League of Legends 2019 World Championship

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1. Introduction

- Game: League of Legends: League of Legends is a multiplayer online battle arena video game developed and published by Riot Games.

- Dataset: The dataset consists of every competitive game that has been played during the 2019 world championiship.
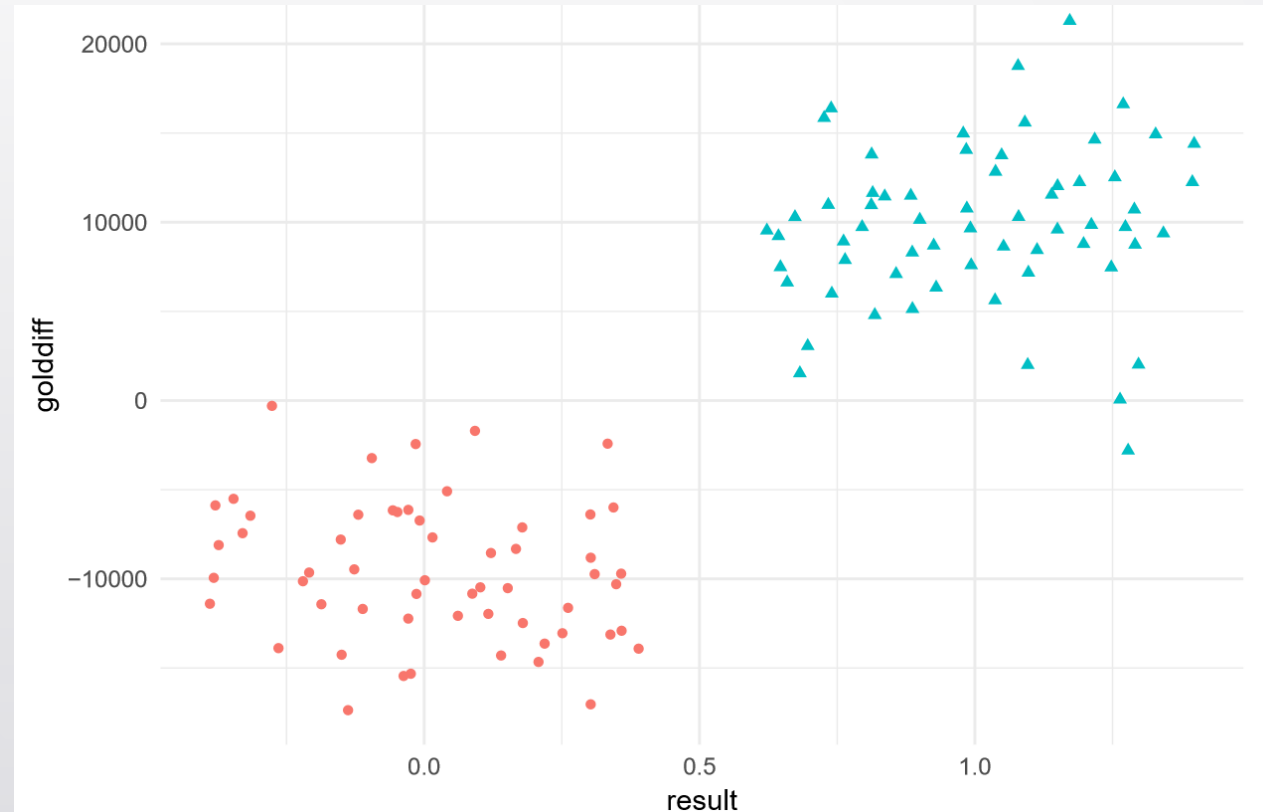
2. Construct Model

- First plan: Logstic regression
  - Binary
  - Predict who will win
  - Earn gold difference(golddiff)
    - Gold Blue – Gold Red

2. Construct Model

- The relationship of

Gold Difference and result

2. Construct Model

- Second Plan: Mutiple Regression
  - Response: golddiff
  - Data clean: 23 possible variables
    - Final data: 10 variables

2. Construct Model

- Variables selection:
  - Full model
  - Compare two model(full & reduced model)

Variables selection

- Full model:

$$(Gold_B - Gold_R) = \beta_0 + \beta_1 fb + \beta_2 herlad + \beta_3 ft + \beta_4 fBaron + \beta_5 vw +$$
$$\beta_6 vwclearrate + \beta_7 ivwclearrate + \beta_8 (KDA_B - KDA_R) + \beta_9 (Drag_B - Drag_R) + \beta_{10}(Baron_B - Baron_R)$$

- fb: first blood

- ft: first tower

- vw: version ward

Variables selection

Varibale names	P-value
fb	0.223192
herald	0.977424
ft	0.288461
fbaron	0.367966
visionwards	0.563930
visiblewardclearrate	0.000366***
invisiblewardclearrate	0.581914
kda	3.97e-06***
drag	8.02e-05***
baron	6.08e-07***

F-statistics	P-value
57.81	2.2e-16

Variables selection

--stepwise method

- Compare two model(full & reduced model)

	Model	R^2	Adj R^2	AIC	BIC
1.	Full Model	0.838	0.838	2346.435	2379.785
2.	Reduced Model	0.838	0.831	2339.703	2359.157

P-value of ANOVA test: 0.699

- Reduced Model:

$$(Gold_B - Gold_R) = \beta_0 + \beta_1 fb + \beta_2 vwclearrate + \beta_3 (KDA_B - KDA_R) + \beta_4 (Drag_B - Drag_R) + \beta_5 (Baron_B - Baron_R)$$
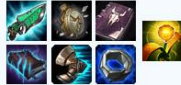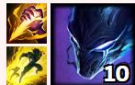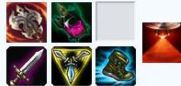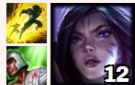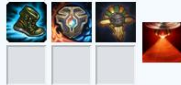
3. Check Model Assumption

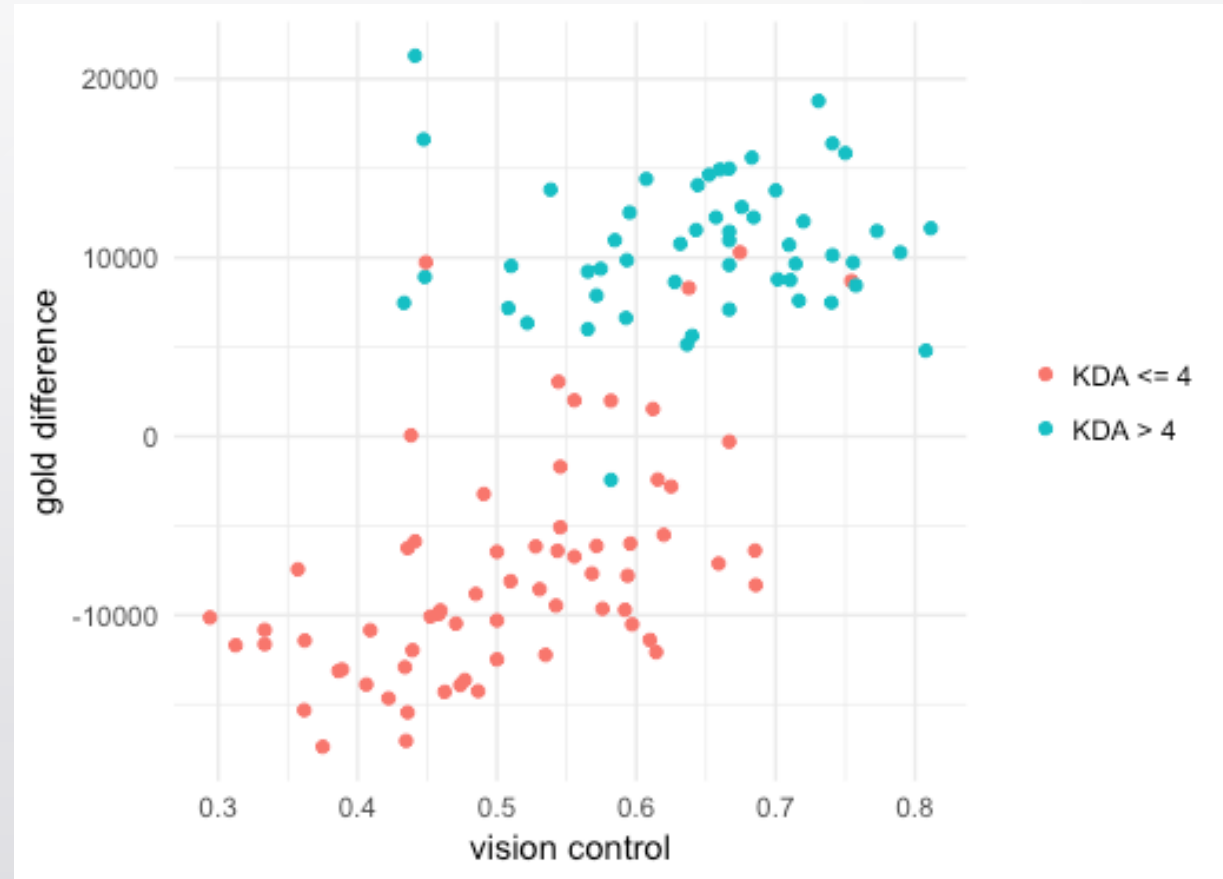# 3. Check Model Assumption
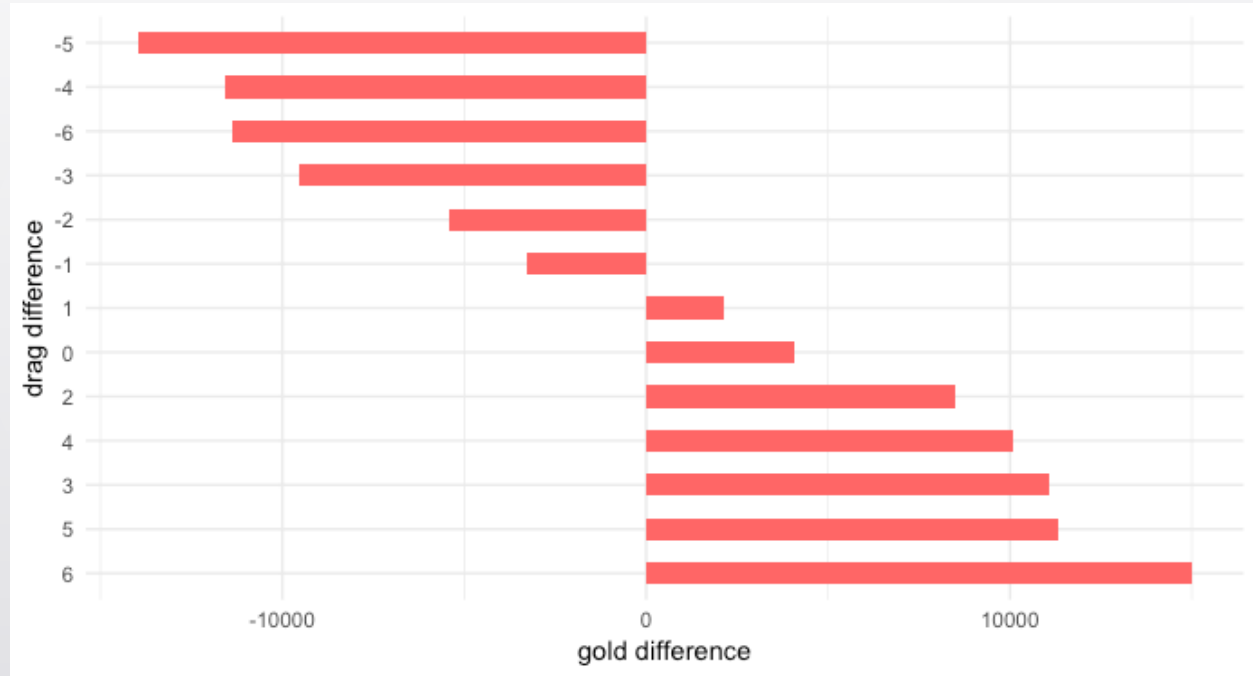
3. Check Model Assumption

4. Result

- The relationship of Gold Difference

   with vision control

- The relationship of Gold Difference

   with Kda

4. Result

- The relationship of Gold Difference
  with drakes difference

4.Result

- Coefficents:

	95%C.I	p-value
Intercept	(-12376) ± 4793	1.29e-06 ***
Baron	3773.5 ± 793.5	6.69e-16 ***
Drag	954 ± 416	1.41e-05 ***
kda	340.5 ± 133.5	1.70e-06 ***
visiblewardclearrate	18735.5 ± 8307.5	1.88e-05 ***
fb	1165.5 ± 1616.5	0.156

5. Conclusion

- Golddiff effects result

- 5 things effects golddiff

- Match assumption

Thank You