

Chp62-1.Evaluate the effect of e-commerce advertising on two types of advertising A/B, [Is the average purchase amount, advertising B greater than A]?

(1). [Question]: What are the x and y variables of this analysis

question?

廣告	消費金額	廣告2	
廣告1	606.9	廣告2	624.9
廣告1	543	廣告2	643.5
廣告1	370.2	廣告2	812.7
廣告1	722.4	廣告2	422.7
廣告1	671.7	廣告2	936.9
廣告1	593.7	廣告2	816
廣告1	581.7	廣告2	799.5
廣告1	562.8	廣告2	666.6
廣告1	648	廣告2	650.4
廣告1	706.2	廣告2	678.6
廣告1	721.5	廣告2	386.7
廣告1	399.3	廣告2	515.1
廣告1	374.7	廣告2	475.8
廣告1	365.4	廣告2	432.3
廣告1	551.1	廣告2	116.1

(2).[Question]: What kind of [statistical verification] should be

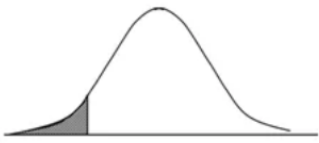
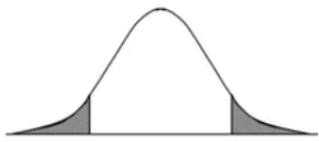
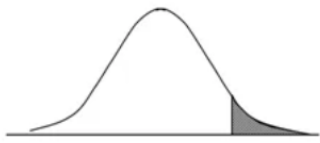
used for such data?

??? Accreditation

Because x is ??? and y is ???



(3).[Question]: Is this [double-tailed test, or right tail test, or left tail test]?

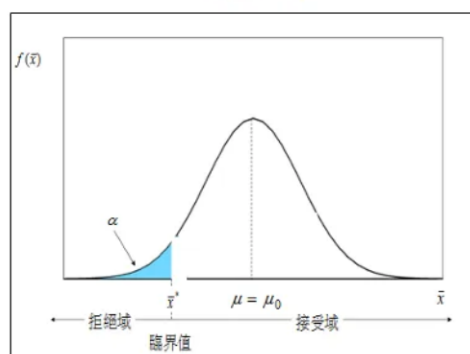
單尾檢定 (左尾)	雙尾檢定	單尾檢定 (右尾)
$H_0 : \mu = \mu_0$ $H_1 : \mu < \mu_0$	$H_0 : \mu = \mu_0$ $H_1 : \mu \neq \mu_0$	$H_0 : \mu = \mu_0$ $H_1 : \mu > \mu_0$
		

[Whether there is a difference in the average purchase amount, **advertisement A and B**] belongs to the **???** Accreditation

[Whether the average purchase amount, advertising A is greater than B], belongs to the **??? Tail check** (single tail check).

[Whether the average purchase amount, ad B is greater than A], belongs to the **??? Tail check** (single tail check).

左尾檢定



(4).[How to set statistical hypotheses]: [Is the average purchase amount, advertising B greater than A, belongs to the left tail test] **2 hypotheses?**

→ Propositions of the question question: **average sales amount, ??**

Will it be greater than??

→ Convert to: Statistical Hypothesis:

• 1. **H0假設(虛無假設)→否定假設**

– **Average sales amount, ????**

• 2. **H1 hypothesis (opposing hypothesis) → affirmative hypothesis**

– **Average sales amount, ????**

→ [Note]: **H0 nihilistic hypothesis/negative hypothesis: is the opposite of the proposition**

→ [Note]: **H1 Opposing Hypothesis/Affirmative Hypothesis: is the affirmation of a proposition**

(5).[Question]: The average sales amount, B will be greater than A?

群組統計量					
	廣告	N	平均值	標準差	標準誤平均值
消費金額	1	120	467.77	181.375	16.557
	2	120	514.00	174.645	15.943

獨立樣本檢定									
變異數等式的 Levene 檢定					等變異數式的 t 檢定				
		F	顯著性	t	自由度	顯著性 (雙尾)	平均值差異	標準誤差異	差異的 95% 信賴區間
消費金額	採用相等變異數	.376	.540	-2.014	238	.045	-46.282	22.985	-91.563 -1.002
	不採用相等變異數			-2.014	237.661	.045	-46.282	22.985	-91.563 -1.002

Step 1: Look at the pronounced p-value of [Levene Test]:

Significance p-value 054>0.05→→ means that 2 maternal variants are accepted[??].

Therefore, it is necessary to choose the ??? of the mean equation t test

significant p-values (??)

Step 2: Look at the T Determination of the Mean Equation for the Apparent P-Value:

The one-tail test is divided by 2

Significance p-value $p = ??? = ??? < \text{trust level of } 0.05,$

→ So in line with ??? Assumptions

→ ??? Assumptions: Average sales amount, advertising ???
> Advertising ???

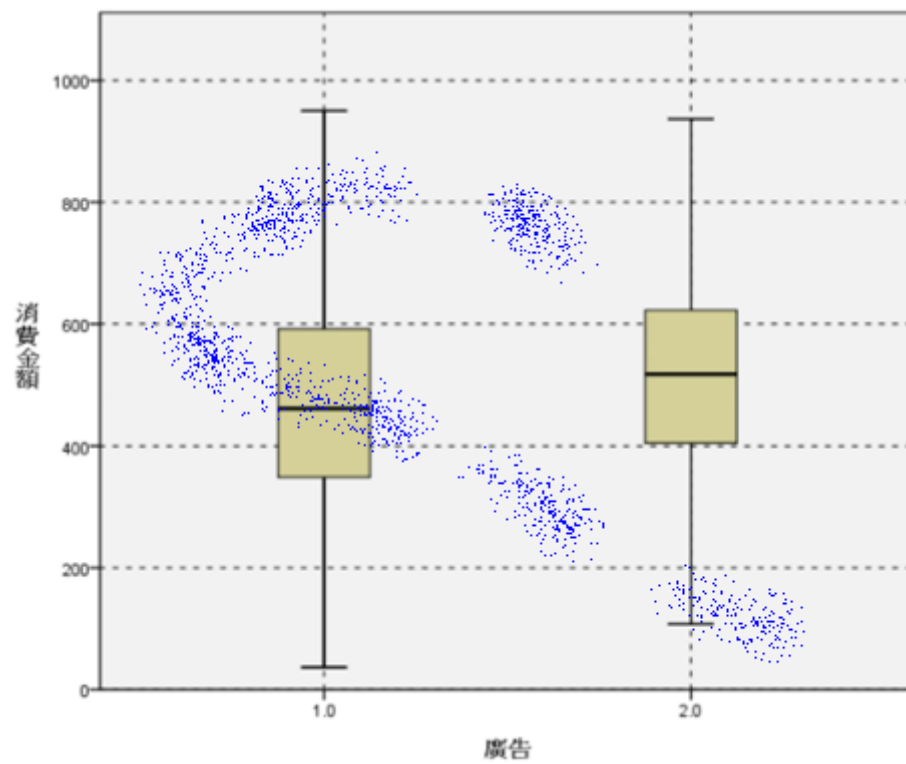
(6). [Conclusion]:

→ Conclusion 1: Obvious Advertising ??? The performance is greater than the advertisement ???, the average sales amount is relatively high

→ Conclusion 2: Make a [recommendation form for A/B plan].

廣告設計種類	平均銷售金額	建議採用順序
廣告2	514.05	1
廣告1	467.77	2

(7). [Drawing]: Box diagram



(8). [Drawing]: Histogram

