



Moving Towards an Active Living Society: Policy Interventions for Promoting Cycling as a Sustainable and Healthy Means of Travel in West Midlands

Eleni Anoyrkati, Alba Avarello, Giuliana Famiglietti-Pipola
Coventry University Enterprises Ltd, Coventry, UK
Kostas Alexandris
Aristotle University of Thessaloniki, Greece

Abstract

Over the last years, cycling has received significant attention at policy level. Recognizing its contribution to both the adaption of an active living lifestyle but also on decongestion of traffic as an active mean of travel, in 2014, in Paris Declaration, the ministers agreed on a 'an-European Master Plan for Cycling Promotion, supported by guidelines and tools to assist in the development of cycling promotion policies at the national level'. This paper aims to define policy directions to achieve a paradigm shift by stimulating a further cycling uptake through local and regional support and promotional schemes. This paper reports secondary research from a mapping exercise on the current schemes and marketing tools being implemented in the region of West Midlands, UK for the adaption of cycling by the citizens as well as the main European policies in the field. Primary research was also conducted through a survey to identify the main promotional tools but also schemes that can contribute to a boost on cycling, from the lens of citizens.

In order to achieve the research objectives, the policy schemes were compared and contrasted with the tools revealed by the research to actually suggest policy directions that can incentivize the creation of a cycling culture. The results showed that the European directions are aligned with the regional schemes in West Midlands but also with the preferences of the citizens, with infrastructure investment to increase cycling safety appearing as first priority. The policy directions were discussed and validated by a focus group consisted of the main cycling stakeholders and authorities of the region.

Key words: Cycling, Active living, Policies, Active travel

Introduction

From back in 2016, the World Health Organization, recognizing the magnitude of the inactivity problem in Europe, suggested the connection of active living with the reduction of traffic congestion while at the same time building health-enhancing habits for citizens. This connection enables a more thorough development of local and national policies that can foster the creation of healthy, active cities supported by residents, businesses and professionals from a variety of disciplines.

Policy makers in Europe are directing their efforts towards a shift to an active travel system by implementing measures to encourage citizens to replace car usage by walking and cycling for short distances. The European Commission acknowledges the multiple co-benefits of cycling on health, environment and city livability and therefore has invested significant funds to encourage a modal shift towards cycling uptake and behavioural change. The European Commission highlighted the importance of cycling to deliver the ambitious targets of the EU Green Deal (Eltis, 2020). EU regional funds for the next programming period (2021-2027) such as the European Regional Development Fund (ERDF) will continue to offer funding for cycling projects.

Based on the European Cyclists' Federation (ECF) estimate, 160 million cycling trips were undertaken every day on European roads in 2017. With the right measures in place, this has the potential to increase to 240 million daily trips by 2030.

Acknowledging the huge potential of cycling, this research focuses on identifying the main factors encouraging cycling as well as the most important marketing tools that can be employed to achieve behavioural change, as these perceived by the citizens. The geographical focus of the research is the region of West Midlands in the UK where the policy measures and cycling practices currently implemented are being investigated and compared with the findings of the survey in order to identify policy gaps.

This paper aimed to provide policy directions that can further boost cycling in the region of West Midlands in the UK.

Literature Review

European cycling policy and background

Research (Arseni et al, 2018; ECF, 2020; Götschi et al, 2020; Handy et al, 2014; Neun et al, 2016; Rajé et al, 2016) has shown that value of cycling for society, environment and economy are very high and cover a variety of fields. This is in line with continuous efforts in investment in research to frame cycling as a form of active mobility and active living whose multiple benefits are greatly acknowledged by the European policy makers; a fact which is reflected on the funds made available but also on the development of a number of policies and schemes to support a boost on cycling.

On 30th October 2020, the European Mayors along with the first Vice President of the European Commission, Frans Timmermans, the European Cyclists' Federation (ECF) and Cycling Industries Europe (CIE) called for a 10 bn Euro in cycle investments from the National Recovery and Resilience Plans (NRRP) to help countries to address the economic and health crisis caused by the COVID-19 pandemic. This was accompanied with three suggested measures that could support cycling infrastructure investments, allocate funds for e-bikes and support cycling tourism too.

Prior to that, in 2014, the promotion of cycling became a central element of the Transport, Health and Environment Pan-European Programme (THE PEP). The PEP introduced a pan-European Master

Plan for Cycling Promotion, reinforced by strategies and tools to support in the development of cycling promotion policies at the national levels. Later in 2018, the PEP was updated with ten recommendations on how to foster cycling in Europe with the aim to achieve the following objectives by 2030:

- Increasing cycling in every country and double cycling
- Developing and implementing national cycling policies
- Increasing safety of cyclists'
- Integrating cycling in health policies
- Integrating cycling into land use, urban and regional planning

The EU ministers for Transport drafted in 2015 a 'Declaration on Cycling' which included suggestion on measures that promote cycling that can be adopted by regional and national authorities. To support the delivery of the PEP, the European Cyclists Federation developed the 'Recommendations for Delivering Green Growth and an effective mobility system in 2030' which includes suggestions for European, National and Regional/Local level on how behavioural change can be achieved by introducing measures that assure cycling safety, support a new (active) mobility culture and provide adequate cycling infrastructure.

Safety appears as a major obstacle to active travel. According to the European Transport Safety Council (2020) 51,300 pedestrians and 19,450 cyclists were killed on EU roads over the period 2010 to 2018. This has prompted a recommendation addressed to all levels:

'Develop a policy of modal priority for road users, particularly in urban areas, the hierarchy being based on safety, vulnerability and sustainability. Walking should be at the top of the hierarchy, followed by cycling and use of public transport.' (p.10, 2020)

Amongst the European schemes that can have an application and effect on national level too, is the EuroVelo network which forms a cycling route platform and can act as a 'flagship' development in countries with limited cycle infrastructure. (<https://en.eurovelo.com/>) Bicycle sharing schemes have been also long established in European countries; these differ in terms of the technology used. They can be reliant on smart cards, code-based rental, keys or deposits. (Deffner et al, 2012)

CIVITAS (2016), the European network of cities dedicated to cleaner, better transport, on their policy brief suggested that the following actions should be taken:

- Extension and improvement of the bicycle networks
- Improvement in the comfort and safety of bicycle lanes as well as adaptation of road infrastructure (e.g., junctions, crossings) and traffic signs to give cyclists priority and safer journeys
- Offer additional bicycle services like safe and comfortable parking and transfer facilities, repair shops, rental systems or accommodation on public transport vehicles
- Stimulate the use of electric bicycles

Training, education and marketing campaigns are essential tools in fostering a cycling culture in every city. (Behrensen et al, 2015; Vaismaa et al, 2012) Active travel and cycling information points in European cities have been also proven as a useful tool for a greater cycling endorsement; that also

includes cycling maps, route planners and apps. The info points can provide general information on the benefits of cycling but also to provide local information like maps, brochures or calendars of cycling events (Deffner et al, 2012)

Cycling promotion schemes in West Midlands

The UK's government's long-term ambition is to make active travel ie cycling and walking, 'the natural choices for shorter journeys, or as part of a longer journey, by 2040'. The targets by 2025 are:

- To double cycling: where cycling activity from 0.8 billion stages in 2013 to 1.6 billion stages in 2025
- To rise walking activity to 300 stages per person per year in 2025
- To increase the percentage of children that usually walk to school: from 49% to 55% of children aged 5 to 10 in 2014 in 2025.

The Cycling Charter Action Plan for West Midlands (2019) sets the cycling strategy for the region. This is conveyed in four pillars of activities: Leadership (stakeholder involvement and roles), Cycling and walking maps (constantly updated), Promoting and encouraging cycling (stimulation of behavioural change) and Funding.

In the region of West Midlands, the cycling network (so called 'Starley Network') covers 493 miles of routes dedicated for active travel, with the goal that the routes will either be traffic free away from the highway, or within roads but physically and safely separated from traffic (TfWM, 2020) To encourage active travel, the local government launched the 'Roll and Stroll' campaign where a number of small projects along with promotional events took place. These included cycling events, cycle hubs (free storage) at rail stations, online cycling routes and apps, cycling webinars as well as incentives such as competitions that offer 'Go Outdoors vouchers' (NfWM, 2020) The Department of Transport has also issued the 'Cycle to Work' scheme which enables employees to obtain work bikes and spread the cost of the bike over monthly tax-free instalments through their employer; taken from employees salary. (SUTRANS, 2019) Lastly, the 'Bikeability scheme', offered in schools, constitutes a cycle training (modern version of cycling proficiency) for children is delivered in many primary schools by a cycle training team. (<https://bikeability.org.uk/>)

The main marketing and promotional tools that were used in West Midlands to support active travel and in particular cycling were: workshops, social media, word of mouth and co-planning with citizens. (e-Smartec, 2020)

Research Objectives

The main research questions addressed in this paper are:

- To discuss the policy context in the area of cycling promotion and adaption in Europe
- To identify the main cycling schemes and measures in West Midlands
- To identify the cycling schemes and marketing tools that can help in boosting cycling in West Midlands, from the lens of citizens

Research Methodology

Secondary research was firstly conducted in order to identify a) the cycling policy background at European level b) the regional and local policies and schemes associated to the promotion of cycling uptake in the West Midlands. The objective of the literature review was to map the schemes available but also to provide a better understanding of the policy background and the links with the local and regional policies.

Quantitative research was then conducted to identify the citizens' preferences, on a sample of ninety-one (91) participants who declared the frequency of cycling, prohibiting factors, reinforcement schemes and promotional tools that can be put forward through local policies. During the 'Coventry Green Week 2020 (<https://www.cusu.org/ents/event/4593/>) a paper-based questionnaire was distributed to the attendees of the event where responders submitted also their consent to participate to the survey which complied with the GDPR (EU) 2016/679 regulation. The sample technique was a combination of convenience and cluster sampling: the potential responders were approached during the above-mentioned event where they were asked to complete the questionnaire restricted to the ones who belonged to the 'geographic cluster' of West Midlands.

The results of the analysis of the primary data were compared with the existing tools to identify gaps in policies and provide recommendations to endorse a behavioural change to an active travel modal shift.

A qualitative research also took place as a policy directions validation process. The focus group workshop was held with the main stakeholders of West Midlands in order to present the results of the survey and ask the participants for their views on policy directions and schemes that should be adopted in the region of West Midlands to foster cycling activities. The stakeholder identification and involvement criteria were:

- Expertise on cycling schemes implementation
- Expertise on cycling policies
- Expertise on (sustainable) city planning

In addition, a mixture of academics, policy makers and cyclists NGOs were involved in order to capture the whole spectrum of stakeholders who are involved in the process of designing and implementing cycling policies.

The two main questions that drove the focus group discussion were:

- What policy actions could be planned to improve and encourage cycling in the West Midlands region?
- What promotional tools can be used to motivate cycling?

The focus group was conducted online where detailed notes were kept. Each of the stakeholders was encouraged to answer the abovementioned questions based on his/her experience and involvement in cycling policies and tools. After that a brainstorming discussion took place to prioritise the answers and extract the main measures and tools. At the end, a summary was presented to the stakeholders who had the opportunity to reflect and reach a consensus.

Results

Quantitative research: Survey

During the survey, ninety-one questionnaires were received. With regards to the responders' demographics, the great majority were females (63.74%) and 29.67% were males. The option of not reporting gender was also provided, and therefore 6.59% of the responders did not describe their gender as shown on Figure 1: Gender. Because the event, where the questionnaire was distributed took place at the university campus, it is expected that a relatively large number of responders were either university staff or students. This explains the age group that the majority of them belong to, which is between 40 to 49 years old, followed by 18 to 21 and 22 to 29 years old as demonstrated in Figure 2: Age Group.

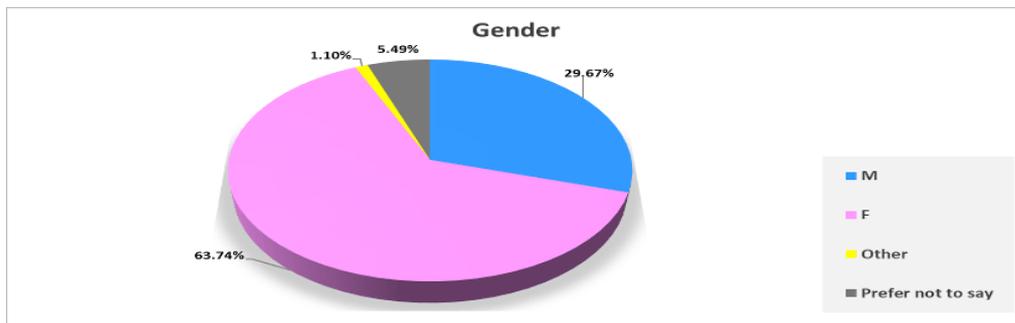


Figure 1. Gender

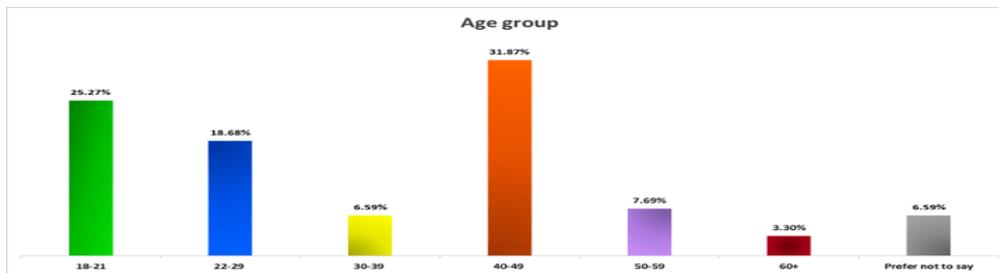


Figure 2. Age Group

With regards to the frequency of cycling, the respondents were asked to state the average number of days that they usually do a particular cycling activity. These answers are used to derive the frequency percentages presented Figure 3: Frequency of cycling (e.g., “once a week”). The results showed that that the majority of responders cycle quite often from 2 to 3 times a week while 18.18% cycle even on a daily basis. The answer ‘other’ which received a significant preference too (20.45% of the responders) referred to ‘rare’ cycling which translates to once a month or less.

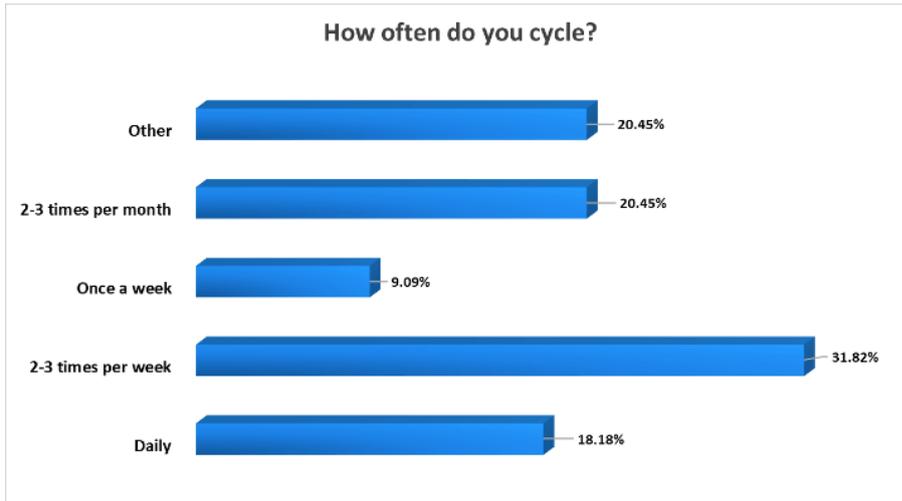


Figure 3. Frequency of cycling

Concerning the purpose of the cycling activity, 'other' appears at the most frequently answer provided. According to the explanations provided by the responders, this translates to travel for 'leisure', 'fitness' and 'pleasure'.

Commuting (Get from place to place) for short distances and travel to work also received high rates which endorses the necessity for extending the cycling routes but also the cycle-to-work schemes.

Figure 4: Purpose of cycling below shows the split between the main purposes of cycling.

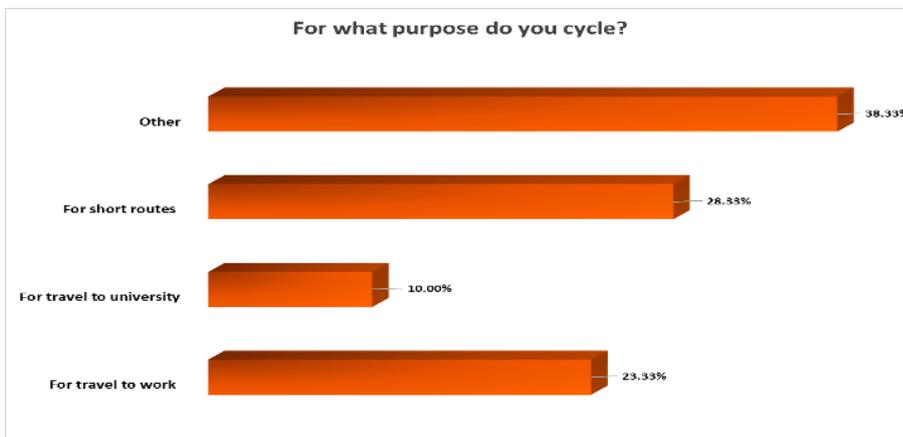


Figure 4. Purpose of cycling

The expansion of the cycling routes network seems to be the most important factor contributing to a further cycling uptake. Safe parking spaces and monetary schemes for buying bicycles have also reported as significant factors to support cycling activities in the region as demonstrated on Figure 5: Factors encouraging cycling.

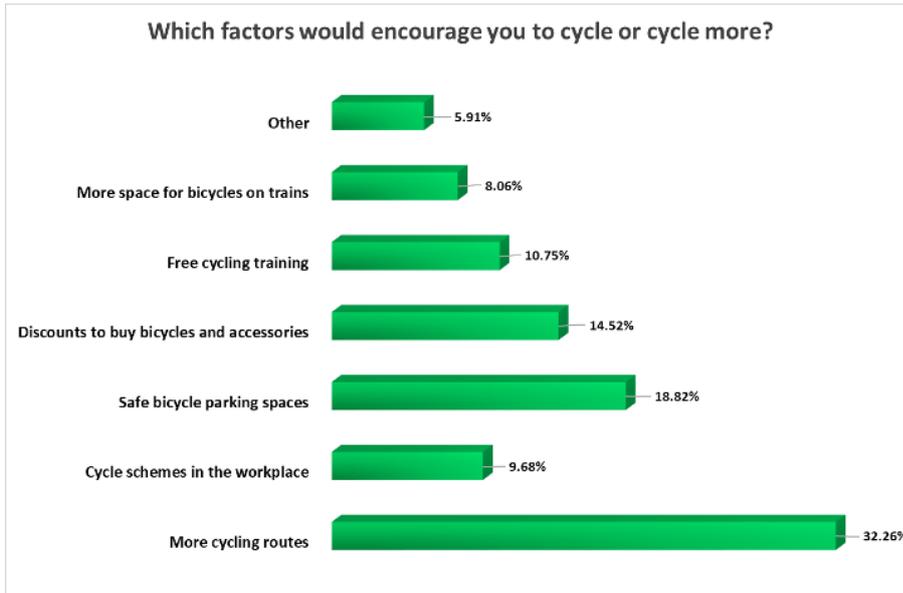


Figure 5. Factors encouraging cycling

The responders reported that to be successful, cycling promotion, needs social media marketing to be integrated as a function alongside with other tools. The significant majority of 44.23% of the responders stated that social media constitute the outmost tool to support behavioural change and achieve modal shift, as illustrated in Figure 6: Promotional tools for cycling. Mobile applications appear also quite a strong tool with 16.03% of responders reporting that apps would encourage them to cycle more often. Cycling information points at key spots in the city centers would also be efficient where 17.95% of participants saying that such a measure will provide an extra push for inhabitants but also tourists to travel with bicycle. Cycling training schemes that can train both adults and pupils appear as a good scheme for 14.74% of the responders. 'Other' refers mainly to TV and newspapers adverts, posters and 'face-to-face' campaigns.

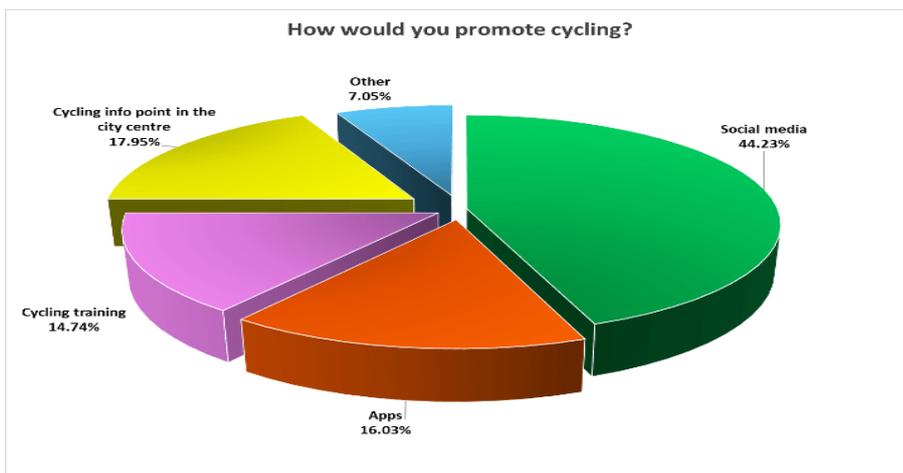


Figure 6. Promotional tools for cycling

Qualitative results: Focus group

A thematic analysis approach was used to analyze the data of the focus groups. Four themes were revealed as follows:

- **Cycling in the era of COVID-19**

During the workshop, it was reported that in the light of the latest COVID-19 developments in the region, new funding and priorities have been set by the government at national and regional levels. This refers to the 'Active Travel Fund' a £3.85m government grant to fund 'emergency' cycling and walking infrastructure in the West Midlands during 2020 summer.

- **Cycling safety**

Citizen-centric cities and regions should encourage cycling by providing the appropriate infrastructure to ensure safety for the cyclists. Apart from the infrastructure, which is the most essential component, training on safety can be also provided both to adults and pupils. Lastly, stricter legislation can prevent accidents too.

- **Focus on cycling benefits**

The health-related advantages have to be communicated. This also includes mental health benefits as cycling can be relaxing and improve mental focus. Monetary related benefits should be part of the promotional strategy too. This can be supported by establishing schemes that employers can participate such as 'Cycle to Work' scheme.

- **Promotional means and tools**

Social media, enlargement of the cycling routes and safe parking were also reported as priorities that actually the region is already addressing to a great extent. It was also suggested that a combination of several measures is needed to promote cycling. Nothing can be done on the problem of distance, but it's possible to work on all the other issues mentioned (for example by building more cycle lanes etc.). As indicated by the stakeholders: 'training is part of a big picture, together with promotion; and promotion needs to be well strategically thought through' (for example with a proper social media campaign, not just a single post). For the Bikeability project, not much marketing has been done as the training was specific for schools. Lastly all stakeholders agreed that the main two main messages that need to be communicated are 'why cycling is safe and why cycling is necessary'.

Discussion

The policy content and promotional tools in Europe

There is currently no official EU Cycling Strategy. However, the European Cyclists' Federation (ECF), supported by a number of other organisations, developed its own strategy and set of recommendations in 2017. Studies have shown that a range of approaches associated with increase in cycling (CyclingUK, 2016; O'Dolan, 2014; PASTA, 2017; Vaisma et al, 2012) These have been acknowledged by both European but also regional and local policy makers and have been integrated in their cycling and active travel policy plans and measures. Some of the most commonly used approaches at European level to boost cycling include intensive communication with individuals, individualised marketing campaigns,

improvement of infrastructure for cycling to achieve higher levels of safety and multidimensional town level or city level sustainable mobility programmes (ETSC, 2020; Handy, S et al, 2014; PASTA, 2017; Savan et al, 2017; WHO, 2018)

The most important results have been achieved in those cities where infrastructure planning has been followed by (i) training and education for road users (ii) cycling information points and social media-based promotion campaigns. To reduce cycling injuries and accidents which seems to be very important obstacle to cycling, it is of crucial importance to impose a safety-oriented behaviour but also legislation while building safety-oriented infrastructures (e.g good signposting, dedicated cyclists' paths). (BOOST, 2020; PASTA, 2017; PRESTO, 2011; Savan et al, 2017) Except from some bicycle-friendly countries (e.g the Netherlands, Denmark) most cities and countries do not have a good road infrastructure network for cyclists (EC, 2010; ECF, 2017)

Cycling schemes and measures in West Midlands

The UK's cycling strategy has been built based on the recognition of cycling as 'an ideal low-impact form of exercise which allows anyone, at whatever level of fitness, to build-up gently fitness levels and improve health and wellbeing. Building cardio-vascular fitness through exercise is more effective at reducing risk of death than losing weight through dieting and the health benefits of cycling greatly out-weigh the risks of injury from cycling'.

The region of West Midlands has invested significant funds over the last years in developing separate infrastructure for bicycles to avoid potentially dangerous situations, a measure that seems to be coherent both with the European policy directions but also the citizens' views as expressed in the survey. Training packages for children and adults in cycling behaviour should be also put forward. The scarcity of bicycle parking facilities has been addressed to a great extend in the region but a wider inter-modality can foster a greater cycling uptake.

Promotional tools and policies that can boost cycling in West Midlands

Spatial factors have been reported in the survey that can have a positive effect. These could include a network of dedicated cycle routes or paths, separation of cycling from other traffic, high population density, short trip distance, proximity of a cycle path to school.

Apart from spatial infrastructure planning, behavioural change should be also achieved highlighting the contribution of cycling on the environment but equally important, on health.

Given the changing travel behaviour imposed by the pandemic, where an increase in cycling and micro mobility (use of e-scooters) has been recorded, policies should capitalise on this paradigm shift and further promote active travel. To achieve a long-lasting behavioural change, it's important to consider city campaigns, social media and, in a diverse city like Coventry or Birmingham, looking at all areas and promotional means such as days in parks focused on cycling where traffic can be stopped and citizens of all abilities had the chance to cycle the inner ring road.

Building on the fact that West Midlands consists of many university-cities, campaigns should also target new students coming each year; they can be informed about the cycling services in campus and in the city, cycling lanes and relevant schemes.

To sum up, the main schemes that the region should be focusing on, according to the survey are:

I. Infrastructure investment: The results showed that that the majority of responders in West Midlands cycle quite often, above the cycling statistics for cycling for England (CyclingUK, 2018). However, more and safer cycling lanes can increase the cycling rates. can contribute to reducing speeds and separate pedestrians and cyclists from motorised vehicles. Cycle lanes should comply with certain specifications to assure safety and convenience levels such as adequate widths, smooth surfaces, and clear signage. A number of guidelines outline principles to guide the selection of appropriate cycle paths (Andersen et al, 2012; Sustrans, 2014)

II. Convenience enhancement: According to the survey the responders cycle more often for 'leisure', 'fitness' and 'pleasure'. This is very much aligned with the statistics for England provided by CyclingUK where for 2018 the majority of the trips made were for 'health, recreation and training'. Even if awareness for active living lifestyles is rising and infrastructure investments are growing, issues of convenience constitute an obstacle that prevent a larger shift towards cycling. The measures that were reported by the participants of the survey include provision of cycling training, discounts to buy bicycles, safe parking space and cycle-to-work schemes provided from employers. Cycling training can be built around the idea of the 'right to cycle' by improving the ability to ride a bicycle, but also the capacity to cycle safely. Monetary incentives including buying, repairing bicycles as well as accessories can further stimulate uptake. Cycling parking should be developed in parallel with the cycling network infrastructure as described in (i). This refers to safe and convenient locations to prevent theft. Cycle-to-work schemes refers measures that allows employers to loan cycles and cyclists' safety equipment to employees as a tax-free benefit.

III. Raising Awareness through promotion and marketing: Social media campaigns can stimulate cycling uptake but also to convince people who own a bike, but do not use it, to get back in the saddle (as in the example of Big Bike Revival in the UK) (<https://www.cyclinguk.org/bigbikerevival>). Information points could include info on paths, (guided or not tours), events, schemes etc. Mobile apps can also offer the same information as the 'info points' but on a more interactive manner.

Conclusions

This research focused on the policy side of cycling. More specifically, starting from the EU policy framework, the study was narrowed down to regional level looking upon practices adopted by the region of West Midlands in the UK. By comparing the EU and the regional measures, it was evident that the region has followed most of the practices that were also suggested by the EU and the European Cyclist Federation. The survey undertaken by West Midlands inhabitants as well as the focus group with the local stakeholders (policy makers, academics and NGOs) revealed that the actions can be used to accelerate a change of modal split are new lanes that can offer enhanced safety but also convenience (to access more places), safe and secure parking spaces in key areas and monetary incentives to buy bicycles and accessories. The most promising promotional tools appear to be social media-based campaigns, establishment of information points and mobile applications.

The secondary research indicated that there is no single recipe of policy directions that fits all countries. Directions are provided by the EC at European Level and local/regional governments should

parameterise the policies to fit with local needs. Also, a single policy cannot achieve active travel to an adequate level, most of the European countries use a mixture of various tools and schemes. Active living policies should be at the heart of the policies mixture, as this will drive a behavioural change too. So, it is important to incorporate active living considerations into policy development.

Limitations and Suggestions for Future Research

The limitations of the research are likely to impact on the quality of the findings and the capacity to successfully answer the research questions. The main limitations relate to:

- The chosen research methods (Survey and focus group).
- Ability to recommendations for policy directions/interpretation of results.

Two methodologies have been used in this research, a survey and focus group workshop. The sample used, for the survey, was based on convenience as they were participants of the Coventry 'Green Week 2020'. This implies two main limitations. The first one relates to the size of the sample which was limited (91). The second relates to the sample breadth who, given the fact that we attendees of an environment focused event, environmental protection might have been their first priority and not the 'active living' aspect. Also, the survey was conducted in March 2020 which was just before the COVID-19 restrictions in the UK, so the priorities of the citizens might have changed since given the outbreak of the pandemic since after.

The recommendations, provided, are for general directions and not for micro-decisions on specific directions. These should be taken on regional government level and be treated as 'living documents' because of the rapid changes imposed by COVID-19. For example, a fair and transparent framework for active living policy should be adopted at European level; however, the specific tools to implement the policy can be decided on national and regional level and allow a degree of flexibility to address the probability of emerging new conditions and therefore objectives.

Future research can concentrate on measures that are driven from the needs arose from the COVID-19 pandemic. This has led to an increased necessity for active travel to mitigate the burden imposed by the usage of private cars instead of public means of transport. Also, a thorough investigation into the policies at all countries can bring very useful findings that can be applied in West Midlands too. This can be done, for example, by identifying and analysing case studies of practices that have been applied in certain countries/regions. The lessons learnt can be extracted and good practices suggested based on the transferability of each practice. This will involve the introduction of certain criteria that can be applied in order to classify a practice as good.

Acknowledgements

The results presented in this paper have received funding from the European Regional Development Fund under the Interreg Europe programme PGI06099 (project acronym: e-Smartec).

References

Andersen, T; Bredal, F; Weinreich, M; Jensen, N; Riisgaard-Dam, M; Nielsen, M (2012). Collection of cycling concepts 2012. Cycling Embassy of Denmark, Copenhagen

Behrensen, A; von Rauch W; Balsmeyer, H; (2015). European Good practices on cycling: promotion from six pioneering European cities. European Biking Cities project, funded by the European Commission under Life programme

Bikeability (2020). 'An introduction to tools for schools' available at <https://bikeability.org.uk/tools-for-schools/an-introduction-to-tools-for-schools/> Accessed on 21st November 2020

BOOST-Boosting starter cycling cities (2020). 'Cycling Measures Selector', Available at <https://boost.up.pt/en/roadmap/> Accessed on 21st November

Catriona O'Dolan, Kathryn Stewart, Reggie Tricker (2014). Evaluating the Impact of Innovative Cycling Measures in EU cycling cities.

CIVITAS (2016). 'Policy note: Smart choices for cities Cycling in the City' Available at https://civitas.eu/sites/default/files/civ_pol-09_m_web.pdf Accessed on 20th November 2020

CyclingUK (2016). 'Cycling and the economy' Available at https://ec.europa.eu/transport/sites/transport/files/cycling_guidance/cycling_and_the_economy.pdf Accessed on 21st November 2020

CyclingUK (2018). Available at 'Cycling Statistics UK' <https://www.cyclinguk.org/statistics#:~:text=Around%205%2D6%25%20of%20the,%3D%202.3%20%E2%80%93%202.8%20million%20people> Accessed on 21st November

Deffner, Jutta; Hefter, Tomas; Rudolph, Christian; Ziel, Torben Eds. (2012). Handbook on cycling inclusive planning and promotion. Capacity development material for the multiplier training within the mobile2020 project. Frankfurt/Hamburg

Department for Transport (DfT) UK. (2020). Cycling & Walking Investment Strategy Report to Parliament: Moving Britain Ahead

e-Smartec (2020). 'Categorization of engagement and behavioural changing techniques in sustainable mobility plans steps'. Project Deliverable of E-Smartec, website: <https://www.interregeurope.eu/e-smartec/>

ELTIS (2020). 'Let's make cycling the European way! EU leaders discuss needs and funding opportunities' Available at https://www.eltis.org/in-brief/news/lets-make-cycling-european-way-eu-leaders-discuss-needs-and-funding-opportunities?fbclid=IwAR2TUJEplqsI0i31jQYBsbFOtP1y5fqFO8Te7xo8iwlQqngHtmbfQy_H42U Accessed on 18th November 2020

EU ministers for Transport Luxembourg. (2015). 'Declaration on Cycling as a climate friendly Transport Mode', Available at <http://www.eu2015lu.eu/en/actualites/communiqués/2015/10/07-info-transport->

declaration-velo/07-Info-Transport-Declaration-of-Luxembourg-on-Cycling-as-a-climate-friendly-Transport-Mode---2015-10-06.pdf Accessed on 20th November 2020

European Commission (2010). 'The promotion of Cycling'. Policy Department B: Structural and Cohesion Policies, Brussels

European Cyclist Federation .(2017). 'Cycling Barometer' Available at <https://ecf.com/resources/cycling-facts-and-figures/ecf-cycling-barometer> , accessed on 18 November 2020

European Cyclist Federation .(2017). 'Recommendations for delivering green growth and effective mobility system in 2030', Brussels

European Cyclists Federation .(2020). 'The Recovery and Resilience Facility – Joint ECF and CIE recommendations for the national recovery and resilience plans', available at https://ecf.com/sites/ecf.com/files/civicrm/persist/contribute/files/CIE_ECF_recommendations%282%29.pdf Accessed on 20th November 2020

European Transport Safety Council.(2020). 'HOW SAFE IS WALKING AND CYCLING IN EUROPE?' Available at https://etsc.eu/wp-content/uploads/PIN-Flash-38_FINAL.pdf Accessed on 21st November 2020

Fiona Rajé and Andrew Saffrey .(2016). The Value of Cycling, Department of Transport, UK

Handy, S., van Wee, B. and Kroesen, M. (2014) 'Promoting cycling for transport: research needs and challenges', *Transport Reviews* Vol. 34(1), 4-24

<http://www.eu2015lu.eu/en/actualites/communiqués/2015/10/07-info-transports-declaration-velo/07-Info-Transport-Declaration-of-Luxembourg-on-Cycling-as-a-climate-friendly-Transport-Mode---2015-10-06.pdf> . Accessed on 20th November 2020

Network for West Midlands. (2020). 'New or returning to cycling' <https://www.networkwestmidlands.com/ways-to-travel/cycling/new-or-returning-to-cycling/> Accessed on 21st November 2020

Neun, M. and Haubold, H. 2016. The EU Cycling Economy – Arguments for an integrated EU cycling policy. European Cyclists' Federation, Brussels, December 2016

Oana Arseni, Francesca Racioppi. (2018). MAKING THE (TRANSPORT, HEALTH AND ENVIRONMENT) LINK Transport, Health and Environment Pan-European Programme and the Sustainable Development Goals, World Health Organisation Regional Office for Europe, Denmark

PASTA Consortium (editor). (2017). 'PASTA Handbook of good practice case studies for promotion of walking and cycling'. Available at www.pastaproject.eu/publications Accessed on 21st November

PRESTO .(2011). Promoting Cycling for Everyone as a Daily Transport Mode. project deliverable of PRESTO, funded by the European Environmental Agency

Savan, B; Cohlmeier, E; Ledsham, T. (2017). Integrated strategies to accelerate the adoption of cycling for transportation. *Transportation Research Part F: Traffic Psychology and Behaviour*, Volume 46, Part A, pp 236-249

SUSTRANS .(2019). 'Cycle to work scheme explained' available at https://www.sustrans.org.uk/our-blog/get-active/2019/everyday-walking-and-cycling/the-cycle-to-work-scheme-explained/?gclid=Cj0KCQiAkuP9BRCKARIsAKGLE8UWXaZ-hx0A-ALknZW95iZNgVAoysvs7GOp7tVK9ORAEWAMnBDfnpQaAufQEALw_wcB Accessed on 21st November 2020

SUSTRANS .(2014). 'Handbook for cycle-friendly design' Available at https://ec.europa.eu/transport/sites/transport/files/cycling-guidance/sustrans_handbook_for_cycle-friendly_design.pdf Accessed on 21st November

The European Cycle Route Network, <https://en.eurovelo.com/>

Thomas Götschi, Sonja Kahlmeier, Alberto Castro, Christian Brand, Nick Cavill , Paul Kelly , Christoph Lieb , David Rojas-Rueda , James Woodcock, Francesca Racioppi. (2020). Integrated Impact Assessment of Active Travel: Expanding the Scope of the Health Economic Assessment Tool (HEAT) for Walking and Cycling, International Journal of Environmental Research and Public Health 17(20):7361

Transport for West Midlands.(2019). 'Cycling charter action plan' Available at https://www.tfwm.org.uk/media/47373/cycling-charter-action-plan-digital_v2.pdf Accessed on 21st November 2020

Transport for West Midlands.(2020). 'New West Midlands cycling network unveiled'. Available at https://www.coventry.gov.uk/news/article/3444/new_west_midlands_cycling_network_unveiled, accessed on 21st November 2020

Vaisma, Kalle; Mantynen, J; Metsapuro, P; Luukkoen, T; Rantala; Karhula, K. (2012). Best European Practices in promoting cycling and walking, Tampere University of Technology, Finland

World Health Organisation. (2006). Promoting physical activity and active living in urban environments: THE ROLE OF LOCAL GOVERNMENTS, World Health Organization, Denmark

World Health Organisation, UNECE. (2018). 'THE PEP Partnership on Cycling Pan-European Master Plan for Cycling Promotion', available at https://thepep.unece.org/sites/default/files/2018-07/THE_PEP_PS_Cycling.pdf Accessed on 21st November 2020