Strategy for Differentiation:

South Korea's Global Green Growth Leadership Seeking

By

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Author's Declaration

I, the undersigned Seonkyeong Kang, hereby declare that I am the sole author of this thesis. To the best of my knowledge, this thesis contains no material previously published by any other person except where proper acknowledgement has been made. This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language.

This is a true copy of the thesis, including final revisions.

Date: June 17, 2022

Name: Seonkyeong Kang

Signature

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Abstract

South Korea announced Green Growth Strategy and its ambition to be a global green growth leader as a responsible middle. Ironically, when Korea announced the strategy, it faced an economic downturn that required immediate fiscal remedy. As the South Korean economy is highly dependent on carbon-intensive industries, the strategy raised concerns among the public, industry, and political elites about the economic benefits of green growth in the short term. This thesis addresses the research a question "Why does South Korea persist in global green growth leadership despite pushbacks from domestic public and political elites?" This thesis analyses presidential speeches by conducting topic modelling and qualitative content analysis. By uncovering topics presented in relations to green growth strategies and contextualising, it argues that South Korea's strategy aims to differentiate itself from its previous image of a 'developing country' and insist on its middle power identity. This further argues that middle powers attempt to play a leading role in a particular policy area which affects to its national image transition the most. This thesis bridges the gap between normative middle power theory and empirical study on the implication of the identity into the national strategy as well as provide heuristic research approach.

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1. Introduction

1.1 Research Objective

In the wake of growing concern about global climate change, many countries are introducing climate change policies that are guided by international regulations. Green growth is a climate change policy that aims to explore opportunities to adopt a new low-carbon economic development model, proposed by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in 2005.

In 2008, the 17th President Lee Myung-bak fist set "Green Growth" as a national strategy, and the 19th President Moon Jae-in revived the strategy with the introduction of the "Green New Deal" in 2020. The Green Growth Strategies (GGS)[1] introduced by the presidents claimed to be a "global green leader" as a responsible middle power (MP). In line with this model, South Korea (hereafter Korea)[2] established international climate change institutions, increased budgetary spending on foreign environmental aid, and set targets for reducing carbon emissions at home. Despite Korea's expanding GGS and its growing role in the international relations (IR), there have been few studies of South Korea's GGS in terms of global leadership. This paper thus addresses the following research questions: "Why does South Korea persist in global green growth leadership despite pushbacks from domestic public and political elites?"

This research question is puzzling mainly for the following two reasons. First, when the two South Korean presidents addressed the GGS, Korea was in an economic downturn. In 2008, when President Lee Myung-bak first proposed the Green Growth vision, Korea's GDP growth

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[1]To distinguish between the general green growth strategy and President Lee Myung-bak's one, I used GGS for the general green growth strategy. I used full names for each President's strategy.

[2] As this thesis focuses on South Korea's Green Growth Strategy, Korea in the thesis indicates South Korea. When it mentioned North Korea, the full name of the country is used.

fell 2.8%-point year-on-year due to the global financial crisis that started in the US and Europe. In addition, the global economy was hit by a pandemic in 2020, which also affected the Korean economy. Given Korea's economic situation, short-term fiscal remedies were more urgent.

GGS is a long-term strategy that requires time and financial cost, including the cost of changing technology and economic system. Korea's economic development has depended primarily on carbon-intensive industries such as construction and heavy industry. The introduction of a green growth strategy shows that Korea is trying to comprehensively transform its economic structure. Although presidents assume the impact of GGS on creating new jobs and sustainable energy security, the timing that two presidents launched the strategies and questions about their efficacy for short-term economic growth from the domestic public, industry, and political elites have continued.

Second, Korea did not have a comparative advantage in green technology over the pioneers in the sector, such as the European Union, Canada, or Australia. Since the GGS contains two goals: economic development and environmental protection, which seem to be mutually exclusive, the policy makers faced with a choice between economic growth and taking effective measures to protect environment. In addition, controversies in government policies, such as on nuclear power, have led to considerable debate about the appropriateness of the GGS.

Even though the strategies of both administrations insisted on transitioning to a domestic economy and expanding its role in the IR, Korea still lacks consistent policies and the technological capacity to take on this role. Therefore, this paper answers the research question by examining the objectives of the GGS. To this end, this thesis investigates Korea's perception of green growth and how presidents contextualised the GGS. The findings of this thesis will contribute to building an overarching framework of the differentiation approach to explain MP

behaviour by bridging the gap between the normative theory on MP strategy and the practical implication of identity to national strategy.

Another contribution of this thesis is the construction of a heuristic framework for studying MP strategy. Mainly, this seeks to develop a differentiation-based framework of MP strategy. Considering the shortcomings of MP theory and lack of its empirical studies on the differentiation framework, the case study on Korea's GGS will contribute to theorising the framework. The methodology and approaches utilised to identify topics incorporated with the GGS and contextualisation of issues in the speeches provide a heuristic research approach.

Chapter 1 and two introduce the historical development of Korea's GGS and studies on it. Chapter 3 explains the process of the study, including the methodology and data, as well as the tools used in this thesis. Chapter 4 conducts a topic modelling of the speeches of the 17th President Lee Myung-bak and the 19th President Moon Jae-in. This chapter shows which topics the presidents addressed with the GGS. Chapter 5 conducts a qualitative content analysis on the presidential speeches to examine how the presidents delivered the GGS. This part focuses on two things. Fist, how the two Presidents perceive GGS, and second, how they contextualised the GGS in their speeches. Chapter 6 summarises and discusses the results of the analyses and highlight the contribution of the thesis.

1.2 Historical Development of South Korea's Green Growth[3]

Korea was the first country to adopt a GGS as a national strategy (Global Green Growth Institute 2015). Korean climate policy has four stages of development: observational

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[3] This chapter revised the Korean climate change diplomacy development based on Kim(2016), governmental policies issued by Blue House.

participation (1972-1987), passive reaction (1989-1996), active reaction (1997-2007), and active leadership (2007-present) (Kim 2016).

In the first and second phases, Korea tended to adopt the international climate change rules. Korean climate policy began in Roh Tae-woo administration in 1992 with the establishment of the United Nations Framework Convention on Climate Change (UNFCCC). As a developing country, Korea supported "Common But Differentiated Responsibility" (CBDR) principle.[4]

In 1993, during President Kim Young-sam administration (1993-1998), Korea ratified the UNFCCC as a Non-Annex I Party country[5] on 14 December 1993. Based on the treaty, Korea minimised costs and responsibilities by taking advantage of its developing country status and slowly transitioned to an energy-saving industrial structure (Kim 2016, p. 137). Meanwhile, Korea became an official member of the Organisation for Economic Co-operation and Development (OECD) in December 1996 and withdrew from the G77 in April 1997. This shows that Korea is recognised as industrialised economy. Despite the economic development, South Korea maintained its status as a developing country in the context of climate change.

In the third and fourth phases, Korea has been more active in implementing its climate change actions. The government of President Kim Dae-jung (1998-2003) moved to active

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[4] The Common But Differentiated Responsibilities (CBDR) principle is within the United Nations Framework Convention on Climate Change (UNFCCC). This principle acknowledges that all states have a shared obligation to address environmental destruction but denies equal responsibility of all states concerning environmental protection. At the Earth Summit, states acknowledged the disparity in economic development between developed and developing countries (UNFCCC 1992).

[5] Non-Annex I Parties are mainly developing countries. The Convention recognises certain groups of developing countries as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and droughts. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasises activities that promise to answer these vulnerable countries' particular needs and concerns, such as investment, insurance, and technology transfer (UNFCCC n.d.).

reaction stage. Kim administration established institutional systems to adapt the Kyoto Protocol at the national level: Pan-governmental Organisation for Climate Change Convention was established in April 1998; national plan to address the UNFCCC was devised, legislation for implementing the international regulation was passed in December by the national assembly. Until President Roh Moo-hyun (2003-2008), Korea followed the international rules by incorporating them into national legislation, but there were no outstanding performances in the international regime.

Difference between the third and fourth stages is Korea's role in the international regime. In the active reaction period, Korea formulated subgroups within the existing climate change regime, and began to raise its voice as a developing country. In the active leadership period, Korea officially sought a "leading role" and established an international and regional institutionalised regime.

Lee Myung-bak administration (2008-2013) has begun "active leadership" stage in climate change policy since the beginning of its term. Under the guiding principle of Low-Carbon Green Growth (LCGG), Lee administration has taken remarkable domestic and international action. Domestically, the Presidential Committee on Green Growth was established, the National Strategy and Five-Year Plan for Green Growth were announced, and sector-specific GHG emission reduction targets were introduced (Kim 2010). At the international level, the administration established the Global Green Growth Institute (GGGI), expanded foreign environmental aid, drafted the Declaration on Green Growth, proposed a GGS at Rio+20, and took over the secretariat of the Green Climate Fund (GCF). Korea also promised to finance developing countries' adaptation to climate change policy through the EACP from 2008 to 2012.

Park Geun-hye administration (2013-2017) has backtracked in some way in terms of climate change policy. Moon Jae-in administration (2017-2022) revived the GGS, initiating the "Korean New Deal," which consists of the Green New Deal, the Digital New Deal, and the Human New Deal. Domestically, Moon administration increased the national budget for the development of green technologies, including green mobility such as electric and hydrogen cars, low-carbon and green industries, and the shift to renewable energy with a goal of "net-zero"[6] by 2050. Moon Jae-in pledged to expand South Korea's role in climate policy on the international stage at COP26 in 2021 and two P4G summits in 2020 and 2021, and to increase the budget for green technology and environmental ODA during the pandemic. Domestically, the government has established the Office for the Korean New Deal as a direct institution of the President.

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[6] Net-zero is the concept explaining cutting greenhouse gas emissions to as close to zero as possible by equating the amounts of emissions and re-absorbed from the atmosphere (United Nations n.d.).

2. Literature Review

There are two strands of studies dealing with Korea's GGS. The first strand is the MP theory, as Korea insists on MP identity. There are three approaches to explaining MP: hierarchical, behavioural, and functional.

The hierarchical approach focuses on state's material powers. In this approach of categorisation, states are ranked hierarchically on the basis of military and economic indicators. In this approach, MP is between great and small powers. However, the hierarchical approach is not sufficient to comprehensively explain MP. This is because measuring national status based on identical standards is not sufficient to explain the uneven pattern of development levels. Moreover, distribution of countries within the tiers also varies. For example, South Africa, one of the MP countries in MIKTA[7], declined its economic level from 33rd to 39th, whereas the other countries increased from 2019 to 2020.

Behavioural approach explains the MP based on states' behaviour in the IR. MPs tend to be a good international citizen, support multilateralism and international orders, and serve as mediators in disputes (Efstathopoulos 2018; Carr 2014; Chapnick 1999; Cox 1998). MP attributes to international multilateralism with preserving its autonomy via-a-vis the great powers by establishing binding rules, pursuing its values and interests, and maintaining autonomy (Behringer 2005). In the late 1990s and in the twenty-first century, as the number of MP and their influence grew, they institutionalised sub-group in international institutions such as MIKTA within the G20 (Cooper 2016).

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[7] MIKTA stands for Mexico, Indonesia, South Korea, Turkey and Australia.

Functional approach explains that MPs tend to play a role in certain international issues, which is non-traditional security issues such as climate change, health, cyber security, utilising its soft power (Nye 1990) [8] to present their interests in IR. Cooper (1997) explains MP's strategy as 'niche diplomacy'. As MP states have limited resources, they tend to focus their resources on specific issues and play a leading role in them (Mo 2016, p. 588; Thies & Sari 2018, 399).

Australia's foreign policy on climate change (Narisya 2021) is considered as an exemplary case of a MP strategy. Australia plays an important role in responding to climate change due to its geographic proximity to island states. Equipped with the "soft power" that Australia possesses with its economic and social status in IR, it played a role in "agenda-setting, persuasion, and attraction" (Hidayatullah 2017).

Korea's claim to be a global leader in green growth has characteristics described in the MP theory: multilateralism, niche diplomacy, and soft power (Mo 2016; Karim 2018). Korea insists on a growing role in regional and IR based on its soft power (Ikenberry & Mo 2013). Since the late 1990s, South Korea has begun to refer to itself MP and promote its image as an important Asian and global player. Korea participated in international regimes and followed liberal order by taking a role in regional security issues. For example, Korea hosted the Six-Party Talks to discuss North Korean nuclear weapons. Korea also participated in Official Development Assistance (ODA) programmes as a donor country and expanded its role from a regional leader to international leader (Lee 2016; Moon 2008).

President Lee Myung-bak launched the "Global Korea" vision to enhance Korea's role beyond its regional sphere to the international sphere (Lee 2016). The hosting of the G20

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[8] "Soft Power" is power of attraction to affect other states' behaviour through non-coercive instruments, including culture, political values and foreign policy (Nye 1990)

Summit in Seoul in 2010 and the Nuclear Security Summit in 2012 shows that Korea aims to expand its leadership role (Teo, Singh & Tan 2016). "Green Growth" is in line with the Lee administration's vision. The creation of a new climate regime on the Korean peninsula and the promotion of GGS show that Korea is enhancing its leading role to niche diplomacy. Moon Jae-in's "Korean New Deal", which includes the "Green New Deal", is in the same vein.

Although the MP theory is a foundational framework to explain Korea's GGS, the incorporation of MP identity into national strategy formation has not been sufficiently explored. The theory explains Korea's motivations to pursue an identity that follows international rules and strives for GGS. However, it still does not provide evidence on why specifically GGS the Korean government focus on, instead of other securities issues that Korea has comparative advantage such as ICT-related issues.

Moreover, MP theory does not explain the reasons for self-identification. There are several countries that refer to themselves MP even though economic advantages they can gain as a developing country in the international climate regime, for example CBDR condition. Although the CBDR condition provides buffer period to implement climate change policies for economic development, the countries voluntarily pursue MP status. However, this is not explained by the existing MP theory.

The second strand of literatures focuses on the national security aspects of GGS. Climate change is seen as a "threat multiplier" (MacPherson 2017) that affects national security, including economic, social, and human security. MacPherson's study (2017) presents impacts of climate change on national security with the example of the South Pacific region by weakening

the capacity of administrations to sustain the national system due to increasing migration issues caused by climate change.

Among security issues, energy and economic security are explicit concerns of Korea's GGS. Increased oil and gas prices during the economic downturn raised concerns about energy security. The Korean economy is vulnerable to fluctuating energy price as it is highly dependent on imported energy. In the early stages of development, energy resources were crucial for increasing productivity and price competitiveness to support economic catch-up (Jung 2015). As the resource prices escalated during the global economic crisis, it was essential to secure sustainable energy resources. Considering the GGS includes policies to promote sustainable energy resources, the strategy aims at Korea's energy independence.

The GGS also serves to protect national economic security and sustainable economic development. Industrial innovation and the introduction of environmental policies are expected to benefit from the international trade regime. Considering the importance of climate change, the international trade regime has proposed a carbon tax, and negative incentives for carbon producers. To protect national economic security from changes in the international development, proactive GGS equipment is essential (Ulph & Ulph 2007; Barrett 1994; Barrett & Stavins 2003).

Korea's GGS is also implemented for economic reasons. Presidents explicitly defined green growth as an economic strategy in general official documents. They emphasised importance of technology innovation and promised to increase investment in green technologies and prepares to change the international economic system in advance. Korea's green growth, which includes fiscal policies that support technological development and incorporate

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information and communication technology (ICT) development, is closely related to economic factors. To meet international standards, Korea has voluntarily set carbon reduction target and pursued green innovation. South Korean government also expected spill over effects from green innovations for prosperity and promotion of new economic engines for economic growth (Fankhauser, Tol & Pearce 1997; Katsoulacos & Ulph 2001).

This approach explains the rationale behind Korea's GGS. However, this still not adequately explain Korea's persisting in leadership. Unlike Australia and European countries, Korea was not a pioneer country in climate issues. Korea voluntarily gave up its position as a developing country in 2008 in the climate policy regime, despite the position provided benefits in economic aspects in the short-term.

The previous studies partly explain Korea's insistence on the GGS. The first strand of the studies explains Korea's GGS based on the MP identity of Korea, and the second strand of the studies explains based on the security benefits of GGS. Although Korea's GGS includes both MP identity and practical economic issues, there is no study that links the two strands. To fill this gap, this thesis aims to provide a comprehensive analysis and incorporate the MP theory and practical issues of the national strategy of MP.

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3. Methodology and Data

3.1 Overview of Analysis Process

This thesis relies on an abductive research methodology. Abductive methodology involves observing data and drawing logical assumptions, explanations, and conclusion (Brinkman 2014). This also uncovers patterns of contextualising national strategies, determining their meaning, and constructing conclusions based on the observations (Patton & Appelbaum 2003, 67). As this thesis does not aims produce a general theory or assumption but focuses on examining South Korea's case abductive methodology provides a heuristic research framework for the study.

To answer the research question, this thesis conducted topic modelling and qualitative content analysis. The primary purpose of the thesis is to understand the purpose of the GGS of the Korean government. To this end, it is essential to understand what issues (topics) the presidents discussed in their speeches and the contexts in which they mentioned the topics.

3.2 Research Methodology

3.2.1 Topic Modelling

To identify which topics were delivered with the GGS, this conducted topic modelling (TM). TM is an efficient, computer-based technique for analysing text contents, used in various research sectors (DiMaggio et al. 2013; Hagen 2019; Quinn et al. 2010). It does not require labelled data and can be applied directly to a range of text documents to extract information.

For the TM, I used the Latent Dirichlet Allocation (LDA) model to generate statistical probabilities based on the observations (DiMaggio et al. 2013). LDA is one of the most popular TM methodologies that identifies the embedded topics in the document by uncovering weighted

groups of words that occur frequently in the document. Shown in the Figure 1, document (target text data) is composed with multiple topics, and each topic is composed with multiple words. A word can be shared in multiple topics.
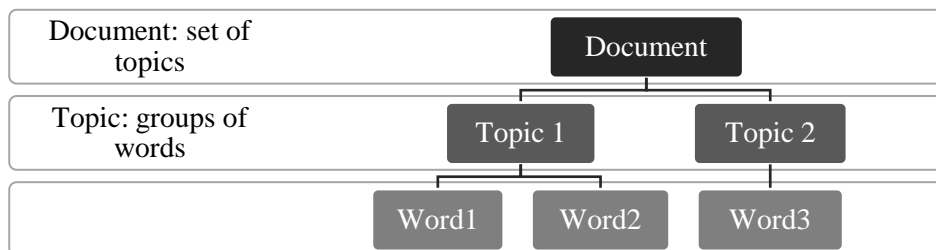

Figure 1. LDA Model

LDA model provides initially provides two outputs: "estimated probability of a document being generated by a topic (referred to as an affinity score), the probability of a word being used to represent a topic (referred to as a topic)" (Hagen 2018). For modelling, it is necessary to indicate a specific number of topics (*k*). It is possible to designate the *k* manually or calculate with sample data. The HDT-LDA function was used to determine the optimal number of topics to increase credibility and minimise perception bias.

The advantage of the TM is a possibility to discover relevant terms without a priori knowledge. With a large amount of data, there is a likelihood of perception bias and omission. As TM follows "letting the text speck" approach, the problems are also prevented (Graneheim & Lundman 2004; Mimno et al. 2011; Hagen 2019).

However, there is limitations of this modelling. First, TM does not look at change in term usage over time or in contexts within a given word. For example, the results may show that the topic of tree death is relevant, but the terms for the topic may not be consistently used or discussed in the context of that topic.

Second, interpretability loss is another shortcoming of this model (Hagen 2019). Since the results of TM are entirely data-driven, it is questionable to what extent they accurately reflect

the topics written in the text. For this reason, this paper combines qualitative content analysis with TM.

In this thesis, I used Rstudio, with "topicmodels" package to perform modelling, and bigram analysis is performed as a supplement.

3.2.1 Qualitative Content Analysis

In order to identify contexts of the topic, this thesis utilised qualitative content analysis. Qualitative content analysis is a widely used research method focused on interference and interpretation of communication data using manual or computational methods (Krippendorff, 2013). The content analysis used here focused on understanding how the presidential office understands green growth issues. Content analysis is a systematic and flexible method for analysing text data (Cavangh 1997). The method describes a family of analytic approaches ranging from "impressionistic, intuitive, interpretive analyses to systematic, strict textual (Hsieh & Shannon 2005)".

The main idea of qualitative content analysis is to measure a manifest content of text data (transcript of interviews, discourses, protocols of observations, policy documents, speeches) and suggest the themes of the data. Qualitative content analysis aims "to provide knowledge and understanding of the phenomenon under study" (Downe-Wamboldt 1992, 314). This method is for the subjective interpretation of the text data through systematic classification and theme or pattern identification (Hsieh and Shannon 2005).

Despite the advantages of qualitative content analysis, there are some shortcomings. First, large amounts of data require a time-consuming process. Second, there is the problem of bias. These shortcomings lead to limited credibility of the study and objectivity of research. To

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maximise the efficiency of the TM for the content analysis, it is crucial to develop a systematic

approach focusing on the interpretability and validity of the result of the modelling (Hagen

2019).

3.3 Data

This thesis examines 77 presidential speeches by 17th President Lee Myung-bak (n=43)

and 19th President Moon Jae-in, who officially announced GGS as a national strategy (n=53). [9]

The Lee Myung-bak administration used the term "Green Growth" since he took office in 2008,

and the Moon Jae-in administration announced the "Green New Deal" as a pillar of the Korean

New Deal in 2020. As two national plans were designed and proposed by the presidents, the

speeches of the two provide a basic understanding of the issue. The speeches of two presidents

explicitly show how the presidents perceived the GGS and Korea.

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[9] The speeches of President Moon Jae-in is available from here: https://www.korea.net/. President Lee Myung-bak's speeches are available here: http://17cwd.eng.pa.go.kr/pre_activity/speeches/speeches_list.php.

4. Topic Models for Presidential Speeches

In this chapter, I analysed the speeches of President Lee Myung-bak and President Moon Jae-in by conducting TM. To increase credibility and minimise data confusion, stop words[10] are deleted. This firstly decomposed sentences into words (*corpus*) and calculated frequency of each word. Based on a frequency report, this identified the frequently appeared but meaningless words and deleted them.[11] Besides, since single word has limitations to understand the meanings of each term, this utilised the "bigram" model and this form of phrase. Bigram is a set of N-gram models that calculates the probability of words to be presented with preceding word based on conditional probability statistics, presenting the relationship among the words (Schmidt & Heckendorf, 2022)

The bigram graph (Figure 1) shows that *green growth, climate change, and carbon neutrality* are the most frequently mentioned words in speech data. Additionally, words related to the economic crisis are frequently mentioned in the text data. Based on the result, it is able to identify that environmental issue, economic issue is accompanied with the GGS the most.

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[10] Stopwords are commonly used but provide little information, including articles. Along with the function, the stop words are automatically found and deleted.
[11] Words of "korea","korean","administration","since","percent","the","government", "countries","country","excellency","republic", "fellow", "citizen", "national", "assembly", "trillion", "won", "distinguished","guests","셰","19","unofficial","translation", "your","people","world","global","time","hope","will","also","year", "can","one","last","way","now","well","even","end","'s","- ","new","prime","minister","ladies","gentlemen","good","morning","mr","president","thank","much","move","toward","let","us","able","take","two","many","secretary","general","secretaregeneral","delegates","green","growth","climate","change", "united","states","year","ago" are also deleted.

Bigrams In Presidential Speeches (Combined)

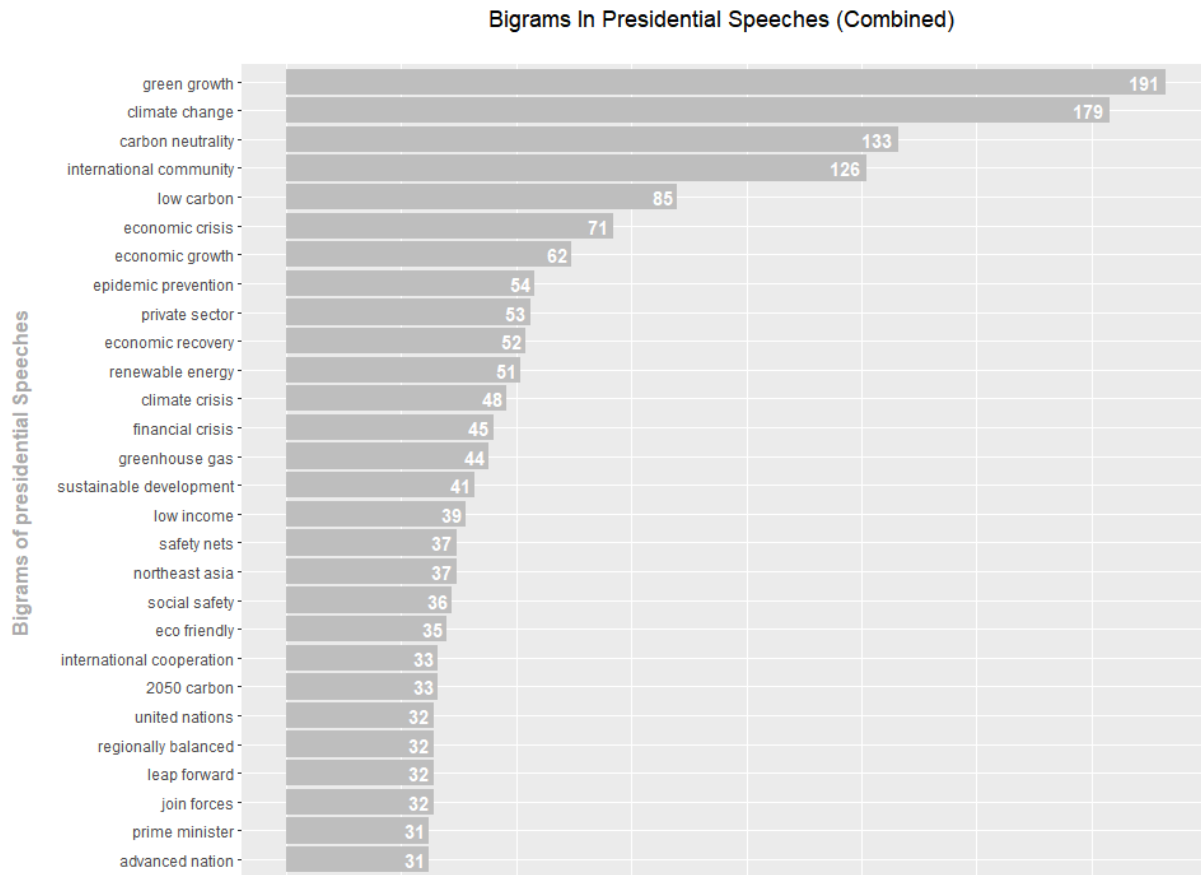| Bigram	Count
green growth	191
climate change	179
carbon neutrality	133
international community	126
low carbon	85
economic crisis	71
economic growth	62
epidemic prevention	54
private sector	53
economic recovery	52
renewable energy	51
climate crisis	48
financial crisis	45
greenhouse gas	44
sustainable development	41
low income	39
safety nets	37
northeast asia	37
social safety	36
eco friendly	35
international cooperation	33
2050 carbon	33
united nations	32
regionally balanced	32
leap forward	32
join forces	32
prime minister	31
advanced nation	31

Bigrams of presidential Speeches

Figure 2. Bigrams in Presidential Speeches

TM revealed embedded topics of text data. Whereas the bigram simply shows the frequently used terms, the TM groups the words in topics based on the frequency of cooccurrence. For TM, it is necessary to indicate the number of topics (*k*). It is possible to designate the *k* manually or calculate with the samples. The *k* must be large enough to generate interpretable categories that have not been over-aggregated and small enough to be usable at all" (Quinn et al. 2010, 216). To increase the credibility of the result, optimal *k* should be appropriately given. If *k* is too small, the topics will be over-aggregated, and if it is too big, the result of the study will be uninterpretable (Yau et al. 2014, 777). This uses the HDP-LDA model

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instead of designating it manually. The reason for conducting the HDP-LDA model is to increase

the model's trustworthiness and remove the bias in the analysis.

As shown in Figure 2, the optimal number of topics is between 10 to 17. Considering the

topic dispersion level is minimised at 10 (shown by the '▲ CaoJuan2009' line), this analysed the

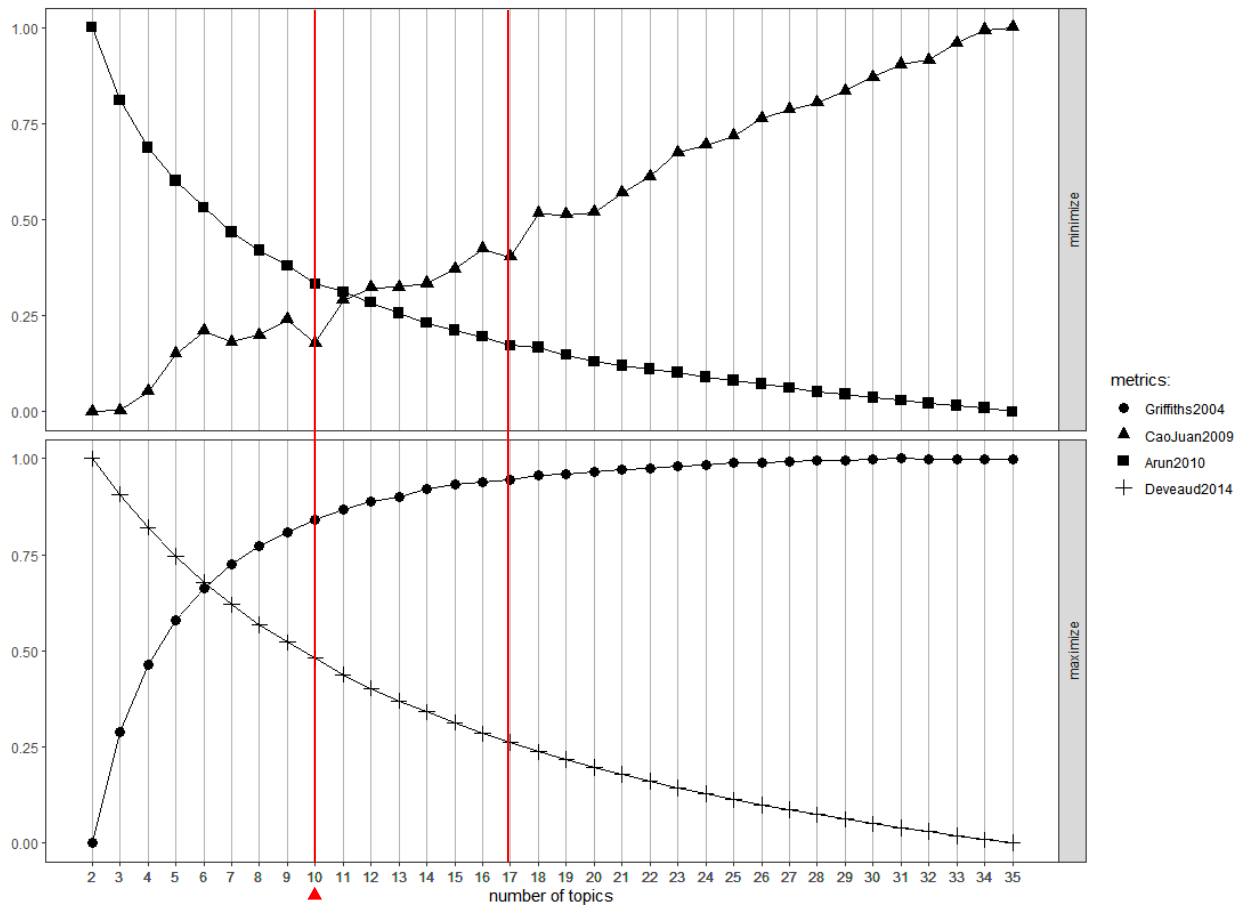text based on 10 topics (Table 1).

Figure 3. HDP-LDA Calculation

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	Topic1	Topic2	Topic3	Topic4	Topic5
	carbon neutrality, international community, culture arts, greenhouse gas, 21st century, regionally balanced, balanced deal, renewable energy, northeast Asia, balanced development, fine dust, ecosystemic development, safety nets, safety net, international cooperation	carbon neutrality, international community, epidemic prevention, economic crisis, greenhouse gas, prevention control, common prosperity, free trade, financial crisis, gas emissions, reduce greenhouse, Seoul summit, covid19 pandemic, g20 Seoul, emergency economic, five years	international community, power generation, offshore wind, economic crisis, wind power, g20 summit, sustainable development, usher era, economic recovery, real estate, mutual benefit, make sure, low-income families, interest rates, future cars	science technology, carbon neutrality, international community, peace peninsula, greenhouse gas, private sector, regionally balanced, gas emissions, renewable energy, northeast Asia, permanent peace, leaders industry, everyday lives, create jobs, 60 years,	carbon neutrality, international community, high schools, work together, peace peninsula, culture arts, response covid19, Koreans members, independence movement, member international, s response, financial crisis, northeast Asia, March 1, fiscal spending, first independence, balanced development, mutual benefits

	Topic6	Topic7	Topic8	Topic9	Topic10
	carbon neutrality, international community, epidemic prevention, economic crisis, prevention control, solidarity cooperation, advanced nation, covid19 crisis, renewable energy, hydrogen energy, top priority, five years, pacesetting economy, foreign aid, cultural content	business leaders, carbon neutrality, the international community, disease prevention, 2050 carbon, competitive edge, high school, school graduates, regionally balanced, balanced deal, balanced development, leap forward, covid19 pandemic, low-carbon economy, infectious disease, budget plan, s livelihoods	carbon neutrality, the international community, work together, economic crisis, sustainable development, per capita, hard work, renewable energy, Seoul summit, capital income, supply chains, leading nation, daily lives, 50 million, fair society	carbon neutrality, the international community, epidemic prevention, economic crisis, prevention control, 2050 carbon, economic recovery, join forces, private sector, financial crisis, renewable energy, independence activists, forward together, state affairs, provide support, local governments, human rights, everything possible, centrist pragmatism	the international community, work together, four major, covid19 crisis, restoration project, northeast Asia, safety nets, social safety, nuclear security, nuclear energy, look forward, liberation day, security summit, rivers restoration, major rivers, employment social, deeply grateful

Table 1. Frequent Terms Appeared in Each Topic

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As shown in the table, the *"international community"* appeared in overall topics. This presents that the green growth policies originated from the consciousness of global demand of climate change policies.

Topic 1 discusses the "regional role" of South Korea, which is interpreted with MP identity. Topic 2 is about resilience building, such as policy against the COVID-19 pandemic. The economic crisis, epidemic prevention, prevention control is prevailed in the topic. Topic 3 is identifiable as energy security, with words related to renewable energy sources and future energy sources. Topic 4 is also about renewable energy but is more related to job creation and human life. Topic 5 contains words discussing historical events, such as "march first (independence movement day)" and "independence movement." Topic 6 is highly similar to Topic 2 but discusses different topics. Topic6 emphasises South Korea's role as an advanced nation in the international and regional arena. Topic 7 is the human social security issues. Topic 8 is an economic security issue. Topic 9 discusses the international economic crisis and global issues such as human rights. Topic 10 is international security, such as northeast Asia's nuclear issue.

5. Qualitative Content Analysis of Presidential Speeches

In this chapter, the contextualisation process of GGS in the speeches is examined by conducting a qualitative content analysis. Based on the topics and words identified in chapter 4, this chapter examines sentences containing the topic words manually. The speeches defined the GGS in three ways: as for national security, economic development engines, and responsibility.

5.1 Green Growth as for National Security

Firstly, GGS is regarded as a response to national security threats incurred by climate change. National security encompasses economic, energy, human, social, and territorial security, referring to the ability of the state to protect its citizens. In this approach, GGS is usually considered as a strategy to prevent national security threats especially in relations to economic and energy security.

As shown in the bigrams and tables, GGS is most often mentioned in relations to the economic crisis and energy issues. From an energy security perspective, two presidents have linked GGS to rising energy prices and oil shocks. For example, President Lee addresses Korea as a vulnerable country from fluctuating energy price and a nation which *"does not produce even a single drop of oil"* in his speech on August 15, 2008, emphasising requirements to achieve energy self-sufficiency by implementing GGS. President Moon Jae-in also insists that GGS *"allow[s] us to keep our energy security robust without relying on"* imported energy sources.

Economic security is another important issue delivered with the GGS. From the economic security aspect, the focus is on job creation and building social safety net against economic crises. The administrations present the GGS to secure domestic economy from

fluctuating international economic condition and ensure economic security by creating in green

technology industries (Topic7).

The historical event was also revisited in this discussion. The colonial experience, the

Korean War, and the financial crisis in 1997 mentioned in this context. Together with the

historical events, the GGS is referred to as a potential strategy to avoid repeating such

challenges. In addition, speeches delivered changed

5.2 Green Growth as a Sustainable Development Engine

GGS is also referred to as an engine for sustainable development. The two Presidents

discussed GGS to enable another *"miracle of Korean Peninsula (Lee 2018)"* and to maintain

national economic development that adapts to changing international economic system. As

outlined in Topic 3, the administrations insisted that Korea should take the opportunity of GGS

establish new energy plant and revitalise the economy.

The Presidents introduced the historical events when they addressed the GGS as the

engine of sustainable development. In the speeches, both presidents argued that Korea should

maintain its development pace as a country that has achieved rapid economic development, and

has escaped from Japanese colonisation, national division, and financial crisis. President Lee

presented the GGS as an essential mechanism to avoid *"hinder[ing] economic growth"* and

President Moon introduced the GGS as a transit country for Korea to continue the developed

economy. Specifically, Moon addressed the GGS as a policy for post-Covid-19 era and

envisioned the strategy to create a consolidated foundation for national development.

Meanwhile, the administrations also expressed the ambition to be a global leader in green

growth as a capable, progressive country. In the speeches, a carbon-dependent economy is

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equated with a developing economy. On the other hand, a low-carbon and carbon-neutral economy is equated with a developed economy. To be a "pacesetting economy" in IR, the transition to a green economy and the adoption of GGS is inevitable.

5.3 Green Growth as a Responsibility

Finally, GGS is referred to as an unavoidable trend that Korea must follow. In this context, two ideas prevailed: normative responsibility and the bridging function between developed and developing countries. This approach explicitly clarifies the MP strategies that Korea pursued to achieve GGS.

The administrations perceived green growth as a normative responsibility to prevent climate change that triggers global disasters. The basis of this approach is that climate change requires a global response, and Korea should act against global climate change as a "*responsible state*" in the "*international community*", emphasising the role and capacities that Korea has. In the speeches on 10 December 2020, President Moon Jae-in pointed out that Korea has advanced technologies such as ICT industry, chemicals, and low-carbon technologies to achieve "carbon neutrality."

The speeches also addressed Korea's bridging role between the developed and developing countries in IR. Especially, it is able to find that two South Korean Presidents emphasised experience of overcoming challenges. Korea promised to "*bolster international solidarity and cooperation by insisting on such a role in the international regime that delivers the climate change issue (Moon 2021)*". Not only by participating in the international regime but also by living up to these responsibilities, Korea projects its MP identity.

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In this regard, Korea promised to support developing countries in implementing climate change policies by increasing environmental aid and sharing its experience in economic development. President Lee Myung-bak also promised to establish GCF and GGGI to support and finance developing countries to adapt international carbon policies. President Moon Jae-in asserted that Korea is a capable country that has "pioneered path" in resilience building during the pandemic and is therefore able to provide funding and experience-based knowledge to developing countries.

The Presidents presented Korea *"now"* has a capability and responsibility to assist developing countries. Additionally, when referring to relations with developing countries, they used words such as 'assist', 'help', and 'aid' to express it as it is in a vertical relationship. This means that the Presidents insisted on expressing Korea's higher position in the hierarchical international order. On the other hand, horizontal expressions such as 'alliance', 'ally', and 'partnership' are used when they explained the relationship between developed countries and large economies.

6. Discussion

This chapter discusses findings from Chapters 4 and 5. Based on Chapters, the objective of the GGS were identified: national interests of security, development, and maintaining its status in IR. Korea pursued a MP strategy to achieve the objectives by participating in the international regime, playing a bridging role, and expanding leadership in niche diplomacy issues.

The contextualisation can be characterised as "differentiation". Korean leaders used the GGS to differentiate itself from the image of a developing country and maintain its MP identity by following methods. When contextualising the GGS goals, three things can be noted. First, GGS is delivered with historical events. Second, GGS is presented as an economic system that is different from the development process. Finally, hierarchical terms are used in the presentation of Korea's role in the IR. The differentiation approach taken by South Korean Presidents is for two reasons: international reputation, and domestic legitimacy.

6.1 International Reputation

Promoting a responsible image of the nation serves to enhance its international reputation. By acquiring MP identity, Korea gained economic and security interests in regional and international relations (Ikenberry & Mo 2013; Teo, Sing and Tan 2013). Given the contextualisation, Korean leaders aimed to ensure Korea's capacity to implement progressive technologies by emphasising changed national image. Additionally, the Presidents differentiated it from developing countries and make Korea attractive to cooperate with. Additionally, the pioneer status in green growth, which is a niche security, provides more opportunities for trade and bilateral economic relations.

For example, President Lee Myung-bak promised to cooperate on renewable energy development and energy research between the government and scientific institutions, as well as talks on Free Trade Agreement (FTA) with New Zealand (Ministry of Foreign Affairs 2009). Furthermore, during the Moon Jae-in administration, relation with Austria was upgraded to a strategic bilateral relationship. In particular, the two countries recognised each other as important partners in international environmental security and promised cooperation in related areas of science and technology (Ministry of Foreign Affairs 2021).

6.2 Domestic Legitimacy

The promotion of GGS is also intended to increase legitimacy at home. First, increased international prestige increases domestic public support for governments (Dellmuth & Tallberg 2018; Beugelsdijk et al. 2002). Through the introduction of the GGS, Korea announced it as an advanced economy and expanded foreign relations. Additionally, the Presidents gave speeches in the international organisations. Increased international reputation encouraged confidence on governments from domestic publics. Additionally, as a spill over effects of expanded trade, domestic public and industries can benefit from increased foreign opportunities.

Moreover, as alluded to in the speeches, Korean government has sought to create a domestic safety net by adopting GGS. For example, from 2008 to 2012, the Lee Myung-bak government promoted the "Four-major-river project"[12] which aims to rehabilitate and restore rivers and prevent flooding, as well as to create green spaces near rivers. To this end, the government invested KRW 22 trillion in this project (Blue House 2008). This also created jobs in construction and industries related to urban development. President Moon Jae-in also spend

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[12] Four-Major-River Projects is a part of Green Growth of President Lee Myung-bak to restore Han, Nakdong, Yeonsan, Geumgang rivers of Korea (Cheongwadae 2008).

KRW 220 trillion on the Green New Deal (Blue House 2021) to create jobs, restructuring cities,

and build infrastructure for the green energy transition.

When it comes to contextualisation, South Korean leaders wanted to encourage domestic

public and industries to pursue GGS. One is by stimulating past memory to legitimise GGS not

to repeat the histories, and the other is assuring changed Korea's international status to peg away

on this sector.

7. Conclusion

This thesis posed the research question, "Why does South Korea persist in global green growth leadership despite pushbacks from domestic public and political elites?" Based on the analyses, this identified perceptions on GGS of South Korean Presidents and how the strategy has been contextualised in their speeches. Given the analyses, GGS is strategic policies to differentiate South Korea from past developing country image and maintain its MP identity.

This thesis focused on the topics that are related to GGS and contextualisation of strategy in presidential speeches. Due to this reason, there are several further studies expected. As this did not examine correlations of economic, social, political factor and policy areas, the studies on relationship between the factors and MP identity persuasion would supplement the results. Moreover, this thesis did not revealed closeness by topics. The examination on closeness of each topic presented in Chapter 4 would provide detailed explanation and policy prioritisation within GGS.

Despite the limitations, this study contributes to studies on MP behaviour regarding rationale and process of strategy making. South Korea, which shows the most dynamic development stages in a brief period, is a good example of the changing strategies. Based on the findings of this thesis, this found that GGS is the most effective policy area that distinguish the developing and developed image, which the South Korean Presidents pursued. By taking the differentiated image, South Korean governments aimed to gain international reputation and domestic legitimacy. Based on the findings, it found that MP attempts to play a leading role in a particular policy area which affects to its national image transition the most. This contributes to bridge the gap between normative MP theory and practical implication of identity into policy.

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The methods used in the thesis suggests heuristic framework to conduct further studies. TM was efficient tool to identify what objectives states pursue by implementing specific strategy. Qualitative content analysis is useful as this uncovers contextualising the strategy. Combined methodologies provide comprehensive understanding of MP's strategy to implementing identity into national policy making. The application of combined methodologies into studying the MP strategy making process is expected to contribute to building consolidated MP differentiation-based theory.

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Appendix

Appendix 1. R Code

```
library(tm)
library(wordcloud)
library(dplyr)
library(tidytext)
library(ggplot2)
library(tidyr)
library(dplyr)
library(ngram)
library(ldatuning)
library(topicmodel)

#data load
combined <-readLines("C:/Users/suney/OneDrive/¹ÙÅÁ È-¸é/speech
data/combined.txt",encoding="UTF-8")

###most frequent words in speeches###

comb_df <-tibble(Text=combined)

comb_words <- comb_df |>
  unnest_tokens(output = word, input = Text)

#stopwords in the speech document
stop_comb <-
tibble(word=c("korea","korean","the","government","countries","country","excellency","republi
c", "fellow", "citizen", "national", "assembly", "trillion", "won",
"distinguished","guests","™s","19","unofficial","translation","koreans","your","unofficial","tran
slation","people","world","global","time","hope","will","also","year","can","one","last","way","
now","well","even","end","'s","-", lexicon="added"))

stop_added <-bind_rows(stop_words, stop_comb)

comb_wordscount <-comb_words |>
  anti_join(stop_added) |>
  count(word, sort = TRUE)

comb_wordscount #add stop words based on the result

#bigrams on speech document
comb_bigrams <- comb_df |>
  unnest_tokens(comb, input=Text, token="ngrams", n=2)
```

comb_bigrams

```r
combbigrams_separated <-comb_bigrams |>
  separate(comb, c("word1", "word2"), sep= " ")

combbigrams_filtered <- combbigrams_separated |>
  filter(!word1 %in% stop_added$word) |>
  filter(!word2 %in% stop_added$word)

combbigrams_wordcounts <-combbigrams_filtered |>
  count(word1, word2, sort=TRUE)

combbigrams_wordcounts <-combbigrams_wordcounts |>
  unite(comb, word1, word2, sep = " ")

combbigrams_wordcounts

#word counts graph
combbigrams_wordcounts |>
  filter(n > 30) %>%
  ggplot(aes(reorder(comb, n), n)) +
  geom_col(fill = "grey") +
  coord_flip() +
  labs(x = "Bigrams of presidential Speeches \n", y = "\n Count ", title = "Bigrams In Presidential
Speeches (Combined) \n") +
  geom_text(aes(label = n), hjust = 1.2, colour = "white", fontface = "bold") +
  theme(plot.title = element_text(hjust = 0.5),
      axis.title.x = element_blank(),
      axis.ticks.x = element_blank(),
      axis.text.x = element_blank(),
      axis.title.y = element_text(face="bold", colour="darkgrey", size = 12))


###topic modelling create Corpus
combcorp <- VCorpus(VectorSource(combined))

#preprocessing documents
mystopwords<-c("korea","korean","administration","since","percent","the","government",
        "countries","country","excellency","republic", "fellow", "citizen", "national",
"assembly",
        "trillion", "won", "distinguished","guests","™s","19","unofficial","translation",
        "your","people","world","global","time","hope","will","also","year",
        "can","one","last","way","now","well","even","end","'s","-
","new","prime","minister","ladies",
```

"gentlemen","good","morning","mr","president","thank","much","move","toward","let","us","able",

"take","two","many","secretary","general","secretaregeneral","delegates","green","growth","climate","change",
            "united","states","year","ago")

```
combcorps <- tm_map(combcorp, content_transformer(tolower))
combcorps <- tm_map(combcorps, removePunctuation)
combcorps <- tm_map(combcorps, stripWhitespace)
combcorps <- tm_map(combcorps, removeWords, stopwords("english"))
combcorps <- tm_map(combcorps, removeWords, mystopwords)
combcorps

combcloud <- wordcloud(combcorps, scale = c(2,1), min.freq = 100, colors = rainbow(30))
```

##bigram topic modelling

```
combitoken <-  function(x)
  "unlist(lapply(ngrams(words(x), 2), paste, collapse = " "), use.names = FALSE)"
("Understanding Agriculture #budget2016: bi-gram wordcloud and Sentiment ...")

dtm2 <- DocumentTermMatrix(combcorps, control = list(tokenize = combitoken))

str(dtm2)

filenames <- rownames(dtm2)
freq<-colSums(as.matrix(dtm2))
length(freq)
ord <- order(freq, decreasing = TRUE)
freq[ord]
```

##create document-term-matrix of combined speech

```
comb.sum <- apply(dtm2,1,FUN=sum) #sum by raw each raw of the table
dtm2 <- dtm2[comb.sum!=0,]

dtm2
```

#calculating k

```
combresult <- FindTopicsNumber(
  dtm2,
  topics = seq(from = 2, to = 35, by = 1),
```

```
  metrics = c("Griffiths2004", "CaoJuan2009", "Arun2010", "Deveaud2014"),
  method = "Gibbs",
  control = list(seed = 3300),
  mc.cores = 2L,
  verbose = TRUE
)


FindTopicsNumber_plot(combresult)

#Run LDA using Gibbs sampling
lda2 <-LDA(dtm2, k = 10, control=list(seed=3300)) #the observations is 3704.

#tidytext package load for word manipulation

combtopics <- tidy(lda2, matrix ="beta")
combtopics

#retrive the top 15 terms by topic
comb_top_terms<-combtopics |>
  group_by(topic) |>
  top_n(15, beta) |>
  ungroup() |>
  arrange(topic, -beta)

#plot top topics

comb_top_terms |>
  mutate(term=reorder(term, beta)) |>
  ggplot(aes(term, beta, fill=factor(topic))) +
  geom_col(show.legend=FALSE) +
  facet_wrap(~ topic, scales ="free") +
  coord_flip()
```