STREET MOBILITY PROJECT
How to do a survey
A guide for local authorities, voluntary organisations and community groups

March 2017

HOW TO DO A SURVEY

About this handbook

This short handbook on conducting a survey is produced by the Street Mobility team at UCL (University College London), based on a booklet developed by the New Economics Foundation on *Measuring well-being*. It is designed primarily for local authorities, voluntary organisations and community groups

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CONTENTS

1. GATHERING INFORMATION

By the end of this section you should:

- Understand why questionnaires are a good way of gathering information
- Be familiar with a range of additional questions you may wish to ask your respondents.

Using questionnaires to gather information

Questionnaires are a good way of gathering information: they provide information in the form of numbers ("quantitative data") and they offer the advantage that they can be repeated at different times to show trends and patterns in results.

There are other ways of gathering information. These include:

- research interviews
- discussion groups and focus groups
- community consultation events
- research diaries (where people write down their feelings, behaviours and activities over a set timeframe).

Most of these methods provide information in the form of words ("qualitative data") and can be used alongside questionnaire data to help explore findings in more detail. **This handbook focuses on gathering information using questionnaires.**

How can you administer questions?

Administering a questionnaire means implementing it in practice – collecting responses from the people you are interested in. By the end of this section you should:

- Understand the main ways to administer questionnaires
- Understand some of the things to consider when deciding how to administer a questionnaire.

How to administer questionnaires

Once you have decided which questions to ask, you will need to decide how to administer your questionnaire. There are different ways of doing this:

Self-completion questionnaire

- This is where the respondent fills in the questionnaire by themselves. This tends to be in one of these three ways:
    - pen and paper
    - email
    - on the web

Interview

This is where an interviewer asks the respondent the questions. This tends to be either:

- in person (face-to-face)
- by telephone

Things to consider when deciding how to administer questionnaires

There are benefits and challenges to each of these ways of administering questionnaires – you should think through which is the most appropriate given your own objectives. For example:

- literacy issues may make the pen and paper format difficult for some potential respondents;
- problems with access to the internet may make email or web-based questionnaires tricky;
- sensitivity of some questions and 'response bias' issues may make face-to-face interviews problematic (see the next section, on page 8, for details of 'response bias').

It is important to note that there is no 'right' way to go about administering a questionnaire – you will need to make an informed judgement about the best way to do it, taking into consideration factors such as the resources you have at your disposal, your data needs, and the respondents you will be surveying.

Things to consider when designing your questionnaire

By the end of this section you should:

- Understand some of the main issues to take into account when planning a questionnaire

Content

You will be conducting a survey because you want to know what the people you are interested in think, feel, believe, and/or do about an issue that is important to you.

Where possible, it is good practice to use existing questions that have been developed carefully and have been tested. Writing questions is a skilled job. It is too easy to ask questions where what you mean and what the respondents think you mean are different!

Most questionnaires will focus on a particular topic. There is such a large range of potential topics that this guide does not provide sample questions (except for background information, below). In Section 5, we provide a list of sources for validated questions on ell-being and on physical activity.

Whatever the topic, it is important to remember that the shorter the survey, the more likely people are to answer your questions. When designing a questionnaire, you always need to balance the amount of detail you would like to collect against how many questions you can ask before potential respondents feel the survey is taking too much of their time.

Background information

It is often useful to collect some basic information about the people answering the questionnaire in addition to the main questions on the special topic. This can allow you to explore, for example, how what people do or feel or problems they have vary among your target group according to gender, age, ethnicity, working status, postcode etc.

The form on the next page is intended as an example only. You will need to think about what you want to know and how you will analyse your data, and ask the relevant additional questions. We have also included some questions on disability that you may find useful.

Age (please write) ……

Gender *(please circle)* Female Male Other

What do you do at the moment? *(Please circle)*

Full time Education / Part Time Education (less than 16 hours) / Apprenticeship / Working full time / Working Part time (less than 16 hours) / Internship / Stay at Home Parent / Volunteering / Other (please specify)

Postcode (please write) ……

Ethnicity (please circle)

A. White
• English/Welsh/Scottish/Northern Irish/British
• Irish
• Gypsy or Irish Traveller
• Any other White background, write in

B. Mixed / multiple ethnic groups
• White and Black Caribbean
• White and Black African
• White and Asian
• Any other Mixed / multiple ethnic background, write in

C. Asian / Asian British
• Indian
• Pakistani
• Bangladeshi
• Chinese
• Any other Asian background, write in

D. Black / African / Caribbean / Black British
• African
• Caribbean
• Any other Black / African / Caribbean background, write in

E. Other ethnic group
• Arab
• Any other ethnic group, write in_____

The next questions ask about difficulties you may have doing certain activities because of a HEALTH PROBLEM.[1]

1. Do you have difficulty seeing, even if wearing glasses? *(Please circle)*
a. No - no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

2. Do you have difficulty hearing, even if using a hearing aid? *(Please circle)*
a. No- no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

3. Do you have difficulty walking or climbing steps? *(Please circle)*
a. No- no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

4. Do you have difficulty remembering or concentrating? *(Please circle)*
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

5. Do you have difficulty (with self-care such as) washing all over or dressing? *(Please circle)*
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

6. Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood? *(Please circle)*
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all

[1] These are the internationally agreed core set of questions on disability, called 'The Washington Six' which you may wish to include.

Question order

While it is common for answers to survey questions to be affected by earlier questions in the same survey, these effects have been found to be particularly strong for some measures such as subjective well-being. If you are asking well-being questions as part of a larger questionnaire, they should be asked as early as possible, although ideally after a few basic introductory questions to allow respondents to feel relaxed about answering the survey.

Frequency of measurement

You will need to think about how often to measure your sample. You may want to do a survey once, to find out how common certain issues are in your area. You may decide to do two surveys, for a simple 'before and after' measurement, if you want to find out whether what people think, feel or do has changed. More frequent measurement will allow more detailed tracking of these issues, for example, picking up shorter-term variation in response to particular events and seasons. This may not be necessary for overall monitoring. It is important to repeat the same contact methodology and question ordering to be able to compare survey data collected at different times.

Informed consent

You will need to think about obtaining informed consent from your survey participants. First, this means that you should *inform* potential participants fully about the purpose of the exercise and what you are going to do with the data that is collected about them. Secondly, it means you should seek *consent* to collect data from them, and only collect such data if they have consented to it. You may wish people to sign a short consent form as a record that consent has been given – examples of such forms can readily be found on the internet. Verbal consent to take part is generally sufficient for answering questionnaires. If you make it clear that people can choose whether or not they take part in the survey and that they do not have to answer all the questions if they prefer not to, you can assume that people who answer the questions are consenting to take part.

Anonymity and confidentiality

In many cases of collecting data for social research, responses to questions are given anonymously – without any personal information. If you are collecting answers through interviews, the interviewer may know at least the name of the person giving the answers. However, there is usually no need to put down someone's name or address on paper. As well as informing people why you are surveying them, you can reassure people that you will not use their data for any other purposes, and that the data will be kept confidential – not accessible to anyone else. If respondents feel that their responses will be anonymous and confidential, they are more likely to answer questions honestly. Personal data (which includes identifying details of the respondents like names and addresses) needs to be collected and stored in accordance with the Data Protection Act 1998.

It is not usually necessary to collect information that can identify individual respondents to your survey: you don't need names, but using ID numbers to identify individuals (especially if doing before and after measurement) can be useful. In some settings you will be able to assure respondents that their answers will be confidential. At the very least, you should confirm that the information people provide will only be used for the purposes that they have agreed to (see informed consent above).

Sample (the group of people answering a questionnaire)

How many people will you involve, what groups of people will you approach? Where will you find them?

It may not be feasible to get data from everyone you would like. The most important thing to consider in your sample is that you will want the responses that you receive to represent as closely as possible the group of people (the 'population') you are seeking to understand.

It is always good practice to ask more people than you strictly need, because not everyone you ask is likely to complete a questionnaire. For example, if you were measuring the self-reported health of new mothers through parenting classes, and half of the participants had English as a second language (ESL), you would ideally hope that the sample of questionnaires you received back included about half from mothers with ESL. It may be that you need to ask more mothers with ESL than mothers with English as a first language, in order to receive equal responses from both, as it is possible that if you are doing a questionnaire in English, the rate of response may be lower among those with ESL.

Additional information

What other information might you need to know alongside the main data that is the focus of your survey? Some examples are:

- Demographic information like age, gender, ethnicity, marital status, residential postcode of respondents (see part iii)
- To what extent have respondents been affected by something changing locally?

Collecting such pieces of information can allow for more detail when you analyse data (see Part III below), and help put your results in context. For example, if the sample of responses you receive is not a good representation of the population (group of people) you are trying to understand, then you can at least know which people within a population have been adequately covered by your sample.

Physical activity

Many surveys would like to ask questions on physical activity. Several different physical activity questionnaires have been developed and validated.[2] Some information about three of these questionnaires are given in section 5.

Practical issues

Language issues

Are there any language barriers in terms of literacy or non-English speakers? Is there a need to re-phrase questions if using them with children, or use more creative techniques to try and engage people?

[2] Bull F, Maslin T, Armstrong T. *Journal of Physical Activity and Health* 2009; 6: 790-804.

Timing of data collection

During the day or evening? Weekday or weekend? Will there be local events/activities which may affect people's responses (positively or negatively).

Who will gather the information?

A community group leader or a project officer? Local residents who are trained/supported? An organisation commissioned to do the work?

Cost

Are there costs involved in the measurement process (e.g. to pay for external research support/community researchers)? How will these costs be covered?

Sensitive topics

You may wish to think about whether any of the issues you are measuring are likely to be sensitive for people. This may particularly be the case if, for example, you are working with a group of people who have experienced mental illness. This may affect how you administer the questionnaire, for example you may decide to ask people to complete it themselves. You should ensure that you can signpost people towards appropriate support in the event that they disclose anything particularly sensitive to you.

Response bias

Sometimes people respond to questions in terms of how they think they *should* respond rather than how they *actually* feel. Technically, this is known as "social desirability bias". You may want to consider whether this is likely to be a significant issue in your measurement work.

If you are considering other methods of gathering data such as group discussions, you may wish to consider whether group settings are more likely to encourage people to give responses they think they *should* give, or that are socially acceptable.

Analysis

You will need to think about how you are going to analyse your data. Have you identified someone with experience of handling quantitative data? What information do you want to know? Who will do the analysis, and do they understand statistics? What analysis software is available? In the following section we explore in more detail some of the issues around analysis and interpretation.

In general, you will not need a full analysis of all the data you can collect in the survey. You will need 'indicative' data, that is, enough information to take to the local authority, or other organisation, to show that something is a problem, what proportion of the community is affected or concerned, or who is affected.

2. ANALYSING AND INTERPRETING RESULTS

By the end of this section you should:

- Be familiar with issues around reliability
- Better understand how to interpret the results you gather
- Be comfortable judging whether your analysis is "fit for purpose" – good enough to provide meaningful insight about the programme or activity you want to understand.

Analysis

Analysis is the process of turning lots of individual responses into an aggregate picture of the data. You might start with a pile of completed paper questionnaires, administered before and after an intervention, and process them to produce a summary of the responses. For example, on average, people's well-being in your study may have gone from 6.8 to 7.5 on a ten point scale. Or it may be that the proportion of people who have difficulties walking around their local area because of traffic has changed from 42% to 19%. The main analysis task is to find average scores across the sample of individuals. You could have a look online to learn more about data analysis.

To analyse a large amount of data, it will be easiest to manage this electronically, using a computer and software. There are free online survey tools which will be sufficient for data entry and basic analysis of your questions which we recommend – such as Survey Monkey (www.surveymonkey.com). Spreadsheet software such as Microsoft Excel is useful for holding data. There are free spreadsheet programmes which can be downloaded from the internet as part of packages such as Open Office (www.openoffice.org/download/) and Google Docs (https://docs.google.com/).

If you are reading this guide because you plan to use UCL's Health and Neighbourhood Mobility survey questionnaire, you can use the Microsoft Excel tool they have prepared for data entry and simple analysis. You can download the Excel tool from www.ucl.ac.uk/street-mobility/toolkit.

Reliability of data for a sample

Survey based data is not very useful if collected for single individuals or very small groups. Therefore, we recommend reaching as **large a number of participants as possible**, and if your sample numbers are small, we recommend **collecting data at multiple points in time**, with consistent approaches to measurement each time.

Let's consider an analogy: researchers are trying to find out if free toothbrushes made a difference to the dental health of 200 children at a primary school over the course of one year. This is measured by dental check-ups every three months throughout the year.

The results of dental checks for one child would not tell you meaningfully whether this is an effective intervention. There are likely to be many other factors which affect this child's dental health. In fact we wouldn't expect the dental health of all children to improve. Some will have eaten more chocolate – others might have lost their toothbrush on the way home from school.

However, overall, across 200 children, we could expect this intervention to have a positive impact. We might expect that although there will be a background of many different factors for many different children, the average level of dental health will improve because of the toothbrushes.

Other outcomes are similar. There is unlikely to be any programme, activity or intervention which can improve the self-rated health, for example, of 100% of participants. If the self-rated health of an individual has improved, or got worse, it may very well be that there were other factors which were an influence. This is why it is important to reach as large a number of participants as possible, as the greater the numbers, the less chance that average scores are the result of specific, individual factors.

Reliability of data for a population

In this context, we are using the word "population" to refer to the people who you are trying to understand better by collecting data. This may be everyone who visits a particular place, or everyone who lives in a local community, but the key point is that it is a broader group than the sample of people who answer the questions: it is the group which the sample aims to represent.

You will want to know if the data that you have received back from your sample and analysed is reliable enough to make a meaningful. There are two basic processes you can go through to build confidence in the reliability of your data.

Firstly, it may be that you have surprising results, in aggregate. After an intervention, the change may have been smaller or larger than you expected. It may be that this is because the sample of people who responded does not represent the population well. It may be possible to "weight" the sample, which is a process of undertaking a mathematical calculation which balances the sample of responses you have to reflect the population you want to understand. For example, if you want to understand the dental health of the children at the primary school, and you know the school has 100 boys and 100 girls, you would want your sample to have 50% boys and 50% girls. If in reality you achieved 20 responses from girls and 60 responses from boys, you could count each of the responses from each of the girls three times (give each girl respondent a weighting of 3), to make the sample better reflect the known gender split among the whole school.

Secondly, it may become obvious through your analysis that underneath the aggregate changes shown through your overall analysis, the data actually shows different things for different types of people within the sample. It should be possible for you to see how changes may be different for different age ranges or gender groups, for example; that is, to look at how the scores vary between different types of people. This might be one of the most interesting results, although to know this you will need to have collected demographic information alongside asking questions on the main issue of interest. Even if you have adjusted your sample to reflect your population characteristics (weighting, described above), you may find that scores are higher for boys than for girls, or higher for older people than for younger people, for example. You can then go on, in your interpretation, to explore *why* this might be the case.

Finally, it is worth remembering that data which aims to capture changes in levels over time are just one indication of the true, messy reality of change in people's lives. Don't worry too much about the exact scores and numbers. What is important to be sure of is that you understand the scores in context (are they generally high or low), the direction of change (getting bigger, smaller, better or worse over time), and the size of any change (a big change or a small change over time).

Interpretation

If you are confident that your data is reliable and you are aware of the ways in which it might not be reliable, interpretation of the data is the next step. Interpreting the results of your data analysis means developing ideas about what you think the data *mean*: what do the results tell us and why this might be the case?

We have come up with a list of **three simple questions** which can help start a useful conversation about interpretation. It is best if this conversation is with colleagues and others who work with the people you are surveying. People with experience of research in a range of different fields could also be helpful.

Interpreting your data: what does it mean?

- **Are the results surprising in any way?** Do they show you what you expected to see?
    - If there were surprises, or differences from your expectations, why were you surprised? Why did you expect results to be different?
    - If there weren't any surprises, what did you know in advance that allowed you to be accurate in predicting what the analysis would show?
- **Can you see patterns within the overall results?**
    - Did some questions produce answers which were not in line with the others? Why?
    - Did some types or groups of people answer questions very differently than other types or groups? Why?
- *(If you have done more than one survey)* **How did results change over time?**
    - Why do you think this is the case?
    - Did they change for some people and not others?
    - Did the results for certain questions change over time and not for others?

It is important to remember that findings can vary by chance. This is more likely to be the explanation when the number of participants in a survey is small. Using statistical tests when analysing the data can help you decide how likely it is that a difference is only by chance.

Making meaningful comparisons

One useful way to understand more about what your results mean is to compare the results against regional and national averages. This is one reason for using questions in your survey that are also used in a regional or national survey.

Conclusion: results that are 'fit-for-purpose'

Analysing and interpreting data: the toothbrushes example

In the case of the toothbrushes, data analysis could tell us that the intervention was more effective among girls than boys in improving dental health. If the difference in dental health results was 1% between boys and girls, this may not be enough of a difference to draw strong conclusions, and may suggest a need for further investigation. A 10% difference would be a better indication of a pattern that meant something.

A rule of thumb is that a bigger sample size means that we can be more confident that the difference in scores between two groups of respondents is *statistically significant*.[3] If we had only received responses from 10 boys, and 25 girls, the sample size is too small to rely on to understand whether gender was a factor in the effectiveness of the intervention. Interpreting a 10% difference in dental health between boys and girls, and assuming each gender had an adequate sample response; we might then try and identify factors which could help to explain the difference.

Once results are collected, organisations are often keen to understand their results in context. Are the results good or bad? What can they be compared against? Evaluating the effectiveness of the dental intervention, we could seek to compare our results about dental health improvement in a number of ways. We could investigate dental health indicators for a similar population (e.g. primary school aged children), or look at another evaluation that had considered a similar or contrasting type of dental health intervention.

The key question you need to make a judgement on is this: are the analysed results 'fit for purpose'? Are they *useful enough* to use in improving a service, or evidencing impact? Does the set of findings feel sensible against other information you have about what is happening "on the ground"? If this is a second survey, for example after an intervention, does the direction of change over time (up or down) and the magnitude of change (big or small) seem sensible against what else you know? If the answer to these questions is yes, then the exercise of collecting data has been worthwhile: the subjects of the intervention are validating the judgements of the organisers, staff and evaluators.

[3] The statistical significance of a result is the probability that the observed relationship (e.g., between variables) or a difference (e.g., between means) in a sample occurred by pure chance ("luck of the draw"), rather than because there is a real difference or relationship in the population. Findings are "statistically significant" when we have calculated that the probability of getting a different result, if we repeated the data collection under the same conditions again, but with different respondents making up the sample, is very low (typically, a 5% chance is used as a threshold): see http://www.statsoft.com/textbook/elementary-statistics-concepts/#What is "statistical significance" (p-level)

3. USING THE RESULTS OF ANALYSIS

By the end of this section you should:

- Understand some of the things to consider when deciding how to use results from measurement and analysis
- Understand some of the things to consider when deciding how to disseminate results

Making use of the findings

Conducting a survey is of little benefit unless you act on the results. If you do this, measurement can help to improve people's lives, in the long-term. For example, they can point to where neighbourhood layout can be made more effective in enhancing people's well-being.

How you use your findings will depend on what you explored, and on the results obtained. However, it might be possible to think about using them in order to:

- **Bring about change**.
    - By informing local agencies about the issues facing your community or group, you may be able to encourage service providers to think about how their services affect people, and to think about adjusting them so as to maximise health and well-being outcomes.
    - Your survey may provide information that you can take to the local council, as evidence of a local problem that needs to be tackled. For example, you may find that a high proportion of older people don't go out because there aren't enough crossings on a major road, or the time allowed to cross isn't long enough for them to feel safe. Instead of making a general statement, your survey may give you specific evidence you can take to the local council's transport department.
- **Demonstrate outcomes and impact**. By showing that people's health or well-being has improved over time, you may be able to better demonstrate the impact of your intervention.
- **Tailor your intervention**. By using your data as a springboard for further exploration with participants, you may be able to improve their neighbourhood so as to improve health, well-being and other outcomes.
- **Help with applying for funds**. By demonstrating evidence on the needs or issues you are trying to address, you may be able to make a funding application more convincing.

Disseminating the findings

Conducting a survey is of greater benefit if you share and disseminate the results. In this way, measurement can help to better inform local residents, organisations, groups and service providers. It is useful to begin by considering who you would like to share your findings with. Your list may include:

- Local residents
- Service users/project participants
- Community and voluntary groups
- Project officers
- Local statutory organisations (the local council, NHS)
- Regional or national organisations
- Funding bodies

There are many ways in which you can share and disseminate the results. Select whatever methods are best suited to your needs and resources.

Some ideas you might consider include:

- Showing the findings in a newsletter
- Distributing a short report to local agencies / project participants / local residents
- Contacting the local media (local newspapers, local radio or television)
- Presenting the findings at an event or meeting
- Reporting to funders
- Using in application to funders

4. CHECKLIST

Congratulations! You have nearly reached the end of our handbook for conducting a survey. By now we hope you are:

- Familiar with **measurement** issues
- Familiar with some useful steps to meaningfully **analyse** and **interpret** your results
- Familiar with some of the things to think about when deciding **how to use results**

5. SOURCES OF EXISTING, VALIDATED QUESTIONS

Measuring well-being

The New Economics Foundation's National Accounts of Well-being – *Measuring Well-being*
www.nationalaccountsofwellbeing.org/learn/measuring/

Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)
www2.warwick.ac.uk/fac/med/research/platform/wemwbs/

Self-reported health (page 27), health behaviours (e.g. smoking) (page 44), social care (page 49)
Health Survey for England
http://doc.ukdataservice.ac.uk/doc/7919/mrdoc/pdf/7919_hse2014_dataset_documents.pdf

The effects of busy roads on local people
Health and neighbourhood mobility survey
www.ucl.ac.uk/street-mobility/toolkit

Physical activity

The **International Physical Activity Questionnaires (IPAQ)**[4] provides a set of well-developed instruments that can be used internationally to obtain comparable estimates of physical activity (Hagstromer et al 2006). It was designed specifically for adults (18-65 years) and consists of four domains: (1) transportation; (2) occupational; (3) household and gardening tasks; and (4) leisure-time activities. There are two versions of the questionnaire. The short version (nine items) is suitable for use in national and regional surveillance systems and the long version (31 items) provide more detailed information often required in research work or for evaluation purposes. The long- and short-forms of the IPAQ questionnaire are available here: https://sites.google.com/site/theipaq/.

The **Global Physical Activity Questionnaire (GPAQ)**[5] covers several components of physical activity and consists of three domains: occupational; transport-related; and leisure activities (Armstrong and Bull 2006; Bull, Maslin, and Armstrong 2009). It comprises 19 questions. Within the occupational and leisure-activities domains, questions assess the frequency and duration of two different intensity categories (vigorous- or moderate-intensity). In the transport domain, the frequency and duration of all walking and cycling for transport is captured but no attempt is made to differentiate between these activities. One additional question asks about time spent in sedentary activities. The GPAQ questionnaire is available here: www.who.int/chp/steps/resources/GPAQ_Analysis_Guide.pdf.

The **Neighborhood Physical Activity Questionnaire (NPAQ)**[6] measures walking, including that undertaken within the neighbourhood, and overall physical activity (Giles-Corti et al, 2006). It is based on the short form of the IPAQ and the Active Australia survey. It can be downloaded here: www.see.uwa.edu.au/research/cbeh/projects/?a=382545

Original document on *Measuring well-being* written by Juliet Michaelson, Sorcha Mahony and Jonathan Schifferes and published by the New Economics Foundation.[7]

Document revised to cover all surveys by: Jennifer Mindell and Jemima Stockton

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[4] Hagstromer M, Oja P, Sjostrom M. The International Physical Activity Questionnaire (IPAQ): a study of concurrent and construct validity. *Public Health Nutrition*. 2006; 9(6): 755-762.

[5] Armstrong T, Bull F. Development of the World Health Organization Global Physical Activity Questionnaire (GPAQ). *Journal of Public Health* 2006; 14: 66-70.

[6] Giles-Corti B, Timperio A, Cutt H, *et al*. Development of a reliable measure of walking within and outside the local neighborhood: RESIDE's Neighborhood Physical Activity Questionnaire. *Preventive Medicine*. 2006; 42(6): 455–9.

[7] Michaelson J, Mahoney S. Measuring well-being. *A short handbook for voluntary organisations and community groups*. London: New Economics Foundation, 2012.

Available at: www.uknswp.org/wp-content/uploads/Measuring_well-being_handbook_FINAL.pdf