

DM-Quiz-2020-Q3

30.77% (4/13)

- ✗ 1. Logistic Regression Model is used to describe
- ☐ A Relationship between one categorical dependent variable and one or more (any) explanatory variables
 - ☐ B Relationship between one numeric dependent variable and one or more (any) explanatory variables
 - ☐ C Relationship between one categorical dependent variable and one explanatory variable
 - ☒ D Relationship between one categorical dependent variable and one or more numeric explanatory variables
 - ☐ E I do not know
- ✗ 2. Why Linear Regression cannot be used to predict the binary response variable?
- ☐ A Some of the estimates might be outside the [0,1] interval
 - ☒ B Coefficients of linear regression models do not exist
 - ☐ C There will be the multicollinearity
 - ☐ D All of the variants
 - ☐ E I do not know
- ✗ 3. The most common approach to estimate coefficients of logistic regression is
- ☐ A The Maximum Likelihood
 - ☒ B Ordinary Least Squares
 - ☐ C Generalized Method of Moments
 - ☐ D I do not know
- ✗ 4. The model of Logistic Regression is
- ☐ A $\ln(\lambda) = e^{(xb)} / (1 + e^{(xb)})$
 - ☒ B $\ln(y) = e^{(xb)} / (1 + e^{(xb)})$
 - ☐ C $\Pr(y=1) = e^{(xb)} / (1 + e^{(xb)})$
 - ☐ D I do not know

✗ 5. We can estimate Logistic Regression in R using the function

- ☐ A lm()
- ☐ B glm()
- ☐ C flm()
- ☒ D logit()
- ☐ E I do not know

✗ 6. Which one of these is the correct interpretation of the coefficient of Logistic Regression?

- ☒ A For a 1-unit increase in X, we expect a b1 unit increase in Y.
- ☐ B For a 1-unit increase in X, we expect b1 percentage increase in Y.
- ☐ C For a 1-percentage increase in X, we expect b1 percentage increase in Y.
- ☐ D Increasing X by one unit changes the log odds by b1
- ☐ E I do not know

✓ 7. Logistic Regression cannot be used to model the response variable which

- ☐ A has two categories
- ☐ B has more than two categories
- ☐ C is ordinal
- ☒ D is numeric
- ☐ E I do not know

✓ 8. Accuracy =

- ☒ A $(TP+TN)/Total$
- ☐ B $TP/(TP+FN)$
- ☐ C $TN/(TN+FP)$
- ☐ D I do not know

| | | Predicted | |
|--------|--------------|--------------|--------------|
| | | Negative (0) | Positive (1) |
| Actual | Negative (0) | TN | FP |
| | Positive (1) | FN | TP |

✗ 9. Sensitivity =

- ☐ A $(TP+TN)/Total$
- ☐ B $TP/(TP+FN)$
- ☒ C $TN/(TN+FP)$
- ☐ D I do not know

| | | Predicted | |
|--------|--------------|--------------|--------------|
| | | Negative (0) | Positive (1) |
| Actual | Negative (0) | TN | FP |
| | Positive (1) | FN | TP |

✗ 10. Your lecturer decided that you are cheating while you are not. It is

- ☐ A Type 1 error (false positive)
- ☒ B Type 2 error (false negative)
- ☐ C I do not know

✓ 11. Suppose the data with the number of observations equals to 142, where 89 observations belong to class 1, and another part to 0. Let the level 1 is the positive case. We performed the logit model and obtained the accuracy = 60%. Does the model have a high predictive power?

- ☐ A Yes, because it is more than the non-information rate
- ☒ B No, because it is less than the non-information rate
- ☐ C Yes, because it is less than the non-information rate
- ☐ D No, as a result of other reasons.
- ☐ E The non-information rate? What is it?

✓ 12. Is Logistic regression a supervised machine learning algorithm?

- ☒ A Yes
- ☐ B No
- ☐ C I do not know

✗ 13. By using MLE for estimating the coefficient in the Logistic Regression model

- ☒ A we can obtain the unique formula for coefficients
- ☐ B we can obtain the unique formula for coefficients only for 1-D case
- ☐ C we cannot obtain the unique formula for coefficients
- ☐ D I do not know