

Surveys: Research into attitudes and the use of models

Case Study: Siting of a LILW repository in Slovenia

Country: Slovenia

Due date: October, 2013

Background Information:

A small group of researchers from the national implementing agency for radioactive waste management (ARAO), the Department of Psychology in the Faculty of Arts and the Faculty of Social Sciences at the University of Ljubljana, was formed in 1997 with the aim of obtaining information on people's behaviour in a technologically high risk environment, attitudes towards radioactivity and radioactive waste, and about the possible influences which could alter public acceptance of the proposed low and intermediate level radioactive waste (LILW) repository.

In 2000 the group studied Ajzen's psychological models of planned behaviour, which explain the relationships between attitudes and behaviours within the case of a radioactive waste repository. Ajzen's theory enables possible answers to the prediction and explanation of specific action tendencies by considering the relevant behavioural dispositions. According to this theory, attitudes toward the behaviour, subjective norms and perceived behavioural control should account for the specific behaviour. The individual's attitude towards the behaviour is defined as a positive or negative evaluation of the consequences that are typical for a certain situation. The consequences are evaluated against the probability of a certain event occurring and the importance of that event to the person. A second factor is his or her perception of social pressure to perform or not to perform certain behaviour, i.e. his or her subjective norms (perceived normative prescriptions). Nevertheless, the successful performance of the intention is dependent on the person's control over the factors that may prevent it. Therefore the perceived behavioural control was introduced into the theory. To the extent that perceptions of behavioural control correspond to actual control, they provide useful information about expressed intentions. Depending on the specific intention, both factors could together, or in different combinations, explain the intended behaviour.

In 2001 a pilot orientation investigation regarding the differences between experts and non-experts, and any possible disagreements, was performed in order to obtain supplementary information on people's perception of the mediating process and the conditions under which they would accept the LILW repository. The research was oriented mainly on perceptions of the whole process of site selection, its phases and main emphases. For the purpose of the survey a special questionnaire was constructed. It consisted of 65 mainly closed-type questions, concerning different aspects of the LILW repository site selection process, as well as questions about some socio-demographic variables. The questions covered different aspects of the negotiation process, beliefs about the LILW repository influences on the respondents' local community, attitudes to the media and confidence in their reporting about radioactive waste, conditions for acceptance of such a facility and preferences for the two potential types of LILW repository: surface and underground. As an introduction to the questionnaire a specific script was used in which a general description of the situation concerning the repository site selection and negotiation process was provided. The participants were asked to become acquainted with the situation described and to express their own opinion when answering the questions.

From 2004 onwards the mental models of radioactivity and of a LILW repository, and their relative influence compared with other factors which affect acceptability of the repository in a certain local community, were studied. Mental models were derived from adaptation of the method developed by Morgan *et al* (2002). Other data were acquired via another questionnaire, which included social and other aspects of the repository. This approach is divided into several stages. Firstly, the expert model is created, based on the available expert knowledge of radioactivity and repository design, which are assumed for such a facility. The expert model is an attempt to pool, in a systematic manner, everything known or believed by the community of experts that is relevant for the risk decisions that the audience faces. Secondly, lay people's mental models about the processes and properties are obtained through the

individual open-ended interviews with a different public, eliciting their beliefs about the hazard, expressed in their own terms. The responses are analysed in terms of how well these mental models correspond to the expert model. Thirdly, based on the captured beliefs expressed in the open-ended interviews and in the expert model, a confirmatory questionnaire is created which is then applied to a representative sample of the Slovenian population. The sample was focused in those geographical areas which are more relevant to the repository site selection project, i.e. they were condensed in the areas where local partnerships in Slovenia have been established. In parallel, the questionnaire also assesses people's views on other important factors such as trust, credibility of the implementer, perception of their involvement and possibilities for participation. In the fourth stage, risk communication methods are developed and evaluated in support of the LILW repository site selection process.

Phase of decision making process

The site selection process for a LILW repository in Slovenia was officially carried out from 2005 until December 2009, culminating with adoption of the Governmental Decree, but the preparation activities had already begun in 1997

Formal framework of decision making process

There are several legal frameworks in Slovenia prescribing the site selection process for a facility of national importance: the Spatial Planning Act, the Environmental Protection Act and the "Atomic" Act (the Law on Protection Against Ionizing Radiation and Nuclear Safety). Those Acts already address all important international conventions and EU Directives, such as the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters; the Espoo Convention on Environmental Impact Assessment in a Transboundary Context; the Kiev Protocol on Pollutant Release and Transfer Registers, plus others.

Objectives of the process

The aim was to understand public and expert conceptions of different aspects of radioactive waste repository development, the important factors which determine acceptability and behavioural intentions in the site selection process.

Which tool was used?

For the purposes of the investigations, the protocols and questionnaire were developed based on models, conceptualisations and context of the activities. These were then applied to representative samples or the groups of participants involved in the research. The results were analysed using common statistical software such as Statistics, SPSS and Excel spreadsheets.

Status: Completed for the site selection phase.

Objectives and outcomes of stakeholder engagement

The results of the research served as a useful additional tool to assist the design of the site selection approach for a radioactive waste repository in Slovenia, taking account of the needs of the public and supporting the actions of the responsible organisation. The communication activities and participative models were prepared based on the findings of the research.

Involved Stakeholders

The research was performed with different target groups, including the general representative public in Slovenia, the representative public from the local communities, experts, students' groups with particular characteristics (such as background knowledge), teachers and others.

Implementer of the participation process details

The research was conducted by the group established in 1997.

Financing

The work was paid for by the relevant national public institutions (including direct costs and some subcontracting expenses for the questionnaire survey).

Points to consider

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Further tools used in this case study

N/A

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