



The Modelling of Visitor Flow Patterns

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POSTER PAPER – EXTENDED ABSTRACT

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This paper outlines existing and proposes new approaches to modelling visitor flow patterns. The objective of the research outlined in this paper is to ascertain useful method(s) to graphically represent visitor flow patterns. Useful methods are defined as methods that are intuitively descriptive and display data trends explicitly. If tourist flows patterns could be represented graphically then this information could be further explored for specific trends. This data exploration/data-mining concept could raise our awareness of visitor flow patterns. Such awareness would be advantageous during the planning, marketing and promotion of tourism. This paper expands upon previous research that provided a possible mechanism to model visitor flow patterns.

Data will be utilised from the joint outputs of the New Zealand Foundation for Research, Scientific and Technology funded project undertaken by the University of Otago (inter dependency sustainable tourism) and Lincoln University (improved management of flows and effects). Some data will be extracted from the New Zealand Tourism Board's 1997 International Visitors Survey (IVS) questionnaire results. Information includes tourist(s) nationality, age, mode of transportation, destinations visited, point of arrival and point of departure. The IVS data will be analysed to search for graphical methods to illustrate patterns of visitor flows.

Visitor flow patterns are inherently spatial phenomena. The representation of visitor flow patterns, their

spatial relations and behavioural characteristics is complex because of the many facets involved. Geographic information systems (GIS) are at times utilised, as numerous spatial components must be considered in modelling visitor flow patterns (for example, infrastructure such as the position of the attractions, the accommodation available and the transport routes all of which are geographical entities). These spatial components contribute to the identification of spatial variations and regionalisation that help in the modelling of tourist flows. The analysis of visitor flows allows the simulation of growth and impact assessments.

In attempting to represent spatial sequences of temporal patterns as generic or typical flows, previous research focused on extracting classes of flows. That was achieved by classifying flows which were the most similar in terms of route (entry, exit and region characteristics), duration (length of stay and season) and tourist characteristics and behaviour (nationality, age, education, social group and reason for visit). This approach allowed both spatial and aspatial information to be represented. The concept of spatial profiles was proposed with the idea that they could be used to help extract or identify generic or typical flows of visitor patterns. It asks two primary questions, including which chief variables should be used to depict spatial profiles and how is it possible to determine the similarity between profiles? Previous work by the authors focussed on predicting spatial flows by indexing flows on point of entry and





grouping tourists by nationality, age, length of stay and point of exit which is used to make spatial profiles to identify typical flows.

This paper takes a reflective and propositional stance, in order to provide insight for the management of tourist flows and their repercussions. One such proposition is that the perceptions and expectations of tourists should be matched to destinations via virtual reality techniques (for example, across the web) to offer tourists a “route of best return”. “Route of best return” is where satisfaction, expectations and perceptions levels are likely to be delivered.