

The Settlement Hierarchy in Ffestiniog

Upon visiting the various settlements in the Vale of Ffestiniog, it was quite apparent that certain places were of more 'importance' than others, ranging from a few houses and a primary school, to superstores and governmental buildings. Data was collected for each of the 14 settlements visited, and sorted into hierarchical order. Once this was done a pattern emerged:

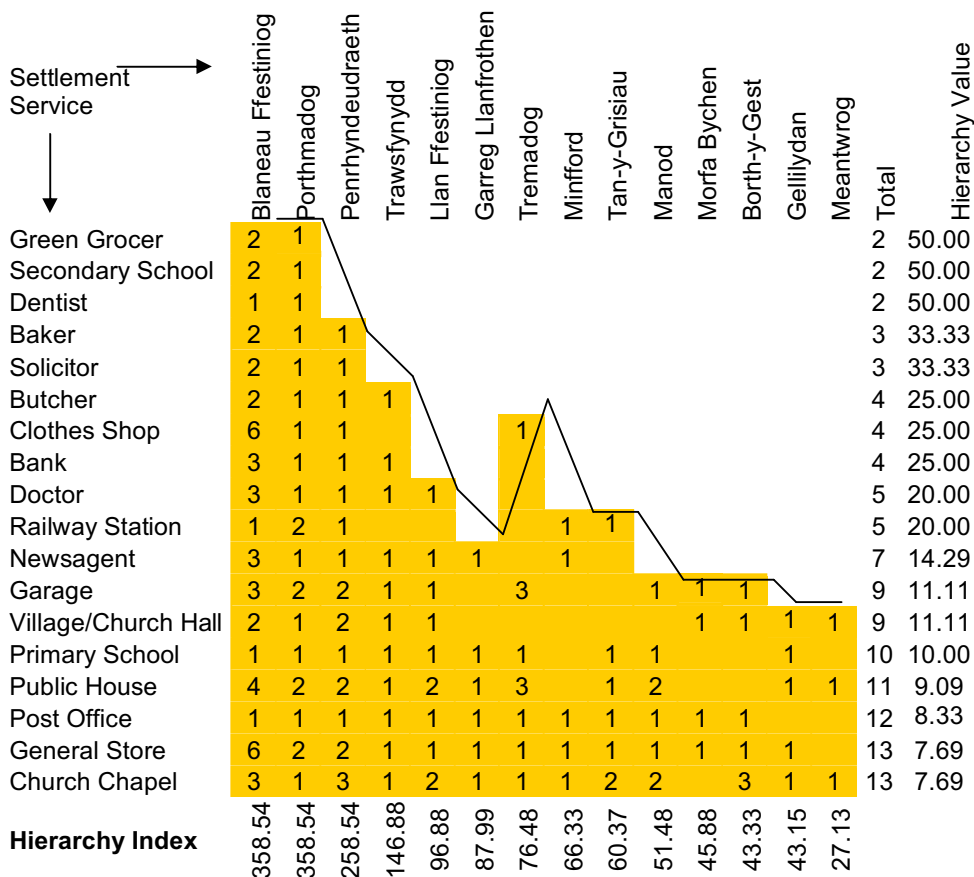


Fig.4

Bar the slight anomaly towards the centre of the table (Tremadog), it can be clearly seen that as the hierarchy index decreases, the number of amenities available in that settlement decreases also. Not only that, but, less of the higher order services are available, such as the green

grocers' or solicitors'. (The highlighting and overlay line tries to emphasize this).

There are reasons behind Tremadog having such a low order service, the designer clothes shop, when its' hierarchy index is as low as it is, 76.48. Tremadog is a planned, 'T' shaped settlement situated at the junction of two main roads, the A467 and the A498. Tourists frequent it and so there are few specialist shops that are geared towards them, rather than the local residents.

As the 'weight' of each settlement decreases, the recurrence of the same amenity or service available also decreases. This is because the larger settlements cover a greater area and has a greater sphere of influence, and consequently, the same service has to be repeated throughout the settlement in order for it to serve the number of people in its range. Some smaller settlements have at most one of a few of the listed amenities, because the threshold of that particular service is met by only its single occurrence in that settlement. There is also a pattern in the hierarchy index, and this is demonstrated in the 'Hierarchy of Settlement' graph.

A general statement can be made that as the hierarchy is descended, each successive settlement is on average, approximately 18% smaller than the previous one, though there is an exponential decay from the largest of the settlements. (Fig.5)

When the data in Fig.4 was sorted into descending numerical order of the hierarchy index, and cross referenced with the population of the related settlement, some interesting results were found, and when looked at in more detail, a relationship between population size and settlement hierarchy index was revealed, directly linking them to one another.

The relevant data from this finding was put into a formula, Spearman Rank Correlation Coefficient (SRCC), in order to calculate how strongly they are related to one another.(Fig.6.a)

