Abstract

There are few studies about acceptance of nuclear energy for our energy. This study will empirically explore the level and determinants of acceptance of nuclear energy among those of other attitude not expected.

First, we describe the basic level of acceptance of nuclear energy among people according to socio-demographic variables.

Second, we analyze the determinants of support for nuclear energy, which is the risk/benefit, trust, stigma or any independent variables.

Third, we consider the support structure about power generation by nuclear energy with that by other energies (water, coal, gas and petroleum).

We will use the survey data which are collected in 2008 with samples of 1500.

Research Background

On facing serious energy crisis and environmental problems, every country has begun to regard the nuclear energy as a solution for the problem. As a result, a lot of countries have been involved in the construction and operation of nuclear power stations before the accident of Fukushima nuclear power plant.

However, if someone who accepts the nuclear energy for alternative energy for future and what is factor to influence the decision for acceptance or non-acceptance for nuclear energy? There are few comparative studies about the preference and relationship between nuclear power and alternative energies.

Research Topics

1) The basic level of acceptance of nuclear energy people according to socio-demographic variables.
2) The relative power of determinants of support for nuclear energy, such as the perceived risk/benefit, trust and stigma.
3) The support structure about power generation by nuclear energy and by other energies (water, coal, gas and petroleum).
4) Impact of (3) alternative energy preference on the acceptance nuclear power and (2) the nuclear related variables on alternative energy preference.

Theoretical Background

Although Nuclear Energy was accepted as important energy resource in the age of energy crisis, nuclear facilities still have been long seen as the hot topic of radical debate in nearly country. At the perspective of risk/benefit analysis, people make judgment about risk/benefit expectation that the perceived risk, the economic incentive, the trust in government and institution, and stigma, probability of the nuclear energy for power generation.

Perceived Benefit/Risk: Generally believed that the perceived benefit increase the support for nuclear power whereas the perceived risk decrease it. However, Dixit et al. (1998) argued that because of increasing of nuclear accident and public perception, the nuclear energy should be accepted in case of accepting the benefit, the perceived benefit can increase the acceptance of nuclear power stations.

Trust: Trust in government (Frye et al. 1992). Basic of socio-psychological condition management related with nuclear power (Chen, 2004) decreases the perceived risk, the increased trust, and considered the relationship between perceived risk/benefit and acceptance of it. (Kirk A, 2007)

Research Design

Model

We are the demographic variables, perceived benefit/risk, trust and stigma as independent variables in explaining the acceptance of nuclear power.

Measure for alternative energy resources (water, coal, petroleum, gas) is regards as independent variables in the explaining the acceptance of nuclear power and dependent variables which are explained by nuclear-energy-related variables (perceived benefit/risk, trust, stigma).

A: (three point scale) Disagree or Agree?

B: (four point scale) Disagree or Agree?

Data

We will use the survey data which are collected in 2008 with samples of 1000.

Analysis 1:
The Basic Structure of Three Dimensions about Nuclear Power Support

To describe the basic level of support structure about nuclear energy for our energy, we will do the frequency analysis between three dimensions of nuclear power support and benefit. Age, Education Level, Sex related Income and Locality

Analysis 2:
Relationships between Preference for Nuclear Power and Social-Constructed Variables

To as describe the relationship between support for nuclear power and social constructed variables (perceived benefit/risk, trust, stigma), we make the correlation analysis.

Analysis 3:
Comparing the Relative Explanation Power between Predictors

To know the comparative support structure between nuclear energy and other energies (water, coal, gas and petroleum), we analyze the same frequency as shown in Figure 1, Figure 2 and Figure 3

Analysis 4:
The Preference between Nuclear Power and Alternative Energy Powers

Key Findings and Implications

1) Key Findings

The people preference risk and stigma of nuclear power, the more people oppose nuclear power whereas the more people perceived benefit of nuclear power and have trust. The people accept it.

The socio-demographic variables show significant variations according to three dimensions of nuclear power acceptance. When the nuclear power is evaluated in terms of economy, safety and environment, it ranks second following after water energy whereas those who have higher perceived benefit and trust less like it.

There are significant preference relationship between nuclear power and alternative energy.

3) Implication

As more dominant or privileged groups in society have more positive view toward nuclear power, it implies that the support structure about power generation by nuclear energy with other energies is relatively different. The socio-demographic variables show strong variations according to three acceptance dimensions.

The reverse preference suggests the possible difficulty in policy mix or combination between nuclear energy and other alternative energy.

Reference:

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