



Sentiment Analysis of the Role and Connotation of Office Secretary through Twitter

Rouna Paoki

Akademi Sekretari Manajemen Indonesia Klabat

rouna.paoki@unklab.ac.id

Jimmy H. Moedjahedy

Universitas Klabat

jimmy@unklab.ac.id

Abstract

A secretary is responsible for coordinating and attending board and committee meetings, producing minutes, acting as a liaison between directors, officers, and shareholders, and directing activities related to the annual shareholders' meeting. The presence of sexual harassment or an intimate relationship with a married supervisor is one of the challenges a woman encounters at work. Consequently, the secretary role and the term secretary are frequently used negatively. This research seeks to do a Twitter-based sentiment analysis of the secretary's words and position. Using the Tweepy API, the sentiment analysis method was applied to the research by analyzing phrases on Twitter. This investigation makes use of five keyword instances. There are 31.73 percent favorable answers to scenarios involving the words "boss-secretary," 29.72 percent negative responses, and 38.55 percent neutral replies. There are 45.97% positive answers, 19.18% negative responses, and 34.85% neutral responses to scenarios containing the keyword "secretary position." 42.11 percent of answers to scenarios including the keyword "female secretary" are favorable, 17.22 percent are negative, and 40.67 percent are neutral. 35.44 percent of replies to scenarios including the keyword "office secretary" are positive, 17.84 percent are negative, and 46.72 percent are neutral. Responses to the fifth scenario were 36.60 percent positive, 19.35 percent negative, and 44.06 percent neutral. According to the results of the sentiment analysis of the five scenarios containing varied keywords, the negative connotations in each scenario never outweigh the positive ones. Each scenario indicates that the proportion of positive response values is consistently more significant than the proportion of negative response values. This implies that the word secretary and the office position of secretaries continue to trigger positive feelings from users.

Keywords: office secretary; polarity; sentiment analysis; tweepy; word cloud

INTRODUCTION

A secretary is an office worker who handles letters, maintains records, and performs general administrative activities for clients as well as other related jobs for a business, organization, or association. The office duties of a secretary include composing letters, taking phone calls, planning meetings, and answering them (Herbranson et al., 2022). According to Peij et al.(2021), Since the imperial era, administrative work has been performed by one or more individuals whose primary responsibility, if viewed today, is that of a secretary. To be more productive and efficient when doing secretarial duties, secretaries must be able to stay up with changes and advances within the organization and utilize digital technologies. Depending on the many duties and responsibilities of the secretary within an organization, there are various terms for the position of secretary, such as Corporate Secretary, Executive Secretary, Professional Secretary, Administrative Professional, Administrative Assistant, Executive Assistant to the Executive Administration, and Personal Assistant (Musty, 2023).

In research conducted by Peij (2021), There are numerous obstacles to the secretary's function or job. First, there is the issue of time constraints; many have noticed that the sheer quantity of duties makes the post of company secretary unrealistic. One of the statements discovered was, "I always receive additional tasks; nothing is ever filled." In addition, company secretaries said that a lack of resources and support for the function contributes to time constraints. Additionally, annual meetings and reporting cycles create time constraints.

Working for various organizational entities, such as the management and supervisory boards, is the second greatest obstacle for corporate secretaries. Secretaries believe that this produces conflicting loyalties and uncertainty regarding what information should be shared with whom, frequently causing them to become unwittingly entangled in disputes between these many organizational entities. Information management is the third key difficulty frequently mentioned by company secretaries (i.e., information collection, processing, and distribution to organizational bodies). Each stage in this information process has the potential to be troublesome, with issues occurring when the relevant information does not arrive at the appropriate time and location.

The next challenge often experienced by female workers, including secretaries, is sexual harassment in women. (Holland & Cortina, 2016; Kensbok et al., 2015; McLaughlin et al., 2017). Women are not aware of sexual harassment, which is why this situation arises, and because of this, now the world is taking a stand (Gupta & Garg, 2020). In contrast, the so-called boss-secretary connection may be seen negatively. Nonetheless, historically all unmarried female administrative workers were assumed to be in the office primarily to find a husband, which contributed to the romantic and sexual atmosphere of the office. Obviously, not all women are, but popular culture reinforces this notion. The public imagination strongly associates the workplace with women's yearning for romance (Berebitsky, 2012). Numerous anecdotes exist regarding the distinction between secretaries of the past and present, namely "good morning boss" and "it's morning boss." Berebitsky (2012) presents some anecdotal images regarding this, as in Figure 1.

Foucault (1990) wrote in his book that secretaries are filled with sexual attraction. Benet (1972) The author asserts that when many men think of secretaries, sex is the first thing that comes to mind. In the guidebook, *The Professional Secretary*, Spencer dan Pruss (2000) informs its readers that many male bosses continue to marry their female secretaries, while many bosses divorce their spouses in order to be with their secretaries. If you spend at least eight hours every day with a single person, you develop a bond that can evolve into friendship and even attraction. This study seeks to determine the public's perception of the role and connotation of secretaries in the present by collecting data through Twitter and analyzing sentiment.



Figure 1. Cartoon Illustration of Boss and Secretary Relationship

Sources: (Berebitsky, 2012)

LITERATURE REVIEW

In the past five years, numerous studies have been conducted on the same subject as the present one. Research conducted by Sailunaz (2019) By collecting a number of tweets and analyzing them using a sentiment analysis technique, it was possible to provide generalized and personalized suggestions for Twitter users depending on their Twitter behavior. Next, Roberts et al. (2018) Researchers sought research regarding the emotional responses of individuals to urban green spaces. According to the

results of an analysis of 10,000 tweets using three approaches, the majority of answers are happy or positive. Hassan (2022), The purpose of this study is to determine the attitudes of internet users toward cryptocurrency. The analysis of 15,000 tweets revealed that the vast majority of responses were positive. Other related research was conducted by Schneider and Carpenter (2019), where they studied the #MeToo hashtag, a social movement against harassment and rape in which people share their experiences with sexual harassment. The analysis of 2,102 tweets revealed that although the overall tone of the tweets was unpleasant, the majority of positive social reactions validated and supported the victims, offered emotional assistance, and called for societal reform. The last research topic taken by the researcher was conducted by Gulati (2022). The purpose of the 12,258 recovered tweets was to determine the response to vaccine tourism, which involves traveling to another country or state to receive a vaccine that is unavailable in one's home country. As a result, happy emotions are valued twice as much.

Sentiment Analysis

Sentiment analysis is the classification of sentiment polarity represented by a set of tests with positive, negative, or neutral results. Classification of sentiment polarity is currently one of the most in-demand research areas due to its major implications for a variety of scenarios involving the analysis of social media data. The sentiment classification problem is frequently treated as a two- or three-way positive-negative-neutral classification of a text unit (Zimbra et al., 2018). According to Carvalho (2021), the automatic recognition of ideas and feelings conveyed in brief informal messages, such as tweets on Twitter, is one of the greatest hurdles in this subject. Tweets, which are short writings broadcast on Twitter, make sentiment analysis a challenging process due to traits intrinsic to tweet patterns, such as informal language styles, misspelled words, and coarse grammar. In light of this, it is required to prepare the data for analysis prior to doing the study.

Social Media

In 1994, the word social media was first used in an online media environment named Matisse in Tokyo. In the early days of the commercial Internet, the first social media platforms were created and introduced. According to Carr & Hayes (2015), social media are Internet-based channels that enable individuals to opportunistically communicate and choose to exhibit themselves in both real and virtual settings with a wide and narrow audience that values user-generated content and perceived interactions with others. The number of social media platforms and active users has grown substantially over time, making it one of the most important Internet apps. Social media can be utilized as a recommendation to socialize with friends and family by strengthening relationships by the sharing of key life events in status updates, images, and videos while boosting their face-to-face interactions. Multiple studies have demonstrated that social media has a significant impact on romantic relationships. In addition to facilitating human interaction, communication technology also shapes and defines our relationships; it has been demonstrated that this is important in the early stages of a relationship and has a significant long-term impact on many couples' relationships; social media can be helpful when starting a relationship, for instance, contacting a crush via social media can be of particular benefit to introverts, who typically avoid face-to-face contact and communication (Aichner et al., 2021). Some platforms that are currently widely used are Facebook, Instagram, Whatsapp, Linkedin, and others.

Tweepy

Numerous popular services offer API (Application Programming Interface) packages in multiple programming languages or at least have one or more community-supported modules. In addition, they are well-maintained and include additional features that make them user-friendly. This study uses Tweepy, one of the community-developed and supported Python modules for Twitter. Twitter's list of libraries for several languages includes multiple Python libraries. Tweepy is actively updated, and many researchers use it to retrieve tweet data from Twitter through API without manually transcribing each tweet.

METHODS

The method utilized in this study is a sentiment analysis strategy with the following stages: gathering tweet data from several keywords pertaining to the secretary and the secretary's function and obtaining data through a Python script. In addition to gathering tweet data, the script's purpose is to clean data by removing offensive or unneeded words, characters, spaces, and words, then obtaining the polarity value, beginning positive, negative, and neutral factors, and obtaining results and conclusions. The procedure and steps are depicted in Figure 2.

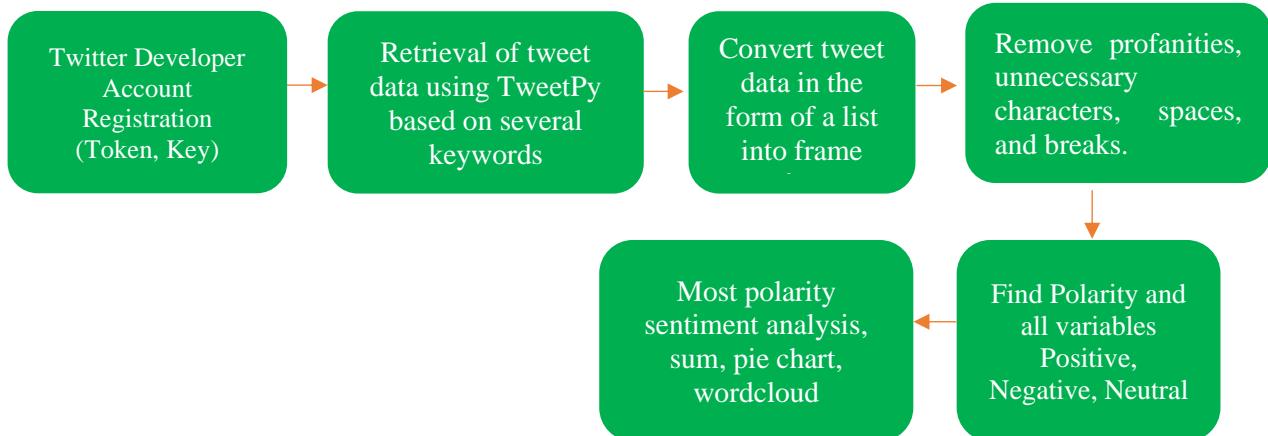


Figure 2. Steps of the Research that was Performed

RESULTS AND DISCUSSION

Analysis Result with Keyword 1 "Boss-Secretary"

The first scenario is to analyze using the keyword "office secretary." The result is that there are 498 tweets, the data fragment after the cleaning process, as seen in Figure 3.

polarity	tweet
0 0.156250	lisa check out his mansion little more royal t...
1 0.200000	understand he is responsible transpor
2 0.000000	secretary here boss gave permission fighting t...
3 0.066667	so this is wilsons second appearance at royal ...
4 0.000000	let s play secretary im boss tonight
...	...
493 0.050000	boss does not want re enlist october secretary...
494 0.000000	come sit my lap darling we could play boss sec...
495 0.500000	i know you love your job profile but you don t...
496 0.000000	dear secretary my default settings are pinnoch...
497 -0.083333	unfit serve bold words someone who failed as w...

498 rows × 2 columns

Figure 3. Data Shifting of Tweet Results After Cleaning Process Keyword 1 "Boss-Secretary"

After analyzing 498 data points, 158 users find the keyword "boss-secretary" to be positive, 148 users find it to be negative, and 192 users find it to be neutral. As indicated in Figure 4, the percentages obtained are 31.73 percent for positive, 29.72 percent for negative, and 38.55 percent for neutral. Figure 5 is also a word cloud based on the keywords entered; a word cloud is a graphical depiction of word frequency that emphasizes terms that frequently appear in this keyword set.

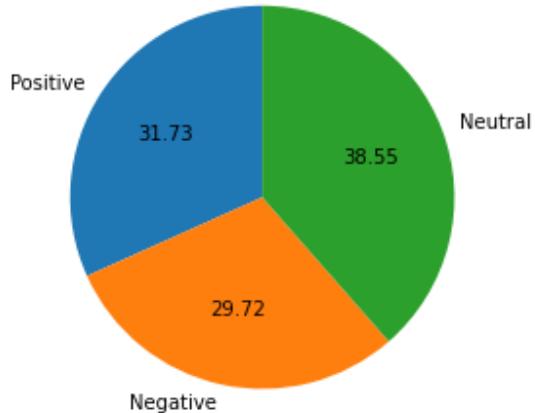


Figure 4. Percentage of Results by Keyword 1 "Boss-Secretary"



Figure 5. Wordcloud of Keyword 1 "Boss-Secretary"

The results for the term boss-secretary are consistent with research conducted by (Gomathy, 2022). According to the results, many respondents agree that the secretary's role in organizing the superior's task schedule, such as preparing trips or tours, receiving information, and others, is one of the aspects that improve the superior/secretary connection.

Analysis Result with Keyword 2 "Secretary-Role"

The second scenario requires an analysis of the term "secretary role." As a result, there are 881 tweets; the data fragment resulting from the cleaning operation is presented in Figure 6.

	polarity	tweet
0	-0.350	transportation secretary has literally no good...
1	0.000	greggery your role included clearance exposure...
2	0.000	yes war is not solution dear secretary gen but...
3	0.800	great see our friend wes allen this afternoon ...
4	0.075	mr secretary general uno antonio guterres you ...
...
876	0.000	only when he enters role secretary ye can he r...
877	0.000	secretary state antony blinken under pressure ...
878	-0.125	while facts show that sharp told cabinet secre...
879	0.100	especial thank you mr faisal rao who played vi...
880	0.000	psychologist meets secretary at friends weddin...

Figure 6. Data Shifting of Tweet Results after Cleaning Process Keyword 2 "Secretary-Role"

After analyzing 881 data points, 405 users found the keyword "secretary role" to be positive, 169 users find it to be bad, and 307 users find it to be neutral. As indicated in Figure 7, the percentages obtained are 45.97 percent for positive, 19.18 percent for negative, and 34.85 percent for neutral. Figure 8 can also be interpreted as a word cloud based on the keywords entered; a word cloud is a graphical depiction of word frequency that emphasizes frequently occurring words in this term.

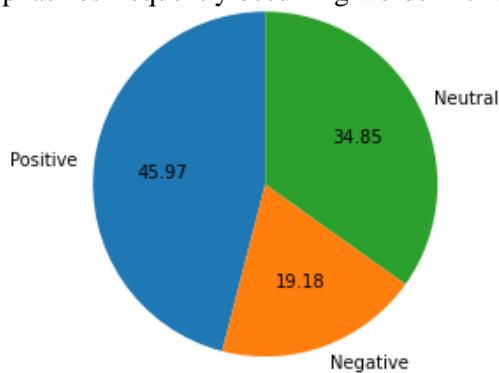


Figure 8. Percentage of Results by Keyword 2 "Secretary-Role"

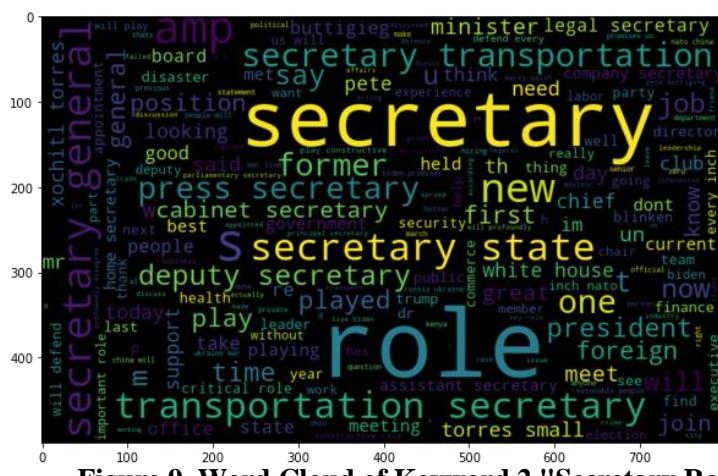


Figure 9. Word Cloud of Keyword 2 "Secretary Role"

The keyword search for secretary role returns positive outcomes and is consistent with research by (Nowland et al., 2021); in other words, the job of secretaries is necessary because their study

demonstrates that, depending on their role and workload, corporate secretaries greatly impact board procedures and financial reporting.

Analysis Result with the Keyword 3 "Female-Secretary"

Using the keyword "female secretary," evaluate the third scenario. As a result, there are 209 tweets; the resulting data fragment is depicted in Figure 10 following the cleaning process.

polarity		tweet
0	0.000000	our trans secretary became butt hurt last nigh...
1	0.175000	secretary transportation pete buttigieg went i...
2	0.016667	hes always taking personal time pothole pete r...
3	0.016667	pete run transport secretary buttigieg loses h...
4	0.000000	buttigieg asks take reporters photo street int...
...
204	0.145833	shes first black female be press secretary so ...
205	0.000000	but she had 3 qualifications that according bi...
206	0.000000	just like nixons secretary erased 18 mins tape...
207	0.000000	female energy secretary claps back after nevad...
208	0.000000	we have president whom we pretend is not final...

209 rows × 2 columns

Figure 10. Data Shifting of Tweet Results after Cleaning Process Keyword 3 "Female Secretary"

After analyzing 209 data points, 88 users find the keyword "female secretary" to be positive, 36 users find it to be negative, and 85 users find it to be neutral. As indicated in Figure 11, the percentages obtained are 42.11 percent for positive, 17.22 percent for negative, and 40.67 percent for neutral. Figure 12 can also be interpreted as a word cloud based on the entered keywords; a word cloud is a graphical depiction of word frequency that emphasizes terms that frequently appear in this keyword set.

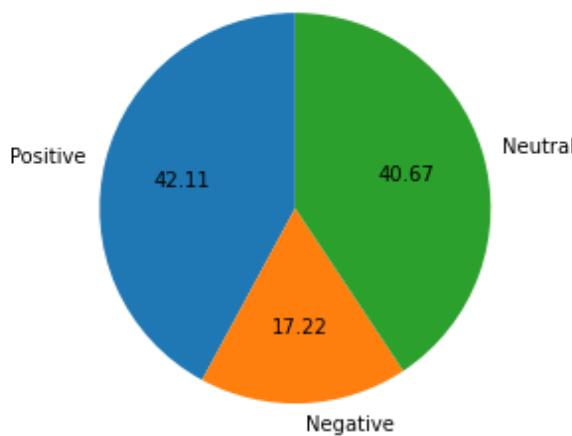


Figure 11. Percentage of Results by Keyword 3 "Female Secretary"

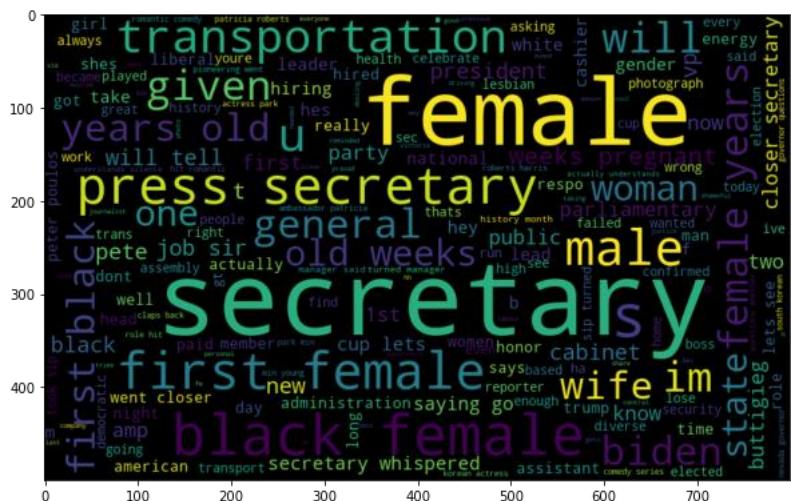


Figure 12. Word Cloud of Keyword 3 "Female Secretary"

The female secretary keyword generates positive results. They correspond to research by Thompson (2020); consequently, female secretaries have different bodily techniques, such as typing, dictating, and editing texts, which all result in distinct forms of writing that contain constructions, appropriations, and meanings regarding the work performed by women.

Analysis Result with Keyword 4 "Office Secretary"

The fourth scenario is to analyze using the keyword "female secretary". The result is that there are 1250 tweets; the data fragment after the cleaning process can be seen in Figure 13.

polarity	tweet
0	0.200 hey victor you get indictment your secretary g...
1	0.375 fact his first days office president biden ove...
2	0.400 ron desantis press secretary throws hissy fit ...
3	0.000 one who laws is law yer just as one who saws i...
4	0.000 tonights recipient community leadership award ...
...	...
1245	0.000 longing wish 150 years gets fulfilled 13 days ...
1246	0.000 longing wish 150 years gets fulfilled 13 days ...
1247	0.000 longing wish 150 years gets fulfilled 13 days ...
1248	0.000 longing wish 150 years gets fulfilled 13 days ...
1249	0.000 longing wish 150 years gets fulfilled 13 days ...

Figure 13-D-1. Shifts of Total Product after Changes in Input K, and 14 "Offset" Supply Curves.

After analyzing 1 250 pieces of data, 443 users believe the keyword "female secretary" is positive, 223 users believe it is negative, and 584 users feel it is neutral. As indicated in Figure 14, the percentages obtained are 42.11 percent for positive, 17.22 percent for negative, and 40.67 percent for neutral. Figure 15 can alternatively be interpreted as a word cloud based on the keywords entered; a word cloud is a graphical depiction of word frequency that emphasizes words that frequently appear in this term

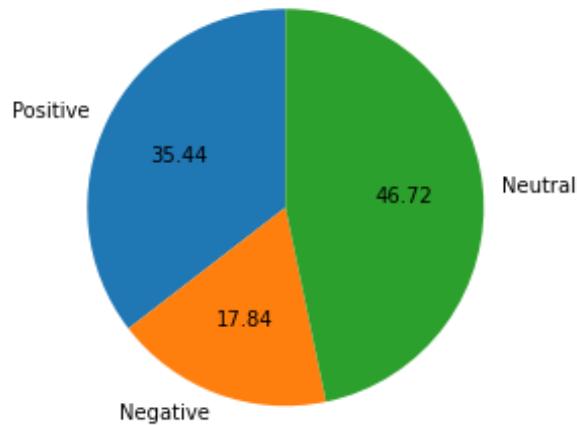


Figure 14. Percentage of Results with Keyword 4 "Office Secretary"

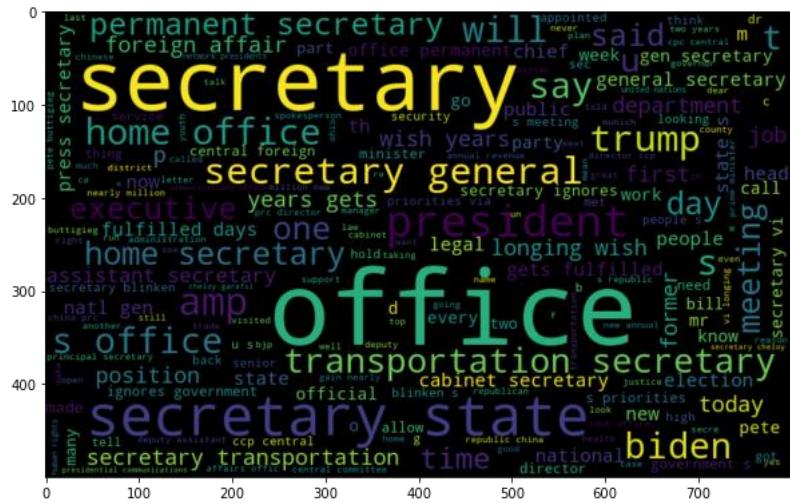


Figure 15. Word Cloud of Keyword 4 "Office Secretary"

The results of office secretary keywords or office secretaries - companies still have positive results and are in accordance with research conducted by (Peij et al., 2015). The results indicate that company secretaries have a major impact on the governance architecture of a firm. In addition to executing their numerous tasks and responsibilities, they encounter a number of practical obstacles with directors, employees, and management.

Analysis Result with 5 Keywords "Personal Secretary"

The fifth scenario is to analyze using the keyword "personal secretary". The result is that there are 429 tweets; the data fragment after the cleaning process can be seen in Figure 16.

Sentiment Analysis of the Role and Connotation of Office Scandal through Twitter

	polarity	tweet
0	0.000000	our transportation secretary is personal time ...
1	0.100000	biden administration is completely ignoring th...
2	0.000000	no you cant hes supposed be us se
3	0.000000	no it shows he cares you obviously don t trans...
4	-0.158333	kim joo ryung is expected play active role as ...
...
424	0.000000	baillie continues her vindictive personal camp...
425	-0.166667	you have been cabinet secretary previous admin...
426	-0.554545	we know that jake those us who live nearby hav...
427	0.100000	i would actually say i have lot respect nicola...
428	0.000000	suella braverman has spoken with lancashire co...

429 rows × 2 columns

Figure 16. Data Shifting of Tweet Results after Cleaning Process Keyword 5 "Personal Secretary"

After reviewing 429 user ratings, 157 users find the keyword "female secretary" to be favorable, 83 individuals find it to be bad, and 189 users find it to be neutral. As indicated in Figure 17, the percentages obtained are 36.60 percent for positive, 19.35 percent for negative, and 44.06 percent for neutral. Figure 18 can also be interpreted as a word cloud based on the entered keywords; a word cloud is a graphical depiction of word frequency that emphasizes terms that frequently appear in this keyword set.

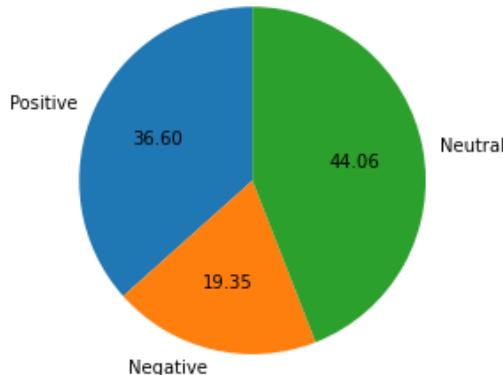


Figure 17. Percentage of Results by Keyword 5 "Personal Secretary"

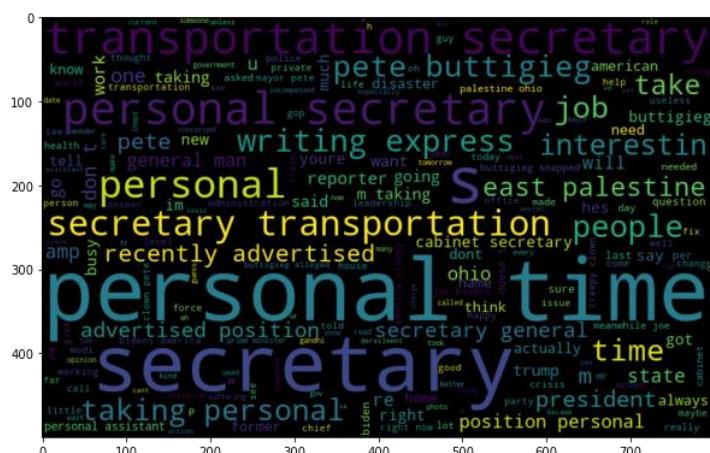


Figure 18. Word Cloud of Keyword 5 "Personal Secretary"

Based on the findings, this study is consistent with the findings of other studies, including those conducted by (Schneider & Carpenter, 2019), in terms of public perceptions of female workers and their susceptibility to sexual harassment. With the outcomes, the majority of positive public responses demonstrate acceptance and confidence in women professionals, provide emotional support, and urge for social reform. The following researcher conducts research that yields results consistent with this

study (Kachen et al., 2021); Their examination of the findings highlights the significance of #MeToo, a social media initiative to combat all sorts of sexual harassment and assault on Twitter in academic and corporate institutions, and a change toward accountability and openness. By valuing ideas like fairness and equality, institutions with accountability and transparency can lessen the impact of sexual harassment.

Table 1. Tabulation of Scenarios based on 5 Keywords

Results/Keywords	KK1	% KK1	KK2	% KK2	KK3	% KK3	KK4	% KK4	KK5	% KK5
Positive	158	31.73	405	45.97	88	42.11	443	35.44	157	36.60
Negative	148	29.72	169	19.18	36	17.22	223	17.84	83	19.35
Neutral	192	38.55	307	34.85	85	40.67	584	46.72	189	44.06
Total	498	100%	881	100%	209	100%	1250	100%	429	100%

Description of Table 1:

KK1 = Keyword 1 "boss-secretary."

KK2 = Keyword 2 "secretary role."

KK3 = Keyword 3 "female secretary."

KK4 = Keyword 4 "office secretary."

KK5 = Keyword 5 "personal secretary."

CONCLUSION

The following are summaries of the outcomes of each scenario. 31.73 percent of responses to "boss-secretary" scenarios are positive, 29.72 percent are negative, and 38.55 percent are indifferent. 45.97% of answers to scenarios with the term "secretary role" are positive, 19.18% are negative, and 34.85% are neutral. Female secretary-related scenarios have positive reaction rates of 42.11 percent, negative response rates of 17.22 percent, and neutral response rates of 40.67 percent. 35.44 percent of replies to scenarios including the keyword "office secretary" are positive, 17.84 percent are negative, and 46.72 percent are neutral. The final scenario, the sixth scenario with the phrase "personal secretary," received 36.60 percent positive responses, 19.35 percent negative responses, and 44.06 percent neutral responses. To answer the goal of this study, which is to determine public opinion regarding the role and connotations of secretaries nowadays, the sentiment analysis results of the five scenarios with varied keywords reveal that negative connotations in each scenario never surpass positive ones. In every situation, the proportion of positive response values is always greater than the proportion of negative response values. This indicates that the word secretary and the job of secretaries in the workplace continue to elicit favorable responses or connotations from users. Next, it is necessary to create a research object for Indonesian tweets and employ multiple machine-learning algorithms.

REFERENCES

- Aichner, T., Grünfelder, M., Maurer, O., & Jegeni, D. (2021). Twenty-Five Years of Social Media: A Review of Social Media Applications and Definitions from 1994 to 2019. *Cyberpsychology, Behavior, and Social Networking*, 24(4), 215–222. <https://doi.org/10.1089/cyber.2020.0134>
- Berebitsky, J. (2012). *Sex and the Office : A History of Gender, Power, and Desire*. Yale University.
- Carr, C. T., & Hayes, R. A. (2015). Social Media: Defining, Developing, and Divining. *Atlantic Journal of Communication*, 23(1), 46–65. <https://doi.org/10.1080/15456870.2015.972282>
- Carvalho, J., & Plastino, A. (2021). On the evaluation and combination of state-of-the-art features in Twitter sentiment analysis. *Artificial Intelligence Review*, 54(3), 1887–1936. <https://doi.org/10.1007/s10462-020-09895-6>
- Foucault, M. (1990). *The History of Sexuality: An Introduction*. Knopf Doubleday Publishing Group.

- Gomathy, Dr. C. K. (2022). A Personality Development Progress in Boss and Secretary Relationship at Business Organizations. *International Journal of Scientific Research in Engineering and Management*, 06(02). <https://doi.org/10.55041/ijserm11596>
- Gulati, S. (2022). Decoding the global trend of “vaccine tourism” through public sentiments and emotions: does it get a nod on Twitter? *Global Knowledge, Memory and Communication*, 71(8/9), 899–915. <https://doi.org/10.1108/GKMC-06-2021-0106>
- Gupta, D., & Garg, J. (2020). Sexual Harassment at Workplace. *International Journal of Legal Science and Innovation*, 2(1), 189–211. <https://doi.org/10.1007/BF02639904>
- Hassan, M. K., Hudaefi, F. A., & Caraka, R. E. (2022). Mining netizen’s opinion on cryptocurrency: sentiment analysis of Twitter data. *Studies in Economics and Finance*, 39(3), 365–385. <https://doi.org/10.1108/SEF-06-2021-0237>
- Herbranson, W. T., Pluckebaum, H., Podsobinski, J., & Hartzell, Z. (2022). Don’t let the pigeon chair the search committee: Pigeons (*Columba livia*) match humans’ (*Homo sapiens*) suboptimal approach to the secretary problem. *Journal of Comparative Psychology*, 136(1), 3–19. <https://doi.org/10.1037/com0000304>
- Holland, K. J., & Cortina, L. M. (2016). Sexual Harassment: Undermining the Wellbeing of Working Women. In *Handbook on Well-Being of Working Women* (pp. 83–101). Springer Netherlands. https://doi.org/10.1007/978-94-017-9897-6_6
- Kachen, A., Krishen, A. S., Petrescu, M., Gill, R. D., & Peter, P. C. (2021). #MeToo, #MeThree, #MeFour: Twitter as community building across academic and corporate institutions. *Psychology and Marketing*, 38(3). <https://doi.org/10.1002/mar.21442>
- Kensbock, S., Bailey, J., Jennings, G., & Patiar, A. (2015). Sexual Harassment of Women Working as Room Attendants within 5-Star Hotels. *Gender, Work & Organization*, 22(1), 36–50. <https://doi.org/10.1111/gwao.12064>
- McLaughlin, H., Uggan, C., & Blackstone, A. (2017). The Economic and Career Effects of Sexual Harassment on Working Women. *Gender & Society*, 31(3), 333–358. <https://doi.org/10.1177/0891243217704631>
- Musty, B. (2023). Analyzing the Changing Role of Professional Secretary in Dealing with The Impact of Digital Technology A Case Study on Professional Secretaries in Indonesia. *International Journal of Business, Economics and Social Development*, 4(1), 12–19.
- Nowland, J., Chapple, L., & Johnston, J. (2021). The role of the company secretary in facilitating board effectiveness: reporting and compliance. *Accounting and Finance*, 61(S1). <https://doi.org/10.1111/acfi.12632>
- Peij, S., & Bezemer, P. J. (2021). Exploring the key challenges facing company secretaries in a two-tier board context. *Corporate Governance (Bingley)*, 21(5), 815–830. <https://doi.org/10.1108/CG-06-2020-0226>
- Peij, S., Bezemer, P. J., & Maassen, G. (2015). Role ambiguity and conflicts: A study of company secretaries and two-tier boards in the Netherlands. *Corporate Ownership and Control*, 12(3). <https://doi.org/10.22495/cocv12i3p10>
- Roberts, H., Resch, B., Sadler, J., Chapman, L., Petutschnig, A., & Zimmer, S. (2018). Investigating the Emotional Responses of Individuals to Urban Green Space Using Twitter Data: A Critical Comparison of Three Different Methods of Sentiment Analysis. *Urban Planning*, 3(1), 21–33. <https://doi.org/10.17645/up.v3i1.1231>
- Sailunaz, K., & Alhajj, R. (2019). Emotion and sentiment analysis from Twitter text. *Journal of Computational Science*, 36, 101003. <https://doi.org/10.1016/j.jocs.2019.05.009>
- Schneider, K. T., & Carpenter, N. J. (2019). Sharing #MeToo on Twitter: incidents, coping responses, and social reactions. *Equality, Diversity and Inclusion: An International Journal*, 39(1), 87–100. <https://doi.org/10.1108/EDI-09-2018-0161>
- Spencer, J., & Pruss, A. (2000). *The Professional Secretary*. Continuum.
- Thompson, P. (2020). The writing of the secretary: A female sentient exercise. *Digitum*, 2020(25). <https://doi.org/10.7238/d.v0i25.3208>
- Zimbra, D., Abbasi, A., Zeng, D., & Chen, H. (2018). The State-of-the-Art in Twitter Sentiment Analysis. *ACM Transactions on Management Information Systems*, 9(2), 1–29. <https://doi.org/10.1145/3185045>