Using a Mixed-Method Approach to Evaluate the Behavioural Effects of the Cycling City and Towns Programme

Kiron Chatterjee (Centre for Transport & Society, UWE)

**with acknowledgements to research team colleagues:
Henrietta Sherwin and Juliet Jain (CTS) and
Jeremy Hardin, Jo Christensen and Steven Marsh
(AECOM)**

Outline

- Cycling City and Towns (CCT) evaluation
- Household survey
- Qualitative research

Programme to encourage cycling

- England has some of the lowest rates of cycling in Europe (2% of all trips, 1% of all distance)
- Cycling England remit - 'More people cycling, more safely, more often'
- Six Cycle Demonstration Towns (2005-2009) expanded to include 12 new Cycling Cities and Towns in 2008
- Funded by Department for Transport, Department of Health and Cycling England
- Aims to demonstrate whether 'European' levels of investment in cycling can increase levels of cycling and deliver other benefits

Actions pursued

- Infrastructure
  - Cycle routes (on-road and off-road)
  - Cycle parking facilities
  - Lower speeds limits
- Equipment
  - Low-cost bike purchase
  - Cycle hire
- Training
  - Children in schools
  - Adults
- Information, Marketing and Events
  - Maps
  - Personalised advice
  - Cycle rides

Cycling Cities and Towns

- Largest place is Bristol (570,000) and smallest place is Leighton-Linslade (38,000)
- Highest cycling mode share in Cambridge (28% cycle to work, 7% children cycle to primary school)

Results from CDT survey (2006-2009)

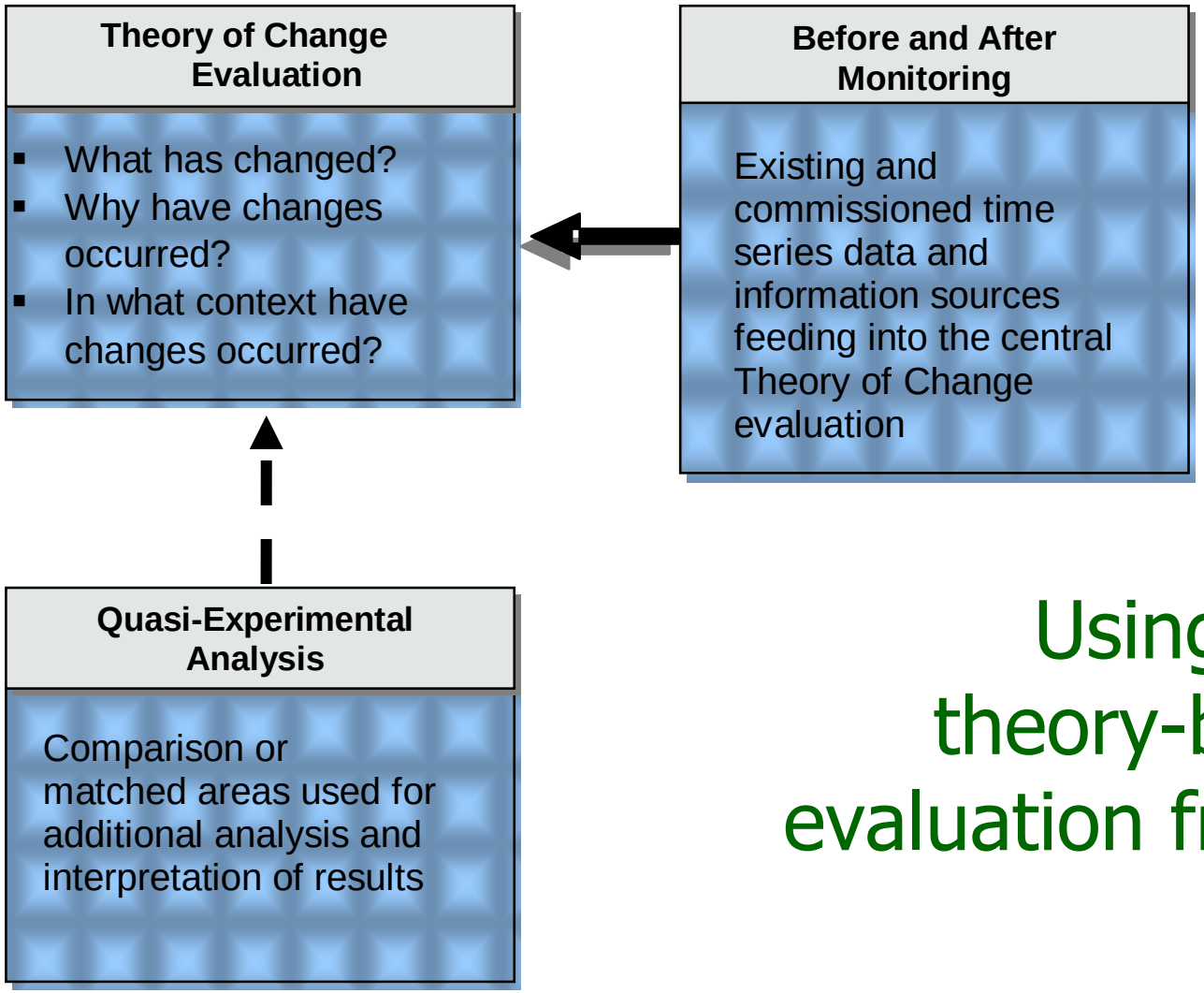
- Cycling levels increased by average of 27% across 6 CDTs
- No. adults cycling in typical week increased from 24.3%-27.7%
- Pupils cycling to school increased from 1.9%-2.2%
- Some gaps in knowledge remain
  - How did behaviour change and what were the reasons?
  - Which initiatives were more effective?

Sloman L, Cavill N, Cope A, Muller L and Kennedy A (2009) *Analysis and synthesis of evidence on the effects of investment in six Cycling Demonstration Towns. Report for Department for Transport and Cycling England.*

Evaluation of CCT programme

- Evaluation is being conducted by AECOM, UWE and Tavistock Institute
- Investigating effects of town-wide investment on:
  - Perceptions and attitudes
  - Cycling and other travel behaviour
  - Physical activity
  - Wider impacts (intended and unintended)
- Investigating how different implementation and delivery strategies affect outcomes
- Seeking to identify what transferable lessons can be drawn

1. CCT evaluation

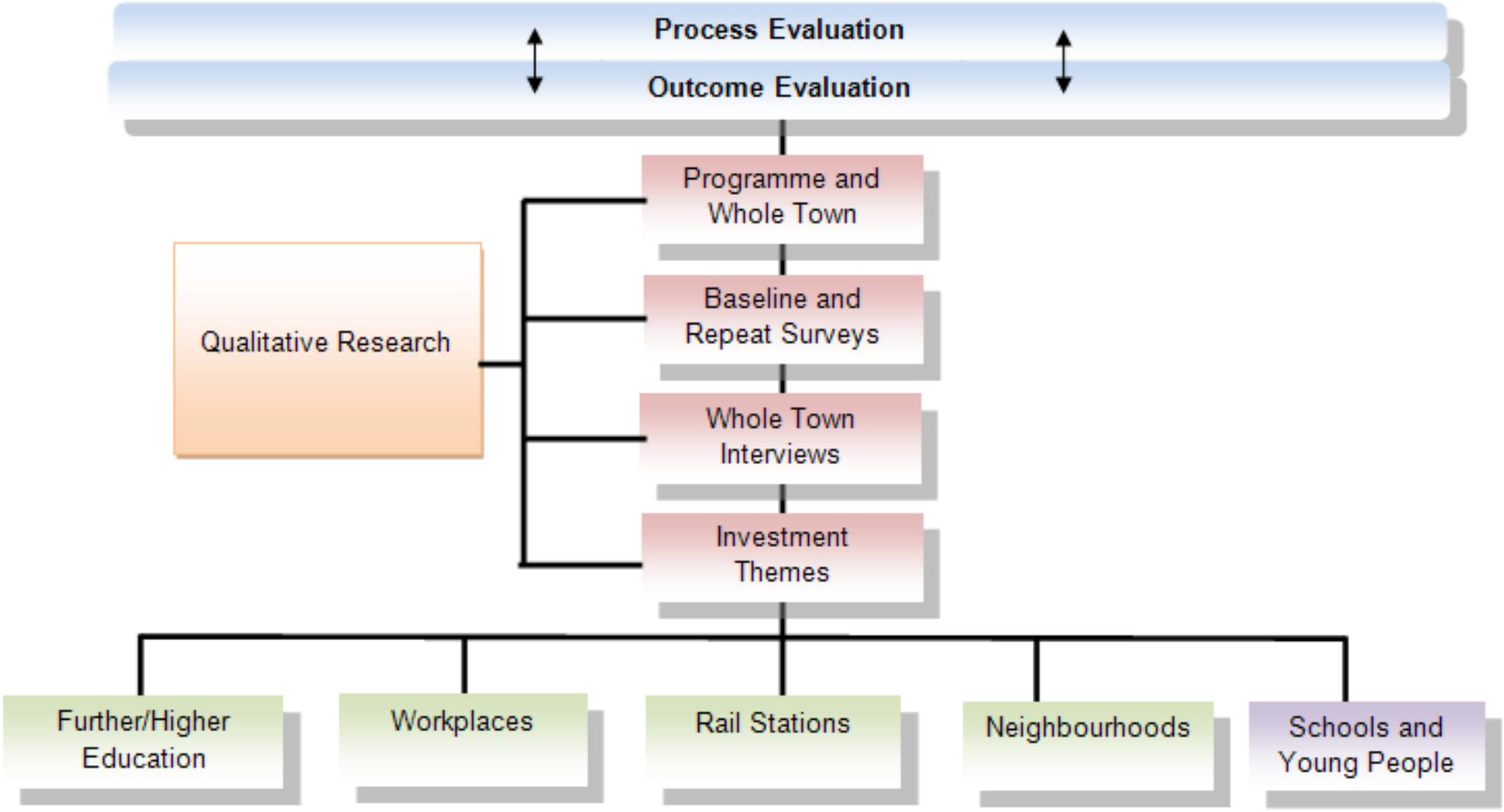


Using a theory-based evaluation framework

Expected changes to perceptions and attitudes

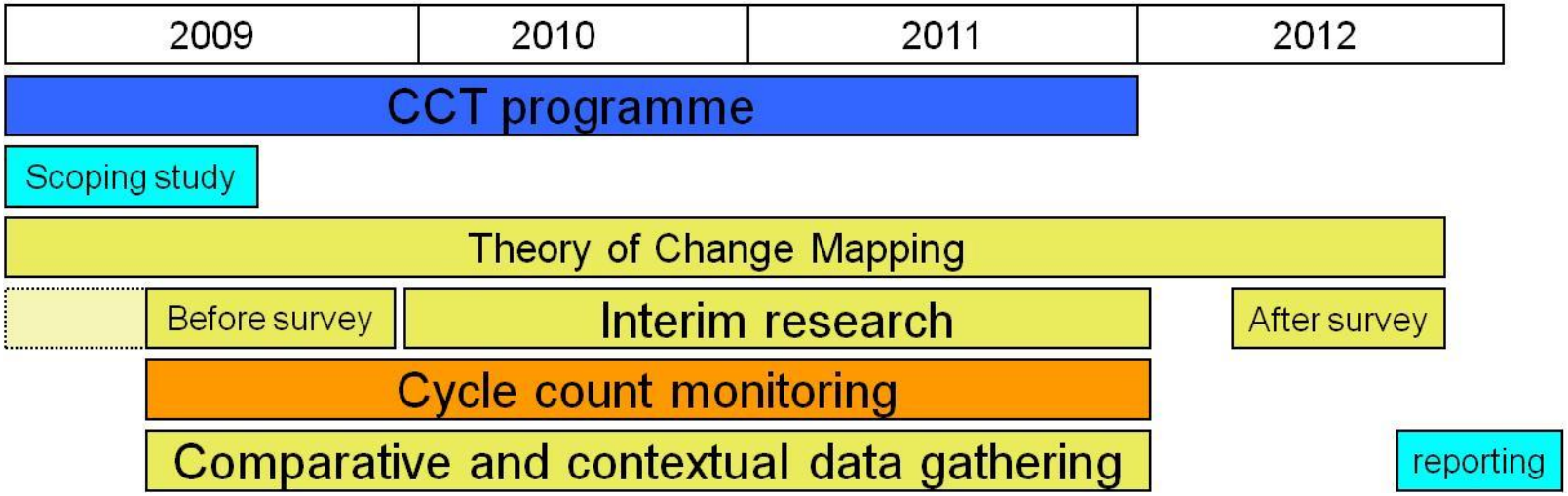
- Improved environment (environmental)
- Reduced fears (safety and risk)
- Enhanced self efficacy/skills (skills and knowledge)
- Changed social norms (social and cultural)

Overview


Process Evaluation
Outcome Evaluation
Programme and Whole Town
Baseline and Repeat Surveys
Whole Town Interviews
Investment Themes
Qualitative Research
Further/Higher Education
Workplaces
Rail Stations
Neighbourhoods
Schools and Young People

Surveys and qualitative research

- Household survey – before survey (or baseline) in 2009 and after survey (post-programme) envisaged in 2012
- Qualitative research – follow-up interviews with survey sub-sample



Sample size and design

- 2,500 individuals and 1,250 households in each CCT
- 425 households randomly allocated to complete travel diaries in each town
- Repeat (panel) survey with same households (where possible) is envisaged in 2012
- Two-stage clustered sample design (random sampling of output areas and addresses within them)

Survey elements

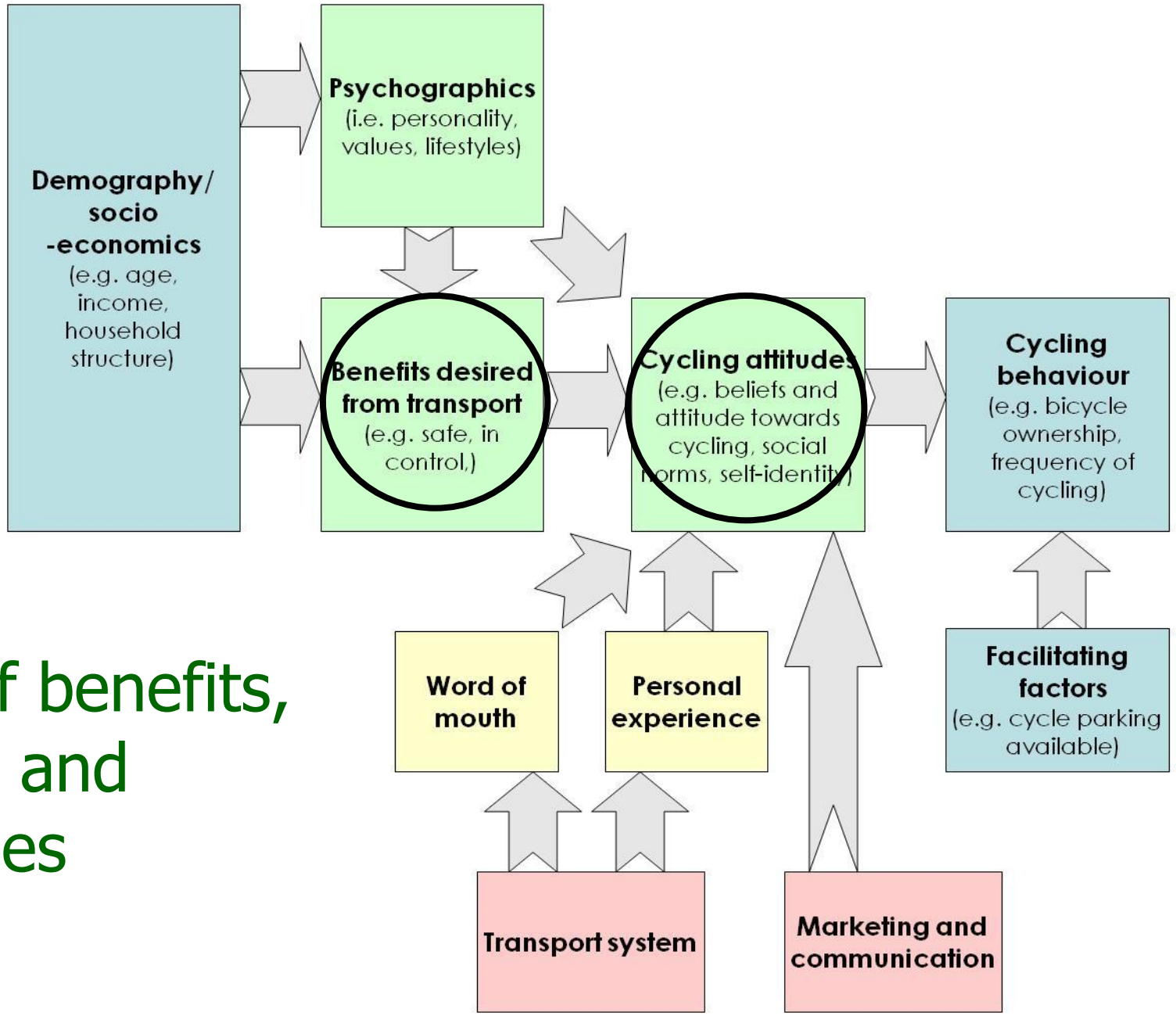
- Face-to-face interviews with all household members (parents/guardians provide responses on behalf of children 5-15)
  - Physical activity
  - General travel behaviour including cycling
  - Socio-demographics and -economics
- Travel diary
- Attitudes questionnaire

Attitudes questionnaire

- Aim of this is to understand impact of intervention on beliefs and attitudes to cycling
- Relate changes in behaviour to changes in attitudes, to
  - Help understand why behaviour changes have occurred
  - Identify/confirm barriers and motivators for cycling
  - Test stages of change model and theoretical constructs (e.g. role of perceived behavioural control)
- Allows for segmentation of the population according to attitudes to cycling, and
  - Assess how different segments respond to the intervention

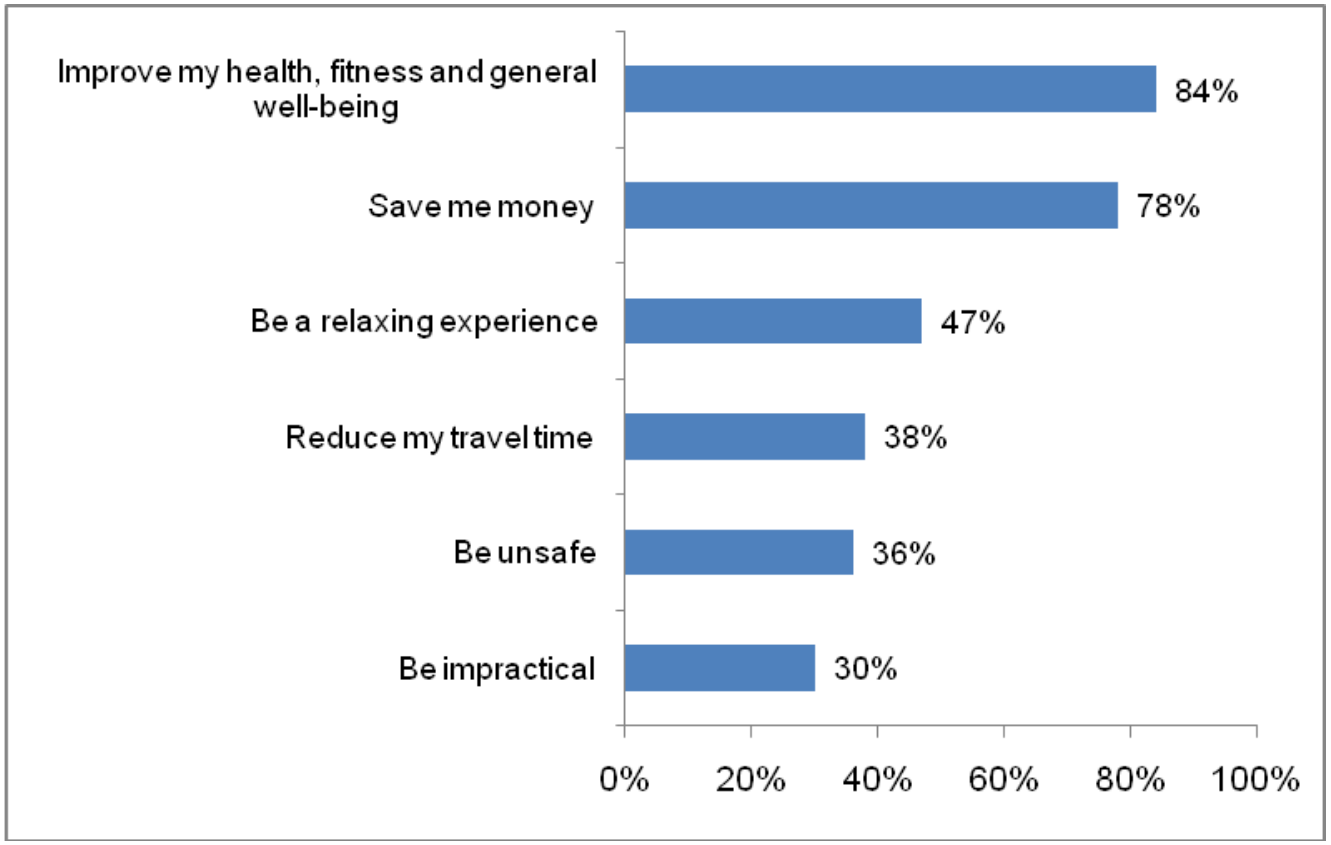
2. Household survey

Role of benefits, beliefs and attitudes



Illustrative result from baseline attitudes questionnaire

How far do you agree or disagree
that if you made the local journey by bicycle it would…



Base: All respondents who stated they knew how to ride a bicycle (N=7,680)

Note: No weighting applied

How it helps meet project objectives

- To attribute intended outcomes to CCT investment (at different levels)
- To understand why outcomes vary by journey type and population subgroups
- To identify key motivators and barriers to increased cycling for different subgroups
- To understand effects of CCT investment on perceptions and attitudes to cycling
- To investigate wider impacts of CCT investment such as safety and accessibility impacts
- To identify possible unintended impacts of CCT investment
- To compare the effects of different CCT overall delivery and marketing strategies

Overall aim of qualitative research

- To explore in depth how targeted population have responded to cycling investment (assisting interpretation of survey results)

- Qualitative research allows
  - Viewing cycling in context (places, people's lives)
  - Understanding why changes have or have not occurred
  - Revealing the unexpected
  - Considering non-verbal communication

Methodology – first stage

- Telephone interview
  - To contact selected survey respondents
  - To check baseline cycling behaviour and if changed in previous year
  - To briefly ask why changes have taken place
  - To recruit to take part in interview

Target sample for each town/city

Initial cycling behaviour	Current cycling behaviour	Cyclist	Number
New regular cyclist	Continue to cycle regularly	Y	2
Plan to become regular cyclist	Started cycling regularly	Y	2
New regular cyclist or cycled regularly for more than 6/12 months	Cycle more frequently	Y	2
Cycled regularly for more than 6/12 months	Continue to cycle regularly	Y	1
Cycle from time to time/Plan to regularly cycle	Cycle from time to time	Y	2
Possibility to become regular cyclist or no intention	Started cycling or planning to start cycling	Y/N	2
Possibility to become regular cyclist or no intention	Not started cycling or planning to start	N	1

Response to baseline survey (2009)

Situation at recruitment call (2010)

Total=12

Methodology – main stage

- In-depth Interviews
  - Conducted in homes of interviewees (i.e. in context)
  - Individual interviews, rather than household interviews, but investigating inter-personal influences
  - Main parts of interview
    - Cycling history timeline to identify transition points and enable interviewer to probe these
    - Detailed discussion of regular journey and other journey
    - General experiences of cycling in town/city
    - Awareness of cycling promotion in town/city
    - Accompanied journeys for two interviewees in each town/city to give further insight on cycling perceptions and experiences

Illustrative initial findings for Greater Bristol*

*On-going work with analysis continuing

- **Awareness of cycle town**
  - General awareness that Bristol is a 'Cycling City', but different aspects mentioned depending on home location, life stage and cycling status
- **Awareness and views of infrastructure**
  - City centre and main routes not considered to have good provision for cyclists
  - Bristol to Bath cycle path often mentioned as valuable route
  - Cyclists (regular and occasional) had noticed new cycle routes and parking and were particularly enthusiastic about new off-road routes
  - New Hartcliffe Way route was used frequently by one interviewee
- **Awareness and views of softer measures**
  - *Cycling Events:*
    - Some interviewees participated in Bristol Biggest Bike Ride, including families with children
    - One interviewee participated in Ashton Court mountain bike festival
  - *Cycling Information/Marketing:*
    - Street banners promoting cycling had been seen but it was noted they had been replaced with banners promoting walking
    - Some interviewees had obtained cycle maps/leaflets
    - Two interviewees mentioned schools actively promoting cycling to their children
    - One interviewee mentioned Bike It team visiting workplace

Illustrative initial findings for Greater Bristol*

*On-going work with analysis continuing

- **Perceived changes to number of cyclists**
  - Consistent perception across interviewees that cycling has been increasing and one interviewee mentioned that this increases their confidence in cycling
  - Two interviewees mentioned that they disliked cycle paths being too busy
- **Perceived changes to walking and cycling**
  - Generally considered that cycling environment is improving due to increased cycle infrastructure
  - In some locations conflicts between cyclists and pedestrians noted
- **Good about cycling in the area**
  - Number of cycle paths and number of other cyclists
  - Pleasant places that can be accessed by bicycle
  - Diversity of people cycling (young, old, males, females, families)
- **Bad about cycling in the area**
  - Level of traffic on roads, especially in city centre
  - 20 mph areas not accompanied by physical measures to enhance cycling
  - Security of leaving bicycles in city centre
- **Key recommendations for area**
  - Cycle lanes/paths on busy roads and safe routes for children
  - Cycle paths outside of city
  - Further publicity

Accompanied rides – the cycling experience

Enabling the cycling experience to be observed and discussed with interviewees

Rides include journeys where the infrastructure used has been modified as part of CCT investment

Conclusion

- An integrated approach combining surveys and in-depth interviews
- Survey respondents (especially those indicating an increase in cycling) followed up with in-depth interviews
- This mixed-method approach will allow findings on:
  - Role of cycling investment alongside other factors in increased cycling
  - Perceptions/attitudes and motivators/barriers and how these have been affected by investment
  - Outcomes/impacts of cycling investment that were not expected
  - Awareness and opinions on cycling investment