

Amazon Customer Survey Analysis

This survey was taken to help the E-commerce giant Amazon, understand the kind of customers making purchases from their website. The data gathered was used for the descriptive analysis to get a clear picture of how the business processes are doing and to effectively increase the conversion rate of customer leaving the sales funnel in between. This survey was sent to customers on their registered email address. The survey was taken by the customers of age group 22-30 years.

The below analysis mainly focuses on getting the estimate about the following variables associated with the customer:

- 1) Monthly expenditure of customers on e-Commerce Websites
- 2) Monthly expenditure of customers on Amazon
- 3) Did Amazon met customers need with its stock
- 4) Did customers find the product fairly prized on amazon

Statistical procedures and parameters used:

- 1) The level of risk for incorrectly concluding the confidence interval contains the true mean is .05 or 5%
- 2) The level of confidence taken is .95 or 95%
- 3) For Ratio variables, t- distribution is used to calculate the Margin of Error
- 4) For Categorical variables, normal distribution is used to calculate the Margin of Error
- 5) Mean calculated is for the sample chosen for the analysis
- 6) Standard Deviation is also for the sample chosen for the analysis

Analysis:

1) Monthly expenditure of customers on e-Commerce Websites

		<i>Monthly expenditure on e-Commerce Websites</i>	
Confidence Interval for Age using t-Distribution		Mean	284.0816327
Alpha	0.05	Standard Error	78.20418415
Sample standard deviat	547.4292891	Median	100
Sample size	49	Mode	100
Sample average	284.0816327	Standard Deviation	547.4292891
		Sample Variance	299678.8265
		Kurtosis	14.0720227
		Skewness	3.578051569
Confidence Interval	95%	Range	2980
t-value	2.011	Minimum	20
Margin of Error	157.2400508	Maximum	3000
Lower	126.8415818	Sum	13920
Upper	441.3216835	Count	49
		Confidence Level(95.0%)	157.2400508

- It can be concluded with 95% confidence that the average expenditure of customers on e-commerce website is from \$126.84 to \$441.32.

Monthly Expenditure of males	
Mean	136.25
Standard Error	34.85569
Median	55
Mode	100
Standard Deviation	197.1736
Sample Variance	38877.42
Kurtosis	11.78439
Skewness	3.173613
Range	980
Minimum	20
Maximum	1000
Sum	4360
Count	32
Confidence Level(95.0%)	71.08866

Confidence Interval for Age using t-Distribution	
Alpha	0.05
Sample standard deviation	197.174
Sample size	32
Sample average	136.25
Confidence Interval	95%
t-value	2.040
Margin of Error	71.0887
Lower	65.1613
Upper	207.339

- It can be concluded with 95% confidence that the average expenditure of males is between \$65.16 to \$207.33

Monthly expenditure on e-Commerce Websites	
Mean	562.3529412
Standard Error	202.5903564
Median	200
Mode	50
Standard Deviation	835.3014382
Sample Variance	697728.4926
Kurtosis	3.983193596
Skewness	2.098998509
Range	2975
Minimum	25
Maximum	3000
Sum	9560
Count	17
Confidence Level(95.0%)	429.4723701

Confidence Interval for Age using t-Distribution	
Alpha	0.05
Sample standard deviation	835.3014382
Sample size	17
Sample average	562.3529412
Confidence Interval	95%
t-value	2.120
Margin of Error	429.4723701
Lower	132.8805711
Upper	991.8253113

- It can be concluded with 95% confidence that the average expenditure of females is between \$132.88 to 991.86

Conclusion:

- We can extrapolate that on an average, expenditure of females is more than that of males in the total population.

Notes: Refer to Total Monthly expenditure worksheet in the attached workbook.

2) Monthly expenditure of customers on Amazon

<i>Monthly Expenditure on Amazon</i>			
Mean	134.3928571	Confidence interval for Monthly Expenditure using t Distribution	
Standard Error	33.18487241		
Median	40	Alpha	0.05
Mode	30	Sample standard deviation	232.2941069
Standard Deviation	232.2941069	Sample size	49
Sample Variance	53960.55208	Sample average	134.3928571
Kurtosis	7.736651318		
Skewness	2.832193529		
Range	1000	Confidence Interval	95%
Minimum	0	t-value	2.011
Maximum	1000	Margin of Error	66.72265789
Sum	6585.25	Lower	67.67019925
Count	49	Upper	201.115515
Confidence Level(95.0%)	66.72265789		

- It can be concluded with 95% confidence that average monthly expenditure of a customer is between \$67.67 to \$201.11

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<i>Monthly Expenditure of Males on Amazon</i>			
Mean	81.4765625	Confidence interval for Monthly Expenditure using t Distribution	
Standard Error	26.36868895		
Median	32.5	Alpha	0.05
Mode	30	Sample standard dev	149.1638301
Standard Deviation	149.1638301	Sample size	32
Sample Variance	22249.84822	Sample average	81.4765625
Kurtosis	18.15120788		
Skewness	4.020955442		
Range	800	Confidence Interval	95%
Minimum	0	t-value	2.040
Maximum	800	Margin of Error	53.77929568
Sum	2607.25	Lower	27.69726682
Count	32	Upper	135.2558582
Confidence Level(95.0%)	53.77929568		

- It can be concluded with 95% confidence that the average monthly expenditure of males is between \$27.70 to \$135.26

Monthly Expenditure on Amazon			
Mean	234	Confidence interval for Monthly Expenditure using t Distribution	
Standard Error	77.69874895		
Median	100	Alpha	0.05
Mode	70	Sample standard deviation	320.3601489
Standard Deviation	320.3601489	Sample size	17
Sample Variance	102630.625	Sample average	234
Kurtosis	2.463677424		
Skewness	1.838523686		
Range	986	Confidence Interval	95%
Minimum	14	t-value	2.120
Maximum	1000	Margin of Error	164.7139896
Sum	3978	Lower	69.28601036
Count	17	Upper	398.7139896
Confidence Level(95.0%)	164.7139896		

- It can be concluded with 95% confidence that the average expenditure of females on Amazon is between \$69.29 to \$398.71

Conclusion: From the analysis done above, we can extrapolate the following about the expenditure of the total population:

- Females accounts for the major revenue of amazon
- Average expenditure of females is almost thrice as much as that of males

Notes: Refer Monthly expenditure of Amazon worksheet of the attached workbook

3) Did Amazon meet customer's need with its stock

Confidence interval using t Distribution	Yes	No
Alpha	0.05	0.05
Sample Proportion	0.714285714	0.28571
Sample size	49	49
Confidence Interval	95%	95%
z-value	1.960	1.960
Error	0.064536279	0.06454
Lower	0.587796932	0.15923
Upper	0.840774496	0.4122

- It can be concluded with 95% confidence that the customers who thinks Amazon met their need with its stock falls between 58.78% to 84.14%

Conclusion:

- From the above analysis we can extrapolate with 95% confidence that in total population, 58.78% to 84.14% of the customers will find that the Amazon has the product they are looking for.

Notes: Refer worksheet Product Fairly priced of the attached workbook

4) Did customers find the product fairly prized on amazon

Confidence interval using t Distribution	Yes	No
Alpha	0.05	0.05
Sample Proportion	0.69388	0.30612
Sample size	49	49
Confidence Interval	95%	95%
z-value	1.960	1.960
Error	0.06584	0.06584
Lower	0.56483	0.17708
Upper	0.82292	0.43517

- It can be concluded with 95% confidence that the customers who thinks that the products are fairly priced on Amazon falls between 56.48% to 82.29%

Conclusion:

- From the above analysis we can extrapolate with 95% confidence that in total population, 56.48% to 82.29% of the customers will find that the products are fairly priced on Amazon.

Notes: Refer worksheet Product Fairly priced of the attached workbook

Final Conclusions:

- Females spend more on e-commerce as compared to men
- Females spend almost as thrice as men on Amazon
- At least 60% of the customers find the product they are looking for on Amazon
- At least 56.5% of the customers find the products fairly priced on Amazon.



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