

Welfare Responsibility, Civic Morality, and the Environmental Attitudes in Korea

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Recent scholarships on the potential intersection between the welfare and environmental agendas suggest the need for a transition from a traditional welfare state to an eco-welfare state. Although the relationship between the two states has been explored mainly at the macro level, relatively little is known about the relationships at the micro level. In this context, our study explored the attitudinal aspect of the welfare-to-environment linkage in Korea by bringing in the concept of civic morality into the discussion. Using a nationally representative data, partial proportional odds logit analysis was conducted to analyze the effects of welfare responsibility and civic morality on environmental attitudes. Citizens with higher welfare perception were found more likely to show environmental concern, while the effect of welfare had a negative relationship with environmental taxpaying willingness. However, citizens' moral attitude was positively associated with both environmental attitudes, although it was more pronounced in predicting environmental taxpaying willingness.

Keywords: *ecological welfare, welfare responsibility, civic morality, environmental attitude, partial proportional odds model*

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Introduction

For decades, the convergence between the welfare and environmental agendas remained indistinct for their incompatible policy aims and thereby was regarded as a mere political blueprint for both green activists and social scientists. This is because ecologists believe that a welfare state feeds on productivism and operates as a system of social control by contradicting ecological values (Barry and Eckersley 2005; O'Connor 1998). In contrast, from a social policy perspective, green agendas have failed to reflect their goals in the tangible form of policy (Fitzpatrick 1998). However, in the face of severe environmental pressures, often referred to as a “super wicked” dilemma, in most of the OECD countries, (Lazarus 2009), environmental consequences are increasingly becoming intertwined with other sweeping social transitions leading to a degeneration of social welfare (Dryzek 2008; Hildingsson, Khan and Johansson 2016). Environmental issues, in this sense, can be a defining agenda as it is intrinsically linked to the domains of poverty, inequality, public health, and, from a long-term perspective, in securing a sustainable economic system (Jackson 2009; Jahan and Umana 2003; UNDP 2011).

Against such a backdrop, recent literatures have explored the potential link between the welfare state and the newly emerging environmental agenda, suggesting the need for a transition from a traditional welfare state to an eco-welfare state (Bailey 2015; Dryzek 2008; Gough 2016; Gough and Meadowcroft 2011; Meadowcroft 2005). Although the prevalence of such theories pertaining to the relationship between the two policies has provided a natural starting point for future policy interaction, previous explanations mostly spring from the state-level literature. If the convergence of welfare and environmental agendas are to materialize, investigating citizens' attitude, that is, public opinion about the interaction of the two issues is priority, as most of the literature has stressed the importance of public attitude on policy domain (Burstein 2003; Mettler and Soss 2004). It still remains unknown whether public support for welfare goes hand in hand with preference for environmental issues, and if so, recent empirical evidence raises questions on whether another driving force is required for the mechanism to become implemented via policy (Jakobsson, Muttarak and Schoyen 2017; Spies-Butcher and Stebbing 2016). Moreover, empirical studies exploring the welfare-environment interaction have so far only been considered in the western context (Jakobsson, Muttarak and Schoyen 2017; Koch and Fritz

2014; Spies-Butcher and Stebbing 2016), leaving room for its feasibility in the non-western context.

In this paper, alternatively, we aim to investigate how such interaction operates in the attitudinal domains of citizens, by using the representative Korean data. To further expand on the previous framework, we concentrate on how citizens' perception toward welfare responsibility and their sense of civic morality are associated with dual environmental attitudes. One objective of our study is to explore whether citizens' welfare perception pertains to both the environmental attitudes, which are subdivided into general concern over the environment and the willingness to pay environmental tax. The difference between the two is that environmental concern can be referred to the individual's rational insight towards environmental problems (Franzen and Meyer 2009), while the tax-paying variable directly links to conative aspect, that is a proximal cause of environmental behavior (Bamberg 2003; Fransson and Gärling 1999). Although environmental concern and behavior are known to be interrelated, their concern-to-behavior link may not be direct (Bamberg 2003; Dunlap et al. 2000), and some posit that the environmental attitude-behavior correspondence is tenuous (Olli, Grendstad and Wollebaek 2001). Therefore, an empirical approach to both the compartmental environmental attitudes is much needed to generate a practical discussion for the potential welfare-environment policy interaction.

Another core aim of our study is to bring the concept of civic morality to the above framework. Although various types of moral sharing exists throughout the cross-cutting circumstances (Hitlin and Vaisey 2013), and empirical evidence has shown it being broadly adopted in welfare and environment, respectively (Crumpei, Boncu and Crumpei 2014; Feinberg and Willer 2013; Findor 2016; Handler and Hasenfeld 1991; Liere and Dunlap 1978; Low and Wui 2016), scholars have often separated the moral framework outside the mainstream of policy research (Henricson 2016; Steensland 2010). Indeed, individuals' moral motives, normative beliefs, and values can be positively related to pro-environmental orientation and behavior (Fang et al. 2017; Jansson, Marell and Nordlund 2011; Stern et al. 1999). Particularly, citizens' normative beliefs in the civic sphere are essential, especially in the provision of public goods such as welfare and environmental policies. In this sense, linking moral dimensions with the public agenda can be a crucial source for predicting political attitudes and behavior (Letki 2006; Miles and Vaisey 2015; Skitka and Bauman 2008). Thus, the goal of this research is to better understand the micro foundational aspects of the emerging welfare-environment interaction by exploring the impact of welfare

responsibility and civic morality on citizens' attitudes toward the environment.

The welfare and environmental linkage

Recent studies have explored the institutional link between welfare and environmental states at the structural level (Dryzek 2008; Fitzpatrick and Cahill 2002; Gough 2016; Meadowcroft 2005). At the essence of such discourse lies the idea of extending the boundary of existing social risks to a broader extent embracing ecological challenges as a new social risk (Bailey 2015; Hildingsson, Khan and Johansson 2016). Scholars have pointed that advanced welfare states have largely failed to be satisfactory in their environmental results (Bailey 2015; Koch and Fritz 2014). Meadowcroft (2005) discusses a common ground that both states are faced with alleviating the negative market externalities (Meadowcroft 2005). As a welfare state provides social safety nets to compensate for market failures, environmental policies too can similarly mitigate the adverse effects of economic activities (Gough 2016; Meadowcroft 2005).

Dryzek (2008) comes to a provisional conclusion that social democratic regimes and states with a coordinated market system are in a better position to handle environmental agendas than are liberal welfare states (Dryzek and List 2003). The difference can be well supported by the idea of ecological modernization,¹ in that social democratic regimes regard environmental issues as a new platform for "green growth." In doing so, the existing economic and environmental agendas can mutually reinforce each other (Dryzek 2008). Relatedly, Gough (2016) provided a leading framework for comparative analysis between the two states by focusing on the common driving forces that have triggered the development of both states. Gough's examinations have mostly revolved around the possibilities of welfare regimes tackling environmental pressure and the need to encompass both issues within broader welfare programs (Gough 2010; Gough 2016; Gough

¹ The concept of ecological modernization can be used at both the theoretical and the practical level (Spaargaren and Moi, 1992). The former refers to a concept for analyzing the necessary development of central institutions in modern societies to resolve the problems of ecological crisis, while the practical domain signifies a political program to direct an environmental policy. Dryzek (2008) notes that social democratic regimes would generally make a coordinated effort to realize economic success that is compatible with ecological values, rather than depend on the market-based policy.

and Meadowcroft 2011).

Furthermore, welfare and environment agendas can both be considered under the justice framework (Arts and Gelissen 2001; Parris et al. 2014; Taylor 2000). As environmental impacts extend beyond its own domain to a broader human society, the issue of environmental justice emerged aiming for an equal distribution of environmental damages and risks across diverse social groups (Schlosberg 2009; Taylor 2000). One of the common implications encompassing the discussion is that affluent societies have better ability to afford environmental expenses, such as the costs of dealing with carbon emissions (Borghesi 2006). At the household level too, differing environmental costs between haves and have-nots can cause different distributional outcomes (Jakobsson, Muttarak and Schoyen 2017) as those who are hit hardest by environment pressures are those who did the least to cause the problem, and in such a scenario, low-income households are likely to be victims of “double injustice” (Walker 2012).

Empirical research on the relationship between the welfare and environmental agendas has produced mixed results (Jakobsson, Muttarak and Schoyen 2017; Koch and Fritz 2014; Spies-Butcher and Stebbing 2016). Koch and Fritz (2014) empirically tested whether social democratic nations perform better in their environmental achievements and found that the spillover effects from welfare to environmental achievements were largely unnoticeable. Spies-Butcher and Stebbing (2016)’s results show that voters who support higher spending over tax cuts also prioritize environmental and global warming issues, indicating a positive interaction between the two agendas in the Australian context. More recently, Jakobsson, Muttarak, and Schoyen (2017) explored whether preference toward income redistribution and willingness to pay to protect the environment crowd out or overlap. Results suggest that the preference for welfare and environmental policies replace each other, rather than synergize (Jakobsson, Muttarak and Schoyen 2017). Taken together, recent attempts to empirically capture the relationships between the two domains were insightful, although the mechanism connecting the two still requires further investigation at micro level. Particularly at the attitudinal level, welfare-environment interaction may require other driving forces, more complex than the suggested institutional link. For example, Spies-Butcher and Stebbing suggest a qualitatively different set of political actors for its mobilization, as traditional welfare supporters and those committed to the environment might be in different socio-political domains (Gough 2016; Spies-Butcher and Stebbing 2016).

Adopting civic morality

In this section, we introduce the theoretical background of civic morality and its strategic value in helping to explain the link between welfare and environmental attitudes. As various types of moral sharing exists throughout the cross-cutting circumstances (Hitlin and Vaisey 2013), civic morality can be referred to as an ethical habit or a morally desired behavior that leads people to hold high moral standards in the public sphere (Cepoi 2016; Dinesen, Nørgaard and Klemmensen 2014; Sieben and Halman 2015). More narrowly defined, it is a sense of civic responsibility for public goods and fellow-citizens, entailing a sense of obedience and trust (Letki 2006). In this regard, linking citizens' moral foundations with their given political agenda is a crucial source for predicting citizens' political behavior (Letki 2006; Skitka and Bauman 2008).

As morality involves a proactive aspect that can be manifested as one's moral imperatives and duties (Bandura 1999; Hitlin 2008), civic morality naturally taps into the role-based norm, involving the notion of civic duty, which entails faithfulness to public rules and responsible civic behavior (Miller 1994; Orviska and Hudson 2003). With this in mind, the concept denotes that citizens with a higher moral sense will likely accept duties thrust on them by society and even feel they owe it to all their fellow citizens and society (Letki 2006). Dalton (2008) has empirically captured the duty dimension of citizenship and given it theoretical prominence in relation to political participation. Individuals who value their duty as citizens can engage in conforming to norms such as willingness to report, casting their vote, and obeying laws. Indeed, citizens inspired by their given duty are keen to identify what is expected of them and, at the same time, what they expect of the government² (Dalton 2008). Therefore, ethical citizens can evoke their convictions to shape their political attitudes and increase the likelihood of desirable political behavior (Skitka and Bauman 2008).

Although scholars have often separated the moral framework outside the mainstream of policy research (Henricson 2016; Steensland 2010), welfare and environment agendas, respectively, have been closely associated with the

² Dalton has empirically distinguished two facets of citizenship norms, which can be divided into engaged citizenship norms and duty-based citizenship norms. The former imply participation in non-electoral activities such as understanding the opinions of others and helping those who are worse off, while the duty dimension involves social order norms, including the obligations to vote and pay taxes (Bolzendahl and Coffe 2013; Dalton 2008).

moral framework (Feinberg and Willer 2013; Findor 2016; Handler and Hasenfeld 1991; Liere and Dunlap 1978; Low and Wui 2016; Roosma, van Oorschot and Gelissen 2014; Rothstein 1998). Welfare state, for one, is based on strong moral premises, and empirical evidence finds that efficient welfare states establish their success based on the civiness of their citizens such as generalized trust, trust in government, civic spirit, and having a fair perceptions towards the costs of welfare programs (Algan, Cahuc and Sangnier 2011; Rothstein 1998). Furthermore, it has been observed that individual moral attitudes are key to unveiling the complex composition of welfare attitudes (Findor 2016; Roosma, van Oorschot and Gelissen 2014).

In a similar fashion, environmental issues are increasingly discussed under moral discourse, as it strongly pertains to the problem of securing social justice and human rights (Stern et al. 1999; UN 2015). From this perspective, previous literature has long examined the relationship between an individual's sense of morality and his or her pro-environmental attitude (Liere and Dunlap 1978; Stern et al. 1999). Recent findings indicate that modern environmental discourse can be closely linked to moral concerns, especially in liaison with the individual's political ideology (Feinberg and Willer 2013). As such, citizens' moral and normative concerns in the civic sphere are essential, especially in the provision of public goods such as welfare and environmental policies. Since citizens are the taxpayers and the beneficiaries of potential policy integration, the legitimacy of its implementation should revolve around public opinion. Therefore, it is of priority to investigate how citizens' moral term, with their perception toward welfare, is related to their attitude toward the environment.

Data and method

Data

Our data come from the 2014 Korean General Social Survey (KGSS). The KGSS is a face-to-face interview survey that has been administered since 2003 to a nationally representative sample of respondents.³ The dataset is a Korean version of the General Social Survey (GSS) and it contains core topical modules compatible with the International Social Survey Project (ISSP). The 2014 round of the KGSS data includes both the *Citizenship* and

³ The data, codebook, and questionnaires are available at <http://kgss.skku.edu/>

the *Risk Society* modules, which encompass questions not only on socio-political participation and civic attitudes, but also a battery of questionnaires related to environment- and risk-related issues. The response rate of the 2014 KGSS data was 55% ($n = 1,370$).

Measures

We based our investigation on two model specifications using two types of environmental attitudes for the dependent variable. In the first model, we set environmental concern, while in Model 2, willingness to pay an environmental tax was explored. To measure environmental concern, the respondents were asked, “How concerned are you about environmental issues?” with responses ranging from 1 (not at all concerned) to 5 (very concerned) on a five-point ordinal scale. To measure environmental taxpaying willingness, the respondents were asked, “How willing are you to pay much higher taxes to protect the environment?” with responses ranging from 1 (very willing) to 5 (very unwilling). We recoded the respondents’ scores from 1 (very unwilling) to 5 (very willing) to indicate the increase in environmental taxpaying willingness. Regarding the distribution of ordinal dependent variables, we visualized the responses as can be seen in figure 1. For both responses, our samples showed more concern or more willingness to pay the environmental tax than being at the neutral midpoint.

Measuring individuals’ subjective welfare attitude can be key to grasp the public’s degree of endorsement for the government responsibility (Hasenfeld and Rafferty 1989). Our welfare responsibility measurement situates the respondents’ preference for the agent more suitable as welfare provider between the individual and the government. Respondents were asked to rate

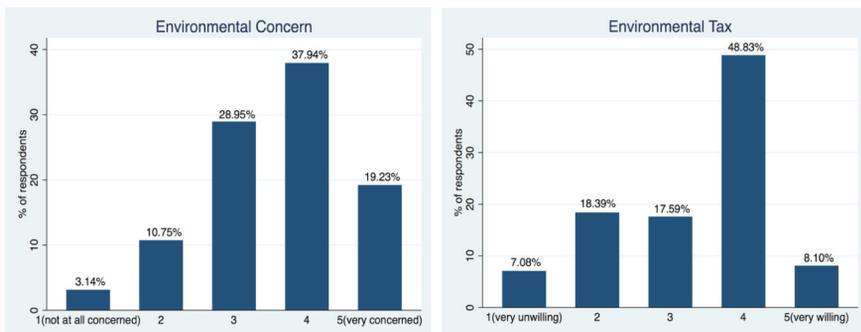


FIG. 1.—Distribution of the dependent variables

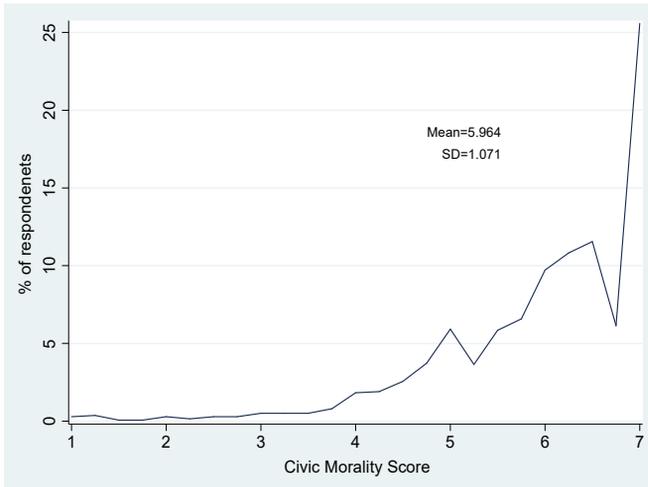


FIG. 2.—Distribution of the civic morality score (N = 1368)

from 1 (Government should become more responsible for social welfare) to 10 (Individual should become more responsible for his/her own living) on a ten-point Likert scale. We reversed the scores from 1 (Individual responsibility) to 10 (Government responsibility) to indicate higher scores reflecting the increase in perception of welfare responsibility.

To measure civic morality,⁴ we focused on the measures of Good Citizens in our data. The respondents were asked questions in the form of “To be a good citizen, how important is it for a person to...,” implying a normative standard of what a good citizen ought to do (Bolzendahl and Coffé 2013). There are nine items that respondents rank as 1 (Not at all important) to 7 (Very important) with “Cannot choose” as an option.⁵ As mentioned

⁴ To the best of our knowledge, there are no clear-cut, consensus measurements for the concept of civic morality. However, in previous studies, the concept has been measured based on a set of ad hoc questionnaires. The most representative case for creating a civic morality index was made by Letki (2006) by using the questionnaires from the World Values Survey (e.g., combining the scores of claiming government benefits, avoiding public fares, and cheating on taxes). The concept was also referred to in various proxy measures for aspects including generalized morality (James 2015), civic duty (Orviska and Hudson 2003), civic cooperation (Owen and Videras 2006), civic virtue (Kim 2016), and civic norms (Bolzendahl and Coffé 2013; Dalton 2008).

⁵ Items include (a) never try to evade taxes; (b) obey laws; (c) try to understand the reasoning of people with other opinions; (d) buy or boycott goods for political/ethical/environmental reasons; (e) help people in your country who are worse off than yourself; (f) help people in the world who are worse off than yourself; (g) always vote in the elections; (h) be active in social and political

TABLE 1
DESCRIPTIVE STATISTICS

| Variables | Scale | Mean (SD) | Descriptions |
|------------------------------|----------|----------------|--|
| Dependent variables | | | |
| Environmental Concern | 1-5 | 3.594(1.015) | ① Not at all concerned to ⑤ Very concerned |
| Environmental Tax | 1-5 | 3.325(1.084) | ① Very unwilling to ⑤ Very willing |
| Independent Variables | | | |
| Welfare Responsibility | 1-10 | 6.536(2.187) | ① Individual responsibility to ⑩ Government responsibility |
| Civic Morality | 1-7 | 5.964(1.071) | averaging the score of (a) never try to evade taxes; (b) obey laws; (g) always vote in elections; (i) keep watch on the actions of government. |
| Political Ideology | 1-5 | 3.040(1.012) | ① Very conservative to ⑤ Very liberal |
| Age | In years | 45.216(17.159) | 18(min) to 90(max) |
| Female | 1 = yes | 0.522(0.500) | 0=male; 1=female |
| Marital Status | 1 = yes | 0.631(0.483) | 0=unmarried 1=married |
| Education | 1-5 | 2.916(1.249) | ① Under middle school ② High school ③ Tech college ④ University ⑤ Graduate School |
| Religious status | 1 = yes | 0.430(0.495) | 0=religious 1=no religion |
| Income | 0-8.92 | 5.667(1.210) | ln (income + 1) |

above, we adopt Dalton's duty dimension of citizenship to create the civic morality index (Dalton 2008). To do so, we averaged the scores of duty dimension of citizenship, which are (a) never try to evade taxes; (b) obey

associations; (i) keep a watch on the actions of the government.

laws; (g) always vote in the elections and (i) keep a watch on the actions of government. The Cronbach's Alpha for the index was 0.7822. We present the distribution of civic morality score as shown in Figure 2.

We also include an array of control variables including political ideology and socio-demographic variables. We recoded the political ideology measurement from 1 (very conservative) to 5 (very liberal) to indicate more liberal respondents having a positive attitude toward the environment. Furthermore, the socio-demographic variables included are gender (0 = male, 1 = female), age (in years), and income level (log-transformed). The educational level was recoded (1 = under middle school, 2 = high school, 3 = tech college, 4 = university, 5 = graduate school) to reflect the general hierarchy of the Korean education system. We also included a dummy variable for religious status (0 = religious, 1 = no religion), as increasing secularization is known to be related to the environmental attitude (Inglehart and Abramson 1999; Kidd and Lee 1997). The descriptive statistics are presented in Table 1.

Partial Proportional Odds Logit Model

One of the important assumptions of the ordered logit model is that all the corresponding coefficients need to remain constant throughout the cumulative logistic regressions (Williams 2016). However, the previous literature points out that these assumptions are frequently violated (Long and Freese 2014; Williams 2006). In our data, the dependent variables are skewed toward the supporting end, indicating an irregular distribution (see Figure 1). Alternatively, the partial proportional odds logit model can be utilized by relaxing the assumptions (Fu 1999; Williams 2016). To do so, a test devised by Brant is performed to detect whether each variable violates the assumption (Brant 1990; Long and Freese 2014). In both our models, a Brant test showed that the parallel-line assumption was violated ($p < .000$ in Model 1, $p < .001$ in Model 2), showing that the implementation of traditional ordered regression is unavailable. To further explain, the unconstrained generalized ordered logistic model can be written as follows.

$$Pr(Y_i > j) = \frac{\exp(\alpha_j + X_i \beta_j)}{1 + [\exp(\alpha_j + X_i \beta_j)]}, j = 1, 2, \dots, M - 1 \quad (1)$$

In equation (1), M refers to the categories of the ordinal displayed

dependent variable. Despite the advantages of equation (1) with regard to drawing each parameter, it is however possible that some specific coefficients have not violated the assumption. In such cases, the partial proportional model allows some of the beta coefficients to be the same for all values of j , while coefficients that violate the parallel assumption can change across the cumulative logits (Williams 2016).

$$Pr(Y_i > j) = \frac{\exp(\alpha_j + X1_i\beta1 + X2_i\beta2 + X3_i\beta3_j)}{1 + [\exp(\alpha_j + X1_i\beta1 + X2_i\beta2 + X3_i\beta3_j)]}, j = 1, 2, \dots, M - 1 \quad (2)$$

Equation (2) shows the partial proportional odds logit model. Here, beta coefficients such as X1 and X2 are the same across the values of j (constrained), but the beta coefficients of X3 are not (unconstrained). The strength of such a model is that it relaxes the assumptions and produces results that are statistically more parsimonious (Williams 2016).

Results

Our results for the partial proportional logit model are presented in Table 2. In Model 1 (left-hand side of Table 2), three variables violate the parallel assumption, including civic morality, age, and education, while in Model 2 (right-hand side of Table 2), the welfare responsibility, political ideology, and age variables violate the assumption. Therefore, different coefficients indicate that the effect and interpretation should be different across the cumulative logits⁶. The impact of each independent variable on our dependent variable is given as the odds of the absolute coefficient (i.e., $e^{|\text{Coef}|}$). Non-responses with missing data were removed from our analysis (Model 1: $N = 1,336$; Model 2: $N = 1,338$).

In Model 1, the linkage between welfare responsibility and environmental concern are positively interconnected, indicating that an increase in an individual's welfare responsibility perception appears to increase the

⁶ Regarding the variables that violate the parallel assumption, four coefficients for each independent variable are displayed. For example, in Model 1, labeled a predicts the responses that show more concern over the environment than the response in the "not at all concerned" group. As a moves to b , c and then d , the reference group extends to the supporting end, as a result of which the responses in the "very concerned" category are predicted compared to the rest of the responses. Regarding the format of the tables, we adapted Craemer's display (Craemer 2009).

TABLE 2
PARTIAL PROPORTIONAL ODDS LOGIT ANALYSIS

| Variables | Model 1 | | | Model 2 | | |
|--------------------------------------|--------------------------------|--------------------|--------|----------------------------|--------------------|--------|
| | Environmental concern(N=1,336) | | | Environmental tax(N=1,338) | | |
| | Coef. | S.E. | Impact | Coef. | S.E. | Impact |
| Welfare Responsibility | | | | -0.124 ^{a*} | 0.050 | 0.883 |
| | | | | 0.026 ^b | 0.030 | 1.026 |
| | 0.057* | 0.024 | 1.059 | 0.041 ^c | 0.027 | 1.042 |
| | | | | 0.076 ^d | 0.049 | 1.079 |
| Civic morality | 0.070 ^a | 0.132 | 1.073 | | | |
| | 0.047 ^b | 0.076 | 1.049 | | | |
| | 0.347 ^{c***} | 0.057 | 1.414 | 0.247 ^{***} | 0.049 | 1.280 |
| | 0.212 ^{d**} | 0.077 | 1.237 | | | |
| Political ideology | | | | -0.192 ^a | 0.103 | 0.826 |
| | | | | -0.083 ^b | 0.067 | 0.920 |
| | 0.120* | 0.052 | 1.128 | -0.064 ^c | 0.059 | 0.938 |
| | | | | 0.236 ^{d*} | 0.102 | 1.266 |
| Age | -0.010 ^a | 0.010 | 0.990 | -0.014 ^{a*} | 0.006 | 0.986 |
| | -0.001 ^b | 0.006 | 0.999 | 0.006 ^b | 0.004 | 1.006 |
| | 0.000 ^c | 0.004 | 1.000 | 0.004 ^c | 0.004 | 1.004 |
| | 0.020 ^{d***} | 0.005 | 1.020 | 0.016 ^{d*} | 0.007 | 1.016 |
| Female | 0.195 | 0.103 | 1.215 | -0.113 | 0.106 | 0.893 |
| Marital status | 0.375 ^{**} | 0.122 | 1.455 | 0.040 | 0.123 | 1.041 |
| Education | 0.546 ^{a**} | 0.171 | 1.727 | | | |
| | 0.187 ^{b*} | 0.081 | 1.205 | | | |
| | 0.086 ^c | 0.056 | 1.089 | 0.310 ^{***} | 0.051 | 1.364 |
| | 0.060 ^d | 0.066 | 1.062 | | | |
| No religion | -0.322 ^{**} | 0.104 | 0.725 | -0.173 | 0.106 | 0.841 |
| Income | 0.117* | 0.049 | 1.125 | 0.078 | 0.048 | 1.081 |
| Wald χ^2 (Probe > χ^2) | | 141.65 (0.0000) | | | 136.42 (0.0000) | |
| Log Likelihood | | -1779.14 | | | -1752.8479 | |
| Pseudo R ² | | 0.0413 | | | 0.0386 | |

NOTE.—Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. The scale of the ordinal dependent variables ranges from 1 to 5. The *a* coefficient shows a response that is more supportive than 1; *b* indicates responses that are more supportive than 1 and 2; *c* indicates responses that are more supportive than 1, 2 and 3; and *d* shows responses that are more supportive than 1, 2, 3 and 4.

likelihood for concern over the environment ($p < .05$; impact: 1.059). On the other hand, when environmental taxpaying willingness for the environment (i.e., conative aspect) is set in Model 2, the effect of welfare responsibility mostly fails to reach conventional levels of significance. However, in the first coefficient, where the responses showed more willing to pay than the “*very unwilling*” responses (labeled *a*), an increase in welfare responsibility decreased the likelihood of willingness to pay for environmental tax ($p < .05$; impact: 0.883). The result of this logit section explicitly shows that the dimension of welfare attitude and environmental taxpaying willingness dimensions can be conflictual.

Regarding the effect of civic morality, it correlates well with both our dependent variables; however, the parallel assumption is violated in Model 1, while its effect remains solid in Model 2. When predicting environmental concern, the coefficients all have positive effects, but the estimates fall short of statistical significance during the first two logits. Further analysis, however, suggests that respondents who scored high in civic morality showed an increase in concern for the environment beginning with the third logit section ($p < .001$ for *c*; $p < .01$ in for *d*). On the other hand, in Model 2, the effect of civic morality immediately stands out as a powerful predictor of an individual’s willingness to pay for an environmental tax, without violating the assumption ($p < .001$). The results suggest that respondents who scored higher on the civic morality index are 1.280 times more willing to pay an environmental tax.

The effects of control variables were more prominent in Model 1 compared to that in Model 2. Respondents with a more liberal political orientation are more likely to show concern for the environment in Model 1 ($p < .05$; impact: 1.128). On the other hand, in Model 2, the effect of political ideology tends to have a more complex aspect. Throughout the first three logits, having a liberal political orientation decreases the likelihood of paying an environmental tax, although the estimates fall short of statistical significance. However, when moving toward the last logit, predicting responses of “*very willing*,” compared to the rest of the responses, showed that the respondents were 1.266 times more likely to pay for the environmental tax ($p < .05$). This contrasting pattern in our model can be views as the asymmetrical effects that allow contradictory results among the respondents to be captured (Fullerton and Dixon 2010). Similarly, when viewing the effect of age in Model 1, the coefficients remain negative throughout the first three logits; however, the sign turns positive in the last logit (i.e., labeled *d*) and reaches a significant level ($P < .001$). In Model 2, the

increase in age negatively affects the willingness to pay for an environmental tax in *label a* ($p < .05$; impact: 0.986), but the coefficients gain power throughout the rest of the logits and reach a significant level at the “very willing” end, indicating that older people are more willing to pay an environmental tax ($p < .05$; impact: 1.016). Our findings suggest that the association of age with both the environmental attitudes was prominent among respondents toward the “very concerned” or “willing” end.

While being female does not affect any of the environmental attitudes, married respondents are 1.455 times more likely to show concern for the environment ($p < .01$), but the effect of being married is weak to reach a significant level in Model 2. Similarly, an increase in the income level is statistically significant only in Model 1, leaving the association between the income and taxpaying willingness in Model 2 irrelevant. In both models, the educational level positively affects the dependent variables. In Model 1, the effect of the educational level is statistically significant in the first two logits ($p < .01$ in *label a*; $p < .05$ in *label b*), while its effect remains solid in Model 2 ($p < .001$; impact: 1.364). Our findings clearly show that the effect of education is a more powerful indicator than the effect of income when predicting environmental attitudes. Finally, being non-religious shows a negative coefficient in both our models. Especially in Model 1, respondents with no religion are less likely to have concern for the environment ($p < .05$; impact: 0.725). In general, our empirical results have certainly benefited from the partial proportional model, which shows comparatively rich information compared to the conventional logit model.⁷

Discussion and conclusions

The present study investigated the effect of citizen's perceptions of welfare responsibility and civic morality on their environmental attitudes in the context of South Korea. To make the best use of our data attributes, we performed a partial proportional logit analysis with the data from the 2014 KGSS. Our findings show that both citizens' perceptions of both welfare responsibility and their civic morality are closely interrelated with both the employed environmental attitudes, which we analytically subdivided into

⁷ Although we have not presented the results for the traditional logistic model (e.g., ordered logistic model or multinomial model), only 2 variables (e.g., civic morality and education) reached the significance level when adopting the conventional model, particularly in Model 2.

environmental concern and environmental taxpaying willingness.

Our results suggest that Korean citizens who attach greater importance to welfare responsibility are also likely to show more concern for environmental issues. These findings suggest that public support for welfare goes hand in hand with environmental concerns, which is in line with the previous literature suggesting a positive affinity between the welfare and environment dimensions (Dryzek 2008; Gough 2016; Spies-Butcher and Stebbing 2016). The explanation for this *double-worry* scenario might result from citizens' awareness that both dimensions are perceived as sources of social risks that require governmental responsibility (Jakobsson, Muttarak and Schoyen 2017). That is, in a broader sense, both policy goals rest on the decommodification strategy, allowing citizens to perceive both policy domains as jointly alleviating negative market externalities and reducing social risks at a collective level (Meadowcroft 2005). It has been well noted that environmental agendas are becoming more salient in Korean society, particularly recognizing the problem as an anthropogenic matter that led to initiate the government's proactive action (Yun 2014). With such a background, the positive relationships might provide political legitimacy for future policy arrangements orienting toward laying out the groundwork for an integrated eco-welfare policy.

However, our findings indicate that citizen support for welfare responsibility does not necessarily translate into their environmental taxpaying willingness, which also corroborates the substitutional relationships between the two agendas, as previous empirical findings suggest (Jakobsson, Muttarak and Schoyen 2017; Koch and Fritz 2014). A possible explanation for such negative relationships is that citizens can be biased by self-interest, recognizing both policy enforcements as a tax-based program. Therefore, concurrently upholding both policies can lead to a financial burden on citizens as tax payment for both domains becomes materialized. Additionally, it has been frequently noted that welfare and environmental policies can be contradictory, particularly at the stage of policy implementation. In this scenario, constituents are likely to distance themselves from the environmental policy in favor of pre-existing welfare programs since the environmental policy is weakly institutionalized compared to the welfare policies (Meadowcroft 2005). Another possibility is that individuals' awareness of the environment may not be reflected in their intention for environmental behavior intentions (Dunlap et al. 2000). Therefore, the degree of linkage between welfare and environmental taxpaying willingness can *shrink* compared to the positive relationships at the concern level. In

summary, our analytical strategy of subdividing different environmental attitudes has clearly depicted the heterogeneous relationship.

Above all, this study finds that civic morality plays a prominent role through its influence on environmental attitudes. The findings have identified the areas in which the effect of civic morality on environmental concern had a limited impact; only for those who had high levels of environmental concern, its effect on environmental taxpaying willingness was coherent throughout all responses. These positive connections are generally consistent with the previous findings that intrinsic moral terms are related to the valence of individuals' environmental attitudes (Crumpei, Boncu and Crumpei 2014; Feinberg and Willer 2013; Frey 1999; Liere and Dunlap 1978), and they are especially in line with the evidence highlighting the positive relationships between civic norms and pro-environmental attitudes (Owen and Videras 2006). Moreover, these findings are especially noteworthy given the negative relationships between citizens' welfare perception and their environmental taxpaying willingness. One speculation on this puzzling pattern is that even if citizens who attach greater attention to welfare are less likely to pay an environmental tax, their moral term, in a separate domain, increases the intention to pay the environmental tax. Such an explanation can be grounded in the argument that tax compliance is primarily driven by moral imperatives and values rather than institutional forces (Robbins and Kiser 2018). Our findings suggest that citizens' moral dimensions can offer an alternative perspective that can possibly explain the negative relationships between welfare and environmental tax paying willingness, which is a stronger reflection of environmental behavior compared to environmental concern. In this scenario, citizens' moral domain might take on an entirely different complexion when explaining why public support for the potential eco-welfare policy withdraws as their burden for tax payment becomes materialized.

Besides the effects of the main independent variables, our controlling covariates also yielded important discussions. For one, both the environmental attitudes are positively shaped by citizen education level, particularly the taxpaying intention. This indicates that the enhanced awareness toward the environment might spring from the education effect, by which citizens gradually become sensitized about these issues along with their educational achievement. Also, despite previous studies proposing the possibility of an additional political dimension in eco-welfare alliances (Spies-Butcher and Stebbing 2016), our results show that citizens who are self-identified as leftist were more likely to be positive toward both the

environmental attitudes.

In summary, our study has important implications for the potential unfolding of a welfare-environment intersection in the context of Korea. The employment of civic morality provides a new angle from which to view the dynamic links between the welfare and environment dimensions, highlighting the potential of adopting citizens' moral attitudes in research pertaining to policy interaction. Moreover, our analytical strategy of subdividing different environmental attitudes allows richer interpretations by depicting heterogeneous relationships. This study has limitations that also must be considered. First, despite the efforts to use the latest available data, examining a single year may not capture the complex attitudinal dynamics and longitudinal implications, especially because environmental attitudes vary over the course of time (Franzen and Vogl 2013). Additionally, due to the limitations of proper data, with this study's particular attention to the attitudinal dimension, our study excluded institution-related variables in the statistical analysis. As the previous literature has emphasized the role of institutional factors in both welfare attitudes (Larsen 2008; Svallfors 2012) and citizens' moral dimensions (James Jr 2015; Letki 2006), our implications should not ignore the potential impact of institutional actors, such as the quality of the government and economic performance, which may have a significant impact on the cultivation of attitude formation.

Lastly, this study has insufficiently reflected the conventional theories of the eco-welfare state that pertain more to the social democratic factors, ecological modernization or justice frameworks in discussing the potential convergence between the welfare and the environment states. Instead, our study used civic morality as an alternative factor in viewing the attitudinal relationships between the two domains. Since we aimed to explore the attitudinal dimensions regarding the issues, we hope future research specifically examines the on-the-ground political and structural linkage between the two policies. Despite its limitations, our study was the first to explore the attitudinal dynamics of the welfare-environment intersection in a non-western context. We hope our findings of the heterogeneous relationships between citizens' welfare responsibility with different environmental attitudes can contribute to future discussions, to the extent that welfare dimensions correspond to specific environmental agendas might provide the groundwork for future policy convergence.

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