CASA0007 Quantitative Methods Written Investigation

The Task

Define a research question of your choice in a topic that is related to cities research and investigate this question, using the quantitative methods from this module as a basis. Present your investigation and its conclusions as a written report.
You need to use Python as the main language in this investigation, rather than other programming languages or tools (e.g. R, Excel).

[NOTE: Your work should be founded on methods covered in the Quantitative Methods module, possibly extended through your own research. Projects based around methods from a different module (e.g. Geographically Weighted Regression, GIS, etc.) are not appropriate for this task.]

Weighting

The Written Investigation makes up 60% of the marks for the Quantitative Methods module.

Deadline

Tuesday 18 January 2022, 17:00 GMT

Late submission of the written investigation will be subject to the standard penalties, according to UCL regulations.

Submission

Submission is exclusively via Moodle. Work should be submitted in PDF format.

DO NOT submit a MS word document, as the formatting of a word document may change on different computers.

DO NOT submit any file of code or data on Moodle. If you want, you can upload these in a Github repo and put down the link to the Github repo in the submission. This encourages people to reproduce your work.

DO NOT append code blocks in your submission.

Be aware that submissions are run through Turnitin software and checked for plagiarism. Punishments for plagiarism (following UCL procedures) can be extremely serious, potentially including disqualification from modules and courses. See the UCL guidelines for details.

In your submission, please add a line of your student number, but avoid **including** your name or email address.

Length

The **maximum** length of the text is **1750 words**, excluding graphs, tables, other figures and code extracts. Footnotes **are included** in the word limit. In addition, the work as a whole

must not exceed **7 pages**, with a minimum font size of 12. The word count must be stated at the end of the text.

The only exception to the above is the bibliography, which should appear on its own page at the end of the document, and which is not counted in the word limit.

Penalties for exceeding these limits will be in line with UCL regulations.

Assessment Criteria

The assessment criteria are those that have been made available via Moodle. You will receive a mark out of 20 for each of the five streams, giving a total mark out of 100.

Content

Structure Your written investigation should include the following sections:

- Research question
- Literature Review
- Presentation of Data
- Explanation of methodology
- Presentation of results
- Discussion of results
- Conclusions

Research Question Your research question must be something that admits a quantitative (rather than qualitative) analysis, in the broad area of cities research. As seen in the mark scheme (the “Ambition” stream), credit is given for ambitious and interesting research questions whose answers may be of genuine value, so consider justifying your choice of question on this basis. After defining your question, consider setting out some more specific research objectives and hypotheses.

Literature Review This should be a brief discussion of sources relevant to your work. Be sure to consider sources relating to both the *context* of the research question you have chosen and the *methods* that other authors have used to address similar questions. Ensure that you take a critical perspective on the sources you reference and end by *summarising the relevance* of what you have learnt for your own investigation.

Data It is likely that you will be working with data that you have obtained from some third party source (the exception may be if you are doing an investigation based purely on computer simulation). If so, you should include this section, where you communicate the key features of your data to the reader through summary statistics and appropriate figures and tables.

Methodology Your methodology must demonstrate an understanding of quantitative techniques and their value. Consider which of the methods from the course would be most appropriate to deploy in the investigation of your particular question. Methods not covered in the course may also be deployed, provided that they are clearly explained. As seen in the mark scheme (the “Technical Difficulty” stream), credit is given for the application of more varied and sophisticated techniques, so be sure to choose an approach that allows you to demonstrate the true extent of your understanding.

Results Consider the way in which you present your results carefully. The goal should be clarity of communication. In some circumstances, a table of values may be perfectly adequate. In other circumstances, a graph or diagram may be more appropriate.

Discussion When discussing your results, you should demonstrate your understanding of the quantitative methods that you have employed and your ability to clearly interpret any output that you have observed. Avoid summarising information that has already been clearly presented by means of a table or graph and concentrate on highlighting key facts and interpreting outcomes in terms of your research objectives.

Conclusions Your conclusion must relate back to your research question (even if your results are inconclusive) and must be based on all of the information that you have gained and the interpretations that you have outlined in the previous sections.

Data

You may use any data from any source that you are legally entitled to use. Some suggested sources of data will be discussed in the lectures and listed on Moodle. You may also collect your own data.

Your written work must include a clear explanation of how and where you obtained any data used in your investigation.

Be aware that using data that includes information about identifiable individuals would require ethical approval, which is impossible to obtain in the time frame of this assessment. The legal rules around this issue can be confusing. If you have any doubts or queries about your data set, please contact us.

Audience

Your work should be clear and comprehensible for an audience with a sound foundation of quantitative understanding. You should assume a detailed knowledge of the methods covered in the course. Briefly explain the purpose of each method that you employ.

Frequently Asked Question

Why impose a word limit and a page limit?

Word limits are useful to give students an idea of how much work is expected of them, and to manage the amount of marking required, allowing staff to get feedback to students in a reasonable amount of time. However, they can also be difficult to monitor, since doing a word count on every piece of work submitted is not feasible.

With a page limit (and an accompanying minimum font size), it is much easier to quickly verify that students have followed the brief. Simultaneously offering a word limit ensures that students have the clearest possible guidance on the amount of work that is expected.

For this assignment, it should be noted that the figure of 1750 words is a limit, not a target. Depending on the number of graphs, figures and tables in your work, anything from 1400-1750 words may be appropriate. Try to fill the seven pages as effectively as possible.

Note that, with reasonable margins and in most sensible fonts, 1750 words of 12 point text, with single line spacing, equates to between 3 and 3.5 pages of text (without counting space for titles and headings).

Which reference style should I use?

Please use the 10th or 11th edition of Cite Them Right, which is a version of Harvard style.
More information on this style can be found on the Moodle page (https://moodle.ucl.ac.uk/mod/folder/view.php?id=2548392).

What is the relationship between this coursework and group presentation? Should/Can I use the same dataset for these two assessments?

There is no relationship between this coursework and the group presentation. The dataset you use in this coursework should be different from the one in the group presentation.