

# Understanding Climate Action by Teenagers as Social Movements

A Case Study of Youth 4 Climate Action in Korea

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Lund University Centre for  
Sustainability Studies



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## **Abstract**

This thesis is about Y4CA, a youth organization in Korea for climate action. It discusses how non-teenagers support teenage activists for the sustained climate action by considering three factors for social movement: political opportunities, mobilizing structure and framing process by adding collective identity. By using mixed methodology, a survey about behavioral factors of teenagers, in-depth interviews with activists, researchers, educators, and government agencies and focus group interviews with teenage activists- it investigates issues they are struggling with and studies inclusive solutions. Political opportunities allow youth climate action to emerge, though most teenagers are prevented from making use of these political opportunities. In addition, every behavior by teenagers has been regarded as a 'spec': the requirement to apply for university. Simultaneously, consuming the image of youth, youth-washing, happens due to the demand for teenage voices for political diversity. This hinders the development of social networks. Also, there are conflicts regarding membership after Y4CA expand their working group in December 2019 because of because of the decision-making system led by old members, absence of shared cognitive definition without active relationship, and emotional investment. Moreover, there are some limitation for mobilizational framing from recognition of teenagers as stupid or underaged, government targeted action and one-way media use. Therefore, it is recommended 1) increasing political opportunities for more teenager by alternative education and valid political rights 2) Re-building collective identity for membership and social network by slack organization and providing platforms, 3) motivational framing considering credibility, audience effect and using online media. Climate action by teenage activists is important because teenagers are the generation directly involved with the impact of the climate crisis, citizens of society at present, and intellectuals who will lead the future. To sustain youth climate action as a social movement, it is necessary for other generations to be in solidarity with Y4CA as an equal citizen, rather than helping. It is common in the world that the climate crisis is connected to generation justice, most teenagers are in students' positions, and a general gap exists. So, this research is meaningful and valid for other cases of youth climate action globally. In conclusion, for the success of youth climate action as a social movement stimulating society as the counter-hegemony, it is important to consider teenage activists' actions seriously and respond to their demands by recognizing teenagers as equal citizens, not as a student.

**Keywords:** Youth climate action, Youth participation, Political opportunity, Mobilizing structure, Framing process, Collective identity

## 요약 (Korean)

이 논문은 한국의 십대 주도의 기후행동 단체인 청소년기후행동(Y4CA)에 관한 것이다. 이 논문에서는 지속적인 기후행동을 위해 어떤 방법을 통해 청소년활동가들을 지지할 수 있는지에 대해 논의하며, 사회운동의 세가지 요소-정치적기회, 조직동원, 프레이밍 프로세스를 중심으로 집단정체성의 개념을 더하여 설명한다. 혼합된 연구 방법론이 채택되었으면 정량적 연구로서 청소년활동가의 행동 요인에 대한 설문조사, 정성적 연구로서 6 개 그룹(청소년활동가, 청년활동가, 연구원, 환경단체, 교육자, 정부기관)과의 심층인터뷰 및 청소년 활동가에 대한 포커스그룹 인터뷰를 통해, 청소년기후행동에서 나타나고 있는 문제와 갈등에 대해 분석하고 포괄적인 해결방안에 대해 토론한다. 주요 연구결과로서, 엄격한 교육제도의 완화, 다양한 교육의 기회 등의 정치적 기회는 청소년기후행동이 조직되도록 허용했으나, 여전히 대부분의 10 대는 이러한 정치적기회에 제한적이다. 또한, 십대의 모든 행동은 대학진학을 위한 스펙으로 간주되는 경향이 있으며, 정치적 제약 및 정치적 다양성을 위한 십대의 목소리에 대한 요구는 청소년 이미지가 소비하는 '청소년 위상' 현상을 발생시킨다. 이것은 Y4CA 의 소셜 네트워크 개발을 방해한다. 한편, 2019 년 12 월 Y4CA 의 주요활동멤버 그룹이 확장된 이후 이전 멤버들이 이끄는 의사결정 시스템 및 적극적 관계, 정서적 투자 없이 인지된 정의를 확립하여 새로운 멤버들에 대한 멤버십에 부정적 영향을 준다. 게다가 청소년 활동가를 미성숙하다고 간주하여 그들의 프레이밍 신뢰성이 비판받는 경우가 있으며, 정부 중심의 타케팅과 일방적인 온라인 미디어의 사용은 동원프레임에 대한 제약으로 작용한다. 사회운동이론을 고려했을 때 연구결과에서 발견되는 갈등은 청소년의 능력이나 의지의 부족이기 보다는 청소년에 대한 제한적 정치적 기회 및 사회운동조직에서 일반적으로 발생할 수 있는 것임을 보여준다. 그러므로, 1) 대안교육과 유효한 정치적권리를 통한 더 많은 청소년에 대한 정치적 기회의 확대, 2) 느슨한 조직과 플랫폼 제공을 통한 멤버십 및 소셜 네트워크를 위한 집단정체성의 재구축, 3) 신뢰성, 청중효과를 고려한 동원 프레이밍 및 온라인 미디어의 활용 등의 해결방안이 제안된다. 10 대는 기후위기의 직접적 당사자, 현재 사회의 구성원, 미래를 이끌어갈 지식인이라는 점에서 고유한 의미가 있다. 기후행동을 사회운동으로서 발전시키고 청소년기후행동을 유지하기 위해 다른 세대는 청소년 활동가를 도와주려고 하기보다는 평등한 시민으로서 연대해야 한다. 기후위기와 기후행동은 세계적 이슈이다. 또한, 세대정의, 세대차이, 청소년에 대한 제한된 사회적 참여 또한 세계적으로 나타나는 갈등이므로 이 연구는 다른 나라의 청소년기후행동 사례에도 시사하는 바가 있다. 결론적으로 사회변화를 이끌어내는 대항 헤게모니로서 기후행동이 성공하기 위해서는 청소년기후행동을 통해 나타나는 청소년 활동가의 행동에 대해 진지하게 고려하고 청소년을 어린 학생이 아닌 평등한 시민으로서 인정함으로써 그들의 요구에 대해 적극적으로 대응하는 것이 중요하다.

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## Abbreviations

CCPI	Climate Change Performance Index
ES	Educator in Society
EN	Environmental NGOs
GA	Government agency
KCEA	Korean Climate Emergency Action
Korea	South Korea (Republic of Korea)
NGO	Non-governmental organization
RC	Research center
TA	Teenager activist
YA	Youth activist
Y4CA	Youth 4 Climate Action
YCL	Youth Climate Change Lawsuit
YCLTF	Youth Climate Change Lawsuit Task Force & Support Group

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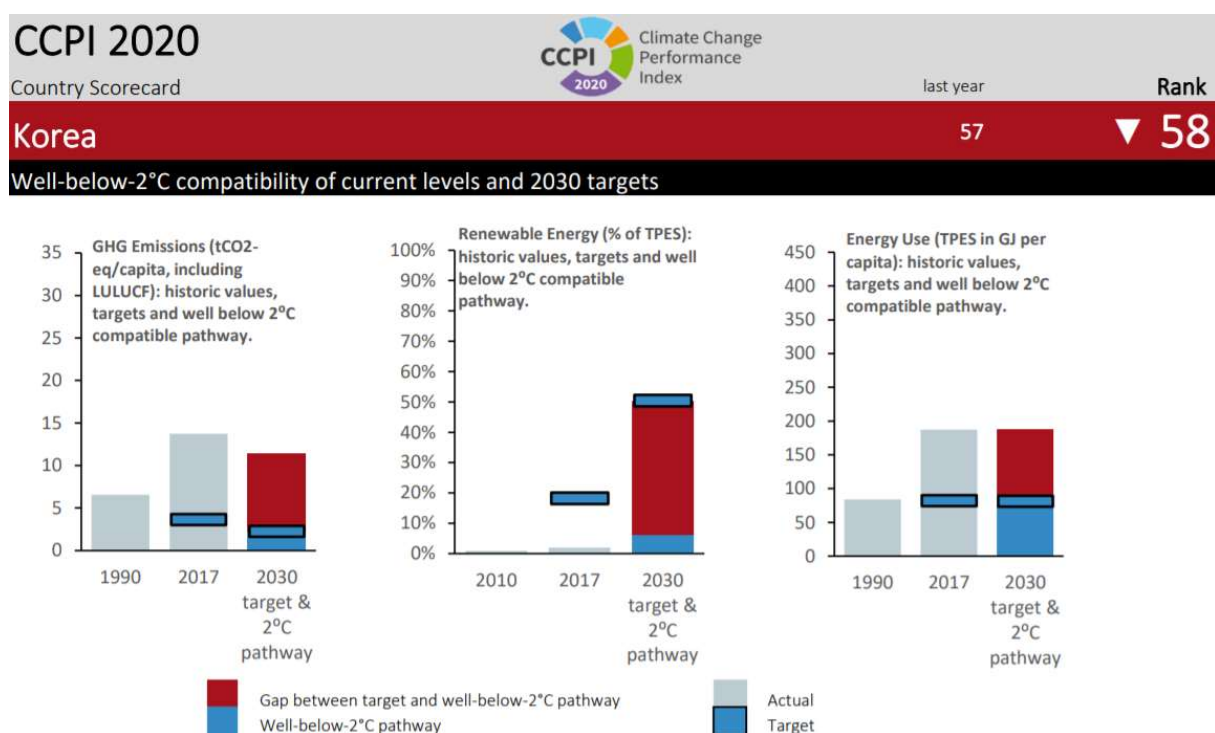
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# 1 Introduction

## 1.1 Climate action by teenagers responding to climate crisis

Climate change is a reality, and youth activists like Greta Thunberg are struggling to demand changes (Lykkegaard, 2019). As greenhouse gas emissions, the major cause of climate change, are increasing, climate change is becoming more severe, and its impacts are easily felt (S. Lee, 2020). According to the Sustainable Development Goal 13- Climate Action, every country needs to take urgent steps to build resilience and adaptation to the impacts of climate change, including awareness and regulations (UN, 2019). Specifically, the importance of active action is emphasized.



**Figure 1.** CCPI 2020 Scorecard Korea (CCPI, 2020).

Korea ranked 58th out of 61 countries on the Climate Change Performance Index (CCPI) 2020. In this report, Korea's greenhouse gas emissions were 59th among the target countries, and efforts to reduce energy consumption were 61<sup>st</sup> (CCPI, 2020; D. Lee, 2020) (Figure 1). According to the 2nd Basic Plan for Climate Change Response, announced in 2019, all major sectors exceeded the reduction plan issued in 2017 (Ministry of Environment, 2019). In addition, new coal-fired power plants are still being expanded (KECA, 2019). Overall, the establishment of a market-based reduction environment refers to the establishment of an emission trading system, but it is insufficient in that it does not change the market behavior of companies (KECA, 2019).

The government's response reflects the hegemonic structure of Korean society. Major Korean government-led companies have entered the energy industry (Greenpeace, 2017). Also, parts of civil society criticize environmental NGOs which insist on energy transition and instead support major companies, although their business shows negative impacts on climate change (Moon, 2020). This is because they think the crisis of major companies may lead to the collapse of regional economies, the collapse of business partners, and unemployment problems (Moon, 2020). Engagement in a social movement is an ideological struggle to create hegemony against the ruling class in civil society (Lim, 1999). Climate action can be the social movement that builds a counter-hegemony to industrial capitalism, led by governments and major companies, by forming a social consensus.

There is a youth climate movement organization in Korea called Youth 4 Climate Action (Y4CA), led by teenagers who sympathize with the urgency of the climate crisis. It was influenced by the school strike of Greta Thunberg from Sweden, which is integrated into the Fridays For Future (McGettigan, 2019). Y4CA has actively led in four school strikes since 2019 and filed a lawsuit in March 2020. However, Y4CA suffered from interference in climate action by non-teenagers and experienced internal and external conflicts. This research analyzes the causes and impacts of these issues around Y4CA using the synthesized theory of social movements theories by McAdam, McCarthy and Zald, which is focused on political opportunity, mobilizing structures and framing processes. Then the research provides comprehensive understanding of the issues by considering collective identity theory from many different perspectives and discusses how to make Y4CA long-lasting.

## **1.2 Research aim and question**

The aim of this research is describing what Y4CA is struggling with for climate action to discuss the way to solve that issue for their sustainable action from the social movement's theoretical perspectives. The research question was decided by the deduction method. Deductive research begins with assumptions derived from theory (Bellamy & 6, 2012). There are two assumptions. First, climate action is an action system of social movements. Second, teenage activists have a unique role in climate action. Then, this research attempts to answer the following research questions:

How do youth climate actions succeed as social movements?

- How can climate action by teenagers be explained in terms of social movements?
- What kinds of conflicts are observed in Y4CA, and which actors at various levels affect these conflicts?

- What should be done externally and internally for the sustainable action of Y4CA?

For the first sub-question, I chose the synthesized theory by McAdam, McCarthy and Zald, which has three interrelated categories: political opportunity, mobilizing structure and framing process (McAdam, McCarthy, & Zald, 1996). The political sphere for the social movements is limited in Korea because Korean society has failed to ensure an institutional reform and normative internalization for the establishment of practical democracy (Lim, 1999). Teenagers are especially more vulnerable to engaging in social movements belonging to the repressive education system. In addition, youth climate action demands political change focusing on governance. For the second sub-question, the conflict that Y4CA is struggling with is described, and the causes and effects of the conflict are analyzed from various perspectives based on the collected data and the social movements theories. Lastly, I focus more on the framing process and add new social movements and the collective identity theory to overcome the limitation of the main theory, the political process theory, to discuss the external and internal methods to solve the conflict surrounding Y4CA such as youth-washing and solidarity issues.

### **1.3 Defining key terms: climate action and teenagers**

#### ***Climate action***

The term climate action used in this thesis refers to a social movement, such as protest, which promotes climate action.

#### ***Teenager (Chungsonyun)***

The study subject is teenagers called 'Chungsonyun' in Korean. It includes teenagers out of school and excludes over 20s youth. I do not want to exclude teenagers outside of school because they also have political constraints like teenagers in school. According to the data issued in 2016, there are approximately 350,000 teenagers out of school (Go & Kim, 2019). In addition, teenagers want to avoid being called students, which reflects the repressive frame of their behavior (TA7, personal communication, March 12, 2020, TA6, personal communication, March 18, 2020). Also, youth or millennials who were born between 1981 and 2000 (Hancock, 2011), have various definitions including over 20s, which is non-teenage.

### **1.4 Ethical considerations**

First, prior to the survey and interview request, I introduced myself and my research. While collecting the data, it was essential to obtain consent to record and use the data for the thesis. Also, I made it clear that the results of the interview would be limited to research purposes for the individual thesis.

Second, personal information was minimally requested, age and gender only for the survey, and nothing for the interview. Because many different perspectives were collected as data, all interviewees marked anonymously to prevent the possibility of misunderstanding each other within the community of climate action. Lastly, I paid more attention to my attitude toward teenagers as data showed that teenagers' bad experiences with rude non-teenagers had a significant impact on teenagers' behaviour. The experience of the interview should not be disturbed or harmed by the experience of the interviewee (Durand, 2016).

### **1.5 Contribution of the study**

Although youth climate action has existed for a long time, by many activists, significant changes have not been made as a reaction nor has much research been done about them. Youth climate action is more than climate action in terms of political opportunities for teenagers. For a better society as well as a better response to the climate crisis, it is necessary to interest youth in climate action and react to their voice. The research analyzes climate action on social movements theories from the perspective of teenagers who are marginalized on the political opportunity. Also, this research identifies the in-depth causes and impacts of conflicts surrounding teenage activists through external and internal approaches from various stakeholders around teenagers. In addition, not only youth climate action, but also generation gap, political constraints to teenagers, and hegemony of capitalism etc. which influence youth climate action are common globally. Therefore, this study can be applied to other cases globally, considering differences in historical specificity of Korean social movements and severe competitive social systems in Korea.



## **2 Theories**

In this section, I will introduce the theoretical underpinnings informing my study such as social movements and collective identity theory.

### **2.1 Social movements**

“Social movements are forms of collective action that emerge in response to situations of inequality, oppression and/or unmet social, political, economic or cultural demands” (Horn, 2013, p. 1). There are some characteristics of social movements as (a) challengers or defenders of existing structure or system, (b) not individual enterprises, but collective, (c) acting outside of institutional or organizational arrangements, (d) various levels of a network to operate organization, (e) some degree of temporal continuity (Cross & Snow, 2012). There are four stages of social movements: emergence, coalescence, bureaucratization, and decline. On the decline stage, there are several reasons like success, organizational failure, co-optation, repression, or establishment within mainstream society (Christiansen, 2009).

### **2.2 Synthesis of social movements theories**

McAdam, McCarthy and Zald (1996) suggest three broad sets of factors for the emergence and development of social movements: political opportunities, mobilizing structures, and framing processes (McAdam et al, 1996).

#### **2.2.1 Political opportunities**

Climate action emerges when they utilize opportunities and overcome or ignore political constraints confronting any would-be movement (McAdam, McCarthy, & Zald, 1996; McAdam, 2017). American scholars like Charles Tilly (1978), Doug McAdam (1982), and Sidney Tarrow (1983) studied the emergence of social movements from the changes in the institutional structure or informal power relations of a given national political system in the perspective of political process theory. On the other hand, European scholars like Hans Peter Kriesi (1989), Herbert Kitschelt (1986), Ruud Koopmans (1992), and Jan Duyvendak (1992) studied cross-national differences in the structure, extent, and success of comparable movements on the basis of differences in the political characteristics of the nation states. They are embedded regarding new social movements which are “a diverse array of collective actions that have presumably displaced the old social movements of proletarian revolution associated with classical Marxism” (Buechler, 1995, p. 442). There are analytical tools for political opportunities reflected from vulnerabilities in the system such as the relative openness or closure of the

institutionalized political system, the stability of that broad set of elite alignments that typically undergird a polity, the presence of elite allies and the state's capacity and propensity for repression (McAdam et al., 1996).

### ***2.2.2 Mobilizing structures***

The organization is formalized as a bureaucratized stage accompanied to mobilizing structure by providing membership and social network (Christiansen, 2009). There are strategies carried out by formal organizations and trained staff (Christiansen, 2009). Mobilizing structures are the organizational vehicles as sites for mobilization by providing membership and social network (McAdam, 2017; Crossman, 2019). Mobilizing structure is emphasized in political process theory and resource mobilization theory (McAdam et al., 1996). It works to organize and presses their claim to engage in sustained collective action (McAdam, 2017), which focuses on two main points: (a) the existence of organizations as a forum for actors of movement, (b) the formation of correlation and coordination in carrying out joint functions (Ilman Hakim & Kosandi, 2018)

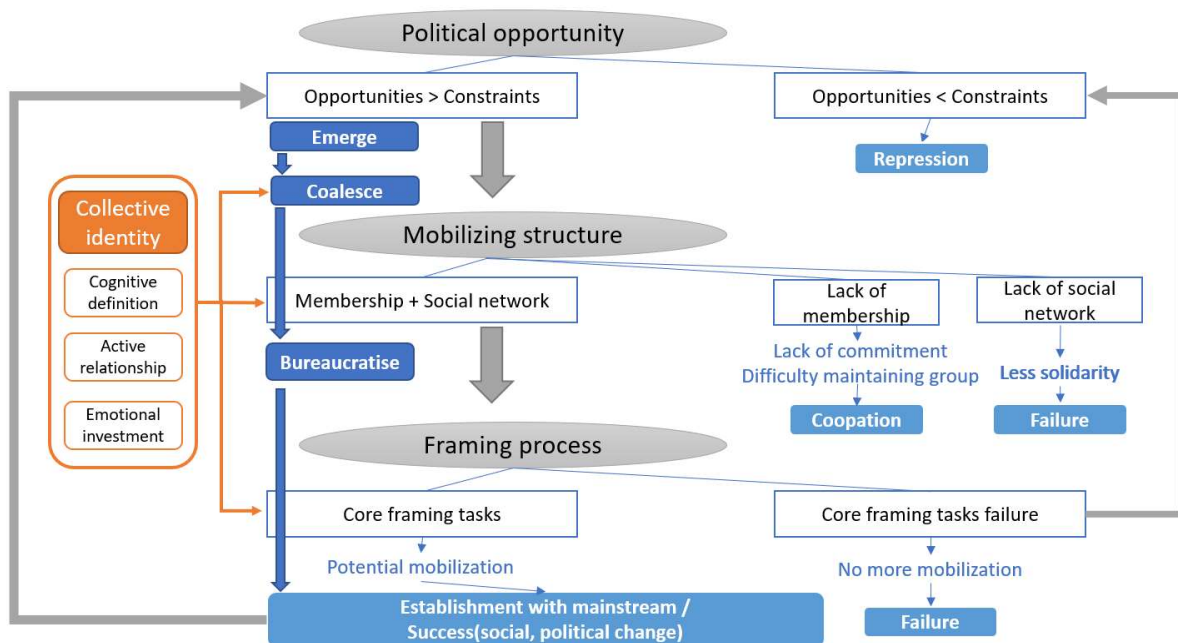
### ***2.2.3 Framing processes***

When opportunity and organization are combined with the framing process, there is potential for the collective action to emerge (McAdam, 2017). The success of the framing process depends on the core framing tasks as diagnostic framing, prognostic framing, and motivational framing (Benford & Snow, 2000). When the core framing tasks cause the potential mobilization of the public, organizations reach a decline stage which means the success of social movements by achieving their goal or establishment mainstream. David Snow's concept of framing refers to "the conscious strategic efforts by groups of people to fashion shared understandings of the world and of themselves that legitimate and motivate collective action" (McAdam et al., 1996, p. 6). The framing process is "the collective processes of interpretation, attribution, and social construction that mediate between opportunity and action" (McAdam, 2017, p. 193), which is the social-psychological dynamics conditioning both perceptions of anger or fear about some aspect of lives and the hope to redress the problem by acting collectively (McAdam, 2017). It also builds the shared meaning and cultural understanding of potential mobilization.

## **2.3. Collective identity**

New social movements theorists tend to problematize the fragile process of constructing collective identities (Buechler, 1995). Melucci (1995) defines collective identity as a process of constructing an action system by several individuals or groups considering orientations of action and the field of

opportunities and constraints (Melucci, 1995). Collective identity involves three dimensions: (a) formulating cognitive definitions concerning the goals, means and field of action; (b) activating relationships among the actors, who interact, communicate, influence each other, negotiate, and make decisions; (c) emotional investments to feel membership (Melucci, 1985). A group constructs a collective identity depending on the difference of access to resources and networks as well as professional or communicative skills which can be influenced by the level of their participation and their expectations for the social movements (Melucci, 1989). The movement is the action system, a complex network among different levels, not from the unity of goals by ideologues or opponents (Melucci, 1995). Collective identity makes distinctions from others and comes to play different roles by recognizing the complexity of present collective actors (Melucci, 1995).



**Figure 2.** Combination of theories (Source: Hyerim Lee 2020 based on Christiansen, 2009; McAdam, McCarthy, & Zald, 1996; Melucci, 1985). There are three broad set of factors which impact on social movements: political opportunities, mobilizing structure and framing process. Depending on them social movement can positively develop (emerge, coalesce, bureaucratise success, establishment with mainstream or negatively decline (repression, cooptation, failure). In addition, collective identity influence on the stage of social movements and three broad set of factors of social movements.

My interpretation of these theories provides the theoretical underpinnings informing my study. The stage of social movements, synthesis of social movement theories, and collective identity can be combined and influence each other with concepts from other theories as indicated in figure 2. It can vary depending on the case to which it is applied. It was made to focus on the case of Y4CA.

### 3 Methodology

#### 3.1 Mixed research method

This study used a mixed-research method including quantitative research, survey, and qualitative research in-depth interview, and focus group interview (Creswell, 2018). These research methods were used to complement each other and to discuss various perspectives on the difficulties surrounding Y4CA, addressing the research questions. In this study, an explanatory sequential design was chosen. That is, quantitative data was collected through a survey first, then an interview finding evidence of the mechanism of correlation was designed based on the survey results (Subedi, 2016) (Figure 3).

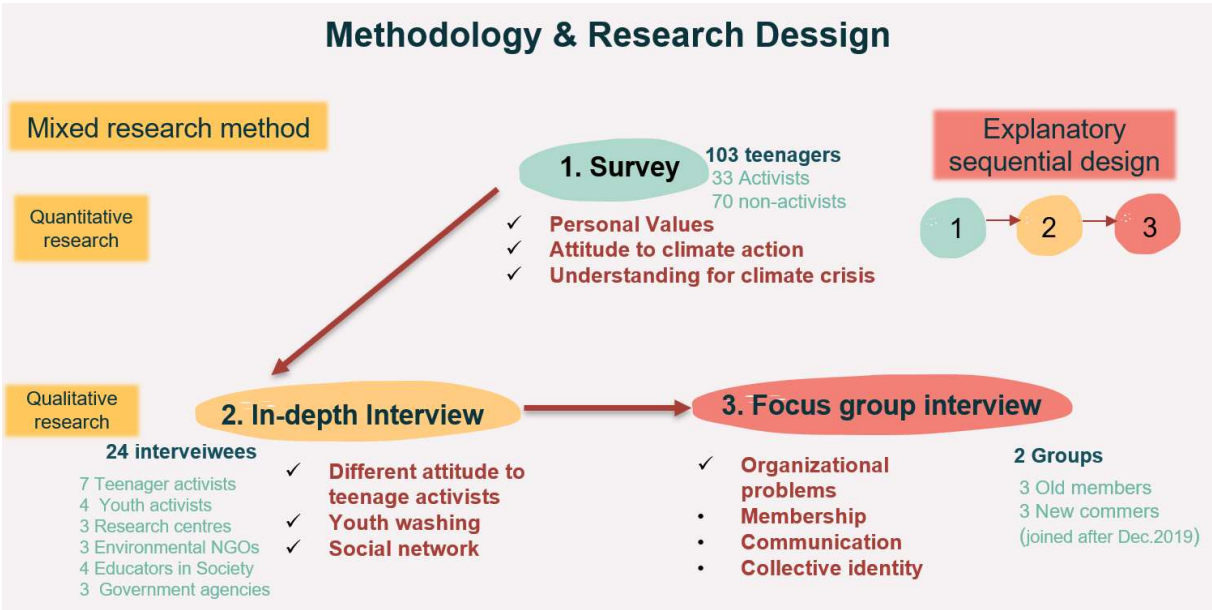


Figure 3. Methodology & Research Design (Source: Hyerim Lee 2020 based on Creswell, 2018; Subedi, 2016).

#### 3.2 Quantitative research methods: Survey

The aim of the survey was identifying what makes teenagers join the climate action or not by comparing two groups: activists’ group and non-activists’ group, to see standardized tendencies. The subjects of the survey were 13 to 18-year-olds living in Korea.

The questionnaire was designed to enable the responses within 10 minutes, consisting of 68 questions excluding personal information (Appendix A). There are three sections: personal values, climate change and climate action, to record the opinions of teenagers regarding climate action. After testing a survey form with two teenage activists and an environmental education expert as a pre-field method, the questionnaire was revised to less questions and selections, with more explanation about some questions. For the question of the personal values, I chose the Values Tree Model from Self Leaders. A

tree is used as a symbol for different types of values, with three main parts: foundation, self-fulfillment and great good.

The surveys were answered between November 28, 2019, and January 9, 2020, by teenagers in Korea. Overall, 103 responses were collected consisting of 33 of activists and 70 of non-activists. Data was collected from two high schools and Y4CA. The questionnaire between the groups was the same for all respondents. The answers were collected through the Google Survey form. Respondents of Y4CA directly filled in the form, while respondents from high schools conducted the survey with a hard copy. I filled in the answers after I got an image file via mail or messenger. Some respondents from the high school who had experience in climate action are classified as an activist. After the survey results were collected through the Google Survey form, I downloaded an Excel file and analyzed the responses using the statistical software SPSS. Almost all the questions except for the 'value' part, are scaled questions with five selections. Most of the numerical data was analyzed through SPSS, while the data of values part was collected as nominal variables and analyzed separately in Excel.

### **3.3 Qualitative research**

#### ***3.3.1 In-depth interview***

In-depth interview refers to the process of generating empirical knowledge by requesting a story on a specific subject. It has a function to supplement the shortcomings of quantitative data: the survey which produces superficial or very standardized responses (Della Porta, 2014). Because the researcher can get specific opinions and information about experiences, in-depth interview is an appropriate research method to analyze the causes and impacts of the issues surrounding Y4CA from the various perspectives. In-depth interviews were conducted individually from February 27, 2020, to April 25, 2020, with 24 interviewees from a variety of sectors in Korean society related to teenagers and climate action, to analyze issues from the various perspectives.

To achieve the purpose of the thesis related to sustainability science, the inter- and transdisciplinary study interacted with diverse relevant social actors (Lang et al., 2012), it was a very important task to select interviewees to ensure the spread of individuals of many types and groups as possible. Finally, interviewees consisted of 6 groups: Teenager activist (TA), Youth activist (YA), Research centre (RC), Environmental NGOs (EN), Educator in Society (ES) and Government agency (GA). All interviews were anonymous (Table 1).

**Table 1.** List of interviewees (Appendix B)

Group		Description	Group		Description
Teenage activist	TA1	Y4CA	Research center	RC2	Civil organization
	TA2	Y4CA		RC3	Governance group
	TA3	Y4CA		Environmental NGOs	EN1
	TA4	Y4CA	EN2		Religious groups
	TA5	Y4CA	EN3		International environmental NGO
	TA6	Y4CA	Educator in society		ES1
	TA7	Green party		ES2	Researcher (Ph. D) studying teenager climate activists
Youth activist	YA1	Green party		ES3	Institution for eco education
	YA2	Youth group A		ES4	Editor in local magazine
	YA3	Youth activist	Government agency	GA1	Ministry of environment
	YA4	Youth group B		GA2	Professor in University of Education (earth science)
Research center	RC1	Political party		GA3	Professor in University of Education (ecological science)

A standard structure was established with an interview guide containing around 15 to 25 questions without any personal information (Appendix C). It is helpful to collect useful data by listening carefully to the opinions of various stakeholders in the comfortable atmosphere of the open and flexible procedure. For example, the order of questions was changed according to the answer of respondents. The interview is a conversation between people with the same interests and a way to establish social relationships (Weiss 1994). At the requesting interview stage, I tried to create familiar feelings for interviewee through prior contact by making appointments and discussing the content of the interview to build the rapport. Also, I tried to make respondents feel free to enjoy the interview by presenting a very broad question of self-introduction at the beginning. Although I had information about them from pre-research, I attempted to proceed objectively without any frame, expectations, or prejudice, to get a more open-minded answer. Also, the categories of questions were limited by focusing on the educational system, organizational networking, and the perspective about youth climate action since all variables cannot be controlled. I made it possible for respondents to choose the way to interview themselves considering the situation caused by COVID-19, which suggests social distancing. Because the respondents may be biased or limited in response to the overall question to capture this process of interpretation (Della Porta, 2014), the questionnaires were not disclosed before the interview, except for the written interview, which interviewees requested.

### **3.3.2 Focus group interview**

I designed a focus group interview for teenage activists to obtain an opinion on specific topics applied to teenagers' behavior serving their way to communicate in real life. It conducted two sessions with

other 3 members, each on 17th March, for old members who joined before the second school strike and 18th March for newcomers who joined in December 2019. Y4CA was recently formed, and their collective identity was seriously confused after increasing the number of members. From the result of pre-research and in-depth interviews, I chose the main discussion theme about youth climate action. Activists discussed how these issues work in their climate action and considered the way to solve them. In addition, I figure out how they communicate and what kind of actor's impact on their communication system, through focus group interviews. Unlike the in-depth interview, the focus group interview allows members to participate in discussions, to share and think about in-depth discussion topics. Their discussion regarding issues and the differences between general and alternative schools is very useful to analyze issues from their perspectives.

The focus group interview was also conducted in the same way as the in-depth interview, but more organized. The researcher, as an intermediary, promoted the discussion for an hour by presenting some issues from the general questions, then the researcher had a role as a facilitator for the next hour stimulating the discussion, encouraging the engagement of all participants and guiding the discussion for the main topic.

### **3.4 Reflections and limitations**

Due to COVID-19 and the resulting social distancing policy, all related meetings, and seminars in March, including absence protests and climate action, were cancelled. During this time, I was planning to participate in absenteeism and emergency climate action from the preparatory stage for participant observation. However, everything was cancelled. In addition, the group interview could not be conducted as planned and did not achieve the expected results because of the COVID-19 focus. Initially, the group interview was scheduled to be for 5 hours with 5 active members on the 16th March, but it was replaced by a video interview using Zoom, and the number of people was also reduced to 3, each for two sessions. It would be interesting to see how members communicate with each other and discuss under 'normal' circumstances. However, it was still possible to see the difference of opinion between old members and social members. Furthermore, the social distancing policy made meeting people face-to-face less possible, with most preferring other methods such as phone or video call interviews.

Mostly, interviewees were active and kind to communicate with the researcher. However, there are some interviewees who were hostile or defensive to research. They focused on asking me questions rather than answering my questions. I was confused about whether they were expressing interest in me or scolding me. It required much time and effort to implement an interview from the beginning to

the end. At the same time, it is a good experience to understand how teenagers can feel when they communicate with many kinds of non-teenagers. So, it is useful to analyze the conflicts between teenagers and non-teenagers.

There is some limitation to getting more information and individual opinion from interviewees who is the representative of their organization. Especially in the case of the participants in the focus group interviews, trained for the interviews to have one opinion as a group, Y4CA. Therefore, the opinions of the same position did not show satisfactory results. All the interviewees were selected by Y4CA rather than by my own choice, and as a result the opinions of the matched organization were mainly presented. Also, I could not get opinion of non-activists about solidarity with other generations, difference political opportunities by school type which are developed on the process of the research by following an explanatory sequential design.

When investigating the case prior to conducting the survey, the problem was approached only from the viewpoint of a teenager, so it was not possible to clearly identify inter-relation and solidarity issues. As a result, the survey does not have data of non-activist teenagers' opinions about inter-relation and solidarity with the older generation.



## **4 Findings**

### **4.1 Political structure and teenagers' participation**

The emergence of collective action is structured by the available political opportunity (McAdam et al., 1996). One researcher said, "emergence of climate-action group centered teenagers shows their life is better than before" (RC1, personal communication, March 5, 2020). Y4CA emerged based on the several political opportunities.

#### ***4.1.1 Political opportunities influencing the emergence of Y4CA***

First, as relaxation of the solid education system, various admissions systems allowed teenagers a variety of education and experiences. The Korean admission system has changed to relieve the too-competitive education system through various methods of evaluation. In the past, most students took an annual exam to apply for university once a year. It has been possible to apply through diverse evaluations by universities such as interviews or writing tests with their school life record, which records their school life, from grades to personal characteristics. These changes have increased the importance of 'creative development activities' which shows their special experience out of school (Jo, Ann, Kim, & Kim, 2017). It has made the demand for education in society including environmental education programs by NGOs and ecological education by private institutions. Also, it allows absent in school to join school strike. Second, there are elite allies to support social participation by teenagers. Youth climate action was proposed by educators who conducted climate litigation education for teenagers. The Youth Climate Change Lawsuit Task Force & Support Group (YCLTF), including the educator, made many teenagers engaged in climate action (ES1, personal communication, March 10, 2020). Third, the political right increases interest in social issues to teenagers. Teenagers voted for the first time this year, in 2020. With the suffrage, political education also took place in schools (Go, 2020). This granting of electoral access provided an opportunity for more teenagers to act with interest in social issues.

#### ***4.1.2. Political constraints to be considered***

For the stability of that broad set of elite alignments that typically undergird a polity, teenagers become an important part of the society with their opinions contributing to various political bodies (N. Kim, 2010). However, these political opportunities are limited to a few teenagers and are not practical for most of them who enroll in a general school. To the development of Y4CA as a social movement with many teenagers, it is necessary to provide political opportunity equally for teenagers. Therefore, this thesis investigates political constraints disturbing joining climate action.

#### ***4.1.2.1 The limited political participation***

The electoral system and political participation in party politics is limited for teenagers. The 21st national election in April 2020 was the first election for 18-year-olds in Korea. In this election, 0.3% (around 140,000) of voters (43,994,247) are a student, which means teenagers in school (Huh & Moon, 2020). 18-year-old voters permitted political participation such as supporting candidates in their classroom or social media, but conversations about the election, supporting specific candidates in school are strongly prohibited following the election act (Jung, 2020). Even all political participation is prohibited as a regulation in several schools. For example, 56.2% of schools in Gwangju city have regulation of discipline about political participation of students, such as expulsion (Yang, 2020). There are limitations to being political in the school system. In addition, those underages cannot create an independent corporation (TA7, personal communication, March 12, 2020). As a result, most activities are centered on adults outside of the school. Only a few organizations like Y4CA can leverage teenagers' identities.

#### ***4.1.2.2 Lack of availability to join climate action***

The education system for most teenagers works to deprive teenagers' availability to join climate action as a propensity for repression. "Even if I am interested in climate action, teenagers in Korea are too busy to think or to do something about climate action'." (TA6, personal communication, March 18, 2020, TA7, personal communication, March 12, 2020). Repression in the education system was easily revealed in the school strike. Some activists submit field work as a family event to get absence permission because school striking is not allowed as an excused absence (D. Kim, S. Kim & Y. Kim, 2019). At this point, It is easy to join climate action for the teenager enrolled in non-general school like I alternative school, independent private school, special purpose school or home schooling, which pursue more diverse evaluation so that there are more openness for their nonacademic activities including climate action. It allows more various experiences for teenagers which has a more strictly repressive system (GA3, personal communication, April 9, 2020; EN1, personal communication, March 5, 2020; TA7, personal communication, March 12, 2020).

#### ***4.1.2.3 Spec-obsession***

Admission to university-oriented, performance-oriented in the Korean education system, entering a university is the goal of a teenager's life, and a 'spec' that fills up school life records that have a great influence on university entrance is a teenager's life (EN1, personal communication, March 5, 2020). 'Spec' refers to the sum of education, credits, and TOEIC scores required to get a job (National Institute of Korean Language, 2020a). Spec-obsession means a pathological symptom that suffers from the

obsession that it is necessary to accumulate specifications (National Institute of Korean Language, 2020b). Spec-obsession prevents teenagers from doing anything other than schoolwork and hinders cooperation among teenagers. All behavior of teenagers was interpreted in terms of spec. Not only school life, but also hobbies and leisure time are being used to build specs (TA5, personal communication, March 18, 2020). The most common excuse when the activists suggest for friends to join climate action is it does not seem to help for their 'spec' (TA5, personal communication, March 18, 2020). On the other hand, there is also criticism within teenagers who are jealous of activists that they filled their school record book with climate action for entering university (TA7, personal communication, March 12, 2020). Also, in an education system where teenagers should always compete with their friends, teenagers have never been accustomed to, learned, or experienced values such as cooperation and solidarity (TA2, personal communication, March 17, 2020, TA4, personal communication, March 18, 2020).

Spec-obsession is reflected in their participation in climate action in the context of perceived control behavior and subjective norm to climate action. Non-activists responded that climate action is not helpful for their study (Figure 4). Also, as for academic relevance, non-activists tend to respond to climate action negatively. There is a tendency to assume that parents, teachers, and friends will be negative about their climate action (Figure 5). It can be interpreted that climate action is negative for teenagers who are not allowed to engage with activities which cannot be spec.

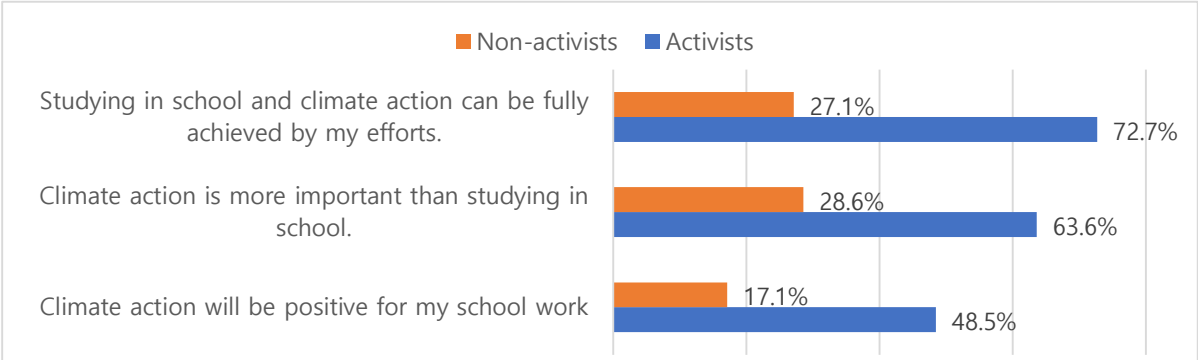


Figure 4. Perceived control behavior for study and climate action

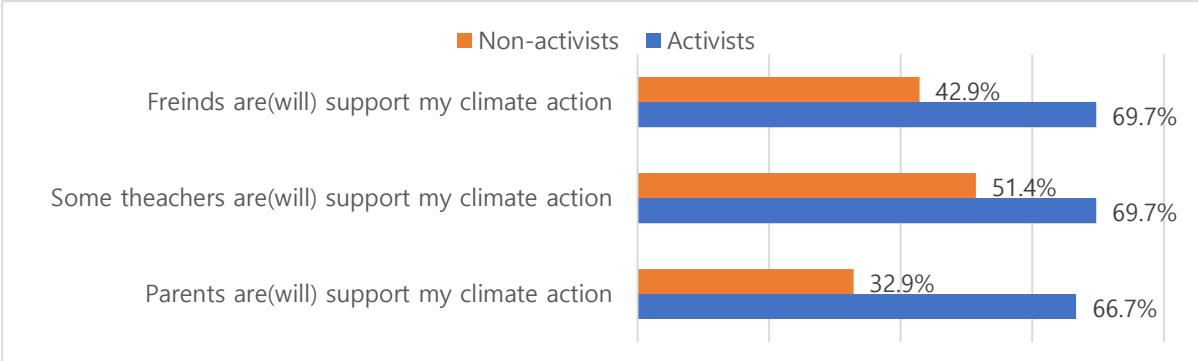
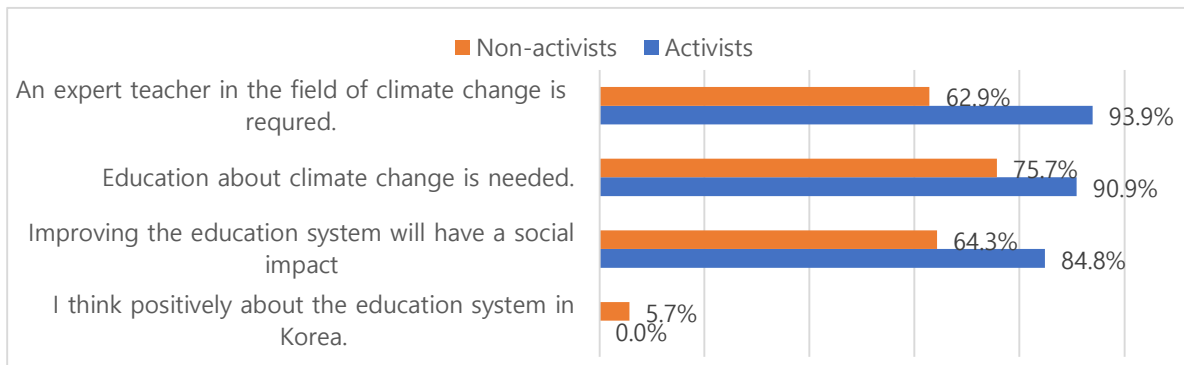


Figure 5. Subjective norm to climate action

#### 4.1.2.4 Dissatisfaction and disbelief in education system

The education system is significantly related to teenagers' lives. Spec-obsession in the competitive education system results in both an internal and external limitation to joining climate action for teenagers. In both the activist and non-activist groups, the positive evaluation response to the education system in Korea is very low, and the response to the demand of the change in the education system, climate change education and professional teachers for climate change are high (Figure 6).



**Figure 6.** Negative reflection to Korean education system and demand changes

There is some feedback to improve the educational system for climate action. Y4CA met Seoul's education chief, Cho Hee-yeon in August 2019. Because there was not any decision at that time, activists felt depressed that they thought they are consumed (Shin & Kim, 2019). However, Seoul Metropolitan Office of Education allocated 14million won (1.15 million dollars) for an ecological transition education plan which mainly includes the education about climate changes in 2020 (Choi, 2020) as Y4CA claimed in the second school strike in May 2019. Although they did not give confirmation when they met, it shows there are changes influenced by Y4CA. Still, most people are skeptical of the effectiveness in real life. The first reason is about the climate club. Some budget is invested in climate clubs, but activists of Y4CA criticize that climate club is not relevant to climate action and teenagers in that club are active only to add one experience to apply for the university as a spec. It shows that teenagers suspect the authenticity of each other's behavior due to spec-obsession. Also, it is hard to implement effectively. First, it depends on the principal or teachers' interests and abilities. Second, teachers in the school are too busy with many administrative tasks other than teaching to do extra work for climate change education (TA7, personal communication, March 12, 2020, GA2, personal communication, April 2, 2020, GA3, personal communication, April 9, 2020). Lastly, it is necessary to provide a detailed manual of climate change education for the teachers who have not learned about climate change and do not have enough time and energy for teaching about climate change (TA6, personal communication, March 18, 2020). This lapse is due to the fact that there is no curriculum about climate change in university education for teacher's trainees (GA2, personal communication, April 2, 2020, GA3, personal communication, April 9, 2020). There is a training course for the teacher

about climate action on that plan (Seoul metropolitan office of education, 2020). Because it is the first year for these educations, no one knows about the quality of the training course (TA6, personal communication, March 18, 2020).

#### ***4.1.3 Youth-washing, contradictory phenomena due to political opportunities and restrictions***

There is a contradictory phenomenon due to political opportunities and constraints called youth-washing. Youth-washing means consuming youth image as a tool to achieve the goals of the older generation (TA1, personal communication, March 17, 2020). For example, teenagers are being involved for publicity purposes and practically are not given a chance to speak (TA6, personal communication, March 18, 2020). Youth-washing is caused by both non-youths and youths, so it affects membership as well as social networks (TA6, personal communication, March 18, 2020). There is demand by the Korean government for more political participation of various citizens including youth, women, and the disabled. In this context, there is a teenager committee, teenager meeting to expand youth participation in policies (N. Kim, 2010), teenage activists were invited to the conference or forum about the climate crisis, energy transition for speech as Greta gave a keynote speech for the UN committee. However, this attendance without practical participation is interpreted as a youth-washing phenomenon and causes conflicts such as solidarity issues.

Through Inductive research from the correlation of the questions, non-teenager attitudes toward teenagers are divided into three categories: unconcern, neglect, and respect.

##### ***4.1.3.1. Indifference group***

The first group has a neutral opinion on climate action and does not show a positive attitude or interest in climate action (Table 2). There are several questions to see their attitude in the interview regarding suffrage for teenagers, youth climate action, and division of teenagers and youth. In the opinion of the first 'indifferent' group, suffrage is not the criterion to distinguish teenagers and youth, and there is no relationship between climate action and suffrage. There are opinions such as "climate action depends on individual choice not related to class or generations" (ES2, personal communication, March 10, 2020), "economic constraints are more important than political constraints" (EN3, personal communication, March 8, 2020). "It is important to know what teenagers need"(EN3, personal communication, March 8, 2020). And "organic cooperation through interaction is important for supporting teenage activists" (RC3, personal communication, March 13, 2020, ES2, personal communication, March 10, 2020).

**Table 2.** Classification of non-teenager's attitude toward teenagers. There are three categories of non-youth interviewees of attitude to teenager depending on the answers of two questions about opinion about teenager’s political participation and the way to support teenager activists.

	Opinion about teenager's political participation	The way to support teenager activists	Attitude to teenger
RC3	No matter	Organic cooperation	Indifference
EN3	No matter	Organic cooperation	
ES2	No matter	Organic cooperation(partnership)	
ES1	Disagree	Education	Neglect (student)
ES3	Disagree	Education	
GA3	Disagree	not support	
GA4	Disagree	not support	
RC1	Agree	Institutional change	Respect (citizen)
RC2	Agree	solidarity	
EN1	Agree	solidarity	
EN2	Agree	solidarity	
ES4	Agree	solidarity	
GA1	Agree	Organic cooperation	

**4.1.3.2. Neglect group**

The second ‘neglect’ group tends to ignore teenagers with a student frame in groups that have a negative opinion on teenagers’ political participation (Table 2). Interestingly, all of them are educators who teach all teenagers. The opinion about supporting is in an educational way like "education for climate club in school" (ES1, personal communication, March 9, 2020), "Linking ecological education, and vocational experience engaged with the curriculum" (ES3, personal communication, March 10, 2020). “Also, because “teenagers are immature” (GA3, personal communication, April 9, 2020), “teenagers have a lack of knowledge, so their action is destructive” (GA2, personal communication, April 2, 2020), there is no reason to support youth climate action (GA2, personal communication, April 2, 2020; GA3, personal communication, April 9, 2020)

It is inferred that youth-washing mainly occurs in the second group. Because of the youth-washing that teenage activists experienced after the first school strike is involved with education policies considering the attitude to teenagers and researchers as a student from the top as a teacher, negative opinion for teenager’s political participation and educational solution.

Characteristics of the second group in the research process are as follows:

- They advise to teenagers despite they are not seeking advice.
- They try to share the knowledge they have, not the knowledge the teenager needs
- They decided that they should teach teenagers

#### **4.1.3.3 Respect group**

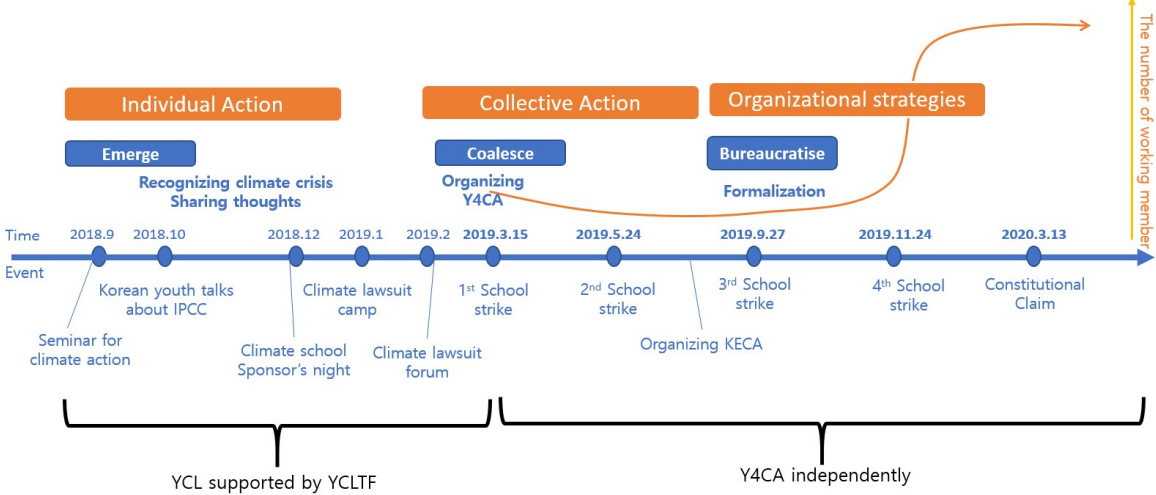
The third, 'respect' group is a group that considers teenagers' political participation as positive, showing respect for teenage activists as an equal citizen (Table 2). They answered solidarity and institutional changes are required for political participation in schools (RC1, personal communication, March 5, 2020), "must do solidarity, not help" (EN2, personal communication, March 6, 2020), "the provision of a local platform and the role of local media is important" (ES4, personal communication, March 25, 2020). "Provide opportunities through programs to help teens recognize climate crisis issues and seek solutions and incorporate students' ideas into policy". (GA1, personal communication, March 19, 2020). "We are very careful in suggesting cooperation and solidarity because we respect our efforts to preserve their identity" (EN1, personal communication, March 5, 2020).

All non-teen activists, especially youth activists, have critically criticized teens for their lack of solidarity to maintain their identity. They said "teenage activists should make their voice again and again because it is meaningful if even one person can listen" (YA3, personal communication, March 7, 2020) and "everyone has their platform and the way to communicate regardless of generation, teenagers should visit others' platforms and speak in their way to communicate to spread teenage activists' opinion, although sometimes it may feel bad to activists" (YA4, personal communication, March 11, 2020). Activists must engage in debate with courage (Museus, 2017). And some risk is required to defend social justice in terms of activism (Cabrera, Matias, & Montoya, 2017).

#### **4.2 Mobilizing structure**

Y4CA was created by the Youth Climate Change Lawsuit Task Force & Support Group (YCLTF) which consisted of teenagers taught in school and activists in NGOs involved with the environment and energy issues. YCLTF arranged some programs for teenagers like seminar for climate action (Sep 19th, 2018), Korean youth talks for IPCC Special report (Oct 3rd, 2018), Climate school (Dec 2018), Sponsor's night (Dec 7th, 2018), Climate lawsuit forum (Feb 18th, 2019), 2nd Youth climate lawsuit camp (Jan 26th, 2019), 3rd Youth climate lawsuit camp (Mar 30th, 2019) (ES1, personal communication, March 9, 2020). Potential teenager activists who joined these programs recognize the climate issues and are unhappy with some social condition (Christiansen, 2009).

**4.2.1 Development of Y4CA**



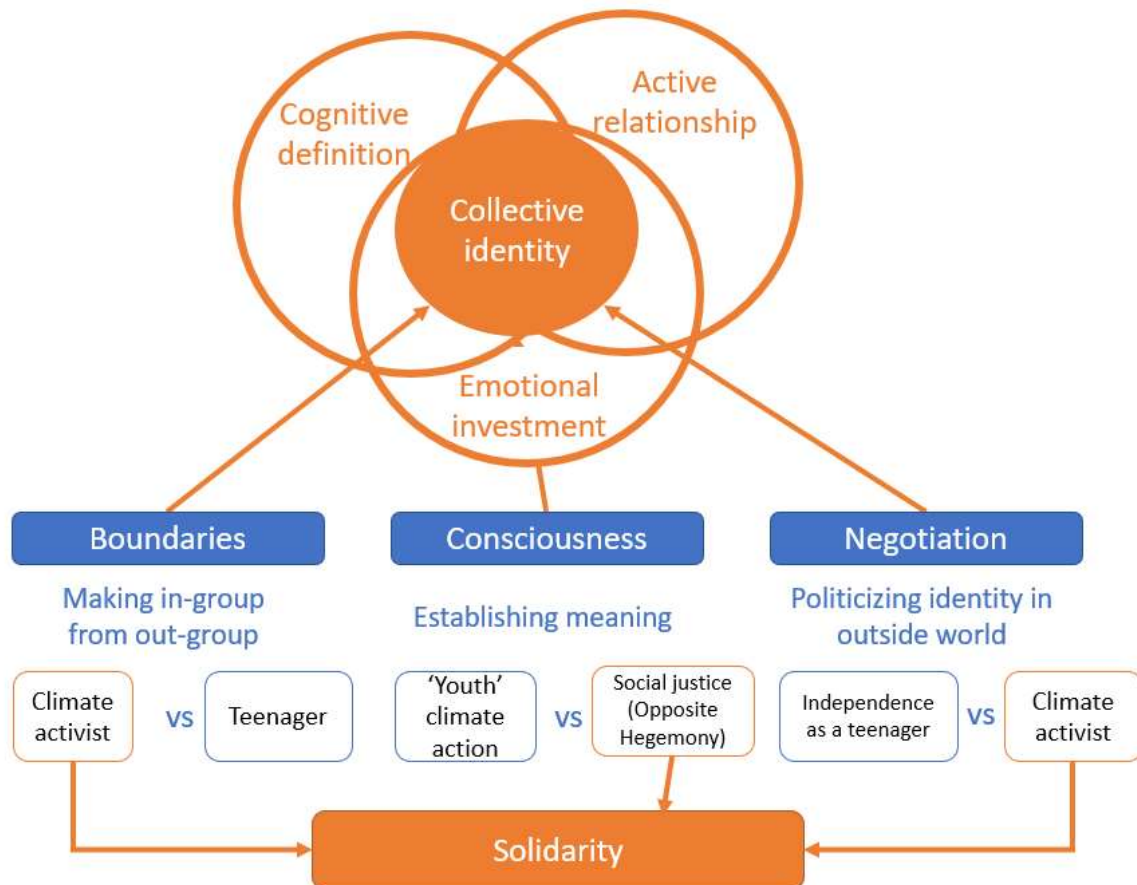
**Figure 7.** Organizing and development of Y4CA (Source: Hyerim Lee 2020 based on D. Sung, 2019, H. Kim, 2019a; Jang, 2019; H. Kim, 2019b; H. Kim, 2019c; ES1, personal communication, March 10, 2020).

Some teenagers who attended these programs gathered as a group called Youth Climate Change Lawsuit (YCL) (TA1, personal communication, March 17, 2020,2,3). The first global School Strike in Korea was on March 15th, 2019 by Y4CA, which launched based on YCL. After they organized Y4CA, they did four school strikes in 2019 and launched legal action (the Constitutional Claim) against the government on Mar 13th, 2020 (Y4CA, 2020). They made a more clearly defined, focalized and collective discontent in the coalescence stage (Christiansen, 2009; Hopper, 1950). Currently, Y4CA is in the bureaucratization stage as an organization although there are only 5 members including one paid staff (Figure 7). However, after the number of members rose over 100 in December 2019, Y4CA had a problem with mobilizing the structure involved with providing membership and social network. Because they could not build a collective identity after expansion.

**4.2.2 A broken collective identity**

According to Melucci, there are 3 conditions to construct collective identity: cognitive definition, active relationship, and emotional investment (Melucci, 1995). When Y4CA was a small group with five members, they set collective identity based on three conditions. Still, Y4CA has the overall direction of voluntary and subjective activity of teenagers in 2019 (TA1, personal communication, March 17, 2020). Collective identity for Y4CA has influenced members. Although Y4CA is bigger than before, their cognitive definition is the same without active relationship and emotional investment (Figure 8).





**Figure 8.** Three tools to build collective identity: boundary, consciousness, and negotiation which reflected from three dimensions of collective action; cognitive definition, active relationship, and emotional investment. Collective identity is built with three conditions 1) cognitive definitions concerning the ends, means, and field of action, 2) a network of active relationships between the actors, 3) a certain degree of emotional investment, which enables individuals to feel like part of a common unity. Also, collective identity is formed by three factors. 1) boundaries which distinguish us and them, 2) consciousness which establish meaning of the group, 3) negotiation which politicize identity in outside world. In case of y4ca, they made boundaries and teenager, not climate activist and establish meaning as youth climate action, not social justice and among independent as teenager and climate activist, independence as teenager was more important when they build the collective identity. (Source: Hyerim Lee 2020 based on Ghose, Swendeman, George, & Chowdhury, 2008; Melucci, 1985)

There are several structural problems after the expansion of the group in the process of changing the structure of the organization by experimental trial and benchmarking to other organizations like Extinction Rebellion in the UK. First, although the number of active members increased in December, the old members still play many roles (TA6, personal communication, March 18, 2020). Major interviews and speeches in public are also dedicated to 2 or 3 old members. For efficiency, they hold departmental meetings and only discuss important issues together (TA5, personal communication, March 18, 2020). In the online meeting, it is hard to express their opinion as a newcomer (TA5, personal communication, March 18, 2020). Through this process, the impact of a small number of key members on the entire organization is too large and absolute. Second, the organizational structure makes it difficult to encourage a newcomer who is positioned as a supporter rather than an activist. Because

they suffer from an inefficient decision-making system at first, they have top-down decision making with a majority vote rather than unanimity (TA1, personal communication, March 17, 2020). There are four departments in the operation support team, media communication, research organization, and action with two members who responded to evaluate the achievement of other members. The evaluation system has failed to empower newcomers and work burden for members covering evaluation (TA1, personal communication, March 17, 2020). Furthermore, there was no physical meeting. They planned the meeting for a school strike on 13th March 2020, but it was cancelled because of COVID-19 issues. Otherwise, it is hard to set the meeting considering their schoolwork, economic availability, etc. (TA6, personal communication, March 18, 2020). It was pointed out from the outside that roles and tasks were concentrated on a small number of members and did not lead to mobilization. The situation focused on minority activists through the unification of their opinion through a single way of communication. One or two cannot represent a teenager; various teenager activist groups are needed (EN1, personal communication, March 5, 2020). To maintain organization with new members and commitment of members, interactive and shared collective identity is important through a network of active relationship and emotional investment with newcomers (Tarrow, 2011).

#### ***4.2.3 Closed social network and solidarity to keep independency of teenagers***

“Activists may feel the need for the support of others whom they trust” (Ray et al., 2003). They may need a sense of solidarity to spur them on (Fantasia, 1988). Solidarity between organizations and the density of their network tend to be fostered, maintained, and dropped instrumentally, in accordance with resource needs (Diani, 1990). Other organizations which want to be in solidarity or partnership with Y4CA assumed two reasons as to why Y4CA is inactive for social networking and communication as (a) lack of manpower, (b) youth-washing (EN1, personal communication, March 5, 2020; YA2, personal communication, March 7, 2020; YA3, personal communication, March 7, 2020). Indeed, only one member is responsible for all the external communication and whether respecting teenagers or not is the first stage to consider cooperating when Y4CA gets the offer of partnership (TA1, personal communication, March 17, 2020).

Y4CA aims for voluntary and democratic participation based on teenagers who recognize the seriousness of the climate crisis. Thanks to their experience from the first school strike, they consider independency as a teenager for their collective identity which commitments to engage in contentious politics and to instigate political and cultural reform (Fiorito, 2019).

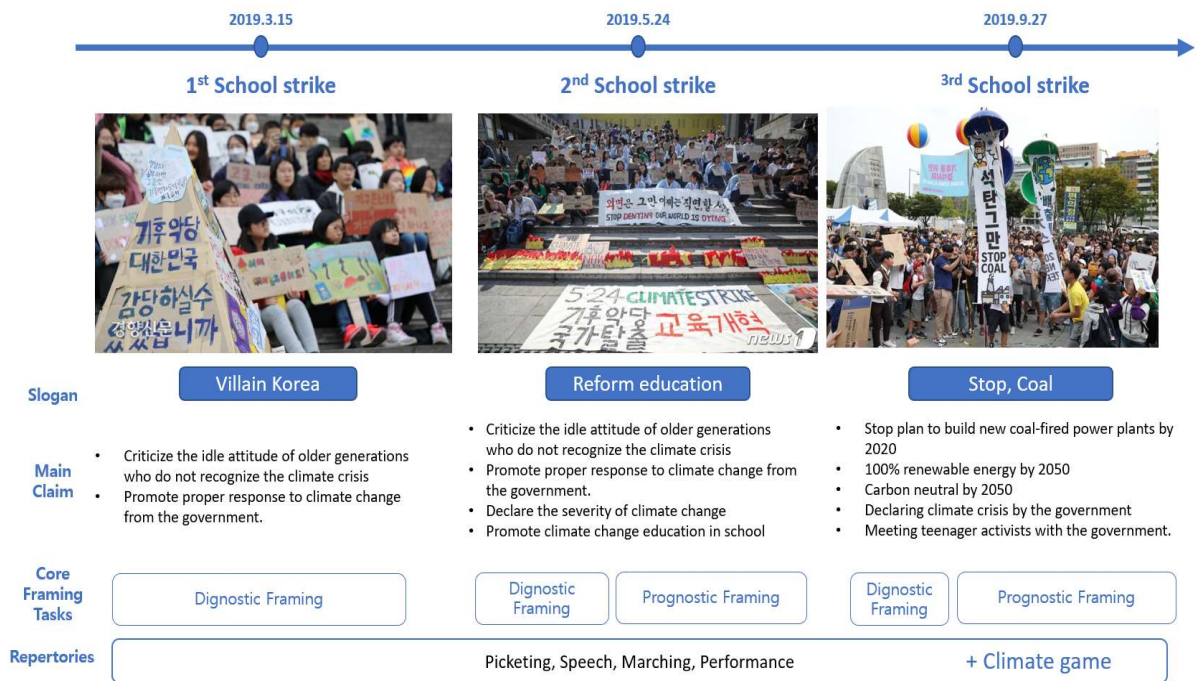
According to Taylor and Whittier (1992), three analysis tools to build collective identity are boundary, consciousness, and negotiation (Ghose, Swendeman, George, & Chowdhury, 2008; Della Porta & Diani, 2006, Figure 5). First, for teenagers who have been threatened with identity in the process of climate action by excessive interference from non-teenagers, the borders of teenagers are an important criterion for their voluntary participation. Second, consciousness is an interpretive framework which develops mostly through opposing consciousness (Della Porta & Diani, 2006). Lastly, Y4CA decides whether they are in solidarity with the specific organization in each case through the negotiation between the collective identity of protecting their independency as a teenager and climate action as a social movement (Figure 8).

### **4.3 Framing processes**

Framing processes and outcome frames are influenced by political opportunity structure, cultural opportunities and constraints and audience effect (Benford & Snow, 2000). The framing process is the process of arising public mobilization (McAdam, 2017), which is interactive with culture (Benford & Snow, 2000). There is both a positive and negative attitude to youth climate action from the reflection of people's experience. Some people have the trauma of radical democratic movement by the student and negative attitude to passive social movements cooperating with the government. Some people experienced the success of social movements on the candle movement to Impeachment of the president in 2017 have a positive attitude to youth climate action and they tend to join the social movements if there is social consensus (S. Kim, 2020). Also, activists and their audience interact with each other in the social movements' studies. It is necessary to appeal to various audiences depending on what role they can play to achieve their goal as a social movement (Benford & Snow, 2000). Considering the strategic framing process, the target; government is too narrow for a social movements' organization.

#### **4.3.1 Core framing tasks**

In the first school strike, Y4CA applied only diagnostic framing to address the problem, but from the second school demonstration, the claim was clarified and a solution to the government was proposed with a prognostic framing. While Y4CA focused on prognostic framing from the second strike. However, motivational framing which serves as a public appeal for success as a social movement, social change, or mainstream formation have never been applied (Figure 9).



**Figure 9.** Core framing tasks over time. On the first school strike on March, teenage activists express their grievance as diagnostic framing without any solution or suggestion. On the second school strike, they suggest education reform regarding climate change education, so there are diagnostic and prognostic framing. On the third school strike, the claims became much more specific. Also, on the third school strike, climate game appeared as a unique repertory by teenagers. On the fourth school strike on November, claim was the same with third one. (Source: Hyerim Lee 2020 based on D. Sung, 2019; H. Kim, 2019a; Jang, 2019; H. Kim, 2019b; H. Kim, 2019c)

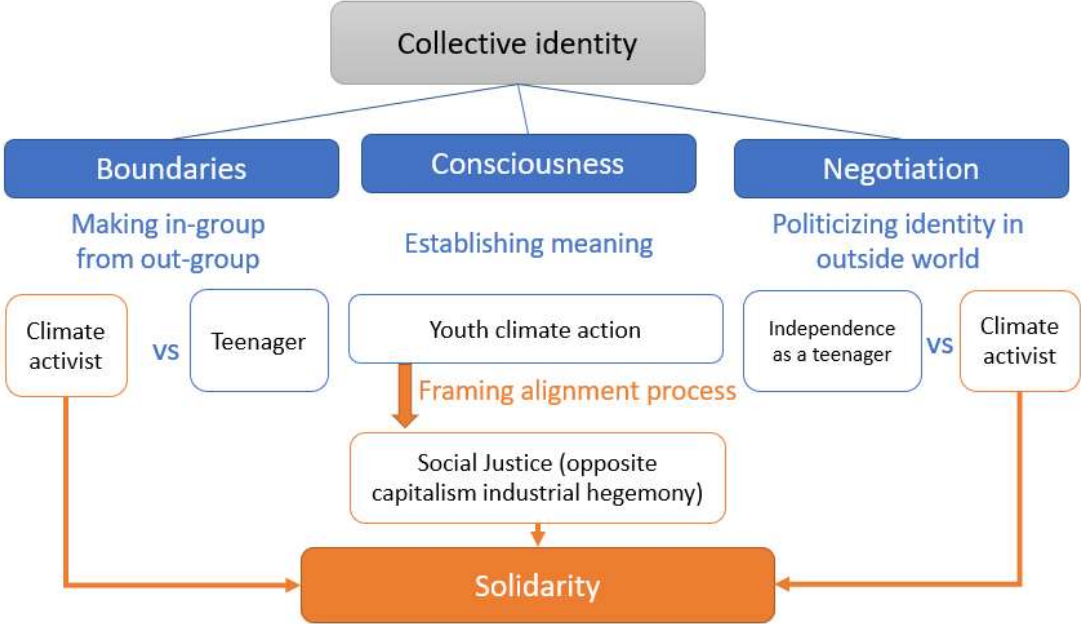
There is some argument about the meaning of climate action from the view of collective identity. There is an opinion that Y4CA should establish the meaning of climate action as opposed to social justice and inequality and build the alliance (RC2, personal communication, March 6, 2020). It is important that climate action is regarded as the process of creating counter hegemony that considers the climate crisis as a top priority to opposite capitalist industrial hegemony (Figure 8).

### 4.3.2 The credibility of framing

The credibility of any framing is a function of three factors: frame consistency, empirical credibility, and credibility of the frame articulators or claims makers (Benford & Snow, 2000). First, frame consistency refers to the consensus between beliefs, claims and actions, and the public is exposed to Y4CA's claims, and most people tend to glance at their action. ES3 who runs an ecological education institution, criticized Y4CA that teenagers should reflect their life and change their daily life rather than school strike (personal communication, March 10, 2020). Activists went through processes from personal change to individual protest to organizing climate action as a collective action. It is a good approach for frame consistency to briefly provide the story of each activist in relation to climate action. Second, the empirical credibility which regards as the effectiveness of diagnosis and prognostic claims

can be increased by empirically verifying the claim. As the seriousness of the climate crisis is explained by the prospects for the future, many people still argue from the diagnostic framing that the climate crisis is a problem for the future, not this moment. Some people disagree with the need to take it seriously and actively resolve it as a climate crisis (GA2, personal communication, April 2, 2020). Third, the credibility of the frame articulators or claims makers. In this respect, teenage activists are ignored, pointed out that their knowledge is not perfect because they are in the process of learning (GA2, personal communication, April 2, 2020).

**4.3.3 Frame alignment process**

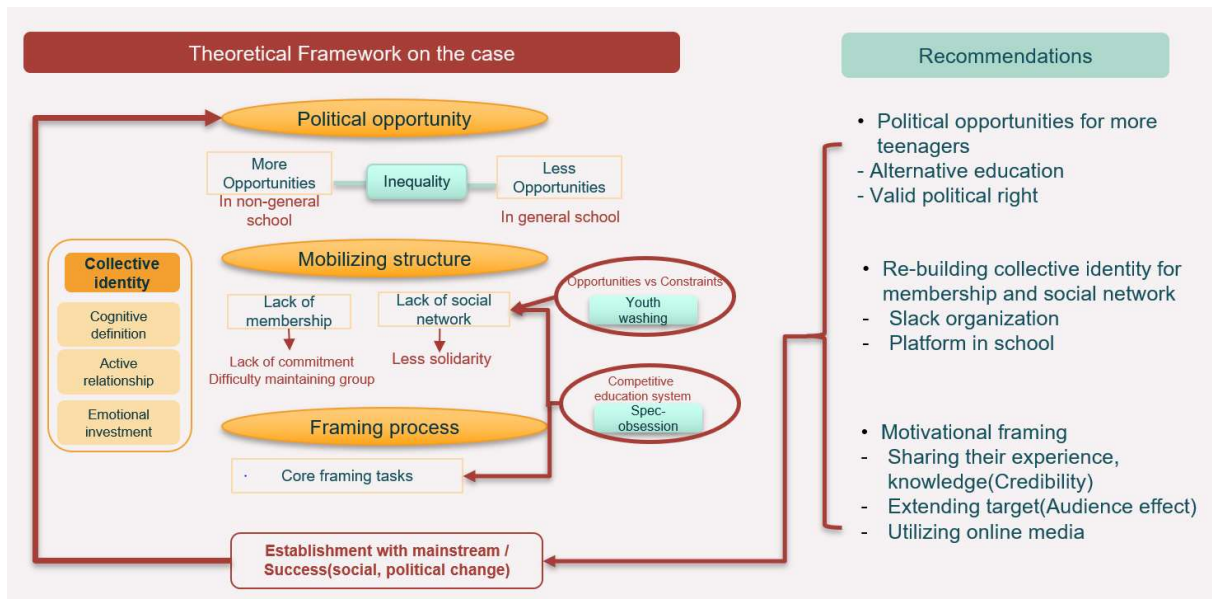


**Figure 10.** Framing alignment process based on framing process theory. By extending establishing meaning from climate action to social justice, which is framing alignment process, Y4CA can be solidarity with other groups like feminists, organization for disabled, labor union etc. (Source: Hyerim Lee 2020 based on Benford & Snow, 2000).

Frames are developed and deployed to achieve a specific purpose like to recruit new members, to mobilize adherents, to acquire resources (Benford & Snow, 2000), and it is conceptualized as “frame alignment processes” which are 4 types: frame bridging, frame amplification, frame extension, and frame transformation (Benford & Snow, 2000). If Y4CA considers frame alignment which is the linkage or conjunction of individual and social network organization interpretive framework, Y4CA can expand their frame like Korean Emergency Climate Action (KECA). The framing alignment process enabled KECA to expand not only environmental NGOs that have been campaigning for the climate crisis, but

also expanded solidarity for women, farmers, and workers' organizations to participate (Figure 10). There are advantages of frame expansion like mobilization potential advocates (Davies 1999), while disadvantages like increasing conflict within the organization (Benford, 1993).

## 5. Analysis and Discussion



**Figure 11.** Theoretical framework on the case and recommendations. From the analysis in the social movement theories, political opportunities allow organizing y4ca. Still, there are some conflicts which influence internally and externally about membership and social network, which are inequality of political opportunities among teenagers by type of school, youth washing influencing social network, and spec obsession by competitive education system influencing membership and potential mobilization. Y4CA has potential to success as a social movement (Source: Hyerim Lee 2020 based on McAdam, McCarthy, & Zald, 1996; Melucci, 1985).<sup>1</sup>

### 5.1 Explanation about Y4CA in terms of social movements

Climate action can be explained as social movements because it is collective action that emerges due to an inactive response to the climate crisis on the existing system. Y4CA has a unique role in climate action because it is led by teenagers who are expected to be the biggest victims of the climate crisis, citizen restricted to social participation and potential leaders in the future.

<sup>1</sup> (a) Emergence: The first stage of a social movement's life cycle, which is characterized by individualized, but widespread feelings of discontent. Movements in this stage lack clearly defined strategy for achieving goals and little organization. (b) Coalescence: The second stage of a social movement's life cycle, which is characterized by the coming together of social movement constituents. This stage is marked by demonstrations and formulation of strategy (c) Bureaucratization: The third stage of a social movement's life cycle in which strategy is carried out by formal organizations and trained staff. Also known as formalization. (d) Co-optation: One of the five ways in which social movements decline. This occurs when movement leaders are offered rewards by the movement's opponents in order to divert movement pressure. For example, leaders can either be "paid off" or given a job by the movement's target so as to divert leadership. (e) Repression: One of the five ways in which social movements decline in which authorities use violent or coercive tactics to destroy a social movement (Christiansen 2009)

I analyzed Y4CA in the order of these three factors by matching the stage of Y4CA as a social movements organization from emergence to bureaucratic stage at the moment, in addition to potential scenarios for decline stage depending how Y4CA mobilizes their resources to deal with issues they have. According to synthesis social movement theory by McAdam, McCarthy and Zald, the emergence and development of Y4CA can be explained with three main factors of social movements as political opportunities, mobilizing structures, and framing processes. And collective identity impacts on each set of the factors of social movements in the whole stage, especially providing membership and social network and structuring core framing tasks in all stages of social movements (Figure 11).

## **5.2. Analysis of conflicts surrounding Y4CA**

### ***5.2.1 Inequality of political opportunity for teenagers***

The provision of diverse education, including climate change education for various evaluation methods, the existence of support groups for teenage activists like YCLTF, and suffrage for teenagers have served as political opportunities for the emergence of Y4CA. However, there is inequality of political opportunities by the type of schools (Figure 11). These opportunities are effective in non-general schools and most teenagers attend general schools and are still restricted from social participation in the repressive educational system by the type of schools.

Spec-obsession, which connects all teenagers' behaviors to 'spec' to apply for university, not only acts as a cause for doubting sincere intention but also hinders the mobilization of peers (Figure 11). In addition, due to dissatisfaction and distrust in the education system, people show negative feedback to even positive change for climate action to change.

Youth-washing is a contradiction phenomenon due to the synthesis of political opportunities and restrictions. That is, the demand for political participation of teenagers has increased, but without actual political participation, teenagers experience dissatisfaction with other generations consuming their image, not being taken seriously. This is especially true in groups of educators who treat teenagers as students. This makes teenagers isolated from other additional opportunities (Figure 11).

Open-mindedness by teenagers is also required to solve this issue because youth-washing is subjective by youth, which is always situational depending on interactional or discursive acts of positioning (Fiorito, 2019). However, youth-washing can be described as the part of the resistance to adult-led efforts to guide their political organizing. "Youth activists recognize how age inequality and generational difference render problematic the accepted wisdom of the top-down, adult-to-youth political socialization model" (Gordon & Taft, 2011, p.1524).



### ***5.2.2 Mobilizing structure by reshaping collective identity***

In the coalesce stage, teenage activists share the necessity of collective action, and they organize climate action organizations. Y4CA is a living organization, and mobilizing structure is very important now considering the stage of the social movements. Y4CA needs to reshape collective identity due to the sudden increase in the number of working members in December. The mobilizing structure that determines the strength of the organization depends on the provision of membership and social networks. When a membership is insufficient, the commitment of members decreases and maintaining the group is threatened. If only social networks exist without membership, the organization can decline as a form of co-optation. In addition, when social networks are scarce, organizations are isolated and unable to gain diverse opportunities through solidarity.

### ***5.2.3 Core framing tasks for motivational framing***

The climate action of Y4CA was a catalyst to discovering the possibility of counter hegemony, which attracted the public's attention and brought together various groups by launching the solidarity group KECA. In terms of audience effectiveness, it is necessary to extend the target group to the public, including peers, for motivational framing. The framing process is important in order to be sustainable as a reputable social movement for climate action, not merely as a teenage group which led a few schools strikes in the short-term. In the first school strike, the core framing task was focused on diagnostic framing, from the second strike, prognosis framing is more widely applied with specific claim to the government. Framing process of Y4CA was criticized in the context of lack of framing reliability. Motivational framing has not been applied. Furthermore, the target group of the strike is government which is not consider audience effect from public (Figure 11). In addition, Y4CA uses online media as a function of notification rather than communication and interaction. The framing process is important that if climate action becomes mainstream because of a successful framing process, it influences political opportunity as elite allies.

## **5.3 Recommendations for youth climate action as social movements**

### ***5.3.1 Alternative education system and valid political rights for political opportunities***

Unlike general schools, there are some types of schools with fewer restrictions non-general school like alternative schools, special purpose schools, and international schools. Although 72% of schools for teenagers in Korea are general school (Park, 2016), more than half of teenager activists seem to come from non-general school (TA6, personal communication, March 18, 2020).

It is also important the type of school reflect economic factors because tuition for non-general high schools is more expensive than general high schools. It is also involved with academic ability because international school and special purpose schools require high grades to enter. There is inequality of experience to social participation as well as the quality of education. Solving these problems in general schools is meaningful that it enhances the capacity of the middle class of Korea (Park, 2016).

Therefore, it supports the study that the participation rate of better education, middle class, and urban residents according to the study of political participation is high (Harriss, 2005). Non-general schools are relatively autonomous because they have less burden of school grades than general schools do to apply for university, while creative experience activities are more important in non-general schools (TA7, personal communication, March 12, 2020). So, there is more change to experience diverse activities including social participation. It reflects the aim of the school because the aim of the education in alternative schools is social participation, while general schools seek academic results, there is more chance to engage in social participation in alternative schools than in general schools (TA2, personal communication, March 17, 2020)

Youth is neglected or marginalized in politics, and the policies they prioritize tend to be unsupported (O'Toole, 2003). Teenagers are largely included in youth with small impact. "Most people praise a teenager's passion rather than listening seriously" (TA6, personal communication, March 18, 2020). Youth activists agreed that teenagers have instrumental constraints such as political, economic, and social ones, but there is no difference in ability, and we must acknowledge their abilities as well as their passion.

In addition, suffrage is the most basic institutional means of recognizing teenagers as equal citizens. In this aspect, extending the age of suffrage to younger teenagers can provide a more powerful opportunity with the bigger group of teenagers who got political rights. It is for not only political rights but also increasing interests in the voices of teenagers. Also, regulation works as a factor of solidarity (Gofman, 2014), which supports teenage activists.

### ***5.3.2 Recommendation for mobilizing structure***

#### ***5.3.2.1 Slack organizational system***

It is natural teenager activists of Y4CA have the confusion of collective identity after the expansion of the group. Since the collectivity identity is continuously reshaped through ongoing discussion, conflict, negotiation, and renegotiation between forces both within and outside the collectivity (Melucci, 1995). It can be easy to solve because the causes are clear regarding problems of lack of active relationships

and emotional investments after the expansion of the organization. It is also expected that it can be resolved easily when Y4CA's action in real life like school strikes reactivate again when people do not need to worry about social distancing due to COVID-19. However, it is controversial that all members can express only one directed opinion collectively and exclude members with different opinions from the official interviews. Collective actors should not be regarded as unified and homogenous (Melucci, 1995). A formalized solid system of centralized, top-down approach for decision making is not good for mobilizing structure (Della Porta & Diani, 2006). Holland, Fox, and Daro (2008) suggest "a decentered, dialogical, and place-based approach to collective identity which develops dialogically in practice both within and outside movements, at multiple sites and places, including alter-versions" (Holland, Fox, & Daro, 2008, p. 106). Then it is recommended to allow diverse opinions in Y4CA and grant real membership by practical empowerment to members without the process of evaluation of their job.

#### ***5.3.2.2 More resource mobilization from social network***

Social organization promotes activists for long-term participation and retention of individuals (Fisher, 2012). Especially, the new social movements consist of a relatively disorderly informal organization by supporters and a social network than an activist (Della Porta, 2006). In this case study, there are not many social networks in which teenagers can be engaged, and Y4CA has a goal-centered formal organizational structure. Although they had a networking member as a supporter, this thesis focused on the interaction of the working member. There are not many organizations or platforms for teenagers led by teenagers. So, it is recommended to provide a local platform to support the teenage activists for climate action and interaction with the social network. In this context, solidarity with other organizations like KECA can provide a platform for broad and various social networking.

#### ***5.3.2.3 Utilizing platform in school for an active relationship***

Schools also need to create a platform(s) to share teenagers' feelings, information, and opinions. On these platforms, they will be able to explore complex problems, strengthen their ability to build coalitions (Grim, Lee, Museus, Na, & Ting, 2019), and discuss their interests in the context of contentious politics. It should be accompanied to grant an institutional and customary atmosphere that does not criticize teenagers for their political and social participation. Educators need to ensure practical regulations which will help students relieve this inevitable" (Linder, Quaye, Stewart, Okello, & Roberts, 2019).

### ***5.3.3 Motivational Framing for potential mobilization***

youth climate action is important in three dimensions of salience for framing process identified as centrality, experiential commensurability, and narrative fidelity (Snow & Benford, 1988). First, centrality expresses how essential climate action is to activists in that Y4CA's claims relate their survival to climate change. Second, in terms of experiential commensurability of the correspondence between the claim and the individual's experience, exposure of the activist's experience is required as well as the frame consistency. Third, the narrative fidelity is that the claim of Y4CA is relatively brief and not related to their direct interests. Though one of the claims on the second school strike is about climate change education, which relates to teenagers' direct interests, otherwise there was no relation to their direct interests.

Y4CA needs to manage core framing management by overcoming credibility issues surrounding them and consider the merits as mentioned in finding. It can emerge from dimensions of salience, sharing activists' experiences and knowledge, and addressing the seriousness of the impact of the climate crisis as a call for teenagers living in the same country, not for a koala or polar bear.

Online engagement can be conducted in real-time over the social network in real life (Cabrera, Matias, & Montoya, 2017). It has new potential mobilization to introduce the claim of activists (Biddix, 2010). In the analysis, Y4CA sets the government as a target group, and online media such as Instagram, Facebook, and webpage are used only for notification without the channel to interact. It is recommended to diversify communication methods to entry for potential mobilization using online media interactively.

## **5.4. Contributions to sustainability science**

### ***5.4.1. Encouraging climate action for sustainability***

Since the climate crisis is a major issue to threaten sustainability, climate action for an active response to the climate crisis is meaningful in itself. Y4CA has specifically worked to stimulate and change Korean society. There are several positive changes responding to climate action by teenagers. First, they influenced civil society by stimulating existing NGOs which organized a solidarity group, KECA, for climate action with over 150 NGOs (KECA, 2019). Second, Y4CA makes a change to government agencies too. The Seoul Metropolitan Office of education has allocated a budget of 14 million won (1.15 million dollars) for climate change education (Choi, 2020) and announced a policy which considers coal investment when they choose a financial agency (J. Lee, 2020; Y. Kim, 2020). Lastly, they also impacted the public. 85% of voters responded they perceived the climate crisis as a major political

agenda and 86.5% responded that they have to declare a climate crisis emergency in a survey by Greenpeace about the national election in April 2020 (S. Lee, 2020).

#### ***5.4.2 A process to be recognized as a member of society for teenagers***

It is not only one social movement called climate action but also the process of social expansion of movements by marginalized groups. For teenagers, youth climate action is a process to be recognized as a member of society. This thesis analyzed conflicts surrounding Y4CA from teenagers' perspective who have led climate action. The experiences and perspectives of youth activists who are already engaged in social movements offer new and important insights to the processes of youth political socialization (Gordon & Taft, 2011). Specifically, it is useful to understand what is needed for political opportunities and how it works by analyzing causes and impact of youth-washing which is a very subjective, transitional, and contradictory concept by teenagers.

#### ***5.4.3. Suggested solutions by various levels and various stakeholders***

This thesis discussed issues surrounding teenager activities from a variety of external and internal perspectives. I found that the problems of Y4CA are influenced by many people who engage with teenagers. The causes of the difficulties that Y4CA is currently experiencing are very complex and have been compounded by various stakeholder's decisions and attitudes toward teenagers. In addition, youth climate action is important not only for the teenagers themselves but also for a better society. Therefore, problems arising from teenage activists must be addressed on a bigger level considering intertwined actors. It is meaningful to investigate these issues from a different perspective considering its complicated causes and impacts.

#### ***5.4.4. Common in global***

Although there may be some degree of difference in that aspect, this case study could be used in other countries and regions. It is common there are youth climate action, general gap, general justice issues and industrial capitalism hegemony globally. Although there is a difference in level by countries, restrictions on political opportunities are common for teenagers who exist as students (Della Porta, Cini, & Guzman, 2019). In many cases, youth generally resist rather than welcome adult-led efforts (Gordon & Taft, 2011). Studies of social participation in teenagers or young adults have been also conducted in America (Fisher, 2012), England (O'Toole, Lister, Marsh, Jones, & McDonagh, 2003), Myanmar (Hong & Kim, 2019) etc. The climate crisis can be more vulnerable to specific places, times, or groups, but anyone can participate in climate action. Efforts for climate change mitigation and adaptation are open to everyone influencing on a global level.

## 5.5 Limitations and further studies

First, the limitation of this thesis is that opinions about social networks and solidarity from non-activist teenagers were not included because I set the research question after the survey on the inductive research method. In-depth interviews were focused on solidarity issues after the questionnaire was conducted. In addition, the basic question of the questionnaire was not included in the aspect that the type of school system. If a questionnaire would be executed by analyzing more variables, it seems that a better discussion could have emerged based on various case studies. Second, although there are clear differences between teenagers and youth over 20 regarding social, economic, political opportunities, there are not many studies to refer to about social movements or social participation by teenagers, not youth. Third, as a researcher, it is hard to investigate a living organization which is changing all the time. There is a special situation for social movements because of COVID-19 that canceled all collective action outside. So, it is also difficult to see their actions and engage with them for research. Lastly, I did not use much collected data about values, attitudes, and behaviors of teenagers to focus on political opportunities and mobilizing structure within limited space. It is necessary to understand the values, attitudes and behaviors which encourage teenagers to join the climate action and its mechanism to potential motivation, including for peers for the success of climate action as a social movement.

For further studies, it might be useful to understand the inequalities of quality of education and school life by comparing the differences between General high school and Alternative school to seek how public education in general high school can develop for the majority of teenagers. Also, there is a clear difference between teenagers and youth over 20 from social, economic, political opportunities. It would be interesting to investigate the difference of the tendency of behaviors between teenagers (generation Z) and youth over 20 (millennials) about climate action, then it can show the clue of correlation of their action depending on what opportunities they have and assume what happened after more teenagers have suffrage. At present, almost all student participation or youth activism is about non-teenagers. It is necessary to have an interest in teenage activism and social or political participation for teenagers as well as youth climate action and study them for a better society with political diversity. It will be good to understand the entire stage of a social movement from this case when it declines after success or failure later. Lastly, although I studied the youth climate action as a social movement, there are many different understanding for youth climate action from different field, such as events influencing individuals' lives, the opportunity to experience small society, and socio-psychological behavior.

## 6. Conclusion

Korea is already facing disasters caused by the climate crisis. As the average temperature rises, the phenomenon of abnormal weather has become more frequent, and the resulting damage to human life is increasing (S. Lee, 2020). Korea is the world's seventh-largest carbon dioxide emitter (S. Lee, 2020). In this context, Y4CA has joined together as an organization for climate action centered on teenagers who demand a response to an active climate crisis. Y4CA has the potential to become a social movement with collective action and collective goals.

This thesis analyzed the current problems surrounding Y4CA using synthesized social theory and discussed potential solutions. These problems are explained based on the political opportunities, the mobilizing structure, and the framing processes. First, political opportunities for climate action are limited to few teenagers, as most teenagers in general schools are prevented from joining climate actions due to the repressive structures of the education system. In addition, youth-washing from the trial including teenagers for political diversity without a reliable relationship, especially by educator groups, affects the collective identity of teenage activists and solidarity with others. Therefore, political opportunities should be given to all teenagers by providing an alternative educational system and valid political rights. Second, cognitive definition without active involvement and emotional investment after their organizational expansion in December 2019 caused the confusion of collective identity for newcomers. To support the mobilization, it is recommended to reshape collective identity considering slacktivism, provide more resource mobilization from social networks, and utilize a platform in school for active relationships. Third, it is necessary to use core-framing tasks by taking advantage of the characteristics of teenagers and retargeting object groups to the public, including peers for motivation framing by using online media. This study shows that the problems and conflicts teenage activists are struggling with are not abnormal or wrong and that they are common for any organization which has a collective identity in the formation stage of social movements. It is not because of the lack of ability, knowledge, or the effort of youth climate actions, as it has been criticized by some non-teenagers but because of their limited social role and the structural characteristics of social movement organization.

Although many problems threaten the sustainable organization of Y4CA, there is potential to become a social movement organization for climate action. In particular, there are unique roles of teenage activists in climate action that only they can play, which can be effective for motivational framing in terms of mobilizing peer groups and centrality describing how essential climate action is for activists as a potential victim of the climate crisis. Therefore, a teenage-centered organization like Y4CA is important for the mobilization of teenage activists and to encourage them to take a role independently.

Also, political opportunities should be provided for everyone through not only emotional support, but also institutional changes, such as ensuring political activities in schools and expanding the minimum age of elections.

This study contributes to sustainability science in several ways. First, this thesis looks for the way to sustain climate action as a movement which is the active response to sustainability issues in the long-term. Second, climate action is not only aiming to save teenagers' lives from the climate crisis but also a way to be recognized as a member of society. After all, what teenage activists want is not the help from adults, but the solidarity with and recognition as equal citizens. Further, this thesis described the phenomenon from the perspective of teenagers, the marginalized group's point of view. Third, it discusses appropriate solutions to solve these problems from the perspective of various stakeholders who engage with teenage activists, taking into account transdisciplinary sustainability issues. Lastly, this study is also meaningful because climate action, generation justice, generation gaps, and teenagers as students exist throughout the world. Therefore, this study can be applied to various cases.

Currently, Korean society has started responding to youth climate action. Once teenage activists have facilitated the formation of a social consensus and awareness of climate change for political or social changes, Korea is expected to respond well with infrastructure to rapid response with thorough preparation as shown at the response to the COVID-19 (H. Lee & Kim, 2020). Therefore, it is important to consider their actions seriously and respond to their demands by recognizing teenagers as equal citizens now as well as in the future.



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## Appendix A. Survey form

NO	Questions	Strongly agree	Agree	Neither agree	Disagree	Stongly agree
1	I think my future is bright.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	I think the future of our country is bright.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	I think the future of humanity is bright.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Climate change is a serious problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	I am currently experiencing discomfort in my daily life due to climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Climate change will cause discomfort in everyday life in the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	I am depressed when I think about climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Sweden's Gretatun Berry knows about absenteeism (climate action).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Climate action has a positive effect on my studies (will give).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Climate action has a positive effect on my future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Climate action has a positive impact on solving climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Climate action is more important than studying at school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Academic and climate action can be combined (possibly) with my efforts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	My parents will support and support my climate behavior.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Some teachers support (and will) support my climate behavior.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Friends support and support my climate behavior.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	I am proud of my climate action (if I do, I will be proud).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Korean students' climate behavior is more difficult than that of Swedish students (and will).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	I am thinking positively about the Korean education system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	The improvement of the education system will have a social impact.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Education on climate change is needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	We need expert teachers in the field of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	I am interested in environmental issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	I can talk about issues that threaten human sustainability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	I am familiar with climate change issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Deforestation (forest destruction) is a major cause of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Fossil fuel use is a major cause of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	The waste problem (disposal of abuse, etc.) is a major cause of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Airplane use is a major cause of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Meat eating is a major cause of climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Climate change is a naturally occurring phenomenon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Climate change affects abnormal climates such as drought and heat waves.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Climate change affects grain production and food security.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Climate change affects ocean acidification.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Climate change affects biodiversity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	Climate change affects air pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	Climate change affects human illness and death.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	War is caused by climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Climate change affects gender inequality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

40	Climate change affects income inequality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	Climate change affects intergenerational conflict.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Climate change affects conflict between countries.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	We can all make efforts to mitigate climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	The Korean government is actively responding to climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	Climate change response policy is more important than domestic welfare system policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	Small daily routines are a great help in mitigating climate change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	Even if the Korean government tries, it cannot solve the world's problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	The climate change problem is already too late to be solved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49	We are familiar with the Kyoto Protocol on how to implement greenhouse gas reduction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	I am familiar with the Paris Climate Convention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	I am familiar with IPCC (Intergovernmental Panel on Climate Change).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	I am always willing to do small things for the environment (eg using tumblers).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53	I take women's rights seriously.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54	I am against the refugee allowance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55	I am a vegetarian / vegan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56	I have tried to reduce meat consumption by considering environmental issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57	I'm happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	I am grateful for the things I enjoy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	I value my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	I love animals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61	I think the natural environment is important.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62	Have you ever been involved in climate action?	<input type="checkbox"/> Yes (How many times?: ) <input type="checkbox"/> No				
63	Through special lectures and special activities, there was an opportunity to learn about climate change in schools.	<input type="checkbox"/> Yes <input type="checkbox"/> No				
64	I have studied climate change on my own through YouTube or external lectures.	<input type="checkbox"/> Yes (Tool: ) <input type="checkbox"/> No				
65	What is the appropriate education cycle for climate change education?	<input type="checkbox"/> Once a week <input type="checkbox"/> Once a month <input type="checkbox"/> other :				
66	Please choose 6 important values you think for living well (well-being). Activism Beauty Co-creation Community Compassion Complexity Contribute Detachment Develop Diversity Equality Ethical Forgiveness Heal Humble Include Inspire Integrate Selfless Simplicity Interdependence Spirituality Intuitive Knowing Mentor Sustainability Transform Vision Peacefulness Wisdom Presence Selfless Simplicity Spirituality Sustainability Vision Wisdom					
67	Please choose 6 important values you think to fully express yourself and give happiness and satisfaction to your everyday life. Acceptance Achieve Appear Artistic Authenticity Awareness Balance Cooperation Courage Create Creativity Curiosity Educated Empathy Explore Focus Generous Gratitude Honesty Independence Initiate Innovation Integrity Lead Perceptive Quality Rational Responsible Scientific Support Vitality					
68	Please choose 6 important values you think to contribute to others, your community and the world. Affection Appreciate Assertive Belonging Careful Comfort Dependable Discipline Efficiency Excitement Fairness Flexibility Health Helpfulness Honor Hope Humor Influence Intimacy Joy Kindness Livelihood Loyalty Moderation Order Persistence Pleasure Realism Recreation Respect Safety Solitude Stability Tradition Trust Variety Vulnerability Welcome					
Comments				Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female
				Age		
I agree to the collection and use of personal information. <input type="checkbox"/> Yes <input type="checkbox"/> No						
Thank you for your participation						

## Appendix B. Interview list

Group	Description	Date	Type of interview	Channel	
Teenage activist	TA1	Teenager activist from Y4CA	March 17, 2020	Focus group 1/In-depth (Individual)	Zoom meeting/ Voice call
	TA2	Teenager activist from Y5CA	March 17, 2020	Focus group 1	Zoom meeting
	TA3	Teenager activist from Y6CA	March 17, 2020	Focus group 1	Zoom meeting
	TA4	Teenager activist from Y7CA	March 18, 2020	Focus group 2	Zoom meeting
	TA5	Teenager activist from Y8CA	March 18, 2020	Focus group 2	Zoom meeting
	TA6	Teenager activist from Y9CA	March 18, 2020	Focus group 2	Zoom meeting
	TA7	Teenager activist from Green party	March 12, 2020	In-depth (Individual)	Voice call
Youth activist	YA1	Youth activist from Green party	March 10, 2020	In-depth (Individual)	Face to face
	YA2	Youth activist from Youth group A	March 7, 2020	In-depth (Individual)	Face to face
	YA3	Youth activist	March 7, 2020	In-depth (Individual)	Face to face
	YA4	Youth activist from Youth group B	March 11, 2020	In-depth (Individual)	Voice call
Research center	RC1	Youth activist from the Political party	March 5, 2020	In-depth (Individual)	Face to face
	RC2	Resarcher from Civil organization	March 6, 2020	In-depth (Individual)	Face to face
	RC3	Resarcher from Governace group	March 13, 2020	In-depth (Individual)	Mail
Environmental NGOs	EN1	Climate activisit from Environmental NGO	March 5, 2020	In-depth (Individual)	Face to face
	EN2	Climate activisit from Religious groups	March 6, 2020	In-depth (Individual)	Face to face
	EN3	Climate activisit from International environmental NGO	March 8, 2020	In-depth (Individual)	Voice call
Educator in society	ES1	Educator from the local educational institute about energy	March 9, 2020	In-depth (Individual)	Face to face
	ES2	Researcher(Ph. D) studying teenager climate activitsts	March 10, 2020	In-depth (Individual)	Face call
	ES3	Educator from the private institution of ecology	March 10, 2020	In-depth (Individual)	Mail
	ES4	Editor in local magazin	March 25, 2020	In-depth (Individual)	Voice call
Government aegncy	GA1	Ministry of environment	March 19, 2020	In-depth (Individual)	Mail
	GA2	Professor in Univertsity of Education (earth sceince)	April 2, 2020	In-depth (Individual)	Mail
	GA3	Professor in Univertsity of Education (ecological sciecne)	April 9, 2020	In-depth (Individual)	Mail

## **Appendix C. Interview Questions**

### **1. In-depth interview**

#### ***General questions***

- 1) Have you had any special experiences related to environmental concerns or climate action?
- 2) What kind of value do you think is the most important for your organization's climate action such as education, public relations, networking?
- 3) What is the difference between your organization and other environmental or climate organizations?
- 4) Do you have any idea of criteria to divide generations?

#### ***Climate action***

- 5) Have you ever heard a group called Youth 4 Climate Action?
- 6) How do you feel about youth climate action? What is the meaning of youth climate action?
- 7) What do you think the youth climate action influences society?
- 8) What do you think are the characteristics of climate action by teenagers, unlike climate action by youth (over 20s)?
- 9) What do you think about the impact of suffrage on youth climate action?
- 10) Do you think teenager activists need to cooperate organically with youth environmental groups, NGOs, local governments, the Ministry of Education, or other stakeholders? So, what kind of attitude and support do you need for youth climate action?
- 11) How can support for youth climate action affect youth, climate action, environmental policy, and the sustainability of Korean society?
- 12) How can youth climate action affect the sustainability of Korean society, given its comprehensive scope?

#### ***Education***

- 13) What do you think about environmental education based on scientific knowledge?
- 14) What do you think is the reason why environmental education and ecological education in Korea are not able to cover social issues and not fall outside the “natural” environmental category?

#### ***Youth washing***

- 15) What are your opinions about youth-washing?

16) How should teenagers respond to youth-washing?

17) How will spec-obsession affect teenagers' climate action?

### ***Policies***

18) What is the political difference of your parties from other political parties in relation to climate change response policy?

19) What are you thinking about persuading the vested interests regarding energy policy?

### ***Question about education in society***

20) What was the background of the program on environmental and climate change issues?

21) What are the goals and objectives of environmental education?

22) What type of program have you been conducting about climate issues?

23) How are the results of the environment/climate change-related programs that have been done before reported?

24) Do you plan to run the program related to youth or climate change programs this year or later? If so, what do you think can be improved?

### ***Education system***

25) How do you think education in the teacher training process affects the education target (student)?

26) What kind of climate change curriculum is in the teacher training course? Are there enough educational opportunities and participation rates for teachers? If there is a shortage, what can be improved?

27) What do you think is different between environmental ecology education and climate change education? And should it be different?

28) How do you feel the response of existing teachers regarding climate change education? Do many teachers want to be actively involved? What do you think is the reason for the good or bad reaction?

29) What do you think about the phenomenon in which the quality of education can vary depending on the teacher's workload, personal interests, and discretion?

30) What do you think the Ministry of Education can do to help to effectively implement climate change education? Or what do you think governments can do to provide alternative forms of environmental and climate change education nationwide?

31) How long is the training by external lecturers practical (the institutional basis is sufficient), and what are the advantages and disadvantages of special lectures by external lecturers as the public education field manager of environmental ecology education?

32) How can the Ministry of Education, the Department of Education, principals, teachers, and parents support climate change education?

33) In climate action, the activities of teenagers attending non-general schools such as alternative schools tend to stand out. What do you think of this phenomenon?

## **2. Focus Group Interview**

1) Do you think Y4CA needs to cooperate organically with youth climate action, youth environmental groups, NGOs, local governments, the Ministry of Education, or others? And what kind of attitude and support do you need?

2) What is the effect of speculative obsessive compulsion on climate behavior?

3) How do you think teenager activists should respond to youth washing?