

Fieldwork ideas: Contemporary urban environments

This resource is part of the Fieldwork toolkit that supports our AS and A-level Geography specifications (7036, 7037).

Contemporary urban environments investigation

All AS and A-level students are required to take part in fieldwork in relation to processes in both physical and human geography. At A-level, students are also required to complete an independent investigation which is the non-exam assessment (NEA) component of the specification. This investigation may be based on either human or physical aspects of geography or a combination of both. This resource has been designed to show how fieldwork and the independent investigation could be linked to the study of Contemporary urban environments (A-level only).

Link to the specification

“Urban characteristics in contrasting settings. Physical and human factors in urban forms. Spatial patterns of land use, economic inequality, social segregation and cultural diversity in contrasting urban areas.

The impact of urban forms and processes on local climate and weather.

Urban precipitation, surfaces and catchment characteristics; impacts on drainage basin storage areas; urban water cycle: water movement through urban catchments as measured by hydrographs.

Environmental problems in contrasting urban areas: atmospheric pollution, water pollution and dereliction. Strategies to manage these environmental problems.”

Investigation ideas

- A comparison of the success and management of two contrasting urban regeneration projects.
- An assessment of ‘green’ transport strategies in a town as a part of managing urban development.
- A comparison of the quality of life between X and Y (two neighbouring wards or areas in different parts of the city).
- Why urban areas show differences in terms of their levels of deprivation.

- How and why quality of life changes with distance from the centre of city/town X.
- Analysis of land use patterns in the central part of an urban area.
- Analysis on patterns of crime and deprivation in an urban area, eg the level of crime is associated with the social, economic and environmental characteristics of an area.
- Comparative analysis of the socio-economic characteristics of different areas of a town.
- A study of microclimate variations across an urban area.
- Investigation into the impact of traffic on air pollution in an urban area.
- Investigation of central areas of a city to look at variations in land use, quality of the environment, footfall and/or characteristics of cultural quarters.
- Investigation of the impact of pedestrianisation on CBD shopping quality.
- Investigation of changing retail provision and shopper behaviours.
- Investigation of planned housing developments and their potential impacts.
- Investigation of how the demands for good living spaces are being managed.
- A comparison of the facilities and attitudes towards recycling, in two contrasting urban areas.

Possible hypotheses

- There are distinct socio-economic patterns in urban area X.
- Levels of crime are related to the social, economic and environmental characteristics of an area.
- There are significant differences in environmental quality across an urban area.
- CBD and out of town retail centres show differences in type and volume of traffic flow, pedestrian density and shop sizes.
- Urban microclimates show distinct changes from the centre to the edge of a town.
- In city X the quality of life for young families is higher in inner urban areas than in suburban wards.
- There are marked differences in levels of deprivation between areas X and Y.
- X town centre is becoming a clone town.

Possible methods

- Land use survey/shop-type classification.
- Pedestrian flows/footfall surveys.
- Questionnaires of shoppers/retailers/residents.
- Bi-polar surveys to analyse quality of the urban/retail environment.
- Assessment of retail quality (range, diversity, types etc).
- General environmental condition of the area (various environmental quality aspects).
- Resident versus visitor perception of parts of an urban area.
- Aesthetic quality surveys of the built environment, eg architecture and design.
- Housing quality surveys: size and upkeep etc.
- Quality of routeways and footpaths, including width and possibly accessibility for users who are partially sighted or in wheelchairs.
- Surveys of traffic/car parks/bus services to the town centre.
- Photographs/micro-field sketches of high street environments.
- Material deprivation and social deprivation indices.
- Noise surveys and pollution level surveys.

Sample investigation

How and why quality of life changes with distance from the centre of a city to the suburbs.

(The boundaries of the sampling areas should ideally be defined according to Census output areas so that geodemographic data can be easily compared with primary field data. This would be very important in the context of multiple deprivation data for instance).

Quality of life represents a multiple index of different criteria that reflects residents' housing standards and the environmental conditions in which they live. Aspects of quality of life include built environment, access to service provision, crime and safety, physical and mental health, traffic noise and safety, recreation, social belonging and community cohesion as well as standards of income. These aspects will be different for different groups of people.

Hypothesis: Levels of deprivation and quality of life change from the inner-city to the suburbs.

Data Collection

Equipment

- Large scale maps
- Recording sheets
- Camera
- Decibel meter

Methods

- Land use survey: record land use of each area on a large scale base map (1:2500 or 1:1250). Categories may include industry, retail, offices, housing, open space. Some might be subdivided, eg housing type (terraced, semi-detached, detached, flats, bungalow etc) and age.
- General landscape evaluation: based on subjective observation, for example boring versus stimulating, ugly versus attractive, crowded versus peaceful, threatening versus welcoming, drab versus colourful. An EQS can be used with indices or bi-polar scores. Students could combine this with photos that they take of the worst and the best images in each category. Include aesthetic quality of the built environment, for example architecture and design aspects.

- Scale of visual pollution: scores from zero to three: no pollution - badly polluted. Criteria might include, obviousness of pollution, litter, smells, state of buildings, impact on surrounding area.
- Index of burglarability: based on penalty points. Absence of burglar alarm, security cameras, metal bars on windows, metal shutters, neighbourhood watch sticker etc.
- Physical condition of buildings/index of decay: Range of options: none, little, some, much. Criteria: deterioration of walls, peeling paint, slipped tiles, broken glass, broken gutters, etc.
- Shopping survey: looks at shopping quality and street appearance. Quality of shops: type, other land use, quality of goods, number of vacant units, etc. Street appearance: safety for pedestrians, crowdedness, street cleanliness, etc.
- Crime perception: surveys, questionnaires or indices, eg a questionnaire for residents or observations in different urban areas of the burglar alarms, anti-crime features. This could be combined with some secondary crime data into an index for each output area.
- Questionnaires: could collect data about different aspects of quality of life or from different stakeholder groups, eg views on community cohesion, do people eat 5-a day, safety perception crime/traffic/pollution etc.
- Services surveys, eg libraries, post-offices, pubs, doctors' surgeries etc.
- Transport index: create an index which combines the frequency, length and cost of public transport to main service provision. Record transport ease/variety/quality.
- Car Age Survey: for each of the cars parked in a survey area, record its age by taking a mean - the average age of the cars in an area can be worked out.
- Noise surveys might give additional information on environmental conditions. Using an app such as Sound Meter or Decibel 10th, measure the sound level within each area in dB.
- Vandalism Audit: subdivide vandalism into different types, eg graffiti, damage to bus shelters, dumped litter etc then map locations in which these were found, as well as an assessment of the severity of the vandalism.

- Extended interviews: For example, with groups who might have set up renewal projects, youth projects, sports facilities etc.
- Photographic evidence: Photos could be taken of the various areas within the region and annotated to take note of the building/environment/traffic/people/services/renewal schemes/upkeep etc. Or perhaps a photo that students think sums up the area – socially or economically.
- Green Space Survey: This could include mapping the green spaces available, as well as assessing their accessibility, economically or perhaps socially.

Example of types of green space:

- Parks and gardens, eg urban parks, formal gardens and country parks.
- Natural and semi-natural green spaces, eg publicly accessible woodlands, meadows, wetland.
- Amenity green space, eg informal recreation space and village greens.
- Provision for children and young people, eg designated play areas and skate parks.
- Outdoor sport facilities ,eg golf courses, playing fields.
- Allotments, eg community gardens and farms.
- Food availability audit: within a given area, locations of shops selling fresh and healthy foods could be mapped, together with an estimation of the cost of a 'standard grocery' list.

Encouraging independence during the planning and data collection phase

It is important to allow candidates to have the opportunity to demonstrate their independence in the following areas:

- planning the enquiry/posing enquiry questions and devising hypotheses
- selecting and implementing data collection techniques.

Presentation of results and statistical analysis

- Land use data: transfer the data onto another base map for each area, using colours/shading.
- Housing Condition Survey: Mapping the features that have been collected in each area, shading in using a key. Decide on the categories to include on the base map and construct a key. The categories are likely to arise from the combination of the condition of brickwork, roofs, paintwork etc. For example, black for 'in very poor repair and condition' to light grey for 'in a good standard of maintenance'. Garden size could be represented by located pictograms along the transect on the base map. Housing density could be represented on a scatter graph. Distance along the transect on the x-axis and housing density per km² on the y-axis.
- Calculate total street environmental quality score for each street. Map results onto a base map using proportional symbols.
- Different indicators could be combined and mapped using radar plot diagrams located onto base maps.
- Visual quality data could be used to draw rose diagrams located at each survey point on a base map of the area.
- Green Space Survey: depending on the area covered, this may be represented as a dot map, showing point locations of the green spaces. A colour key could be used to distinguish between different types of green space, or perhaps the economic accessibility of each green space, eg free or fee paying. Basic mapping of the green space features on a base map may also be appropriate. If an index has been devised, then a choropleth may be appropriate.
- Census Data: this is likely to be a choropleth map for the main variable, eg household car ownership. This could be combined with a proportional symbols map for the average age of the cars on the area from the Car Age Survey.
- Photographic Analysis: displaying this data could range from annotating a series of photographs with descriptions of the various aspects. It would also be possible to construct an analytical table to tally the frequency of different aspects and behaviors. For example, people under 12, under 21, over 50. People individually or in pairs or groups. People smoking, sitting, climbing on street furniture, walking through an area etc.
- Questionnaires: usually displayed using a selection of pie graph, bar charts and pictograms.
- Extended Interviews: data coding is the process of examining data for themes, categories and key words. Students mark the text or chunks of text, so they can be compared and collated.

- Noise Surveys: an isoline map could be used to represent this data. The points at which the noise level was recorded would be chosen either randomly or at regular intervals, these are plotted onto a base map. Lines of equal measurement are then drawn.

Analysis

- Describe and analyse each set of data. Summarise the data using measures of central tendency (mean, median and mode) and dispersion (standard deviation). Use other refining activities that may be relevant such as scaling, ranking and weighting.
- Look for relationships between the data shown on the graphs and where appropriate use correlation.
- Spearman's Rank can be used to analyse some of this data, to test for the degree of relationship between a variable and the distance from the city centre. For example a null hypothesis might be, 'There is no significant correlation between housing condition and distance from the city centre.' Alternatively, students could combine the different data they have collected into a material and/or social deprivation index. For example, a material index might include housing density and households with no car, housing condition. An index for each area can be calculated by ranking each survey area, (1 being the best) for each indicator and taking an average over several indicators. This index can then be used in a Spearman's rank test for example: 'There is no significant correlation between the calculated material deprivation index and distance from the city centre.' The same principle can be used for social deprivation factors.
- Using all maps, graphs and calculated indices, describe patterns of quality of life within the study area. Try to explain trends and anomalous locations. Do inner city wards (or those close to a main road, factory) have lower environmental and housing conditions than areas towards the periphery of the town?
- Summarise key patterns of environmental and housing quality-highlight reasons for these patterns. Comment on recent developments that may have changed environmental or housing quality and overall quality of life.

Possible limitations

- Quality of primary data collection and accuracy of scoring of various elements of housing, environmental quality etc and its subjective nature.
- Coverage of sample points across chosen study areas, and whether it gives a representative picture.

- Age of secondary data – for example the 2011 census data is 5 years old.
- Response rate and balance of different age groups for the questionnaire data.
- Candidates should reflect critically on every stage of their investigation in order to appreciate its strengths and weaknesses. They should also comment on the level of accuracy and degree of reliability of data as these will have a significant impact on their findings and the conclusions drawn.

Extending the study

Consider to what extent perceptions of deprivation vary within a given area, depending on age, social class etc (comparing, for example, perceptions of teenagers and over 60's).

Further research may involve extending the spatial and/or temporal scale of the study, conducting similar research in a different location(s) or creating further sub-questions that could be investigated.

Sources of secondary data

Secondary data, such as National Census data, should be used to support the task. This will allow the students to explore important aspects of quality of life, not possible to observe through primary fieldwork. This might include education provision, crime and safety issues, access to work opportunities and levels of income.

Index of Multiple Deprivation

The Index of Multiple Deprivation (IMD) is a government measure of how deprived every part of the country is. It is a composite index which brings together measurements in 7 different domains:

- Income
- Employment
- Health deprivation and disability
- Education, skills and training
- Barriers to housing and services
- Crime
- Living environment.

These seven domains are combined to construct a single deprivation score. The whole of the UK has been divided up into small areas called Lower Super Output Areas (LSOAs). These are areas of 1000–3000 people. In cities, a Lower Super Output Area may only cover a few streets. In rural areas, Lower Super Output Areas can cover several small villages.

There are 32482 LSOAs in England, 1896 LSOAs in Wales, 6505 LSOAs in Scotland and 890 LSOAs in Northern Ireland.

The government has calculated the IMD for every Lower Super Output Area in the country. Using this information, each Lower Super Output Area has been given a rank. So in England, for example, LSOAs are ranked between 1 (the most deprived) and 32482 (the least deprived).

Census data is a useful source of secondary data on population structure. This includes quality of life indicators and multiple deprivation indices eg socio-economic class, health data, education levels.

- Neighbourhood Statistics for house prices and population pyramids for each postcode.
neighbourhood.statistics.gov.uk/dissemination/LeadHome.do?m=0&s=1471819243608&enc=1&nsjs=true&nsck=false&nssvg=false&nswid=1366
- Services Index: using GoogleEarth estimate distances to major supermarkets, schools, free cash points, computers etc.
- zoopla.co.uk/ House prices information for the whole of the UK. Identify house value index for each ward by calculating average house price. Take average value from 5 detached and 5 terraced houses.
- statistics.gov.uk This is the official website of the UK National Census. You can search by postcode to find all sorts of data about each ward (an enumeration district) in your chosen city.
- local.live.com This website has aerial photos and satellite images. It can be used to describe housing type and housing density. Also can be used to describe externalities: the features of the neighbourhood such as parks and busy roads that add positive or negative value to quality of life.
- checkmyfile.com/postcode-check/SY5-9PR.htm Postcode code data including, house prices, social grades, crime rates etc.
- apho.org.uk/resource/view.aspx?RID=116449 Health Profiles for Local Authorities.
- police.uk Crime Coverage.
- Deprivation mapper, maps factors such as income, employment, health and disability, education, skills and training, crime and living environment.
apps.opendatacommunities.org/showcase/deprivation
- Newspaper reports: reports detailing any of the quality of life indicators, schemes or groups views. These could be annotated and analysed to provide supporting evidence. google.com/earth