

Tutorial 4

Solutions to manually graded questions



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Read-only

Question 1.7

{points: 1}

Using the results in `facebook_MLR_add_results` from **Question 1.6**, how would you interpret the estimated coefficient of the continuous variable `page_engagement_percentage` ?

Points:



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Manually graded answer

Your answer goes here.

BEGIN SOLUTION

- For any type of post, the expected total engagement percentage increases by 1.04% per 1% increase of the page engagement percentage.

Note: an important part of the answer is "For any (or all) type of post".



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**Question 2.5**

{points: 1}

What is the correct interpretation of estimated coefficient of the interaction term `page_engagement_percentage:post_categoryProduct` from `facebook_MLR_int_results` in **Question 2.3**?

Points:



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Manually graded answer



Your answer goes here.

BEGIN SOLUTION

- The difference between the slopes of `Product` and `Action` is -0.22%

or

- The expected `total_engagement_percentage` increase per one unit increase in `page_engagement_percentage` is 0.22% lower for Product-posts than for Action-posts` (1.09% for Action-posts and $1.09 - 0.22 = 0.87\%$ for Product-posts)

Question 2.7

{points: 1}

2.7.0 Using the results from `facebook_SLR_action_results` and `facebook_MLR_int_results` in **Question 2.6**, explain why the estimated coefficients of `page_engagement_percentage` are the same in both models

2.7.1 Using the results from `facebook_SLR_product_results` and `facebook_MLR_int_results` in **Question 2.6**, explain why the estimated coefficients of `page_engagement_percentage` are *not* the same in both models.

2.7.2 Explain why the estimated coefficients of `page_engagement_percentage` in `facebook_SLR_product_results` is *not* the same as that of `page_engagement_percentage:post_categoryProduct` in `facebook_MLR_int_results` using the results from **Question 2.6**.

Points:



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Manually graded answer

Your answer goes here.

BEGIN SOLUTION

2.7.0 Both models estimate the LR for the baseline (or reference) level `Action`.

2.7.1 The estimated coefficient of `page_engagement_percentage` in `facebook_SLR_product_results` is the slope of the LR for the Product-posts. However, the estimated coefficient of `page_engagement_percentage` in `facebook_MLR_int_results` is the slope of the LR for the baseline level `Action` (for the Action-posts)

2.7.2 The estimated coefficient of `page_engagement_percentage` in `facebook_SLR_product_results` is the slope of the LR for the Product-posts. However, the estimated coefficient of `page_engagement_percentage:post_categoryProduct` in `facebook_MLR_int_results` is the *difference in the slopes* of the line for Product-posts and the line for Action-post.