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POS 604: Quantitative Methods

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The data has been rounded to the nearest two decimal points.

#### **Part One**

#### **Ouestion 1**

Item	Life expectancy	Gross national Income per capita
Mean	70.58	16693
Median	73.20	10400

Life expectancy is the number of years that a person is expected to live. The mean life expectancy is the average number of years a particular group can live. From the data, the average mean for life expectancy for 187 countries is 70.58. On average, people live about 70 years before they die. Among the 187 countries in the world, it is estimated that each country is expected to live 71 years (rounding the mean to the nearest whole number). The average life expectancy is an estimate and that does not mean everyone in these countries is expected to live up to 71 years. Also, the mean life expectancy does not mean the nobody could live more the 71 years and above. The median life expectancy considers what half of the population's life expectancy would be. The results showed a median life expectancy of 73.20. The median value indicates that by 73 years, half of these countries' people would have lived their expected lives.

The gross national income per capita is the total value of a country's earned income in a year divided by its population. On average, the gross national income for the 187 countries is 16693. The average gross national income is made of extremely lower and higher incomes. These extreme values project an average income that may be misleading. The median gross national income helps provide a middle income for these countries. The median gross national income is the amount of income that half of a country's population can earn. So, 10400 is the income that divides the population into two halves.

#### **Ouestion 2**

The mean life expectancy is 71 years from, the data the median life expectancy is 73 years and out of the 180 countries, 94 were above the median age of 73. The median age indicates that half of the world's population lived to 73 years, more than the average. Hence, the average person lives more the 70 years. The median age does not include extreme values of an outlier, so if the average person is estimated to live 71 years (mean) with exactly half of the population living up to 73 years (median), then the average person can live longer.

#### **Question 3**

Country	Rank	mean_years_schooling
Norway	4 th	12.6
Mali	183 rd (5th lowest)	2

Norway recorded 12.6 on average years of schooling, ranking them fourth among 187 countries. On average, adults aged 25 years and older spent almost 13 years (rounded to the nearest whole number) in school in 2012. On the other hand, Mali was ranked 183 for the average years of schooling. In Mali, adults aged 25 years and older spend two years on average education. Malian average years of schooling (2) is the least fifth-ranked country. The 2012 data means that Malians who are 25 years and older mostly spend two years in school while their Norwegian counterparts spend 13 years in school.

#### **Question 4**

Name	Average years of	Expected years
	schooling	of schooling
Standard	3.06	2.84
Deviation		
Variance	9.35	8.08
Mean	7.9	12.8

The standard deviation of average years of schooling is (3.06), indicating the spread of observation away from the mean. The mean of 7.9 shows the years of education for adults aged 25 years and older range from 11 years to 5 years. Thus, for people aged 25 years and older, their years of schooling ranges from 11 years to 5 years. The variance shows that there is 9.35 years far from the mean years of schooling.

For the expected years of schooling, the average years for school-going children is 13 years. And the observation of expected years of schooling is (2.84) years away from the mean. The standard deviation shows expected years of schooling for children range from 10.96 years and 15.64 years. The expected years of schooling for children is (8.08) years from the average of 12.8 years.

#### Part two

### **Question 1**

	Mean
Regions	HDI
Australia and New-	
Zealand	0.92
Northern America	0.91
Western Europe	0.89
Northern Europe	0.87
Eastern Asia	0.82
Southern Europe	0.81
Eastern Europe	0.79
Western Asia	0.76
South America	0.73
Caribbean	0.73
Polynesia	0.71
Polynesia	0.69
Central America	0.69
South-eastern Asia	0.68
Micronesia	0.67
Central Asia	0.67
Northern Africa	0.67
Southern Asia	0.61
Southern Africa	0.60
Melanesia	0.58
Middle Africa	0.49
Eastern Africa	0.49
Western Africa	0.45

For the 2012 geographical regional data, Australia and New Zealand have the highest average human development index of 0.92. The high score by this region indicates that in 2012, the region has higher human development indicators than the rest of the regions. Western Africa has the least average human development index, with a 0.45 score. The score of Western Africa indicates the region has the weakest human development indicator scores among the other 22 regions.

# **Question 2**

Sd- Life Region expectar  Southern Africa  Eastern Asia  Western Africa	
Southern Africa  Eastern Asia  Western Africa	7.63 6.89 6.44
Western Africa	6.44
Western Africa	
N. A. C	7.99
Middle Africa	
Eastern Africa	5.28
South-eastern Asia	5.17
Southern Asia	5.11
Northern Africa	4.93
Western Asia	4.28
Northern Europe	4.07
Melanesia	3.98
South America	3.97
Caribbean	3.96
Eastern Europe	3.55
Southern Europe	2.85
Central America	2.76
Micronesia	1.99
Northern America	1.84
Central Asia	1.03
Australia and New-	
Zealand	0.99
Western Europe	0.85
Polynesia	NA
Polynesia	NA

The geographical region with the highest standard deviation in life expectancy is Southern Africa, with a 7.63 value. The standard deviation of Southern Africa indicates the region has the highest spread away from the mean. Southern Africa's population is less likely to live up to the average life expectancy of that population (56.84).

## **Question 3**

Geographical region	Mean (Women labor force)
Australia and New-Zealand	71.05
Caribbean	59.22
Central America	49.4
Central Asia	51.72
Eastern Africa	71.78
Eastern Asia	63.27
Eastern Europe	62.80
Melanesia	59.94
Micronesia	NA
Middle Africa	60.14
Northern Africa	27.46
Northern America	70.39
Northern Europe	70.85
Polynesia	42.86
Polynesia	34.07
South-eastern Asia	61.26
South America	57.63
Southern Africa	57.81
Southern Asia	40.66
Southern Europe	57.01
Western Africa	58.70
Western Asia	41.67
Western Europe	68.95