

The relationship between demand and supply for adult swimming in England

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Aim of paper and research questions

Sport England is the national agency for developing sport in England and its funding is linked to meeting increases in sports participation agreed with the Department of Culture Media and Sport. Swimming is the most participated in sport in England with 13.8% of the adult population swimming at least once every four weeks. If Sport England is to meet the targets specified in its strategy for 2008-2011 (Sport England, 2008a), then swimming participation rates will have to increase. The hypothesis for this paper is that the demand for swimming (adult participation rate) is dependent upon the availability of swimming pool space (supply) at regional level in England.

Literature review

Adult demand for swimming in England has been monitored on a consistent basis since 1987 via the General Household Survey in 1987, 1990, 1993, 1996 (Sport England, 1999) and 2002 (Office for National Statistics, 2004); and more recently via Sport England's Active People Surveys (Sport England, 2006; 2008b). During this 21 year period the 'regular' swimming participation rate for adults has ranged from 13% to 15%. Despite high quality data on participation (demand), until recently there has been no reliable data on the number and size of swimming pools (supply). This data deficiency has been addressed by the Active Places database, which is a continually updated on-line census of sports facilities available for public use in England. In the case of swimming pools, it contains details about the location and dimensions of facilities such that it is possible to compute the surface area of water in each facility. At the time of this research, some 4,606 swimming pools and their details were contained within Active Places. It is widely accepted that the catchment area for a community sports facility is a function of distance decay as people who live nearer a facility more likely to be users than those who live further away (Torkildsen, 1999). It has always been possible to plot the catchment area of a specified swimming pool using postcode data collected from on site surveys. However, until now it has not been possible to test the relationship between supply and demand for swimming pools at a higher level of geography than facility level because of a lack of data.

Research design and data analysis

The data for this analysis were derived from the two databases, Active People and Active Places. The measure adopted for demand was the adult four weekly participation rate in swimming. The measure adopted for supply was the surface area of pool space (m²) per 1,000 head of population. The data derived from the two databases were extracted and subsequently subjected to secondary analysis within Excel.

Results

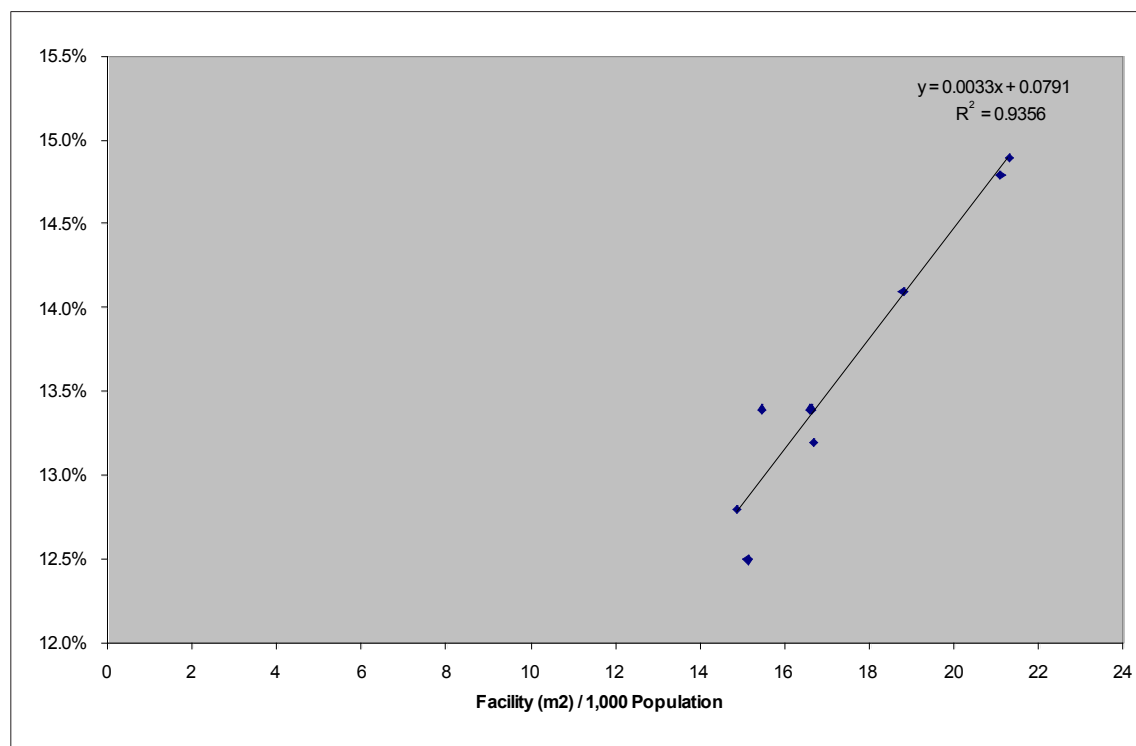
Table 1 presents the raw data for the supply and demand indicators taken from the Active Places and Active People databases respectively. Numbers coloured red represent regions where

scores are above the national average and numbers coloured blue are scores below the national average.

Region	Surface area (m ²)	Population	Facility m ² /1000 people (SUPPLY)	Participation rate (%) (DEMAND)
East	101,115	5,388,254	18.77	14.1
East Midlands	69,196	4,172,303	16.58	13.4
London	119,483	7,171,924	16.66	13.2
North East	37,977	2,515,234	15.10	12.5
North West	111,909	6,729,848	16.63	13.4
South East	170,195	8,000,488	21.27	14.9
South West	103,871	4,928,247	21.08	14.8
West Midlands	78,223	5,267,523	14.85	12.8
Yorkshire & the Humber	76,549	4,965,035	15.42	13.4
England	868,518	49,138,856	17.67	13.8

Table 1: Raw data

Graph 1 is a plot of the supply data against the demand data. A line of best fit has been drawn through the data points and the equation of the line and correlation are shown.



Graph 1: The relationship between supply and demand

Discussion and conclusion

The results reveal that there are differences in adult swimming participation rates in England between regions with a range of 2.5 percentage points between the highest and lowest scores. Similarly, there are also differences in the level of supply between regions (range = 6.17m² per 1,000 head of population). Bringing this data together for all nine regions, reveals a very strong relationship ($r^2 = 0.94$) between the measures adopted for demand and supply and confirms the hypothesis. The data suggest that swimming participation could be increased by increasing the availability of supply for public swimming. However, this does not necessarily mean constructing more swimming pools. It may well be that there is under utilisation of existing provision, such as school pools, which could be brought into use before the need for new facilities. It is also worth noting that the two regions with the highest demand and supply may have a structural advantage over other regions. These regions are holiday destinations and may have abnormally high levels of supply to cope with peak loadings during the summer months. The methodology employed can easily be replicated with other sports and recreational pursuits that are heavily facility dependent such as ice-skating, track and field, and tennis.

References

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