

# Recreation monitoring: experiences of responding in web-surveys and prospects for future

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## Introduction

The objective in nationwide monitoring of outdoor recreation is to assess population level estimates of the number of annual visits to nature areas, and outdoor recreation participation rates in outdoor activities. One of the purposes is to offer estimates for monetary values of recreational visits in processes such as accounting and assessing of cultural ecosystem services. In addition the data offers understanding for recreation behavior by different population groups. The main impact is the knowledge for planning and management of recreation services.

Long term population trends in outdoor recreation are important for planning the recreation resources as well as for understanding the future trends. This information is most reliable when it is collected with systematic monitoring and is based on the representative data. However, survey participation is declining, and this trend is likely to continue in the future also. The responding has declined in all age groups, and among the men and women (Tolonen et al. 2006). With low response activity the results may not present the population average, its' also impossible to determine if the change is in the behavior or which are caused by the poor representativeness of the results.

## Challenge of improving survey responding

The National outdoor recreation demand inventory (LVVI 2) survey was implemented as an Internet inquiry based on a population sample and probability sampling, and a supporting postal inquiry (Mixed mode). All data collection rotations of the LVVI2 survey had a similar inquiry process where the persons selected for the sample were sent a letter and a brochure concerning the survey in the first and second contact stage. In the third stage, those who had not responded were sent the postal inquiry form and also still offered the opportunity to respond on the Internet.

There were differences in the response willingness of men and women in all survey rotations in LVVI 2. Women were more active in responding in most agegroups, and the differences were largest (10-12%) in the youngest age groups (15 to 34 yrs) and among the age group (45 to 54 years).

Assessing temporal representativeness is also an issue in a case of surveys related to leisure time. This means that how leisure activities conducted both weekdays and weekends are present in the data. Another feature of the "temporal aspect" of outdoor recreation refers data collection during the different seasons. For example the estimate of participation in skiing reflects the annual variation in snow conditions (Sievänen & Neuvonen, 2011).

In LVVI2-survey we have tried to reduce the bias by offering the subsampling by collecting data both in the winter, spring and autumn. To reduce the bias among certain activities the continuous data collections has advantages. The data collection was conducted during different seasons as six separate samples over a two-year period during 2009 and 2010. Statistical weighting aims to fix the deviations in the response rates of different population groups. Age (15 to 24, 25 to 34, etc.), gender, region (NUTS3) and season (winter, summer and autumn) were used as weighting criteria.

In the future we are able to get more precise information in the surveys with more sophisticated and personalized questionnaires in the Internet. This is promising as daily Internet usage varies from 31% in age group of 74-89 years up to 100% in the group of 16-34

years (Official Statistics of Finland 2015). Also the smartphone coverage has increased rapidly in Finland. There is need to offer more flexibility to survey responding including easy access to the survey (e.g. Quick Response code).

## **A challenge of map-based data collection**

A new challenge is to collect map-based data in a **random sample based** population survey across the whole country. Map-based data collection could provide totally new type of information. If people could locate the place of their **most recent recreational visits** on the map (the form of question comes from the monitoring process), many analysis of site quality preferences, distances to recreation site, and many other research topics could be analyzed when GIS-based information can be matched together with recreation demand data. Public participatory GIS method for this type of survey data collection exists, but there is still rather few experiences of using the methodology in large random sampling based surveys. The usability of the method in groups with low Internet skills can be challenging (Gottwald, Laatikainen & Kyttä, 2016).

This presentation will describe some recent experiences of monitoring outdoor recreation in LVVI2 and NatureMove-projects and discusses of the advantages and challenges of new type of data collection. Sharig experiences of the challenges in monitoring helps to improve and to harmonize monitoring in European wide context.

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