

LONG DISTANCE DAY TRIPPING

A Comment

By M. J. Baxter*

A recent paper by Edwards and Dennis [1] develops a model of long distance day tripping. The trip distribution part of the model is in the form of a production-constrained gravity model, and can be written as

$$\frac{T_{ij}}{T_i} = \frac{A_j \exp(-\delta C_{ij})}{\sum_k A_k \exp(-\delta C_{ik})} \quad (1)$$

The area under investigation, South West England, is sub-divided into ten regions.

T_{ij} is the number of trips from origin i to destination j .

T_i is the total number of trips generated by origin i .

A_j is the attraction factor for region j , and must be estimated.

C_{ij} is the "generalised" cost of travel from i to j . It is based on the travel time from the centroid of origin i to the centroid of destination j , and could be interpreted as the average cost faced by travellers from i to j .

δ is the deterrence function parameter, and must be estimated.

The numerator of (1) is interpreted as the recreation potential of destination j as seen from origin i , and depends only on the attraction factor of area j , the generalised cost C_{ij} , and δ . The type of long distance day trip modelled using (1) was a trip of over twenty-five miles undertaken for sightseeing purposes. It is argued below that such trips possess distinctive features that may render their modelling within the origin-destination framework, provided by (1), inappropriate.

Recreational journeys for sightseeing purposes possess a number of features not possessed by other types of trips, such as shopping trips or journeys to work. In particular there need not be any specific destination for the journey, since its purpose may be simply to tour around; or the journey may have several destinations in different areas (as defined by the model), none of which can be regarded as a main destination. Many recreational journeys are also circuitous; and, even where there is a main destination, the route taken to it need not be the same as the one taken from it, and need not be the shortest route.

These features are amply evidenced by the work of Colenutt [2], [3] on the Forest of Dean area. He recognised three distinctive kinds of trips—"visitors to the main places of interest (mostly choosing direct routes), trips to the larger area of the

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Forest of Dean and the adjoining Wye Valley, and thirdly multi-stop trips which focused on places outside the Wye/Dean area" ([3], p. 5). More than 70 per cent of visitors from large centres did not take the shortest route available, and most journeys were partial or complete circuits, only 26 per cent choosing the same outward as return route ([3], p. 108).

The problems raised by these features are as follows:

- (1) Where a journey has no main destination it should not be analysed in an origin-destination framework. This, however, is wasteful of information, since many journeys may be of this type. If, on the other hand, all journeys are "assigned" a main destination, the decision will often be arbitrary, with unknown consequences for the validity of the model.
- (2) Even where there is a main destination it need not be approached by the shortest route, and several areas may be passed through before the destination is reached. The route taken to reach a destination may constitute much of the attraction of a journey. This cannot be accounted for in (1), where the recreation potential of an area, and consequently the number of trips to it, is treated only as a function of the attraction of that area, ignoring the attraction of areas passed through to reach it.
- (3) Where a destination area, j , can be reached in more than one way from an origin area, i , the distribution of costs among individuals travelling from i to j need not be unimodal. If the distribution of costs has more than one mode the calculation of a generalised cost for getting from i to j , interpreting this as the average cost faced by trippers, is difficult to justify. In a sense this is the same as problem (2), since some day trippers may be prepared to incur greater costs by travelling longer distances to a destination in order to pass through more attractive areas than would be encountered on the cheapest route. A Scottish example would be day trips from Edinburgh to St. Andrews, which could take several different routes. The shortest of these is a cross-country route; a longer route which many people take is along the coast road, which might be considered more attractive.
- (4) For circuitous journeys, whether or not they have a main destination, it is arguable that any measure of cost should be based on the entire journey. Costs are not based on the entire journey if they are generalised and based on the centroids of origin and destination areas.

Although, in the absence of suitably detailed data, there may be little alternative to modelling recreational journeys in an origin-destination framework, the problems listed above suggest that such a framework is inappropriate. Research in progress at the Tourism and Recreation Research Unit at Edinburgh University is attempting to develop an alternative model to (1), in which predicted levels of day tripping are influenced by the attraction factors of all the areas passed through on a tour, rather than just the attraction factor of any destination there may be. Detailed data has also been collected on day tripping in East Central Scotland, with a view to assessing the seriousness of the listed problems. Until this is determined results obtained from the use of origin-destination models, such as that of Edwards and Dennis, with data on recreational day trips should be viewed with some caution.

A Rejoinder

By S. L. Edwards and S. J. Dennis†

The points raised by M. J. Baxter are of relevance, and we would be the first to welcome a "better" model, but we would like to make the following points in reply:

(a) Although it is probable that some recreation day trippers do not set out with a specific destination in mind, it is likely that most will have some idea of the broad area they wish to visit. Our choice of fairly extensive areas in the model was therefore made partly with this in mind. Such a framework might be adequate to accommodate a valid description of broad patterns of movement, although distribution of trips *within* areas is of course not defined without further information.

(b) If it is indeed true that day trippers behave as if they have at least an idea of their destination, it is reasonable to suppose they give high priority to the aim of reaching it at the least possible generalised cost. This would be particularly true for longer distance trips, which were the ones with which we were primarily concerned.

(c) Moreover, it is likely that the majority of truly circuitous trips would be over the shorter distances.

(d) Data collection problems (and cost) must loom large in the type of alternative analysis Mr. Baxter suggests, particularly where the area studied is as large as a Region.

(e) Finally, the ultimate criterion by which the model should be judged is its performance in isolating the major influences and its ability to predict accurately the principal effects of changes in these factors. The evidence is as yet insufficient for us to claim that the model we developed is a "good" one; but such evidence as there is, for example, in Somerset County Council's recent survey of day tripping (and tourism) in the county shows that the model is predicting fairly accurately.

REFERENCES

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- [2] Colenutt, R. J.: *Modelling travel patterns of day visitors to the countryside*. Area, No. 2; 43-7; 1969.
- [3] Colenutt, R. J.: *An investigation into the factors affecting the pattern of trip generation and route choice of day visitors to the countryside*. Unpublished PhD. Thesis, Bristol University, 1970.

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