

MMDT091

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I think to answer question A and B, we need to analyze whether the model we trained is reliable or not. In this case, we have some data from Mean absolute error and mean squared error. In the result, R^2 is high which is 86% of the variances can be explained. The value of MAE and MSE also prove that this model is enough to make decision

We can answer both questions by looking at the result from our code and this is because we have the results of the trained model and also the coefficient value. I have added some visualization to know the relationship of the cost amount and sale model. At that time, TV and radio sales could provide more relative sales than newspapers. If we have more coefficients, we can have more impact.

Question A.

Which advertising channel has the least impact on sales volume?

Provide evidence from your analysis and explain your reasoning.

To decide which channel has the least impact, we have to look at the value of the coefficient.

In the results, the values are

[3.68334078 2.90625242 0.14194772] 14.497142857142856

So the first one is TV, the second one radio, and the last one 0.14 and then the intercept is 14.50 which means if we don't spend on ads, the sale will be 14.50.

From the results, we can interpret that

The value goes like this TV>Radio> Newspaper

3.68> 2.90> 0.14

I think why I decide here the least impact with coefficient value because if we compare the coef, let's say if we understand the coef as မြှောက်ဖော်ကိန်း in the highschool but if the coef is really low not even one (1) in that case, this will not make any significant change in the sales as newspaper value 0.14.

The result is relevant because nowadays, the rate of newspapers might be lower because of the evolving technology. People like to spend their time more on TV and other electronic devices.

I am thinking of a relatable example of using standard deviation here. In facebook ads, we do boost to reach more audience, to buy our products. At that time, we have to spend money to reach more people. I would say the amount that we spend is directly proportional to the sale that we make.

By looking at the results, most people don't want to read, instead a picture or a video is better rather than reading small texts and finding information. In summary, if we are working in that company to increase sales, my suggestions would be that spending money on newspapers will not really be effective.

Question B

If we increase the amount spent on TV advertising by one dollar, while keeping the amounts spent on radio and newspaper advertising constant, what will be the expected change in sales volume?

Support your answer with your findings and explain your reasoning clearly.

According to question A, TV and radio have a better impact on sales.

The result of the coefficient we got from TV is 3.68. So, if we increase by \$1 more on TV, the sales will increase by 3.68 because we multiply 1 with 3.68 (1×3.68) and the sales of radio and newspaper will remain the same. I think the whole sales volume will increase by 3.68. But I am thinking that if we also increase on radio, we can also have increased sales volume as TV and radio has better coef values as a result. The sales will also increase by 2.90. If we have enough budget we should really consider increasing the budget on these two.