

AB testing interpretation

Assignment 4: Rule-based segmentation Part B

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Please Interpret the test results that was calculated in class. The interpretation should be in two ways. Statistical and Marketing perspective as data driven manager.

Dear Marketing VP,

I hope this email finds you well. As requested, I am sharing the results of our latest AB testing with the subject of switching to Facebook's new cost bidding option. According to you, there is no difference between maximum and average cost bidding, so why would we risk a new strategy when the one we have is working? This is your answer:

The Results

	Proportions_P_Value	Maximum Bidding	Average Bidding	\
Purchase/Impression	0.000000	0.005416	0.004830	
Purchase/Click	0.000000	0.108006	0.146703	
Click/Impression	0.000000	0.050148	0.032922	
	H0_Hypothesis	Winner		
Purchase/Impression	Rejected	Maximum Bidding		
Purchase/Click	Rejected	Average Bidding		
Click/Impression	Rejected	Maximum Bidding		

	Ttest_P_Value	Maximum Bidding Mean	Average Bidding Mean \
Impression	0.000050	101711.450000	120512.425000
Click	0.000035	5100.625000	3967.550000
Purchase	0.350322	550.900000	582.050000
Earning	0.000000	1908.575000	2514.925000
Earning_Per_Click	0.000000	0.408358	0.668312

	H0_Hypothesis	Winner
Impression	Rejected	Average Bidding
Click	Rejected	Maximum Bidding
Purchase	Not Rejected	No Difference
Earning	Rejected	Average Bidding
Earning_Per_Click	Rejected	Average Bidding

The significance of each result is represented by P-value < 0.05. The H0 hypothesis in this AB test is: "There is no difference between Maximum and Average bidding." As the results tables show, the only case where this is true is the purchase feature, which doesn't change because of the bidding type.

Interestingly, though, impressions, earnings, and earnings per click perform better under average cost bidding. However, clicking is higher with maximum bidding. Considering that each click raises the overall cost, average bidding is the best option. Yet reviewing the conversion rates, maximum bidding performs better than average bidding. There are more clicks per impression and more purchases per impression. The latter is not abysmally higher, though. And average bidding still performs better when it comes to purchases per click.

This means that maximum bidding produces more clicks, driving up the cost but not increasing purchases to make up for it, whereas average cost bidding doesn't require as many clicks to produce the same purchase revenue. Earnings per click alone are 26% higher with average cost bidding, and earnings themselves are 31% higher.

According to the data, we should opt for average cost bidding for our Facebook ads. The results are significant enough for us to trust them, and the difference in gross revenue is almost a third of current earnings. As the data-driven manager that I am, I recommend going forward with the change.

Best regards,

Tania Cajal

Marketing Manager at BTS Role Playing for Assignments