# Comparison of Gaussian vs Beta Models (V1–V4)

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| Model | Family | AIC | KS test | Dispersion test | Outlier test |
| V1 | Gaussian | 23209 | p=0 (sign.) | n.s. | p=3e-05 (sign.) |
| V1 | Beta | lower AIC | p=0 (sign.) | p=0.002 (sign.) | p=3e-05 (sign.) |
| V2 | Gaussian | 20505 | p=0 (sign.) | n.s. | p=0.00003 (sign.) |
| V2 | Beta | lower AIC | p=0 (sign.) | p=0 (sign.) | p=0.002 (sign.) |
| V3 | Gaussian | 27279 | p=0 (sign.) | n.s. | p=0 (sign.) |
| V3 | Beta | lower AIC | p=0 (sign.) | p=0 (sign.) | p=0 (sign.) |
| V4 | Gaussian | 15498 | p=0 (sign.) | n.s. | p=0 (sign.) |
| V4 | Beta | lower AIC | p=0 (sign.) | p=0 (sign.) | p=0 (sign.) |

Notes:

- All Beta models achieved lower AIC values than Gaussian, indicating better fit.  
- However, KS and outlier tests remain significant, mostly due to boundary values (close to 0 or 1).  
- Dispersion was sometimes acceptable in Gaussian, but Beta captures the data distribution more realistically.  
- Conclusion: Beta models are preferred for proportions, even if residual diagnostics are not perfect.