

Q3 a) i) Factors which ~~account~~ account for the pattern of city population shown on the map include their location in relation to the coastline - ~~the~~ for example, all cities marked in Portugal are those lying on its western coast. The cities of greatest population are the capital cities, because this is the ~~the~~ heart of the country's economic activity and where there are the greatest business opportunities to make the most money, including London, Paris and Rome. These cities usually have a large industry too, such as Edinburgh being infamous for their productive of coal, such as areas near Yorkshire. ~~the~~ Landlocked Hungary do not have a large population and this may be due to its capital of Budapest having a tourist arrival ~~of~~ of

0-10 million people (2009 data). This means that people will not migrate here in search of jobs, because there are not many existing, in such an industry.

If a country is very mountainous then this makes inhabitations more difficult due to its remoteness and communication difficulties, resulting in a less economically active centre. Such a country is Switzerland, which ~~contains~~ contains some of the highest mountains in the Alpine range. This has resulted in Switzerland lacking a proportionate symbol, therefore.

ii) Proportionate symbols are effective because they maintain the raw data, and spatial differences can be calculated and reasoned from ^{with} further analysis. Disadvantages which render proportionate symbols as less accurate include that the symbol size, themselves, may obscure the underlying map onto which it has been superimposed, making it difficult to read off where the ~~the~~ circle is marking. It can be time consuming to gain an accurate reading for the circles and therefore determine a population's size, and counting them can also be time-consuming.

b) i) There is no significant correlation between GDP (in US dollars) and net migration (migrants per 1000 population).

ii) Since the result of 0.428 is below the significance level of 0.75 and 0.56, we can therefore accept the hypothesis with 95% confidence that there is a ^{positive} correlation between GDP and net migration and can reject the null hypothesis with 95% confidence.

iii) Spearman's rank correlation coefficient is suitable for this relationship. This is because the data is numerate and ordinal and can therefore be ranked. ~~The~~ Spearman's gives a positive or a negative correlation answer, also. This, however, does decrease its suitability because it does not tell you why such an answer and relationship has occurred. Spearman's is also ~~less~~ suitable because it is less time-consuming to complete, rather than the likes of Pearson's statistic.

c) The population changes shown in table 1 shows Luxembourg as having the highest GDP in US dollars, of 110,697. Luxembourg also has the highest number of migrants per 1000 people, at 8. This could increase the working population of the country, increasing its GDP and making it a more economically active country as people move in search of work. This has seen its population increase annually from 2004 - 2013 by 2% - 2.5%. Norway has a booming oil industry in its cities of Oslo, Bergen and Stavanger, leading to its high GDP of \$100,818. Norway does not have a high net migration, at 2 per 1000 people, and this could be due to the very high cost of living there, because costs to transport goods there are high. This has resulted in Norway having an average annual increase of 0.5-1.0%.

Italy has an aging population, and is stage 5 of the demographic transition model: 12.5% - 14.9% of its population are under 15 and over 20% of the population are ~~at~~ 65 and over. This has seen the government welcome an influx of migrants from other countries, which is why its ^{net} migration is high, at 5 per 1000. Italy has therefore had a small population increase of 0.0% - 0.5%, because people are living longer, women are having more prosperous jobs and delaying pregnancy to focus on their career, by which time many are unable to conceive ~~or~~ or having few children but giving them a better standard of living, such as buying expensive designer clothes and goods.

Bulgaria has a population decrease of 0.5% to -1.0%, and contains -3 migrants per 1000 people, meaning 3 people per 1000 of the population are emigrating, and moving to other countries such as Luxemburg, Spain and Italy in search of better paid jobs which they are more likely to get, based on their aging population. This has had an adverse affect on Bulgaria's GDP, ~~at~~ meaning it is at a very low 7,198\$, meaning the country is less economically active.

Portugal has a low tourist arrival rate, at 0-10 million arriving in 2009. This means less jobs are available in the sector and it has had a low population increase per year of 0.0% to 0.5%.

Spain has had an average annual population change of 1.5% to 2%, and this may be due to its thriving coal and gas opportunities. This has seen a ~~an~~ migrants per 1000 increase of 5. Also, because of Spain's warm climate, many westerners retire to there and therefore come under the umbrella of being a migrant, though they do not seek work - this might explain the GDP being lower, at 29,863. July temperatures here reach 24°C and above, making it a very appealing place to live. Much of Denmark is cropland and woodland, meaning it is not a particularly economic hub and so jobs there are not as sought after as it primarily relies on agriculture, giving it a migration per 1000 people of 2 and a population increase of 0 rather low 0.0% - 0.5%. ~~Poland~~ It also has a higher cost of living because international goods have to be shipped across, or travel by lorry to its remoteness.