Review Form 1.6

Journal Name:	**Asian Journal of Probability and Statistics**
Manuscript Number:	**Ms_AJPAS_85735**
Title of the Manuscript:	**Logistic regression without intercept**
Type of the Article	**Commentary**

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	1. Abstract is not conclusion. So rewrite abstract. 2. VIF mentioned in keywords does not reflect practically anywhere in the entire work. 3. What do you mean by monotonic transformation of independent variables in logistic regression model with and without intercept? There is no monotonic transformation of independent variables in logistic regression model without intercept in your work as you mentioned in abstract and conclusion. If you have nothing to show about the transformation, I think you remove it from the work. 4. Parameters in equation (2.1) are not explain, do so. 5. The statement "the log likelihood of logistic regression is defined by equation (2.3)" is referring to which logistic regression function?. If you are referring to equation (2.2), check equation (2.3) again. 6. Differentiating equation (2.3) w.r.t β and $\iota'(\beta) = 0$ does not give equation (2.4). Only the first term of equation (2.2) when differentiating gives (2.4) as $\frac{e^{X_I\beta}}{\left(1+e^{X_I\beta}\right)^2}$ not $\frac{e^{X_I\beta}}{\left(1+e^{X_I\beta}\right)}$ as you shown in the text. What about the second term of (2.2)? 7. Check equation (2.6), how does it differ from equation (2.4)? 8. In equation (3.1), if a_0=0 what will happen to that equation? I suggest the summation sign should cover from the first term (i = 0, 1, . . . , p) in order not to affect the equation when any constant is zero based on your definition of multicollinearity. But if you consider (3.1) as a system without intercept, then remove the first term. 9. In model 4 from the result, intercept B_o tends to zero does not mean it is zero. This shouldn't be a comparative reason to conclude that model 4 with intercept and model 5 without the intercept are the same. 10. Example 6.4 does not have any evident to prove the existence of multicollinearity of the model with intercept. This claim can be shown by using the value of VIF.	Thank you so much for your valuable and constructive review comments. I totally agree with you and have made changes in terms of your comments and suggestions. Enclosed below are my responses. 1. I have rewritten the abstract to include the problem that is solved, the importance of the problem, method(s) used, obtained results etc. 2. I've changed VIF to its full name Variance inflation factor in Keywords.. Variance inflation factor and its acronym appear in Section 3. 3. I have added a paragraph at the very beginning of Section 5 to define a monotonic transformation and its relationship with a linear transformation. Please note that I have removed the 2nd level of heading 5.1, 5.2. 4. Explanation of parameters has been added right after equation (2.1). 5. I omitted some details in the original version. I have added the details in the revised version. Please refer to new equations (2.3) and (2.4) and text around in the revised version. 6. I assume (2.2) in your comment is really (2.3). Now (2.3) becomes (2.5) due to the 2 added new equations as mentioned in 5 above. We can first simplify $l(\beta)$ to $\sum_{i=1}^{N}\left[y_i(X_i\beta) - \ln\left(1+e^{X_i\beta}\right)\right]$ Now we can differentiate it with respect to β, set the derivative equal to 0 and obtain the result. Please refer to the 2 new equations (2.6) and (2.7) for simplification and derivation in the revised manuscript. 7. Equation (2.4), now equation (2.8), has p simultaneous equations including the first equation for the constant (intercept), whereas equation (2.4), now equation (2.10), has only p simultaneous equations. 8. The summation sign now covers from the first term (i = 0, 1, . . . , p) in equation (3.1). 9. I have removed Example 6.3 that includes these 2 models (models 4 and 5). Accordingly, the example numbers are reduced by 1 and model numbers are reduced by 2. 10. I've added the following text into this example (now Example 6.3 as the original example 6.3 has been removed (please refer to Item 9 above): Indeed, if we let $x_1 = age,$ and $x_2 = age1,$ then (3.1) holds with $a_0 = 1, a_1 = -2$ and $a_2 = 1.$ Therefore, age and age1 are collinear.

		Multicollinearity can be checked using function vif in the car package in R. In our case, an error message "there are aliased coefficients in the model" will show up, which indicates multicollinearity in the logistic regression model. In this context, one variable is an "alias" of another variable, that is, one variable is linearly dependent on another variable. Since age1 and age are collinear, $R^2 = 1.$ When one does linear regression of age vs age1 or age1 vs age, the VIF of age or age1 is not defined as the denominator in $vif = 1/(1 - R^2)$ is 0.
Minor REVISION comments	1. Warning message under example 6.5 is not necessary, I suggest you remove it.	It has been removed.
Optional/General comments		

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	