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Subject - Biostatistics

Department Allied health sciences
BS Radiology 6th

Q No 7
(a)

Men	Women
Fresh vegetable $= \frac{(24+259+266+317)}{4}$ $= 261.5$	$= \frac{(178+235+266+324)}{4}$ $= 245.75$
Mean of Fruits $= \frac{(31+45+69+105)}{4} = 62.5$	$= \frac{(28+46+70+121)}{4} = 66.25$
Mean of Rice $= \frac{(364+337+267+246)}{4} = 304.75$	$= \frac{(315+276+243+220)}{4} = 263.5$
Mean of Fish $= \frac{(23+28+31+44)}{4} = 31.5$	$= \frac{(19+21+28+46)}{4} = 28.5$
Mean of meat $= \frac{(70+61+69+77)}{4} = 69.25$	$= \frac{(48+43+54+63)}{4} = 52$

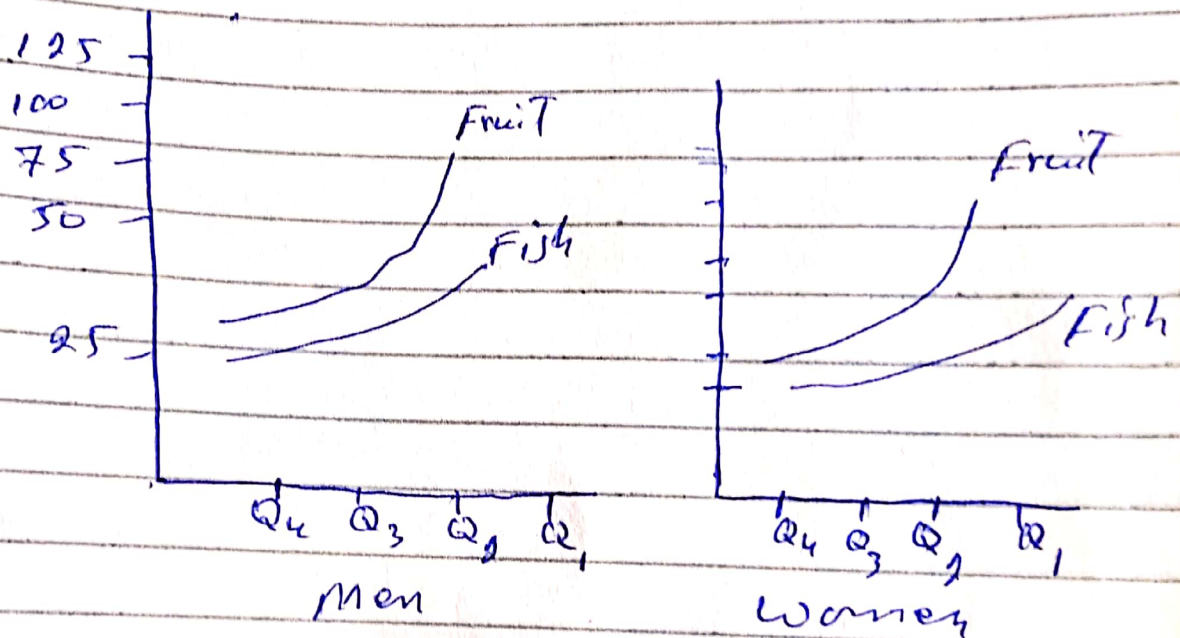
Standard deviation $= \sqrt{\sum (x - \bar{x})^2}$

Men	Women
S.D of Fruit = 32.388	= 53.256
S.D of Rice = 56.7	= 40.352
S.D of Fish = 8.963	= 12.288
S.D of Meat = 60.551	= 8.602
Combined Mean	
$= 261.5 + 245.75 + 304.75$	
Combined mean $= 261.5 + 245.75 + 304.75 + 263.5 + 31.5 + 28.5 + 69.25 + 52$ $= 1570.9375$	
8	
Combined Mean 1570.9375	

(b) it indicates that uses of Root vegetables are more than milk and uses of wheat flour is much more than milk and root vegetable.

(c) Rice men uses more rice than female, in fruit women are more user than men. In fish both consumer consume equally.

(d)



men like fruit more than fish

(e) In fresh vegetable Q_1 ^{women} More than the Q_4 men, each women use 78 grams, while each men uses 67 gram etc.

(f) In fruit men standard deviation is less than women, so men are better. In rice women are better. In fish and mean are better.

Q No 9
A

purpose of census
To count entire
population of
individual and
country at location.
However the lives
counts the number
of living at the
homes. And also
count the gene,
sex, race, (Age).
So it help in
the forming and
important for planning
for the decreasing
numbers, development
and policies.

(b)

In census every
unit of population
is studied in the
sampling. The census
ratio of periodic
collection of information
about the population
from the population.
So it's more suitable
to use the method
for population if
population is same
in nature.
P.T.O

However it is margin for error in sampling survey is more correct while. That

(c)

Absolutely not a full response rate for the census is a problem for accuracy of census as insufficient data will be collected. It is important to know about population and following base for developing and policies planning.

(d)

ironic response to the census by public signifying into trend ~~attitude~~ attitude to for the survey, and their carelessness in following accurate data. Quitters of these types are invalidated with such abuse responses.

(e)

Not all the population is as such in internet friendly. So may the response rate could be less. Other area of concern are cost pressure.

Q No 3 (D)

Rain fall x	F	F _x	F _o c	x ²	Fx ²
19.5 - 24.5	2	22	1	484	484
	3	81	4	729	2187
	5	160	9	1024	5120
	8	296	17	1369	10952
	5	210	22	1764	8820
	2	94	24	2209	4418
	0	0	24	2704	0
	1	57	25	3249	3249
	25	900			

$$AM = \frac{\sum Fx}{\sum F} = 36.8$$

$$GM = A \log \left(\frac{\sum f \log x}{\sum f} \right) = 36.055$$

$$H.M = 35.307 = \frac{\sum \frac{F}{x}}{\sum F}$$

$$\text{Median} = L + \frac{h}{F} \left(\frac{N}{2} - C \right) = 34.5 + \frac{8-5}{17}$$

$$\text{Median} = L + \frac{h}{F} \left(\frac{N}{2} - C \right) = 34.5 + \frac{5}{17} (25 - 9) = 37.7$$

$$\text{Mode} = L + \frac{F_m - F_0}{2F_m - F_0 - F_1} \times h = 34.5 + \frac{8-5}{2 \times 8 - 5 - 5} \times 5 = 39.5$$

$$Q_1 = L + \frac{h}{F} \left(\frac{2N}{4} - C \right) = 34.5 + \frac{5}{8} \left(\frac{25}{4} - 5 \right) = 35.28$$

$$Q_3 = L + \frac{h}{F} \left(3 \times \frac{N}{4} - C \right) = 34.5 + \frac{5}{8} \left(3 \times \frac{25}{4} - 5 \right) = 43.09$$

$$D_1 = L + \frac{h}{F} \left(\frac{4}{10} - C \right) = 24.5 + \frac{5}{3} \left(\frac{25}{10} - 1 \right) = 27$$

$$P_1 = L + \frac{h}{F} \left(\frac{4}{100} - C \right) = 29.5 + \frac{5}{1} \left(\frac{25}{100} - 1 \right) = 15.75$$

P10

$$\text{Range} = x_m - x_o = 57 - 22 = 35$$

$$\text{M.D} = \frac{\sum F|x - \bar{x}|}{\sum F} = 5.456$$

$$\text{Q.D} = Q_3 - Q_1 = 7.81$$

$$\text{Variance} = \frac{\sum Fx^2}{\sum F} - \left(\frac{\sum Fx}{\sum F} \right)^2 = 57.25$$

$$\text{Standard deviation} = \sqrt{\text{variance}} = 7.5666$$

$$\text{Coefficient of variation} = \frac{\text{S.D} \times 100}{\bar{x}} = 0.206$$

$$\text{Skewness} = \frac{3(\text{Mean} - \text{Median})}{\text{Standard deviation}} = \frac{3 \times (36.8 - 37.7)}{7.566}$$

$$\text{Skewness} = -0.3568$$

negative skewed

(b) solution = 22, 27, 27, 32, 32, 32, 32, 32, 37, 37, 37, 37, 37, 37, 37, 37, 37, 42, 42, 42, 42, 42, 47, 47, 57

$$\text{mean} = \frac{\sum x}{N} = \frac{900}{25} = 36.8$$

$$\text{GM} = \left(22 \times 27 \times 27 \times 32 \times \dots \times 57 \right)^{\frac{1}{25}} = 36.45$$

$$\text{HM} = \frac{N}{\sum \left(\frac{1}{x} \right)} = 35.302$$

$$\text{Median size of } \frac{25}{2} \text{ items} = \frac{37+37}{2} = 37$$

mode = most frequent value = 37

$$Q_1 = \text{size of } \frac{25}{4} \text{ th item} = 6 \text{ th item} = 32$$

$$Q_3 = \text{size of } 3 \times \frac{25}{4} \text{ th item} = 18 \text{ th item} = 42$$

$$D_1 = \text{size of } \frac{n}{10} \text{ th item} = \frac{25}{10} \text{ th} = 2.5 \text{ th} = 27$$

$$D_9 = \text{size of } \frac{25}{10} \text{ th item} = 15 \text{ th item} = 29$$

$$\text{Range} = 57 - 22 = 35$$

$$\text{MD} = \frac{\sum |x - \bar{x}|}{n} = 5.456$$

P.T.O

$$Q.D = Q_3 - Q_1 = 42 - 32 = 10$$

$$\text{Variance} = \sqrt{\frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2} = 57.25$$

$$S.D = \sqrt{57.25} = 7.5666 \text{ C.V} = \frac{S}{\bar{x}} \times 100 = 0.20$$

$$Skewness = 3(\text{Mean} - \text{Median}) S.D = 3(36.8 - 37)$$

$$7.5666 \times 0.20 = 1.5133$$