

How Can Research into Cycling Help Implement the National Cycling Strategy? Review of Cycling Research Findings and Needs

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January 2003

Executive Summary

- 1 Achieving the objectives of the National Cycling Strategy (NCS) is dependent on there being in place a high quality knowledge base to underpin decisions on cycling policy and implementation. This review of cycling research is intended to provide support for the work of the Department for Transport (DfT), the National Cycling Strategy Board and other stakeholders in cycling policy and advocacy, by analysing the state of cycling knowledge and identifying gaps that need to be filled. It covers cycling research projects that date back to the early to mid-1990s, focusing especially on research conducted as a response to developments since the publication of the Strategy in 1996. As well as this report, the review has enabled the production of an online Access database of all projects identified. This can be viewed and searched at <http://www.york.ac.uk/org/satsu/Projects/whitehall/>¹

Headline Facts and Figures

- 2 The headline facts and figures from the review's findings are:
 - 2.1 Over 160 cycling research projects have been conducted in the UK since the early 1990s.
 - 2.2 Almost half of these were commissioned and funded by the DfT, whose total expenditure on them has been over £5 million during that period. The only other sizeable cycling research funders are the Engineering & Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC). Their total expenditure on cycling research is around £700,000. The average cost of cycling projects with cost information available is £125,500. This compares favourably with the average cost for all DfT projects of £181,000 and the average cost of all EPSRC transport projects, at £136,000.
 - 2.3 Total cycling research costs are likely to be somewhere between £8 and £15 million over ten years, a small fraction of total UK transport research costs.
 - 2.4 About one third of cycling research is conducted by consultants – mostly working on DfT projects – and a further third by academic researchers.
 - 2.5 Over a quarter of research projects have been conducted by academic researchers using either their own or university resources and time. This represents a considerable hidden subsidy of cycling

¹ Please note that this URL is case-sensitive.

research by the academic sector, in addition to the few projects funded by the Research Councils.

- 2.6 The remaining research and research funding are accounted for by smaller endeavours among a variety of cycling and transport advocacy groups, other voluntary organisations, charitable trusts, local government and other national government departments and agencies.

Research Priorities and the Knowledge Base

- 3 The review has identified the key research priorities of the DfT, the NCS Board and wider cycling and transport stakeholders. It has evaluated the degree to which the knowledge base addresses these priorities, and it identifies gaps that need to be filled in order to help achieve the NCS objectives.
- 4 Key research priorities cover the following issues:
 - planning and technical matters, including –
 - road space allocation
 - infrastructure design
 - cycle parking and cycle security
 - bicycle design
 - the skills of transport engineers and of cyclists
 - the promotion of cycling
 - attitudes to cycling
 - how to progress the National Cycling Strategy, including –
 - resources for cycling
 - the integrity of cycle usage data
 - the relative significance of utility and recreational cycling
 - modal shift from car use to bike use
 - integrated transport and sustainability
 - wider policy concerns such as –
 - social inclusion
 - health
 - young people
 - crime
 - public space
- 5 The research priorities identified in the National Cycling Strategy continue to be those which demand the most attention, but newer concerns with issues such as social inclusion, health and young people also need to be addressed. The framing of research priorities needs to balance the interests of a range of governmental and non-governmental stakeholders.
- 6 Research projects have addressed the full range of NCS research priorities, though more attention needs to be paid to certain issues.
- 7 The most prominent issues in the knowledge base are:
 - technical matters such as infrastructure and facility design
 - safety issues

- the cultural dimensions of cycling and transport, including attitudes
 - the position of cycling within overall modal split
- 8 Closer consideration of the data demonstrates further characteristics of cycling knowledge, notably:
- 8.1 There is a recognition that achieving modal shift will require cultural change
 - 8.2 There is less awareness of interconnections that must be further understood between cultural and behavioural issues and technical concerns
 - 8.3 This indicates a poor understanding among those designing many cycling research projects of the nature of innovation
 - 8.4 A great deal of health-related cycling research is focused on the safety dimensions rather than the health benefits of cycling
 - 8.5 There is only a limited understanding of the respective roles of – and relationships among – utility, leisure and sports cycling
 - 8.6 There is little knowledge about how to bring new people – children or adults – to cycling
 - 8.7 Several issues that are poorly represented in the knowledge base, such as the skills of professionals engaged with cycling, and analysis of best practice in infrastructure, are being actively pursued through means other than research. Research is not, then, the only route for increasing cycling knowledge.
- 9 Issues that do need further research effort include:
- 9.1 Understanding the balance between different kinds of cycling, notably between utility and leisure cycling
 - 9.2 Complexities within the cycling market, and the marketing of cycling to professionals and to the public.
 - 9.3 Research aimed at progressing the NCS, in particular monitoring its progress, identifying how to achieve its objectives, and examining ways of ensuring the integrity of data collected for the purpose of monitoring cycle use.
 - 9.4 Dissemination of cycling research findings has been poor, and needs attention in order to obtain the full benefits of research.
- 10 The repertoire of cycling research includes the following methods and approaches:
- Engineering studies
 - Attitudinal studies
 - Analytical research in social and health studies
 - Policy analysis and the development of policy tools
 - Scientific studies
- 11 Other approaches that could offer some benefit for the cycling knowledge base include:
- comparative studies
 - agent-based transport modelling
 - scenario-building

- 12 It is recommended that these methods are explored in future research.
- 13 The review has found claims concerning bias in the knowledge base towards engineering research, towards quantitative and towards qualitative studies to all be unfounded. The current balance in both these pairings is felt to be appropriate, with increases needed across the whole research base rather than within any one segment of it.
- 14 Exploration is needed of the potential benefits to be had from conducting more interdisciplinary research, bringing the combined benefits of both engineering and social scientific work, and of both large-scale survey research and in-depth understandings of attitudes and behaviour.
- 15 The most pressing need is for cycling research to be underpinned by a comprehensive research strategy which ensures that projects are commissioned to fully support the objectives of the NCS. The resulting research programme should cover the full range of research priorities, it should include a balance between different methodologies and disciplines, and it should address short-, medium- and long-term goals. It should span both the users and the providers of bicycles and facilities, different types of journeys, facilities, routes and locations. Above all, the programme should be designed to capitalise on the interdependence of all these different elements.
- 16 Greater investment in cycling research is needed to achieve such a programme, both from the DfT but also from the university research councils, whose commitment to research on sustainable transport modes has not yet been translated into much research funding.
- 17 In conclusion, cycling research is comparatively inexpensive, and produces excellent value for money by generating crucial background knowledge to inform those making and implementing decisions about cycling policy and facilities. A stronger commitment to cycling research from the major research funders is needed in the form of both funding and research management if the Strategy is to receive research support to help it succeed.



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