

## Modal Auxiliary Verbs in *The Jakarta Post* Op-Ed Articles by Indonesian and Non-Indonesian Writers

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### ABSTRACT

This study was aimed at finding the meaning, similarities, and differences of the use of modal auxiliary verbs in editorial articles from an Indonesian newspaper, *The Jakarta Post*, regarding the writers' various linguistic backgrounds. The data were collected from 20 editorial articles written by Indonesian and non-Indonesian writers using corpus linguistics software #Lancsbox v. 6.0, which found 286 instances of eight modal auxiliary verbs. The most commonly employed modal auxiliary verbs by both Indonesian and non-Indonesian writers are *can*, *will*, *should*, *may*, *would*, *could*, *must*, and *might* respectively. To find the meaning of the modal auxiliary verbs, Biber et al.'s (1999) classification of deontic and epistemic meanings was used. The results of this study show that Indonesian and non-Indonesian writers used modal auxiliary verbs significantly differently, suggesting that linguistic and cultural background might affect the use of modal auxiliary verbs, especially in newspaper editorial articles. Furthermore, the results also show that both groups of writers used more modal auxiliary verbs with epistemic meaning rather than with deontic meaning, indicating their commitment to the truth of their argument.

**Keywords:** *corpus linguistics, deontic, epistemic, modal auxiliary verbs, semantics.*

### INTRODUCTION

Op-eds, or editorial articles in general, have noticeable patterns, characteristics, and stylistics (Bloomer et al., 2006). They deliver opinions on various topics to "state a position on the basis of facts presented in their selected context" (Le, 2010, p. 181) and written by the contributors outside of the editorial board (Goldman & Schmalz, 2000). Such texts can be identified through their linguistic features (Biber et al., 2006) including, but not limited to, verb choices, modal verbs, and conditionals (Biber & Conrad, 2019). The writer's linguistic background also influences how they express their arguments.

For example, editorial articles that are written in English from two different media employ different modal verb distributions because the first media is filled by native English speakers and the other one is not (Ali et al., 2020).

Numerous studies have been conducted on the English modal auxiliaries including the use of modal auxiliaries as one of the stance markers in Pakistani newspaper editorials (Ahmad et al., 2020), their semantic meaning (e.g., Coates, 1983; Kreidler, 1998; Downing & Locke, 2000; Palmer, 2001; Huddleston & Pullum, 2002) the semantic and pragmatic acquisition on children aged four to five-year-olds (Ozturk & Papafragou, 2015), the meaning employed

in learners' corpus such as the semantic meaning acquired by English-as-a-foreign-language (EFL) learners (Torabiardakani et al., 2015), variation of the use of modal verbs in the BNC according to the pattern (Kennedy, 2002), and the comparison of the pattern distribution between textbook for English-as-a-foreign-language (EFL) learner corpus and the native-speaker corpus sourced from the BNC2014 corpus or the British National Corpus 2014 (Li, 2022).

However, there has been limited research concerning the meaning of the modal auxiliary in English editorial texts written by two groups of speakers, specifically Indonesian and non-Indonesian writers. Some preexisting research on modal auxiliaries in editorial texts focused on their use to manipulate readers (Sadia & Ghani, 2018), as a linguistic device to express modality in the political text (Lillian, 2008), or to comment on a certain topic in the readers' forum Text Your Say in *The Jakarta Post* (Widyanti & Yulia, 2013). This research has been done to identify the semantic meaning and analyze the similarities and differences of the modal auxiliary in *The Jakarta Post* op-ed articles by Indonesian and non-Indonesian writers in expressing their arguments and the use of modal auxiliary verbs concerning their linguistics background.

## LITERATURE REVIEW

Numerous attempts have been made to investigate modal auxiliary verbs in English. Some have examined the variations of the modal verbs, such as in two different mass media with the same language (e.g., Bonyadi, 2011; Ali et al., 2020), in research articles (e.g., Piqué-Angordans et al., 2002; Orta, 2010; Hardjanto, 2016), the epistemic modality in research articles (e.g., Yang et al., 2015), in a novel (e.g., Jeyanthi et al., 2018), and in spoken discourse such as political speech (e.g., Vukovic, 2014; Hardjanto & Mazia, 2019).

The use of modal verbs from two different media with different linguistic backgrounds of the writers showed the likeliness of something happening in the future. Predictive modal verbs like will and would were used and it is higher in the English-speaking country's mass media than the

media from a non-English one (Bonyadi, 2011; Ali et al., 2020).

The hypothesis that there are possibilities in the way modal verbs are used in research articles (RA) depending on the field of the study has proven to be partially true (Piqué-Angordans et al., 2002). Using a corpus-based approach to three corpora in the medical, biological, and literary criticism fields, this study found that medical and biological RAs use more epistemic modal verbs over the deontic one (Piqué-Angordans et al., 2002). This is similar to another corpus-based research on English and Spanish business management RAs (Orta, 2010), where there was a difference between English RAs written by native English and Spanish speakers. Spanish speakers' writings showed an atypical use of hedges and boosters due to misplacing the modal verbs can and may (Orta, 2010). Further, the use of modal auxiliary verbs as hedging devices in English RAs of different disciplines such as economics, linguistics, medicine, natural sciences, and engineering revealed that linguistics and economics RAs use more modal auxiliary verbs than those of natural sciences and engineering but did not show a notable difference in medicine (Hardjanto, 2016).

Yang et al. (2015) did a non-comparative study on modal verbs. They examined the usage and categorization of epistemic modalities in English medical RAs. This corpus-based study compiled 25 English RAs written by English native speakers and later dissected the RAs into four sections: Introduction, Method, Result, and Discussion. Based on the distribution of the epistemic modality, the author concluded that medical RA writers persuade their readers by avoiding subjective arguments.

The study of modality in literary works such as in a novel, *The Hunger Games*, was done by investigating modal verbs, which resulted in the epistemic modality being the most employed in the novel (Jeyanthi et al., 2018).

In political speeches, epistemic modality is used as a diplomatic move to be more polite and persuasive to the audience (Hardjanto & Mazia, 2019), which is mostly expressed by modal auxiliaries and lexical verbs. In a parliamentary setting, the use of strong epistemic modality using adverbs and adverb phrases, verbs, adjectives, and nouns as emphasisers revealed that adverbs employed the

most frequently used epistemic modality, followed by strong epistemic verbs (Vukovic, 2014).

However, previous studies have not specifically examined the epistemic and deontic meaning of modal auxiliary verbs in the op-eds in *The Jakarta Post*, relating to the writers' linguistic backgrounds. The present study attempts to fill this gap. Specifically, it examines the use of the modal auxiliary verbs in *The Jakarta Post* op-ed articles written by Indonesian and non-Indonesian writers in expressing their arguments. Furthermore, it also addresses the question whether linguistic and cultural backgrounds affect the use of these modal auxiliary verbs.

## THEORETICAL FRAMEWORK

### Mood and Modality

Mood is a grammatical category that expresses the speaker's attitude toward the activity or state that is being expressed by a verb (Huddleston & Pullum, 2002). The term "mood" most often refers to how a verb changes form. The moods are indicative, which is used to make a statement (e.g., He is cooking), subjunctive, which is used to express a hypothetical situation (e.g., *If I were you, I would cook the chicken*), and imperative, which is used to give a command (e.g., *Cook the chicken*).

Modality is a wider concept that primarily deals with the speaker's perception of the factuality of the events (Huddleston & Pullum, 2002). Due to the speaker's lack of commitment, it serves to somewhat modify the statements and allows a speaker to give a comment and assess the factuality of events or intervene the events. (Downing & Locke, 2006). It is linked to the speaker's assessment of the likelihood, necessity, obligation, permission, or ability of an action or event. It can be expressed in a variety of ways, such as lexical modals, past tense and other verb inflection, clause types, subordination, and parentheticals (Huddleston & Pullum, 2002).

### Modal Meanings

The semantic meaning of modal verbs refers to a basic characteristic embedded linguistically such as

grammatical categories and that remains constant throughout the language use (Klinge, 1993). While the pragmatic meaning is the meaning based on the context.

There are many classifications of semantic meaning of modal verbs, such as epistemic, deontic, and dynamic modality (Huddleston & Pullum, 2002), epistemic and deontic modality (Kreidler, 1998), and intrinsic or deontic and epistemic or extrinsic modality (Biber et al., 1999).

Deontic modality comes from some type of outside authority, including rules or the law, or "deontic source" (Huddleston & Pullum, 2002, p. 178). Often, the authority is the speaker itself, who grants permission to, or lays obligations on the addressee (Palmer, 2001) as a direct control (Biber et al., 1999).

Epistemic modality relates to the speaker's view on the factuality of past or current events (Huddleston & Pullum, 2002), is typically related to the assessment of likelihood (Biber et al., 1999), and is not centered on the subject (Kreidler, 1998). Therefore, the judgments are rooted in empirical evidence. This study adopted the deontic and epistemic meanings proposed by Biber et al. (1999).

### Modal Auxiliary Verbs

Biber et al. (1999) and Quirk et al. (1985) classify the modal auxiliaries to convey the modality of English discourse, including the central modal can, could, may, might, shall, should, will, would, and must. Other modal auxiliaries have meanings that are similar to modal verbs but may have a different connotation or be employed in other circumstances (Biber et al., 1999). These modal auxiliaries are also referred to quasi-modals (Collins, 2009), semi-modals (Biber et al., 1999 & Quirk et al., 1985), or periphrastic modals (Biber et al., 1999).

Collins (2009) divides modal auxiliaries into modals must, shall, should, may, might, can, could, will, would, and ought to and quasi-modals such as need to, needn't, have to, used to, dare to, and dare not. Huddleston and Pullum (2002) group can, may, will, shall, must, ought, need, and dare under the modals category, using the same terminology as Collins (2009). Biber et al., (1999) and Quirk et al., (1985) classify semi-modals or marginal modal which

include had better, have to, have got to, be supposed to, and be going to while the rest such as dare, need, ought to, and used to are fallen into marginal auxiliary (Biber et al., 1999).

The central modal auxiliaries are in fixed form and serve as auxiliaries, come before the particle not in negation, are followed by a bare infinitive (Biber et al., 1999; Quirk et al., 1985), precede the subject in yes-no questions, cannot co-occur with other modal verbs except in some dialects (Biber et al., 1999), or undergo inversion between the subject noun phrase and the auxiliary, do not have -s form inflection for the third person singular subject (Quirk et al., 1985), do not have a nonfinite form (e. g. no form of to can, canning, canned), and have “abnormal time reference” as the use of the past form does not indicate past time but also can be used to indicate present or future time (Quirk et al., p. 137). Considering the characteristics outlined and the focus on the semantic meaning, the present study is only focused on the central modals to narrow the focus and more thorough analysis.

### Modal Auxiliary Verbs in Editorials

Although editorials have an abundance of newsworthy information, they are different from news articles in the way they “represent an individual’s opinion” (Le, 2010, p. 181) by providing a different viewpoint rather than straightforward reporting or giving facts (Fowler, 1991). The text should be new and presented at the right moment, significant, persuasive, “argued rather than asserted”, “normally seven hundred words”, and “double-spaced (Rosenfeld, 2000, p. 11). Given that op-eds or editorials in general carry persuasive arguments, Fowler (1991) noted that the tone of the author is typically emphasized more than in news articles, including the use of modality, emotive language, and general statements. The modal auxiliary verbs as modality are used to indicate writers’ attitudes toward their voice (Bolívar, 1994), steer readers toward a particular viewpoint (Sadia & Ghani, 2019), as personal judgments or stances (Ahmad et al., 2020).

## METHODS

### Description of the Corpus

The corpus for this research contains 20 English op-ed articles taken from the digital version of *The Jakarta Post* with a total of 18,863 tokens, within the period of June to August 2023 with only running texts included. Since the op-eds were published sporadically, only 20 articles were taken for easier management. The help of corpus tools in this study was to provide well-documented empirical data (McEnery & Wilson, 2001; Stefanowitsch, 2020) as the data is susceptible to updates, removals, or inaccessibility such as due to paywall during the research period.

The selection of the newspaper is because it is one of the major newspapers in Indonesia with wide topics coverage, written in English with a diverse and broad range of contributors, and although paid access, it is available in an online form for easier data retrieval.

To avoid the media’s bias, the corpus solely comprises op-eds that were not written by The Jakarta Post’s editorial board. The articles that were included in the corpus must have the writers information or institutional affiliations. To separate the editorials written by Indonesian writers from those written by non-Indonesian writers, the writers must strictly meet the following criteria: Indonesian writers must have Indonesian names and be affiliated to institutions, or residing, in Indonesia while non-Indonesian writers must have non-Indonesian names and be affiliated to institutions in Indonesia, or residing outside of Indonesia.

The identifications above were still limited to the information attached publicly to the publications. The involvement of the third party during the production and post-production processes of the articles such as proofreading and editing were not considered due to the lack of information. This may limit the results of this research. Table 1 below shows the number of words in the corpus.

Table 1. Number of words in the corpus

| Sub-corpus             | Number of words |
|------------------------|-----------------|
| Indonesian writers     | 9,960           |
| Non-Indonesian writers | 8,903           |
| <b>Total</b>           | <b>18,863</b>   |

All 20 op-eds were divided into two sub-corpora: 10 by Indonesian writers and 10 by non-Indonesian writers. Of the 10 op-ed articles written by non-Indonesian writers, four were written by writers from Australia, one article written by a writer from Belgium, one by writers from the U.S. and Denmark, one by a writer from the U.K., one from Ireland, one by writers from Denmark and Canada, and one by writers from Hongkong and Singapore.

### Data Collection

The data for this research are sentences that were retrieved from a self-made corpus of op-eds from The Jakarta Post. The KWIC (key word in context) concordance feature from #Lancsbox v. 6.0 corpus tool (Brezina, Weill-Tessier & Mc Enery, 2021) was used. It generates the occurrence list of the term, the frequency of words or phrases as well as their word classes, sorts, filters, and randomizes concordance lines, and presents an analytical comparison of two different corpora. Using the advanced searches provided in the KWIC tool, the code MD (modal) is inserted on the POS (part-of-speech) tagging column so that the result only shows the modal verb occurrences.

This process was followed by eliminating the modal need and adding not contraction. This second concordance was done by manually inserting each modal verb's not contraction. The elimination of need was because it is included in the #Lancsbox v. 6.0's modal category but does not fall into the nine central modal categories that were used in this research.

### Data Analysis

The first analysis was a qualitative analysis method based on the deontic and epistemic meanings of modal auxiliary verbs, which include *can*, *could*, *may*, *might*, *must*, *shall*, *should*, *will*, and *would*. The classification was based on Biber et al.'s (1999) as shown in Table 2 below.

The data were then manually coded based on their respective types (ID for the data written by Indonesian writers, NID for the data written by non-Indonesian writers, D for deontic and E for epistemic, PER for permission, OBL for obligation, VOL for volition, POSS for possibility, NEC for necessity, and PRED for prediction). Below is an example illustrating the coding system.

- (1) In such a way, citizens **must** verify content before sharing it to prevent the spread of disinformation. (ID02019D-OBL)

In the above example, the code ID stands for Indonesian, meaning that the sentence containing the modal auxiliary *must* was found in an editorial written by an Indonesian writer. The number 02 indicates the order of the editorial in the corpus; the number 019 refers to the data number 19, and the letter D stands for deontic. The three letters OBL that were separated by a hyphen indicate the main meaning of the modal verbs.

Table 2. Deontic/intrinsic and epistemic/extrinsic modality according to Biber et al. (1999)

| Parameters   | Deontic/<br>Intrinsic                              | Epistemic/<br>Extrinsic                     |
|--------------|--|---|
| Main meaning | permission,<br>obligation,<br>or volition          | possibility,<br>necessity, or<br>prediction |
| Subject      | not limited,<br>but usually<br>refers to<br>humans | usually refers to<br>non-humans             |
| Main verb    | dynamic verb                                       | stative verb                                |

The second analysis was comparing the use of modal auxiliary verbs employed in the op-ed articles. This step includes counting the occurrence of modal auxiliary verbs in both raw and relative frequency. The raw frequency or the exact word count of the modal auxiliary verbs was based on what is shown by the #Lancsbox v. 6.0 corpus tool. The next step was normalization per 10,000 words. It is needed to compare two or more corpora since the size of the two sub-corpora is not the same and to make it "easier for a reader to grasp than the absolute frequency" (Brezina, 2018, p. 43). The reason for the basis for normalization is the constant number 10,000 is because this number is the closest to the actual size of the corpus. It was obtained through the

statistical analysis done by the feature Words in the #Lancsbox v. 6.0 corpus tool (Brezina, Weill-Tessier, & McEnery, 2021).

A chi-square test was performed to test whether there was a significant association between the writers' different background and their modal auxiliary verb usage. The purpose of the test is to reject the null hypothesis ( $H_0$ ) that there was no significant association between the two variables and to use the alternative hypothesis ( $H_1$ ) where the variables are dependent. Below are the hypotheses of this study.

**$H_0$ :** The writers' background and the modal auxiliary verbs used are independent

**$H_1$ :** The writers' background and the modal auxiliary verbs used are dependent

The chi-square formula is written below.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

The chi-square ( $\chi^2$ ) is the sum of the squared difference between the observed frequencies ( $O_i$ ) and the expected frequencies ( $E_i$ ) divided by the expected frequencies ( $E_i$ ). If the result is equal to or greater than the critical value, then the null hypothesis is rejected hence we use the alternative hypothesis, indicating that the differences are not due to a chance but there is an association among the variables (Hatch & Lazaraton, 1991).

## RESULTS AND DISCUSSION

### Modal Auxiliary in The Jakarta Post Op-ed Articles

In a corpus of a total of 18,863 words, there are 286 occurrences of modal verbs, or 152 per 10,000 words employed in the editorial texts written by Indonesian and non-Indonesian writers. The modal verbs that are used as auxiliary verbs *can*, *could*, *may*, *might*, *must*, *should*, *will*, and *would* were found in the corpus. However, no instances of the use of modal verbs *shall* found in the corpus, which is similar to

previous studies regarding the use of modal auxiliary verbs (e.g., Widyanti & Yulia, 2013; Hardjanto, 2016). The instance of the modal auxiliary verb found in the op-ed articles is presented in Table 3 below.

This finding is slightly different from the results obtained from the study of modal auxiliary verbs in the readers' comment forum of the same newspaper, where *can* was used more frequently than *will* (Widyanti & Yulia, 2013). In another Indonesian newspaper, *Tempo*, the modal auxiliary verb *can* was the second least used verb in their editorials and *might* was the least frequent (Haq & Mahdi, 2020). In the study of *2016 Manifesto of the National Democratic Congress Party in Ghana*, a clear difference was shown as the modal *will* placed the most commonly employed modal verb with 542 occurrences out of a total of 566 modal verbs employed in the manifesto, followed by the other modal verbs with 10 or fewer occurrences (Aning, 2020).

Table 3. Modal auxiliary verbs found in the Op-eds

| Modal verbs | Total Freq. |         |
|-------------|-------------|---------|
|             | Raw         | Per10kW |
| Can         | 100         | 53.01   |
| Could       | 19          | 10.07   |
| May         | 23          | 12.19   |
| Might       | 6           | 3.18    |
| Must        | 18          | 9.54    |
| Should      | 37          | 19.62   |
| Will        | 62          | 32.87   |
| Would       | 21          | 11.13   |
| Total       | 286         | 151.62  |

Table 4 below shows the frequency of the Indonesian and non-Indonesian writers use modal verbs as auxiliaries in writing op-ed. Per 10,000 words, the most employed modal verb in this study is *can* with a total occurrence of 53, followed by *will* with a total occurrence of 33, then *should* with a total occurrence of 20, *may* with a total occurrence of 12, *would* with a total occurrence of 11, *could* with a total of 10, *must* with 10 occurrences, and the least employed is *might* with only a total of 4.

Table 4. Modal Auxiliary Verbs Used by Indonesian and Non-Indonesian Writers

| Modal verbs  | Indonesian Writers |              | Non-Indonesian Writers |              |
|--------------|--------------------|--------------|------------------------|--------------|
|              | Raw                | Per 10kW     | Raw                    | Per 10kW     |
| Can          | 54                 | 28.63        | 46                     | 24.39        |
| Could        | 8                  | 4.24         | 11                     | 5.83         |
| May          | 14                 | 7.42         | 9                      | 4.77         |
| Might        | 5                  | 2.65         | 1                      | 0.53         |
| Must         | 16                 | 8.48         | 2                      | 1.06         |
| Should       | 18                 | 9.54         | 19                     | 10.07        |
| Will         | 40                 | 21.21        | 22                     | 11.66        |
| Would        | 14                 | 7.42         | 7                      | 3.71         |
| <b>Total</b> | <b>169</b>         | <b>89.59</b> | <b>117</b>             | <b>62.03</b> |

### The Similarities and Differences of the Use of Modal Auxiliary Verbs with the Writers' Background

To find the significance in the use of modal auxiliary verbs by Indonesian and non-Indonesian writers in their op-ed articles, a chi-square test was performed using Minitab 18 (Minitab, 2017). The common p-value for linguistics is normally set at 0.05 (Gomez, 2002). Table 5 shows the frequencies and the p values obtained from the test.

Table 5. The frequencies and p values of the modal auxiliary verbs used by Indonesian and non-Indonesian writers

| Modal verbs  | Indonesian Writers |              | Non-Indonesian Writers |              | p           |
|--------------|--------------------|--------------|------------------------|--------------|-------------|
|              | Raw                | Per 10kW     | Raw                    | Per 10kW     |             |
| Can          | 54                 | 28.63        | 46                     | 24.39        | .492        |
| Could        | 8                  | 4.24         | 11                     | 5.83         | .527        |
| May          | 14                 | 7.42         | 9                      | 4.77         | .564        |
| Might        | 5                  | 2.65         | 1                      | 0.53         | .317        |
| Must         | 16                 | 8.48         | 2                      | 1.06         | .011        |
| Should       | 18                 | 9.54         | 19                     | 10.07        | 1           |
| Will         | 40                 | 21.21        | 22                     | 11.66        | .117        |
| Would        | 14                 | 7.42         | 7                      | 3.71         | .366        |
| <b>Total</b> | <b>169</b>         | <b>89.59</b> | <b>117</b>             | <b>62.03</b> | <b>.028</b> |

As shown in Table 5, in general there seems to be a significant difference in the use of modal auxiliaries in the *Jakarta Post* op-ed articles by the two groups of writers ( $\chi^2_{(1)}=4.82781$ ,  $p = .028$ ). Interestingly, however, the use of individual modal auxiliaries by the two group of writers do not seem to show any significant difference, except for the use of the modal auxiliary *must* ( $\chi^2_{(1)}=6.4$ ,  $p = .011$ ). This seems to show that overall Indonesian and non-Indonesian writers use modal auxiliary verbs significantly differently in their op-ed articles published in *The Jakarta Post*, suggesting that linguistic and cultural backgrounds might affect the use of modal auxiliary verbs, especially in newspaper editorial articles.

Both Indonesian and non-Indonesian writers use modal auxiliary verbs for similar strategies to express modalities because editorial texts have certain characteristics that are distinctive from other text types such as academic texts and hard news (Fowler, 1991) which validate the similarity in the findings from those studies of RAs in various fields (e.g., Piqué-Angordans et al., 2002; Hardjanto, 2016). This study is similar to what Hinkel (1995) has revealed that in her study, there were differences in the use of modal verbs by native and non-native English speakers, depending on the culture and the context of the writings.

### The Meanings of Modal Auxiliary Verbs

Following the finding of the distributions, we will further discuss the meanings of the modal auxiliary verbs above based on their classification proposed by Biber (1999), as presented in Table 6 below.

Table 6. The overall frequency of modal auxiliary verbs according to their meanings

| Modality           | Frequency  |               |
|--------------------|------------|---------------|
|                    | Raw        | Per10kW       |
| Deontic meanings   | 97         | 51.42         |
| Epistemic meanings | 189        | 100.20        |
| <b>Total</b>       | <b>286</b> | <b>151.62</b> |

Table 6 shows the distribution of the modal auxiliary verbs based on the meaning with deontic modality is less preferred with 50 instances per 10,000 words than the epistemic modality with 100 instances,. In writing editorials, both Indonesian and

non-Indonesian writers prefer to use modal auxiliary verbs that mark epistemic meaning (e.g., possibility, necessity, and prediction) rather than those that mark deontic meaning (e.g., permission, obligation, and volition). This result aligns with the aim of editorials to convey the writer's personal opinions, arguments, and judgments (Fowler, 1991; Le, 2010; & Ahmad et al., 2020) and the use of epistemic modality that is concerned with the speaker's attitude to the factuality of an event (Collins, 2009), as expressed through their writings.

Meanwhile, this finding is in contrast with the study of the use of modal auxiliary in the academic and informal written discourse which reveals that the academic writers use more epistemic modality while the informal texts prefer more deontic modality (Bonilla, 2017).

### *Deontic Modal Auxiliary Verbs*

The deontic modal auxiliary verbs marking permission expressed by the modal *can*, *may*, and *might* are shown in Table 7. As for the modal auxiliary verbs marking obligation, the editorial writers use *should* more than *must*.

Table 7. The frequency of deontic modal auxiliary verbs found in the corpus

| Modal Meanings           | Indonesian |              | Non-Indonesian |              |
|--------------------------|------------|--------------|----------------|--------------|
|                          | Raw        | Per10kW      | Raw            | Per10kW      |
| <b><i>Permission</i></b> |            |              |                |              |
| Can                      | 21         | 11.13        | 12             | 6.36         |
| Could                    | 0          | 0            | 0              | 0.00         |
| May                      | 3          | 1.59         | 1              | 0.53         |
| Might                    | 2          | 1.06         | 0              | 0.00         |
| <b><i>Obligation</i></b> |            |              |                |              |
| Must                     | 11         | 5.83         | 2              | 1.06         |
| Should                   | 12         | 6.36         | 14             | 7.42         |
| <b><i>Volition</i></b>   |            |              |                |              |
| Will                     | 12         | 6.36         | 7              | 3.71         |
| Would                    | 0          | 0            | 0              | 0            |
| <b>Total</b>             | <b>61</b>  | <b>32.34</b> | <b>36</b>      | <b>19.08</b> |

### *Epistemic Modal Auxiliary Verbs*

A total of 57.3 and 42.9 (per 10,000 words) of modal auxiliary verbs marking epistemic modality were

found in this research. The result is presented in Table 8. Similar to its deontic counterpart, *can* is the most frequently used with epistemic meaning followed by *will*, *would*, *could* and *may* with the same total frequencies. The least three frequent epistemic modal auxiliary verbs are *should*, *must*, and *might*. In the sections that follow, we will discuss in more detail the use of each of the modal auxiliary verbs by the two groups of writers.

### *Can*

This modal auxiliary verb marks permission, possibility, and ability (Biber et al., 1999). Although the ability meaning may be close to its actualization, it may not be realized so it is within the subcategory of possibility (Collins, 2009). In this study, *can* has the most appearance compared to other modal auxiliary verbs with a total occurrence of 53.0 per 10,000 words, with 28.6 from the editorials written by Indonesian writers and 24.4, per 10,000 words). In terms of meaning, *can* in the corpus marks both permission and possibility.

Table 8. The frequency of epistemic modal auxiliary verbs found in the corpus

| Modal Meanings            | Indonesian |              | Non-Indonesian |              |
|---------------------------|------------|--------------|----------------|--------------|
|                           | Raw        | Per 10kW     | Raw            | Per 10kW     |
| <b><i>Possibility</i></b> |            |              |                |              |
| Can                       | 33         | 17.49        | 34             | 18.02        |
| Could                     | 8          | 4.24         | 11             | 5.83         |
| May                       | 11         | 5.83         | 8              | 4.24         |
| Might                     | 3          | 1.59         | 1              | 0.53         |
| <b><i>Necessity</i></b>   |            |              |                |              |
| Must                      | 5          | 2.65         |                | 0.00         |
| Should                    | 6          | 3.18         | 5              | 2.65         |
| <b><i>Prediction</i></b>  |            |              |                |              |
| Will                      | 28         | 14.84        | 15             | 7.95         |
| Would                     | 14         | 7.42         | 7              | 3.71         |
| <b>Total</b>              | <b>108</b> | <b>57.25</b> | <b>81</b>      | <b>42.94</b> |

*Can* expresses more epistemic modalities than the deontic one in this study, marking possibility with a total occurrence 17.5 from Indonesian writers and 18 from non-Indonesian writers than permission with a total occurrence of 11.1 from Indonesian writers and 6.4 from non-Indonesian writers, all per 10,000 words.

The predominance of *can* found in this study might be because the writers convey what they think is permitted or possible to do according to their opinion in the editorial texts. This is in line with the previous studies (e.g. Biber et al., 1999; Coates 1983; Palmer 1990) which revealed that *can* indicates possibility. Below are the examples of the modal *can* in the corpus.

- (2) If the content resonates and gains enough audience engagement, it **can** reach a larger audience and rise to the top, regardless of the creator's established fame or fan base. (NID02022E-POSS)
- (3) The new body **can** use the complete data collected under the comprehensive audit of the whole palm oil industry a few months ago as a reliable input to coordinate all policies related to upstream and downstream palm oil industries at the central government and local administration levels. (ID01007D-PER)

Example (2) shows the use of *can* expressing epistemic possibility as it can be paraphrased to "it is possible that x" or in example (2), it is possible that the content get a larger audiences and rise to the top if it resonates and gain more audiences, while example 3) expresses deontic permission and can be paraphrased to "it is allowed for x to do y" or in example (3), "it is allowed for the new body to use the complete data..."

### *Could*

Aside from being the past form of *can*, the modal auxiliary *could* is also used to express unreal conditions which implies a hypothetical condition (Coates, 1983). Epistemic possibility *could* in its present form is used to express the potential of an action on the subject at any time but to a lesser degree (Kreidler, 1980). In this study, only a total of 4.2 occurrences from Indonesian writers and 5.8 occurrences from non-Indonesian writers (per 10,000 words) of *could* marking possibility were employed.

No instance of the use of *could* marking deontic permission found in the editorials written by both writers. This is aligned with the previous corpus studies (e.g. Biber et al., 1999; Coates 1983; Palmer 1990) on modal auxiliary, in which most of the modal *can* including its past form *could* marks possibility

rather than permission or ability. The example of the modal auxiliary *could* is as follows.

- (4) Such valuable resources, if well managed with good governance and best agricultural practices **could** become a main driver to propel the country into prosperity. (ID01002E-POSS)

In (4), the modal auxiliary verb *could* marks possibility which can be paraphrased to "it is possible for valuable resources to become a main driver to proper to the country if well managed..." It is important to note that the sentence is not a hypothetical condition but rather indicates that the event is possible to happen although it is in the form of a conditional sentence. This is because example (4) is not an unreal conditional sentence.

### *May*

*May* is used to express permission and possibility, or ability, like *can*. The epistemic use of *may* expresses possibility while the deontic use expresses permission (Biber et al., 1999). A total occurrence of (per 10,000 words) 12.2 was found in this study, with 7.4 occurrences from Indonesian writers and 4.7 occurrences from non-Indonesian writers.

In the corpus, the epistemic *may* marking possibility is preferred with a total occurrence of (per 10,000 words) 5.8 by Indonesian writers and 4.2 by non-Indonesian writers, compared to the deontic use marking permission with a total occurrence of 1.6 by Indonesian writers and only 0.5 occurrence from non-Indonesian writers. It is similar to the previous study where epistemic *may* is greater than non-epistemic use (Collins, 2009). Below are the examples of both epistemic and deontic use of *may*.

- (5) However, the hypothetical influence of this policy on the financial sector, particularly the insurance industry, **may** not always be positive. (ID04046E-POSS)
- (6) Hence, they **may** engage in anti-competitive practices to maintain or strengthen their position. (ID08133D-PER)

Example (5) is the use of *may* as epistemic modality meaning possibility, meaning that the modality can be paraphrased into "it is possible for x to do y". The sentence in example (5), which also contains negation, is paraphrased into "it is possible

for the hypothetical influence of this policy on the financial sector not to be always positive". Sentence (6) is an example of the use of deontic permission of the modal verb *may* and can be paraphrased into "it is permissible for them to engage in and the competitive practices to maintain or strengthen their position."

### *Might*

*Might* is the past form of *may* and its use is also similar to the present form. The epistemic use of *might* marks possibility and it is more common than the deontic use which marks permission (Biber et al., 1999).

In this study, the epistemic possibility is more preferred with a total of 2.7 than the deontic permission with only 0.5 (per 10,000 words) in total, only from non-Indonesian writers. This finding seems to be similar to Collins' (2009) where in his study, epistemic use is more preferred with 77.2% out of all instances of *might* in the corpus. Since it is also the past form of *may*, it is not surprising that both *may* and *might* are similar in result. Some examples found in the corpus are shown below.

- (7) Information gets circulated swiftly on the internet and **might** possibly misconstrue public opinions made by an organization. (NID08095E-POSS)
- (8) Consequently, to balance finances and increase assets, banks **might** increase lending rates, allowing the banking sector to provide higher deposit returns to customers. (ID04056D-PER)

In example (7), the modal auxiliary verb *might* expresses possibility as it is paraphrased into "it is possible for the information to misconstrue public opinions made by an organization..." and the judgment is made based on the speaker's assessment of to what extent the swift circulation of information misconstrue public opinions made by an organization based on some knowledge owned by the speaker. While in example (8), *might* is used to convey permission, which translates to "in order to balance finances and increase assets, banks are permitted to increase the lending rates..."

### *Must*

The meaning of *must* is mainly deontic obligation rather than epistemic necessity (Biber et al., 1999; Collins, 2009). The deontic use of *must* indicates that the speaker is the deontic source that they either make a command or state a rule (Collins, 2009), while epistemic *must* is based on the speaker's "confident inference" toward their own judgment (Huddleston & Pullum, 2002, p. 181). A total of 8.5 from Indonesian writers and 1.1 instances (per 10,000 words) from non-Indonesian writers of *must* found in the corpus.

Much like to the previous study of three corpora (ICE-AUS, ICE-GB, C-US) by Collins (2009), the use of deontic *must* is more frequent than the epistemic *must*. Out of 9.6 occurrences (per 10,000 words) in the corpus, 5.8 instances of deontic obligations were found in the editorials by Indonesian writers, and 1.1 by non-Indonesian writers.

Bolívar (1994) argued that the use of modality is to signal the attitude of the speakers, meaning that we can interpret their directives using it. The use of the deontic obligation of *must* is as shown in (9) which can be interpreted that the speaker imposes an obligation and the source is the speaker, indicated using the subject "I". In example (9) below, the speaker's obligation can be paraphrased into "It is obligatory for a political campaign to change in this new political scenario (therefore public lectures for candidates is mandatory)".

- (9) Lastly, I recommend that universities across the country should sponsor public lectures for candidates as soon as possible to explain this new political scenario and why political campaigning **must** change. (NID07085D-OBL)
- (10) Third, the country's capital market, especially government securities, **must** be liquid assets. (ID03036E-NEC)

As for epistemic use, only 2.7 per 10,000 words of epistemic necessity are employed by Indonesian writers. In the example (10), the use of *must* marking epistemic necessity can be paraphrased into "it is necessary for the country's capital market, especially

government securities, in the form of liquid assets” meaning that there is no other logically possible alternative for the country’s capital market than liquid assets.

### *Should*

*Should* is similar to *must*, it mainly expresses deontic modality meaning obligation rather than epistemic modality meaning necessity (Collins, 2009). The occurrence of the modal auxiliary verb *should* found in this study is in a total of 9.8 occurrences from Indonesian writers and 10.1 (per 10,000 words) from non-Indonesian writers.

Similar to the study of modal and quasi-modal by Collins (2009) in three corpora which revealed that deontic *should* is more preferred, the use of this modal auxiliary in the op-ed articles is greater than the epistemic one with (per 10,000 words) 6.4 instances by Indonesian writers and 7.4 by non-Indonesian writers compared to the epistemic use with only 3.2 occurrences by Indonesian writers and 2.7 by non-Indonesian writers. The deontic use of *should* indicates stronger and more serious suggestions as in example (11) below, while the epistemic use of *should* indicates “a tentative assumption, or assessment of the likelihood of the predication” (Collins, 2009, p. 46) as in example (12) below.

- (11) Indonesia, as the powerhouse of ASEAN, **should** push for ambitious action. (NID01019D-OBL)
- (12) The standards **should** be based on the globally accepted United Nations Sustainability Goals (SDGs), good governance and balancing acts of environmental conservation with responsible economic development. (ID01009E-NEC)

The obligation stated by the speaker using *should* is “pragmatically inferred” since the agent or the deontic source does not directly give a command, but it is according to the interpretation (Klinge, p. 351). This can be seen in example (11) which shows the obligation given by the writer to Indonesia to push for ambitious action, while example (12) shows the necessity to consult to one standard as it can be paraphrased as “it is necessary for the standard to be solely based on the globally accepted United Nations

Sustainability Goals (SDGs)...” and not another logical alternative other than that standard mentioned.

### *Will*

The modal *will* indicates strong volition and prediction (Coates, 1983). Although this modal auxiliary verb, along with its past form would and the modal auxiliary verb shall, marks both deontic volition and epistemic prediction, the latter is more common (Biber et al., 1999). In this study, the total occurrence of *will* is 21.2 from Indonesian writers and 11.7 (per 10,000 words) from non-Indonesian writers.

From the editorials written by Indonesian writers, there are (per 10,000 words) 14.8 occurrences and 8 from non-Indonesian writers of epistemic prediction *will*. The deontic volition of *will* is less preferred by the editorial writers, with a total occurrence of 10.1 from 6.4 employed in the editorial by Indonesian writers and 3.7 by non-Indonesian writers, per 10,000 words. This difference is expected since the previous study on the use of *will* has shown that epistemic use is more common than non-epistemic use (Collins, 2009). Below are the examples of the use of *will* found in this study.

- (13) Consequently, food and fuel **will** continue to compete fiercely for crude palm oil (CPO). (ID01004E-PRED)
- (14) The International Monetary Fund says that Asia **will** contribute about 70 percent of global growth this year, and that Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam are all back to their robust pre-pandemic growth. (NID05051D-VOL)

The epistemic prediction of the modal verb *will*, as shown in example (13), which conveys predictability of the speaker’s judgment of a truth proposition based on some knowledge (Coates, 1983), can be interpreted as “as a consequent of some conditions, it is predictable that food and fuel continue to compete fiercely for crude palm oil.” In (14), the modal auxiliary verb *will* marks deontic volition as suggested by Collins (2009), it uses the second person subject “The International Monetary Fund” as the deontic source.

## Would

*Would* is the past form of *will* and has a similar meaning. This also has deontic volition and epistemic prediction meanings, which conveys a hypothetical meaning (Coates, 1983). A total of 7.4 instances from Indonesian writers and 3.7, per 10,000 words, from non-Indonesian writers of only epistemic use were found. Below are some of the examples of *will* found in this study.

- (15) And yet, despite the role of investment incentivization in Indonesia's economic mix, attributing the country's performance to the classic capitalist model **would** underplay the role of its government and population. (NID06061E-PRED)
- (16) The fragmentation of the global monetary system and the transitional period **would** most likely be marked by a global financial crisis followed by high inflation. (ID03039E-PRED)

Example (15) and (16) are the use of epistemic prediction conveyed by *would*. Both sentences can be paraphrased into "it is predictable that x would do y since it is known that..." with (15) paraphrased into "it is predictable that attributing Indonesia's economic performance to the classic capitalist model underplay the role of its government and population since it is known that investment incentivization in Indonesia's economic mix plays an important role" and (16) into "it is likely predictable that the fragmentation of the global monetary system and the transitional period marked by a global financial crisis followed by high inflation."

## CONCLUSION

In a corpus of 18,863 words, a total of 151.6 instances per 10,000 words of modal auxiliary verbs were found in this research. In terms of the number of distributions, Indonesian writers use more modal auxiliary verbs in their writings with 88.5 instances per 10,000 words compared to non-Indonesian writers with 62 instances per 10,000 words. The most frequent modal auxiliary verb is *can* in both Indonesian and non-Indonesian writers followed by *will*, *should*, *may*, *could*, *must*, *would*, and the least

frequent is *might*.

The result of this study shows that epistemic use is more preferred compared to deontic use. This means that the writers of the editorials are committed and confident to the truth of their arguments using epistemic modality but also provide commands and alternatives and open more room for discussion using deontic modality in the editorials. The deontic meaning consists of the modal auxiliary verbs that mark, from the most to least found in the corpus, permission, obligation, and volition with a total of 51.4 instances per 10,000 words. Modal auxiliary verbs *can*, *may*, and *might* mean permission, *must* and *should* mark obligation, and *will* means permission. The epistemic use of modal auxiliary verbs in this study, in order based on the frequency, is used to mark possibility, prediction, and necessity with a total of 100.2 instances per 10,000 words. The modal auxiliary verbs meaning possibility include *can*, *could*, *may*, and *might*, while the prediction modal auxiliary verbs are *will* and *would*, and necessity modal auxiliary verbs are *must* and *should*.

The writers' linguistics background differences showed an association in the use of modal auxiliary verbs to express their opinions in op-ed articles written in the same language. The significance corresponds to the hypothesis that the writers' background has to do with the use of modal auxiliary verbs and not due to chance. However, it is important to note that this conclusion does not apply to the linguistics repertoire generally due to the limitations of the text samples, genre, writers, and the identifications attached to the text. Deeper and broader research topics relating to modal auxiliary verbs, meaning, and editorials are still possible to be explored.

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