

Outdoor recreation and physical activity: population segmentation of participation

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Introduction

With ever increasing levels of obesity in developed countries, the need to understand the contribution that outdoor recreation can make to the reducing the burden on the health sector has never been greater. However, although it has been generally accepted that participation in outdoor recreation can contribute to improvements in health, especially via increased levels of physical activity, there are significant gaps in the evidence. Hence, this research aimed to address the following key questions:

- What level of participation in outdoor activities is required to deliver quantifiable health benefits?
- Which social groups participate more, or less; taking into account socio-demographic, lifestyle, and geographical factors?

Methodology

The research used data from the Wales Outdoor Recreation Survey – a large-scale household survey, with a sample size of 6000+, which is representative of the adult population in Wales, UK. Detailed information of individuals' participation behaviour was used to segment the population into statistically distinct groups, based on the differing interaction between the three key attributes of physical activity: intensity; frequency; and duration. Each 'segment' was then subject to detailed multivariate analysis using CHAID (Chi-Squared Automatic Interaction Detector). This provided a full 'profile' for each segment which considered the statistically significant differences between:

- a wide range of socio-demographic variables (including age, gender, income etc);
- 'lifestyle' factors (such as dog ownership or having children);
- geographical attributes (covering the distinction between rural and urban areas, or deprivation)

Finally, for each segment the analysis considered the main motivations and barriers to participation and the extent of latent demand expressed by each group.

Results

The research found that the population was divided into seven statistically distinct segments. Each 'segment' has a unique combination of frequency, duration, and intensity, and while some gain the 'maximum' health benefits from their participation in outdoor recreation, others will have gained very little if any of the benefits associated with physical activity. Based on their relative levels of participation, and associated health benefits, we grouped each segment into one of three 'Zones'. These Zones are based on a 'traffic light' system:

- those in the 'Red Zone' participate the least, and gain little if any physical activity health benefits;
- those in the 'Amber Zone' take part in some degree of outdoor recreation, but in different ways fail to meet the minimum level of either frequency, intensity, or duration required for health benefits;
- those in the 'Green Zone' meet or exceed the minimum levels of physical activity required for a healthy life.

Segment 1: Non-participants

People in this segment were statistically more likely to be elderly and disabled. Interestingly, gender was not a significant variable defining this group, neither was deprivation. This segment has a very low level of latent demand, stating barriers relating to 'disability', 'poor health' and 'old age'.

Segment 2: Rare participants

This group was very similar to the 'non-participants' regarding the high number who were elderly with a disability, but also included a significant proportion of 'middle-aged' employed people. They are significantly more likely to live in an urban area, and to take part in less active pursuits. They express a high level latent demand to do more 'passive' activities, but face barriers relating to 'lack of time' and 'poor health'.

Segment 3: Infrequent, low intensity participants

Women with children are significantly more likely to be part of this group, and are primarily motivated by 'entertaining children'. However, they only take part in more 'passive' pursuits, which limits any health benefits. Although this segment has expressed a reasonably high level of latent demand, they face significant barriers relating to a 'lack of time'.

Segment 4: Frequent, low intensity participants

Participants in this segment are more likely to be dog owners, and not have any children. They live in rural areas, and their main form of outdoor recreation is dog-walking. Given that they participate at least 5 times a week, it is unsurprising that they have a very low level of latent demand.

Segment 5: Infrequent; moderate+ intensity; less than 150 min

This group comprises of young to middle-aged adults, who are educated, affluent and live in urban areas. They take part in high intensity, short duration, pursuits, such as running and cycling, and are highly motivated by 'health and exercise'. They express a very high level latent demand, but are restricted by a lack of time.

Health Benefit	Activity Segment	Definition	Size
None 'Red Zone'	1. Non-participants	Have not participated in the last 12 months	6% of pop'n c. 140,000 adults
	2. Rare Participants	Have participated in the last 12 months, but not in the last 4 weeks	8% of pop'n c. 188,000 adults
Limited 'Amber Zone'	3. Infrequent; Low Intensity	Participated less than 5 times a week, and at a low level of intensity	21% of pop'n c. 494,000 adults
	4. Frequent; Low Intensity	Participated at least 5 times a week, but only at a low level of intensity	9% of pop'n c. 212,000 adults
	5. Infrequent; Moderate+ Intensity; Less than 150 min	Participated less than 5 times a week, at a moderate to high level of intensity, and for less than 150 minutes per week	26% of pop'n c. 612,000 adults
Maximum 'Green Zone'	6. Infrequent; Moderate+ Intensity; More than 150 min	Participated less than 5 times a week, at a moderate to high level of intensity, for 150 minutes or more per week	12% of pop'n c. 282,000 adults
	7. Frequent; Moderate+ Intensity	Participated at least 5 times a week, at a moderate to high level of intensity	17% of pop'n c. 400,000 adults

Group 6: Infrequent; moderate+ intensity; more than 150 min

Middle-aged working men with children are strongly associated with this segment. They are affluent and educated, and take part in 'active' pursuits or 'days out'. Their 'hobby' or 'the scenery' are significant motivating factors, and although they have a high level of latent demand, they are restricted by a 'lack of time' and 'places to go'.

Group 7: Frequent; moderate+ intensity participants

Participants in this segment are more likely to be affluent dog owners, living in rural areas. They take part in a wide range of active pursuits, and have diverse motivations. Given their high level of current participation, it is unsurprising that this group have the lowest level of latent demand.

Conclusions

This analysis has resulted in a greater understanding of who does, and doesn't, gain health benefits from participation in outdoor recreation. Importantly, it shows that there is not a simple division between 'participants' and 'non-participants', but rather there is a complex interaction between frequency, duration, and intensity which results in 7 distinct groups. The multivariate profiling of these segments has also evidenced the interaction between different factors, indicating that it is a *combination* of socio-demographic variables which define and differentiate participation. The results of this research can now be used to inform the development of much more focused policies and interventions.