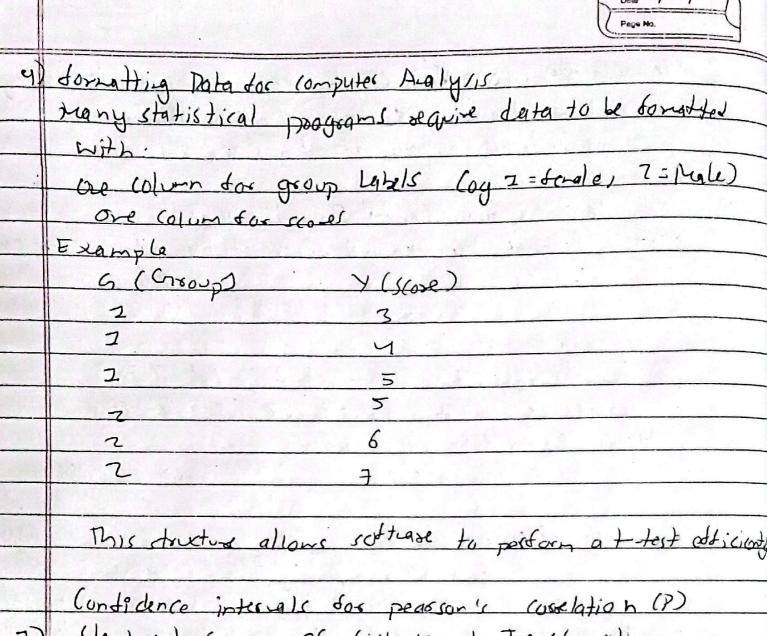
	Distrerence Between Means: Key (compts Assumptions for considence interval on the difference between Means
2)	Assumptions for contiduce internal on the difference between
	Means
200	To compute a contiderce înteral ((I) for the difference
	between means, we assure:
1)	Egial variance. The two populations have the same variance
	(honogeneity of variance)
2)	Normality: The populations are normally distributed Independence: Each value in the sample is independent of the
3)	Independence: Each value in the sample is independent of the
	Ofcess
	Merer violations of assumptions I and I do not significantly
	after the sesults.
32)	formula for lantidence interval on Difference between
I.	Means



(I too the effernce between two near is giving 10-0x 1:m,+ = M2-M2 - (tc. SM3-M2) Upper limit = My-Mz + (toy. SMI-MZ) Example rule ylation (Animal Research Study) step1: compute the standard error of the difference between MI-M7 = VZXMSE dereles ng = 17, My = 5 353, 1, 2 = 7 743 Males no = 17, Ma = 3887, 5,7=2-985 Moon Square 2 Exx Ux (MSE). $MSE = S_1 + S_7 = 7.73 + 7.985 - 7.864$ compute standard foror

SMJ-M 2 = \[\frac{2 \times 7.860}{27} = 0.5805 Step 2 and the towalle dow a 95% (ordidance interal lot = 32) Soom te +-table, for df = 32, t (0.95)=7.037 Step3 compute the foodidance Internal · Difference in Means My - H2 = 5-353 - 3-882 = 1.477 · la culate limits lover limits = = 47] - (7.037 x 6.5805)=0.29 Upper limit = 1471+ (7-037 x 6-5805)=2.65 Thus, the 95% condidence in texal is

0.79 Eyd - Nin 57.65 This suggests that in the pupulation, the difference between Leve and male affitudes tward annal discurch is likely between 0.79 and 2.65 points



The sampling distribution of plasson's correlation

coldiciont (x) is not normally distributed To compute

a contidence interval for the population overlations,

~ o use Fisler's 2) transformation, which converts or into a variable that is approximately normally distribute

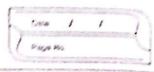
Re standard owner of z 1 is given by

 $\frac{SE_{21}=1}{\sqrt{N-3}}$

where w is the sample size



2) steps to compute a condidence interval for p Convert Pearson's x to z' way distais transformation Compute a contidence interval in term of z' (on vest the confidence internal balk to & 30 5 xample (alculation (Anima) Resourch Study) " Sample Size = N=34 · Sumple lord sation 8 = - 0.654 · dister's z1 transformation of x. Z1 = - 6.78 Strp1: compute to standard coros of z' SE = 1 - 0.16 1. Stp? complte the 95% contidence interval for 2) Sor a 95% confidence Lovel, the z scoris 196 LULOX lim, 7 of z1 = -0.78- (7.96×0.16)= J.B Upper limit of z! = -0.78 + (7.96x 0.76):08 Step 3 Conex + 21 condidence limits Back to 1 using a Conversion calculator z1 = - 1.13 corresponds to 8 = -0.81 21 = -0.43 forzesponds tox = -0.40 Thus, the 95% condidence interval for p is -0.81 < P < 0.40



compute a 99.1. condidence Internal , for a 991 (andicance love), the 25(0-2 is 2.5) Lover limit of z! = -0.78 - (2.58 x 0.78) = -1 Upper limit of 2! = -0.787 (258 x 0.78)-0 concesting back to & 21 = -1.24 robs sponds to = -0.84 z' = -0.37 cosesponds + 0 x = -0.31 Thus, the 99% condidence interval for pis $-0.84 \le p \le 0.32$ As expected, the 99, contidence interval is widel than the 95% considerce interval, reflecting greater undestainity confidence Internal for a pupulation proportion Estimating the population proportion a poll to ostinate public support. sumplo site N =500 Savorable responses x = 260 Sumple proportion $P = \frac{N}{N} = \frac{160}{500} = 0.52$

2) Standard Export of a sample proportion justinged as

SEp = \frac{12-7}{N}

Substituting values . SEp = √ 0.52/1-0.52) = 0.0223



3 (ompute the Condidonce Internal (95%) Using the Z score for 95% condisonco (Z=7.96), the condidence interulis: PIZX'SEP 0.57 + 6.0437 To correct dox continuity, me subtract add 0.5 / N(0.01). 6 LO X / 15 it = 0.57 - 0.0437 - 0.007 = 0.475 Upper libit - 0.52 + 0.0437 + 0.002 = 0.505 Thus, the 95% (antidence interval) dos It is 0.475 € 52 € 0.565 4 Margin of Exect The contidence interval suggests that between 47.5% and 56.5% of voter s uppost the condidate. Impost note The 4.5% margin of exect applies to the percentage sovoris to condicate, pt to difference bot our conduter The rangin of error fox the difference between the consider is \[\sum_{2x4.5} \tau. = 6.36 \tau. This is often insperorted in redia polls!