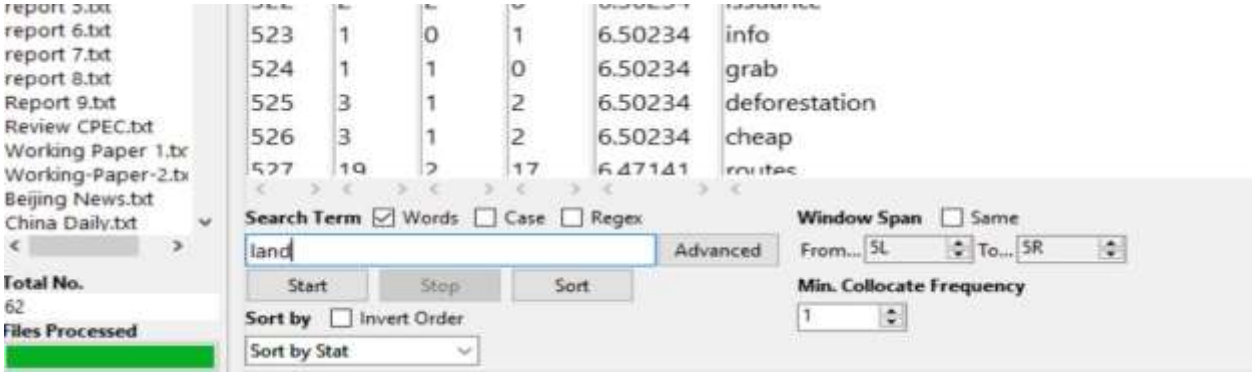
Life on land-CPEC-biodiversity



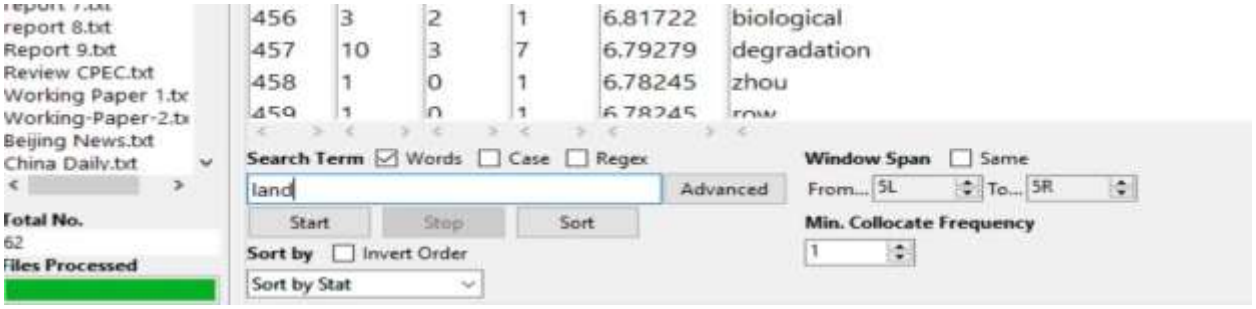
Life on land-CPEC-conservation



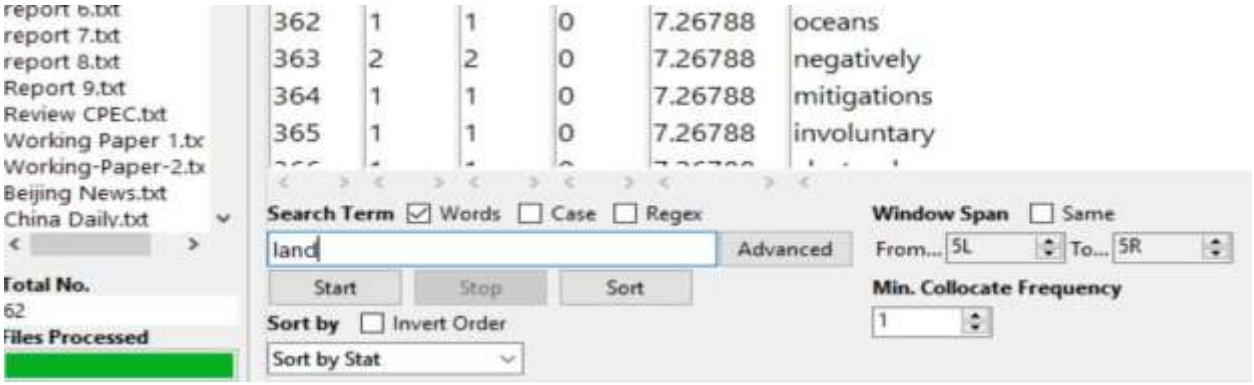
Life on land-CPEC-contamination



Life on land-CPEC-deforestation

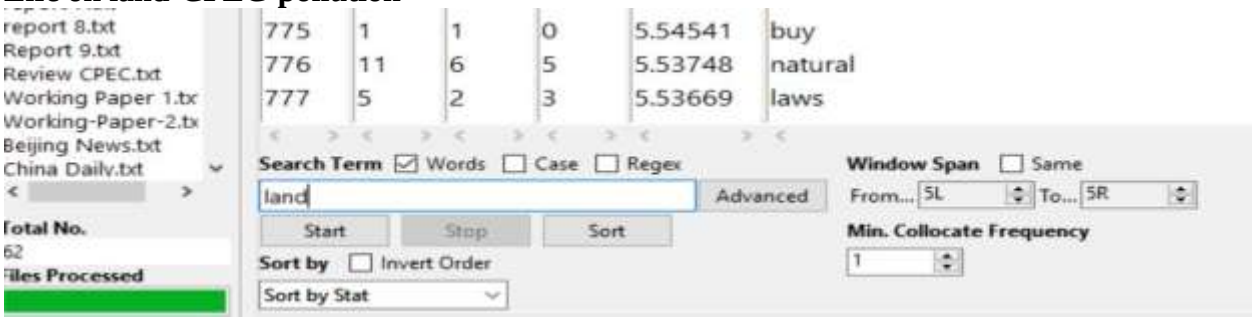


Life on land-CPEC-degradation



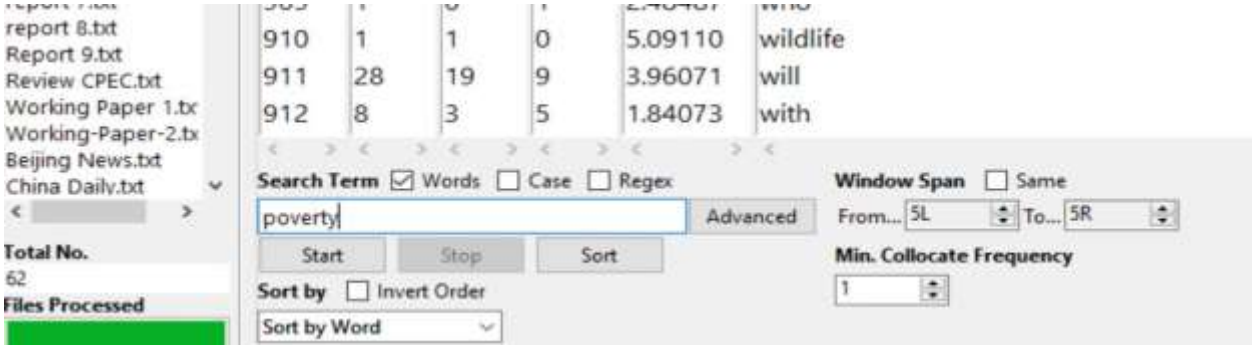
Life on land-CPEC-negatively

Life on land-CPEC-pollution



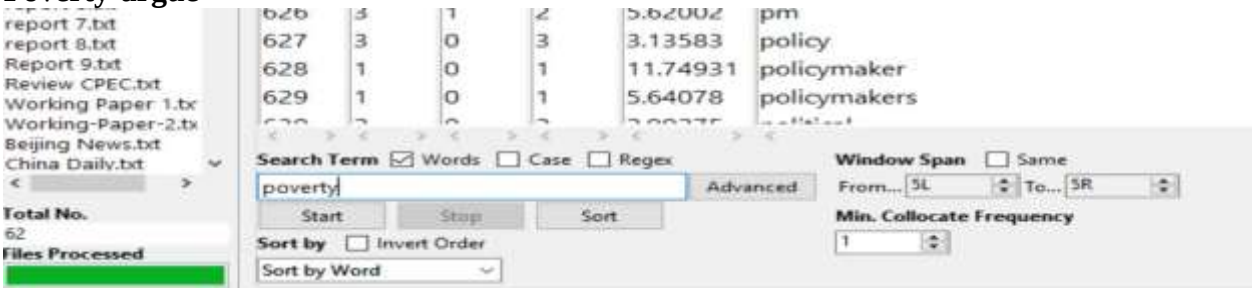
Life on land-CPEC-natural

Table 4.25 Significant Collocates Showing Facticity Patterns in Socioeconomic areas of CPEC

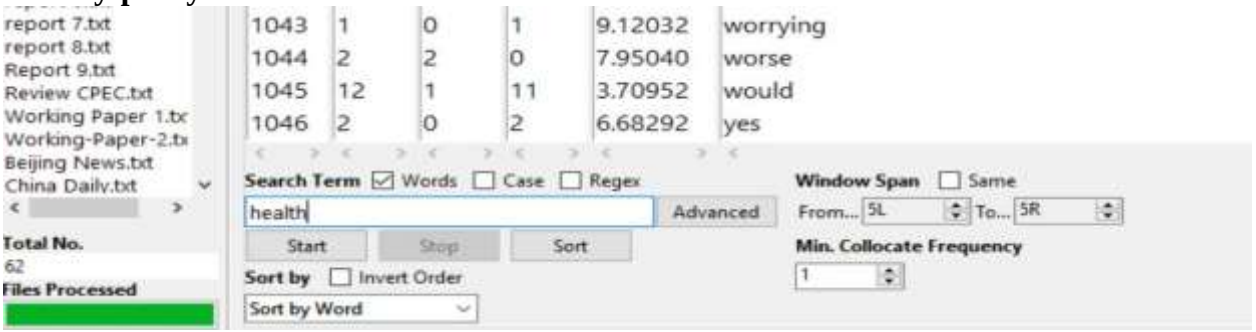


Poverty-will

Poverty-argue

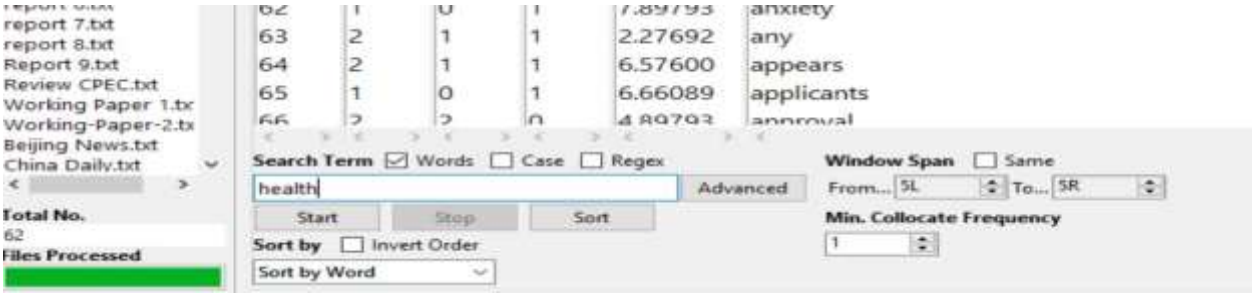


Poverty-policy makers

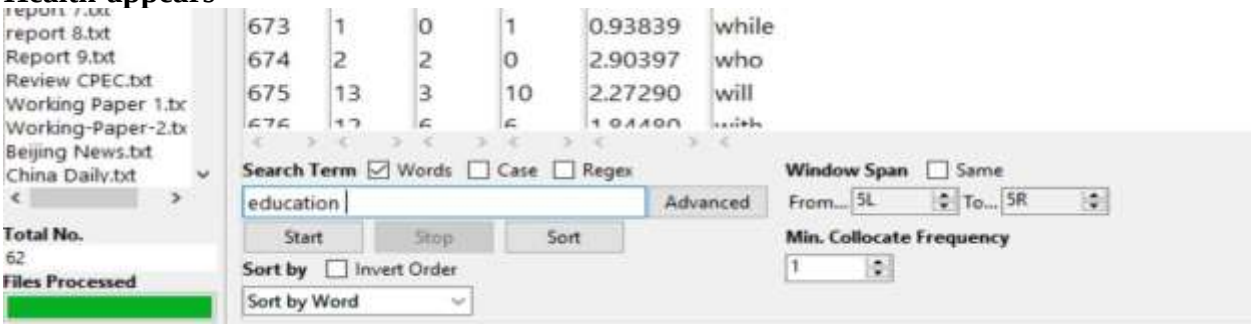


Health-would

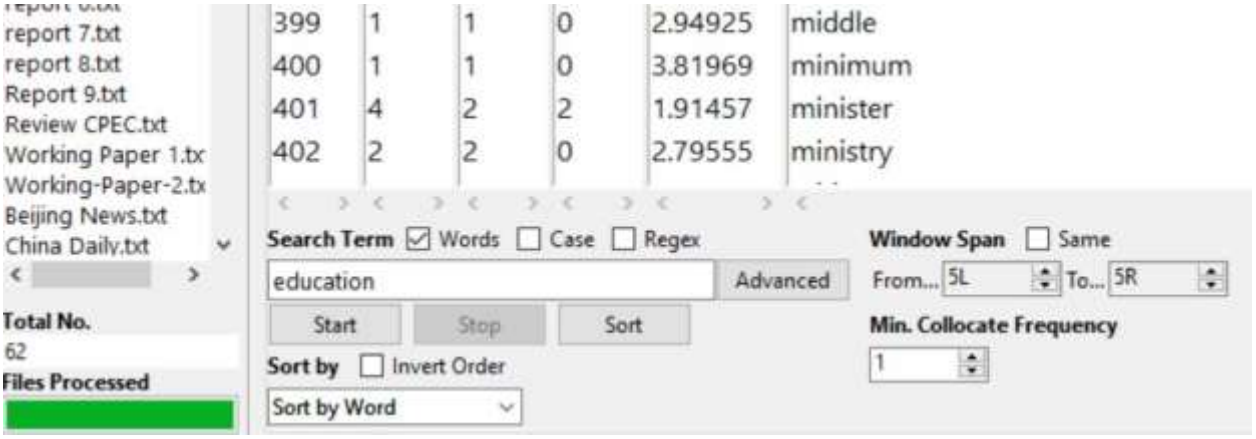
Health-ministers



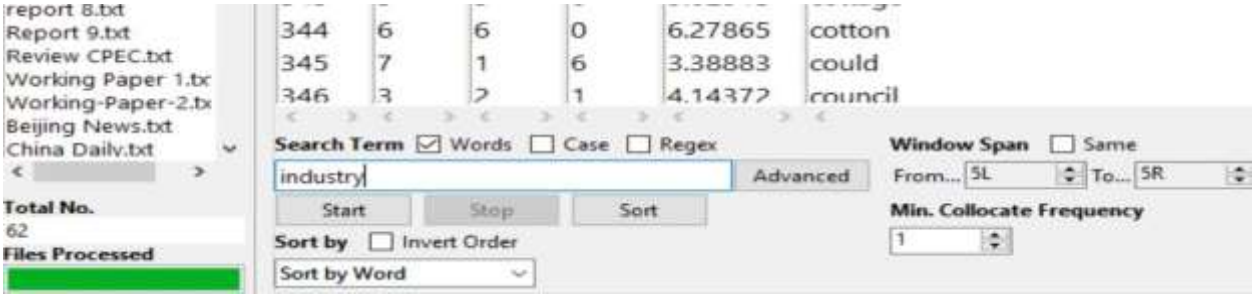
Health-appears



Education-will

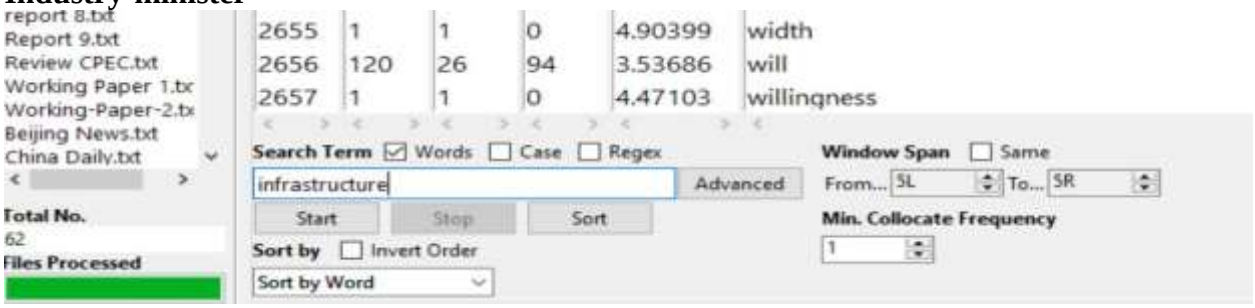


Education-minister

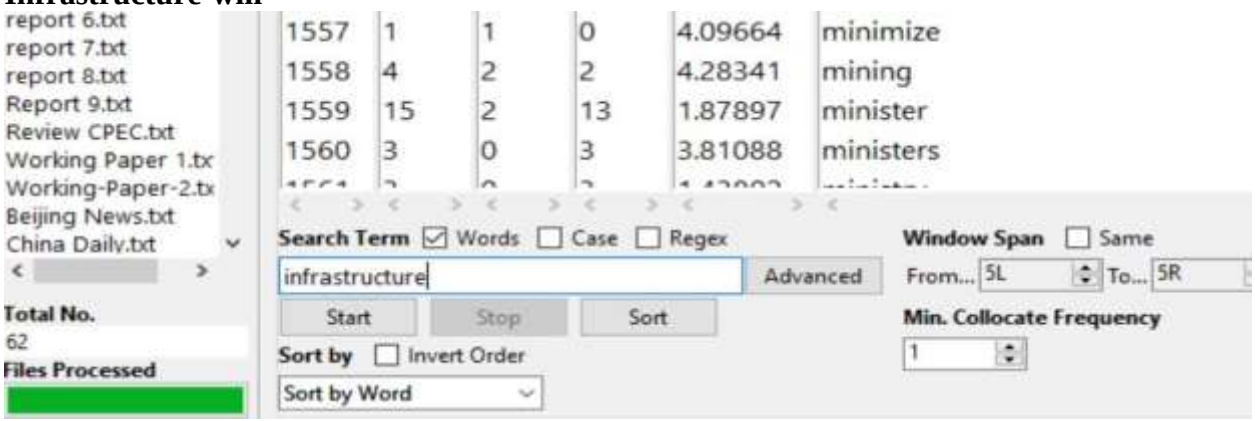


Industry-could

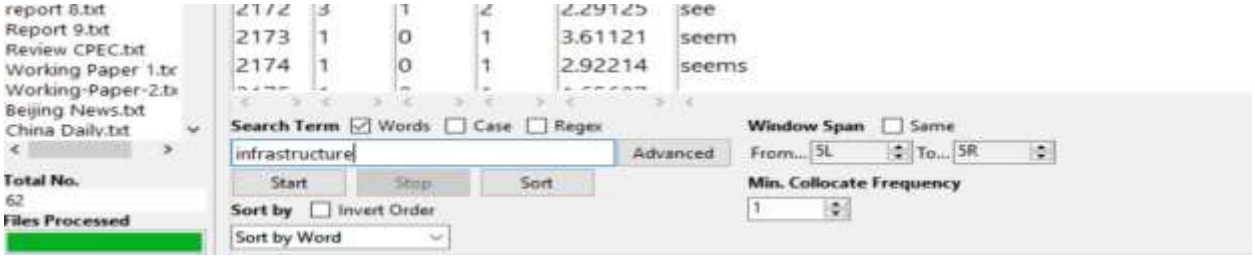
Industry-minister



Infrastructure-will

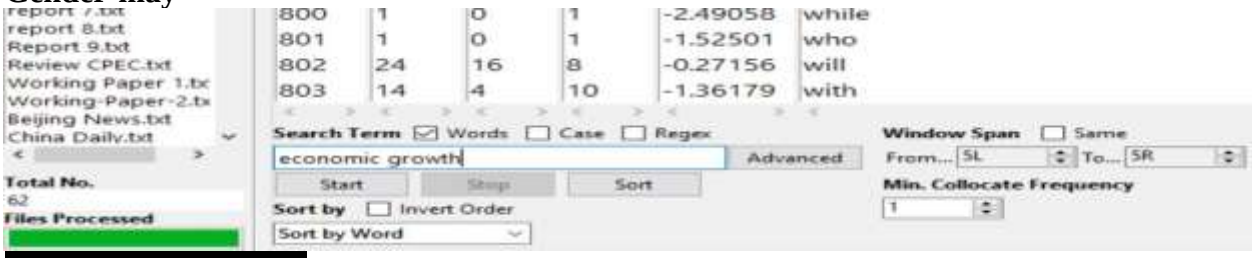


Infrastructure-minister



Infrastructure-seem

Gender-may

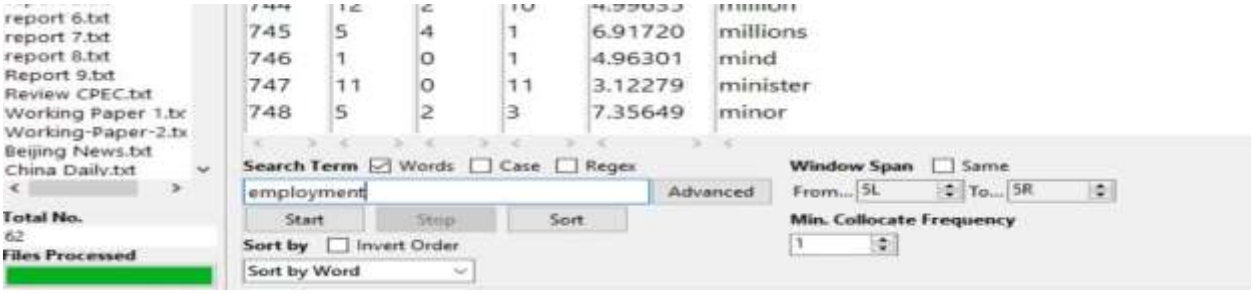


[redacted]

Economic growth-minister

Employment-will

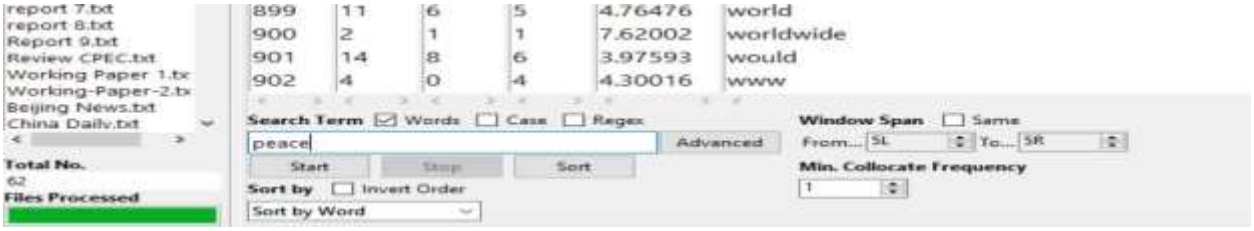
Employment-believe



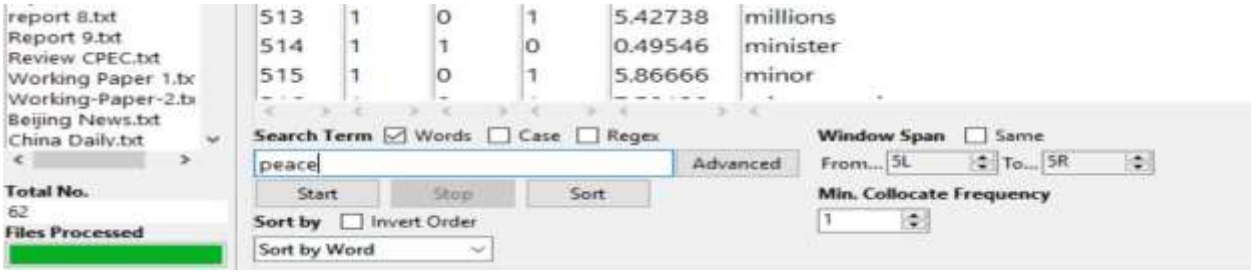
Employment minister

Affordable housing-will

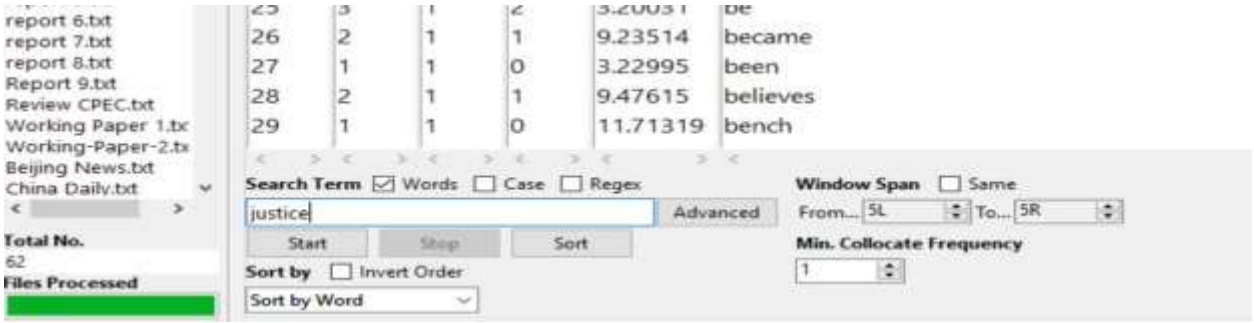
Peace-can



Peace-would



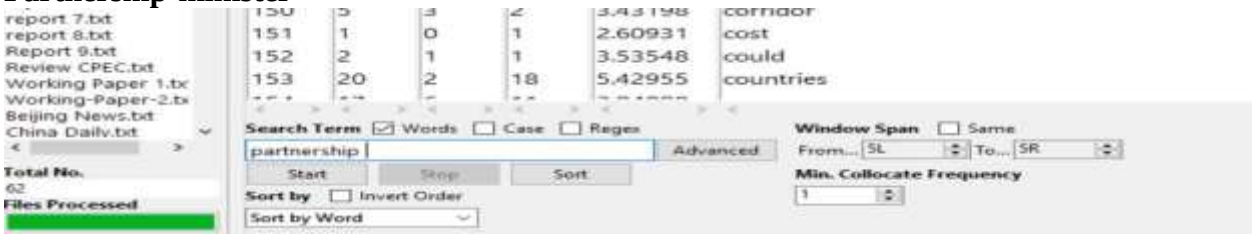
Peace-minister



Justice-believes

Justice-may

Partnership-minister



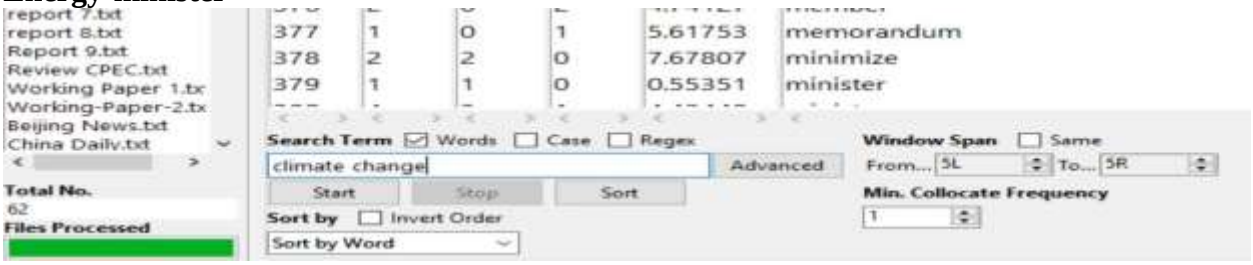
Partnership-could

Table 4.26 Significant Collocates for Facticity Patterns in the Environmental-Ecological areas in the CPEC

Energy-ministry

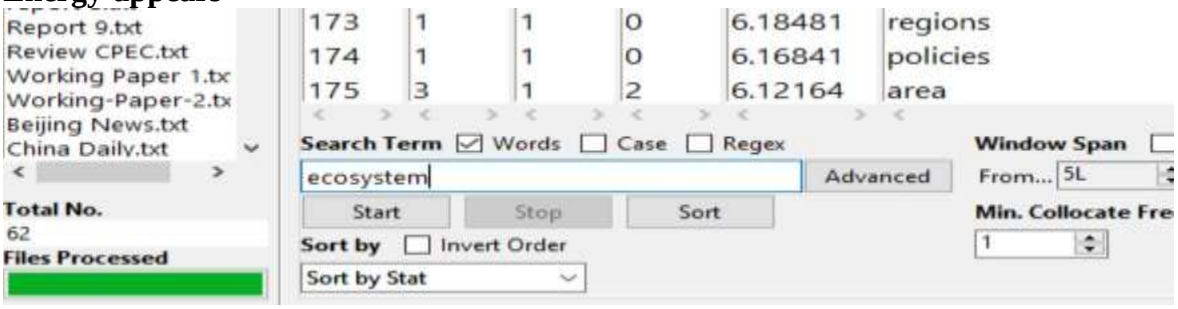
Natural resources-ministry

Energy-minister



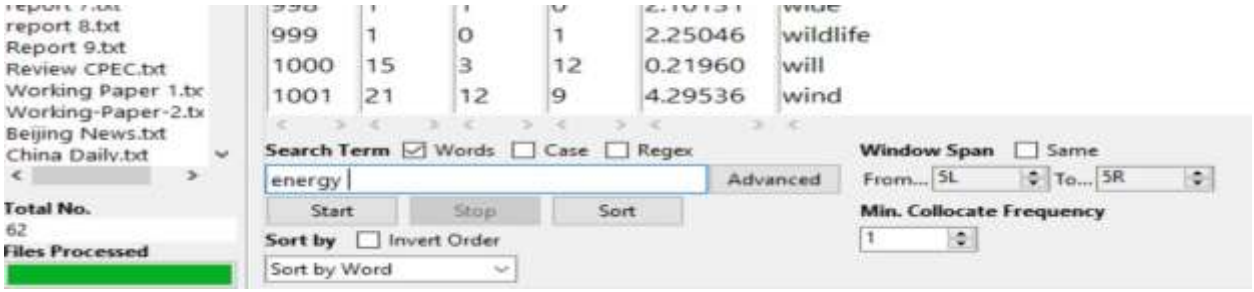
Climate change-minister

Energy-appears



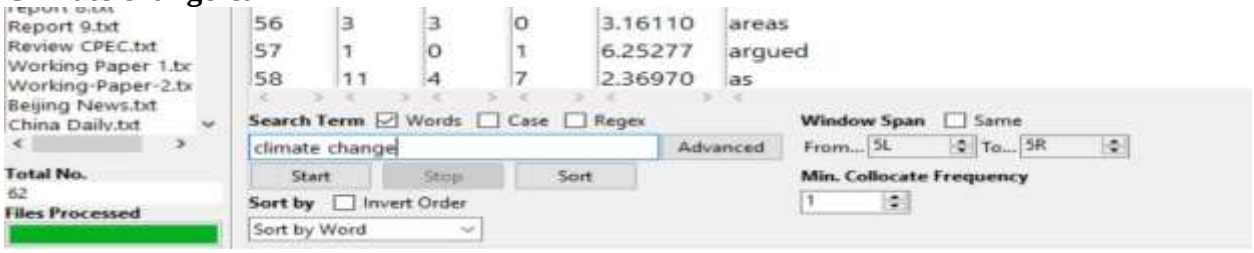
Ecosystem-policies

Natural resources-minister

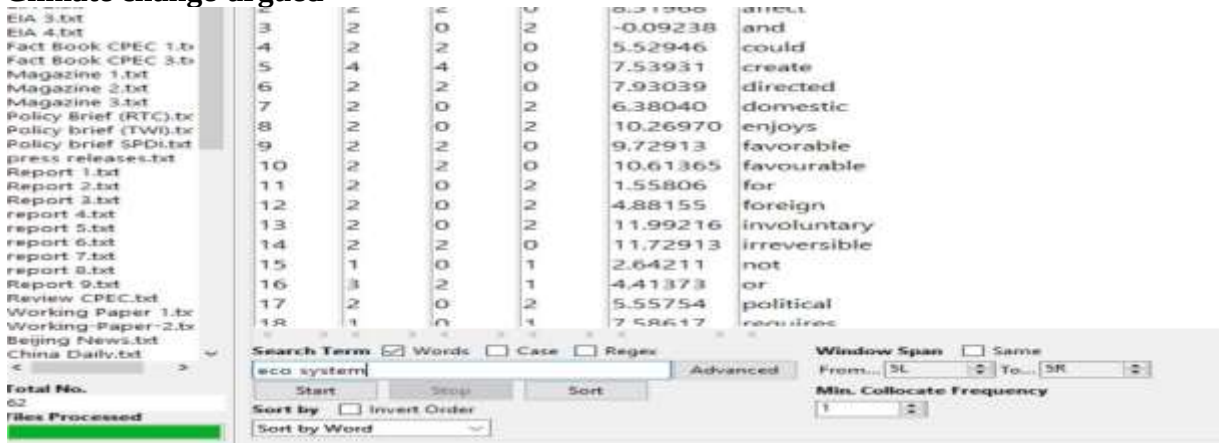


Energy-will

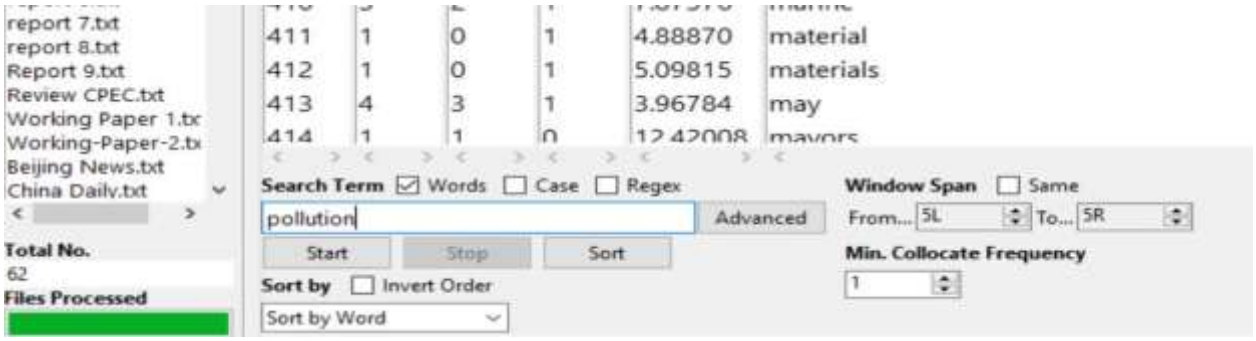
Climate change-can



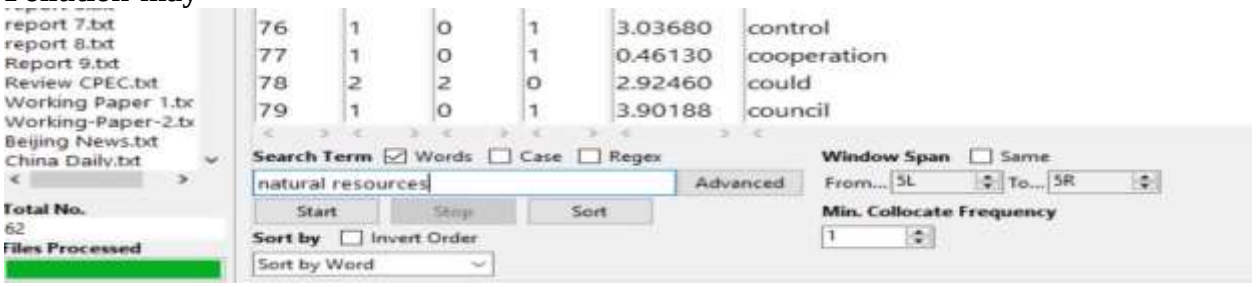
Climate change-argued



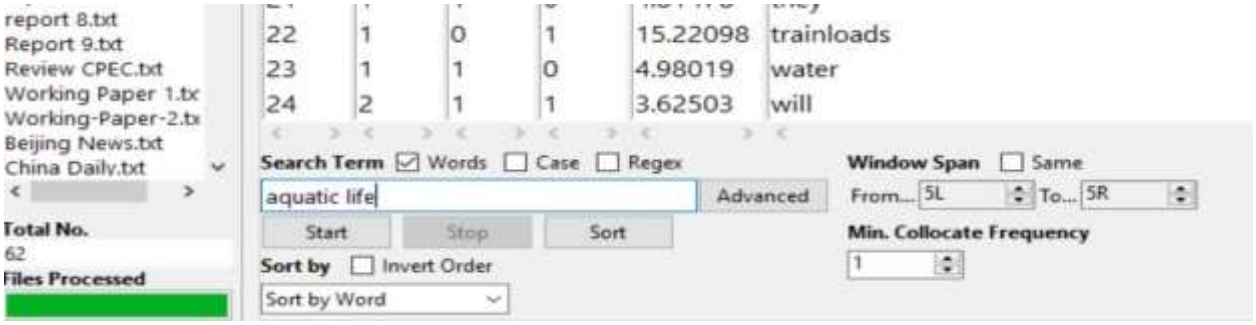
Ecosystem-could



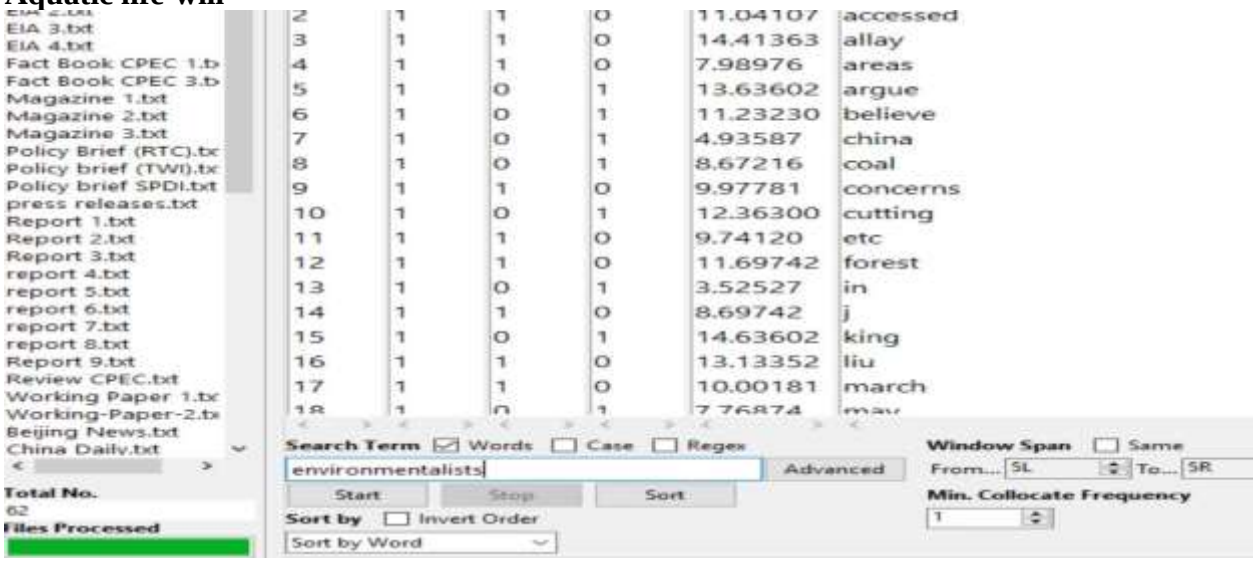
Pollution-may



Natural resources-could

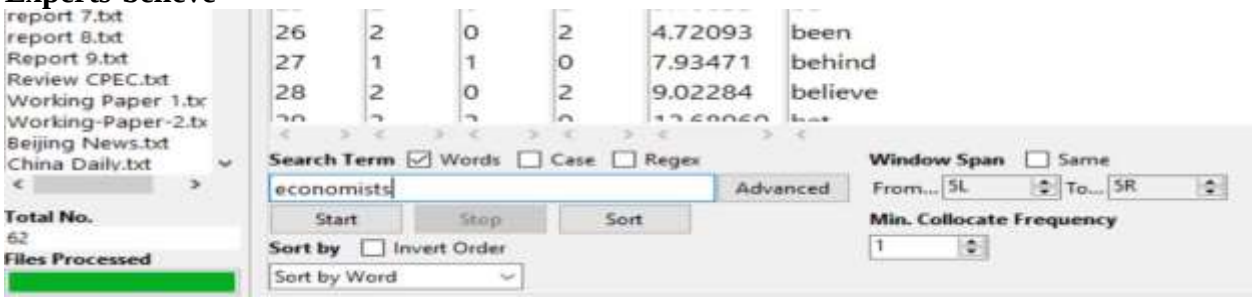


Aquatic life-will

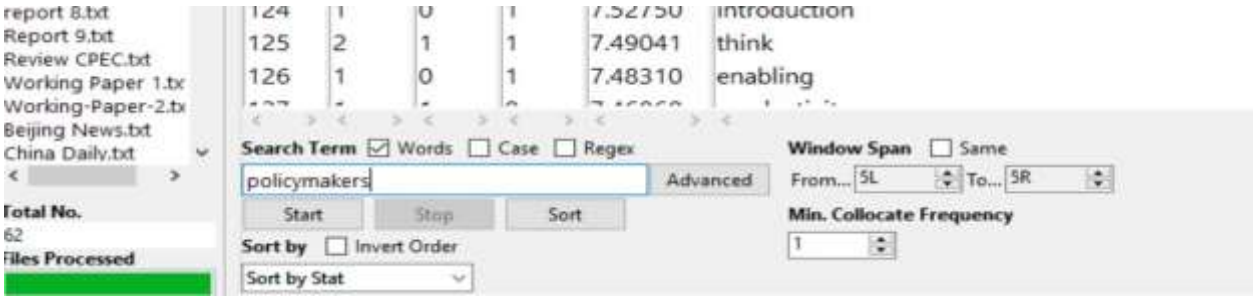


Environmentalists-believe

Experts-believe



Economists-believe

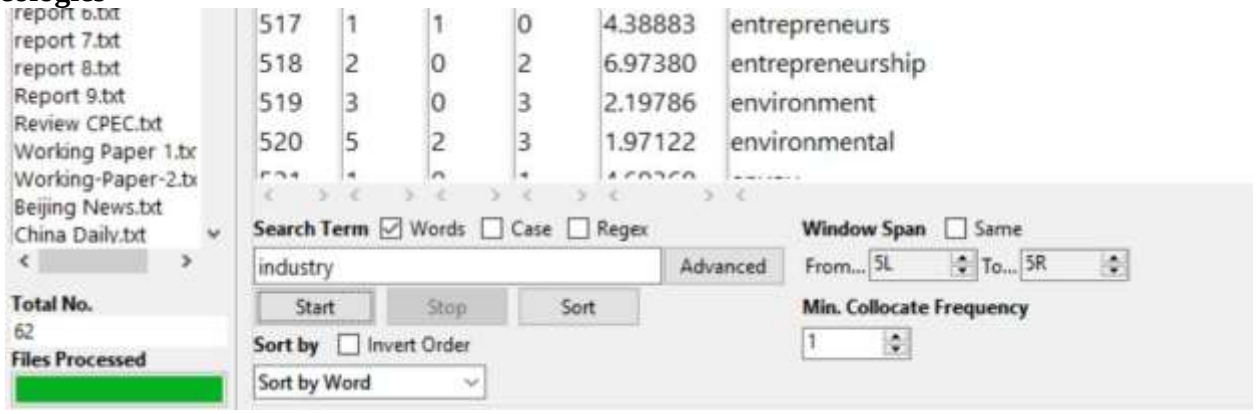


Policymakers-think

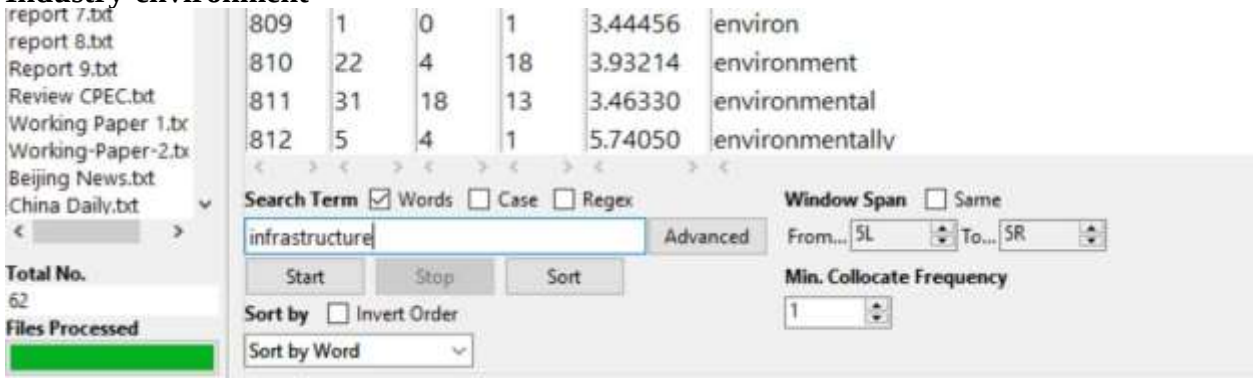
Economist- think

Minister-think

Table 4.27 Significant Collocates Showing Anthropocentric vs Ecocentric Ideologies



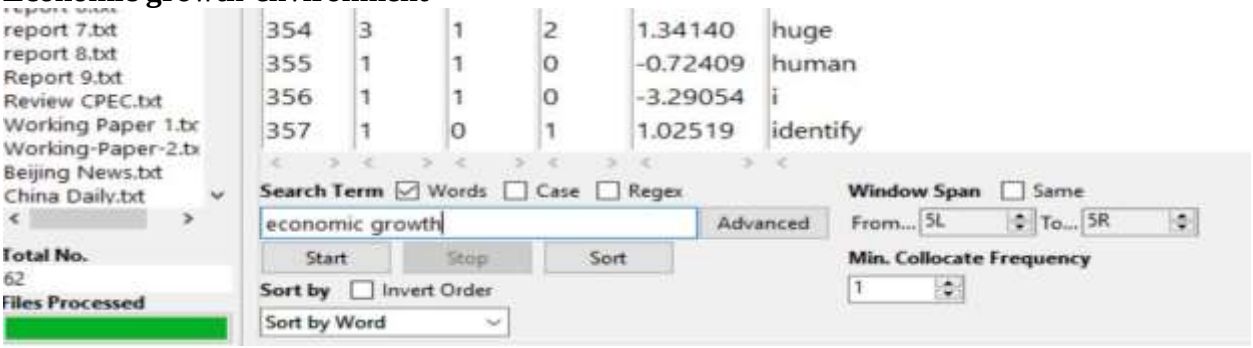
Industry-environment



Infrastructure-environment

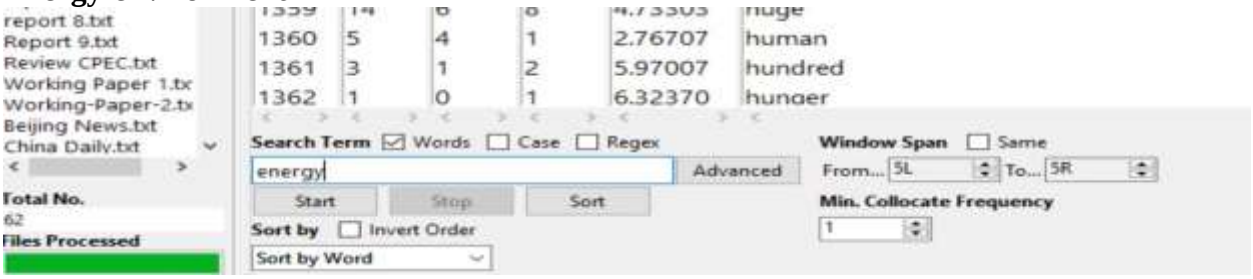
Infrastructure-human

Economic growth-environment



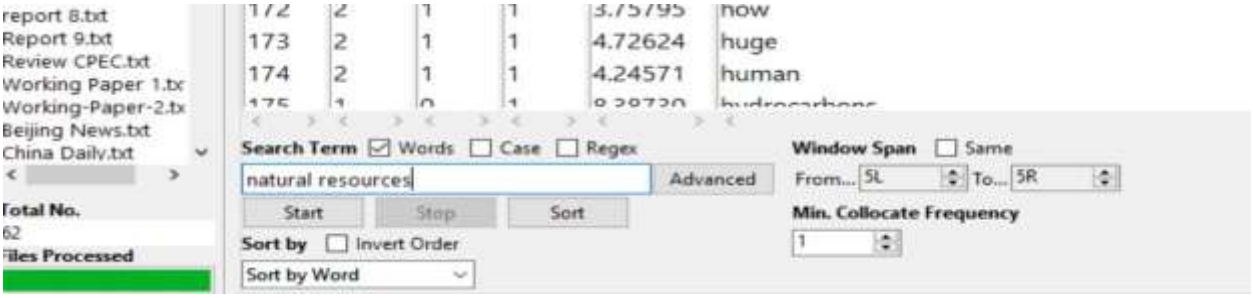
Economic growth-human

Energy-environment



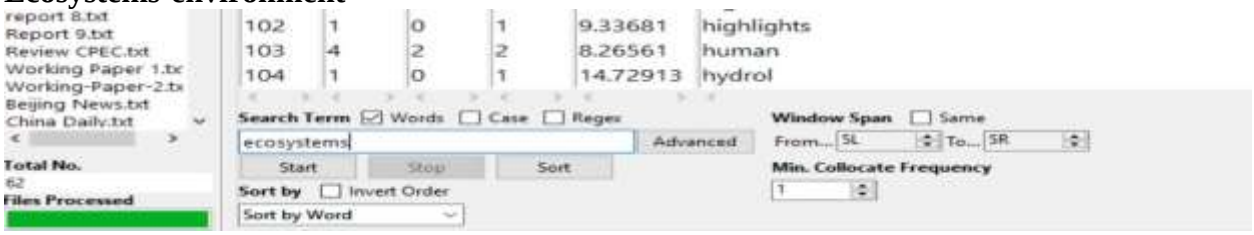
Energy-human

Natural resources-environment



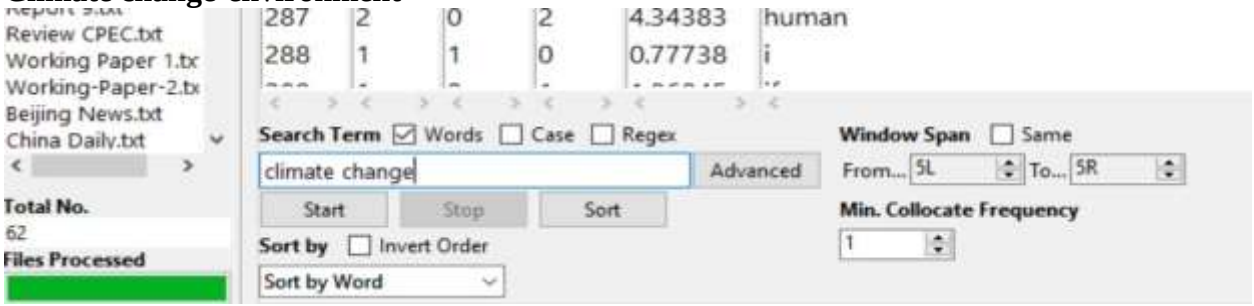
Natural resources-human

Ecosystems-environment



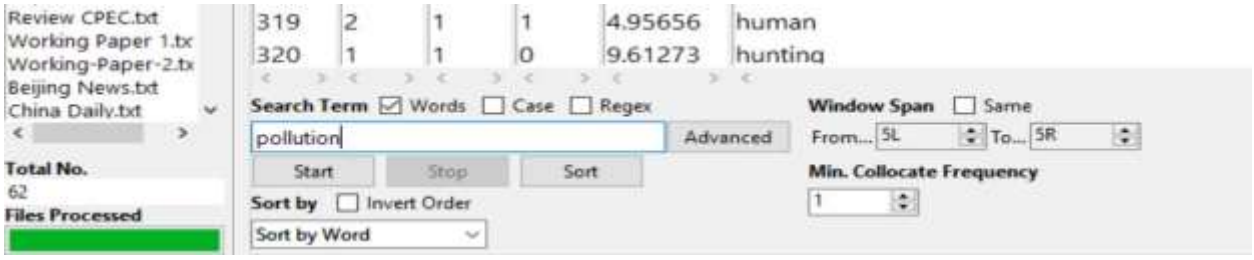
Ecosystems-human

Climate change-environment

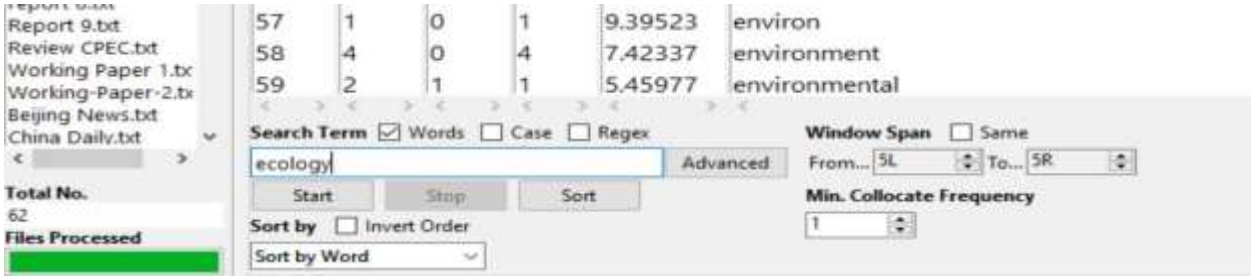


Climate change-human

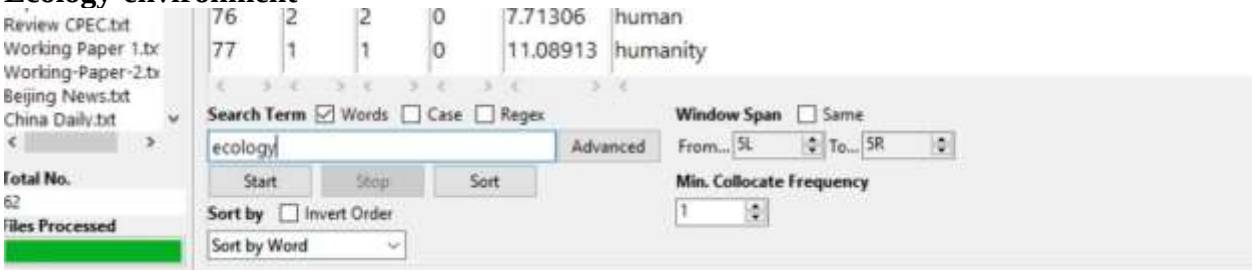
Pollution-environment



Pollution-human



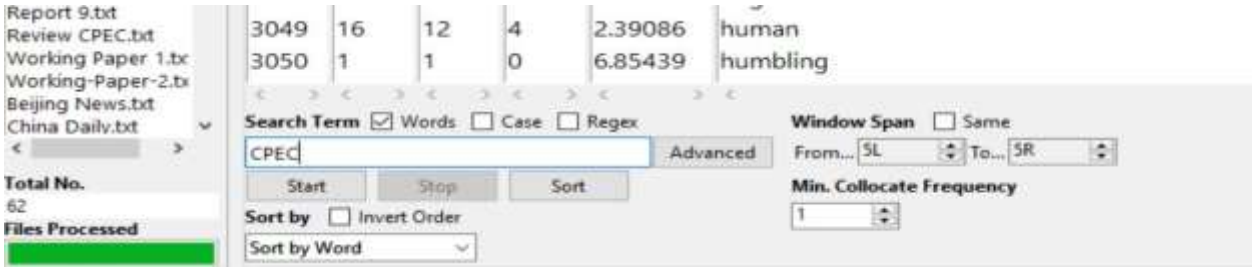
Ecology-environment



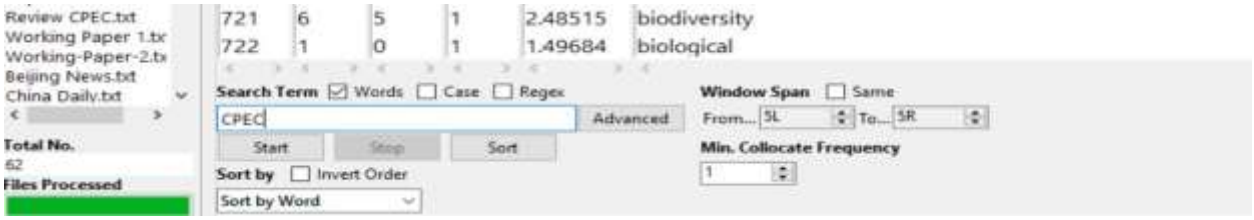
Ecology-human

Table 4.28 Significant Collocates Showing Association of Eco-Environmental Areas with the Word CPEC

CPEC-environment



CPEC-human



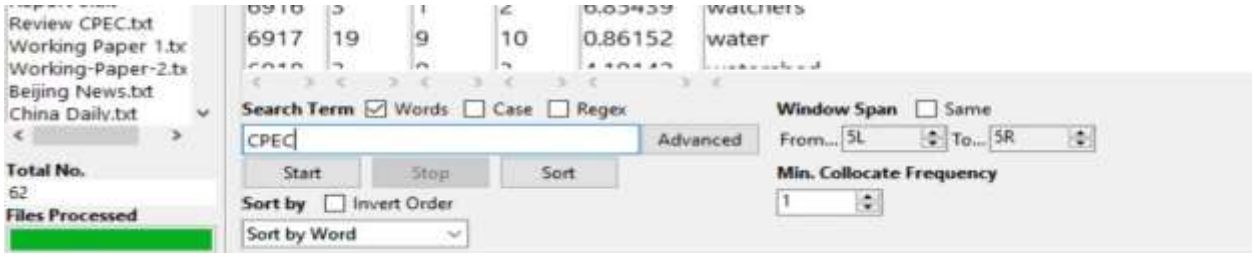
CPEC-biodiversity

CPEC-ecosystems

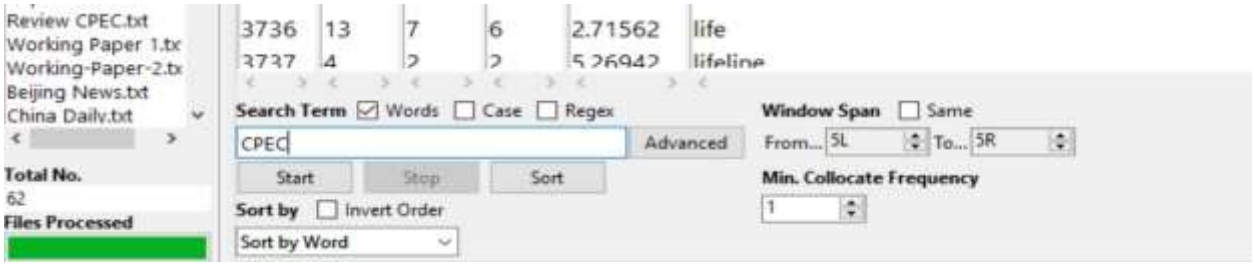
CPEC-pollution

CPEC-habitat

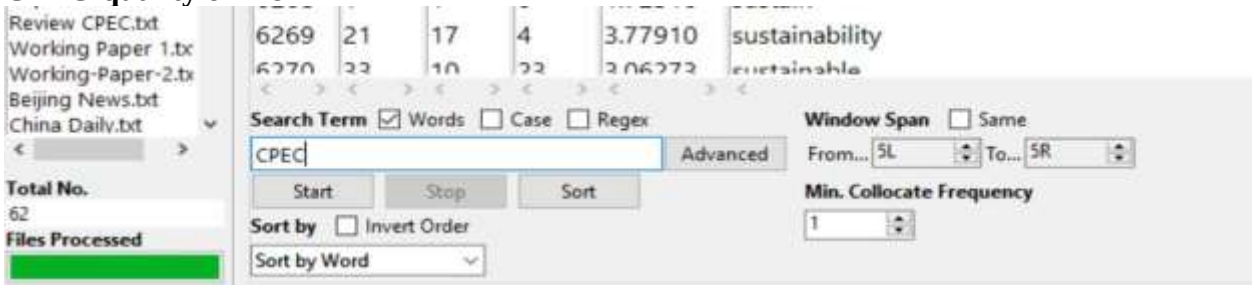
CPEC-natural



CPEC-water



CPEC-quality of life



CPEC-sustainability

CPEC-waste

CPEC-environmental degradation

Appendices 2

Sources of Data with Annotations

Official data Sources: collected from website http://cpec.gov.pk/

1. CPEC LTP: China-Pakistan Economic Corridor Long-Term Plan
2. R1: Report 1
3. R2: Report 2
4. R3: Report 3
5. R4: Report 4
6. CPEC FB: CPEC Fact Book
7. MG1: Magazine 1
8. MG2: Magazine 2
9. MG3: Magazine 3
10. EIA 1: Environmental Impact Assessment 1
11. EIA 2: Environmental Impact Assessment 2
12. EIA 3: Environmental Impact Assessment 3
13. EIA 4: Environmental Impact Assessment 4
14. CPEC AP: CPEC Appraisal
15. PB1: Policy Brief 1
16. PB2: Policy Brief 2

Unofficial Data Sources:

1. Newspapers

i) Pakistani English Newspapers

a) The Dawn News (TDN) https://epaper.dawn.com/

b) The News (TN) https://e.thenews.com.pk/

c) The Express Tribune (TET) https://tribune.com.pk/epaper/

ii) Chinese English Newspapers

a) The China Daily (TCD) https://www.chinadaily.com.cn/

b) The Beijing News (TBN) http://www.bjnews.com.cn/

c) The Xinhua (TX) http://www.xinhuanet.com/english/

iii) Student Research Papers on CPEC from Environmental Perspective (taken from Internet (google.com).

a) RP1: Research Paper 1
b) RP2: Research Paper 2
c) RP3: Research Paper 3
d) RP4: Research Paper 4
e) RP5: Research Paper 5
f) RP6: Research Paper 6
g) RP7: Research Paper 7
h) RP8: Research Paper 8 up to
i) Research Paper 24