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# Exploring Perceptions of Sustainable Development in South Korea: An Approach Based on Advocacy Coalition Framework's Belief System

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Received: 16 October 2018; Accepted: 5 November 2018; Published: 8 November 2018



**Abstract:** The concept of sustainable development has been criticized for its broadness and ambiguity that permits different interpretations in separate views. However, the prior studies on sustainable development generally relied on survey data, so they have some limitations that preclude congruent conclusions. In contrast to prior studies, we used Q methodology, which is designed to investigate subjective perceptions as it is. This study aims to explore the South Koreans' perceptions of sustainable development among various stakeholders such as experts, bureaucrats, legislatures, civic group members, company employees, and journalists. Based on the hierarchical belief system of the advocacy coalition framework, we classified all statements into three categories: core value, policy core, and secondary aspects. Using Q methodology, we extracted five types: (1) democrat; (2) idealist; (3) green growth advocate; (4) skeptics; and (5) elitist. We examined the distribution of the five types according to a hierarchical belief system, and discussed implications of the findings.

**Keywords:** sustainable development; advocacy coalition framework; Q methodology

## 1. Introduction

Sustainable development is a paradigm that pursues individual and social well-being through harmony between economic growth, social integration, and environmental protection. Recently, sustainable development has become an important topic in promoting social innovation. Social innovation is “innovative activities and services that are motivated by the goal of meeting a social need” ([1], p. 8). The concept of social innovation focuses attention on the ideas and solutions that create social value. Many researchers and practitioners in the field of social innovation are paying attention to sustainable development, which has many common respects with social innovation ([2–6]).

In September 2015, the United Nations (UN) Summit unanimously adopted the 2030 sustainable development agenda, which consists of 17 sustainable development goals and 169 targets, and agreed to pursue sustainable development goals until 2030, voting to allow progress to be checked through mutual monitoring and cooperation. However, just as most social innovations often face challenges, most countries are struggling with implementing sustainable development. Korea is a classic example. At present, South Korea's level of implementation of sustainable development is estimated to be low. According to the 2018 Sustainable Development Goal (SDG) Index and Dashboard Report published by the UN Advisory Group on Sustainable Development Solutions Network, Korea's SDG Index totaled 77.4 points, making its ranking 19th out of 156 countries. (This is a somewhat misleading ranking given Korea's economic ranking. As of 2018, Korea is ranked 12th (\$1693.2 billion) in world nominal GDP and 14th (\$2.29 trillion) in terms of purchasing power parity. Moreover, this ranking does not reflect the fact that Korea has engaged in sustainable development in the past. We discuss this in

more detail later). Korea did not receive the highest rating for any of the 17 sustainable development goals. The dashboard's ratings are ranked from green (positive) to yellow, orange, and red (negative). South Korea received five yellows, nine oranges, and three reds [7]. The Climate Action Tracker, an international private research institute, evaluated Korea's level of voluntary national decision making as "highly insufficient" with regard to climate change response and "critically insufficient" with respect to current policies pertaining to climate change [8]. As one of the major causes of this lack of implementation in South Korea, legal and institutional issues are being raised. In a survey, which was conducted among G20 countries about government coordination and implementation mechanisms for sustainable development, Korea's score was below the G20 average [7]. According to the analysis of this report, South Korea failed to identify priorities for implementing SDGs and did not form cross-ministerial committees or a task force (TF) to coordinate implementation of the SDGs across line ministries and agencies.

However, until the middle and late 2000s, South Korea was regarded as offering a best practice model for sustainable development. In 2000, the Presidential Council on Sustainable Development was established in South Korea. In 2006, the National Strategy for Sustainable Development was drawn up. In 2008, the first National Assessment Report for Sustainable Development was published. The United Nations Department of Economy and Social Affairs (UN-DESA), whose evaluation of the South Korean government's efforts to promote sustainable development policies was positive, suggested that a UN Center for Sustainable Development be established in Korea. After the UN-DESA suggested in 2007 that a center be opened, Incheon City proposed a plan in 2009 in which it would cooperate with the Ministry of Environment and Yonsei University to establish the center. Finally, in 2011, the center was opened [9].

However, as a low-carbon green growth approach has become a key national development strategy, the institutional basis of sustainable development collapsed. The driving force for sustainable development has been drastically lost afterwards.

However, the government has tried to reestablish the relationship between sustainable development and green growth and to improve the related system. Since the inauguration of the Moon Jae-in administration, evaluating the success of the new administration in this endeavor has been hard until now. On 26 May 2017, Moon Jae-in announced a plan to upgrade the Ministry of Environment's Sustainable Development Committee to a presidential committee [10], but this plan had not been effected as of October 2018. Democratic Party lawmakers Kim Sang-hee and Song Ok-joo called for a revision of the entire Sustainable Development Act in June and July 2017, respectively.

At this point, it is time to face the normative and practical necessity of promoting sustainable development. However, although in principle all can agree that the balanced development of the environment, economy, and society that sustainable development is based on provides a way to enhance the quality and happiness of the people, agreement on what constitutes sustainable development is hard to come by because it is a broad cross-cutting issue. There are conflicts between goals, and there is a discrepancy in understanding among related actors, and indeed it has been maintained that sustainable development has inherent limits that make it difficult to effectively promote it. Particularly in South Korea, rapid changes in sustainable development policy have been made across different regimes and in response to international issues. The perceptions of related actors about sustainable development form various clusters. In order to promote sustainable development effectively, it is necessary to look closely at these perceptions. In particular, it is necessary to examine the perceptions of stakeholders related to the formation of policy and institutions on sustainable development.

In South Korea, research on sustainable development-related perceptions has been conducted through surveys (see, e.g., References [11–13]). These surveys are useful for exploring general perceptions about sustainable development, but they are limited with respect to helping us understand how individual actors perceive the concept of sustainable development in relation to other concepts and values and how the cluster of interconnected thought is formed.

This study uses Q methodology to address these limitations. Q methodology was developed to scientifically explore the human's subjectivity by Stephenson [14]. Q methodology is based on the concept of operant subjectivity, in which respondents formulate their own opinions through the process of comparing and ordering several statements [15]. In the case of a multilayered concept, such as sustainable development, the Q methodology is more appropriate than other approaches because the subjectivity of actors is more likely to be revealed in their acceptance of this concept. Because sustainable development is not a well-publicized idea, however, one needs to be cautious in the way one uses the results of a survey of the general public and public officials with little to no understanding of sustainable development. For example, in a survey of 1000 citizens conducted by the Sustainable Development Committee of Korea, only 25.3% of respondents said they knew the term "sustainable development". Of those who responded that they were familiar with the term, 21.3% correctly identified what sustainable development was, which was only 5.4% of the total number of surveyed subjects [16]. The fact that only 5.4% of the general population has a valid understanding of the concept suggests that there is a limit to the extent to which survey results can be used to improve policy implementation. On the other hand, in-depth cognitive research and analysis of actors with a relatively high level of understanding of sustainable development can improve policy implementation. For example, if we can identify a point of disagreement in a consensus between stakeholders in relation to sustainable development, we can formulate concrete policy recommendations for effective policy promotion and coordination.

Therefore, this study aims to use Q methodology to explore how those invested in sustainable development understand the concept and how they perceive strategies and systems to promote it. In the next section, we review (i) the history of sustainable development policy in South Korea and its feature; (ii) belief system of the Advocacy Coalition Framework as a theoretical background; and (iii) current research on South Koreans' perception of sustainable development. Thereafter, we introduce our methods and data. Furthermore, we present the findings of our analysis, and conclude with a discussion of their implications for theory and practice, and future research.

## 2. Theoretical Background and Literature Review

### 2.1. Sustainable Development Policy

The World Commission on Environment and Development report *Our Common Future* first popularized the concept of sustainable development, defined as development that "meets the needs of current generations without compromising the ability of future generation to meet their own needs" [17]. In 1992, in the Rio Summit and Rio+10 Summit, the idea of sustainable development was expanded to include economic and social aspects. In South Korea, the concept of green growth was introduced by President Lee Myung-bak, which he framed as a Korean strategy for carrying out sustainable development and new national development paradigm. Green growth refers to "environmentally sustainable economic growth" [18]. Unlike sustainable development, green growth focuses only on economic growth and environmental sustainability. Economic growth contributes to social welfare by reducing poverty and improving education, but it does not necessarily ensure environmental sustainability. Green growth is a response to environmental pollution caused by indiscriminate development that threatens the economy and social welfare [19].

Sustainable development policy was first introduced in South Korea during the Kim Dae-jung administration. The administration proposed a new environmental vision for the new millennium and established the Presidential Council on Sustainable Development. The Rho Moo-hyun administration subsequently enhanced the role and status of this entity and enacted the Framework Act on Sustainable Development in 2007.

Once the Lee Myung-bak administration adopted green growth as the new development strategy, it quickly replaced sustainable development. The Lee administration established the Presidential Committee on Green Growth and the Framework Act on Low-Carbon Green Growth in 2010. At the

same time the Framework Act on Sustainable Development was downgraded to a general act and the Presidential Council on Sustainable Development was also demoted to a ministerial council in the Ministry of Environment. The chairperson of the Presidential Council on Sustainable Development became the first chairperson of the newly established Presidential Committee on Green Growth, and the budget of the Presidential Council on Sustainable Development was used to finance the installation of the new group [20]. Green growth, a less well-developed idea, thus came to replace sustainable development. This inevitably invited criticism from civil society and academia, which advocated for sustainable development. Since the inauguration of the Park Geun-hye administration, green growth has lost momentum, too. The Presidential Committee on Green Growth was downgraded and the committee’s budget has been drastically cut. Currently, both committees still remain, but they are not being fully utilized.

2.2. The Advocacy Coalition Framework and Hierarchical Belief Systems

In South Korea, sustainable development policy has been modified as governments have changed. The advocacy coalition framework [21] can be used to explain this phenomenon. The Advocacy Coalition Framework (ACF) was developed to address wicked problems that involve “substantial goal conflicts, important technical disputes, and multiple actors from several levels of government” [22,23]. This framework allows us to investigate how coalitions compete with other coalitions to turn their beliefs into policy. The advocacy coalition framework assumes that people’s belief systems are structured hierarchically and has three components: core values, policy core values, and secondary aspects (see Table 1).

Table 1. The Belief Systems of the Advocacy Coalition Framework.

Deep Core Beliefs	Policy Core Beliefs	Secondary Aspects
1. Human nature: a. Inherently evil vs. socially redeemable b. Part of nature vs. dominion over nature c. Narrow egoists vs. contractarians	1. Basic value priorities 2. Identification of groups or other entities whose welfare is of greatest concern 3. Overall seriousness of the problem 4. Basic causes of the problem 5. Proper distribution of authority between government and market 6. Proper distribution of authority among levels of government 7. Priority accorded various policy instruments 8. Ability of society to solve the problem 9. Participation of the public, elected officials, and experts 10. Policy core policy preferences	1. Seriousness of specific aspects of the problem in specific locales 2. Importance of various causal linkages in different locales and over time 3. Most decisions concerning administrative rules, budgetary allocations, disposition of cases, statutory interpretation, and even statutory revision 4. Information regarding performance of specific programs or institutions

Source: [24], p. 133.

Core values are “fundamental normative and ontological axioms” [24]. Core values also represent an individual’s sociocultural identity [21,24]. Policy core values are defined as “fundamental policy positions concerning the basic strategies for achieving core values within the subsystem” [24]; these are strategies that glue coalition members together [25]. Secondary aspects are related to a specific policy domain and are described as beliefs about instrumental aspects of implementing the policy core [21,22,24]. They include discourse about “administrative rules, budgetary, allocations, disposition of cases, statutory interpretation, and even statutory revision” [24]. Core values are very stable and fundamental, but secondary aspects are relatively variable and specific [21,24].

The core value that is critical in the discussion of sustainable development is the priority of three pillars—environmental sustainability, economic growth, and an inclusive society. This affects the definition of problems and the desired policy outcome. Further, the sociocultural identity of those invested in sustainable development affects their perceptions of what the best form of governance is. Some consider it desirable to seek horizontal collaboration among broad stakeholders, while others prefer hierarchical coordination.

The policy core beliefs that are important in the discussion of sustainable development are as follows. First is the perception of the relationship between sustainable development and green growth. Some advocate green growth on the grounds that green growth and sustainable development are compatible (see References [26,27]). Others are skeptical about green growth (see References [28–30]). They view the Korean government's green growth policy as solely a tool for economic growth, one that pays no heed to social welfare or the environment. In addition, the institutions of sustainable development have been displaced by green growth despite the fact that green growth is not as well developed as an idea. Thus, some people who advocate sustainable development are skeptical of green growth.

The second important policy core belief concerns the feasibility of sustainable development. There is no common understanding of sustainable development or consensus as to how to achieve it; the term sustainable development can be understood in different ways by different views and positions [31]. This ambiguity has been seen as a positive in that it has provided an arena for debate and opportunities for learning (see References [31,32]). On the other hand, the concept of sustainable development has often been subjected to harsh criticism for its vagueness and uselessness (see Reference [33]).

The secondary aspects that are important in the discussion of sustainable development relate to the priority of strategy, especially in South Korea. The first main issue is whether to put effectiveness before legitimacy, or vice versa. Some people emphasize effective input of resources and institutional arrangements, while others think laying the groundwork to ensure legitimacy is more important.

The second main issue relates to the revision of acts. In South Korea, the Framework Act on Low-Carbon Green Growth is the only framework act pertaining to sustainable development. The Act on Sustainable Development is a general law, even though sustainable development is the better-developed concept. The status of the relevant committees is also inverted. At present, the Presidential Commission on Sustainable Development is part of the Ministry of Environment, and Committee on Green Growth is part of the prime minister's secretariat. That is why there has been increasing demand for system reform. Two completely revised bills on sustainable development were proposed in 2017. These bills seek to remedy the reversal of sustainable development and green growth, the Low-Carbon Green Growth Framework Act and the Sustainable Development Act, and the status and role of committees, and so on. These bills aim to upgrade from Committee on Sustainable Development to Presidential Commission on Sustainable Development, and from general act to Framework Act on sustainable development. These bills aim to upgrade the Committee on Sustainable Development to a presidential commission and the general act to a framework act. The Ministry of Environment has also been trying to help get the legislation passed. Nevertheless, these bills still have not passed and are stuck in the standing committee.

On the other hand, there are also strong voices in favor of green growth. Some insist that the Framework Act on Low-Carbon Green Growth and Committee on Green Growth should be maintained. They regard green growth as an innovative idea on which the Korean government took the lead. For this reason, some argue that it is necessary to upgrade to the Committee on Green Growth to the presidential committee [34].

The third main issue concerns human and financial resources. As the legal system for promoting sustainable development has stalled out, some argue that it is necessary to start making efforts to make more resources immediately available.

### *2.3. Perception of Sustainable Development*

There are a few studies that report the perceptions of actors involved in sustainable development in the Korean literature. Jaegal et al. examined citizen's perceptions of sustainable development in the Andong City through a survey [11]. The focus of this study is different in that it sought to analyze the perceptions of various participants (e.g., central government officials, local government officials, businesspeople, researchers, non-governmental organization (NGO) members, and so on) at the national level. Kim and Kang have suggested that there are significant differences in perceptions

among businesspeople, government officials, and NGO members. NGO members relatively have a solid grasp on sustainable development, and businessmen especially embrace a technology-centered worldview focused on economic growth [13]. Yun and Won examined various experts' perception of climate change policy through a survey. They concluded that experts generally think that South Korea's climate change policy is effective and that green growth should be harmonized with sustainable development. Experts in NGOs, however, have negatively assessed the Lee administration's climate change policy [12]. References [12,13] show the importance of identifying differences in perceptions among various group members, particularly in studies on sustainable development. However, as Dryzek has pointed out [31], sustainable development is a very ambiguous concept that allows for various interpretations, and so the results of surveys might be quite different depending on how a given participant understands sustainable development. In order to take this ambiguity into account, a different methodological approach is needed.

#### *2.4. Synthesis of Theoretical Background and Literature Review*

To sum up, the discussion on sustainable development in South Korea is complicated, owing both to regime change and to the now global nature of sustainable development policy. It is likely that various actors' perceptions are clustered around their awareness of sustainable development, their ideas about appropriate governance, and their opinions about what sort of institutional design—what kinds of laws and what sorts of committees—is needed to implement policy. In order to promote sustainable development effectively, we first need to untangle this web of perceptions. The existing literature in South Korea used surveys to gauge general perceptions of sustainable development, despite the fact that there is no consensus on what constitutes sustainable development and the fact that many South Koreans are not familiar with the idea of sustainable development. Therefore, these studies are limited in their ability to suggest appropriate and specific policy proposals using the results of the surveys. This study, by contrast, aims to analyze the multiple actors who have knowledge of sustainable development using Q methodology. Q methodology combines the strengths of both qualitative and quantitative methods [35,36]. This approach “has been useful in identifying shared discourses between different stakeholder groups, and providing insights into how stakeholders ‘frame’ or understand policy issues” [37].

### **3. Research Design**

#### *Q Methodology*

Q research is a methodology that explores human subjective perceptions. Factor analysis, by contrast, assumes the existence of a generalized human being. Researchers who use factor analysis begin from this presupposition and then classify questionnaire items by reference to similar response patterns. This approach is limited because it cannot distinguish the subjectivity among human beings.

Q methodology addresses these limitations by measuring human subjectivity as manifested in patterns of thought. This methodology is similar to factor analysis in that it relies on “typification”. However, it is crucially different in that it typifies the subjectively ordered ideas of a respondent rather than question items. Factor analysis extracts from classified questionnaires, but Q methodology extracts from classified respondents' subjectivity. Q methodology recognizes similar patterns of subjective thought in respondents' answers and classifies the respondents by reference to those patterns [38].

Q methodology proceeds in three steps. First is the construction of a Q sample, or Q statement. A Q statement consists of a range of subjective opinions on a specific topic. A variety of methods should be used to construct Q statements. A literature review is necessary to understand the historical background of specific issues and to learn who the participants are and which organizations and legal structures are relevant. It is also necessary to conduct interviews with people invested in the issue to understand what they think about it. Indeed, anything that relates personal opinions on a given topic, such as newspaper articles, editorials, and expert talk, can be important sources of

information. The Q statement thus encompasses a wide range of subjective thoughts about specific issues. The next step is the composition of the P set. The P set refers to the individuals who will respond to the Q statement. The P set should be intentionally selected, not random. The P set should be made up of individuals that will respond in different ways to the various opinions expressed in the Q statement. P sets are intentionally extracted based on the Q samples. Because the Q samples are the ideas that represent the population for the research problem, and the P sets play an intentional role in showing one distinct point of view measuring the sample. It functions similarly to the variables in the R methodology-regular factor analysis [38,39].

As shown in the Figure 1, the Q methodology and the R methodology have similar but different aspects. The common point is the same as the process of extracting elements. However, the R methodology derives the type between the variables based on the values of the survey respondents, while the Q methodology derives the type between the P sets based on the Q samples. The process of extracting P sets from the Q methodology must choose a meaningful person as the process of setting variables in the R methodology. Furthermore, the least choice of meaningful people is P sets is more efficient in the Q methodology [38]. Therefore, in this study, we have intentionally selected people who played an important role in determining meaningful opinions in the process of constructing Q samples in setting P set [38]. In particular, the sustainable development policy in Korea is a major part of the P set, since the central government, local government, and the National Assembly have the largest role. The final step of Q methodology is an analysis of the subjective thoughts that make up the response of the P sets to the Q statement.

R methodology	Sample 1 (respondent)	Sample 2 (respondent)	Sample 3 (respondent)	Sample 4 (respondent)	
Variable 1					Factor 1
Variable 2					
Variable 3					Factor 2
Variable 4					
Variable 5					

Q methodology	Q Sample 1 (opinion)	Q Sample 2 (opinion)	Q Sample 3 (opinion)	Q Sample 4 (opinion)	
p-set 1					Factor 1
p-set 2					
p-set 3					Factor 2
p-set 4					
p-set 5					

**Figure 1.** Difference between the R method and Q method.

In this study, Q statements are composed of information gleaned from literature surveys, interviews, and newspaper articles. We tried to look at issues related to sustainable development that had both international and domestic dimensions. We also conducted in-depth interviews with people who are deeply involved in sustainable development issues. We interviewed seven people, and the variety in the number of ideas regarding sustainable development that we collected were a result of our utilizing the semi-structured interview method, which is quite suited to the research characteristics of Q methodology.

The Q statements consisted of 37 subjective opinions that pertained to just sustainable development [38,40]. A pilot test was conducted to aid the respondents. We used the belief system structure of the advocacy coalition framework [22] as a theoretical resource when constructing statements because the differences in the viewpoints among policy advocacy coalitions is well captured by Q

methodology [24,40]. Table 2 records the Q statements, which include 8 core value items, 10 policy core items, and 19 secondary aspect items.

**Table 2.** Composition of Q Statements.

Belief System	No.	Contents
Core value	4	It is impossible to achieve economic growth and protect the environment at the same time.
	13	At this point in time, Korea should put more emphasis on economic growth than anything else.
	14	At this point in time, Korea should put priority on solving social problems (polarization of wealth, low fertility, and aging).
	15	Sustainable development should be a top priority, as it is a means of assuring human survival and prosperity.
	18	Environmental problems inevitably arise in industrial society, and it is impossible to solve these environmental problems without abolishing industrial society.
	19	Threats to the environment are a matter of the survival of earth and humanity.
	20	Environmental problems should be resolved at the same time as social problems because of the greater discriminatory effects of environmental problems on the underprivileged, such as low-income and minority groups.
	22	We should further our society by seeking cooperation between national and local governments and between corporations and civil society.
Policy Core	1	Sustainable development is not only a solution to an environmental problem but also a way to address economic and social issues such as wealth polarization, aging, employment, and welfare.
	2	The Lee Myung-bak government’s green growth policy has depressed Korea’s sustainable development policy.
	3	Green growth is a substitute for sustainable development.
	6	Low-carbon green growth is a key strategy for making Korea an advanced country.
	7	The nuclear industry should not be included in the policy of sustainable development.
	16	Sustainable development is the best solution to global problems such as fine dust that cannot be resolved by the efforts of a single country.
	23	The idea of sustainable development is a good one, but it is hard to be a national goal because of its abstractness.
	26	As the fourth industrial revolution accelerates, environmental problems will be solved naturally.
	29	Green growth is a strategy for promoting sustainable development.
	33	Low-carbon green growth policy ought to be abolished.
Secondary Aspect	5	Sustainable development should be driven by markets and companies.
	8	Sustainable development policy failed because there was no central agency overseeing it.
	9	If the sustainable development is to be successfully implemented, securing public support must be a first priority.
	10	In order to successfully promote sustainable development, government must establish a systematic way to implement it.
	11	To successfully implement sustainable development in general, it is necessary to promote corporate sustainability management.
	12	Civil society should be the main force in implementing sustainable development, with the help of governments and corporations.
	17	Sustainable development should be promoted by experts and bureaucrats first, and citizens’ support should be sought later.
	21	A system based on participatory democracy rather than on the existing bureaucracy is needed to successfully promote sustainable development.
	24	Sustainable development policies are difficult to adjust because they are too broad.
	25	Local governments have a weak will when it comes to promoting sustainable development.
	27	The central government has a weak will when it comes to promoting sustainable development.
28	Maintaining both the current Committee on Green Growth and Council on Sustainable Development is a waste.	
30	It is imperative that the Act on Sustainable Development restore the status of the basic law.	
31	The Council on Sustainable Development should belong to the prime minister’s office.	
32	The Committee on Green Growth that is currently belong to the prime minister’s office ought to absorb the Council on Sustainable Development of the Ministry of Environment.	

**Table 2.** *Cont.*

<b>Belief System</b>	<b>No.</b>	<b>Contents</b>
	34	The president should pay more attention to implementation of sustainable development.
	35	The successful implementation of sustainable development requires broad participation by stakeholders.
	36	Human and financial resources are required to enforce compliance with sustainable development legislation.
	37	Improving ways to evaluate sustainability performance and to provide feedback is critical to successfully promoting sustainable development.

We took the following points into account in constructing the P sets. First, the respondent should have experience with sustainable development. In Korea, sustainable development has been institutionalized, with policies pertaining to it having been in place for more than a decade, and so currently, bureaucrats, experts, civic groups, and companies are by and large the people who are directly involved in it; the interest of the general population in sustainable development is still low. Therefore, understanding the in-depth perception of actors with experience in sustainable development is likely to be the most beneficial for the purpose of promoting sustainable development policy. Second, it is important to maximize the variety of participants. Because Q methodology measures the subjective thinking of respondents, the greater the variety of participants, the more clearly similarities and differences among ideas can be shown.

A total of 24 P sets were selected in this study (see Table 3). All those selected had direct experience with sustainable development. Expert groups, such as the central and local government officials, members of the UN Special Advisory Body and its researchers, former secretaries of the National Sustainable Development Committee, and the members of the Environmental Labor Committee, were selected as P sets. In addition, journalists who demonstrated an ongoing interest in sustainable development, environmental groups that frequently engage in civil society activities related to sustainable development, and the sustainable development managers of SMEs and large corporations, as well as those with experience in environment-related venture companies, were also selected. In our data, the ratio of companies in P sets were relatively small (17%). Theoretically, companies are expected to play a major role in sustainable development. In actual practice, however, Korean companies usually only play a role in implementing policies. Although the number of P sets was small, major actors from the business sector were generally included. It included conglomerates and public enterprises that play a leading role in the Korean business sector, and a venture company and SME that have significant accumulated experience with sustainable development. The respondent working for a venture company has started a venture business as an eco-friendly material industry with a philosophy for sustainable development. Public enterprises in the Korean society play a leading role in spreading the government’s policies to the market, acting as a bridge between the market and the government. It was selected to identify how the government’s sustainable development policies have given the public sector’s stakeholders in sustainable development. It is the largest public corporation in charge of electronic information and communication business in Korea. SME is a medium enterprise that mainly produce domestic air purifiers. The person who responded the Q sample is in charge of sustainable development at the SME. SME was selected to understand how they understand sustainable development between conglomerate company and government. In particular, the company has been focusing on sustainable development since 2011. Conglomerates have a large quantitative and qualitative influence in Korean society. The interest of conglomerates in sustainable development will be very helpful for understanding the development of sustainable development in Korean society. Respondents about conglomerates were selected by Samsung Electronics. Actually, Samsung Electronics has been implementing sustainable development since 2001. It was an advantage of responding to the Q sample based on the experience that the sustainable development policy changed according to the change of government’s regime.

**Table 3.** Composition of P sets.

General Category	Specific Category	Number
Expert	Member of UN advisory body, researcher	5
Bureaucrat	Central and local government officials	6
Legislature	Ruling party and opposition party	3
Civic Group	Members of civil society organizations involved in sustainable development	5
Company	Venture, SME, public corporation, large company representative	4
Journalist	Newspaper reporter	1
Total		24

A total of 24 individuals were asked to categorize the 37 Q statements from using a Likert scale of most strongly agree to most strongly disagree. The collected response values were analyzed using PQMethod (Peter Schmolck & J. Atkinson, University of the Bundeswehr, Munich, Germany), a Q methodology analysis statistical program. Five items with eigenvalues of one or more were selected as final classified type. It was then possible to derive the typed value of the P sets by varimax rotation.

In order to understand the results of the analysis, it was necessary to confirm the correlations between the analytical summary and the factors derived from the factor loadings for each P sets. Then, the characteristics of each type could be discerned. To do this, we first checked the z-score scores that were sequenced from most strongly agree to most strongly disagree. In particular, in order to identify characteristics of each type, it was necessary to identify the items that the greatest number of the respondents most strongly agreed or disagreed with. Furthermore, in order to understand the commonalities and differences between the two types of statements, we had to analyze the respondents' opinions of the different types of statements using the statements the respondents agreed with and the statements differentiated from the other types.

#### 4. Analysis

##### 4.1. Outline of Q Analysis

Table 4 summarizes the analysis results for the five types derived through PQMethod. In this table, the factor loadings are shown for each type, and the values that are significantly derived are indicated by the <\*> to indicate which P sets belong to each type. Total explanatory power is 73%. The first type had the highest explanatory power at 34% and consisted of two company employees, three civic group members, three bureaucrats (two local government members and one central government member), four experts (three researchers and one member of UN advisory body). The second type had an explanatory power of 11% and was comprised of civic groups that have been actively involved in sustainable development policy. The third type's explanatory power was 11% and included a member of the central government who has expertise in sustainable development and a newspaper reporter who frequently writes articles on sustainable development. The fourth type had an explanatory power of 10% and was made up of an assistant member of the National Assembly who worked in the Environment Labor Committee in the opposition party (conservative party). Finally, the fifth type had a descriptive power of 7%, and as with the fourth type, consisted in an assistant member of the National Assembly who worked in the opposition party (conservative party) in the Environmental Labor Committee.

**Table 4.** Summary of Results for the Five Types Derived through PQMethod.

Q Sort	Type 1	Type 2	Type 3	Type 4	Type 5	P Sample
1	0.3759	−0.094	0.3504	0.3559	0.0803	firm
2	0.6510 *	0.3612	0.3677	0.2091	0.0077	firm
3	0.0005	−0.3329	0.0423	0.575	0.4727	firm
4	0.6055 *	0.3895	0.0768	0.182	−0.3564	civic groups
5	0.6325 *	0.5957	−0.1106	0.0227	−0.1726	bureaucrat
6	0.8522 *	0.1998	0.019	0.1348	0.0575	researcher
7	0.8665 *	0.0079	0.1076	0.0917	0.0995	researcher
8	0.5195	0.4891	0.4103	0.1065	0.1551	researcher
9	0.5221	−0.0031	0.449	0.3283	−0.0104	legislature
10	−0.0492	0.2827	−0.0202	0.8446 *	0.024	legislature
11	0.0379	0.1525	0.1676	0.1168	0.8774 *	legislature
12	0.5788	0.3182	−0.1027	0.3944	0.439	bureaucrat
13	0.0724	0.2877	0.8029 *	0.2608	−0.1437	bureaucrat
14	0.7406 *	0.262	0.0554	0.2703	−0.09	civic groups
15	0.7431 *	0.2686	−0.0329	0.0764	0.1233	firm
16	0.7689 *	0.1428	−0.0527	−0.1534	−0.1026	researcher
17	−0.1493	−0.082	0.7808 *	−0.1167	0.3512	journalist
18	0.3525	0.2097	0.3316	0.5952 *	0.1066	bureaucrat
19	0.6320 *	0.1116	0.5321	−0.0838	0.1199	bureaucrat
20	0.2126	0.7467 *	0.1126	0.2622	0.2837	civic groups
21	0.7843 *	0.1393	0.2106	0.385	−0.1083	bureaucrat
22	0.8522 *	0.1653	0.111	−0.0731	0.0749	civic groups
23	0.6866 *	0.1929	0.2678	0.2725	0.288	UN advisory
24	0.5522	0.6546 *	0.18	0.0225	−0.0333	civic groups
Explanatory Power (%)	34	11	11	10	7	73

Next, we need to look at the correlation of each type. Correlation is an indicator of the similarity of each type. As the absolute value of the correlation coefficient approaches 1, it has similar characteristics. The closer to 0, the more independent the coefficient is. As shown in Table 5, the maximum correlation coefficient was 0.6054 and the minimum correlation coefficient was 0.1217. Except for types 1 and 2, it could be estimated that the other types of relationships were composed independently. The validity of the analysis was not in jeopardy, because the correlation was high. However, it was necessary to assess what contributed to the similarity between types [41].

**Table 5.** Correlation Matrix.

Correlation	1	2	3	4	5
1	-	0.6054	0.1541	0.2526	0.1217
2		-	0.2378	0.3660	0.2667
3			-	0.2294	0.2340
4				-	0.2397

#### 4.2. Characteristics of the Five Respondent Types

Based on the six statements the respondents most agreed with and the six statements the respondents' most disagreed with (see Table 6), the characteristics of the five types of respondent were as follows. The first type was the democrat. Let us look at the core beliefs of this type. The democrat perceives the environmental threat as a universal, global problem and prefers to solve environmental problems and social problems at the same time. This is because the democrat is skeptical about a national strategy in which economic growth is the only consideration. As such, the democrat's stance toward sustainable development is both positive and negative. The democratic type's policy core beliefs include a rejection of the Lee administration's green growth program. Conceptually, according to the democrat, green growth cannot be regarded as a substitute for sustainable development, and yet Korea's sustainable development policy has been largely neglected due to its emphasis on green

growth policy. The democrat also believes that a democratic governance structure that features the participation of governments, corporations, and civil society should guide sustainable development.

**Table 6.** Democrats’ Q Statements.

Value *	No.	Statement
5	34	The president should pay more attention to implementation of sustainable development.
4	2	The Lee Myung-bak government’s green growth policy has depressed Korea’s sustainable development policy.
4	19	Threats to the environment are a matter of the survival of earth and humanity.
3	22	We should further our society by seeking cooperation between national and local governments and between corporations and civil society.
3	30	It is imperative that the Sustainable Development Act restore the status of the basic law.
3	20	Environmental problems should be resolved at the same time as social problems because of the greater discriminatory effects of environmental problems on the underprivileged, such as low-income and minority groups.
−3	13	At this point in time, Korea should put more emphasis on economic growth than anything else.
−3	17	Sustainable development should be promoted by experts and bureaucrats first, and citizens’ support should be sought later.
−3	23	The idea of sustainable development is a good one, but it is hard to be a national goal because of its abstractness.
−4	4	It is impossible to achieve economic growth and protect the environment at the same time.
−4	3	Green growth is a substitute for sustainable development.
−5	32	The Committee on Green Growth that currently belongs to the prime minister’s office ought to absorb the Council on Sustainable Development of the Ministry of Environment.

\* value: Strongly disagree (−5) to strongly agree (5).

With respect to secondary aspects, the democrat believes it is important for the president to work with the National Assembly to restore the Sustainable Development Act to a basic law. The democrat does not agree with the idea of only consulting with experts and bureaucrats, which results in a focus on efficiency. In sum, the democrat type believes that the president ought to develop sustainable development policy via democratic governance and use it to solve social problems and environmental problems.

The second type, the idealist, is similar to the democratic type but thinks of sustainable development as an ideal for humanity as such (see Table 7). At the level of core values, this type regards environmental problems as universal, emphasizes cooperation between government, firms, and civil society, the key entities of Korean society. The idealist, like the democrat, is committed to resolving social problems. However, the idealist differs in regarding sustainable development as necessary, not only to address national problems, but also to ensure the continued prosperity of humankind.

The idealist’s global concerns are more evident in his or her core policy preferences. The question item this type most strongly agreed with is that sustainable development is the way to solve many international problems. The idealist strongly disagrees with the view that green growth is the best way to implement sustainable development, but he or she does not think that low-carbon green growth strategies should be abandoned. The idealist thinks that low-carbon green growth is helping solve current environmental problems; he or she just rejects the idea that ultimately green growth can replace sustainable development.

When it comes to secondary aspects, the idealist supports reliance on a democratic system based on the voluntary participation of citizens rather than on a bureaucratic system that seeks to push policy through without input from outside groups. Nevertheless, the idealist is not critical of current sustainable development endeavors; the idealist’s assessment is that these endeavors are achieving the desired results. It disagrees with the view that the central government’s commitment to sustainable development is weak and that there are no central oversight agencies. In sum, the second type is similar to the first type in its active support of sustainable development. However, the second type

more fundamentally supports sustainable development and regards it as the most promising way of solving humanity’s problems.

**Table 7.** Idealists’ Q Statements.

Value *	No.	Statement
5	16	Sustainable development is the best solution to global problems such as fine dust that cannot be resolved by the efforts of a single country.
4	19	Threats to the environment are a matter of the survival of earth and humanity.
4	22	We should further our society by seeking cooperation between national and local governments and between corporations and civil society.
3	15	Sustainable development should be a top priority, as it is a means of assuring human survival and prosperity.
3	21	A system based on participatory democracy rather than on the existing bureaucracy is needed to successfully promote sustainable development.
3	20	Environmental problems should be resolved at the same time as social problems because of the greater discriminatory effects of environmental problems on the underprivileged, such as low-income and minority groups.
−3	8	Sustainable development policy failed because there was no central agency overseeing it.
−3	27	The central government has a weak will when it comes to promoting sustainable development.
−3	26	As the fourth industrial revolution accelerates, environmental problems will be solved naturally.
−4	32	The Committee on Green Growth that currently belongs to the prime minister’s office ought to absorb the Council on Sustainable Development of the Ministry of Environment.
−4	33	Low-carbon green growth policy ought to be abolished.
−5	29	Green growth is a strategy for promoting sustainable development.

\* value: Strongly disagree (−5) to strongly agree (5).

Type 3, the green growth advocate, contrasts with types 1 and 2 (see Table 8). First of all, this type holds as a core value the belief that environmental problems that arise in industrial society can be solved without dismantling industrial society. Basically, the green growth advocate has a positive attitude about the role of industry. On the other hand, the green growth advocate is similar to the democrat and the idealist in embracing a democratic governance structure.

The green growth advocate’s positive attitude toward industrial society is revealed in his or her policy core values. The question item he or she most strongly disagreed with is the statement that the Lee Myung-bak administration’s green growth policy has undermined sustainable development in Korea. The green growth advocate thinks that green growth is an effective strategy for promoting sustainable development and that the nuclear industry should be included in sustainable development policy.

In its secondary aspects, this position emphasizes the participation of civil society. The green growth advocate believes that Korean citizens value economic growth and income over sustainable development. Therefore, the nuclear industry, which helps economic growth, should be supported as part of a green growth policy that promotes sustainable development. The green growth advocate supports the interests of the president on sustainable development and the promotion of sustainable development under the Office of the Prime Minister.

In conclusion, this type can be interpreted as one that favors green growth as a strategy for promoting sustainable development.

Type 4, the skeptic, is the most pessimistic about sustainable development among all respondent types (see Table 9). In terms of core values, this type only shows a theoretical commitment to democratic governance. In terms of a policy core, the skeptic thinks sustainable development is a good idea but also too abstract and that therefore it is difficult to make it a national goal.

The secondary aspects of this type’s beliefs reveal a skeptical position toward sustainable development. The skeptic thinks it is wasteful to maintain both the Green Growth Committee and the Sustainable Development Committee and that sustainable development is currently too broadly conceived.

The skeptic is also opposed to specialist and bureaucratic oversight for sustainable development, to the idea that civil society should play a leading role in the implementation of sustainable development policy, to refining the Sustainable Development Act, and to improving the government’s work promotion system. That is, the skeptic’s view is that sustainable development is not a good policy fundamentally.

**Table 8.** Green Growth Advocates’ Q Statements.

Value *	No.	Statement
5	22	We should further our society by seeking cooperation between national and local governments and between corporations and civil society.
4	29	Green growth is a strategy for promoting sustainable development.
4	12	Civil society should be the main force in implementing sustainable development, with the help of governments and corporations.
3	31	The Council on Sustainable Development should belong to the prime minister’s office.
3	1	Sustainable development is not only a solution to an environmental problem but also a way to address economic and social issues such as wealth polarization, aging, employment, and welfare.
3	34	The president should pay more attention to implementation of sustainable development.
−3	26	As the fourth industrial revolution accelerates, environmental problems will be solved naturally.
−3	18	Environmental problems inevitably arise in industrial society, and it is impossible to solve these environmental problems without abolishing industrial society.
−3	7	The nuclear industry should not be included in the policy of sustainable development.
−4	28	Maintaining both the current Committee on Green Growth and Council on Sustainable Development is a waste.
−4	33	Low-carbon green growth policy ought to be abolished.
−5	2	The Lee Myung-bak government’s green growth policy has depressed Korea’s sustainable development policy.

\* value: Strongly disagree (−5) to strongly agree (5).

The P sets belonging to this type are legislative aides and central government bureaucrats. They participated in the legislative process and in the process of promoting sustainable development. It is presumed that their skepticism derives from their observations of various situations in this process. In sum, the skeptic type is pessimistic about the necessity and feasibility of sustainable development.

**Table 9.** Skeptics’ Q Statements.

Value *	No.	Statement
5	23	The idea of sustainable development is a good one, but it is hard to be a national goal because of its abstractness.
4	28	Maintaining both the current Committee on Green Growth and Council on Sustainable Development is a waste.
4	37	Improving ways to evaluate sustainability performance and to provide feedback is critical to successfully promoting sustainable development
3	22	We should further our society by seeking cooperation between national and local governments and between corporations and civil society.
3	23	The idea of sustainable development is a good one, but it is hard to be a national goal because of its abstractness.
3	24	Sustainable development policies are difficult to adjust because they are too broad.
−3	34	The president should pay more attention to implementation of sustainable development.
−3	30	It is imperative that the Sustainable Development Act restore the status of the basic law
−3	31	The Council on Sustainable Development should belong to the prime minister’s office.
−4	10	In order to successfully promote sustainable development, government must establish a systematic way to implement it.
−4	12	Civil society should be the main force in implementing sustainable development, with the help of governments and corporations.
−5	26	As the fourth industrial revolution accelerates, environmental problems will be solved naturally.

\* value: Strongly disagree (−5) to strongly agree (5).

Type 5, the elitist, believes that environmental issues need to be addressed by experts and bureaucrats (see Table 10). In terms of core values, the elitist recognizes the urgency and importance of

environmental problems and thinks that it is necessary to consider dismantling industrial society to solve them. In terms of a policy core, the elitist appears to be an advocate for green growth. The elitist believes that in order to overcome the urgent environmental crisis Korea is faced with, it is necessary to move away from the so-called brown growth that has been promoted in industrial society and move toward green growth. This is reflected in the elitist’s positive evaluation of the Lee Myung-bak government’s green growth policies, such as the nuclear energy industry policy, and in the belief that the government should promote sustainable management of enterprises.

In order to ensure the continuity and effectiveness of sustainable development, the elitist maintains that it is important to rely on experts, bureaucrats, and corporations to promote sustainable development, to facilitate their work by supplying the human and financial resources they need, and to gauge of the effectiveness of their work through performance evaluations and feedback. The elitist does not advocate citizen participation because they believe that is not effective. Thus, the elitist type recognizes the value of sustainable development for solving environmental problems but believes that bureaucrats and experts are more effective in promoting it than citizens.

**Table 10.** Elitists’ Q Statements.

Value *	No.	Statement
5	19	Threats to the environment are a matter of survival of the earth and humanity.
4	17	Sustainable development should be promoted by experts and bureaucrats first, and citizens’ support should be sought later.
4	18	Environmental problems inevitably arise in industrial society, and it is impossible to solve these environmental problems without abolishing industrial society.
3	11	To successfully implement sustainable development in general, it is necessary to promote corporate sustainability management.
3	36	Human and financial resources are required to enforce compliance with sustainable development legislation.
3	37	Improving ways to evaluate sustainability performance and to provide feedback is critical to successfully promoting sustainable development.
−3	32	The Committee on Green Growth that currently belongs to the prime minister’s office ought to absorb the Council on Sustainable Development of the Ministry of Environment.
−3	21	A system based on participatory democracy rather than on the existing bureaucracy is needed to successfully promote sustainable development.
−3	25	Local governments have a weak will when it comes to promoting sustainable development.
−4	7	The nuclear industry should not be included in the policy of sustainable development.
−4	12	Civil society should be the main force in implementing sustainable development, with the help of governments and corporations.
−5	2	The Lee Myung-bak government’s green growth policy has depressed Korea’s sustainable development policy.

\* value: Strongly disagree (−5) to strongly agree (5).

## 5. Discussion

Let us summarize the five respondent types that our analysis has revealed in terms of core values, policy core, and secondary aspects. In terms of core values, there are two major issues that are at stake. One is the relative importance of postmodern-environmental and social issues as opposed to modern-economic growth. Democrats (type 1) and idealists (type 2) emphasize the importance of addressing environmental and social problems, while green growth advocates (type 3) and elitists (type 5) highlight economic growth. The second issue is whether the best way to promote sustainable development is through governance structures in which various stakeholders participate or through a small number of elite-centric systems. Types 1–4, which embrace sustainable development as a legitimate ideal, favor democratic governance, while type 5 supports the rapid and

effective promotion of sustainable development by experts. Conflicting perspectives on sustainable development with respect to core values are shown in Figure 2.

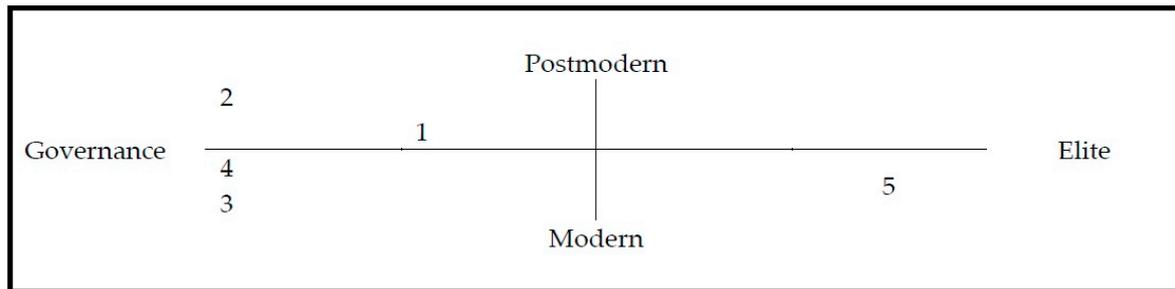


Figure 2. Core Values.

The difference of thought in core values appears to be closely related to the paradigm shift in Korean society. It can be understood from the extension of the change from the modernism of industrial society to the post modernism which places importance on happiness and the environmental values. As the paradigm changes, the way of doing work also changes from the vertical and one-way type to a horizontal and inter-connected type. These differences are also evident in the policy core (see Figure 3). Types 1–3 and 5 advocate sustainable development, but type 4 is skeptical about sustainable development. Furthermore, types 1–3 and 5 have different attitudes toward green growth. Specifically, types 1 and 2 maintain a critical position on green growth, while types 3 and 5 advocate green growth.

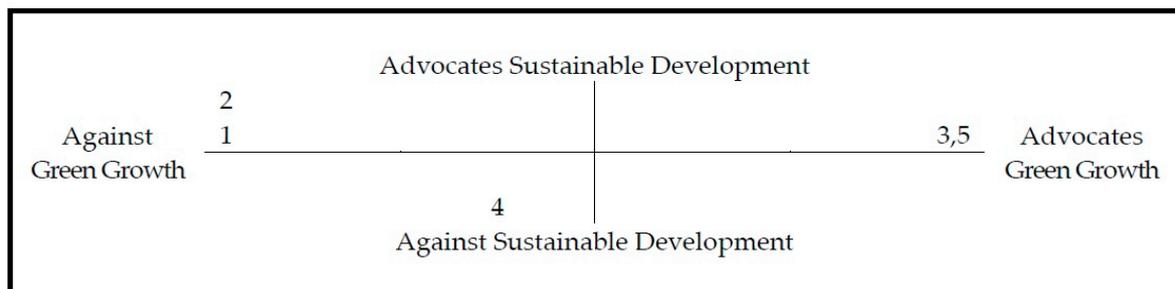
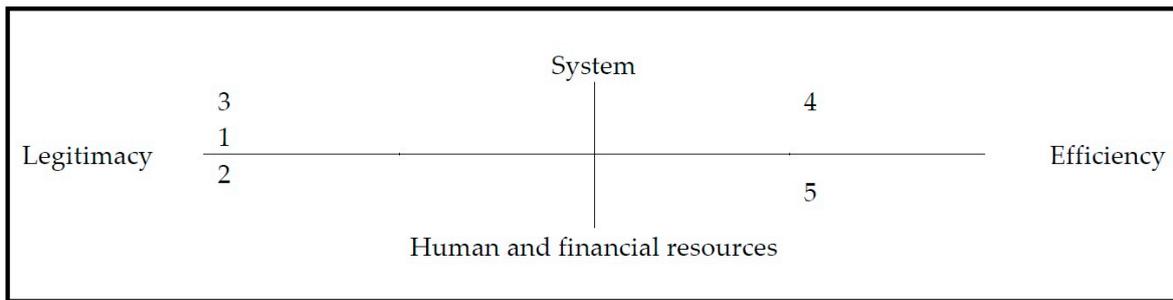


Figure 3. Policy Core.

Within the camps that advocate sustainable development, conflicts also arise between types 1 and 2 and types 3 and 5 in their assessment of green growth. It is difficult to reconcile differences at the core policy level (Sabatier, 1988; Sabatier and Jenkins-Smith, 1999). Therefore, in order to effectively promote sustainable development, the alliance formed among types 1–3 and 5 on the basis of their consensus that sustainable development is a necessary policy has to be brought to bear to persuade type 4 that is opposed to sustainable development.

With respect to secondary aspects, differences emerge on the issue of strategies for implementing sustainable development (see Figure 4). First, democrats (type 1), idealists (type 2), and green growth advocates (type 3), who believe that pursuing sustainable development is justified, believe that demonstrating that sustainable development is legitimate will be more useful in implementing it than efficiency, while elitists (type 5) and skeptics (type 4) think efficiency is more important.

Second, there are differences with respect to the question of whether a structural framework, such as a legal system, is critical in promoting sustainable development or whether human and financial resources are more important. Green growth advocates (type 3) and skeptics (type 4) prioritize reliance on law and systems, while idealists and elitists emphasize increasing the workforce and making more financial support available. The democrats view is that both should be pursued in a balanced way.



**Figure 4.** Secondary Aspects.

Because secondary aspects are strategic rather than fixed beliefs and so subject to change, improving sustainable development legislation might be the most effective way to change the minds of skeptics, who are skeptical about sustainable development itself, and supporting the expansion of the workforce and greater financial resources might lead an elitist to be more interested in the legitimacy of sustainable development.

From the point of P sets, classification of types is as follows. Of the total 24 P sets, there were 5 P sets not classified in any type. Among them, two belonged to the companies, one bureaucrat, one researcher, and one legislative official. We need to pay attention to the attributes of respondents in the company type. P sets of companies belonged to a total of four people, each of whom were engaged in the duties related to sustainable development. The respondent working for a venture company hoped that he would be a good responder because he experienced the philosophy and reality of sustainable development thoroughly from the standpoint of the company. Furthermore, he was classified as type 1. The respondent working for a public enterprise was also classified as type 1. The two P sets classified as type 1 had in common that they supported the current regime’s sustainable development policy. Respondents from SME and Samsung Electronics were two representative companies with a high interest in sustainable development in Korea and had the common point that they did not belong to any type. In their interviews, they were dissatisfied with the government’s policy changing over time as the regime changed. Furthermore, above all, there was a complaint that there was no structure that sustainable development activities of company could participate in sustainable development policy in Korean society. From this point of view, it is necessary to construct a network structure in which major actors of society such as government, civil society, and corporation can participate actively and horizontally.

**6. Conclusions**

Using the Q methodology, in this study we have explored the types of perceptions among actors involved in sustainable development. We constructed Q statements using the hierarchically structured model of beliefs that grounds the advocacy coalition framework. We secured the participation of 24 members of various departments—central and local governments, UN advisory bodies, enterprises, civil society, academia, media, etc.—in order to take into consideration the conceptual ambiguity of sustainable development and the wide range of actors involved. We used the PQ method program to analyze the responses to the Q statements.

As a result of the analysis, we extracted five types of respondent, namely democrat (type 1), idealist (type 2), green growth advocate (type 3), skeptic (type 4), and elitist (type 5). We broke the responses to the Q statements down into core value, policy core, and secondary aspects, and analyzed how the five types were distributed at each level.

The theoretical implications are as follows. First, those who have participated in sustainable development vary in their experience and background, and the five types of perceptions differ according with respect to core values, policy core, and secondary aspects related to sustainable development. This implies that the negotiation space between the alliances can be enlarged or decreased depending on what issues are highlighted.

The implications for the successful implementation of sustainable development policy are as follows. First, acceptance of sustainable development varies according to the level of beliefs. Therefore, first of all, if there is consensus on the concept and policy direction, unnecessary conflicts will be minimized. For example, efforts to reach consensus on sustainable development instead of focusing on excluding green growth will be very helpful in promoting policies.

Second, because it is hard to resolve the gap between respondent types when it comes to core values, it is more prudent to concentrate on negotiating agreement on policy core issues and secondary aspects between perception types. In other words, if the discussion focuses on the political competition between green growth that emphasizes economic value and sustainable development that emphasizes the three pillars, effective promotion of sustainable development is unlikely. Even if one side has an advantage, it will be difficult to maintain this temporary advantage because the differences in core values will persist. This is why Korea's sustainable development policy has stagnated. Therefore, rather than seeking to push out one side or the other, we should try to prove the legitimacy of sustainable development by focusing on the common denominator of sustainable development and green growth and prioritize expanding resources to effect strategies pertaining to secondary aspects about which there is likely to be consensus.

In this study, we have used Q methodology to explore the reasons why sustainable development policies have not been promoted in policy sites. The green growth policy of the most recent government has replaced the sustainable development policy of the previous government, creating unnecessary conflicts. Our analysis finds that in order to recover the driving power of sustainable development, it is necessary to reach beyond these conflicts. This study can contribute to the literature of sustainable development policies theoretically and practically. The literature on sustainable development [11–13] have shown different perceptions of stakeholders through surveys, but failed to answer how to overcome these differences in order to implement sustainable development policy successfully. In South Korea, sustainable development is delayed because the system is not functioning well. Through in-depth interviews show that the system is not functioning well because it is the perception difference among the major stake holders and actors. In this study, Q methodology was used to systematically grasp the subjective perception of actors. In addition, this study applied the hierarchical belief system of ACF as a theoretical framework. Through this, we could distinguish three hierarchical aspects of perceptual gap on sustainable development. These results can contribute to our understanding of this wicked problem and to a better policy approach. Furthermore, we were able to provide practical alternatives to the most urgent and deadlocked problems by analyzing stakeholders' perceptions directly involved in the institutionalization of sustainable development policies.

The limitations of this study are related to the limitation of Q methodology. Q methodology is not a methodology for generalizing theories. Rather, it is a scientific methodology for hypothetical discovery that challenges the way we generally think. The exploratory nature of Q methodology requires those researchers who use to intentionally select P sets and exclude others. In this study, we intentionally excluded citizens who have no particular interest in sustainable development. Citizens did not fit the purposes of this study, but their exclusion is inevitably a problem for representation.

This study focused specifically on the formation of policies for sustainable development, so it prioritized identifying the perceptions of stakeholders currently involved in sustainable development. Future research should explore the citizens' perception of sustainable development. Because participation of ordinary citizens is essential for the effective implementation of sustainable development policies, it becomes an important issue how citizens perceive sustainable development. Future research needs to do comparative studies with sustainable development policies in other countries. A comparative study will be able to analyze commonalities and differences between countries. This will provide many implications for successful implementation of sustainable development and policy enforcement theories.

**Author Contributions:** Conceptualization, H.L.; Methodology, J.E.; Validation, H.L. and J.E.; Data curation, J.E.; Writing-original draft preparation, H.L. and J.E.; Writing-review and editing, H.L. and J.E.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

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