Australia Next Day Rain Prediction

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Table 1: Results of Kolmogorov-Smirnov test on Conditional Distributions (RainTomorrow = 0 vs. RainTomorrow = 0)

NumericVariable	D
MinTemp	0.09
MaxTemp	0.14
Rainfall	0.34
Evaporation	0.14
Sunshine	0.47
WindGustSpeed	0.23
WindSpeed9am	0.08
WindSpeed3pm	0.08
Humidity9am	0.29
Humidity3pm	0.46
Pressure9am	0.26
Pressure3pm	0.23
Cloud9am	0.34
Cloud3pm	0.41
Temp9am	0.04
Temp3pm	0.17

Figure 1: Rain Days across Australia Source: http://www.bom.gov.au/jsp/ncc/climate_averages/raindays/index.jsp
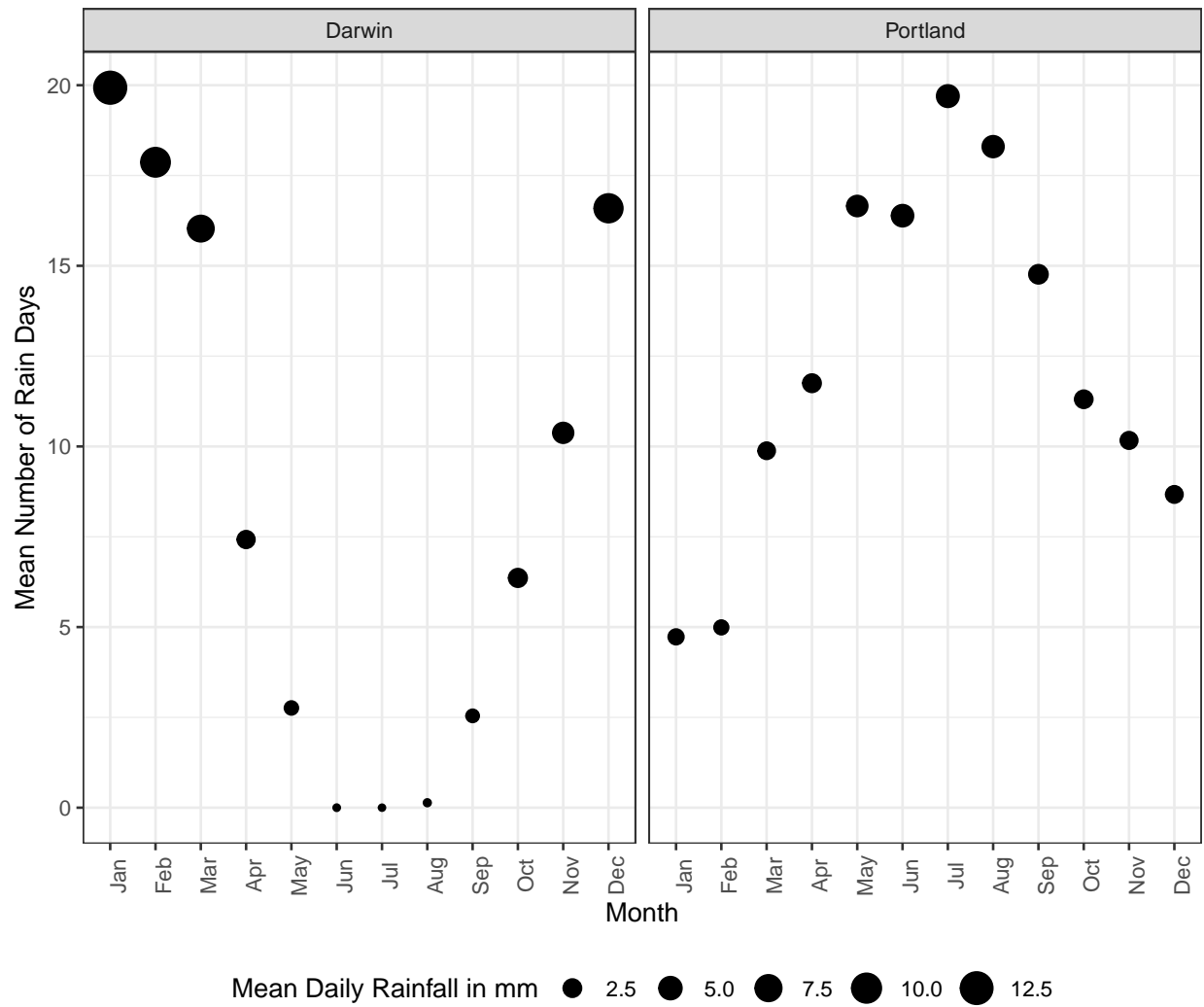
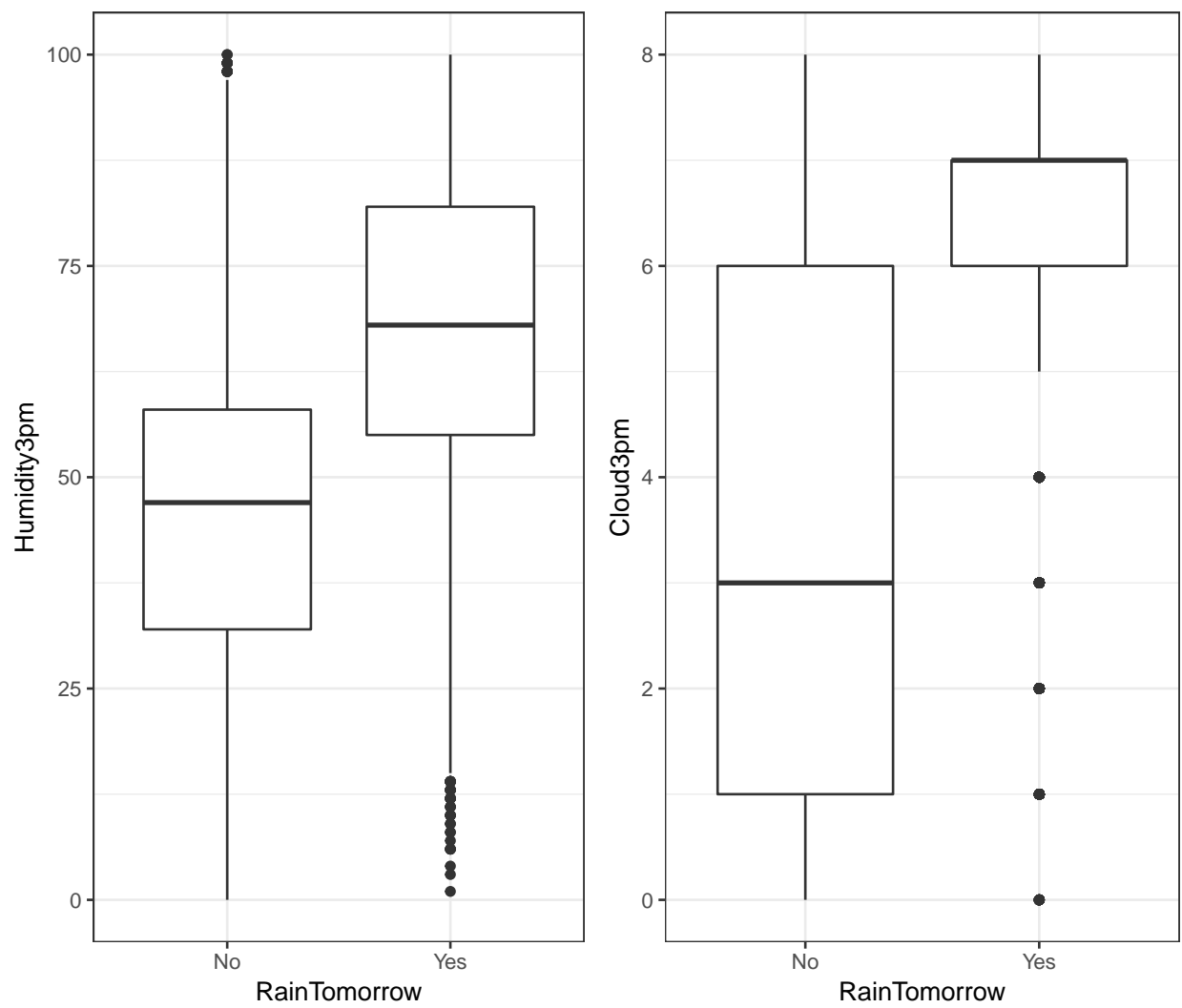Figure 2: Monthly Rainfall Patterns by Location

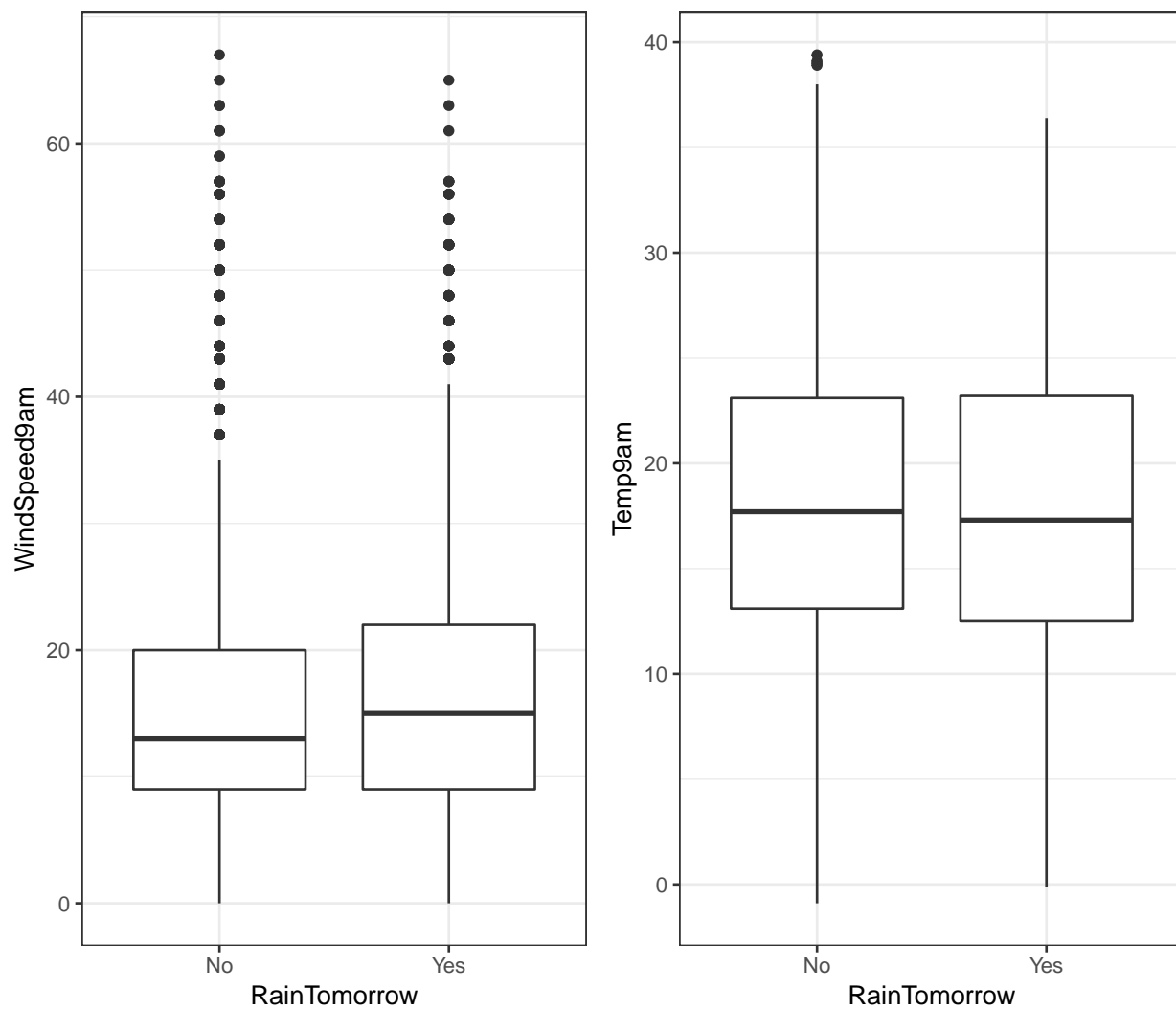Figure 3: Examples of Some Well Separated Cases

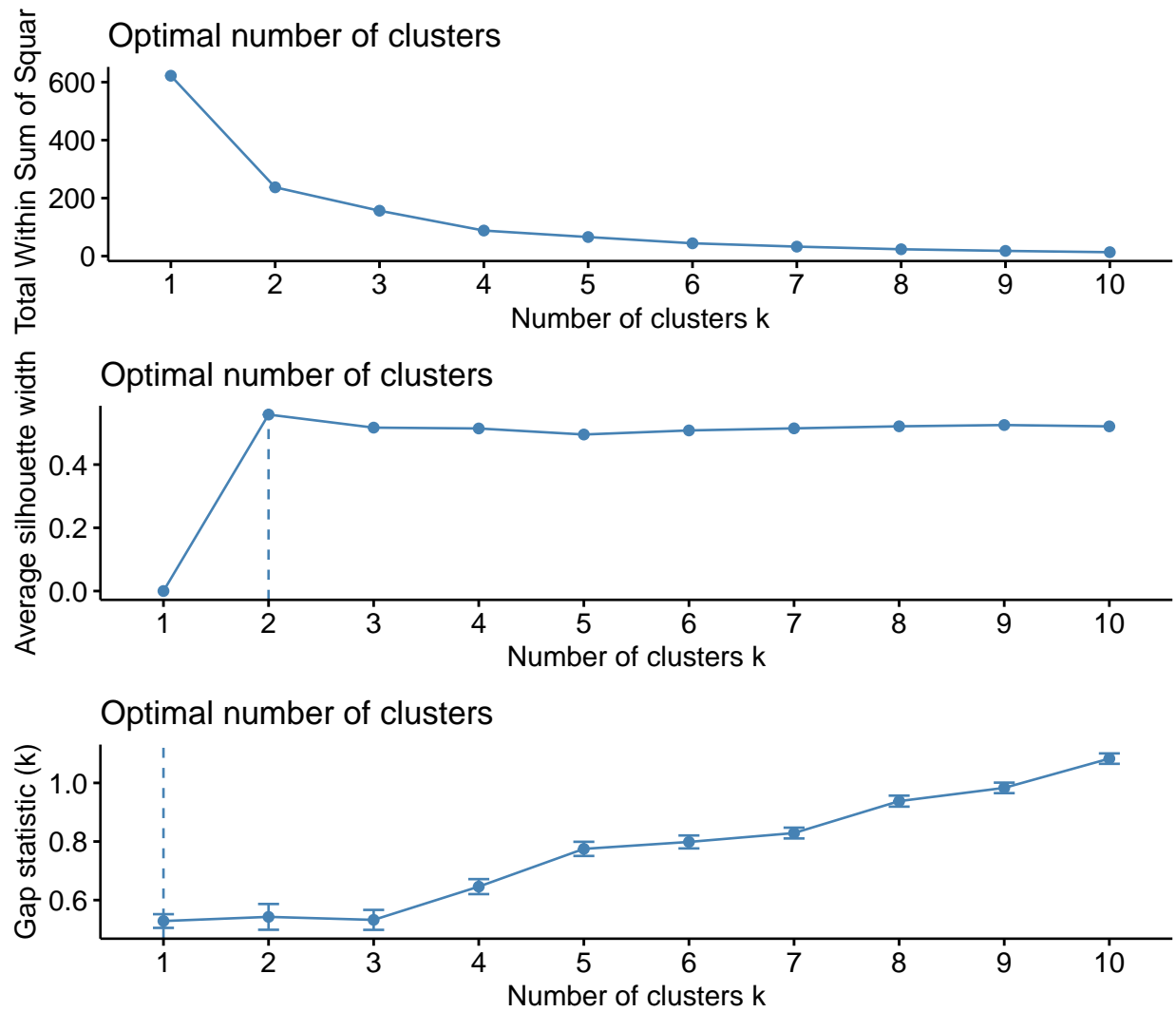Figure 4: Examples of Some **NOT** Well Separated Cases

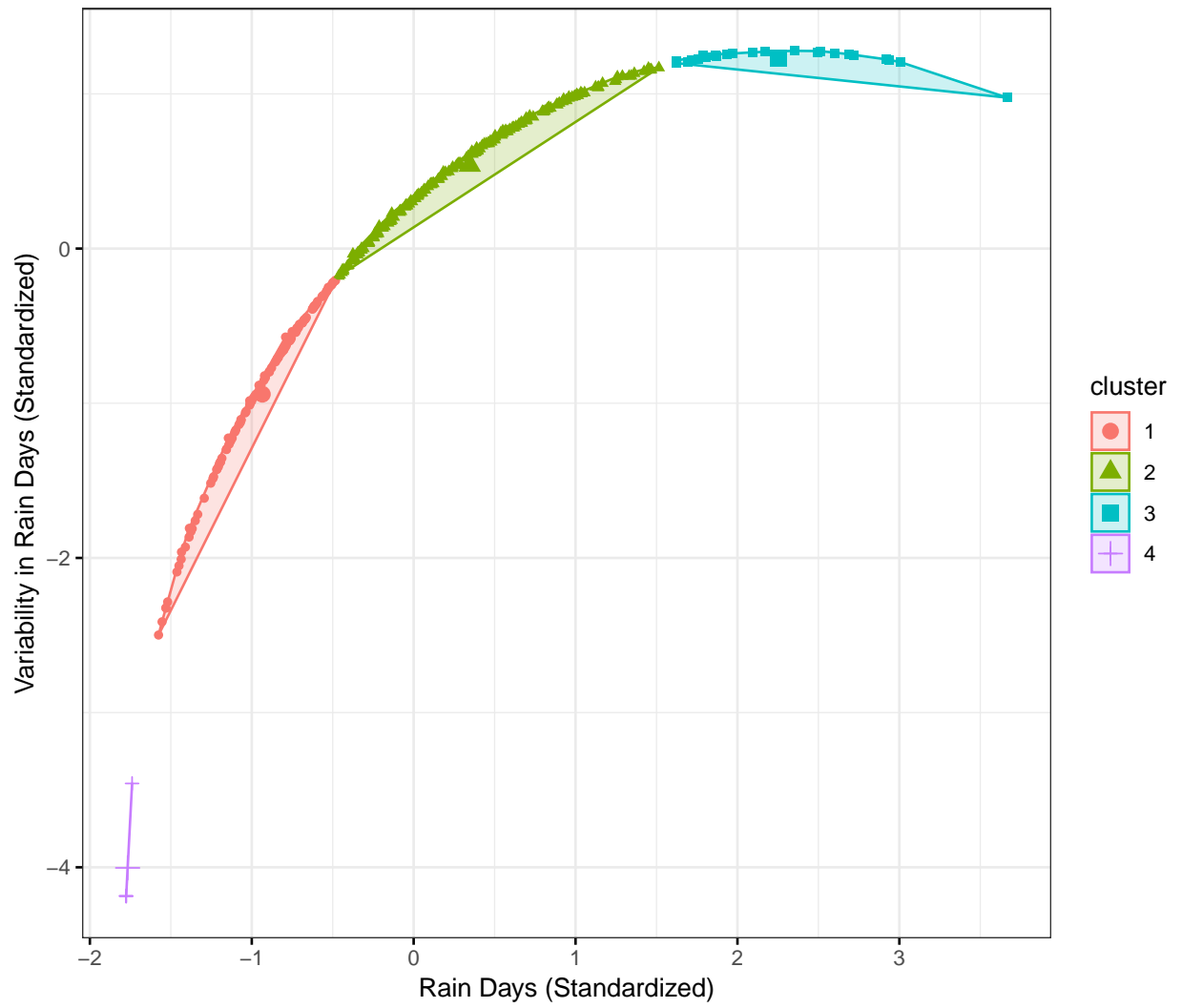Figure 5: Finding Optimal Number for Location - Month Clustering

Figure 6: Number of Rain Days and Variability in Rain Days accross Clusters

Table 2: Location-Month Clusters

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AliceSprings	1	1	1	1	1	1	1	1	1	1	1	2
Brisbane	2	2	2	2	2	2	1	1	1	1	2	2
Cairns	3	3	3	2	2	2	2	1	1	2	2	2
Canberra	1	2	1	2	1	2	1	2	2	2	2	2
Cobar	1	2	1	1	2	2	1	4	1	1	1	1
CoffsHarbour	2	2	3	2	2	2	2	1	2	2	2	3
Darwin	3	3	3	2	1	4	4	4	1	2	2	3
Hobart	2	1	2	2	2	2	2	2	2	2	2	2
Melbourne	1	1	2	2	2	2	2	2	2	2	2	2
MelbourneAirport	1	1	2	2	2	2	2	2	2	2	2	2
Mildura	1	1	1	1	1	1	1	1	1	1	1	1
Moree	2	1	1	1	1	1	1	1	1	1	1	2
MountGambier	1	1	2	2	3	3	3	3	2	2	2	2
NorfolkIsland	2	2	2	2	2	3	3	2	2	2	2	2
Nuriootpa	1	1	1	2	2	2	2	2	2	1	1	2
Perth	1	1	1	1	2	2	3	2	2	1	1	1
PerthAirport	1	1	1	1	2	2	2	2	2	1	1	1
Portland	1	2	2	2	3	3	3	3	3	2	2	2
Sale	1	2	2	2	2	2	2	2	2	2	2	2
Sydney	2	2	2	2	1	2	2	2	2	1	2	2
SydneyAirport	2	2	2	2	2	2	2	2	2	2	2	2
Townsville	2	3	2	1	1	1	1	1	1	1	2	2
WaggaWagga	1	2	1	1	2	2	2	2	1	1	1	2
Watsonia	1	1	2	2	2	2	2	2	2	2	2	2
Williamtown	2	2	2	2	2	3	2	1	2	2	2	2
Woomera	1	1	1	1	1	1	1	1	1	1	1	1

3 Results

4 Conclusion