KEY ISSUES

Segmentation of the travel market according to people group, gender, age, mobility and economic activity.

Deriving parameters for use in the accessibility planning process.

Manipulating and analysing large scale travel behaviour datasets for the uK and Scotland– NTS and SHS.

Advanced statistical techniques to establish relationships between multiple variables and to derive modelling parameters.

ABOUT DHC

Derek Halden Consultancy staff and associates have leading expertise in transport planning, community development, psychology, transport and accessibility modelling, social inclusion, marketing, environmental assessment, and economic development.

Common to all projects is a commitment to draw from state of the art knowledge to ensure that solutions are soundly based and tailored to the needs of clients.

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SEGMENTING THE MARKET ACCORDING TO TRAVEL BEHAVIOUR

A range of types of accessibility indicator is needed to support accessibility planning. All measures depend on the opportunities available at a location and the deterrent effect of travel to reach these opportunities. To represent the deterrent effect of travel, a range of types of deterrence functions can be used.

Continuous measures can make an important contribution to the accessibility planning process. With these, the accessibility of any location i. is the sum of the components of accessibility from all the alternative locations where the required opportunity can be accessed j., factored by a function representing the separation between i. and j. People are less likely to travel to destinations that take longer to reach, and which involve higher costs, so the form of distribution which best fits this behaviour and is commonly used in transport modelling is a negative exponential function: $e^{-\lambda t}$. The λ factor in this function is often called the spread parameter and determines the sensitivity of travel behaviour to travel time.

DHC undertook two significant projects, for DfT (Using National Travel Survey data) and SPT (using Scottish Household Survey data) to derive spread parameters by trip purpose and user group for use in accessibility planning. In the case of DfT work, these figures now form part of the national guidance issued on the accessibility planning process. The SPT work helped with the development of an accessibility model and have also been published in Scottish Executive research on accessibility modelling techniques.

The projects used the National Travel Survey (NTS) and Scottish Household Survey (SHS) to identify quantifiable conclusions about travel behaviour to establish a range of spread parameters. Very large journey databases were manipulated to derive a dataset of individual journeys, each associated with various socio-demographic variables. Subgroups of these variables were tested to establish statistically significant differences. The variables within the survey results were rebanded to reflect these significant sub-groups and the needs of the