

Media bias Toward LDP in Japan: An Application of Sentiment Analysis

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Abstract This article examines media bias in the political news depicting the Liberal Democratic Party (LDP) in Japan. Although previous literature on the impact of media reports on Japanese politics has produced diverging evaluation on whether media are biased or neutral, the question of to what extent the media positively portray LDP compared to a competing party has not been addressed yet. To elucidate the degree of media partisanship in Japan, this research has focused on the extent of the tonality bias in media's portrayal of LDP and its political competitor DPJ during the period surrounding the 2009 general election. To assess the tonality bias, 4,525 newspaper articles depicting the two parties have been gathered and analyzed through the sentiment analysis methodology. By comparing the sentiment scores of the LDP and DPJ through a three-year time-frame (2008-2010) the analysis has revealed that independently from LDP governing position, the party has benefited from a more positive portrayal than its political competitor. In light of the results we concluded that media in Japan are, to a certain degree, slanted towards LDP.

Keywords Media Bias · Japan · tonality · Liberal Democratic Party

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Introduction

Are the media reports biased in favor of the Liberal Democratic Party(LDP) in Japan? In general, we know that media neutrality is not a given property (Mccarthy and Dolfmsa, 2014). Plenty of studies have already examined the configuration of media partisanship among Western democratic countries (Hallin, Mancini 2004; Groseclose and Milyo 2005; DellaVigna and Kaplan 2007). Many of them found strong partisanship in the media reports and showed its influence on the political developments. Media bias in this way has been a central concept in understanding the degree of media instrumentalization by politics.

But, as studies have mainly focused on Western democracies, we still do not have complete understanding of the degree and impact of media bias in Asian countries. Japan is not an exception of this trend. In particular, considering the dominant role of the LDP in Japanese politics, it might be very natural to ask how the media describe the performance of LDP and whether it helps reinforce the ruling of LDP through their political reports. However, there has been little exploration on this issue in Japan. Some studies on Japanese media analyze the tendency of media reports regarding the performance of government (Freeman 2012; Penn 2017; Farley 1996). Since LDP has been the governing party most of time, these researches can be regarded as studies on media reports on the LDP. But, what is missing in these studies is the baseline for the comparison of their reports. That is, we indeed do not know how strong the reports favor the government, or the LDP. Without alternatives for the media to consult with, we only know how the media reports on the government performance, but we still do not know to what extent the media presents biased reports in favor of LDP, nor the other alternative political parties.

This article fills in this gap of existing literature and tries to extend the discussion of media bias into the Asian countries, particularly focusing on the Japanese case. In doing so, we examine the media reports during the rare period of power transition in Japan, 2008~2010. Looking back at the history of LDP, the party was defeated only on two occasions: one in 1994 when a coalition of opposing parties secured the Diet majority and the other in 2009 when Democratic Party of Japan (DPJ) won the general election. The dominance and long-standing ruling of LDP is thus the main obstacle to systematically show the existence of media bias toward LDP. Without the role of effective opposition parties, it is difficult to measure the degree of media support for LDP and thus the level of media bias. Meanwhile, the period of power transition through the 2009 election allows us to compare the media reports on both LDP and the strong, though it was temporal, competitor, DPJ.

Methodologically, this article relies on the ‘sentiment analysis’, recently developed by studies on the contents of media reports (Shapiro, Sudhof & Wilson, 2017; Junqué de Fortuny, De Smedt, Martens, & Daelemans, 2012, Sanders, 2018; Taj et al. 2019; Soroka et al. 2019). Unlike the traditional way of text analysis focusing on the frequency of report in terms of specific words or phrases, this method allows us to compare the tone of media reports and allows us to evaluate more directly the media attitude toward each party. Thus, by comparing the tonality of media reports between the LDP and DPJ around the 2009 election, we can more directly evaluate the potentiality of media bias in favor of LDP.

Therefore, this article is expected to contribute to the existing literature on media bias in two aspects. First, by focusing on the period of power transition in Japan, this article would be

the first to show the relative degree of media bias in favor of the LDP rather than the alternative, the DPJ, and thus helps to extend the scholarly discussion over the media effect on politics in the Asian countries. Second, by applying the recently developed ‘sentiment analysis’, it would overcome the weakness of frequency analysis and improve the validity of evaluation on media bias toward the LDP.

This article consists of as follows. First, we first introduce a few conceptual definitions concerning media reports and cover the characteristics of Japanese media reports. Next, after shortly describing the Japanese dominant party system, we will present two alternative hypotheses regarding media reports. Next, by applying the ‘sentiment analysis’ to the Japanese media reports, we analyze the tonality bias of these reports. Finally, we conclude our analysis by summarizing our findings and presenting their implications.

Media and Politics through a bias perspective

Media and politics are two variables whose link has been widely inspected in the last decades. The evolution of media and their involvement in politics have brought to light important aspects of the mass communication in terms of influence on the political life and fate of many countries. Often described as the “Fourth State” (Schultz 1998), media represents the direct intermediate between citizens and their policymakers, and the main tool of information distribution. Thus, the question of whether the media system is independent or subservient toward the political world has been central in highlighting the media configuration in democratic systems. If media neutrality presupposes that the media report their news in a transparent and unbiased manner to the benefit of democratic values, partisanship implies the exact opposite as media tend to adopt a biased attitude.

The term, bias, is commonly defined as the inclination to side with a particular view, idea or person in an unjustified or arbitrary manner. In the context of media and politics, it refers to the tendency of media to favor the coverage of a certain political figure, political party or policy. In particular, existing literature on media bias discerns three different types of bias (Eberl et al. 2015; D’Alessio and Allen 2000). The first is the coverage bias in which, as the name suggests, there is an unbalanced coverage of an item (politician, party or event) compared to other similar items. For example, Groseclose and Milyo (2005) conducted the research on media coverage in U.S.A. and concluded that most of the analyzed news outlets were leaning toward liberal ideas and views except for the *Washington Times* and *Fox News*. Their findings have been validated again by DellaVigna and Kaplan (2007) findings. By analyzing the bias effect of Fox News on voters since its establishment as a cable channel in 2000, they argue that the channel indeed contributed to an increase in vote share of the Republican Party from 0.4 to 0.7 points. In addition, the cable channel also encouraged a share of non-Republican voters to align with the Republican Party. The second type of bias is the agenda bias laying in the content selection published or delivered by the media. Hallin and Mancini (2004), focusing on four Mediterranean countries, argue that media tends to select relatively higher levels of political contents rather than the others¹. The last and third type is the tonality bias in which media can display more

¹ According to the authors, in the Mediterranean media model newspapers are essentially instrumentalized

positively or negatively a specific party, politician or policy. The tonality bias is in nature more complicated to analyze because of the interpretation of positive and negative stances, nevertheless it remains critical in detecting a possible partisanship attitude in the political news content.

In terms of media reports in Japan, globally we can distinguish two different perspectives. On one hand, focusing on the tradition of Press Clubs² in Japan, a handful of studies examine the media bias with respect to the agenda and coverage content. The Press Clubs are unique feature of information distribution in Japan and are often characterized as the main reason for the lack press freedom³ in the country. Freeman (2012) provides a good description of the system and a great insight on the internal dynamics between the performance of the Clubs and the relationship with the LDP politicians. Her depiction of Japanese media soaking in a cartelized information system puts the Press Clubs managed by the *Nihon Shimbun Kyokai* at the center of non-competitive media system. Kuga (2016) similarly argues that the Press Clubs are the origin of a tightly regulated news system in Japan. This type of coverage bias seems to be reinforced by the agenda bias. An interesting evidence is provided by Penn (2017). He shows how the Press Clubs colluded with bureaucracy to oust the Hatoyama's DPJ cabinet and bring LDP back to power. In a similar vein, Jung(2016) argues that NHK is likely to be subject to state intervention and works as a proxy instrumental tool under LDP's influence.

Other studies, on the other hand, have seen the Japanese media as more neutral and fact-oriented due to their frequently held critical positions toward the government, uncovering scandals involving politicians and bureaucrats and reporting on general public dissatisfaction with government policies. Farley(1996) has identified the cause of this neutrality as a commercial strategy to attract the broadest audience possible. In line with this argument it is often considered to be detrimental for the revenues of the news agencies to support a specific candidate or party. This argument is also supported by Phar (1996), who argues that the Japanese media tends to act as a "trickster". According to her, the trickster "*plays out its roles in society by virtue of its location "betwixt and between" the established order*". Positioning somewhere between the roles of watchdogs and pro-establishment, the Japanese media are likely to take critical and satirical attitude toward political institutions while serving those same institutions.

to direct their news feed into a particular political orientation; some newspapers are even directly linked to a political party or a politician as it is the case in Greece. In Italy for example one of the major newspapers *La Stampa* is owned by the Agnelli family who also happens to be the holder of the Fiat Group, or even more striking the media empire Mediaset owned by the businessman-turned politician Silvio Berlusconi, which has very well served its political campaigns. A French equivalent to Berlusconi is that of Robert Hersant who was a representative in both the French parliament and European parliament and also happens to be the owner of the famous journal *Le Figaro*. Although in the recent years there has been a decline in political partisanship by the western media, their involvement in the political sphere remains significant.

² As the word defines it, Press Clubs are newspaper reporters clubs that connect politicians with journalists. Press Clubs in Japan are legally recognized and managed by the *Nihon Shimbun Kyokai*(NSK). These clubs prevail as a latch between politicians and journalists and often represent a grey area in the information circulation between the political and journalistic world.

³ Press Freedom Ranking is a compiled index by Reporters Without Borders. Based on the analysis of multiple variables such as: Pluralism, Media Independence, Environment and self-censorship, Legislative framework, Transparency, Infrastructure and Abuses. With a score averaging 28.64 Japan comes in 67th position in terms of press freedom(2019 report), a relatively low score for a democratic country.

These understandings of the relationship between media and politics in Japan fail to present a comparative insight on media content covering LDP with other political parties. That is, as majority of studies build on their argument based on the role of the Press Clubs, they commonly emphasize the relationship between the media and governing party, ignoring the media reports on the opposition parties, or competing parties. This lack of information on the media reports of the competing parties makes it difficult to validly evaluate the media bias in terms of its tone. Therefore, compared to the analysis on media coverage and agenda, the tonality bias of media reports has been rarely analyzed. In this paper, we try to fill in this gap of research by analyzing the Japanese media news articles covering both LDP and DPJ. Through the comparison of articles depicting LDP with those of DPJ during the 2009 election periods, we hope to highlight the possible existence of a slanted attitude towards the long-dominant party in Japanese media.

LDP dominance in Japanese Politics

LDP has been well known for its long-time dominance over Japanese politics, a characteristic that defines Japanese politics as one and a half party system (Sartori 1976). Since its establishment, LDP was defeated only on two occasions: in 1994 by a coalition of opposing parties and in 2009 by DPJ. In 1994 a coalition of opposing parties won the general election and pushed through an electoral reform that was supposed to radically change the landscape of Japanese politics by ending LDP dominance and cultivating power alternation. As the coalition government introduced a new electoral system in 1994, the Japanese political system marked the end of the '55-system' and was expected to experience a critical turning point that would bring to an end of LDP dominance.

However, the reality proved to be different from what had been expected. LDP indeed remained in power and ruled unceasingly until 2009.

Prior to 2009, LDP managed to preserve its political leadership, however the public support toward the party was continuously wavering. Mistrust and dissatisfaction over the party's practices have increased from both inside and outside the party. This discontent culminated in the rise of an unconventional LDP politician: Junichiro Koizumi. Armed with a strong reformist mindset, Koizumi had well decided a radical change in LDP's political maneuver. Through a highly mediatized electoral campaign, Koizumi had successfully attracted the votes of urban districts. With a landslide victory during the 2005 general election, Koizumi had put once again LDP at the top of the election results. This victory allowed him sufficient leverage to engage a series of reforms that broke with LDP's rural and industrial electoral base in favor of the hard-to-catch urban electoral base.

Although part of the political reforms by LDP were successful, the party struggled to keep a decent approval rate among Japanese voters. The advent of the economic crisis was a major concern and LDP government failed to efficiently redress it. Also, following Koizumi, the subsequent prime ministers suffered from a very low public support. In particular, in 2008, the LDP secretary, Taro Aso, could not gain support from his party, nor did he draw the public attention.

On the opposite, DPJ, as a main opposition party, had successfully attracted LDP's angered

electoral base after the 2005 election (Reed et al. 2012). According to Maeda (2010), Ozawa⁴'s electoral strategies proved to be quite successful in the 2009 election, his candidate nomination turned out to be efficient against LDP candidates. He selected few prominent women as candidates for urban areas, resulting in a strong appeal to urban voters and attracting media attention. Moreover, the successful cooperation with other opposition parties proved vital in ensuring DPJ's majority in the Diet. Through an electoral coordination DPJ, SPD (Social Democratic Party) and PNP (People's New Party) endorsed each other's candidates in several districts, ensuring that only the most successful candidates would be placed in the single member districts. The potentially successful candidates from each party would then receive endorsement from the other two parties. All things considered, these electoral strategies materialized DPJ's victory into reality and LDP was consequently defeated for the second time in its history. Hatoyama, the leader of DPJ, became the prime minister after the election and the DPJ wrote a new chapter in the Japanese political history by being the first single party to defeat LDP⁵. DPJ remained in power until 2012 when LDP took back the Diet leadership with Shinzo Abe.

With this simple and short description of the party competition in Japanese politics, what we need to note is the dominance of LDP over Japanese politics and the 2009 electoral context as an important exceptional case. In particular, in terms of media reports, these two aspects might provide an opportunity to examine the patterns of media partisanship in Japan. In terms of partisanship it is important to distinguish on whether media bias is directed toward any governing party or whether media are biased specifically towards LDP. Since LDP has been mostly the ruling party, dissociating the concept of governing party from LDP has been rather difficult. In fact, without a concrete shift in governance it would be difficult to inquire on the possibility that the Japanese media might be biased towards a generic governing party and not precisely towards LDP. However, the 2009 electoral context allows us to test this alternative hypothesis concerning the existence of this bias in Japanese media. During the period surrounding the elections, both LDP and DPJ received a considerable amount of media coverage. As competing parties, their policy programs were not converging into one another, rather they were diverging with clear distinctions. Also, the economic crisis and the weakness of the LDP leadership have been salient aspects to voters, which helped media draw a strong attention on the political stances of two parties simultaneously. In this regard, the 2009 electoral period provides a good opportunity to test a direction of media bias with the following hypotheses.

H1 (bias toward governing party): The tradition of one-party dominance in government is more likely to make media reports in favor of the governing party, not the opposition party.

⁴ Ichiro Ozawa is a well-known Japanese political figure. Initially he was part of LDP and a member of the Takeshita faction. After defecting from the Liberal Democratic Party, with other party colleagues, he formed the Japan Renewal Party and led the opposition coalition that led to LDP's first defeat in 1994. Since then Ozawa has always been seen as a symbol and a central figure of the Japanese opposition front. In 2003 he joined the Democratic Party of Japan (DPJ) and led once again to LDP defeat in the Upper House. He then became a heavyweight in DPJ and leader of the party in 2006.

⁵ The 2009 general election saw the victory of DPJ over LDP. 308 seats were attributed to DPJ, 119 to LDP, 21 to Komeito, 9 to the Communist party, 7 to the Social Democratic party and 5 to the New party.

H2 (bias toward the LDP): The tradition of one-party dominance in government is more likely to make media reports in favor of LDP, not the others.

Below, we empirically test these hypotheses with the application of ‘sentiment score’ to the media reports of two main Japanese newspapers.

Data and methodology

This article analyzes the contents of two major daily Japanese newspapers, Asahi Shimbun and Yomiuri Shimbun. The Asahi Shimbun is considered to be ideologically left-leaning and its counterpart, Yomiuri Shimbun is considered to be ideologically right-leaning. Since both of them have national coverage, the choice of two newspapers controls for both the ideological stance and regional coverage. To collect the reports of the Asahi Shimbun, we conducted a keyword searching in the Asahi Shimbun’s database, Kikuzo Visual II. Similarly, the Yomiuri database, Yomidas, was searched to collect the reports of the Yomiuri Shimbun. The timeline of the news articles we searched for covers from 2008 to 2010. Given the 2009 general election in Japan, this periodical coverage will show, if any, the variation of media bias toward a specific political party. The keywords used for the search of reports made by two newspapers was ‘LDP’, ‘DPJ’ and ‘Minshuto’. In total 4,525 articles have been gathered from the respective database. 1,858 articles were dedicated to LDP while 2,667 articles were to DPJ.

To analyze the tonality bias of the reports, we apply the ‘sentiment analysis’. The ‘sentiment analysis’ is similar to the traditional content analysis in terms that it performs content analysis for newspaper text through the use of computational linguistics for speech analysis. Content analysis refers to the series of methods used to analyze and transform textual or image data into quantifiable results. With the technological development and the increasing availability of information and databases, content analysis became increasingly automated while remaining a central methodology in tackling and analyzing trends in different sectors. Recently developed sentiment analysis is distinct from the traditional content analysis in terms that it uncovers the amount of positive and negative words used in a text, here a report, and provides a final sentiment score. The final sentiment score can be either positive or negative based on the wording choice used in the analyzed text. Naturally if the score is positive it would suggest a positive portrayal, while if it is negative it would imply a negative portrayal.

The original sentiment analysis was performed directly by the researcher. The researcher manually codes for every sentence or word that is considered positive or negative based on his judgement. However, the recent technological development allows us to go through the same procedure through an automated way relying on a dictionary-based approach. Basically, the researcher is using pre-formed dictionaries inclusive of a bag of positive and negative words that will be matched with the analyzed text in order to obtain a sentiment score. While it would be fair to recognize that computerized sentiment analysis is a relatively recent methodology as it is still under exploration and development, we can find a rapid utilization of this method in various contexts. For example, Fortuny et al. (2012) used sentiment analysis to inquire on how Belgian political parties have been portrayed by the media in the Belgian government formation in 2011. Taj et al. (2019) is another example using the lexicon-based sentiment analysis to

detect sentiment polarity in BBC news articles. Also, Salunkhe and Deshmukh (2017) have applied this method to analyze Twitter's feed during the 2016 US Presidential election. All these studies prove the reliability of the application of this method in various context. In this regard, we apply the automated way of sentiment analysis to quantify how positive LDP is portrayed in comparison to DPJ.

Technically, we perform the automated version of sentiment analysis through the *SentimentR* package developed by Tyler Rinker (2015). The choice of this sentiment package is principally due to linguistic reasons. In particular, the package is evaluated as a game changer for the accuracy of the sentiment analysis because of the incorporation of the large number of valence shifters in its dictionaries. The *SentimentR* package is based on a total of 11,709 words and 140 valence shifters (Naldi 2019). The reliability of the application of this package has been proved by many researchers (Sanders 2018; Lachanski and Pav 2017; Dekalchuk et al. 2016).

The application of the *SentimentR* package is supposed to produce a count of positive words and negative words per article. The final sentiment score is obtained through an algorithm equation that attributes a sentiment score based on the incorporated dictionaries as well as the valence shifters. In order to provide an idea of how this polarity score is obtained, five random article titles, from Yomiuri newspaper, were singularly analyzed at sentence level using the R function, `sentiment()`, in the *SentimentR* package and presented in the table 1.

Table 1 Examples of Sentiment Scores with Selected Sentences

Sentence	Sentiment Score
LDP plans major revision of Sports Promotion Law	0.34
Parties fear crash could sink Cabinet approval rate	-0.28
Aso Cabinet disapproval jumps to 72% / Rate worst for a cabinet in 8 years	-0.35
New DPJ leadership, polls a worry for LDP	0.02
Shady money-politics ties not going unnoticed by voters	-0.15

Table 1 shows some examples of sentiment scores with selected sentences. The R function `sentiment()` analyzes the content of each sentence according to the valence shifter and produces a sentiment score ranging between 1 and -1. That is, each sentence is analyzed in terms of the polarizing words it includes, and the final sentiment score is a weighted score by those polarizing words whose weights are determined by the valence shifter, the frequency of their entrance and their locations between the positiveness and negativeness. The *SentimentR* package also provides us with the information of which words are polarizing the sentence. Using the R function, `extract_sentiment_by()`, they can be extracted and shown dichotomously as words of positive or negative orientation. Table 2 shows the examples using the same exemplary sentences.

Table 2 presents the most polarizing words by sentence along the positive-negative spectrum. If we compare the results in Table 2 with Table 1, we can get an intuitive understanding of how the weight of each word influences the final sentiment score. First the weighted average of the two positive words in Table 2 produces the sentiment score, 0.34 in Table 1. Reminding the range of the sentiment scores extending between -1 and 1, the score 0.34 implies that the weights of two words, 'major' and 'promotion' might be somewhat moderately positive. Also if

we compare the configurations of the words in the second and third sentence, it implies that the words in the third sentence have stronger negative weights than the second sentence since the higher negative sentiments score is acquired from the two words, ‘*disapproval* and *worst*’ than the three negative words in the second sentence after their part of their weights are cancelled out by the positive word, ‘*approval*’. By this weighting, the R function, `sentiment()`, can produce the sentiment score for any sentence. Thus this automated sentiment analysis is a very simple and clear-cut way of analyzing the tonality of sentences.

Table 2 Examples of Polarizing Words with Selected Sentences

Sentence	Negative	Positive
LDP plans major revision of Sports Promotion Law		<i>major, promotion</i>
Parties fear crash could sink Cabinet approval rate	<i>fear, crash, sink</i>	<i>approval</i>
Aso Cabinet disapproval jumps to 72% / Rate worst for a cabinet in 8 years	<i>disapproval, worst</i>	
New DPJ leadership, polls a worry for LDP	<i>worry</i>	<i>new</i>
Shady money-politics ties not going unnoticed by voters	<i>shady, unnoticed</i>	<i>money</i>

However, this automated method of sentiment analysis has its own limitation. Among others, it might produce serious errors of the estimated sentiment scores when the sentences contain metaphors or satires since the dictionary-based analysis does not account for metaphorical expressions or satirical ones. Notwithstanding, the method might be supported in this application if we consider that in the context of Japanese political news content, the amount of satirical or metaphoric content is not as abundant as to nullify or considerably distort the automated analysis results. In this regard, we are rather confident on the application of this method on the analysis of the Japanese newspaper articles.

Empirical results

Among the total 4,525 articles, 1,858 articles covering LDP are analyzed to calculate the sentiment scores of LDP and the remaining 2,667 articles are analyzed to calculate the sentiment scores of the DPJ. After collecting the sentiment score for each article, we calculated both the annual average and every four-month average during the period 2008~2010.

Table 3 shows the annual average of sentiment scores for LDP and DPJ respectively. According to the annual scores, LDP experienced a lower score than DPJ only in 2009, the election year. In particular, LDP record in 2008 is two times higher than that of the DPJ. This doubled record of LDP seems to be an unexpected one if we consider the political environment of 2008. Before the general election of September 2009, the LDP government was considered to be in serious trouble due to the economic crisis, the legislative gridlock, the low opinion polls etc. For example, in the early 2008, the LDP prime minister, Fukuda, had a hard time due to legislative confrontation against DPJ. At the time, DPJ already had the majority of seats at the upper house. He tried to get an unpopular gasoline tax renewed at a time when oil prices

were hitting new historic height, but only failed to pass it because of the DPJ's bloc and denigration of the need for the tax by blaming that the revenue was tied to some pork barrel politics (Arase 2009:108). In addition, a series of opinion polls show the decreasing popularity of the LDP since the early 2008. The Fukuda Cabinet support rate started at 55% in October 2007, but fell to only 20% in May 2008, a level normally requiring the resignation of the prime minister (Arase 2009:109). This problem has not been addressed after Aso became a prime minister in September 2008. Although the new prime minister refreshed the image of the government, every poll record at that time expected Aso to have hard time in reversing the LDP's worsening popularity.

Table 3 Sentiment Scores of LDP and DPJ, annual average

	2008	2009	2010
LDP	0.30	0.27	0.24
DPJ	0.15	0.34	0.20

Considering that the situation had become worse in 2009, the higher positive sentiment score of the DPJ than that of the LDP looks natural. But, again the 2010 record is opposite to the normal expectation since the new government draws commonly positive evaluations as a part of honeymoon effect (Bernhard et al. 2003). Although it is argued that new democracies are more affected by the economic performance prior to the election, Japan is not regarded as a new democracy. In addition, public support for DPJ was said to be around 40% since May 2010 (Rosenbluth, 2011). In opposite side, LDP did not gain public support either. Without a serious reform, LDP maintained its old programmatic emphasis on social security and urban voters. All these contexts imply that the tonality toward the DPJ in 2010 should not be lower than that of LDP. That is, DPJ was the governing party and its performance and records of popularity were not bad enough to score lower than LDP. But, the records show that the media tonality only changed after September 2010 into supporting the DPJ slightly higher than the LDP.

Therefore, the annual sentiment scores in Table 3 support the hypothesis 2, but does not support the hypothesis 1. The LDP relatively enjoyed a positive tone of media reports even under its bad governing performance. Meanwhile, the DPJ did not attract such positive media evaluation. While the opposition party experienced a little positive evaluation in the election period, it failed to enjoy the advantage of the governing party even during the honeymoon period. This demonstrates that LDP, irrespective of its governing status, enjoyed more positive evaluation by mass media in Japan.

Figure 1 checks the robustness of this assessment by decomposing the annual sentiment scores into four-monthly base scores. Starting from 2008 when LDP was the ruling party and DPJ was the main opposition party, media portrayal seems to be in favor of the ruling party. With many political issues, particularly tax policies, there has been a heated political debate between the LDP and the DPJ who controlled the majority in the upper house. While the prime minister, Fukuda, explained that the tax rise was to support the government social spending and distribute more resources for the construction of infrastructures, the strong opposition of DPJ in passing the bill had led to bitter public debates on the issue of tax increase. In this process, media supported the LDP by producing a lower sentiment scores for DPJ, 0.079. This trend was not reversed even when LDP lost in the local election in Yamaguchi prefecture in June 2008.

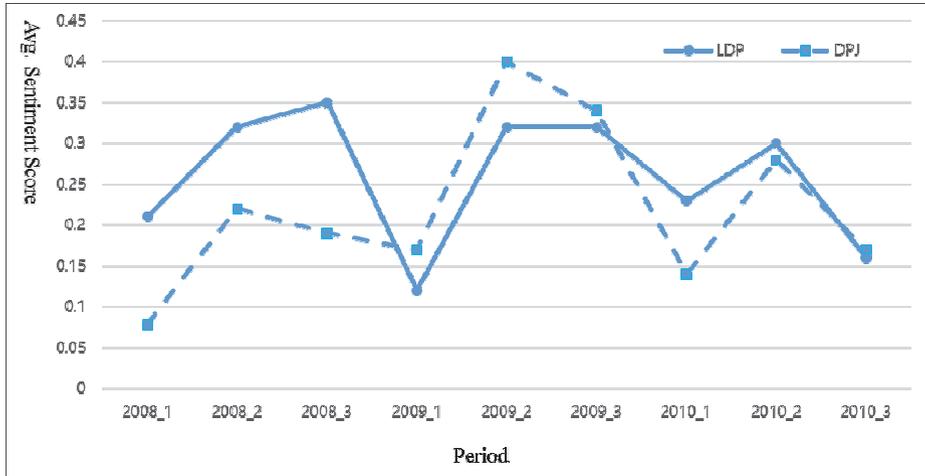


Fig. 1 Average Sentiment Scores, every four-month base

The second four monthly average sentiment scores still show 0.1 point higher for the LDP than the DPJ. The gap of sentiment scores between two parties doubled again when the prime minister, Fukuda, resigned and Taro Aso won the leadership competition. This LDP reform and leadership change seem to be welcomed by Japanese media. Meanwhile, although the opposition party, DPJ, gained the local elections by mobilizing some lobbyist groups and industrial companies which previously supported LDP, the media did not turn its position very easily. The relatively lower scores acquired by the DPJ in 2008 represent the stark negative reports on the opposition party.

Moving to 2009, it is eye-catching that DPJ acquired a sharp increase in positive portrayal by media reports. As a transition year, with the general election occurring in August 30, many incidents contributed to LDP's lowering popularity. First, the popularity of new prime minister, Aso, had been continuously decreasing. Second, the government policy of cash-handout to encourage private spending was not successful to redress the economic crisis and in turn failed to alleviate discontents among Japanese voters. Third, as some members of cabinet resigned, the government was not stable enough to pursue and implement proper policies against the economic crisis.

LDP's situation became worse as voters were more likely to accept the DPJ's manifestoes in the second four-month period. In particular, the DPJ's pledge against the Japanese bureaucratic system and its willingness to redress the economic problem gained popular support (Arase 2010). But, it should be noted that in spite of the DPJ's increasing popularity and LDP's failure to redress the economic crisis, the media retained high suspicion on the plausibility of DPJ's electoral promises. The intensity of negative reports toward LDP by media was somewhat weakened in the period approaching the positive evaluation of DPJ. Also, it is rather unexpected that the positive tonality of media reports toward DPJ dropped after the general election. Since DPJ won a landslide victory consisting of the long-awaited majority in the Lower House of the Diet, the common honeymoon effect was expected to be stronger at that time. But, the reality was in contrast a sudden drop of the positive reports on the DPJ by the media. Therefore, over

the 2009, the LDP did not experience a harsh treatment by the media, but maintained relatively stable records despite the significant contextual changes against it.

Finally, the variation on sentiment scores in 2010 for the DPJ does not confirm the hypothesis 1. That is, the DPJ never enjoyed the positive reports by media from its status as governing party. It could result from the party's failure in providing an effective solution to the economic recession, or from the leadership crisis it faced right after the election. The average sentiment scores during the first four months of 2010 recorded 0.14, which was even lower than the previous year. The money scandal involving the DPJ's prime minister, Hatoyama, was highlighted by the media at the beginning of 2010 (Rosenbluth 2011). Also, the failure of providing a clear cut budgetary strategy to finance the welfare programs promised during the election was seriously criticized by the media.

In contrast, LDP tried to improve its images by proposing new military policies to address the US-Japan security alliance and suggesting a constitutional reform to lower the voting age to eighteen years old from twenty. Under the context of government failure, these measures taken by the LDP, although they were not so successful, helped to improve LDP's image relatively to DPJ. Notwithstanding, the relatively higher positive sentiment scores of the LDP might not be easily expected without the media's favoritism towards the party.

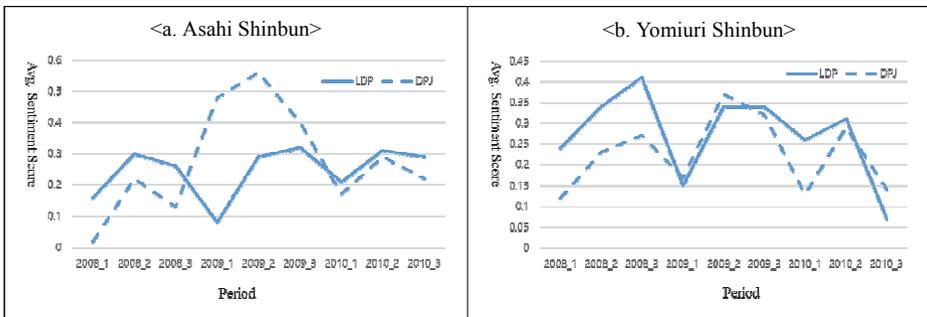


Fig. 2 Average Sentiment Scores by Each Media, every four-month base

These trends are also confirmed when we calculate the sentiment scores for each news outlet. In Figure 2, we observe that although the gaps of the sentiment scores between two newspapers differ, the two graphs show a similar pattern. The ideologically progressive newspaper, Asahi, reported the DPJ from more positive stance during the election year, 2009, compared to the conservative Yomiuri. But, both newspapers delivered the reports for the LDP with stronger positive tones when the LDP was an opposition party in 2010. Thus, except for the election period, LDP enjoyed to some extent a tonality bias by both medias.

To sum up, the sentiment scores of the four monthly basis show that the Japanese media has reported highly favorable tones toward the LDP. Regardless of its governing position, LDP has been reported positively more than what was expected. Even when the party showed a bad governing performance in 2009, it experienced a short drop of the sentiment score and then recovered very quickly. When LDP was an opposition party in 2010, it enjoyed higher sentiment scores than the governing party, DPJ.

Conclusion

This article examined how the media industries exhibit signs of tonality bias toward the long-dominant party Liberal Democratic Party. We see the LDP case is very interesting since she presents unique political feature among democratic countries. The LDP has been almost monopolized political power in Japan. LDP has been successful in institutionalizing itself within the Japanese political system. In 65 years of democracy the party has lost her power only twice: once in 1994 against a coalition of opposition parties and once in 2009 against the Democratic Party of Japan(DPJ).

Given the dominance of political power of the LDP in Japan, it might be natural to think of the media bias toward the LDP. But, existing literature has commonly focused on media reports on the works of LDP government. As a consequence, although many studies show media bias toward LDP governments, they fail to differentiate the media bias toward the LDP from that toward the government. That is, we still do not completely know whether Japanese media reports in favor of the LDP or of the government. In this regard, we take the cases of media report under the 2009 election periods when there occurred strong competitions between the LDP and the DPJ. These cases help us to compare media reports on two competing political parties and thus discern the degrees of bias toward one of the parties as well as the government.

In light of these considerations, we first, hypothesized that media in Japan might be biased towards the ruling party, second we hypothesized that media might be biased more specifically towards LDP.

To test the hypothesis and answer the research question we performed a newspaper coverage analysis of the period surrounding LDP political defeat in 2009. LDP's defeat in 2009 provides a very rare context in which the party became an opposition party, moreover the defeat against another single party(DPJ) has been crucial in providing a benchmark for comparison. Overall 4,525 newspaper articles from Japan's two major newspapers have been gathered and analyzed through a sentiment analysis package(*SentimentR*). The gathered newspaper articles covered both LDP and DPJ for a temporal arc that ranges from 2008 to 2010. This temporal arc has been selected to provide a better evolution of the sentiment scores through the different governing contexts of LDP. In 2008 LDP was the ruling party and DPJ was the main opposition party. In 2009 the election took place consequently leading to a shift of power for the two parties. Finally, in 2010 LDP was the opposition party and DPJ was the ruling party. The use of *SentimentR* to quantify the positive portrayal of the newspaper articles has brought interesting results. The comparison of the sentiment scores between LDP and the opposition party DPJ has resulted in confirming the slant attitude of media toward the institutional party LDP. The average sentiment scores have highlighted how LDP has been better portrayed than DPJ in both 2008 and 2010 but not in 2009. In view of the results, we deduced that independently from LDP's governing position the party enjoyed a higher sentiment score average, thus concluding that the results seem to corroborate the second hypothesis while invalidating the first one.

We conclude that in light of the findings it is plausible to assert that Japanese media present a slant attitude towards the long-dominant party LDP. Our findings are expected to contribute to extend the existing discussion on media bias in Japan. In particular, overcoming the weakness of the existing literature focusing on the reports on government works, they might improve our understanding of the media bias specifically on the LDP, not on the Japanese government.

References

- 정치회. (2016). “2000년대 이후 자민당 정권의 방송내용 규제논리와 NHK 우경화 논란,” 『동아연구』 70, 151-188.
- Arase, David. 2009. “Japan in 2008: A Prelude to Change?” *Asian Survey* 49(1), 107-119.
- Arase, David. 2010. “Japan in 2009: A Historical Election Year.” *Asian Survey* 50(1), 40-55.
- D'Alessio, D., & Allen, M. 2000. “Media bias in presidential elections: A meta-analysis.” *Journal of Communication* 50(4), 133-156.
- Dekalchuk, Anna and Khokhlova, Aleksandra and Skougarevskiy, Dmitriy. 2016. “National or European Politicians? Gauging MEPs Polarity When Russia is Concerned.” *Higher School of Economics Research Paper No. WP BRP 35/PS/2016*.
- DellaVigna, Stefano, & Kaplan, Ethan. 2007. “The Fox News effect: Media bias and Voting.(effect of service introduction of Fox News Channel on voting in American elections).” *Quarterly Journal of Economics* 122(3), 1187-1234.
- Eberl, J.-M., Boomgaarden, H. G., & Wagner, M. 2017. “One Bias Fits All? Three Types of Media Bias and Their Effects on Party Preferences.” *Communication Research* 44(8), 1125-1148.
- Freeman, L. 2012. *Closing the Shop*. Princeton; New Jersey: Princeton University Press.
- Julianne Schultz. 1998. *Reviving the Fourth Estate: Democracy, Accountability and the Media (Reshaping Australian Institutions)*. Cambridge University Press.
- Junqué de Fortuny, E., De Smedt, T., Martens, D., & Daelemans, W. 2012. “Media coverage in times of political crisis: A text mining approach.” *Expert Systems With Applications* 39(14), 11616-11622.
- Kimiko Kuga. 2016. “Japan’s press clubs: an impregnable fortress of information.” *Media Asia*, 43(1), 14-17.
- Khedr, A. E., SESalama, & Yaseen, N. 2017. “Predicting stock market behavior using data mining technique and news sentiment analysis.” *International Journal of Intelligent Systems and Applications*, 9(7), 22.
- Lachanski, M., & Pav, S. 2017. “Shy of the Character Limit: "Twitter Mood Predicts the Stock Market" Revisited.” *Econ Journal Watch* 14(3), 302-345.
- Maeda, K. 2010. “Factors behind the Historic Defeat of Japan's Liberal Democratic Party in 2009.” *Asian Survey* 50(5), 888-907.
- Maggie Farley. 1996. “Japan Press and the Politics of Scandal.” In *Media and Politics in Japan*. Edited by Susan J. Pharr and Ellis S. Krauss. 133-163. Honolulu. University of Hawai'i Press.
- Mccarthy, Killian & Dolfmsa, Wilfred. 2014. “Neutral Media? Evidence of Media Bias and its Economic Impact.” *Review of Social Economy* 72. 10.1080/00346764.2013.806110. Michael Penn. 2017. “The Hatoyama Administration and the Outing of the Establishment Media” in *Press Freedom in Contemporary Japan*. Edited by Jeff Kingston. Abingdon, Oxon; New York, NY. Routledge.
- Naldi, Maurizio. 2019. “A review of sentiment computation methods with R packages.”
- Reed, S., Scheiner, E., & Thies, M. 2012. “The End of LDP Dominance and the Rise of Party-Oriented Politics in Japan.” *The Journal of Japanese Studies*, 38(2), 353-376.
- Rosenbluth, F. McCall. 2011. “Japan in 2020: Messy Politics But Healthier Democracy,” *Asian Survey* 51(1), 41-53.
- Salunkhe, Pritee and Sachin Deshmukh. 2017. “Based Election Prediction and Analysis.” India. University of Maharashtra.
- Sanders, J.E. 2018. “Similarities and Differences in the Argumentative Characteristics of the Official Brexit Campaigns.” *LSE Undergraduate Political Review*, Vol 1, pp 1-21.
- Sartori, Giovanni. 1976. *Parties and Party Systems: Framework for Analysis*. Cambridge; Cambridge University Press.
- Shapiro, A., Sudhof, M., & Wilson, D. 2017. “Measuring News Sentiment.” *IDEAS Working Paper Series from RePEc*, IDEAS Working Paper Series from RePEc, 2017.
- Susan J. Pharr. “Media as Trickster in Japan: A Comparative Perspective”. 1996. In *Media and Politics in*

- Japan*. Edited by Susan J. Pharr and Ellis S. Krauss. 19-43. Honolulu. University of Hawai'i Press.
- Soroka, S., Young, L., & Balmas, M. 2015. "Bad News or Mad News? Sentiment Scoring of Negativity, Fear, and Anger in News Content". *The ANNALS of the American Academy of Political and Social Science* 659(1), 108–121.
- Taj, Soohn & Meghji, Areej & Shaikh, Baby. 2019. "Sentiment Analysis of News Articles: A Lexicon based Approach." Paper presented at 2nd International Conference on Computing Mathematics & Engineering Technologies-2019 (iCoMET).
- Tyler Wade Rinker. 2015. <https://github.com/trinker/sentimentr>. Accessed October 2019.

