

THE SEMANTIC PROSODY ANALYSIS OF 'INCREASE' IN COVID-19: A CORPUS-BASED STUDY

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ABSTRACT

Increase is a neutral word that is generally perceived as a positive word, were synonymous with positive words such as rise, grow, expand. However, when resorting to dictionary definitions, increase has been found to possess negative words such as 'increase the violence'. This study investigates how 'increase', generally often categorized with positive words, interacts with neighboring words to achieve particular meanings and how particular forms of several words can change a word to negative, positive and neutral connotation. This study is analyzed on a descriptive qualitative research design because corpus linguistic research needs to be interpreted more with qualitative considerations. The data are collected using a corpus-based approach, Covid-19 corpora, and the data analysis using semantic prosody based on Stubbs,s (2001) theory. The result of the data showed that word increase in Covid-19 corpora have negative meaning if it is collocated with several word such as risk, rate, levels, number, significantly and associated and followed by negative word but it will have positive meaning if it is located with word expression.

1. INTRODUCTION

Increase is a neutral word which generally perceived as a positive word. According to *Collins English Online Dictionary*, *Longman Online Dictionary*, *Word Reference Online Dictionary*, *word Net online dictionary*, and *LEXICO online dictionary* (2020) defined this word "to become or to make greater in size, amount, or degree. Word "greater" caused good meaning if it is collocated with a positive word, for example *increase his productivity*, but it will have a different case if it collocates with a negative word such as *increase of violence*. It is not only shown in the definition but also in the thesaurus. This word is usually synonymous with *rise*, *grow*, *expand*, etc. All of those words can be categorized as words that have a positive meaning.

Then what if the word "increase" is synonymous with *escalate* such as *escalate in crimes*, it will cause a negative meaning. In this case, the collocate of a node word is very important, it will cause the semantic meaning changes in sentences, especially in positive and negative in semantic prosody. Related to this issue, the author interested to know what will happen to the meaning of this word if it is located in Covid-19 data, whether this word still had positive meaning or negative meaning. As all people in the word know that nowadays people are scared by the existence of this virus. Based on this situation, there are so many researcher try to analyses Covid-19 in different way, but almost all of them only focused in health perspective and only a few of experts do that analysis in linguistic perspective.

There have been some of previous studies from experts attempted to discuss about the neutral word in collocation and semantic prosody in corpus linguistics. One of them is conducted



by Lin & Chung, (2016). They analyzed about how a negative word *challenge* generally perceived as negative word interacts with neighboring words to achieve particular meaning. The result of their study stated that in addition to the unpleasant prosody described the intensity of difficulty or caused and met trouble like *in pose a huge challenge* sentence, challenge also expressed positive prosody like in *bring an exciting challenge* sentence.

This study aims to investigate how ‘*increase*’, generally often categorized with positive words, interacts with neighboring words to achieve particular meanings and how particular forms of several words can change a word to negative, positive, and neutral connotation. The semantic prosody of ‘*increase*’ as a verb was investigated by analyzing data from COVID-19 corpus in Sketch Engine, a web-based corpus. This research analyzing the used theory of Stubbs (2001) proposes that some words have predominantly negative prosody, a few have positive prosody, and many more words are neutral or mixed in this respect. If the collocates that a node word attracts are mostly of strong negative semantic characteristics, the node word bears a strong negative semantic prosody. If the collocates are mainly positive words, then the node word is endowed with positive semantic prosody. If both positive and negative collocates exist in the context, the node word can be said to bears a neutral or mixed semantic prosody.

2. LITERATURE REVIEW

2.1 Collocation in Corpus Linguistic

Collocation is one of the most extensively used methods in corpus linguistics, and this approach has been studied for at least five decades which introduced by Firth (1961), when he said that ‘I propose to bring forward as a technical term, meaning by collocation, and apply the test of collocability’ (Firth, 1961). Firth’s notion of collocation is mostly quantitative because he used this approach in statistic analysis. But according to (Halliday et al. (2004), ‘true collocation can be shown to be not only statistically but also semantically relevant’.

Stubbs (2002) observes that ‘there are always semantic relations between node and collocates, and among the collocates themselves’. The meaning of collocational arising from the interaction between a given node and its typical collocates might be referred to as semantic prosody, ‘a form of meaning which is established through the proximity of a consistent series of collocates’ (Bill, 2000).

2.2 Semantic Prosody

Semantic prosody was first introduced to the public by Bill Louw, (1993), It was coined by Sinclair, (1987), who borrowed the notion of phonological Prosody from Firth (1961), it also called as pragmatic Prosody by (Stubbs (2001), semantic associations by (Hoey (2003) & Nelson (2006), and termed as discourse prosody by Jones & Waller (2015).

Louw (1993) defined semantic prosody as “the consistent aura of meaning with which a lexical item is imbued by its collocates”. He said that semantic prosody cannot be retrieved reliably through introspection, and consciously upsetting a word’s semantic prosody can achieve an ironic effect. Bill (2000) further claimed that negative semantic prosodies were much more



frequent, with relatively few of them bearing an affectively positive meaning. However, a speaker/writer can also violate a semantic prosody condition to achieve some effect in the hearer/reader, for example irony, insincerity, or humor can be explained by identifying violations of semantic Prosody Louw (1993).

Another researcher, such as Partington (1998) defined semantic prosody as “the spreading of connotational coloring beyond single word boundaries”. In this definition, semantic prosody is more strongly associated with connotation. Stubbs (2002) and Hunston (2002) expanded the notion of semantic prosody by suggesting that in addition to collocating with positive or negative groupings of words, lexical items can also collocate with semantic sets. According to Hunston (2002), "A word may be said to have particular semantic prosody if it can be shown to co-occur typically with other words that belong to a particular semantic set". In addition, semantic prosody is not only one word; semantic prosody can be two words or phrases, as Schmitt & Carter (2004). Both individual words and phrases can have semantic prosodies. The table below shows the example data from some of the researchers.

Table 1. The example of semantic prosody

Researcher	Negative Prosody	Positive Prosody
Sinclair (1991)	BREAK out HAPPEN SET in	
Louw (1993, 2000)	bent on build up of END up verb- <i>ing</i> GET oneself verb- <i>ed</i> a recipe for	BUILD up a
Stubbs (1995, 1996, 2001a, 2001b)	ACCOST CAUSE FAN the flame signs of underage teenager(s)	PROVIDE career
Partington (1998)	COMMIT PEDDLE/peddler dealings	
Hunston (2002) Schmitt and Carter (2004)	SIT through bordering on	

3. METHODOLOGY

Since the aim of this study to investigate the collocate *increase* as a verb through COVID-19 corpora. This study is analyzed based on a descriptive-qualitative research design. Kwary & Arum (2011) stated that corpus linguistic research needs to be interpreted more with qualitative considerations.



The object of this study is all content word of the article in COVID-19 corpora which is collocated with word *increase*. According to BBC (2020) content word are words that have meaning such as *risk, significantly, levels, expression, number, associated, rate, & production*. All data are collected by using a corpus-based approach. COVID-19 corpora by using Sketch Engine tools it can be visited at <https://www.sketchengine.eu/> for searching the most collocates word *increase* which will appear on COVID-19 and classified by using into some dictionaries such as *Longman Online Dictionary* into a group of function word and find the meaning.

There are several procedures to collect the data completely. For the first step, the author tries to found the word which frequently collocates with a node *increase* as a verb in COVID-19 corpora by using Sketch Engine, one of the corpus query tools. It was found 248.288 words collocate with *increase*. After that, the researcher selects top 10 words which most frequently collocate with a node *increase*, grouping and classifying into word that includes as the content of word (*risk, significantly, levels, expression, number, associated, rate, & production*) and ignoring word that includes as a function of a word (*an, & with*) since this study is about semantic prosody. Finally, the researcher chose 8 words collocates with a node *increase* to be analyzed.

The next part will deal with the procedure for identifying the semantic prosody of *increase* based on Stubbs (2001) theory, how *increase* collocates with other words and changes the word and the meaning of the word, from neutral word to a positive or negative word.

4. RESULT AND DISCUSSION

4.1. The collocation of *Increase* in Covid-19 Corpora

In this research, *increase* was chosen to be the node word to analyze, the span was -5+5. The observed frequency of *increase* in Covid-19 corpus was 248.288 words that are categorized as content words (nouns, verbs, adjectives & adverbs) and function words (aux verbs, prepositions, articles, conjunctions, and pronouns). All the words within the span were called collocation. The result on this corpus, point out *increase* mainly collocates with quantity words such as *number, levels, rate* and so on but in some case, it collocates with a quality word such as *expression, concentration, sensitivity*, etc. After that the researcher chose the top 10 words collocates with *increase* to be analyzed that is *a risk, significantly, levels, expression, number, associated, an, rate, production, and with*.

Table 2. Collocates of *increase* in Covid-19 Corpus

Collocate	Freq	coll.freq	T-score	MI	log.Dice
Risk	14372	138014	118.86553	6.8801	10.2519
Significantly	11191	113228	104.84129	6.80476	9.98667
Levels	10363	165666	100.36013	6.14482	9.68032
Expression	10559	232371	100.75783	5.6837	9.49177
Number	8655	214189	90.99689	5.51438	9.26055
Associated	8040	182426	87.86744	5.63961	9.25688
An	18187	732161	130.05961	4.8124	9.24765



Rate	5150	118594	70.30255	5.61827	8.84571
Production	4881	106055	68.52215	5.70209	8.8185
With	36523	2412053	179.95206	4.09827	8.81338

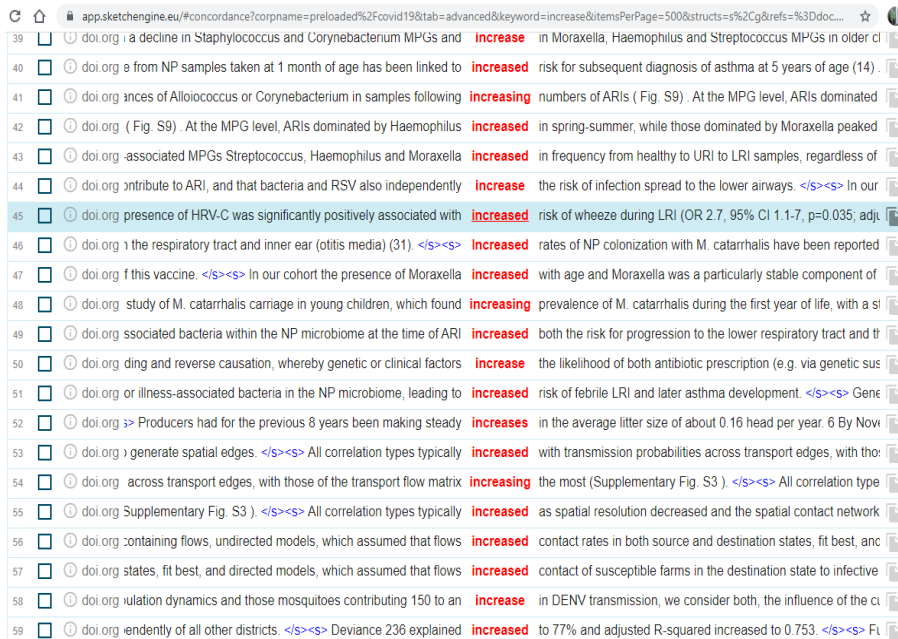
Since this study aims to analyze semantic prosody where talked about meaning, then the researcher determines to classify word that included as the content of word (*risk, significantly, levels, expression, number, associated, rate, & production*) to analyze and as the limitation of this research, because according to BBC (2020) content word are words that have meaning. It will help the researcher to see sense and the meaning of the word itself during analyzing proses.

Table 3. Collocates of *increase* in Covid-19 Corpus in contents word

Collocate	Freq	coll.freq	T-score	MI	log.Dice
Risk	14372	138014	118.86553	6.8801	10.2519
Significantly	11191	113228	104.84129	6.80476	9.98667
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The data in table 3 above clearly showed that among all the collocates of *increase*, the word *risk* enjoyed the highest value. The total frequency of word *risk* was 14372. From all the hits, it shown that mostly a node *increase* appeared with word *risk*, so the typically collocation was *increase/increasing/increased risk* or *increase the risk*. After that, word *significantly* take at the second place with total frequency was 11191, followed by word *expression* with total frequency was 10559 at the third place, then at the fourth place taken by word *levels* with total frequency was 10363, followed by word *numbers* was 8655, *associated* was 8040, *rate* was 5150, and the last place taken place by word *production* with total frequency was 4881. The concordance below if the result of the collocate of a node *increase* in Sketch Engine tools.





39	doi.org	a decline in Staphylococcus and Corynebacterium MPGs and	increased	risk for subsequent diagnosis of asthma at 5 years of age (14).
40	doi.org	amples taken at 1 month of age has been linked to	increased	risk for subsequent diagnosis of asthma at 5 years of age (14).
41	doi.org	ances of Alloiooccus or Corynebacterium in samples following	increasing	numbers of ARIs (Fig. S9). At the MPG level, ARIs dominated
42	doi.org	(Fig. S9). At the MPG level, ARIs dominated by Haemophilus	increased	in spring-summer, while those dominated by Moraxella peaked
43	doi.org	-associated MPGs Streptococcus, Haemophilus and Moraxella	increased	in frequency from healthy to URI to LRI samples, regardless of
44	doi.org	tribute to ARI, and that bacteria and RSV also independently	increase	the risk of infection spread to the lower airways. </s><s> In our
45	doi.org	presence of HRV-C was significantly positively associated with	increased	risk of wheeze during LRI (OR 2.7, 95% CI 1.1-7, p=0.035; adj
46	doi.org	itory tract and inner ear (otitis media) (31). </s><s>	increased	rates of NP colonization with M. catarrhalis have been reported
47	doi.org	of this vaccine. </s><s> In our cohort the presence of Moraxella	increased	with age and Moraxella was a particularly stable component of
48	doi.org	study of M. catarrhalis carriage in young children, which found	increasing	prevalence of M. catarrhalis during the first year of life, with a si
49	doi.org	ssociated bacteria within the NP microbiome at the time of ARI	increased	both the risk for progression to the lower respiratory tract and th
50	doi.org	ding and reverse causation, whereby genetic or clinical factors	increase	the likelihood of both antibiotic prescription (e.g. via genetic sus
51	doi.org	or illness-associated bacteria in the NP microbiome, leading to	increased	risk of febrile LRI and later asthma development. </s><s> Gene
52	doi.org	> Producers had for the previous 8 years been making steady	increases	in the average litter size of about 0.16 head per year. 6 By Nov
53	doi.org	generate spatial edges. </s><s> All correlation types typically	increased	with transmission probabilities across transport edges, with tho
54	doi.org	across transport edges, with those of the transport flow matrix	increasing	the most (Supplementary Fig. S3). </s><s> All correlation type
55	doi.org	Supplementary Fig. S3). </s><s> All correlation types typically	increased	as spatial resolution decreased and the spatial contact network
56	doi.org	containing flows, undirected models, which assumed that flows	increased	contact rates in both source and destination states, fit best, anc
57	doi.org	states, fit best, and directed models, which assumed that flows	increased	contact of susceptible farms in the destination state to infective
58	doi.org	ulation dynamics and those mosquitoes contributing 150 to an	increase	in DENV transmission, we consider both, the influence of the ci
59	doi.org	ependently of all other districts. </s><s> Deviance 236 explained	increased	to 77% and adjusted R-squared increased to 0.753. </s><s> Ft

Figure 1. Concordance of *increase* and *risk*

4.2. Semantic prosody of increase in Covid-19

The result from the data showed that a node *increase* that is generally perceived as positive word turns into negative words due to the negative collocation of that word. Evidence from the Covid-19 corpus showed that the word *increase* may have negative semantics prosody and that this has a significant influence upon its collocational behavior. The table below showed the evidence of alteration in semantic prosody from neutral to negative, a node *increase* collocate with word *risk*.

doi.org	amples taken at 1 month of age has been linked to	increased	risk for subsequent diagnosis of asthma at 5 years
doi.org	ARI, and that bacteria and RSV also independently	increase	the risk of infection spread to the lower airways. <
doi.org	IRV-C was significantly positively associated with	increased	risk of wheeze during LRI (OR 2.7, 95% CI 1.1-7, p
doi.org	itory tract and inner ear (otitis media) (31). </s><s>	increased	rates of NP colonization with M. catarrhalis have b
doi.org	e. </s><s> In our cohort the presence of Moraxella	increased	with age and Moraxella was a particularly stable c
doi.org	acteria within the NP microbiome at the time of ARI	increased	both the risk for progression to the lower respirato
doi.org	-sociated bacteria in the NP microbiome, leading to	increased	risk of febrile LRI and later asthma development. ·

Figure 2. Concordance of a node *increase* with *risk*

The picture above showed that all of a node *increase* collocates with *risk* always have a negative meaning. According to *Longman Online Dictionary Online* (2020), word *risk* means ‘the possibility that something bad, unpleasant, or dangerous may happen’. Such as data showed in the sentence ‘The relative risk by time increased steadily from January 20’ and ‘An increasing number



of novel coronavirus disease cases'. Both of the sentences above showed that word *increase* has negative meaning caused the collocate of negative word *risk*.

doi.org	on and one corresponding unit to 134 estimate the	increased	number of cases caused by one-day and two-day
doi.org	ited two days earlier, and the	number	of cases will increase by 1462 with the 285 lockdown implemented two c
doi.org	, 2020). Initially, (Figure 1), the	number	of cases increased exponentially. </s><s> This feature was also clear
doi.org	s> Since then the	number	of confirmed cases has increased drastically. </s><s> Model estimates suggested th
doi.org	; depend on those parameters, and how the	risk	is increasing in time as the number of cases in China is growing

Figure 3. Concordance of *increase* collocates with *the number*

As shown in figure 3 above. It is one of some evidence of semantic prosody of a node *increase* that collocates with word *number* and, followed by negative words such as *case*, word case in this corpus refer to the coronavirus case. In this phenomenon, the word *increase* is generally mentioned as positive word turn into a negative word which has negative meaning caused the behavior of that word. The data above showed that *increase* which collocates with *number* and stays in negative word behavior will have a negative meaning. For example:

- a. *In December of 2019, the increasing number of patients with pneumonia,*
- b. *Since December 2019, an increasing number of atypical pneumonia cases,*
- c. *The number of cases has increased rapidly but laboratory diagnosis is limited.*

All of the data above showed in Covid-19 corpora, the three of those sentences have a negative meaning caused as the behavior of negative words or the collocates with negative meaning. In *Longman Dictionary Online* (2020) word patients defined as ‘someone who is receiving medical treatment from a doctor or in a hospital’, the word explained the people ill.

doi.org	lassifier. </s><s> We started from one feature and	increased	the number of features in the clinical route, until th
doi.org	r; aminotransferase levels started to decrease but	increased	again five days after starting remdesivir. </s><s> L
doi.org	contacts increase, the	number	of infections would increase . </s><s> Realistically, interventions are lifted slow
doi.org	, myocardial damage indicators were	significantly	increased . </s><s> It also indicated that there was a high pr
doi.org	they were admitted to the hospital, and it gradually	increased	with the disease progressed and was up to 26.21f
doi.org	, fever symptoms (HR 0.24; 95% CI 0.09-0.60) and	increased	IL-6 levels (> 2.9 pg/ml) on admission (HR 0.31; 9
doi.org	ged. </s><s> Lactate dehydrogenase levels were	increased	in 31 patients. </s><s> Seven patients progressed

Figure 4. Concordance of *increase* collocate with word *levels*

The data above pointed out that word *levels* collocated with *increase* and followed by a negative word such as *patient* will have a negative meaning in this corpus. It was the evidence of semantic prosody changed from neutral word become negative word caused by the collocate around that word. All of the data above showed that *increase* has negative meaning if it is word collocates with *risk*, *rate*, *levels*, and *numbers* in COVID-19.

On the other hand, in this corpus, a node *increase* has a positive meaning when it is collocated with word *expression*. Again, that case of semantic prosody caused by the collocates of a positive word. Here the picture below showed the evidence on Covid-19 corpora.

doi.org	</s><s> Natural Killer (NK) cells showed a slightly	increased	level 338 of IFITM3 expression in the lung compa
doi.org	sed to IFITM3 expression gradually reducing with	increased	362 differentiation, we saw a distinct pattern of IFIT
doi.org	56 </s><s> Suggesting that IFN stimulation cannot	increase	lymphoid cell expression to a 457 similar level as
doi.org	I stimulation (Figure 5e) . . NK and B 462 cells also	increased	expression of IFITM3 modestly following type I FI

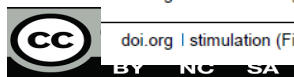


Figure 5. Concordance of increase collocates with expression

All of the data above showed that word *increase* in Covid-19 corpora have negative meaning if it is collocated with several words such as *risk*, *rate*, *levels*, *number*, *significantly* and *associated* but have positive meaning if it is located with word *expression*. For example, in this case, for the collocates word *number*, we have to look at the word that can effect this word: *In December of 2019, the increasing number of patients with pneumonia*. A node *increase* collocated with word *number* that refers to the *patient*, and according to the *Longman English Dictionary* *patient* is a negative word. As like Stubbs (2001) stated that some words have predominantly negative prosody, a few have positive prosody, and many more words are neutral or mixed in this respect. If the collocates that a node word attracts are mostly of strong negative semantic characteristics, the node word bears a strong negative semantic prosody. If the collocates are mainly positive words, then the node word is endowed with positive semantic prosody. If both positive and negative collocates exist in the context, the node word can be said to bears a neutral or mixed semantic prosody. Regarding what stubs stated about semantic prosody, the researcher is interested in finding how word *increase* with positive meaning can turn into a negative word.

The researcher found that the semantic prosody of word *increase* in this study is evidence of Stubbs (2001) stated that semantic prosody in the corpus-based analysis.

5. CONCLUSION

The aim of this study is to investigate how '*increase*', generally often categorized as positive words, interacts with neighboring words to achieve particular meanings and how particular forms of several words can change the word to negative, positive and neutral connotation.

The result of data showed that word *increase* in Covid-19 corpora have negative meaning if it is collocated with several words such as *risk*, *rate*, *levels*, *number*, *significantly* and *associated* but have positive meaning if it is located with word *expression*. Finally, at this conclusion, the advantages of doing this study are to improve the knowledge in the corpus linguistic field, especially about collocation and semantic prosody and hope that the result of this study may be beneficial to other researcher and it can be a reference and give a contribution in this study. Hoping in the future, there will be more researchers in this interesting and important field focused on the different approaches, and the researchers can do more research related to this issue.



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