Department Of AHS

Bio Statistics

Note: Attempt all questions. Manage your time properly.

Q.No. (01) ***(10)***

The data in the table are taken from a survey of the diet of 1308 men and 1540 women in total 2848 adults in a region of Pakistan. The numbers of men and women surveyed were divided, separately, into four equal parts on the basis of their fresh vegetable consumption. These parts are shown as Q4, Q3, Q2 and Q1. The mean consumption in grams per day is given for each food type in each part, for men and women separately. For example, the mean consumption of fruit by men who ate the lowest amount of fresh vegetables is 31 grams per day. The columns headed SE give the standard errors of the mean food consumptions by all men and all women.

	Men (sample size 1308)					*Women (sample size 1540)*				
	Q4	Q3	Q2	Q1		Q4	Q3	Q2	Q1	
	Mean	Mean	Mean	Mean	SE	Mean	Mean	Mean	Mean	SE
Fresh veg	204	259	266	317	0.9	178	235	266	304	0.8
Fruit	31	45	69	105	0.5	28	46	70	121	0.4
Rice	367	337	269	246	1.0	315	276	243	220	0.8
Wheat flour	79	114	197	253	1.0	56	118	141	180	0.8
Whole grain	2	2	6	27	0.1	1	3	6	22	0.1
Root veg	7	11	16	29	0.1	6	12	17	28	0.1
Meat	70	61	69	77	0.4	48	43	54	63	0.3
Fish	23	28	31	44	0.2	19	21	28	46	0.2
Milk	2	3	23	39	0.3	1	4	15	48	0.3

a. Calculate the overall mean consumption of fresh vegetables fruits, rice, fish, and meat for men and women separately. Give the underlying standard deviation in each case. Calculate also the overall mean consumption of fresh vegetables, rice, fish, and meat for men and women combined.

b. Describe in words what the figures for milk, root vegetable, wheat flour, consumption indicate.

c. What distinctive pattern is there, for both men and women, in rice, fruit, and fish consumption across the four parts, Q4 to Q1?

d. Draw a suitable diagram to show the difference in consumption patterns of fish and fruits between men and women.

e. Men require, on average, about 20% more food per day than women to maintain energy levels. Use this information to compare the consumptions of the main food groups by men in Q4 and women in Q1. (You are not required to consider whole grains, root vegetables or milk.).

f. Explain in your own words what the standard deviation of the above commodities shows for men and woman and which one show better result.

Q.No. (02) *(10)*

In the United Kingdom there has been a national census every 10 years since 1801 (with the exception of 1941). At the time of the 2011 UK census, a government minister described the census as 'expensive, inaccurate and inefficient', and 'out of date almost before it's done'.

The minister also said that data held by the National Health Service, local councils, the postal service, the electoral register, tax returns, credit card firms and phone companies can do the job.

A proposal for the 2021 UK census is that it should be conducted online and that it should incorporate additional data held by government agencies.

a. Describe the purpose of a census.

b. Explaining how it differs from a sample survey and from routine collection of data by government agencies.

c. The 2011 UK census attracted a response rate of about 94% of the population. Discuss whether or not that is a problem for the accuracy of the census.

d. In the 2011 UK census, almost 170 000 people stated their religion as 'Jedi Knight'. (Jedi Knights are characters in the 'Star Wars' films.)
Discuss what responses of this type indicate about the attitudes of some members of the public to the census. Discuss also whether responses of this type invalidate asking a question about religion.

e. Discuss the potential problems in conducting the 2021 UK census online, and explain how these problems might be overcome.

f. Discuss the potential problems in incorporating additional data held by government agencies.

Q.No. (02) *(10)*

a. Find A.M,G.M,H.M,Median,Mode,Quartiles,Deciles,Percentiles,Range,M.D,Q.D,Variance,Standared Deviation, Coefficient of variation,Skewness for the following data.

Rainfall (inches)	Number of Years
20 - 24	1
25 - 29	3
30 - 34	5
35 - 39	8
40 - 44	5
45 - 49	2
50 - 54	0
55 - 59	1

b. Convert the above given data in the form of ungrouped and then find A.M,G.M,H.M,Median,Mode,Quartiles,Deciles,Percentiles,Range,M.D,Q.D,Variance,Standared Deviation, Coefficient of variation, Skewness for the converted data.