CAN AMELIA BE USED FOR CONSULTATION?

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Abstract: Transport planners are increasingly concerned with improving the accessibility of services and facilities for disadvantaged groups such as those without access to a car and those with disabilities. AMELIA is a software tool that will enable planners to test that their transport and other policies do increase social inclusion. The tool was design to be easy to use, thus it may also serve as a consultation tool with people who are socially excluded. Research was undertaken to explore whether this was the case and also whether the assumptions embedded in AMELIA reflect the views and behaviour of disadvantaged groups. To do this, a series of consultations were set up with three different groups of people who are vulnerable to social exclusion: a group containing older people and people with disabilities; a group of children aged 12-15 and a group of young adults aged 16-19. This paper describes the results of this work and discusses the extent to which tools such as AMELIA can truly represent the views and behaviour of vulnerable groups and the role they can play in consultation processes.

Keywords: transport planning, social inclusion, accessibility, consultation techniques

1. INTRODUCTION

Accessibility analysis has an increasing role in policy making and evaluation, particularly for transport policies targeted tackling towards social exclusion. In the UK, for example, local transport authorities are required to undertake accessibility planning and to develop accessibility strategies as part of the Local Transport Plan (LTP) process. Accessibility measures are useful in helping to identify groups of

people and locations with poor levels of access to services and facilities, for policy formulation and for monitoring progress and are thus widely used within the accessibility planning process. As part of accessibility planning process requires local transport authorities to consult with local communities, it is important that any accessibility measures used by Local Authorities as an aid to accessibility planning and to inform strategy development should also be readily understood by those accessibility planning aims to help, such as people with disabilities, on low incomes, and/or without access to a car. They should also reflect to some extent their accessibility concerns.

This paper describes work to develop a GIS-based software tool (AMELIA) that will enable planners to test that their transport and other policies do increase social inclusion. The tool was developed as part of the AUNT-SUE (Accessibility and User Needs in Transport for Sustainable Urban Environments) project funded by the UK Engineering and Physical Sciences Research Council (EPSRC). AMELIA was design to be easy to use and simple to be understood, thus it may also serve as a consultation tool with people who are socially excluded. As part of the AUNT-SUE project we have explored whether this was the case and also whether the assumptions embedded in AMELIA reflect the views and behaviour of these groups. This paper presents findings from a series of consultations with three different groups of people who are vulnerable to social exclusion: a group containing older people and people with disabilities based in St Albans, Hertfordshire; a group of children aged 12-15 living in East London and a group of young adults aged 16-19 from South London. In each consultation a variety of techniques were used to establish barriers to movement and priorities for action by the local authority. AMELIA was then used to establish the effects on accessibility of various policy actions proposed by each group. After describing the results of this work, the paper discusses the extent to which tools such as AMELIA can truly represent the views and behaviour of vulnerable groups and the role they can play in consultation processes.

2. AMELIA

As part of the AUNT-SUE project a software tool (AMELIA – A Methodology to Enhance Life by Increasing Accessibility) is being developed in the Centre for Transport Studies at University College London. The purpose of AMELIA is to help local transport planners determine whether their policies help increase social inclusion by seeing how many more people can reach various types of opportunity such as those identified in the benchmarks for older people such as food stores, medical centres, social and leisure facilities, and post offices [Titheridge and Solomon, 2007]. The benchmark can be selected on the basis of judgement about a "reasonable" distance or level of expenditure of time or money to reach a facility or service. Accessibility by a range of different modes can be assessed including walking, by public transport and by car. AMELIA can be focused on particular groups in society, with different barriers and different assumptions as to what is reasonable, set to reflect the accessibility needs of the groups being considered. For example, within AMELIA we have attempted to incorporate some of the physical barriers to mobility by combining data on the capabilities of individuals (based on data from the Survey of Disabled Adults) [OPCS, 1989] with standards taken from sources such as the Inclusive Mobility Guidelines [DfT, 2005] which gives guidance, for example, on footway widths and gradients of dropped kerbs [Titheridge et al, 2009]. AMELIA is described in more detail in [Mackett et al, 2010].

As with all accessibility models and measures, AMELIA embodies a number of

assumptions about accessibility by different individuals and groups in society. If the tool is going to be used for policy formulation and monitoring then the measures output by the tool should reflect, as far as practicable, how those the policies aim to help experience accessibility. Furthermore for the tool to be useful for consultation, its outputs must be meaningful to the general public. To be meaningful the measures must reflect perceptions of accessibility, be sensitive to the types actions that the public would like to see implemented, and be easy to understand and interpret.

Thus, having developed the tool we needed to test whether:

- Our measures of access are the correct ones,
- We incorporated the correct barriers,
- Our binary (or absolute) approach to handling barriers is a reasonable one.

3. METHODS

Consultations were run with three groups. These groups were selected because they were readily identifiable groups commonly mentioned in the literature as being vulnerable to social exclusion and likely to experience low levels of accessibility. Older people and people with disabilities were grouped together as there is considerable overlap between the two groups in terms of the barriers they are likely to experience to travel. Discussions were held with two groups of young people: young people aged 12 to 15 and young people aged 16 to 19. The former group was of interest because they are establishing their independence from the parents; the latter because they have their independence and may face barriers to access related to the cost of travel, and the perceptions of others in society about them.

In each case the consultation was run in a number of stages. For the first stage the intention was to see what barriers to access each group saw and how these might be overcome. The second stage of the process was to understand the types of places that each group considered important to be able to access. The final stage was to use AMELIA to model the improvement in accessibility resulting from policy actions which would address some of the barriers identified in the earlier stages of the process. The exact details of the consultation process are described below. The process was slightly different for each group due to the constraints time availability, the meeting venue, and the size and abilities of the group. Details of each of the groups and a description of the consultation process used are given below.

3.1 Consultation with older people and people with disabilities

A series of four focus group meetings were held. The focus group consisted of five older people and one younger adult, all with various disabilities. One carer and an observer from the Disability Information Service for Hertfordshire (DISH) also participated in the meetings. The disabilities of members of the group included visual impairment, being in a wheelchair, communication difficulties and hearing impairment. The participants were recruited through the St Albans District Access Group. It is a voluntary group of individuals interested in access matters. Many of its members are also representatives of other disability organisations. The focus group meetings were held over the period June 2009 to January 2010. All the meetings took place at the Civic Centre in the centre of St Albans.

The meetings consisted of a mixture of presentations, discussions and synthesis of views. These included:

- General discussion about accessibility problems in St Albans and elsewhere;
- Discussion about barriers to movement in specific situations such as crossing the road and making a rail journey;
- Identification of views about priorities for actions that the local authority could take to improve access;
- Discussion about the role of information;
- Identification of the key elements of a map and a website that would show how to access various parts of St Albans for those with different disabilities;
- Three imaginary journeys were taken by the group to St Albans Abbey, St Albans City railway station and St Albans City Hospital from the Civic Centre, using photographs taken by the researchers linked to a projected image of a map of the centre of St Albans to simulate discussion about the obstacles along the routes (Figure 1); the views were collected by using some hardware that enabled the researchers to write descriptions of the barriers to access onto the projected map (Figure 2);
- The information about the barriers to movement collected from these exercises were input into AMELIA to see how much access would be increased if the barriers were removed.   The results were discussed by the group.

The results of all the discussions and exercises were written up into a report which was presented to back to the group.   The report concluded with a series of recommendations that came out of the discussions. The group were happy that the report represented their views and for it to be presented to others as the outcome of the focus group discussions.
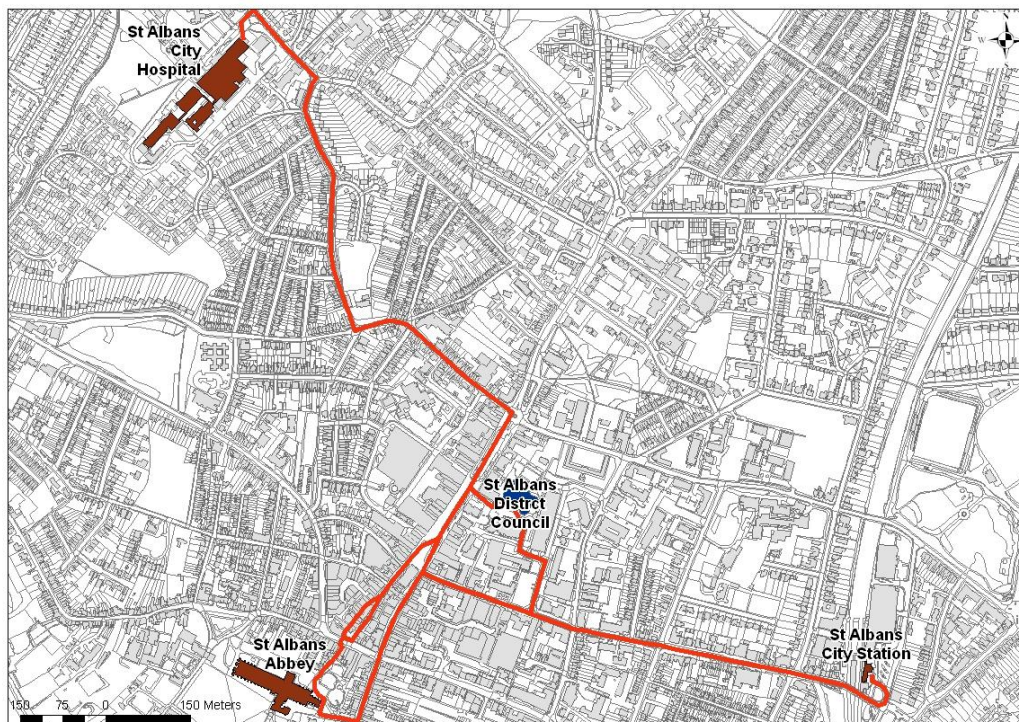

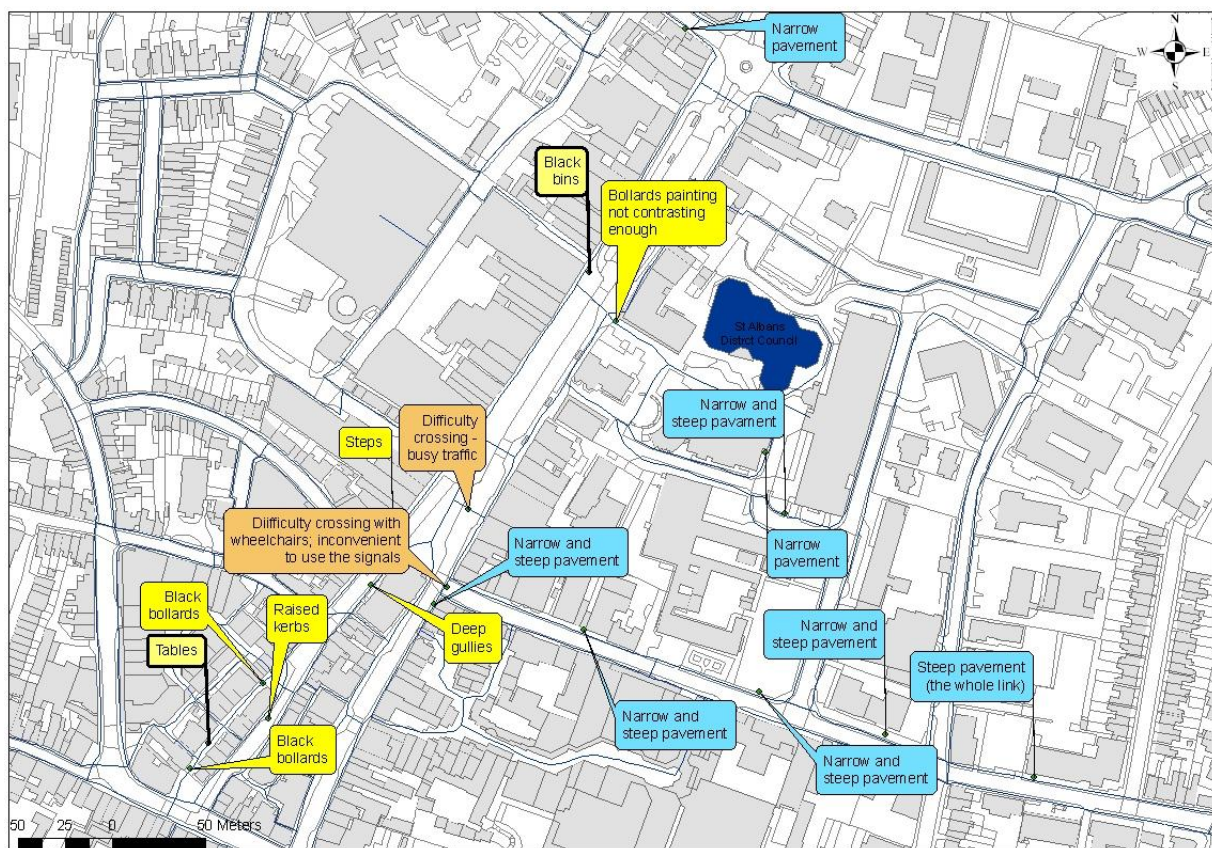Figure 1: The three imaginary routes used as part of the consultation process

Figure 2: An example of the data on barriers collected via the exercise involving imaginary routes.

3.2 Consultations with young people aged 12 to 15

The discussions with nine young people in Years 8, 9 and 10 (aged 12 to 15) at Langdon school in East London were facilitated through the National Children's Bureau (NCB) and the Senior Learning Mentor at the school, who welcomed the opportunity for the research team to engage with some young people who were perceived as having difficulties engaging with the learning environment. The objective of the exercise was to establish the types of places the young people went to, the places they would like to go to but cannot get to, and why they could not, and then what could be done to overcome the barriers.

After introductions, the young people were given a presentation about AMELIA and a demonstration of how it can be used. At the first meeting a discussion involving the whole group was held in order to establish the accessibility issues that they saw as important, and the barriers that they perceived. At the second meeting small group discussions were held (3 students to each group plus a facilitator). Each group had maps of the area, coloured dots to be stuck on the maps, plus two forms: one about the places they go to, what they do there, how they travel there, how often they go there and who they go with. They also indicated whether they could travel there without an adult. The other form was to collect similar information about places they would like to go to.

Following the second meeting data collected was input into AMELIA and AMELIA was used to test the improvements to accessibility of establishing new facilities in the area at locations proposed by the young people.

3.3 Consultations with young people aged 16 to 18

The meeting at Croydon College was facilitated by the NCB and the Tutor Manager

at the College. One meeting was held on 19 March 2010 with five young people taking BTECs in ICT aged about 16-18. All were from ethnic minorities.

After a presentation about AMELIA, with a demonstration relevant to their interests, the participants were invited to present information about their use of the local environment. The method used was to project a map of the area and then for the students to use eBeam technology to 'write' on the screen, with the information recorded in the laptop computer. In effect it was an interactive whiteboard. (This was the only group of the three consulted to actively use the technology themselves. With the other two groups the research team input the information coming from the discussion).

4. RESULTS

4.1 Older people and people with disabilities

The group identified a number of barriers to movement along the street network. These included:

- Some pavements too narrow for wheelchairs

- Steep cambers on some pavements

- Temporary obstructions, especially A-signs, tables and chairs, and cars parked on pavements

- Poor street lighting

- Steep drop kerbs at road crossings

- Lack of space for wheelchairs on the pavement at crossing points out of the way of people moving along the pavement, and at pedestrian refuges in the centre of the road

- The time given for pedestrians to cross at signalised crossings was insufficient

- Crossing points, particularly in more suburban areas, were often obstructed by parked cars.

Issues relating to the use of public transport were unreliability of services, lack of staff to help particularly at evenings and weekends, lack of information during service disruptions. Access to facilities was hampered by a lack of suitable parking spaces – in some cases there was just not enough provision, in others cases the disabled parking spaces provided were considered too short or narrow for wheelchair users to safely get in and out of the vehicle. City centre problems included a shortage of public conveniences, stepped entry to buildings, a lack of seats in shops and anti-social behaviour by young people.

Following on from this, the information about the barriers collected was input into AMELIA to see how much access would be increased if the barriers were removed. The policy actions that were examined using AMELIA included:

- The effects of removing obstacles on the street for people in wheelchairs and people with visual impairment;

- Providing more disabled parking spaces in car parks;

- Providing more public conveniences with facilities for people with disabilities;

- Providing level access to buildings; and

- The effects of the Post Office Closure Programme.

The results of the analysis in AMELIA were presented back to the group for discussion. A series of recommendations came out of those discussions which were then written up into a report. In summary, the recommendations were:

- Providing more disabled parking spaces near the city centre would provide significant benefits.

- More disabled public conveniences are required, including adult changing facilities. Of the various options considered, making the existing facilities suitable for use by people with disabilities would probably be most effective.

- Many more shops could be accessible if the single step into them was replaced by a ramp.

- The Post Office Closure Programme has had a significant adverse impact in St Albans and should be reviewed.

The group have reported that they were happy that the report produced represented their views and for it to be presented to others as the outcomes of the focus group discussions. Indeed, since finishing this section of the work, the group invited the research team to present the findings to council officers, amongst others, showing that AMELIA can successfully be used as part of a consultation process.

4.2 Young people aged 12-15

The main places the group of young people aged 12-15 visited were friend's homes, parks and play areas (mainly boys who wished to play football), the cinema, leisure centres for swimming, and shops and shopping centres, particularly girls. There were various facilities they would like locally, including youth clubs suitable for people of their age, cinemas, skateboard and rollerblading parks, bowling alleys and restaurants suitable for them.

The main barriers to movement that they perceived were:

- Lack of knowledge about finding the way and concern about getting lost

- Parents not letting them out

- Gangs of other young people (at night time)

- Inadequate bus services

- Some walking routes dirty and unpleasant (e.g. rubbish, graffiti, bushes, litter cans)

- Distance to some facilities partly caused by lack of bridges over the A13, which had been removed.

A significant issue for them was that the cinema and shopping centre that they

enjoyed going to involved crossing the A13, a busy arterial road. The quickest way to reach this involved using a footpath they found dirty and unpleasant. Part of the difficulty was caused by the closure of some of the bridges across the A13. The cinema was about to be closed down, hence the desire for a new more local cinema.

AMELIA was used to establish the distance of each of the current activities from their home and school, and the number of young people living within 500m and 1000m of the various new facilities that they proposed. This is the subject of on-going work to establish the potential for improving the access for opportunities for this age group, which does seem to be rather neglected in the planning process (younger children being catered for in terms of the provision of play areas and older teenagers in terms of social facilities).

4.3 Young people aged 16 to 18

The main places they visited were friends' homes, local play areas to play basketball, the cinema and shopping centres.

Barriers to movement that they perceived were

- The attitudes of others:

- Other young people living in other areas, often in the form of gangs

- White people in high income areas

- Older white people on public transport

- Bus drivers towards younger people

- Stop and search by police and security guards

- Shop owners who summon back-up support from others

- The cost and time of travel

- Public transport, especially at peak times

- Car parking

- Bus travel takes a long time to reach central London (bus was used rather than the Underground because it was cheaper).

The main finding from this consultation was that the barriers for members of this group were mainly the attitudes of other people. These cannot be represented in AMELIA which focuses on modifications to the physical environment, and so AMELIA was not used in this case beyond its use to collect data.

5. DISCUSSION

Many accessibility measures, including some of those produced by AMELIA, focus on travel time. Previous work carried out as part of AUNT-SUE on benchmarking suggested that for older people travel time may not be an important element of accessibility for this group [Titheridge and Solomon 2007]. Overly long journey times were not raised as an issue or a barrier to travel by the group of older people

and people with disabilities.   However it was seen as a barrier by the group of young people aged 16-19.   Clearly different types of accessibility measure are needed for different groups of individuals.   AMELIA has this capability.   The accessibility measures used when presenting AMELIA to the groups were threshold-based measures – i.e. the number of people who can access facility type X within Y time (or Z walking distance) given a certain set of mobility constraints.   One member of the St Albans group expressed the opinion that this type of measure was very appealing, very powerful because it clearly showed how many more people could now access a facility as a result of a policy action.   The group agreed that although this type of measure could never truly represent the accessibility of individuals due to data constraints and number of assumptions that are incorporated into the measure, it was still useful because of its potential impact.   Quantifying the impact of a change was seen as important in being able to put a persuasive case for action.

Currently, we are not able to model the cost of travel within AMELIA due to lack of suitable fare data.   However, this was not seen as a major limitation of the tool as most of those in the groups were entitled to some form of free bus travel.   For the participant who was in a wheelchair, the cost of vehicle insurance was an issue, this was not considered to be adequately covered by the allowance he received.   There was also quite a lot of discussion in the group of older people and people with disabilities relating to the rules for qualifying for taxi vouchers.   Taxi vouchers are not available to bus pass holders (although this policy is understood to be under review).   Not all of this group, particularly those with visual impairments, felt able to uses buses unaccompanied, so when travelling alone they prefer to use taxis.   But they would not want to give up their bus voucher as this mode is convenient when travelling with others.   These are not issues that could easily be addressed through AMELIA.

AMELIA, and other similar software that attempt to incorporate individual capabilities into accessibility models [Jones et al 2006; Matthews et al 2003; Reneland 2005], have tended to focus on physical aspects of the built environment such as type and provision of road crossing points, footway widths and slopes, etc.   These tend to be represented rather simply in the models for example dropped kerbs at crossing points exist or do not exist.   If they exist they are classified into too steep or as having an acceptable gradient.   The group of older people and people with disabilities pointed out additional problems of dropped kerbs and crossings at "strange angles" to the road – these were particularly a problem when manoeuvring a wheelchair across the road, and hindered navigation for those with visual impairments.

Another major problem identified by the group was cars parked in front of dropped kerbs or tactile paving.

> "....you often find car drivers parked right by the tactile paving, it happens in Chiswell Green regularly."

This type of temporary barrier is very difficult to incorporate into measures of accessibility due to its transitory nature and the lack of data on the extent to which this phenomenon occurs at any particular crossing point.   Similarly, problems created by cars parking on the footway were a significant issue for wheelchair users and those with visual impairments but are difficult to incorporate into accessibility measures.

> "They park their cars, completely blocking the pavement, all four wheels...I am really frustrated along busy roads in particular... and if I get parked vehicles I

don't go in the road: I fear for my life."

Other types of temporary barrier mentioned by the group of older people and people with disabilties included dustbins left on the street, market stalls, market goods stacked on the pavement, tables and chairs outside cafes, and A-boards outside shops. As these types of temporary barrier, however, tend to be regularly present on certain days and between certain times, they are a little easier to incorporate into accessibility measures if different days of the week and times of day are modelled separately. Indeed many of them have been introduced into AMELIA in the form of pavement narrowing. However, local knowledge and/or regular street surveys are required to identify these features.

Many accessibility measures neglect the entrance to the building, i.e. whether it has step-free access or not. AMELIA takes into consideration the presence or absence of level access to buildings, however, as the St Albans pointed out, accessibility issues do not just disappear at the entrance to the building. The level of seating inside shops and the quality of washroom facilities were raised as issues. Many so called accessible washrooms are poorly designed, in inaccessible locations as the back of the shop, or lack adult changing facilities, for example.

There were a number of barriers discussed by all the groups that are not related to specific locations, or parts of a journey, making them almost impossible to incorporate into a standard accessibility measure. For example, the attitudes of others plays an important part in ensure a journey can be undertaken with "reasonable ease". The public's general attitudes towards people with disabilities and their lack of willingness to give help and support was seen to be a major problem. Similarly, the young people raised issues relating to attitudes of others towards ethnic minorities, towards young people generally and in some instances attitudes of young people towards other young people who are not from "their patch". The young people aged 16-19 talked about no-go areas, areas where they were made to feel uncomfortable travelling into or travelling through because they were not local. Both the group of older people and people with disabilities and the group of young people aged 12-15 mentioned levels of antisocial behavior in certain locations, including drunkenness, effectively making these "no go" areas for many.

The types of activities that the groups wanted to participate in included visiting friends and social activities. Typically these types of activities are not considered in accessibility analysis. Whilst AMELIA is able to measure access to various different types of social facilities, modeling access to friends and family is problematic.

Finally, AMELIA treats potential barriers in absolute terms. The existence of a barrier along part of the network makes that part of the network inaccessible. In reality many of the "barriers" were an annoyance rather than an insurmountable obstacle. For those with visual impairments, examples of annoyances included deep guttering and uneven pavements, bollards in the middle of the footway and clutter on the pavements. Familiarity with a route reduced the impact of these obstacles, as they could then often be easily avoided. The extent to which an obstacle posed a barrier to travel for an individual depended, for example, on whether or not that person was travelling alone or was accompanied, and in the latter case, who their companion(s) were. However, it was considered that treating barriers in absolute terms within AMELIA was reasonable given the complications of an alternative approach.

6. CONCLUSIONS

It is clear from the results of the consultations with older people, people with disabilities and young people that they perceive and experience accessibility (or lack of accessibility) differently from the way in which accessibility is typically measured. There were a large numbers of barriers to travel identified that are difficult to incorporate into accessibility measures such as those modeled by tools like AMELIA, including attitudes of others and the presence of temporary obstacles. Similarly some of the places that these groups want to be able to access, such as the homes of friends and family, are difficult to represent using standard measures of accessibility.

Having said this, whilst the measures produced by AMELIA may not fully represent the experience and perceptions of those consulted, the exercises did provoke a lot of discussion and enabled us to gather a lot of useful data about the barriers that need to be addressed. We were also able to make policy recommendations in several cases using AMELIA and based on the input but from the groups. None of the groups seem to have a difficulty understanding what we were trying to achieve and as mentioned in the discussion above being able to quantify the impact of a change in terms that are easy to understand and have instant impact such as the number of people benefiting from a change of policy, outweighs the problems of the simplicity of the measure. These results indicate that AMELIA could be used as part of a consultation process.

7. ACKNOWLEDGEMENTS

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