Sampling of $\overbar{X}$ (Page 86-87)

1. $Mean \left(\overbar{X}\right)= μ$
2. $Variance \left(\overbar{X}\right)= \frac{σ^{2}}{n}$
3. $Standard error\left(standard deviation\right)\left(\overbar{X}\right)=\sqrt{Variance \left(\overbar{X}\right)}= \frac{σ}{\sqrt{n}}$
4. Distribution of $\overbar{X} is $
5. If X is normal , then $\overbar{X}≈Normal (μ,\frac{σ^{2}}{n})$
6. If X not normal , then $ \overbar{X}≈Normal (μ,\frac{σ^{2}}{n})$:

By central limit theorem.( n > 30)

1. تحويل $\overbar{X}$ to Z (لاستخدام الجداول في ايجاد الاحتمالات )

 $ Z=\frac{القيمة-mean }{Standard error }=\frac{\overbar{X}-μ}{σ/\sqrt{n}}$



Sampling of $\overbar{X}\_{1}-\overbar{X}\_{2} (Page 94-95)$

$$1.Mean \left(\overbar{X}\_{1}-\overbar{X}\_{2}\right)= μ\_{1}-μ\_{2}$$

$$2.Variance \left(\overbar{X}\_{1}-\overbar{X}\_{2}\right)= \frac{σ\_{1}^{2}}{n\_{1}}+\frac{σ\_{2}^{2}}{n\_{2}}$$

3.$Standard error\left(standard deviation\right)\left(\overbar{X}\_{1}-\overbar{X}\_{2}\right)= \sqrt{Variance \left(\overbar{X}\_{1}-\overbar{X}\_{2}\right)}= \sqrt{\frac{σ\_{1}^{2}}{n\_{1}}+\frac{σ\_{2}^{2}}{n\_{2}}}$

 4.Distribution of $\overbar{X}\_{1}-\overbar{X}\_{2} is $

$$\overbar{X}\_{1}-\overbar{X}\_{2}≈Normal (μ\_{1}-μ\_{2},\frac{σ\_{1}^{2}}{n\_{1}}+\frac{σ\_{2}^{2}}{n\_{2}})$$

5. تحويل $\overbar{X}\_{1}-\overbar{X}\_{2}$ to Z (لاستخدام الجداول في ايجاد الاحتمالات )

 $ Z=\frac{القيمة-mean }{Standard error }=\frac{(\overbar{X}\_{1}-\overbar{X}\_{2})-mean}{Standard error}$

Sampling of $\hat{P}$ (Page 97-98)

1. $Mean \left(\hat{P}\right)= P$
2. $Variance \left(\hat{P}\right)= \frac{pq}{n} (q=1-p)$
3. $Standard error\left(standard deviation\right)\left(\hat{P}\right)=\sqrt{Variance \left(\hat{P}\right)}= \sqrt{\frac{pq}{n}}$
4. Distribution of $\hat{P} is : \hat{P}≈Normal (P,\frac{pq}{n})$
5. تحويل $\hat{P}$ to Z (لاستخدام الجداول في ايجاد الاحتمالات )

 $ Z=\frac{القيمة-mean }{Standard error }=\frac{\hat{P}-P}{\sqrt{\frac{pq}{n}}}$

Sampling of $\hat{P}\_{1}-\hat{P}\_{2}$ (Page 100-101)

1. $Mean \left(\hat{P}\_{1}-\hat{P}\_{2}\right)= P\_{1-}P\_{2}$
2. $Variance \left(\hat{P}\_{1}-\hat{P}\_{2}\right)= \frac{p\_{1}q\_{1}}{n\_{1}}+\frac{p\_{2}q\_{2}}{n\_{2}} (q\_{1}=1-p\_{2})$
3. $Standard error\left(standard deviation\right)\left(\hat{P}\_{1}-\hat{P}\_{2}\right)=\sqrt{Variance \left(\hat{P}\_{1}-\hat{P}\_{2}\right)}= \sqrt{\frac{p\_{1}q\_{1}}{n\_{1}}+\frac{p\_{2}q\_{2}}{n\_{2}}}$
4. Distribution of $\hat{P}\_{1}-\hat{P}\_{2} is : \hat{P}\_{1}-\hat{P}\_{2}≈Normal (P\_{1-}P\_{2},\frac{p\_{1}q\_{1}}{n\_{1}}+\frac{p\_{2}q\_{2}}{n\_{2}})$
5. تحويل $\hat{P}\_{1}-\hat{P}\_{2}$ to Z (لاستخدام الجداول في ايجاد الاحتمالات )
6. $ Z=\frac{القيمة-mean }{Standard error }=\frac{(\hat{P}\_{1}-\hat{P}\_{2})-(P\_{1-}P\_{2})}{\sqrt{\frac{p\_{1}q\_{1}}{n\_{1}}+\frac{p\_{2}q\_{2}}{n\_{2}}}}$