Effects of Risk Perception on Climate Change Special Events : A Focus on Value-Attitude-Behavior Model

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Abstract

Purpose : This study explored the consumer effect of climate change-themed public events. The value-attitude-behavior (VAB) model was used to model and validate the role of climate change risk perception.

Methodology : An analysis of hierarchical regression was performed on the data gathered from the survey. The data analysis tool utilized was SPSS.

Findings : As a result of the analysis, personal susceptibility and social susceptibility had a positive effect on the value of climate change-themed public events. Severity perception was also found to affect event value. Politically progressive orientation, social susceptibility, and severity perception were influencing event attitudes. It was found that political orientation and social susceptibility affected event participation behavior.

Practical Implications : The study's findings have consequences for how attendees' perceptions of danger are accounted for in the VAB model for public events with a climate change theme. Moreover, event planning has practical ramifications since, for an event with a particular subject, how the theme is perceived is crucial.

Originality : The current work, in contrast to other research on risk perception, constructs an extended VAB model that includes political orientation in addition to risk perception.

Keywords : **climate change event, political orientation, risk perception, severity perception, and value-attitude-behavior (VAB) model**

Paper Submission Date : September 20, 2023 ; Paper sent back for Revision : March 13, 2024 ; Paper Acceptance Date : May 5, 2024 ; Paper Published Online : September 14, 2024

Climate change, which humanity is currently experiencing, is a global problem. Climate change is now a real risk and active efforts are needed to respond to it. To minimize future climate change, people of all countries around the world need to participate. This is because, as in the case of Tuvalu, where the national territory is sinking, environmental crises occurring in one country are triggered by events or practices in other countries, and countries' own environmental problems affect other countries (Samovar et al., 2016). For example, radioactivity spilled from a nuclear power plant disaster in Japan seeps into the sea next to neighboring countries, and fine coal dust from China impacts Korea. Climate change research is vitally needed because it is an urgent problem.

Numerous variables cause climate change. Climate change essentially occurs as the Earth's temperature rises. Reducing emissions of carbon dioxide and other comparable gases that trap heat in the atmosphere, including methane, is necessary to slow down climate change. Companies need to make efforts to reduce emissions of these

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DOI : https://doi.org/10.17010/ijom/2024/v54/i9/174395

gases. The idea that corporate involvement is a social obligation has gained traction since the advent of the ESG concept. ESG management is helpful for corporate brand enhancement and product marketing (Han et al., 2015). However, there are barriers to encouraging businesses to actively participate because of financial concerns. Individuals' active involvement is crucial as a result. By taking action to protect the environment, individuals can also indirectly aid in the solution to the climate change challenge. As people start to engage, climate change may be brought to the public's attention and a consensus regarding its seriousness can be established.

Strengthening public communication and raising awareness of the dangers of climate change are essential to promoting individual participation. Organizing an event is one of the more efficient ways to reach the audience. Traditionally, mass media advertising has been used a lot in communication targeting the public. However, as the influence of traditional media, such as newspapers and broadcasting, is dramatically diminished, alternative communication tools are needed. As the media environment has changed, advertisements using digital platforms such as social network sites (SNS) are attracting increasing attention. Direct communication, however, is frequently a more effective way to reach the audience. While people are directly involved and experiencing events, they can convey messages.

Since events facilitate communication through in-person interactions with individuals due to their on-site characteristics, event marketing is a powerful instrument for marketing communication. The effect of direct experience has been demonstrated in experiential marketing (Fazio & Zanna, 1978; Smith & Swinyard, 1983). Here, "experience" refers to firsthand experience, however, virtual experiences based on digital technology, which are increasingly popular since the start of the COVID-19 epidemic, can also be beneficial (Kober & Neuper, 2013). Events can be carried out through platforms such as Metaverse. Direct and mediated experiences are being employed as powerful instruments for consumer communication as immersive media advances.

Although many studies have been conducted on sports events or entertainment events, relatively few studies have been conducted on the effects of public events. In order to fill this knowledge gap, we conducted a study that aimed to investigate the capacity of public events to spread knowledge about climate change issues. This study differs from others because it extends the value-attitude-behavior (VAB) paradigm by incorporating risk perception and individual variables. We explored how people's opinions on events with a climate change theme are influenced by their political orientation and how they perceive the risk that comes with it. Political orientation, which has great explanatory power in explaining Korean behaviors, was also included as a personal characteristic variable. Ultimately, the impact of awareness of climate change on values, attitudes, and intentions to participate in climate change events was modeled.

Literature Review

Value-Attitude-Behavior Model

According to psychological research, beliefs are a key factor influencing attitudes, and attitudes, in turn, influence behavioral intentions (Kruglanski & Stroebe, 2005). There are cases where beliefs directly affect behavior and attitudes influence beliefs, but in general, the results of the research are consistent with Fishbein and Ajzen's (1975) belief, attitude, intention, and behavior model. Beliefs come in many different forms. Values, a major focus of the present study, can also be defined as beliefs, and it can be inferred that values affect attitudes and are linked to behavioral intentions. This hierarchical relationship is described in detail in the VAB hierarchy model (Homer & Kahle, 1988).

It is possible to argue that adopting values entails a social cognition process that enables environmental adaptation (Homer & Kahle, 1988). Perceived values shape people's attitudes and actions (Rahman & Reynolds, 2019). Values are classified into several categories depending on the academic perspective. A study on the benefits of the sharing economy separated benefits into social and emotional aspects and discovered that value

recognition had a favorable impact on attitudes (Ahn & Yang, 2018). In a study targeting travelers, value was divided into hedonic value and practical value, and it was found that both values affect the favorability of attitudes toward cruise travel and repurchase intentions (Jung & Han, 2017).

A representative model that explains the role of values is the VAB hierarchy model. The VAB model explains how attitudes mediate between values and behaviors for specific behaviors (Homer & Kahle, 1988). Perceived value can be defined as a comprehensive evaluation of a particular product or service (Zeithaml, 1988). An attitude is defined as a favorable or unfavorable disposition towards a specific object (Ko & Lee, 2020). The intention of an individual to carry out a particular activity can be predicted by actions that suggest control that the person voluntarily accepts (Homer & Kahle, 1988). This study used value, attitudes, and behaviors as dependent variables in the research model.

Political Orientation

Researchers have effectively used political orientation to explain people's behavior in Korea. Koreans are politically polarized, and political orientation acts as a factor in determining individual decisions. In many cases, Korean voters have absolute confidence in the candidate they support. Differences in political orientation create differences in attitudes and behaviors. Studies on consumer behavior have revealed that conservative consumers engage in more conflictual and complaint behaviors. This is linked to conservatism's right-wing authoritarianism (An & Jung, 2021).

When it comes to climate change studies, progressives are more likely to think that the issue is real than doubters, who are more likely to lean conservative (Bak & Huh, 2012). A study that examined climate change stories published by Korean media sources discovered that progressive newspapers covered social issues linked to climate change, while conservative publications focused more on the detrimental effects and damage caused by the phenomenon (Han et al., 2021). A comparative analysis between the progressive Hankyoreh and the conservative Korean newspaper Chosun Ilbo revealed that Hankyoreh employed a diagnosis frame to gauge the severity of an issue, whereas Chosun Ilbo frequently used a prognosis frame (Ju, 2013).

Politics can influence how people respond to climate change, as has been previously noted. Climate change challenges are more likely to affect people who identify as progressive. Progressive-leaning Koreans are likely to know more about climate change, according to the findings of earlier studies on the topic of political orientation and climate change issues. Therefore, the following hypotheses are proposed, considering that progressive tendencies will have a positive effect on value perception, attitude, and intention to participate in climate change-themed events.

- **H1-1 :** Political orientation will positively influence the perceived value of the event.
- **H1-2 :** Political orientation will positively influence attitudes toward the event.
- **H1-3 :** Political orientation will positively influence intention to participate.

Risk Perception

Beck (1992) defined modern society as a "Risk Society." Risks in society are rapidly increasing due to various physical factors. Risk here is defined as "an individual's subjective feeling influenced by psychological and social factors" (Slovic, 2000). Risk perception is a concept that includes both subjective and objective aspects (McComas, 2006). Different individuals have different perceptions of general levels of risk. Experts evaluate risk based on objective data or facts, but ordinary people base their judgment primarily on the seriousness of the consequences of an event they perceive as a risk (Jacobs & Worthley, 1999).

In the 1970s, as awareness of the possible risks associated with nuclear power grew, early studies on risk perception attracted attention in the United States. Starr (1969) conducted a study on the technical risks as opposed to the benefits that nuclear power would bring, and Slovic (2000) studied individual and social responses to risk factors through a psychometric approach. Recently, much research has been conducted on risk perception during the product purchase process (Sinha & Singh, 2014). Various factors shape the perception of risk and can develop through personal experiences and interactions with others (Slovic, 2000). In particular, it has been reported that media consumption patterns are closely related to risk perception, and risk perception studies are continuously conducted in the communication field (Leiss, 1996).

Risk Susceptibility

Risk perception includes perceptions of susceptibility and severity. Risk can be largely categorized as either social risk or individual risk (Tyler & Cook, 1984). A social risk is a risk to others, and an individual risk is a risk to oneself. In this study, vulnerability is divided into personal and social dimensions, and hypotheses regarding the effect of events on values, attitudes, and behaviors are proposed and tested. In light of Korea's collectivistic society, it would be pertinent to separate risk perception into two categories: individual risk and communal danger. We made the following predictions regarding the influence of perceived personal risk:

- **H2-1-1 :** Personal susceptibility will positively influence the event value.
- **H2-1-2 :** Personal susceptibility will positively influence attitudes toward the event.
- **H2-1-3 :** Personal susceptibility will positively influence the intention to participate in the event.

Previous studies have found that people make more optimistic judgments about personal risk than social risk. This can be said to be an impersonal influence on risk judgment. Optimistic bias is a similar concept (Weinstein, 1989). This can be understood in the same context as the third-person effect, in which persuasive messages are expected to affect others more than themselves (Davison, 1983). Personal and social vulnerability may vary, as previously mentioned, given the collectivist cultural traits of Koreans. Consequently, we anticipate that the consequences of social and personal vulnerability would differ, so we offer the following theories regarding the significance of social vulnerability:

- **H2-2-1 :** Social susceptibility will positively influence the event value.
- **H2-2-2 :** Social susceptibility will positively influence attitude toward the event.
- **H2-2-3 :** Social susceptibility will positively influence the intention to participate in the event.

Severity Perception

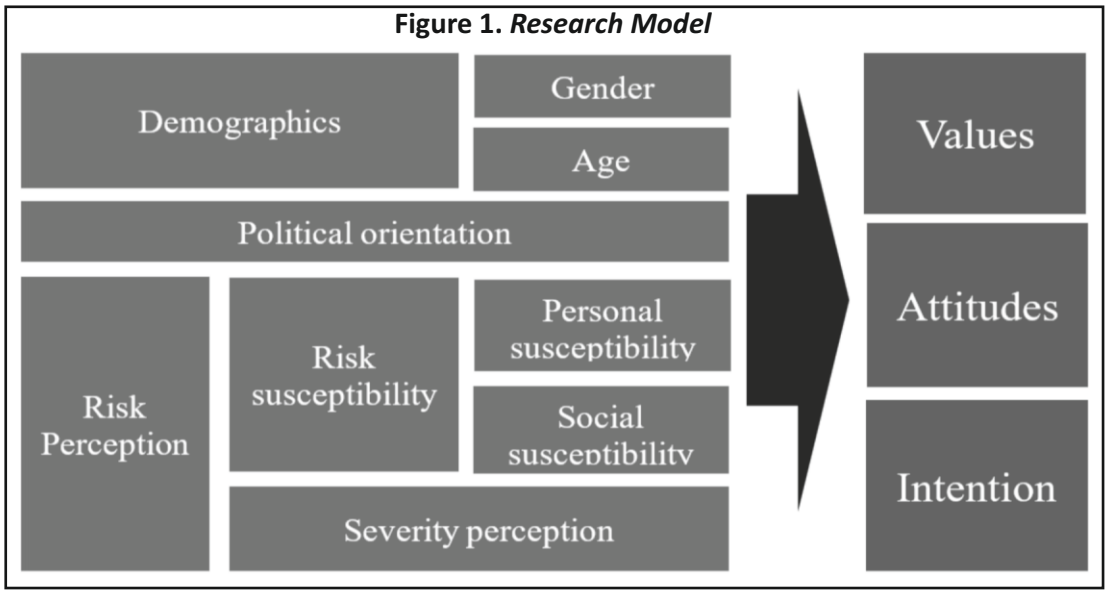
When people perceive a particular risk as serious, their motivation to take action to deal with the risk increases. However, there are cases in which conflicts arise because individuals perceive and experience risk differently and, therefore, respond differently (Botterill & Mazur, 2004; Robinson et al., 2012). Previous research suggests that in situations involving risk, the perception that risk is severe increases people's intention to take preventive actions (Severtson & Myers, 2013). In a study of avian influenza conducted in Korea, the perception that the risk it posed was severe appeared to have a positive effect on the intention to take preventive actions (Song et al., 2014). In a study regarding perceived risk from MERS, the perception that the risk it posed was severe appears to increase the intention to take preventive action (Hong & Jun, 2020). Elevated levels of concern about climate change lead to an increased level of collective action (Stevenson et al., 2018).

The role of variables related to risk perception was discussed previously. In this study, severity was classified as one of the risk perception dimensions and its influence was investigated. Therefore, we would like to propose the following hypotheses regarding the impact of the perceived severity of risk :

- **H3-1 :** Perception of severe risk will positively influence the value accorded to the event.
- **H3-2 :** Perception of severe risk will positively influence attitudes toward the event.
- **H3-3 :** Perception of severe risk will positively influence intention to participate in the event.

Figure 1 depicts the research model.

Figure 1. ***Research Model***



Methodology

Samples

A survey was conducted to test the hypotheses. A professional survey company was hired to conduct an Internet survey targeting the panel members. Although it is a non-parametric sample, efforts were made to secure maximum representativeness by evenly distributing gender and age. The questionnaire was sent by email to the participants selected by the survey company. The survey was conducted in Korea from November 30 to December 2, 2022. A total of 263 people participated in the survey. Among the survey participants, 132 were male (50.2%) and 131 were female (49.8%). The data were analyzed using hierarchical regression. The statistical package used was SPSS.

Measures

The measurement items used in the survey questionnaire were selected from instruments whose validity had been demonstrated in previous studies. Event value was measured by Ducoffe's (1996) items used for Internet advertisements. Event attitudes were measured with four items frequently used in previous studies (Holbrook & Batra, 1987). Three items were used in the measurement of participation intention (Stafford et al., 1996).

Table 1. ***Measurement Scales and Statistics***

Constructs	Scales	*M*	*SD*	α
Event Values	Climate change events are useful.	5.12	1.23	
	Climate change events are valuable.	5.17	1.20	
	Climate change events are important to me.	5.08	1.30	
	Index	5.12	1.18	α = 0.95
Event Attitudes	Climate change events are favorable.	5.22	1.25	
	Climate change events are positive.	5.29	1.21	
	Climate change events are good.	5.06	1.28	
	Climate change events are likable.	5.10	1.26	
	Index	5.17	1.18	α = 0.96
Participation Intention	I will likely participate in climate change events.	4.82	1.42	
	I may participate in climate change events.	4.90	1.32	
	I will probably participate in climate change events.	4.82	1.40	
	Index	4.85	1.32	α = 0.95
Personal Susceptibility	Climate change is an important issue to me.	5.44	1.13	
	I am concerned about the damage from climate change.	5.53	1.16	
	I will be affected by climate change.	5.27	1.21	
	I feel the risk of climate change is high.	4.95	1.26	
	Index	5.30	1.02	α = 0.88
Social Susceptibility	Climate change is an important issue in our society.	6.09	.97	
	I am concerned about the damage the public will suffer from climate change.	5.69	1.09	
	The public will be harmed by climate change.	5.67	1.13	
	The risk the public believes posed by climate change is high.	5.51	1.13	
	Index	5.74	0.96	α = 0.91
Severity Perception	Climate change is a mortal danger to everyone.	6.22	0.96	
	People are likely to be seriously harmed by climate change.	6.08	0.97	
	Climate change is a serious threat.	6.06	1.01	
	Climate change is more lethal than any other problem.	5.82	1.12	
	Index	6.04	0.90	α = 0.91
Political Tendency	Conservative/Progressive.	4.45	1.30	

Measurement items from earlier risk perception studies on diseases were adapted for use in asking participants about climate change, especially with regard to social and individual risk vulnerability (Morton & Duck, 2001). Every question was answered on a 7-point Likert scale. Table 1 contains information on the dependability of the scales as well as the descriptive statistics.

Analysis and Results

Hypotheses Testing

Hierarchical regression analysis was conducted to test the hypotheses. First, the value attached to the event was the

dependent variable. In the first step of the analysis, demographic variables were input as control variables. We found that women rated the value of climate change events higher. Political orientation showed only a marginally significant relationship to event value ($p < 0.10$). Thus, Hypothesis 1 is not supported. Both personal susceptibility and social susceptibility to risk are significantly related to event value ($p < 0.05$). Severity perception also has a significant effect ($p < 0.05$). Therefore, Hypotheses 2 and 3 are supported (refer to Table 2).

Next, a hierarchical regression analysis was conducted on the attitude toward the event. Women are found to have favorable attitudes. Political orientation also shows a statistically significant relationship with attitude toward the event ($p < 0.05$). Thus, Hypothesis 1 is supported. It is found that social susceptibility has a positive effect on attitudes toward events ($p < 0.001$). However, the relationship between personal susceptibility and event attitudes is not statistically significant. Therefore, Hypothesis 2 is partially supported. Perception of seriousness has a positive effect on attitudes ($p < 0.01$). Thus, Hypothesis 3 is supported (refer to Table 3).

A hierarchical regression analysis was conducted on the intention to participate in climate change events. Political orientation shows a statistically significant relationship with participation intention, supporting Hypothesis 1 ($p < 0.05$). Consistent with Hypothesis 2, both personal susceptibility and social susceptibility also show statistically significant relationships ($p < 0.001$). Hypothesis 3 is not supported since the perception of severity does not have a statistically significant effect. However, it was discovered that once the severity perception was incorporated, the statistically significant association between personal susceptibility and event participation intention vanished. Thus, in the final model, Hypothesis 2 is partially supported (refer to Table 4).

Table 2. ***Results on Event Value***

DV	IV	Model 1	Model 2	Model 3	Model 4
Event Value	Gender	–0.156*	–0.142*	–0.038	–0.033
	Age	0.061	0.057	0.013	0.002
	Political Orientation		0.114#	0.079	0.076
	Personal Susceptibility			0.173*	0.157*
	Social Susceptibility			0.439***	0.308**
	Severity Perception				0.189*
Adjusted R^2 = (ΔR^2)		0.015	0.033(.022)	0.353(0.324)	0.365(0.014)
F		3.797*	3.708*	29.589***	26.098***

Note. # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. ***Results on Event Attitudes***

DV	IV	Model 1	Model 2	Model 3	Model 4
Event Attitudes	Gender	–0.138*	–0.120#	–0.025	–0.019
	Age	0.052	0.046	0.006	–0.008
	Political Orientation		0.149*	0.115*	0.111*
	Personal Susceptibility			0.122	0.102
	Social Susceptibility			0.448***	0.287**
	Severity Perception				0.232**
Adjusted R^2 = (ΔR^2)		0.021	0.030(0.013)	0.318(0.287)	0.337(0.021)
F		2.931#	3.961**	25.452***	23.237***

Note. # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. ***Results on Behavioral Intention***

DV	IV	Model 1	Model 2	Model 3	Model 4
Event Behavior	Gender	–0.112#	–0.094	0.005	–0.003
	Age	0.002	–0.004	–0.041	–0.045
	Political Orientation		0.146*	0.117*	0.116*
	Personal Susceptibility			0.171*	0.166#
	Social Susceptibility			0.347***	0.298***
	Severity Perception				0.070
Adjusted R^2 = (ΔR^2)		0.005	0.022(0.021)	0.250(0.231)	0.249(0.002)
F		1.655	3.000*	18.466***	15.483***

Note. # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion, Conclusion, and Implications

The results of this study support our research model regarding how personal characteristics and perceptions of the risk posed by climate change affect consumers' perceptions of climate change events. It is found that people with progressive political views have favorable attitudes toward and strong intentions to participate in climate change events (Hypotheses 1–2 and 1–3). Political orientation does not affect event value (Hypothesis 1–1). Social susceptibility has a positive effect on values, attitudes, and behavioral intentions (Hypotheses 2–2–1, 2–2–2, and 2–2–3). It is found that personal susceptibility ultimately affects only event value (Hypothesis 2–1–1). Severity perception affects only event value and attitudes toward the event (Hypotheses 3–1 and 3–2). There is no effect on behavioral intentions (Hypothesis 3–3).

The results of this study make significant contributions to the understanding of factors related to climate change event participation. The extension of the VAB model is a main academic implication. In other words, the VAB model is used to explore the antecedent factors affecting the perception of a specific event. Our results show that people's awareness of the topic is important for the success of an event pertaining to a specific topic. This study investigates how people's characteristics and risk perceptions affect climate change, and significant results are obtained. It is also found that the antecedent factors are different, with values, attitudes, and behaviors as dependent variables.

Our results show that Koreans' political orientation could affect the success of an event. It is meaningful to discover that political orientation plays such a role for Koreans. In previous studies, it has been reported that progressive people's social participation was high (Bak & Huh, 2012). The results of this study are in line with those of previous studies, as individuals with progressive views are more likely to accord high value to, have positive attitudes toward, and have a strong intention to participate in climate change events.

A novel contribution of our study to understanding the impact of climate change risk perception on perceptions of climate change events is that the effects of risk susceptibility and seriousness are investigated in a more nuanced way than in previous research. In particular, in order to investigate the impact of cultural factors, we divided the perception of risk susceptibility into personal susceptibility and social susceptibility. Both personal susceptibility and social susceptibility have a positive effect on event value, but only social susceptibility affects attitudes and behavioral intentions. These results are due to the cultural characteristics of Koreans. Koreans typically show collectivist cultural tendencies (Hofstede et al., 2010). Considering these cultural characteristics, it is understandable that social susceptibility has a greater influence than individual susceptibility in Koreans' perception of the risk posed by climate change.

In the case of perception of severity, perception of risk had a positive effect on event value and attitudes toward

the event. People who perceive the risks posed by climate change as being serious evaluated the value of climate change-themed events highly and had a positive attitude toward them. Among the factors constituting risk perception, the roles of both severity and susceptibility are found to be important. However, it is found that the perception of severity does not affect participation intention. Thus, perceptions of severity do not have a significant impact on behavior.

Our results have implications for management practices. First of all, this study could have practical implications for event planners. When planning an event with a specific theme, it is necessary to emphasize the theme. People participate in events for a variety of reasons. The most common reason to attend is for entertainment. In the theory of uses and gratification, the most representative motivations for media use are information and entertainment. However, not many visitors come to events with the theme of climate change in order to be entertained. It can be said that most of the people who visit wish to get information about climate change. Therefore, an emphasis on risk will be needed in order to stimulate interest in climate change events.

Individual characteristics can be used as market segmentation variables in event marketing. Political orientation can also be used as a targeting variable that induces participation in climate change events. Our results are consistent with the idea that primarily marketing the event to politically progressive people will be helpful in attracting a sizable audience. In many cases, Koreans form attitudes and make decisions according to their political orientation so that political orientation can be used as an effective segmentation variable.

Limitations of the Study and Scope for Future Research

This study has several limitations. It only focused on the general perception of climate change events rather than targeting a specific event. When studying real events, we are faced with obstacles due to the involvement of various extraneous variables. These problems could be addressed through conducting experimental studies in the future.

Authors' Contribution

Dr. Jong Yoon Lee conceived the idea and collected the research data. Dr. Jong Woo Jun developed a quantitative design to undertake the empirical study and supervised the study.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Funding Acknowledgment

The authors received no financial support for the research, authorship, and/or for the publication of this article.

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