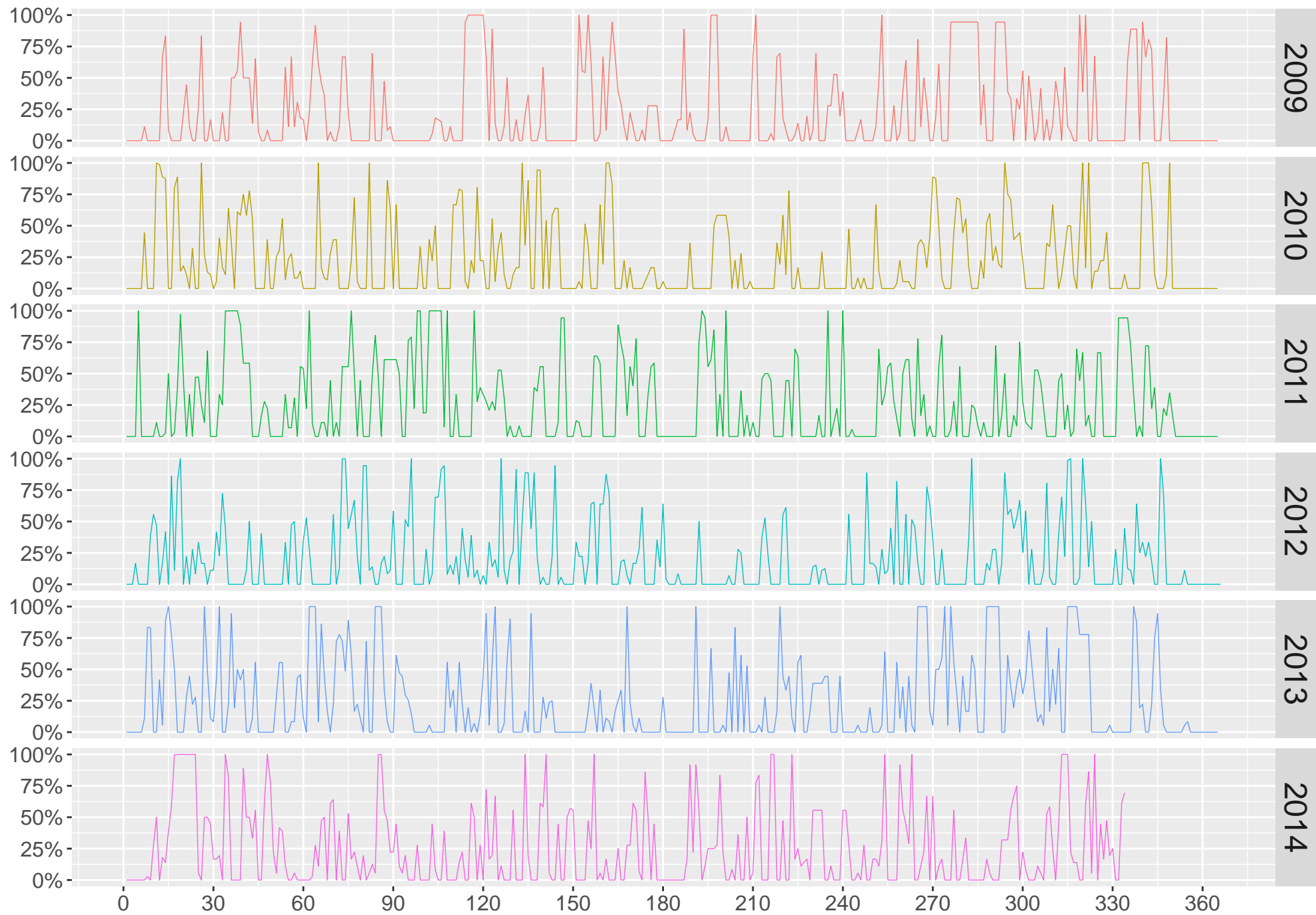


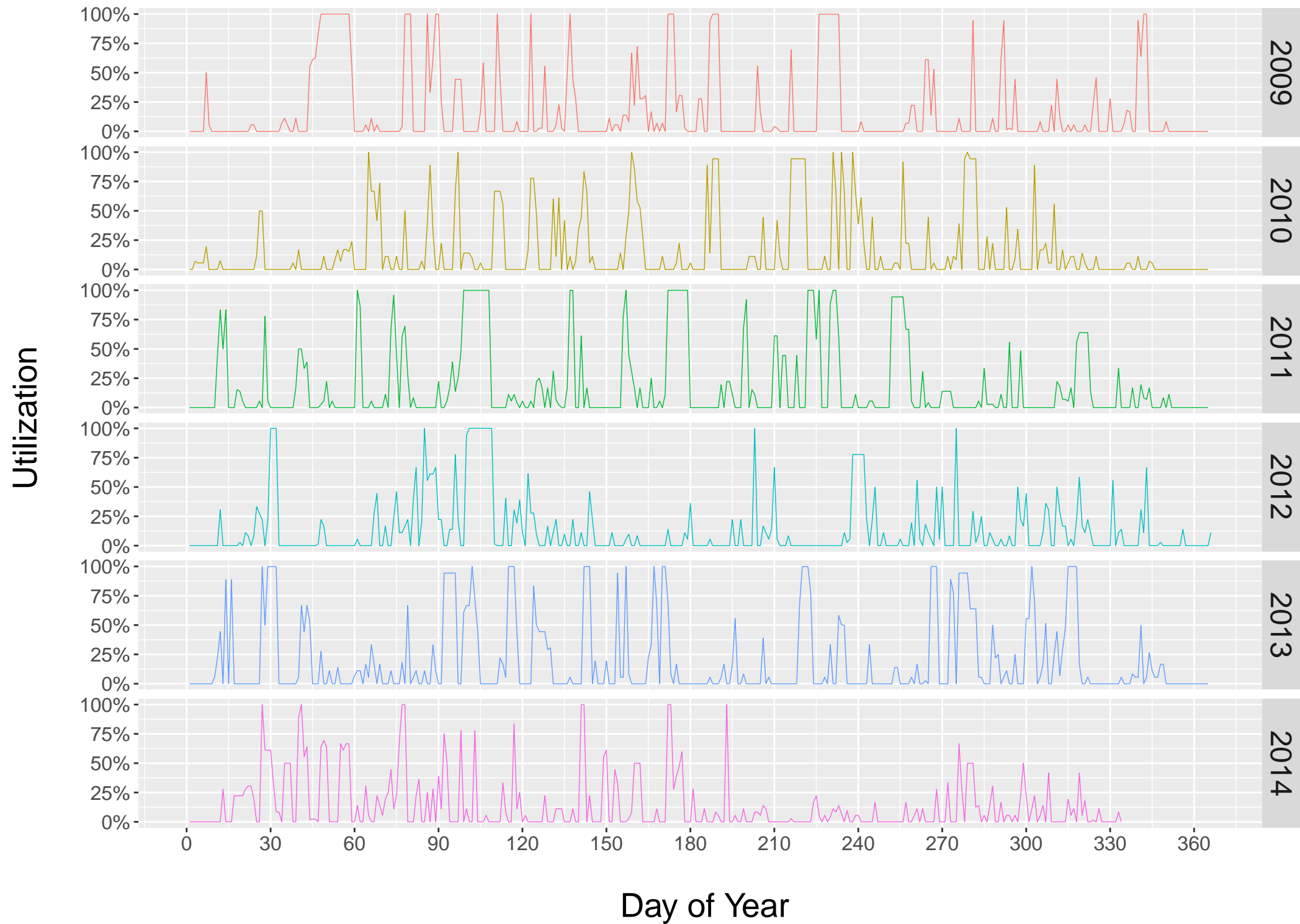
Room 'A' Utilization Rates

Utilization

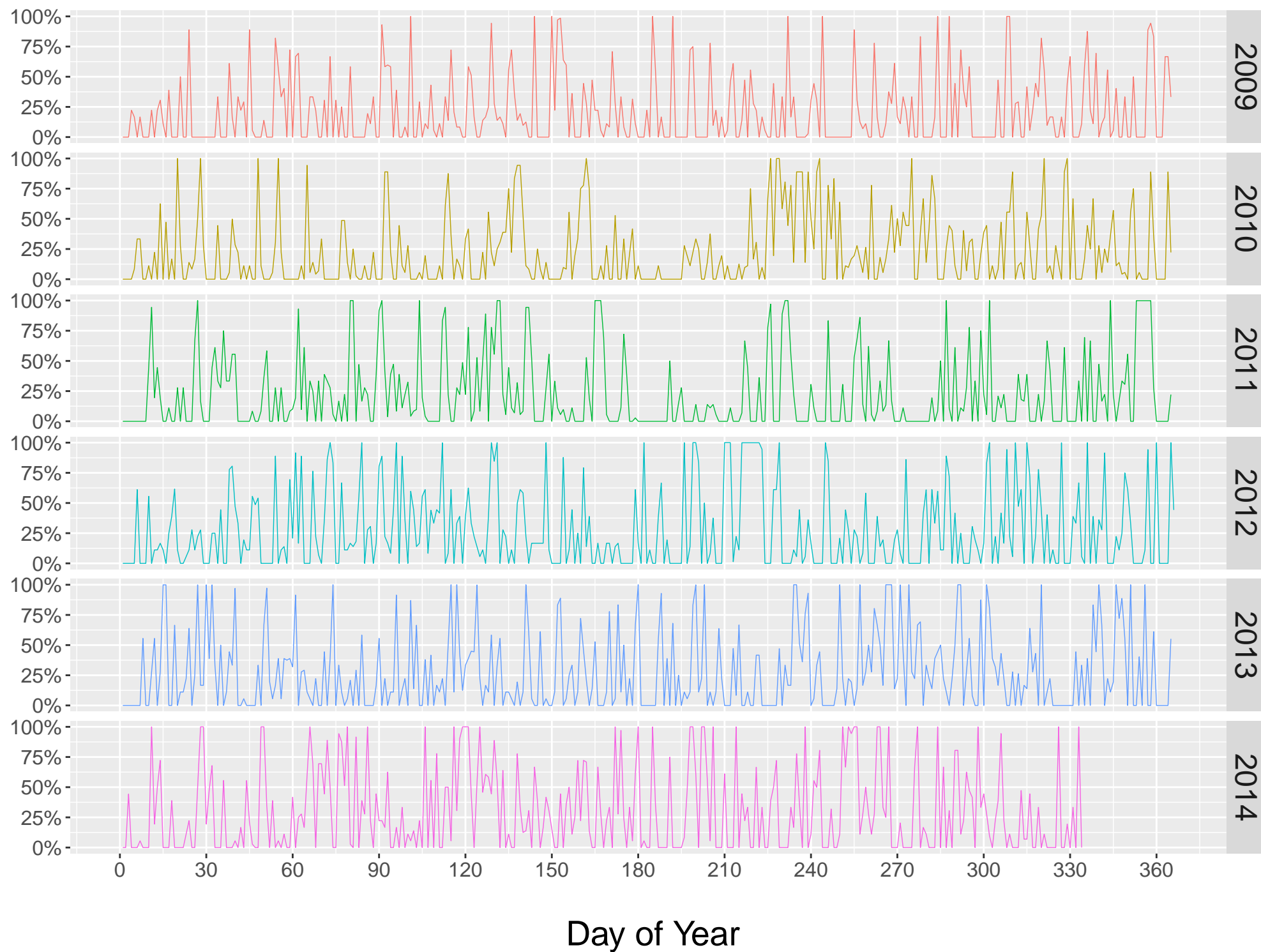


Day of Year

Room 'B' Utilization Rates

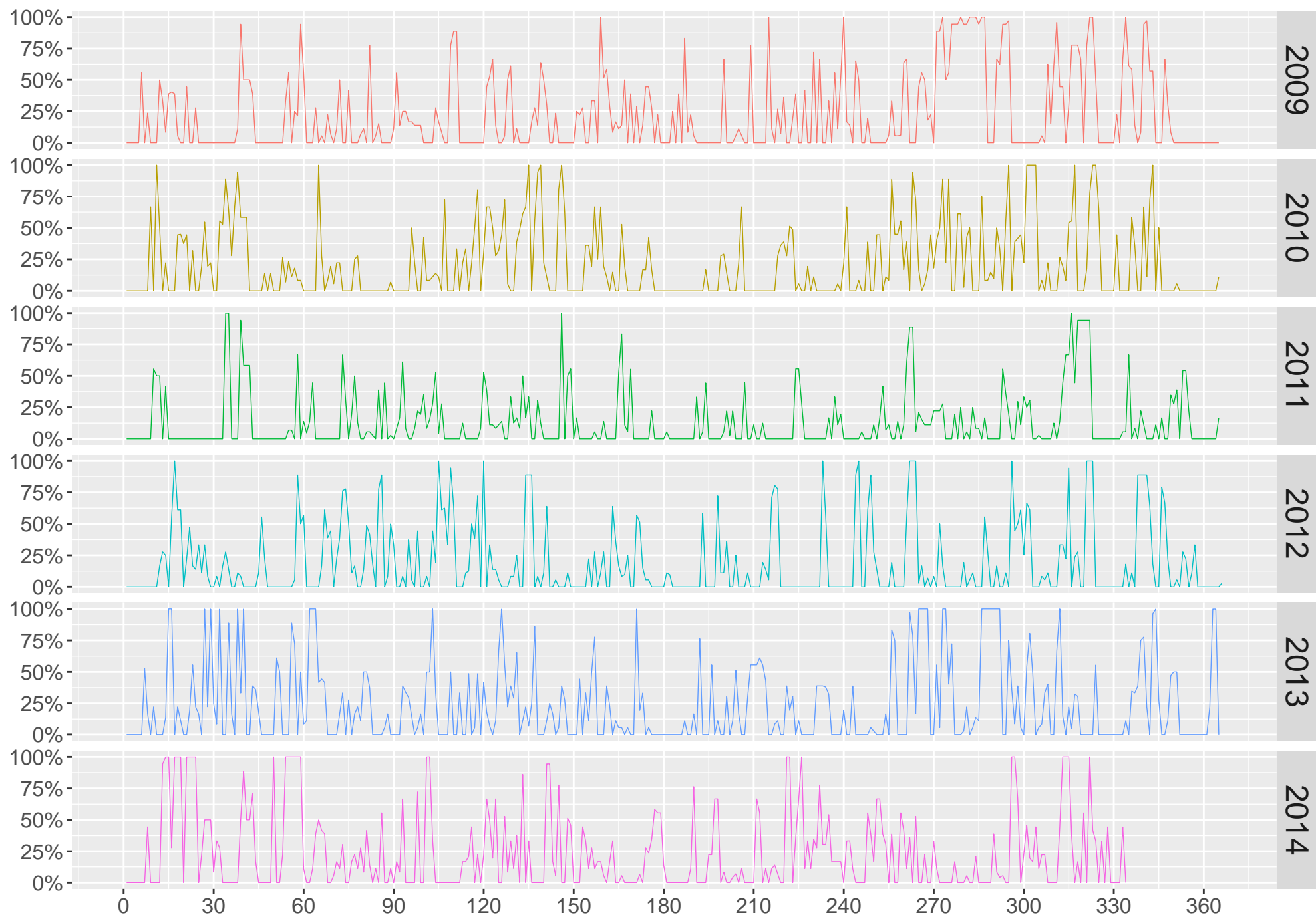


Room 'C' Utilization Rates



Room 'D' Utilization Rates

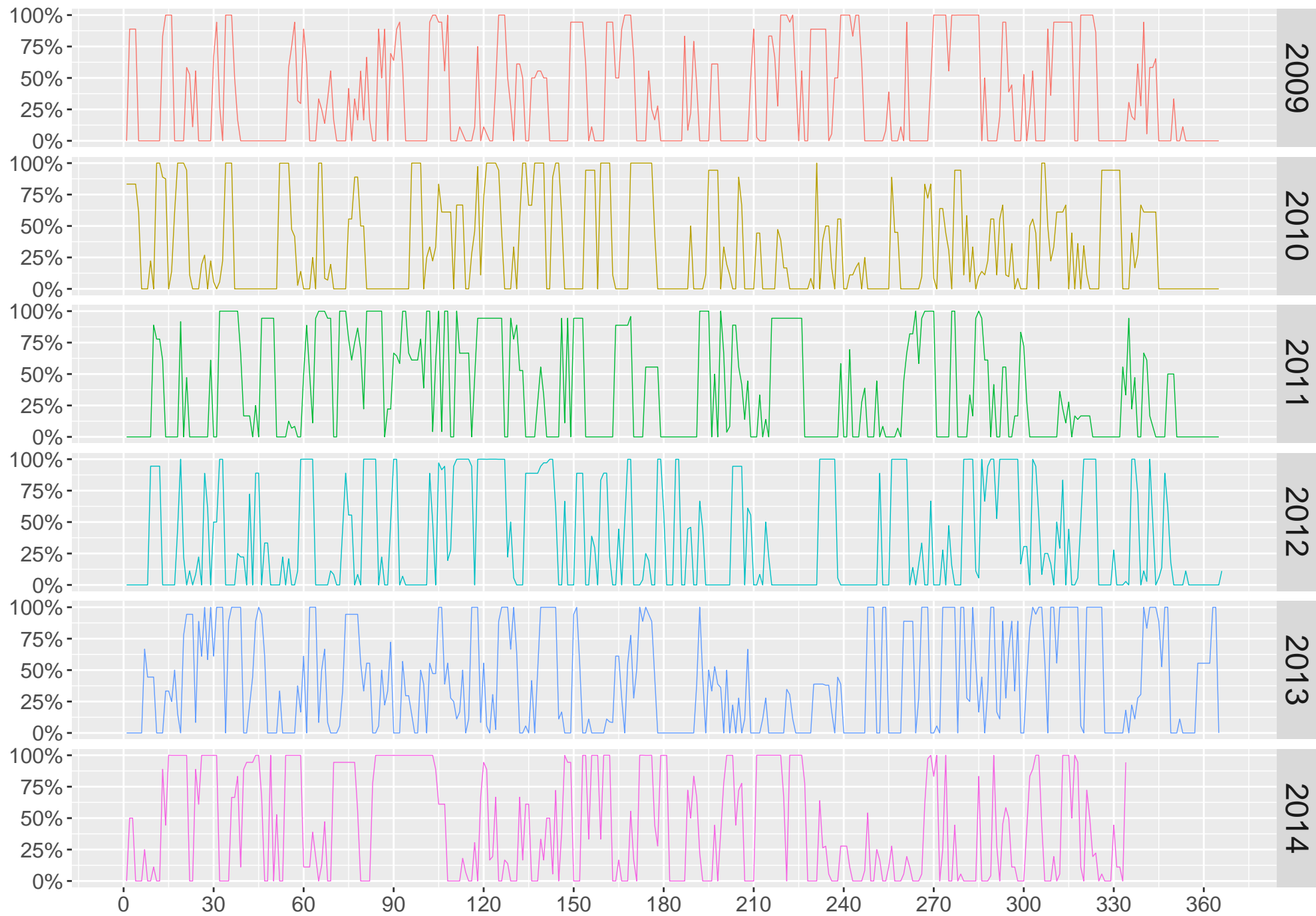
Utilization



Day of Year

Room 'E' Utilization Rates

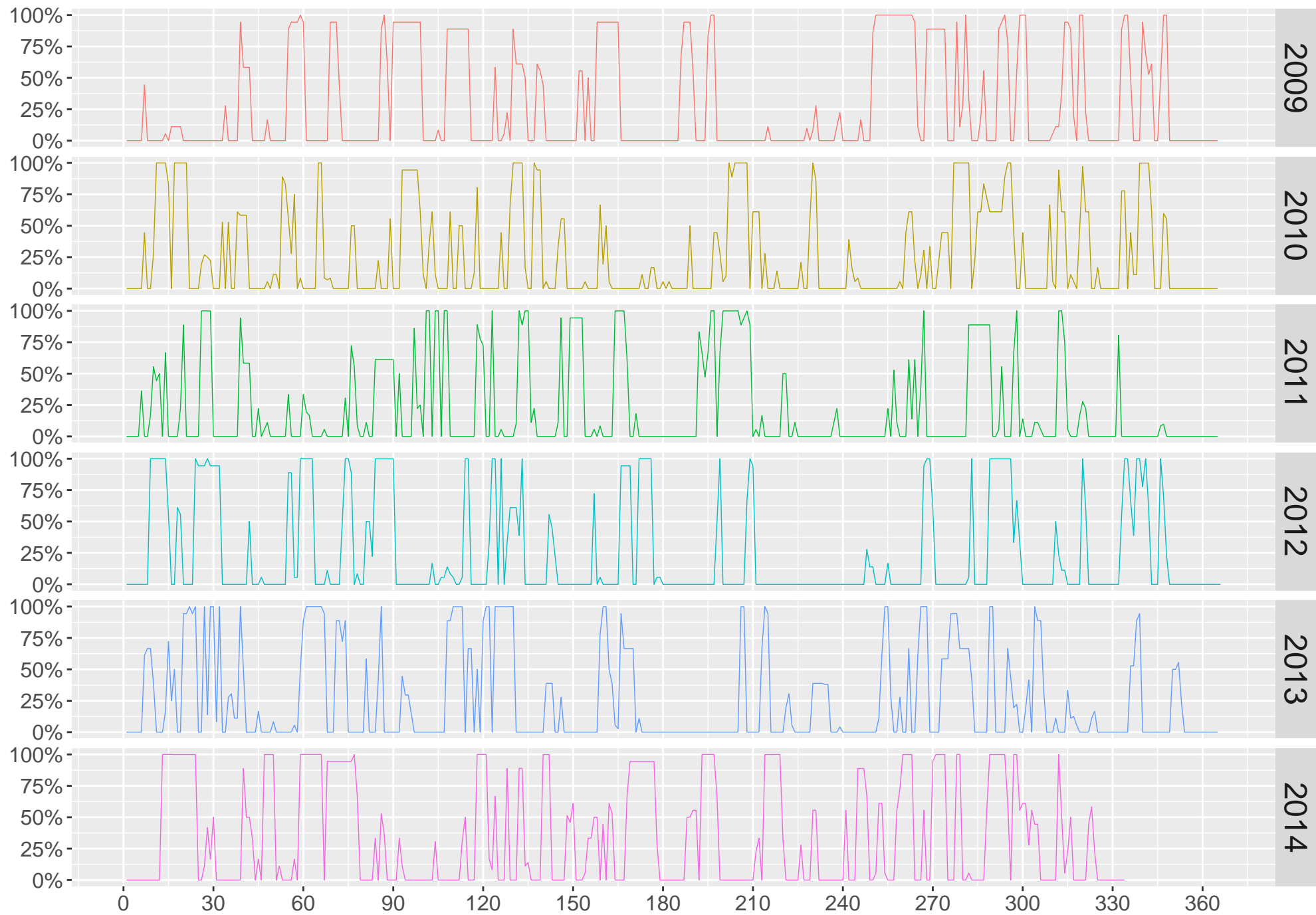
Utilization



Day of Year

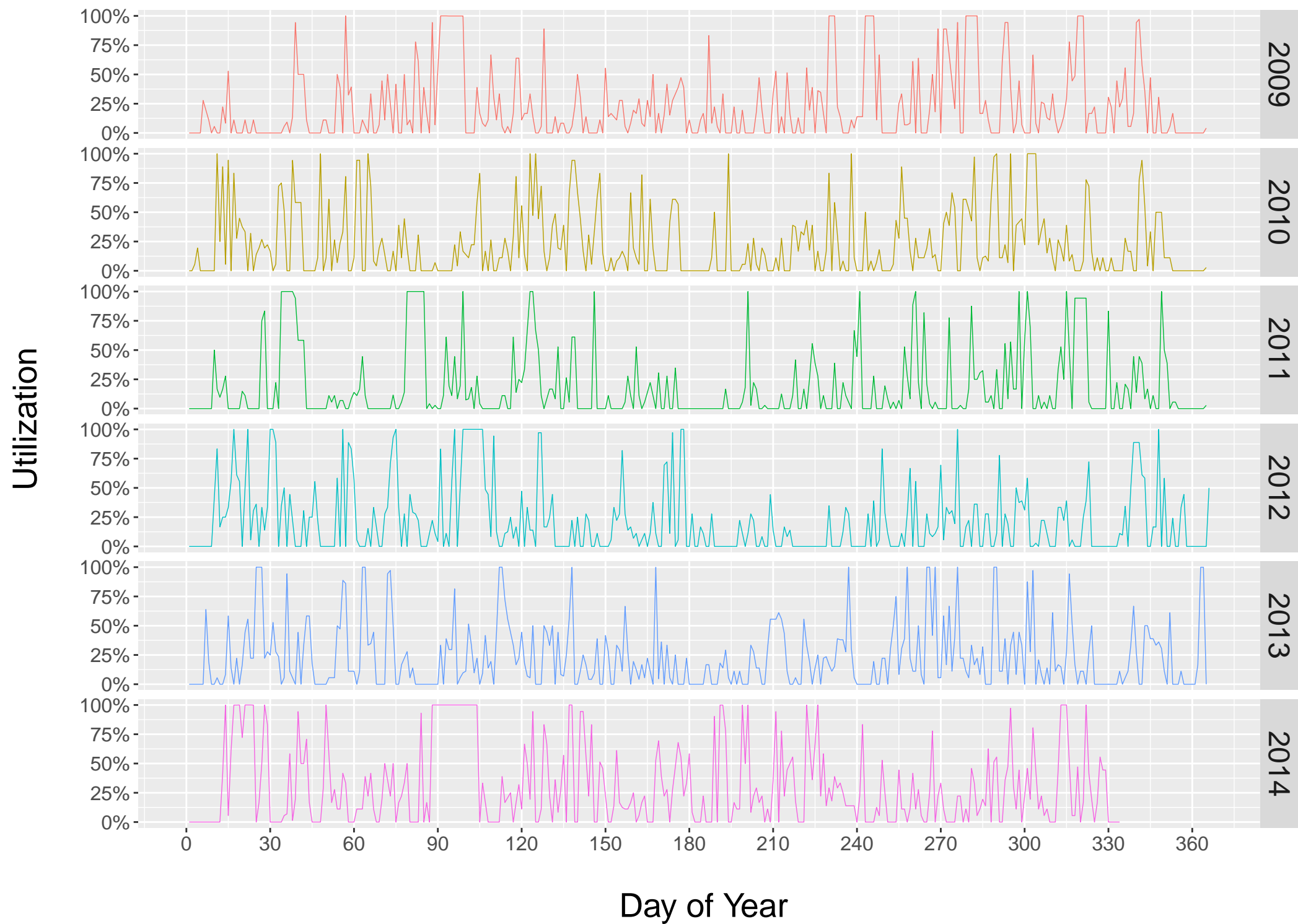
Room 'F' Utilization Rates

Utilization



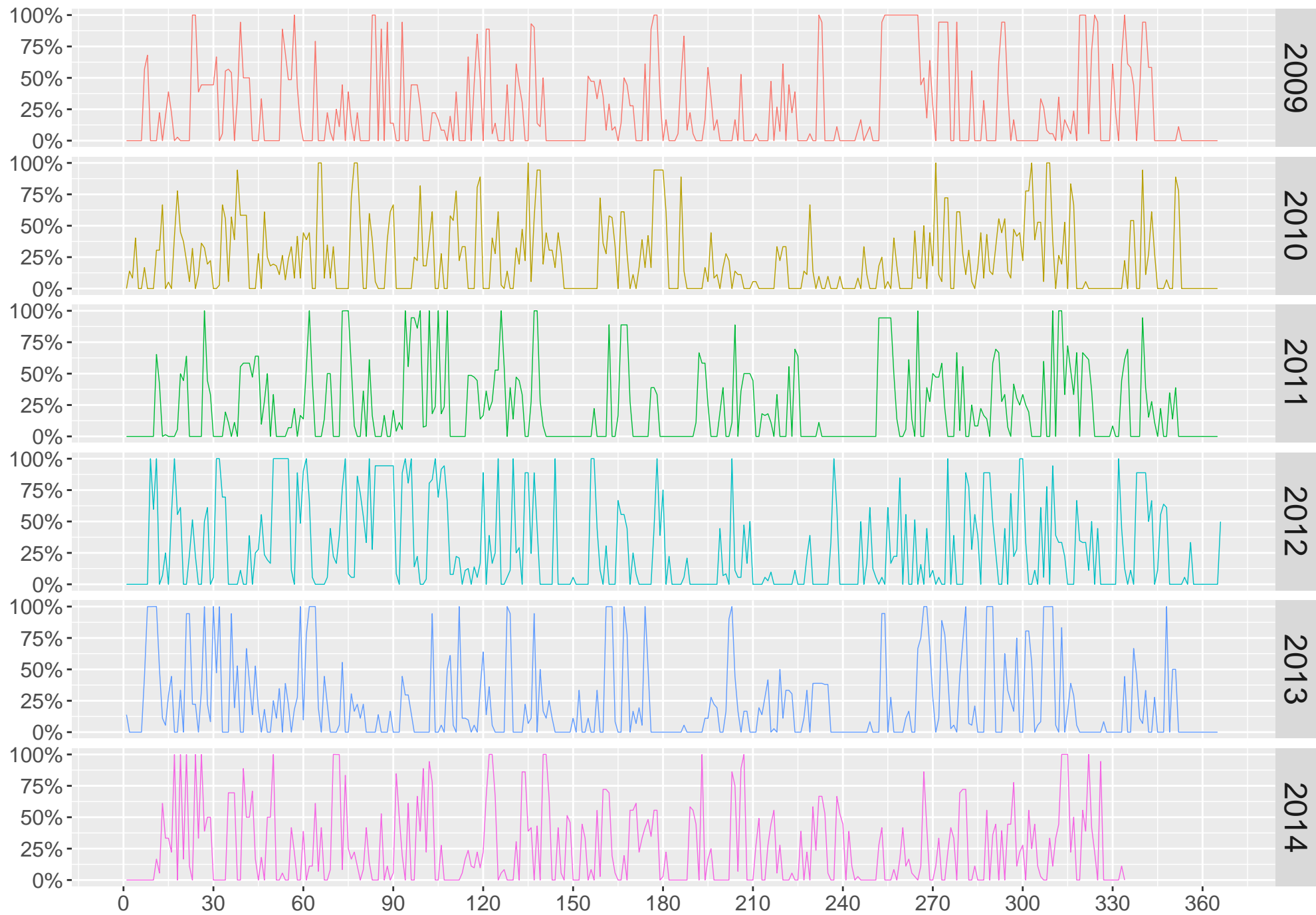
Day of Year

Room 'G' Utilization Rates



Room 'H' Utilization Rates

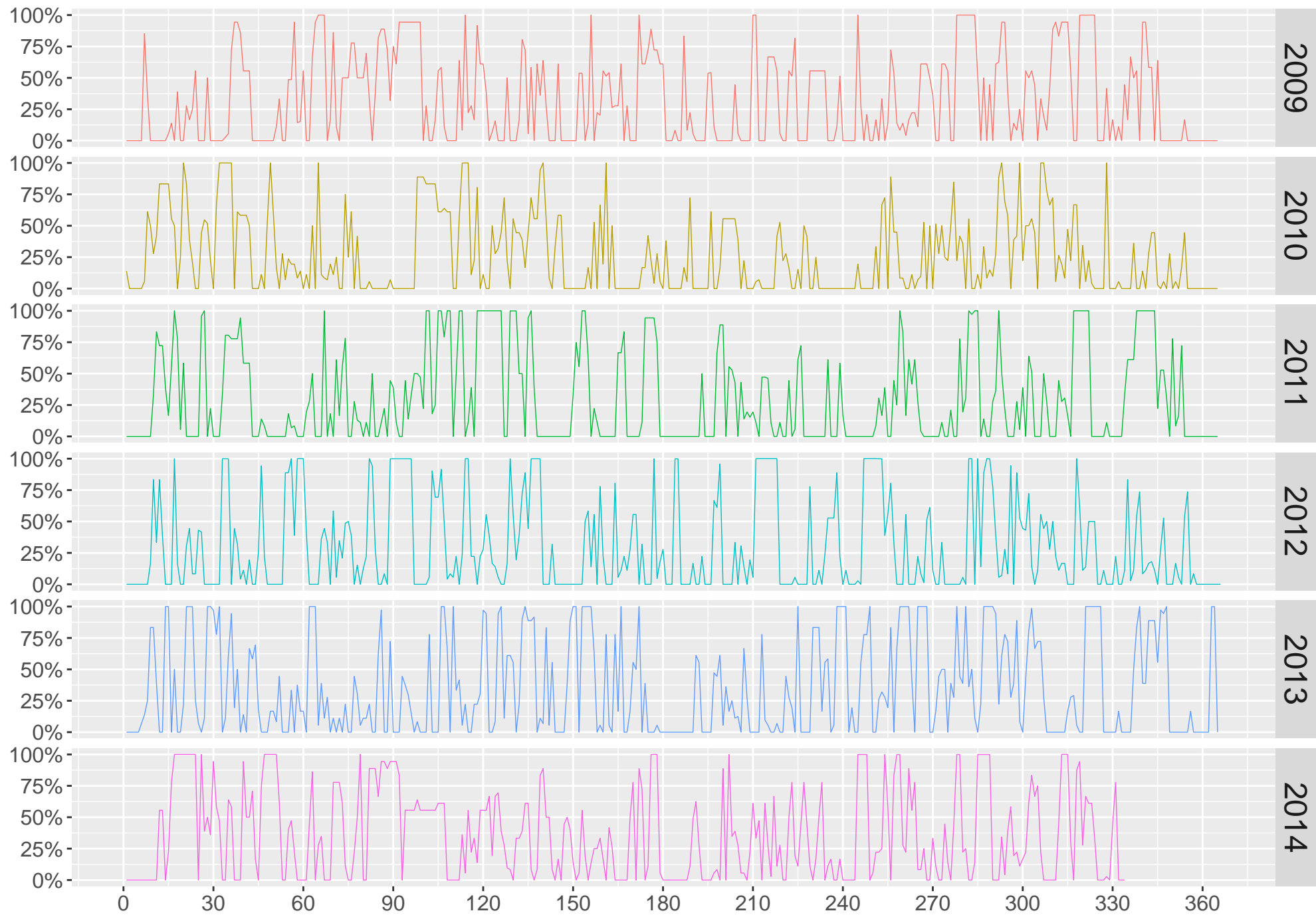
Utilization



Day of Year

Room 'I' Utilization Rates

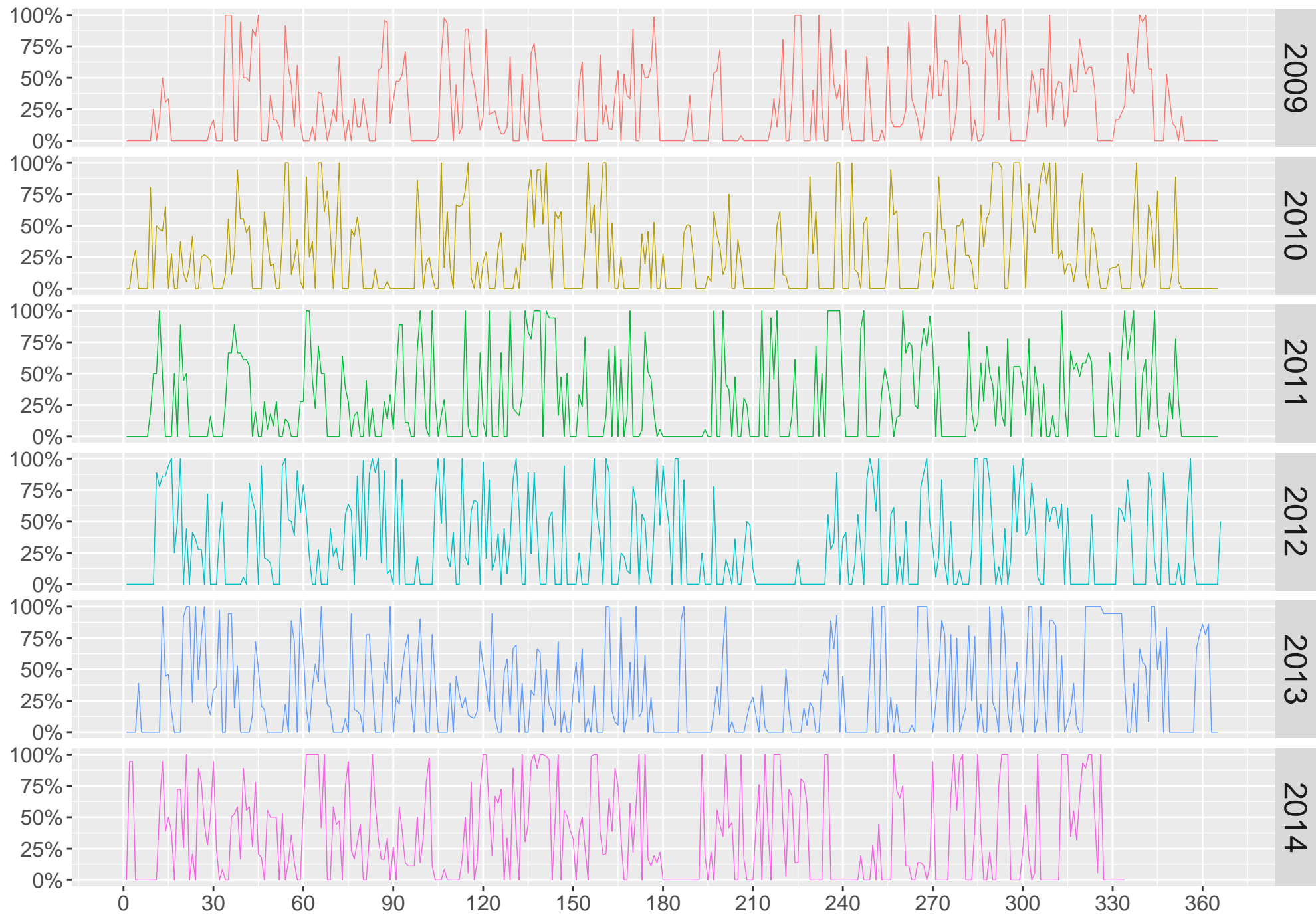
Utilization



Day of Year

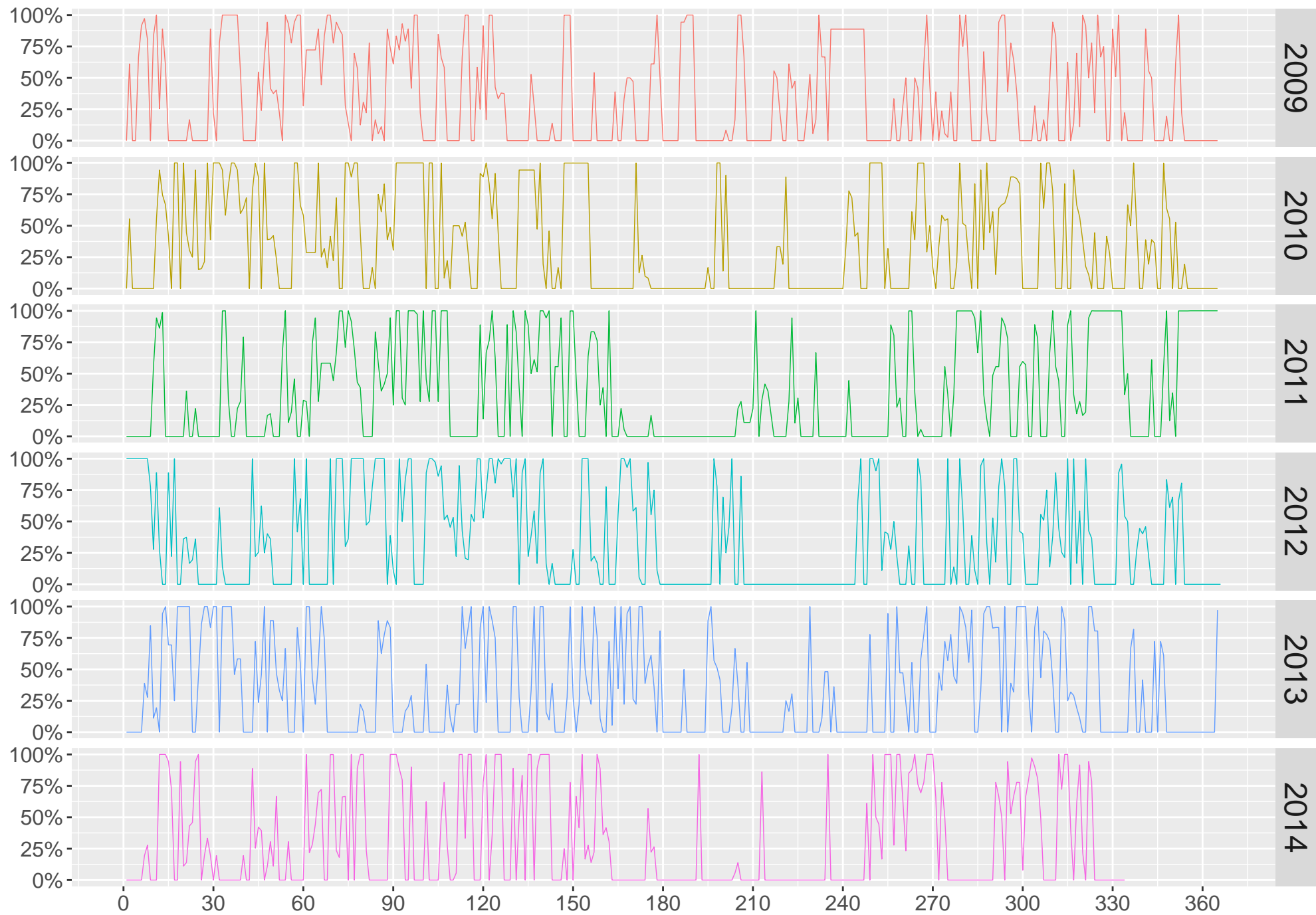
Room 'J' Utilization Rates

Utilization



Room 'K' Utilization Rates

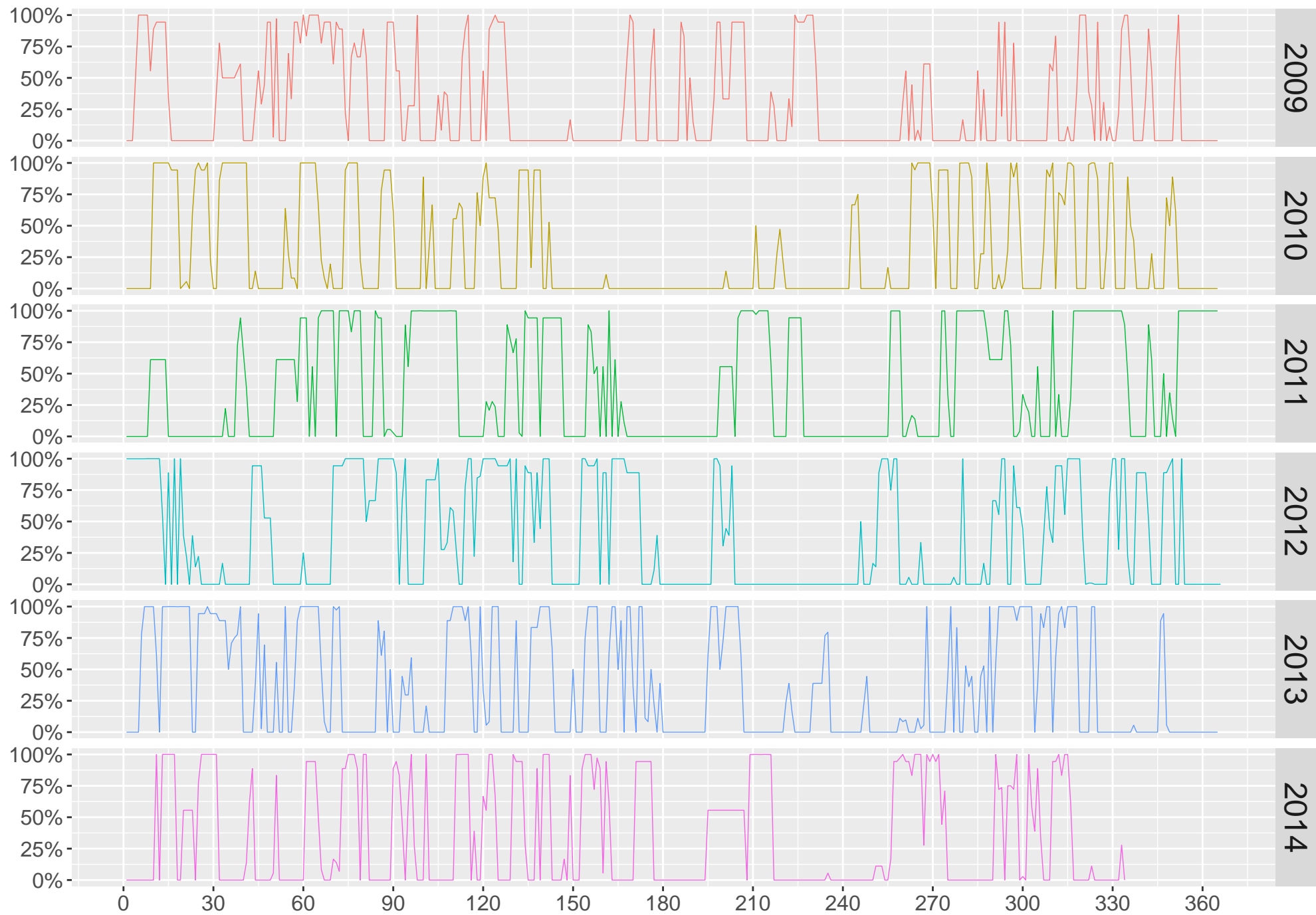
Utilization



Day of Year

Room 'L' Utilization Rates

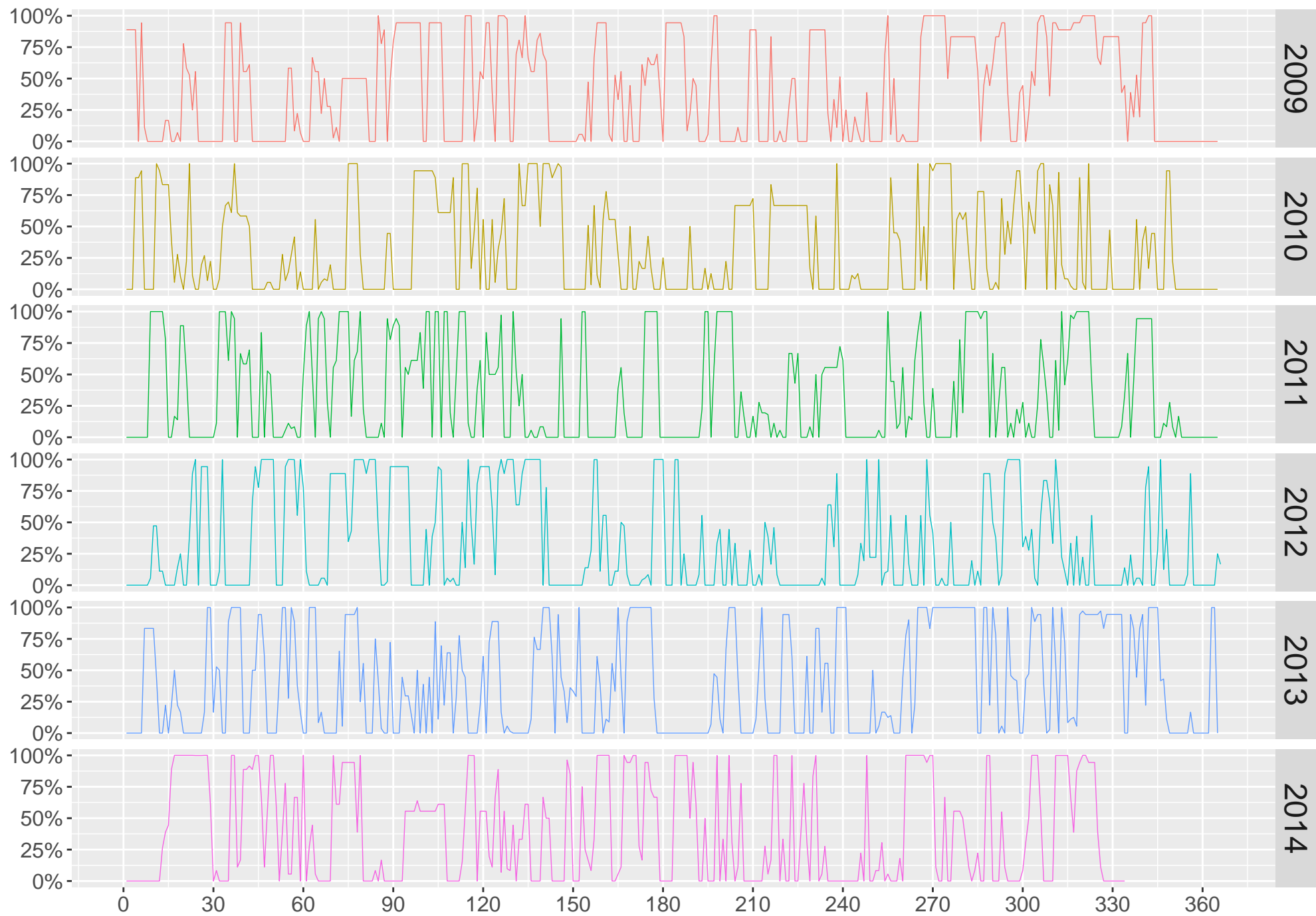
Utilization



Day of Year

Room 'M' Utilization Rates

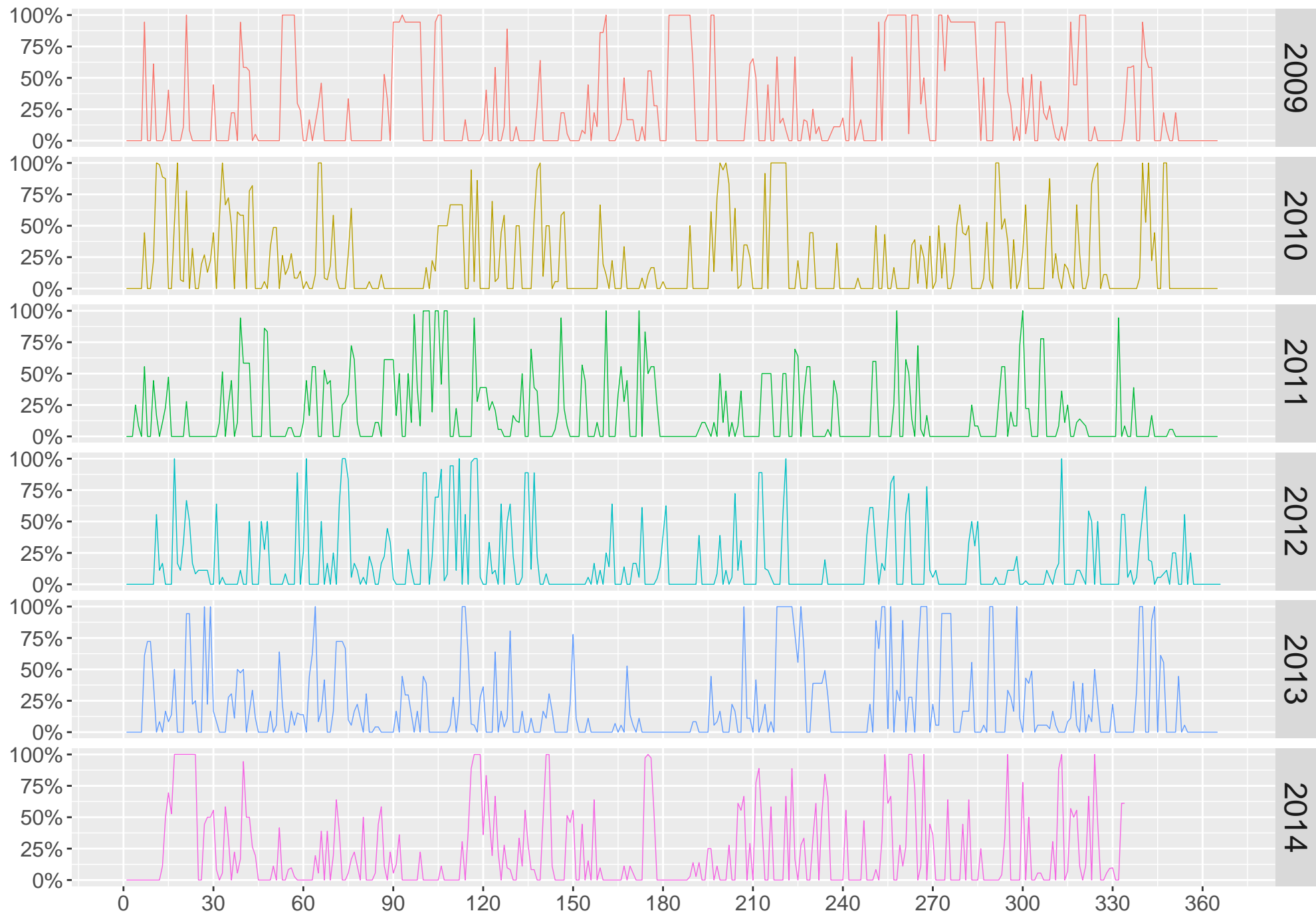
Utilization



Day of Year

Room 'N' Utilization Rates

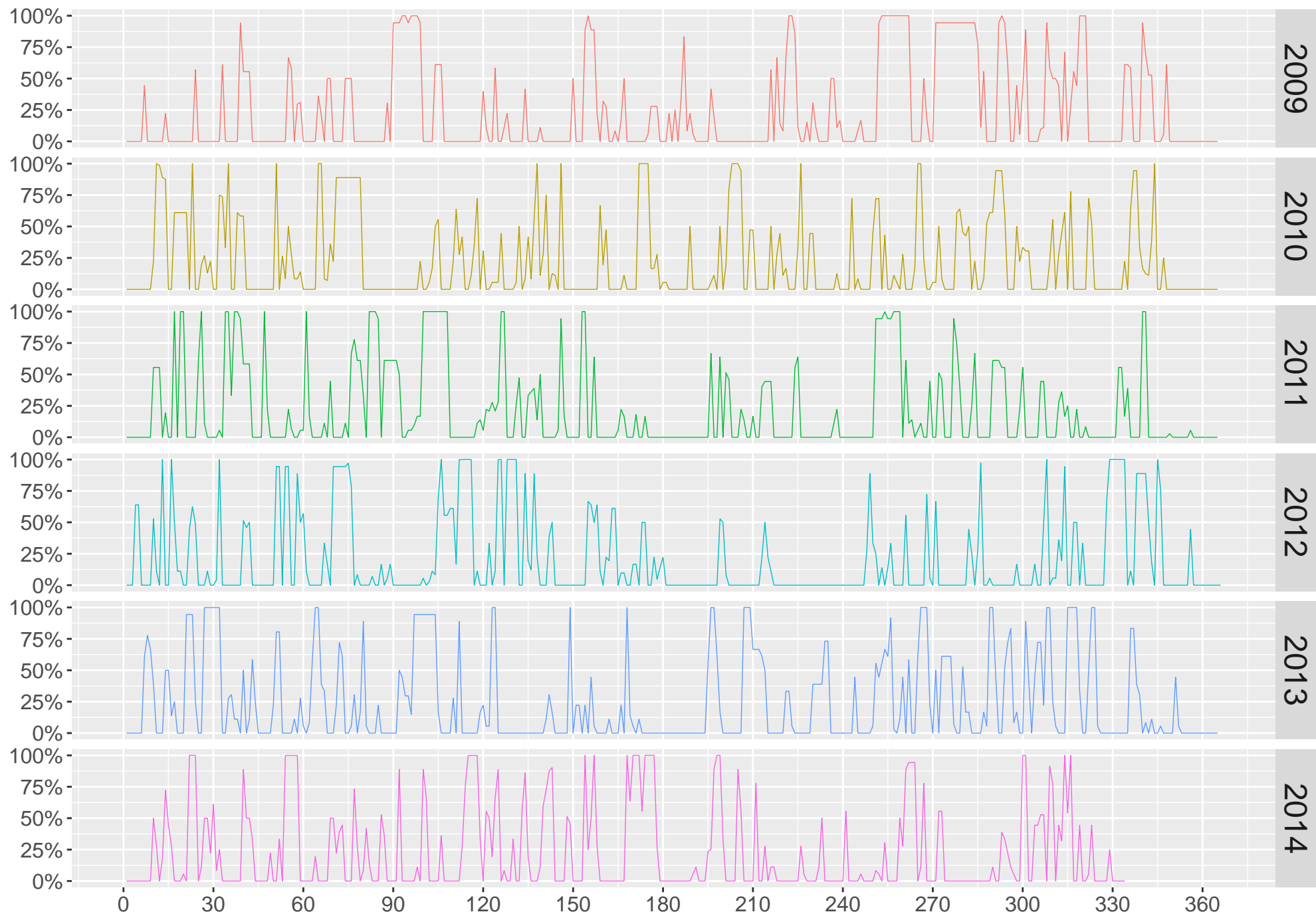
Utilization



Day of Year

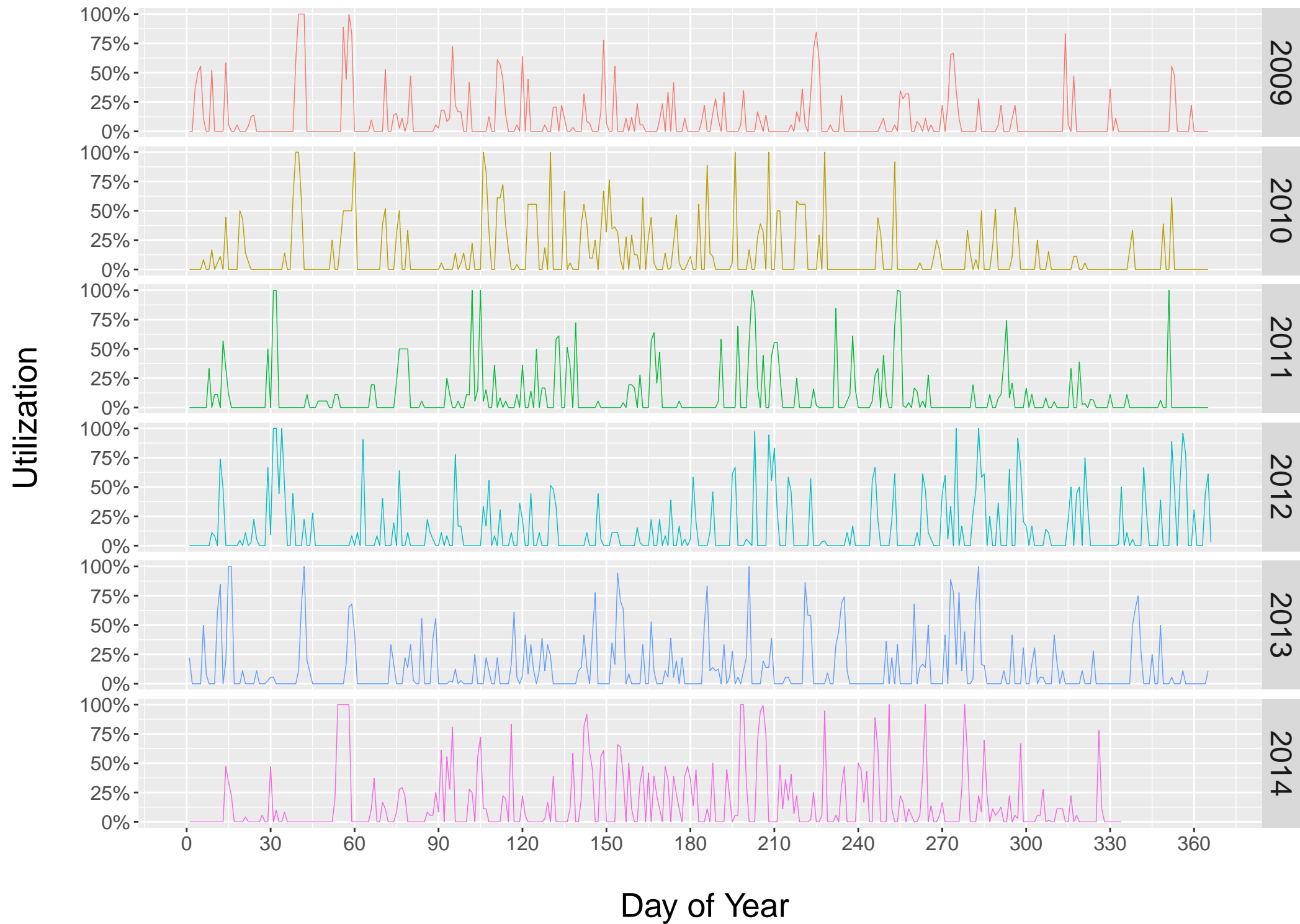
Room 'O' Utilization Rates

Utilization



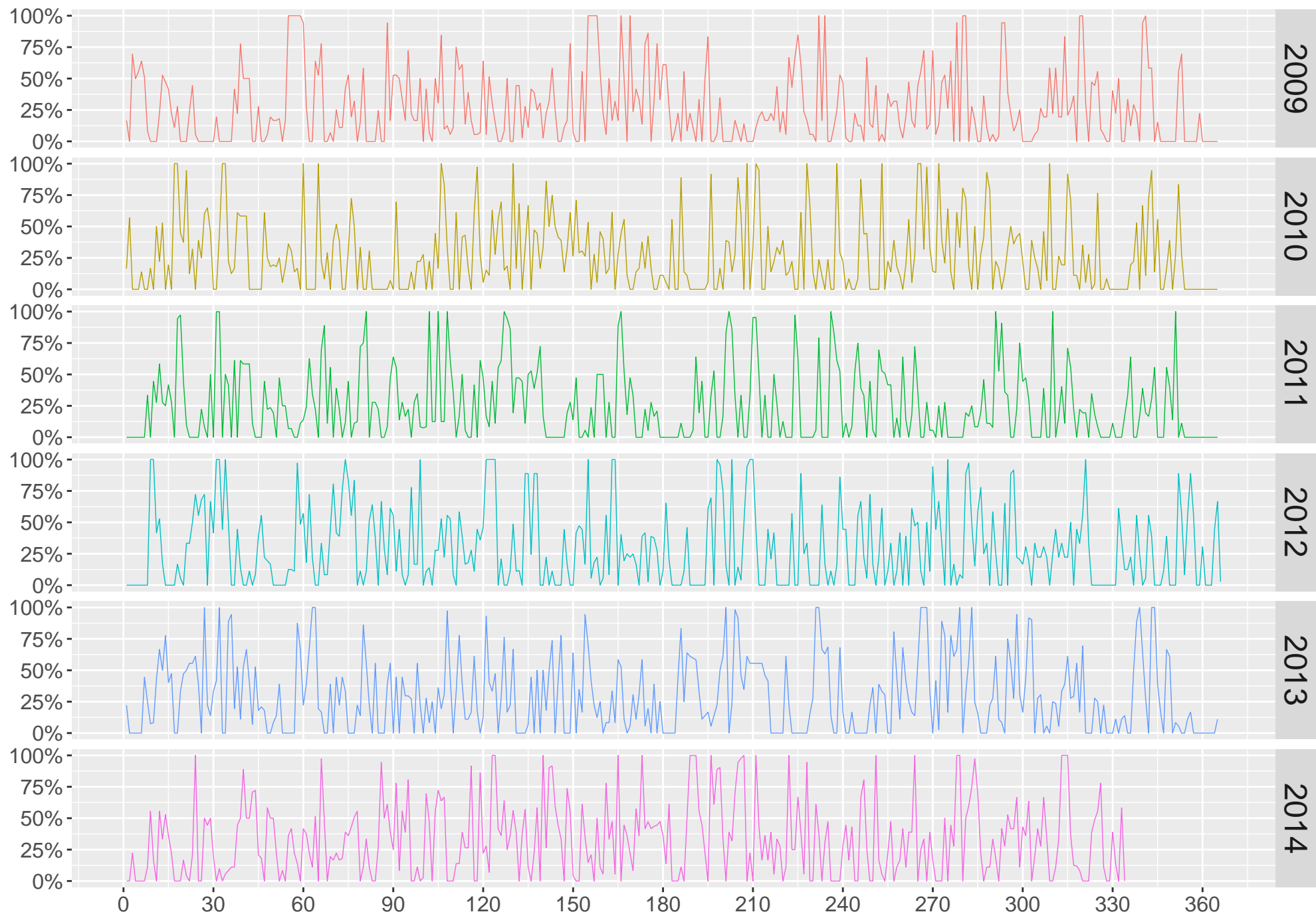
Day of Year

Room 'P' Utilization Rates



Room 'Q' Utilization Rates

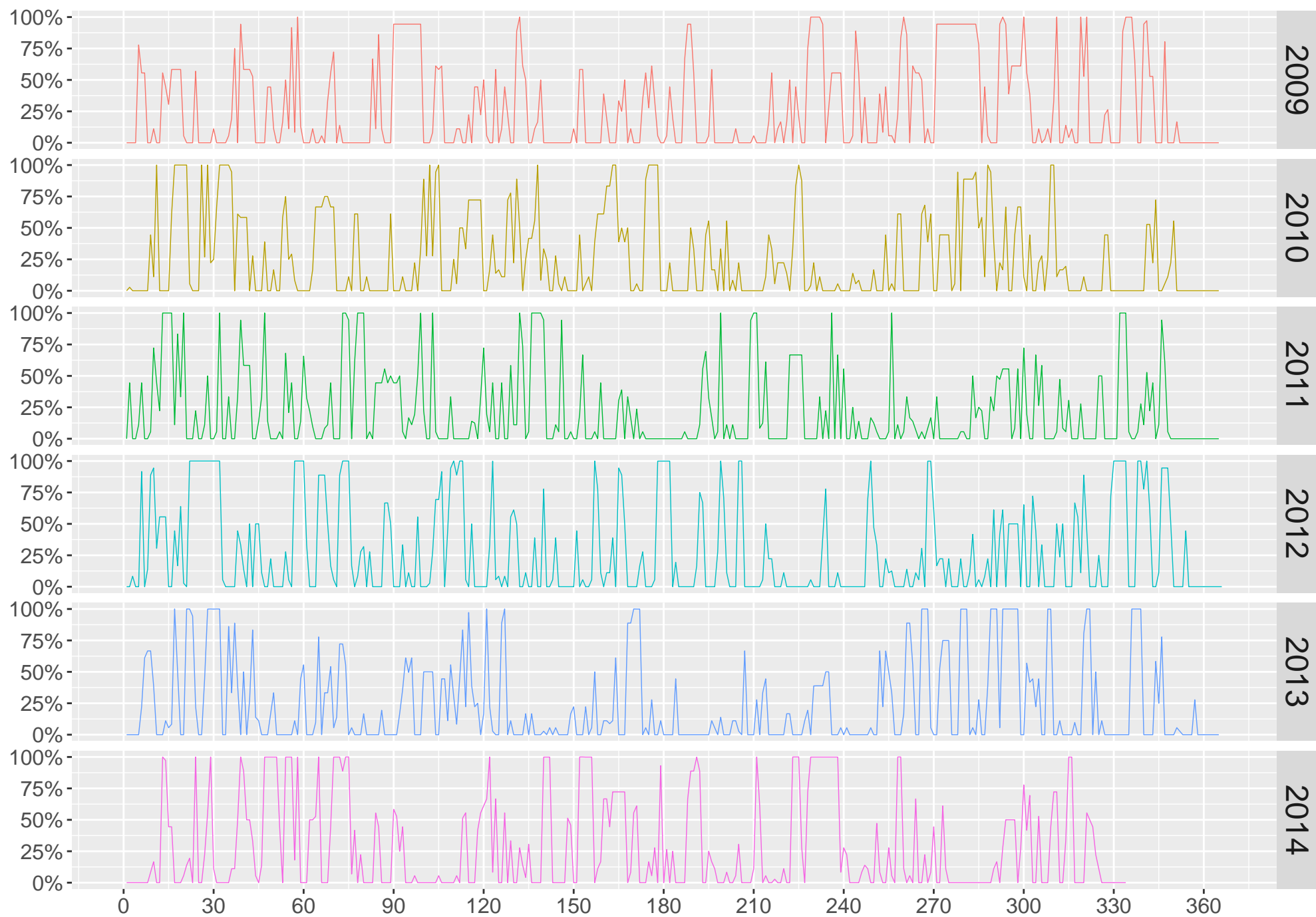
Utilization



Day of Year

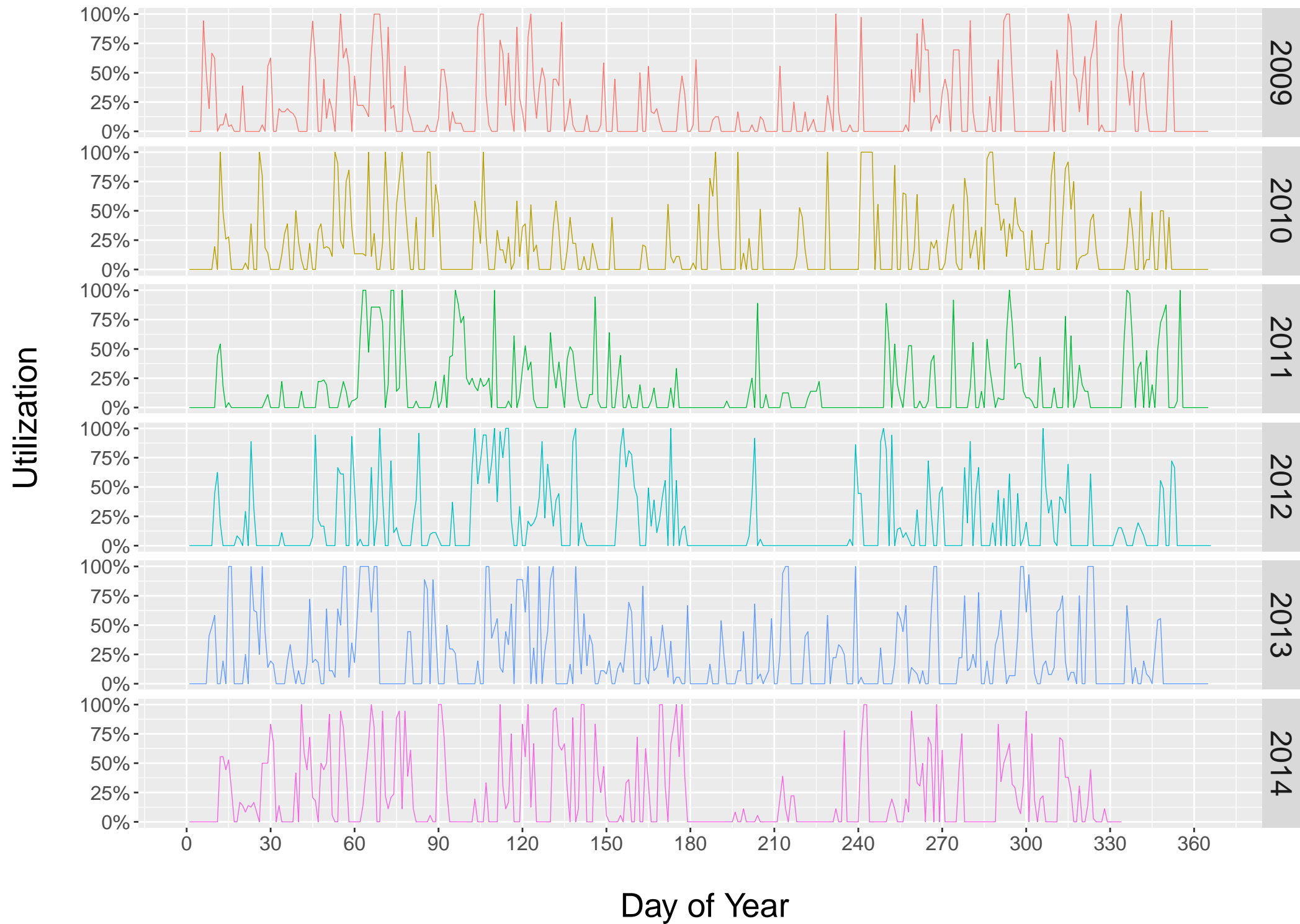
Room 'R' Utilization Rates

Utilization

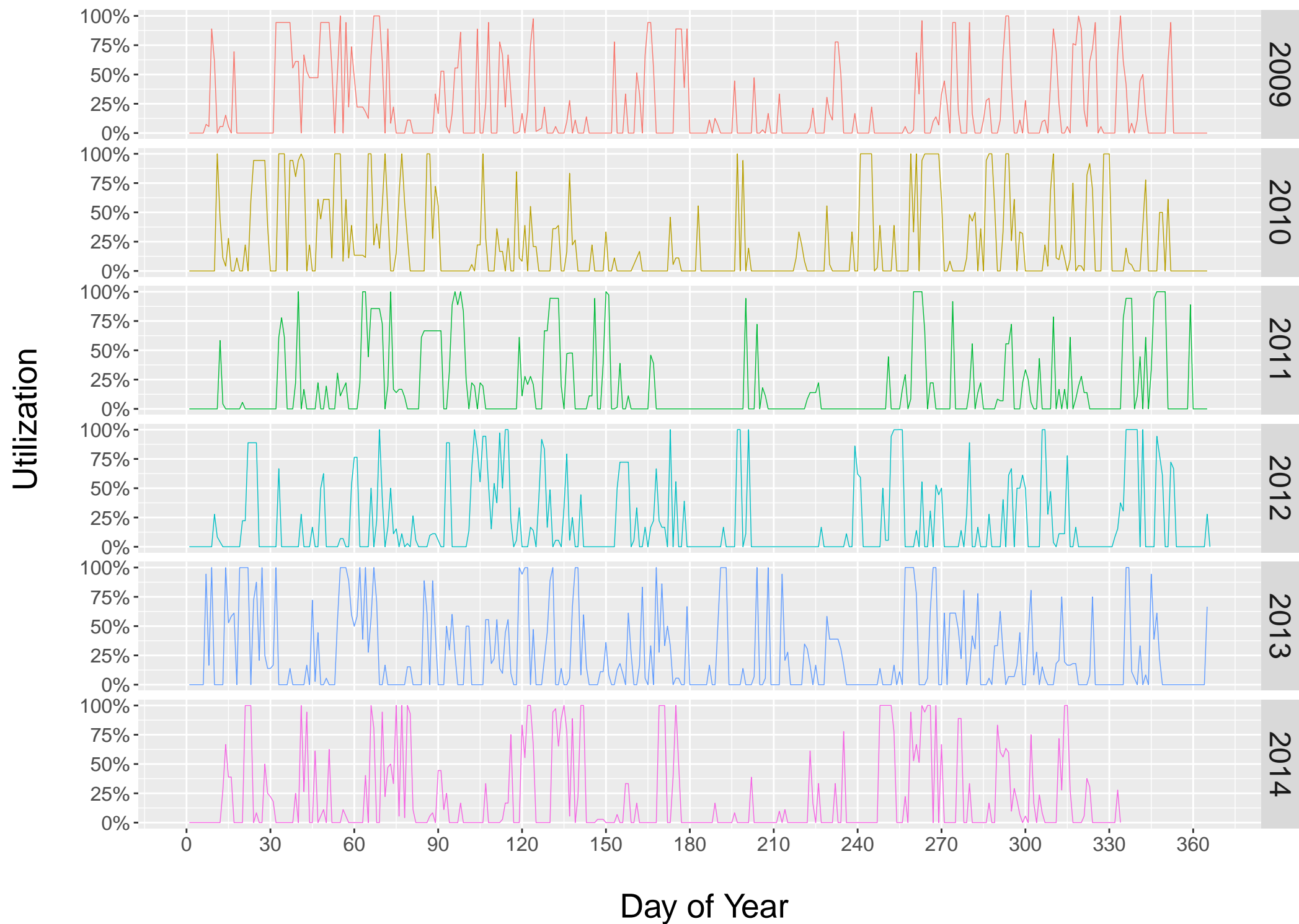


Day of Year

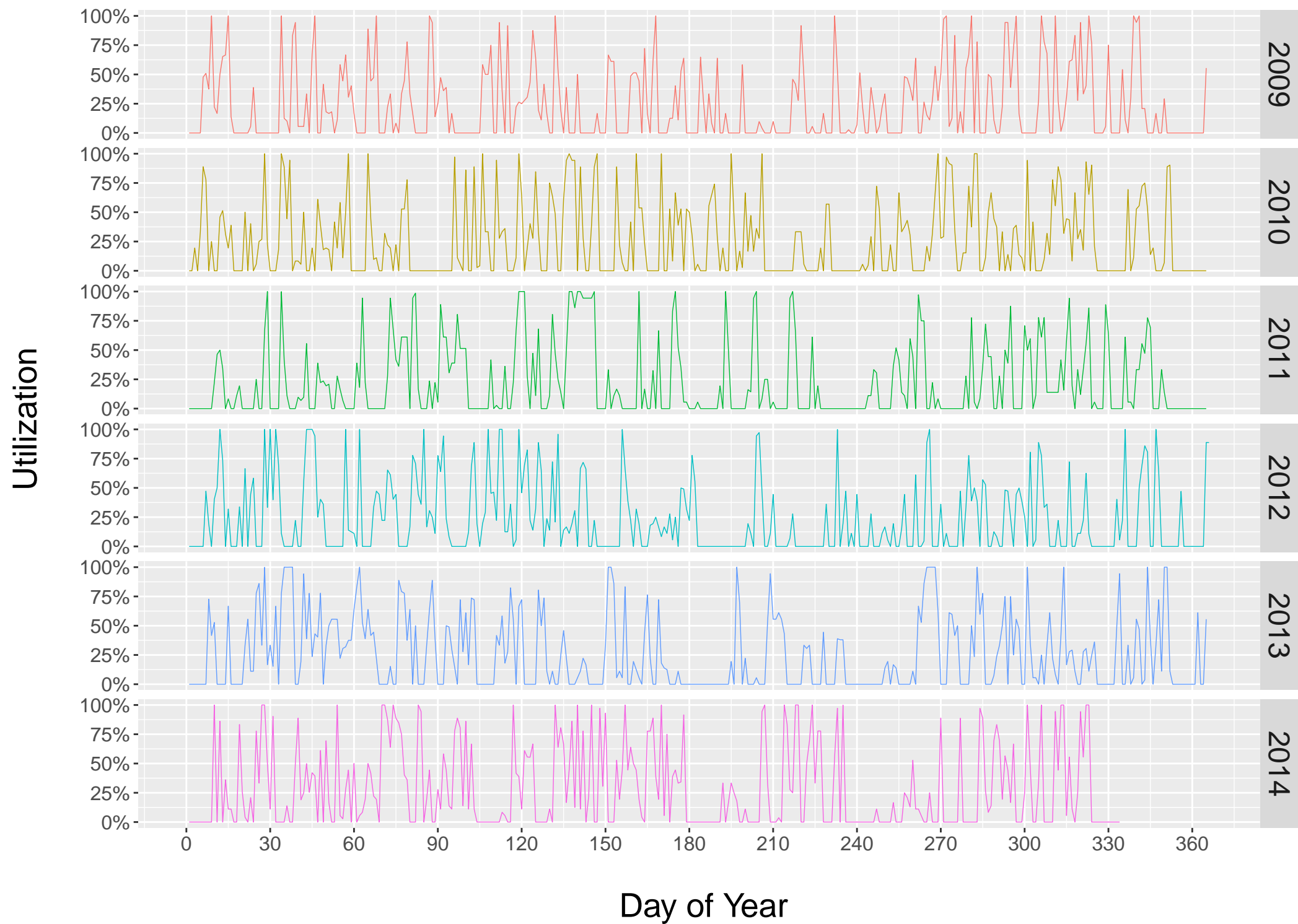
Room 'S' Utilization Rates



Room 'T' Utilization Rates

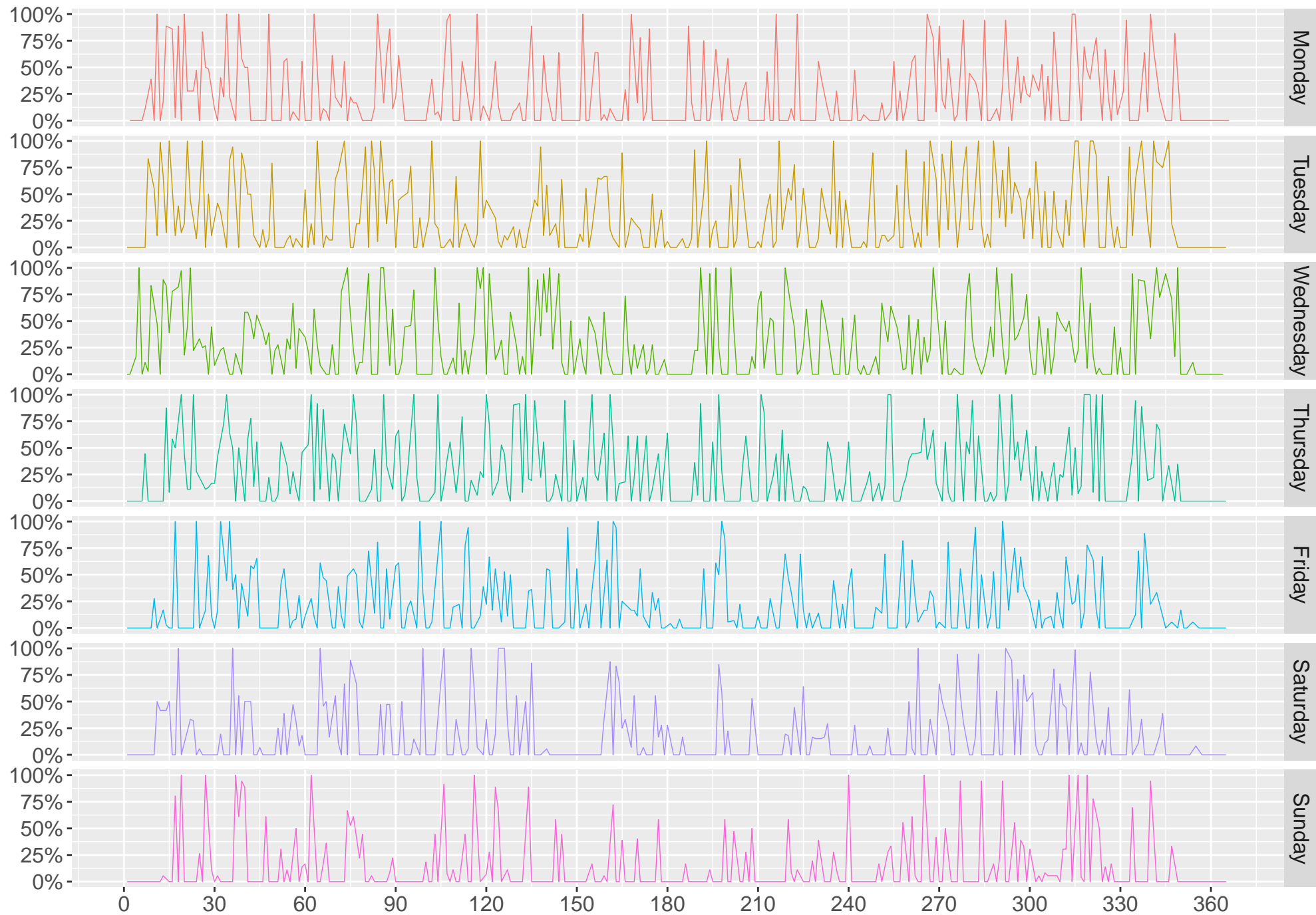


Room 'U' Utilization Rates



Room 'A' Utilization Rates by Day of the Week

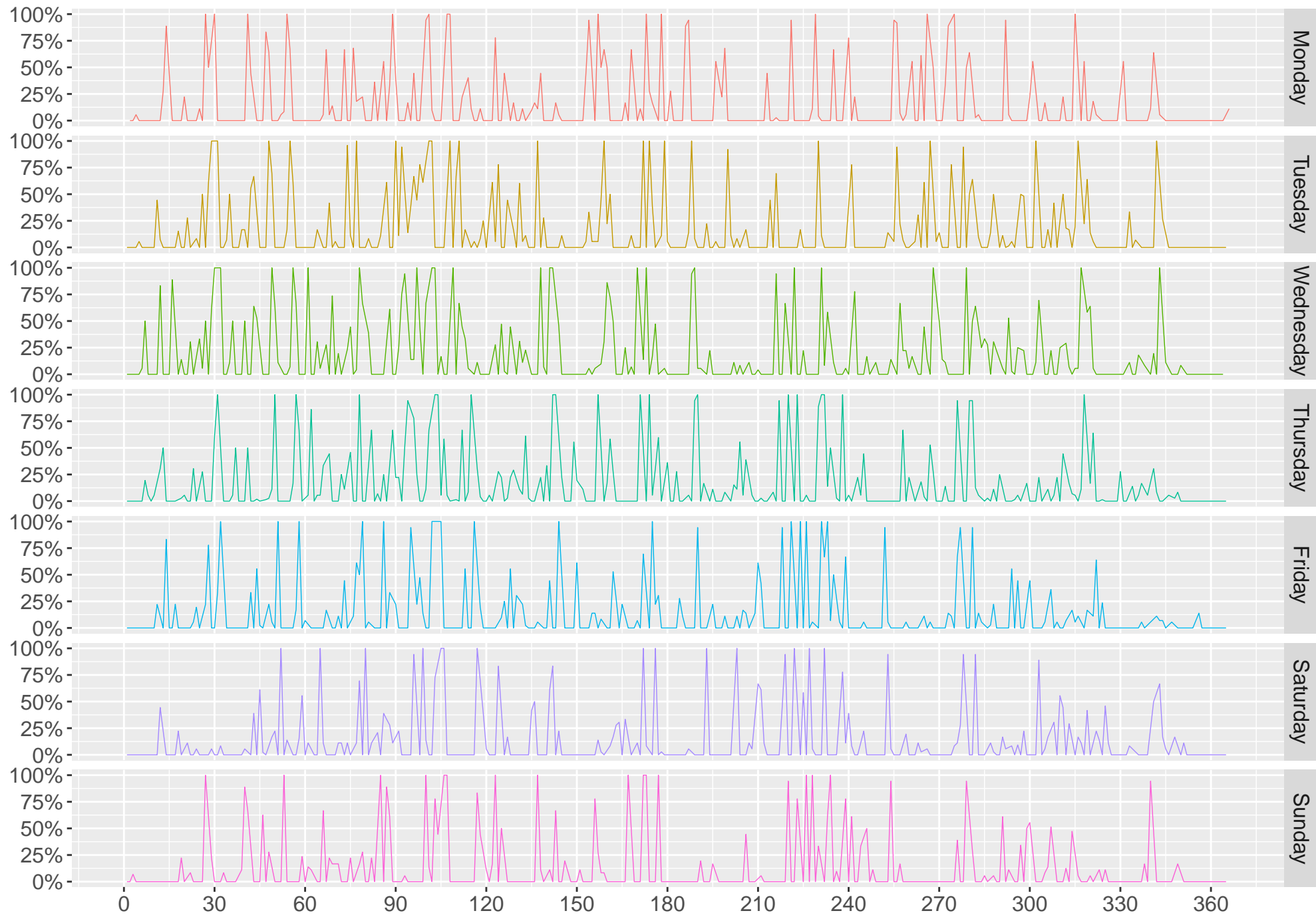
Utilization



Day of Year

Room 'B' Utilization Rates by Day of the Week

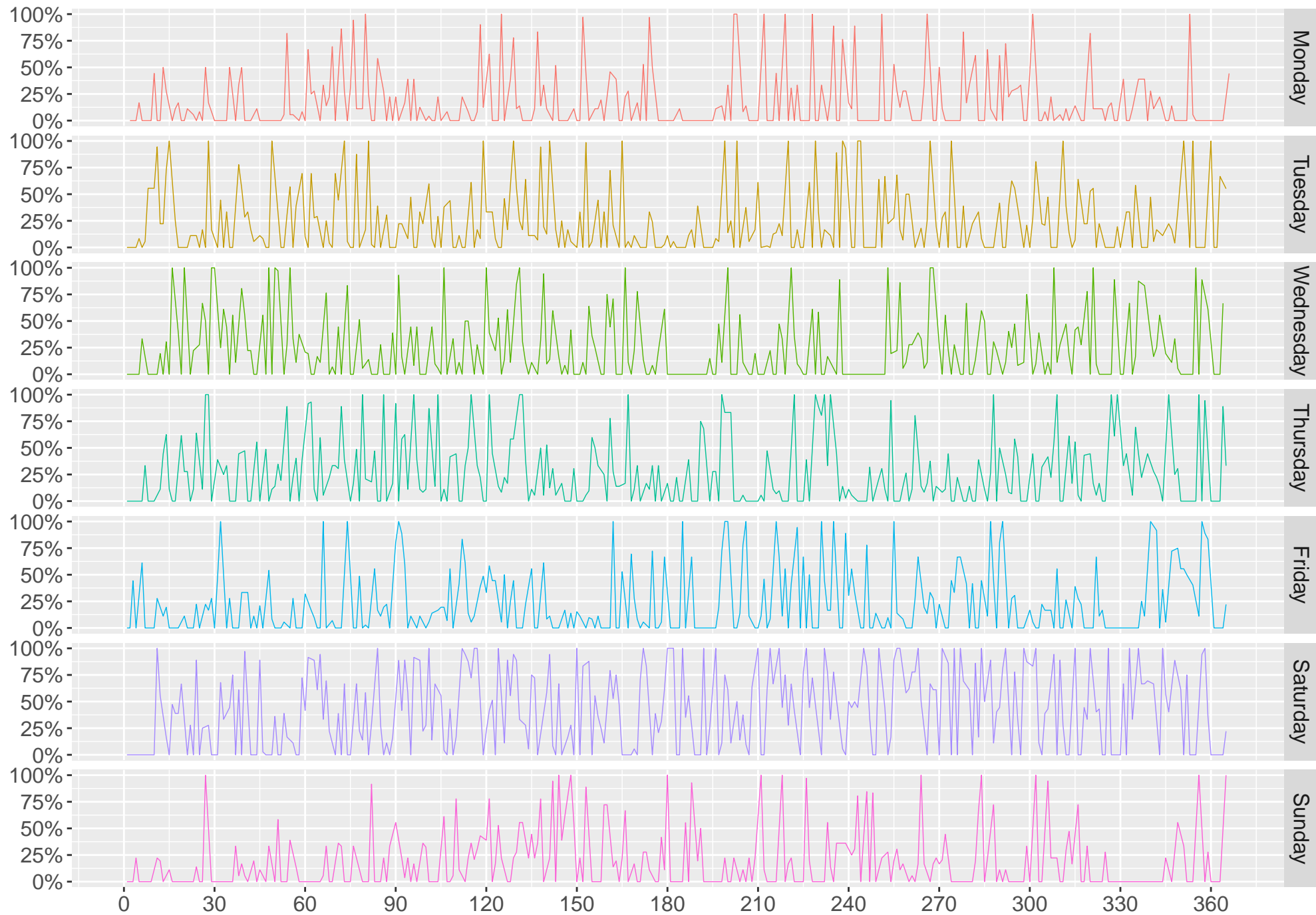
Utilization



Day of Year

Room 'C' Utilization Rates by Day of the Week

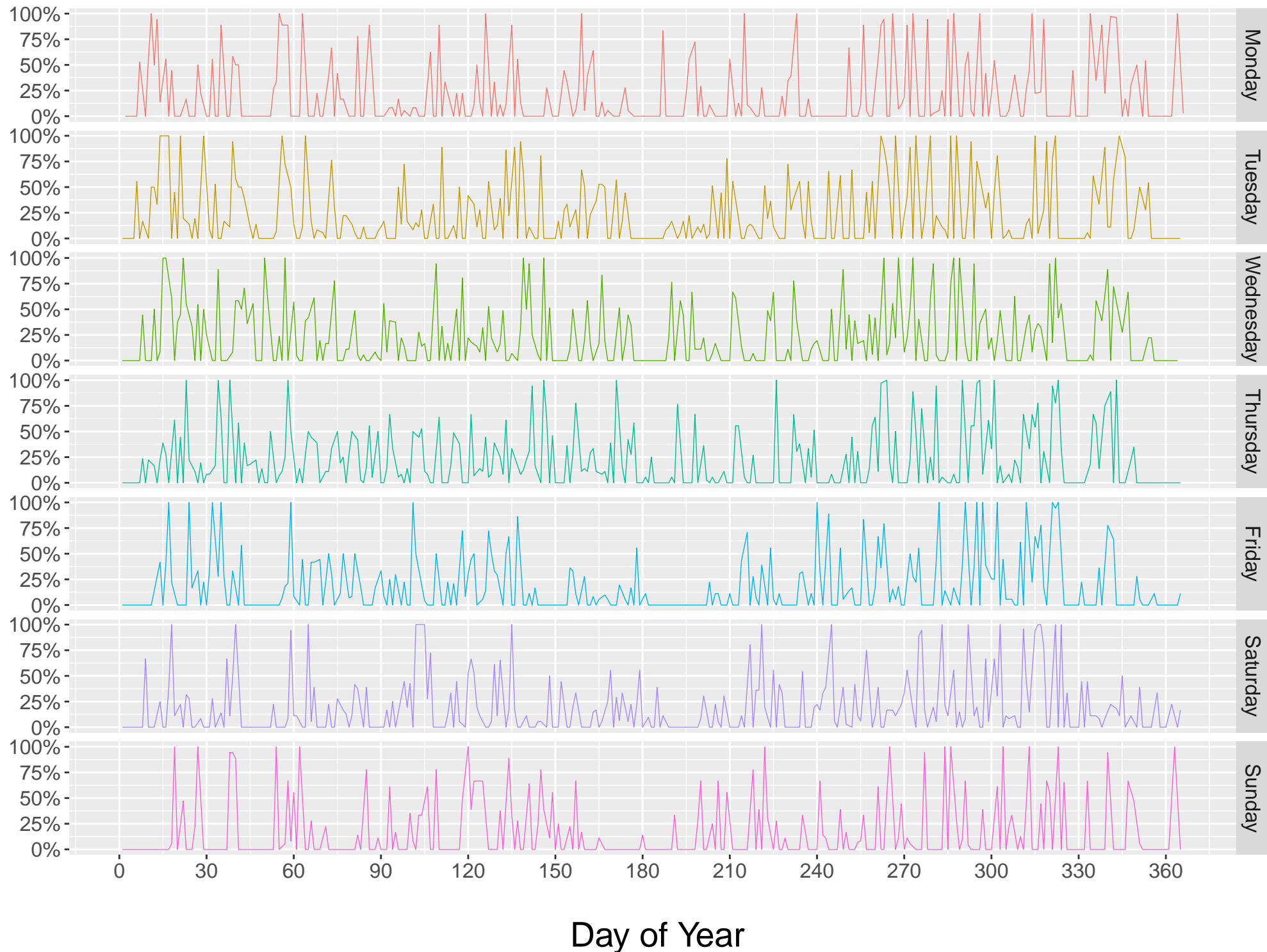
Utilization



Day of Year

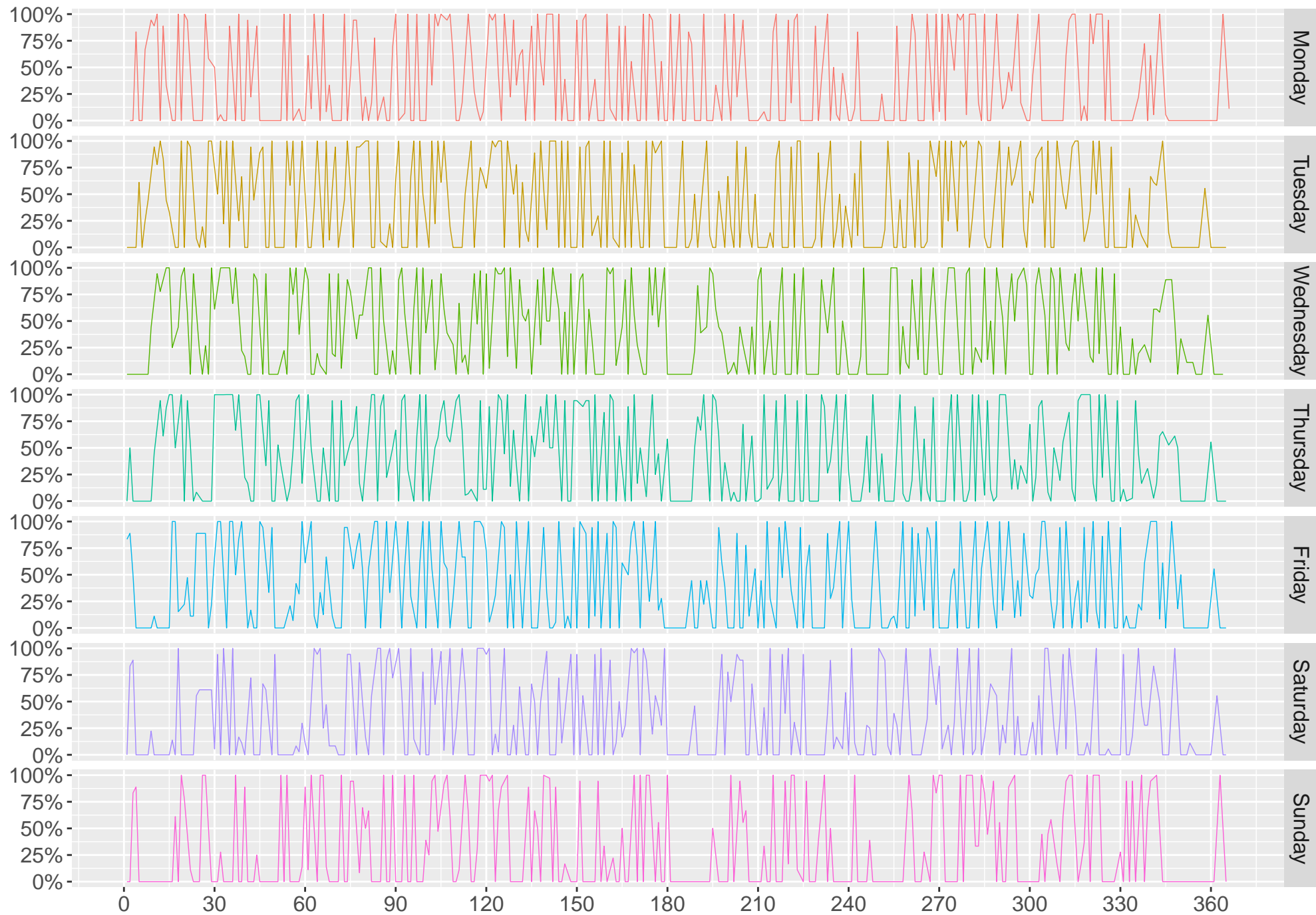
Room 'D' Utilization Rates by Day of the Week

Utilization



Room 'E' Utilization Rates by Day of the Week

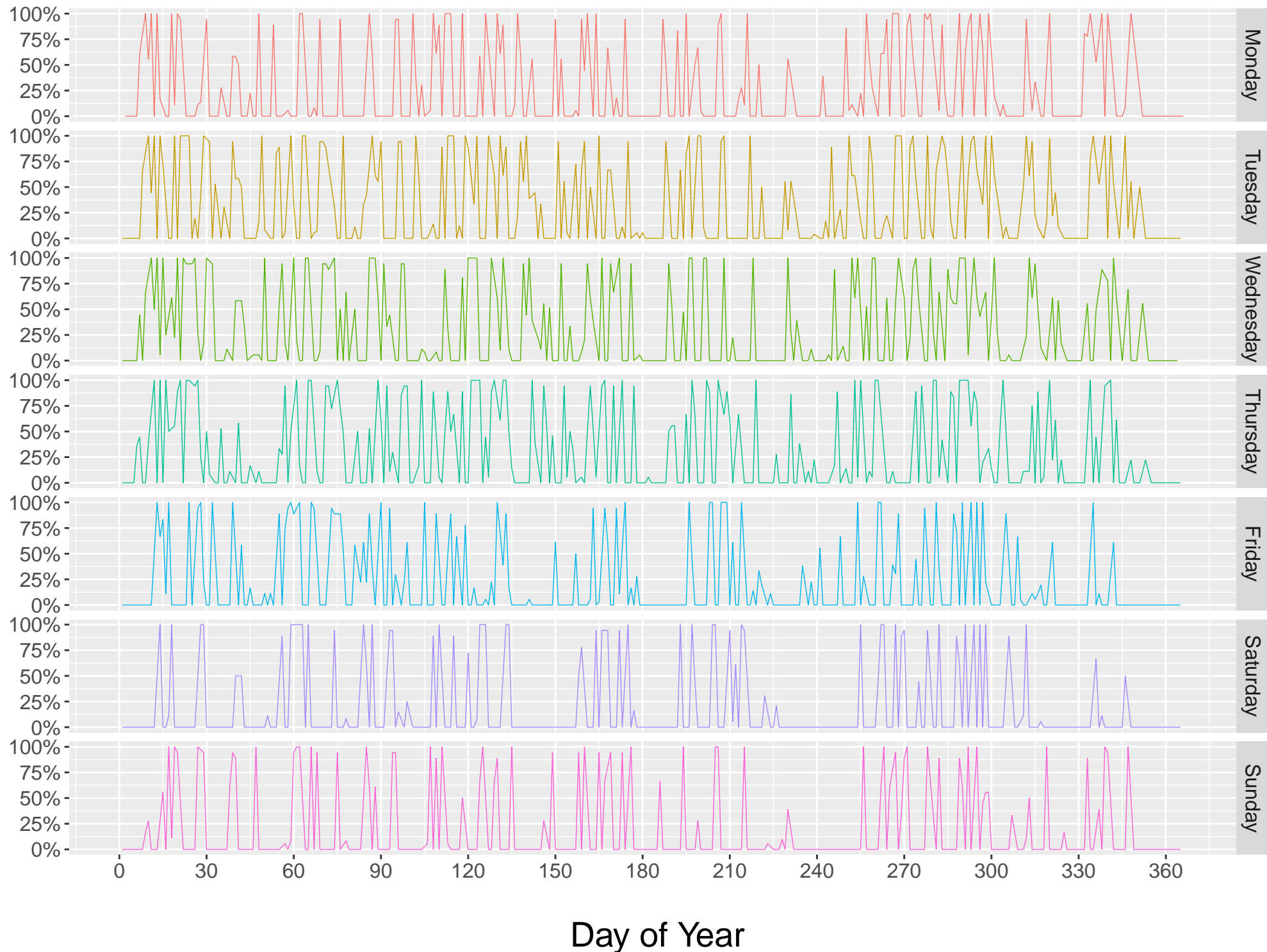
Utilization



Day of Year

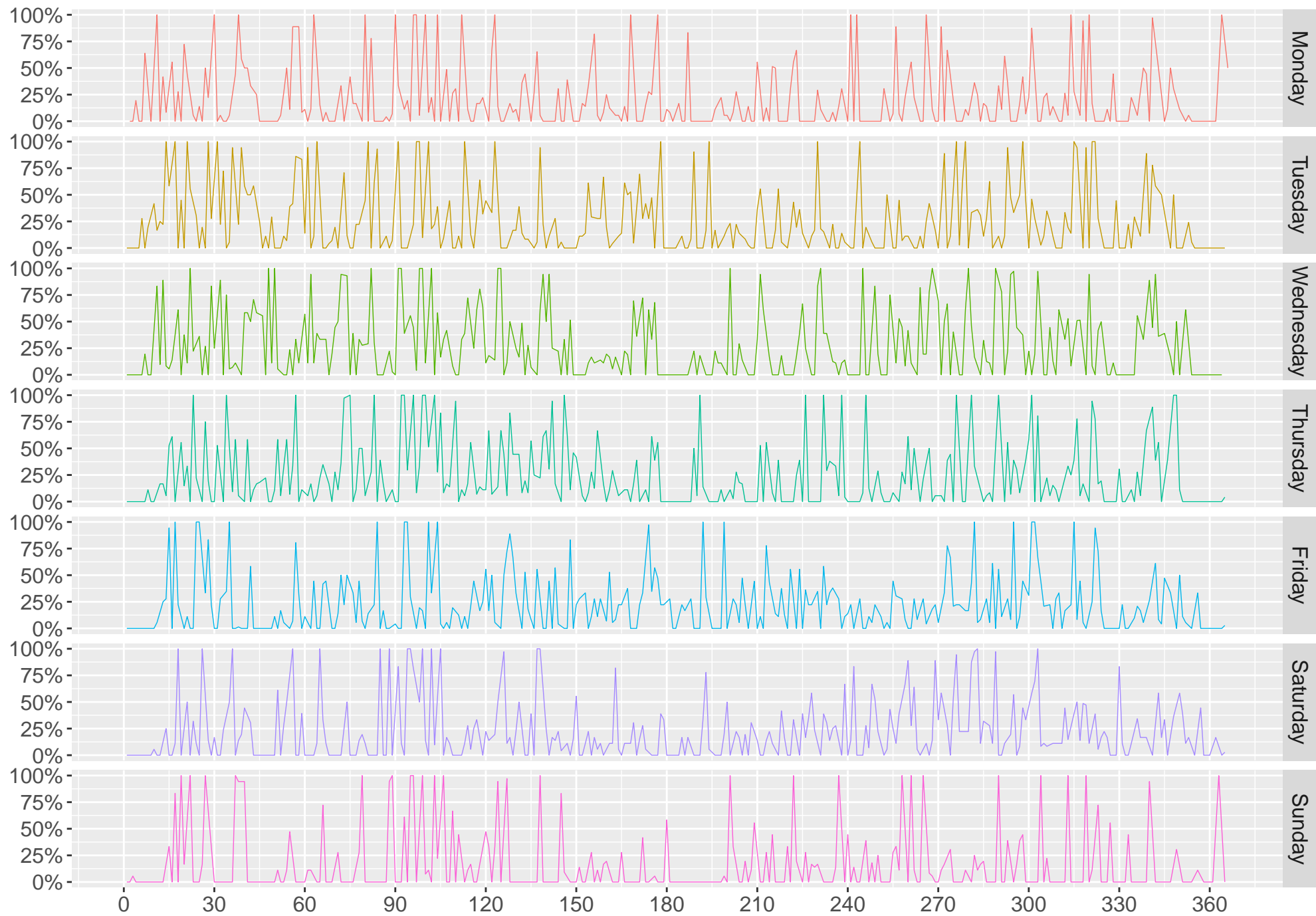
Room 'F' Utilization Rates by Day of the Week

Utilization



Room 'G' Utilization Rates by Day of the Week

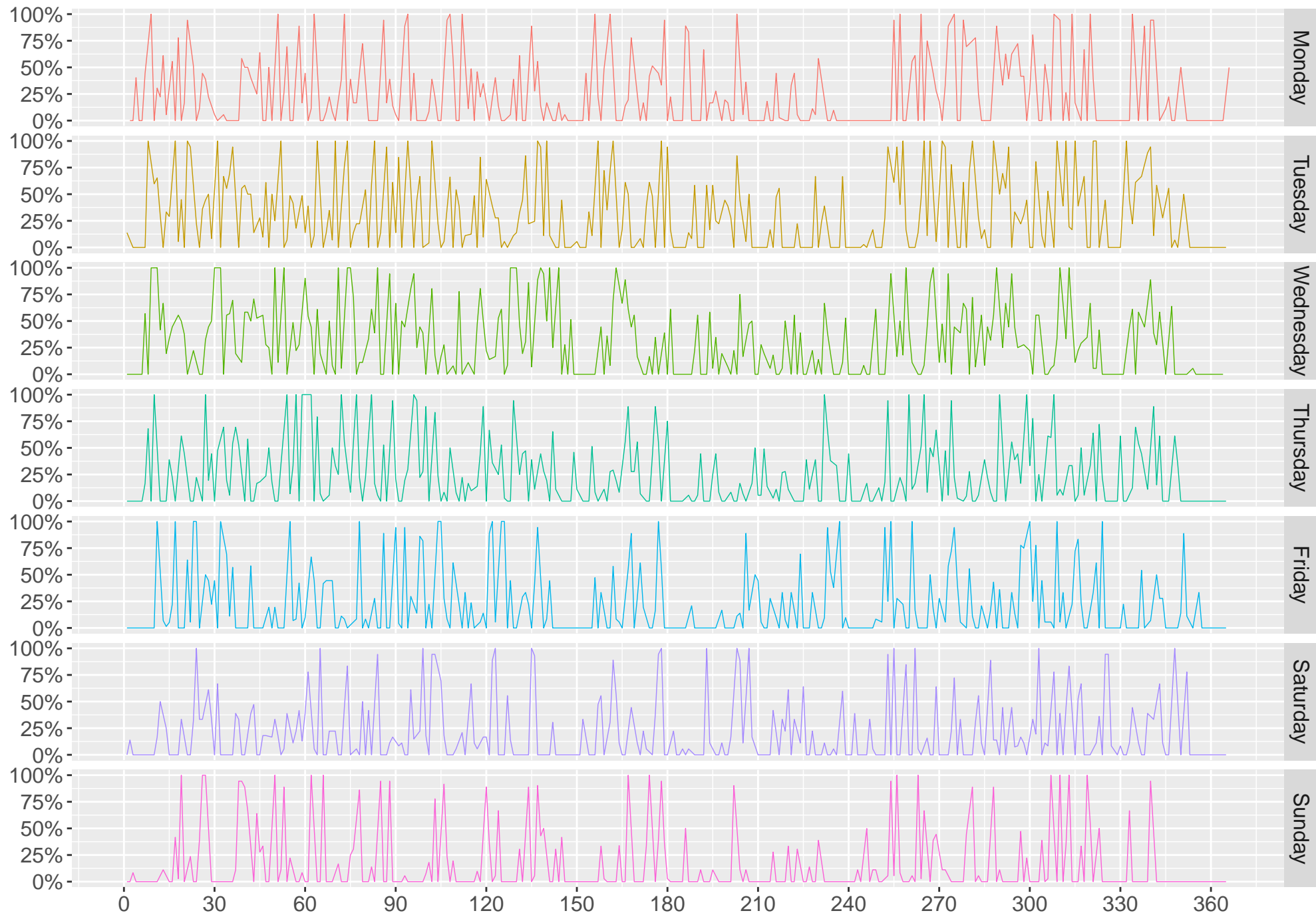
Utilization



Day of Year

Room 'H' Utilization Rates by Day of the Week

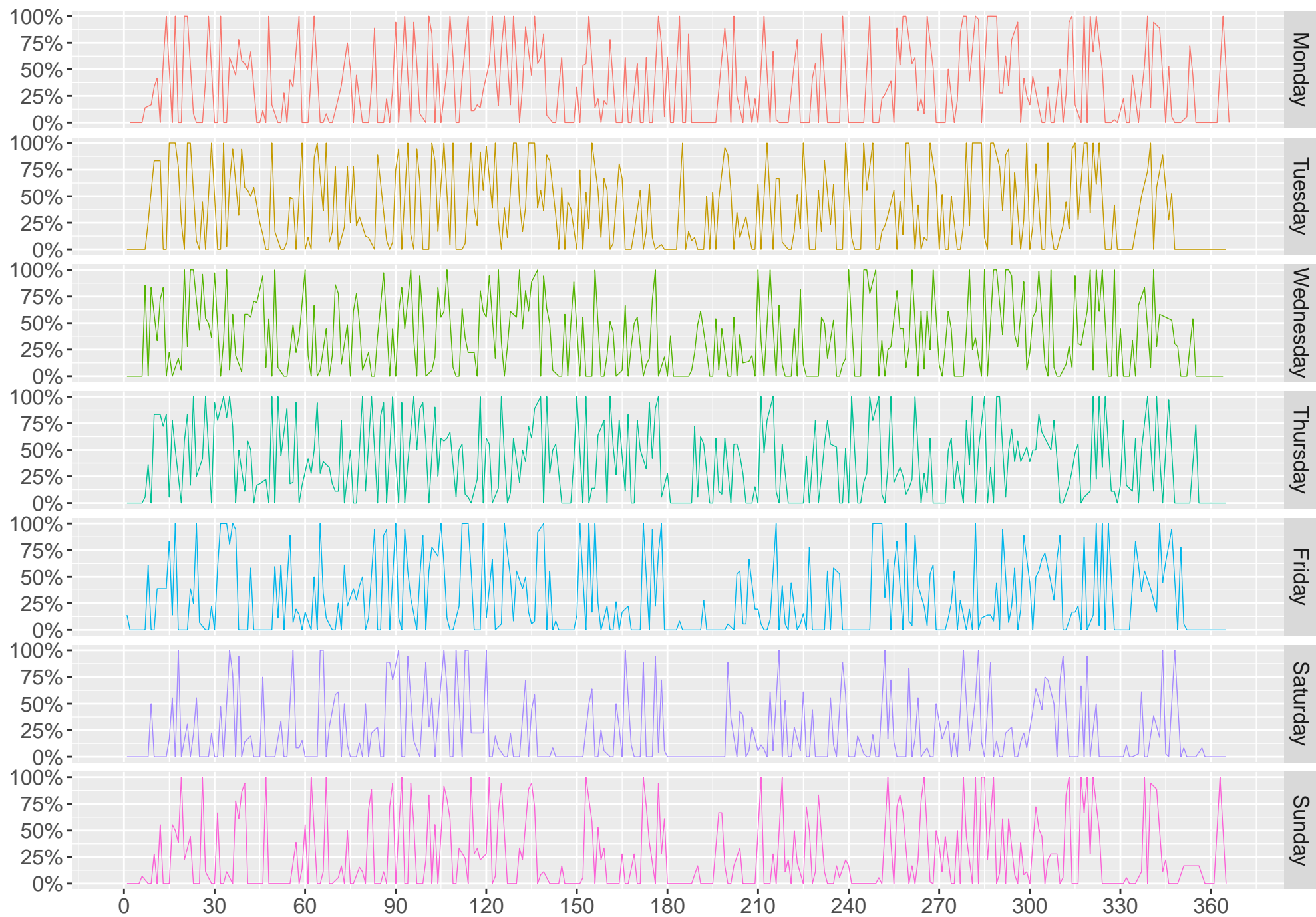
Utilization



Day of Year

Room 'I' Utilization Rates by Day of the Week

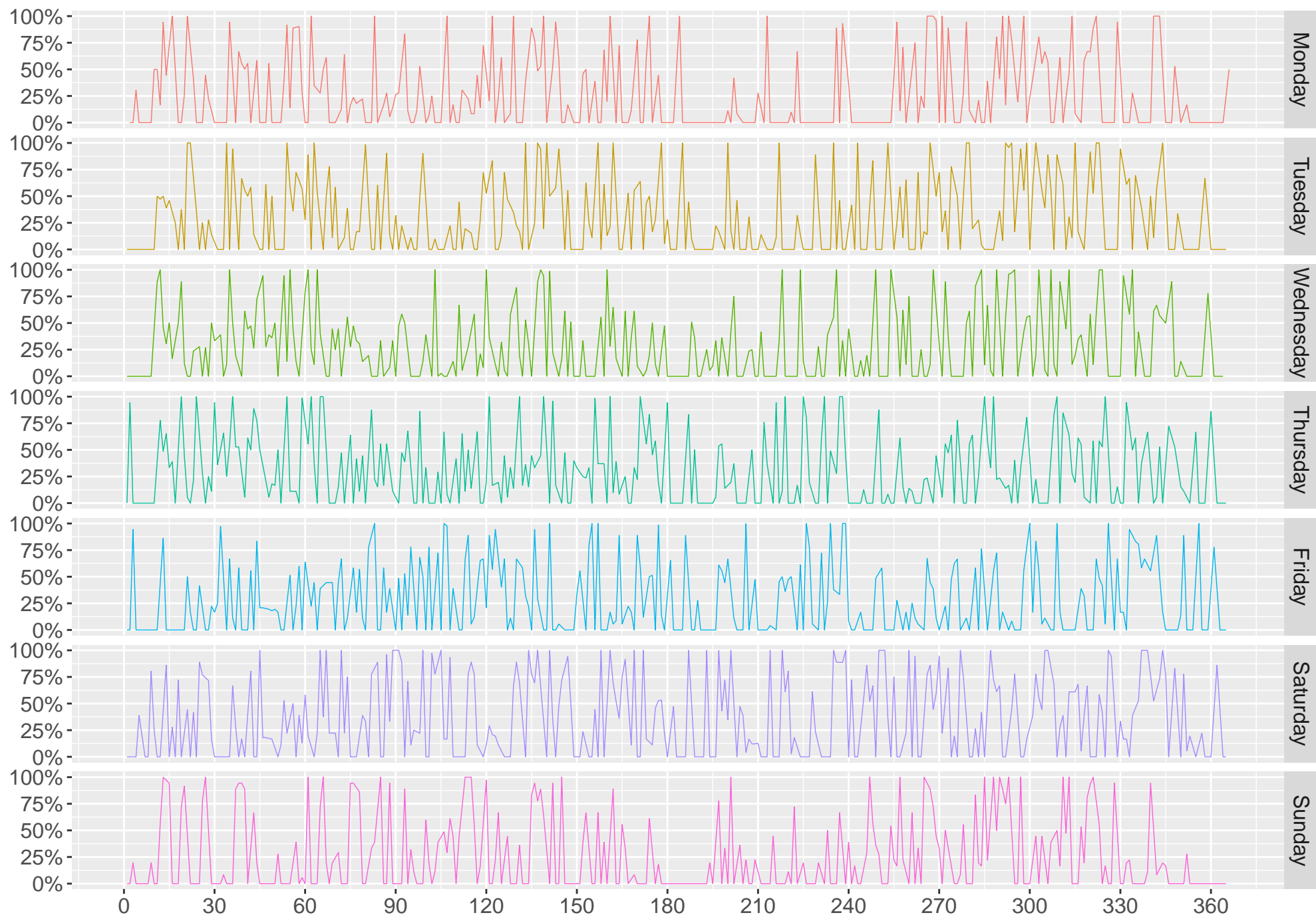
Utilization



Day of Year

Room 'J' Utilization Rates by Day of the Week

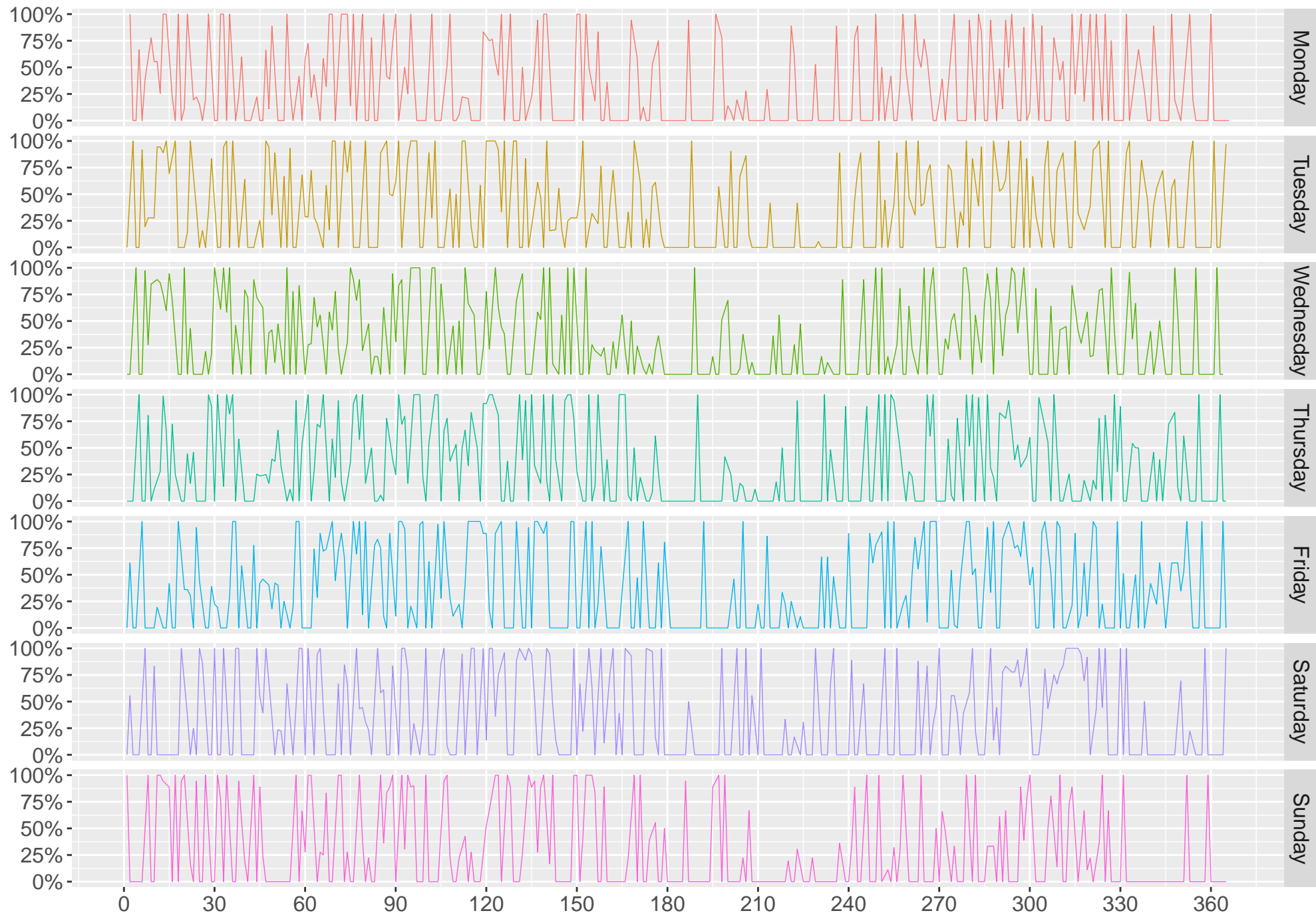
Utilization



Day of Year

Room 'K' Utilization Rates by Day of the Week

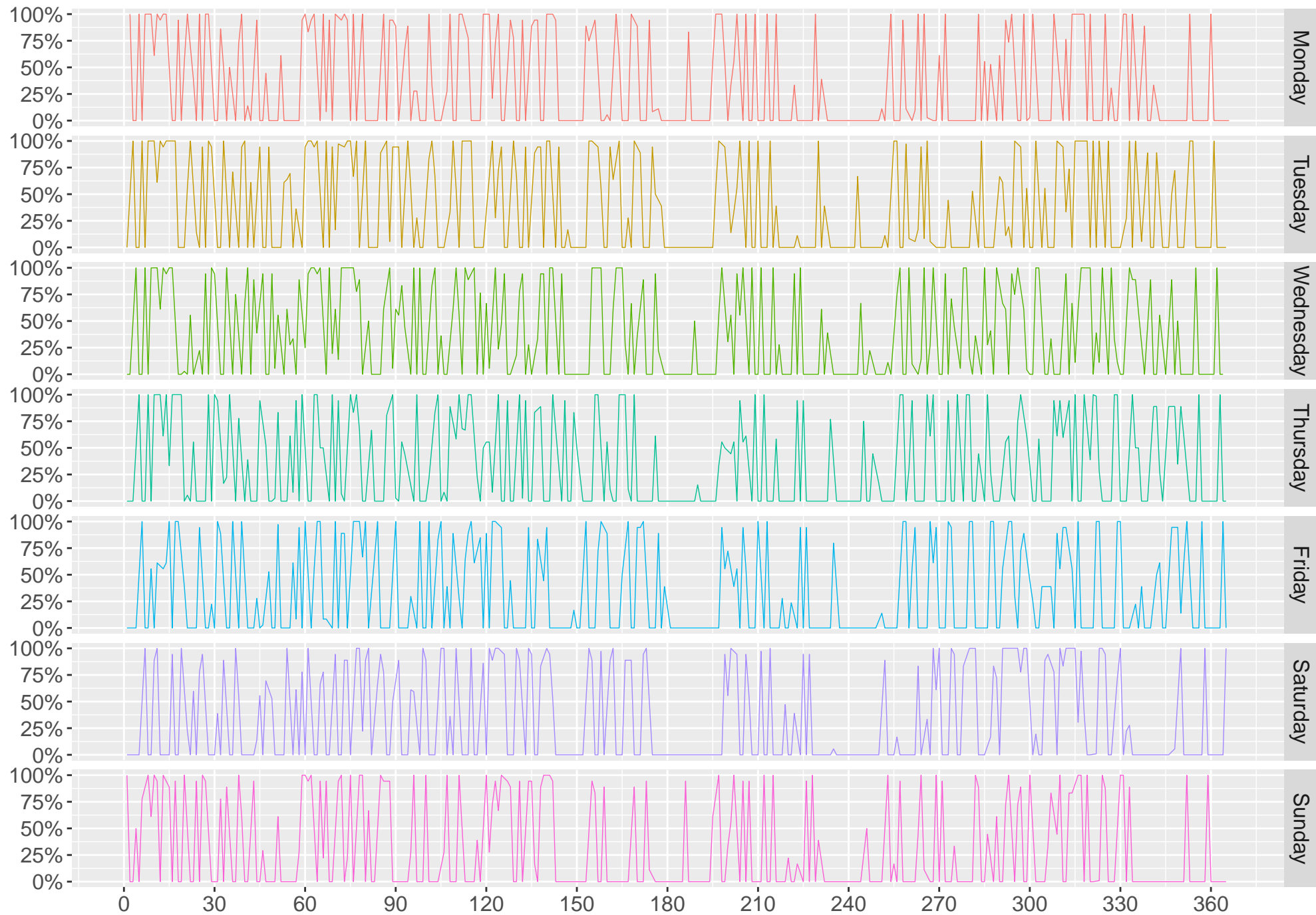
Utilization



Day of Year

Room 'L' Utilization Rates by Day of the Week

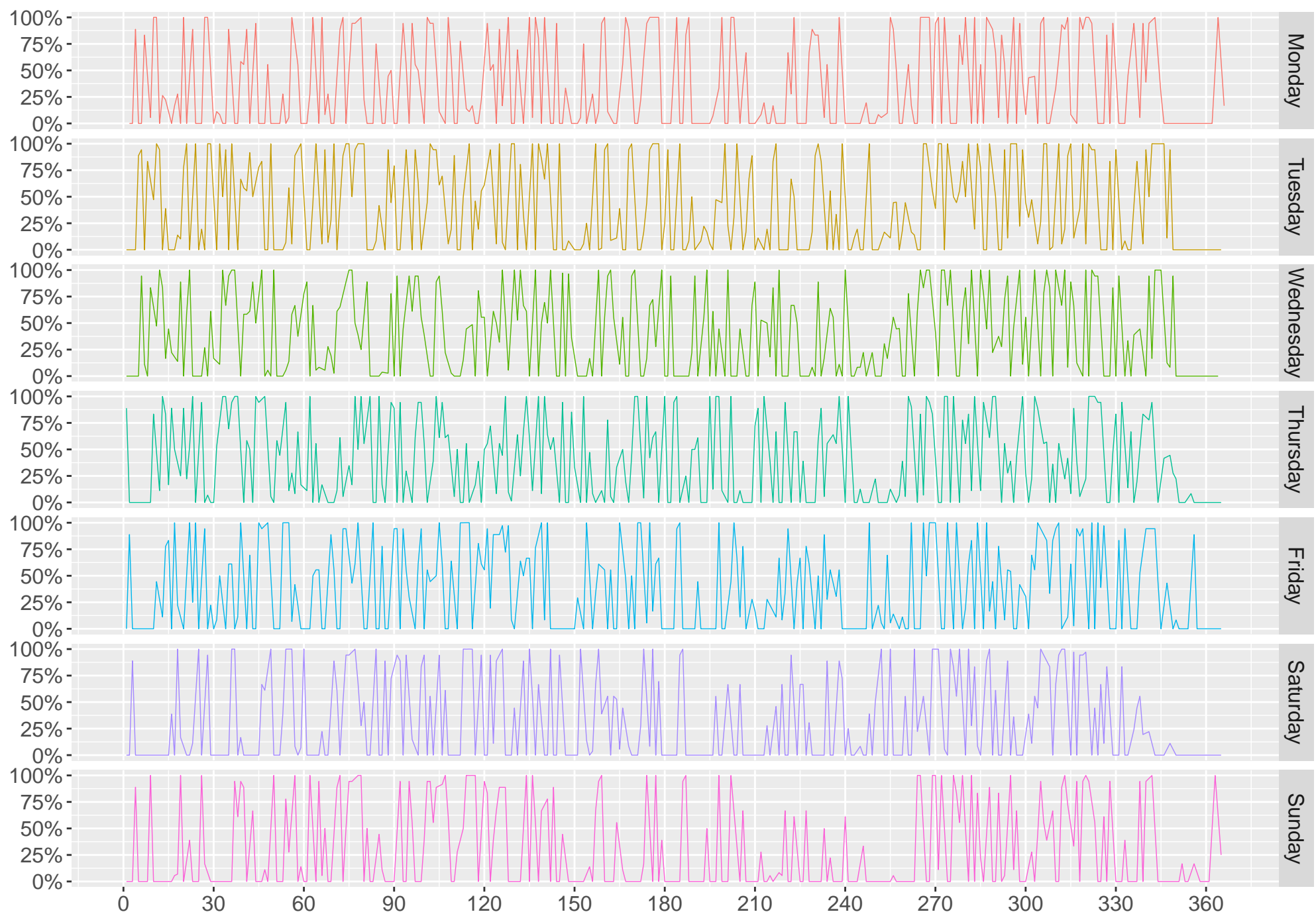
Utilization



Day of Year

Room 'M' Utilization Rates by Day of the Week

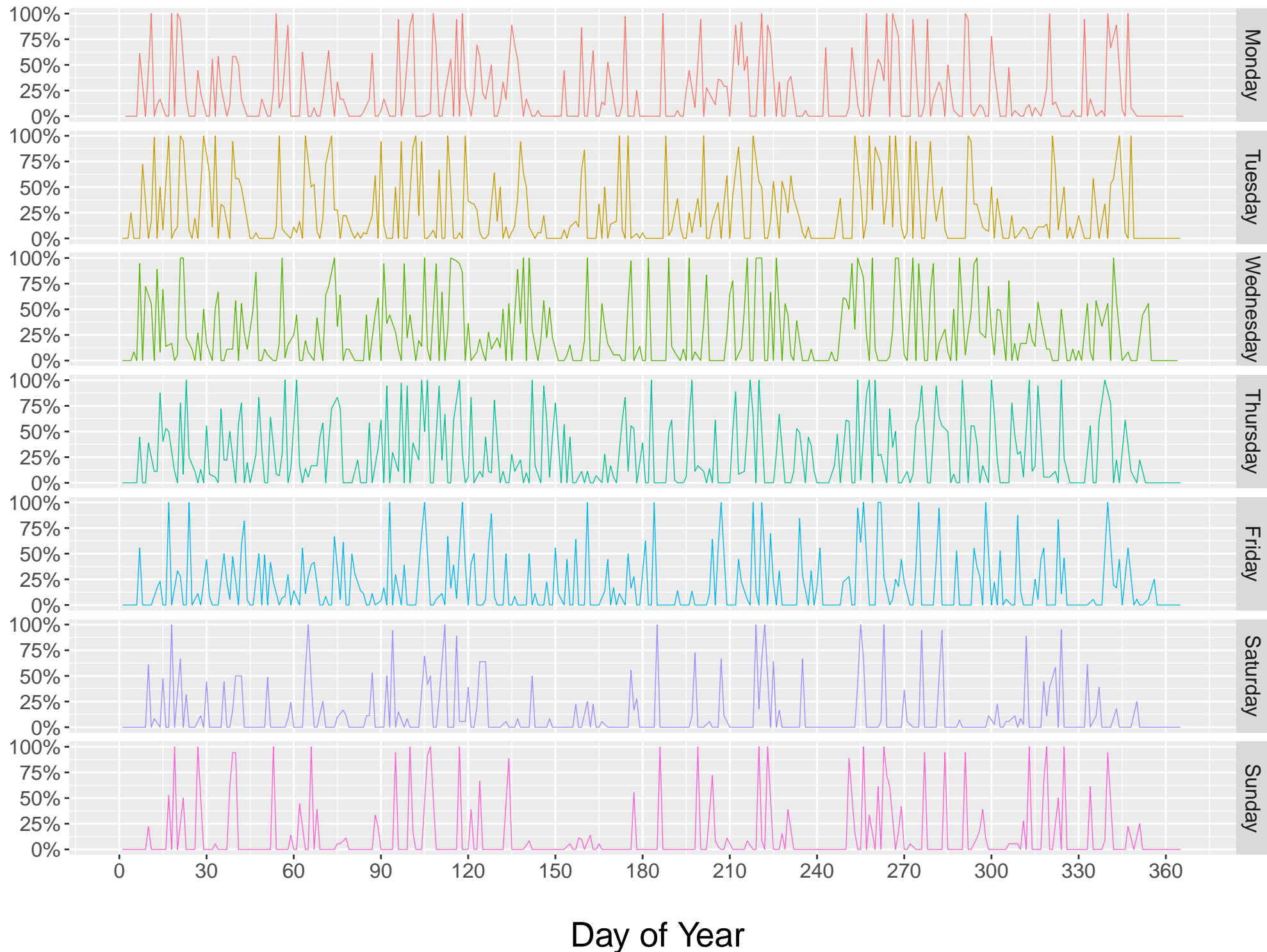
Utilization



Day of Year

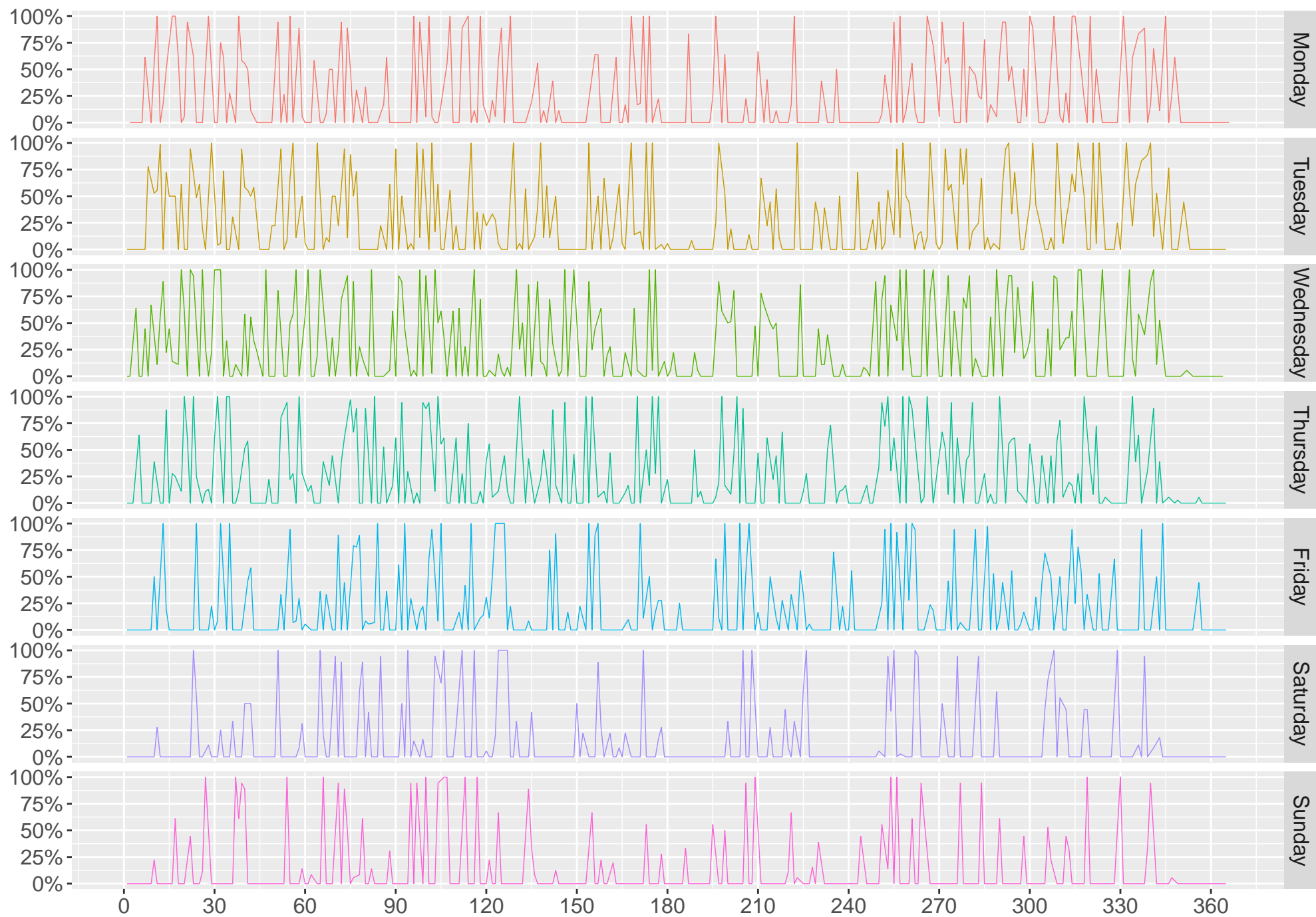
Room 'N' Utilization Rates by Day of the Week

Utilization



Room 'O' Utilization Rates by Day of the Week

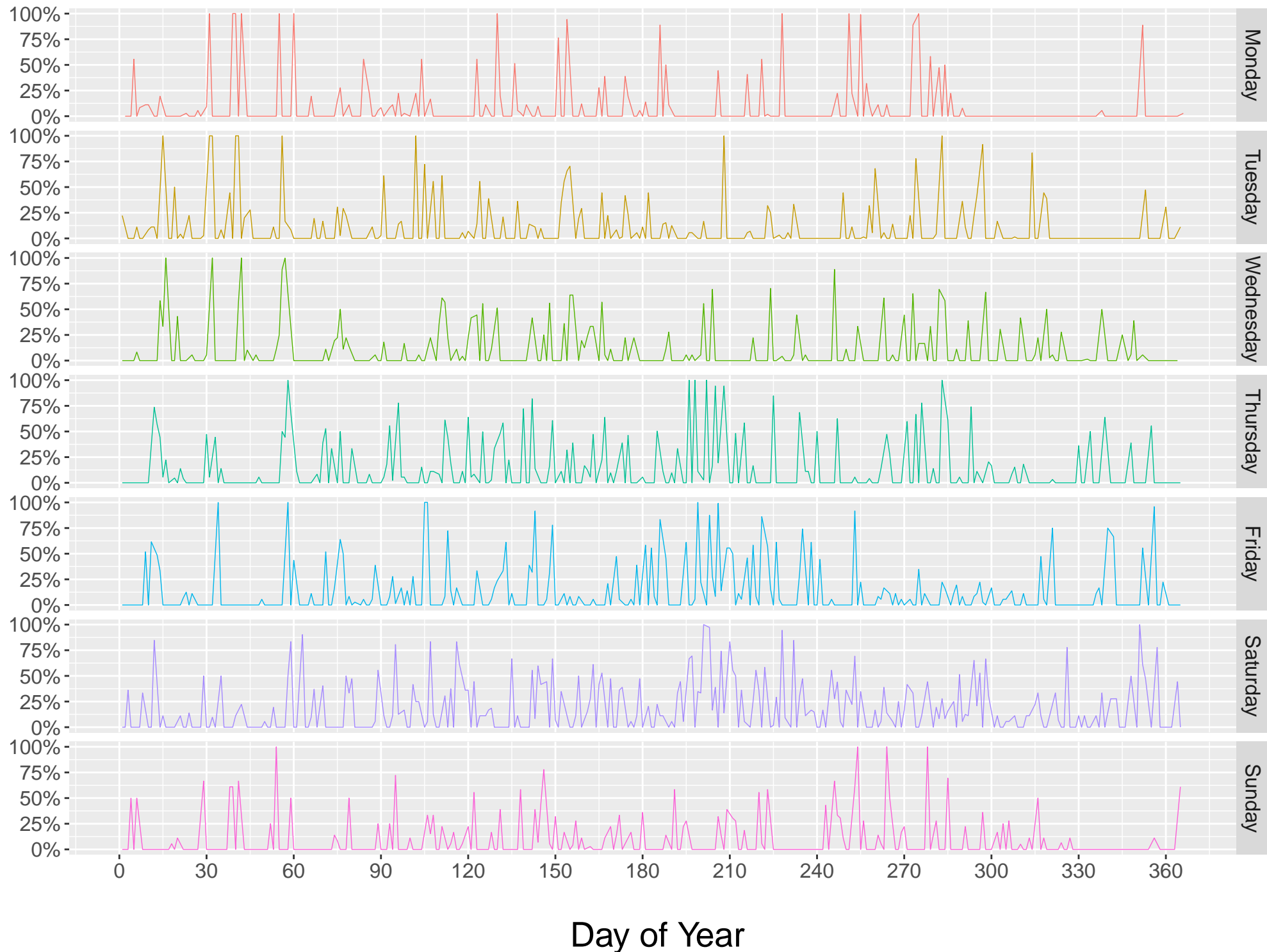
Utilization



Day of Year

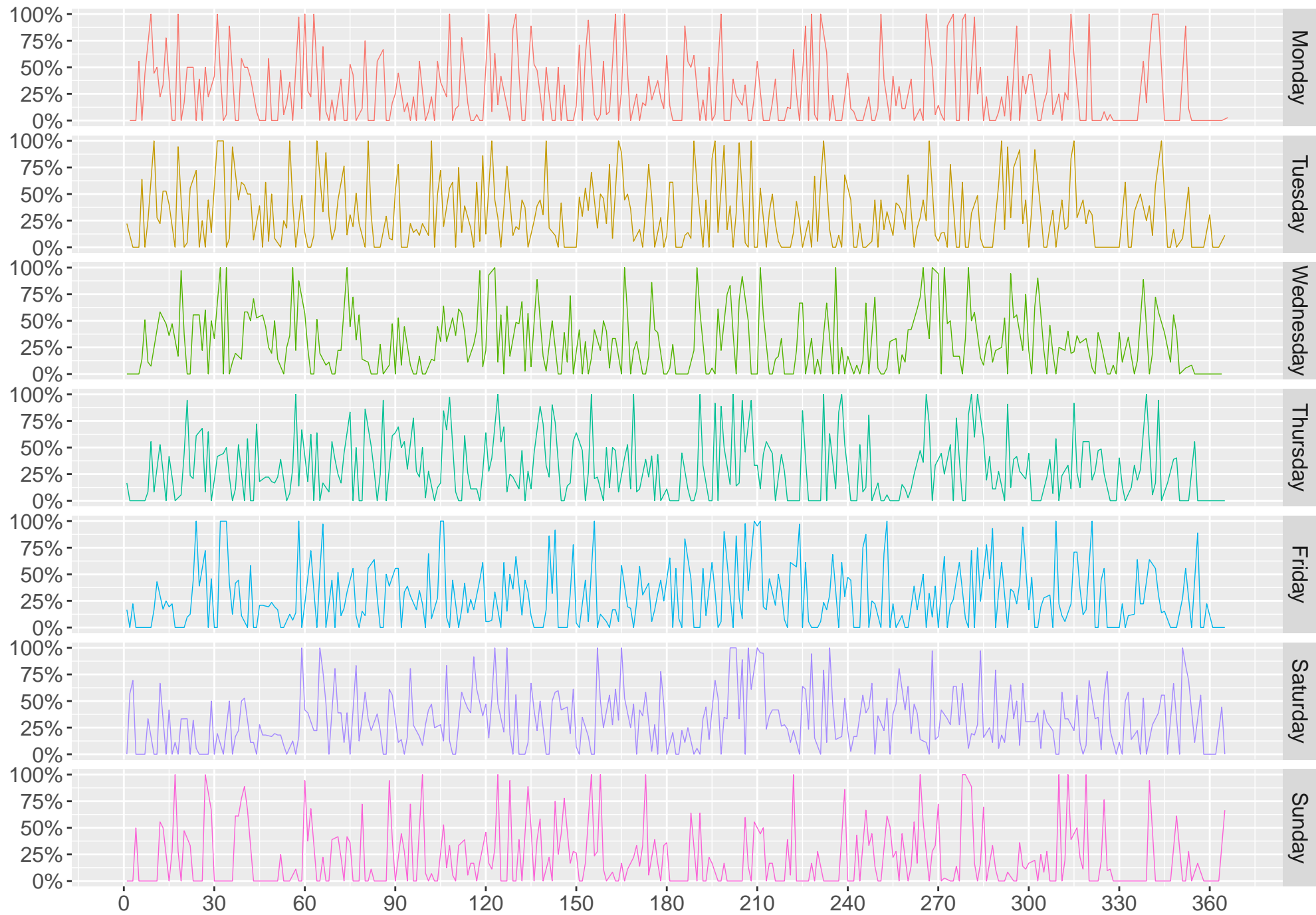
Room 'P' Utilization Rates by Day of the Week

Utilization



Room 'Q' Utilization Rates by Day of the Week

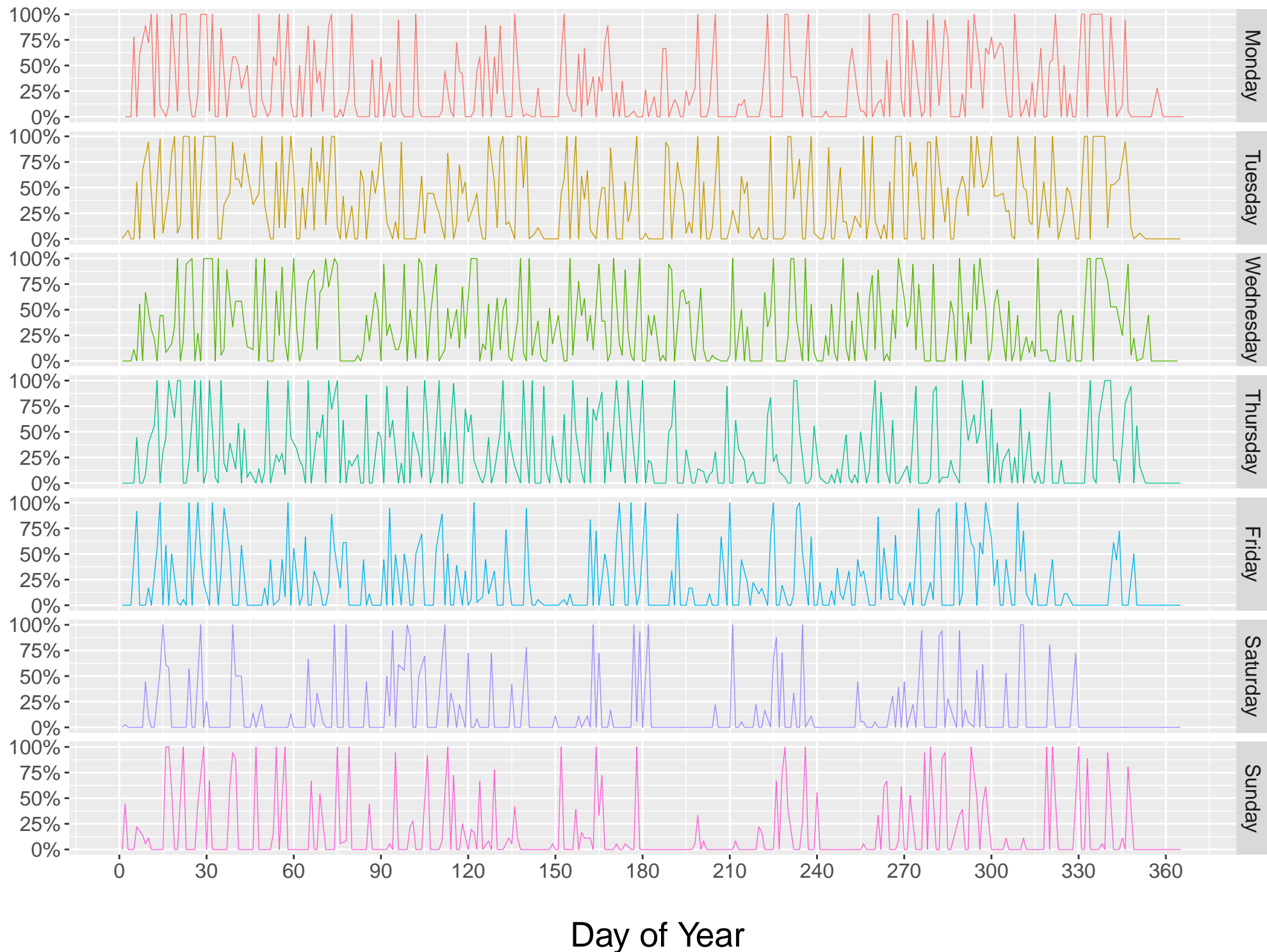
Utilization



Day of Year

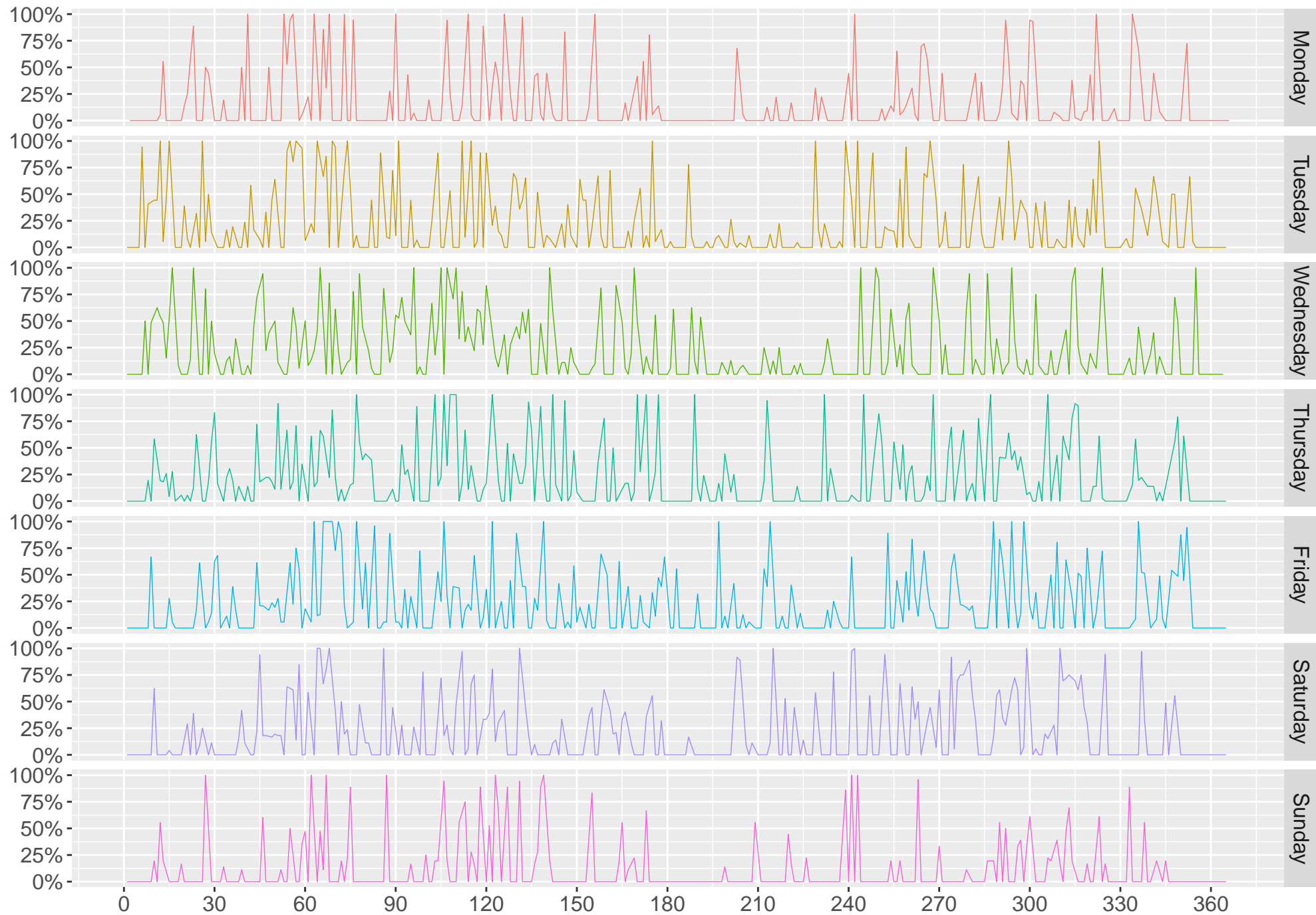
Room 'R' Utilization Rates by Day of the Week

Utilization



Room 'S' Utilization Rates by Day of the Week

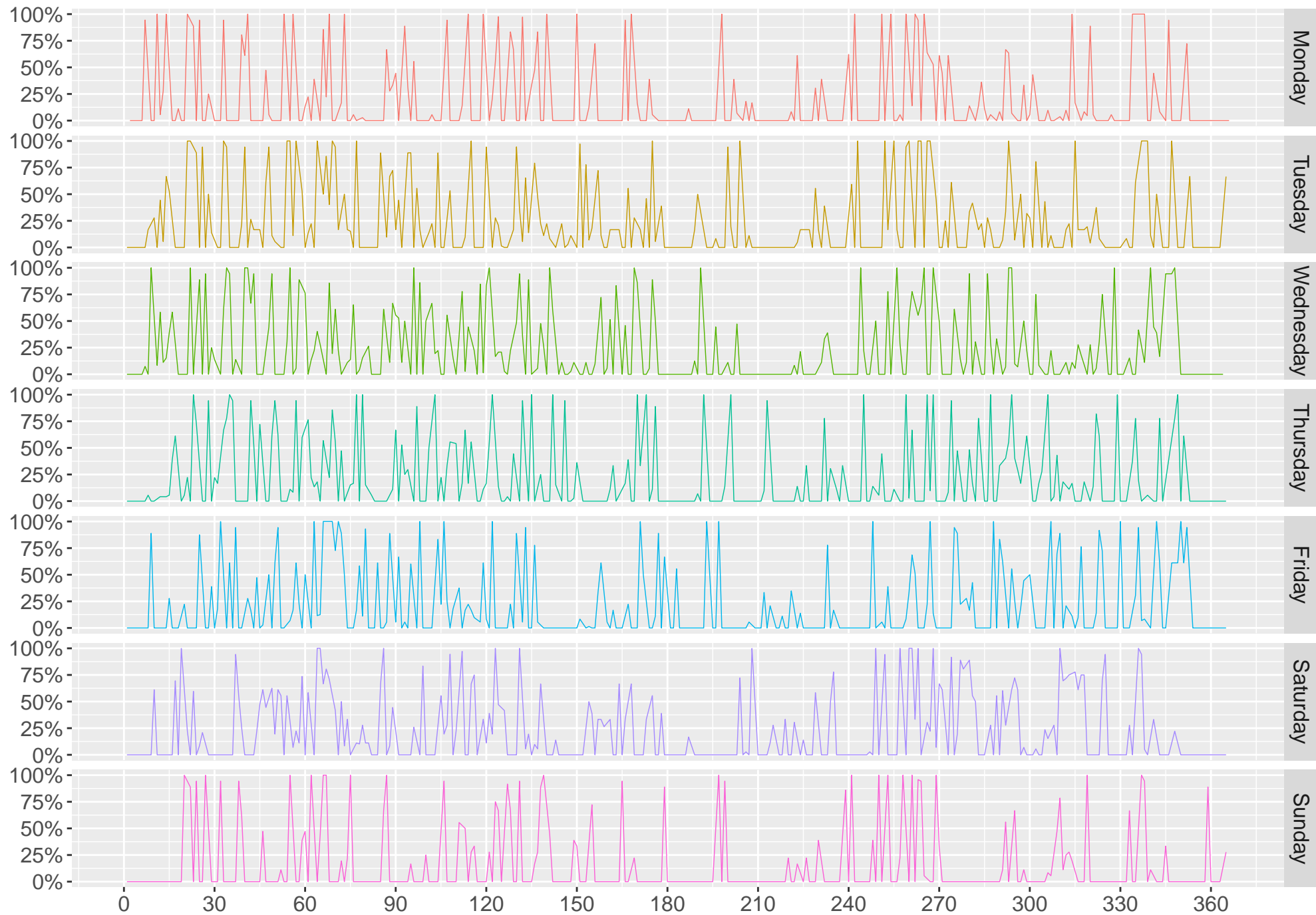
Utilization



Day of Year

Room 'T' Utilization Rates by Day of the Week

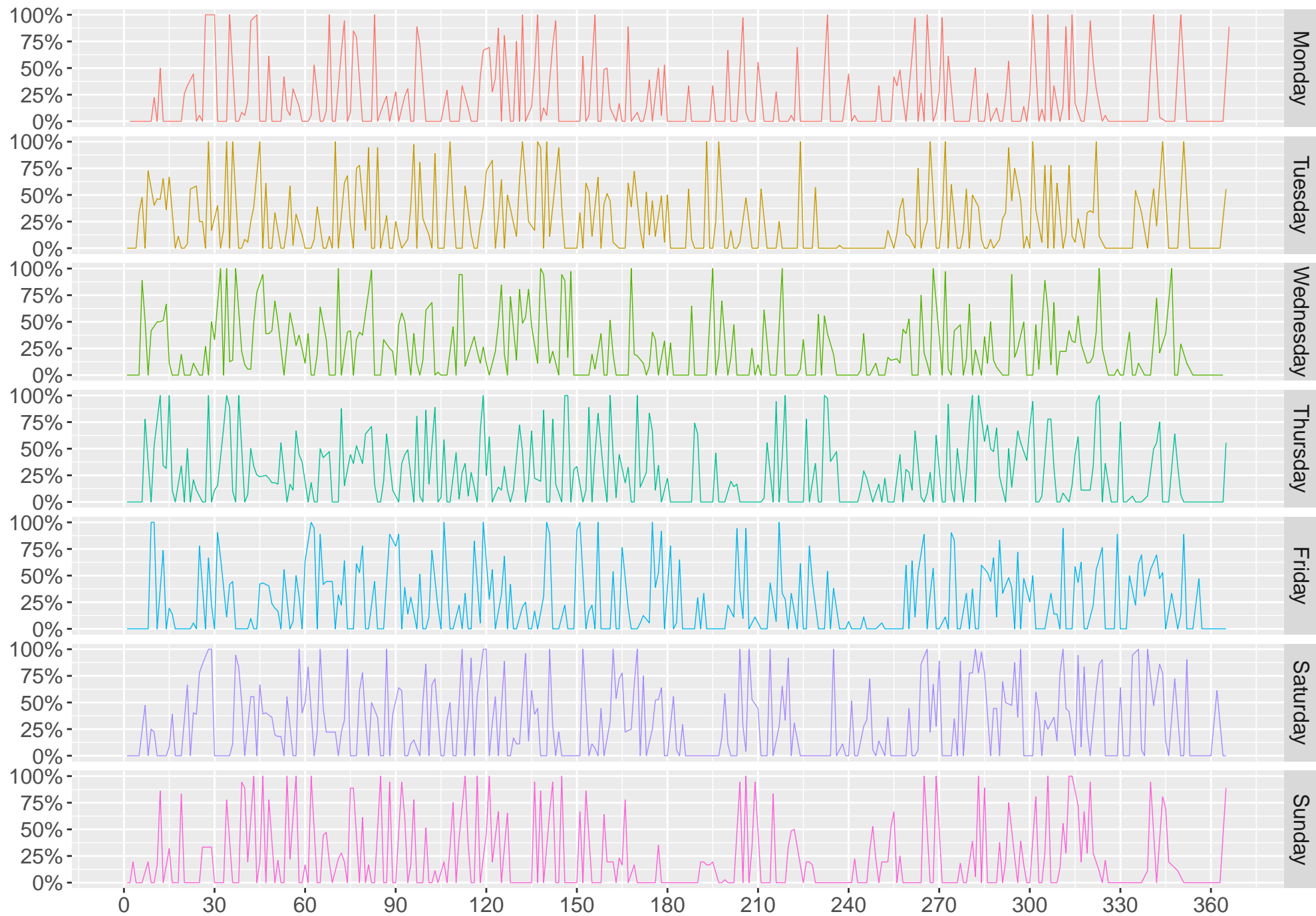
Utilization



Day of Year

Room 'U' Utilization Rates by Day of the Week

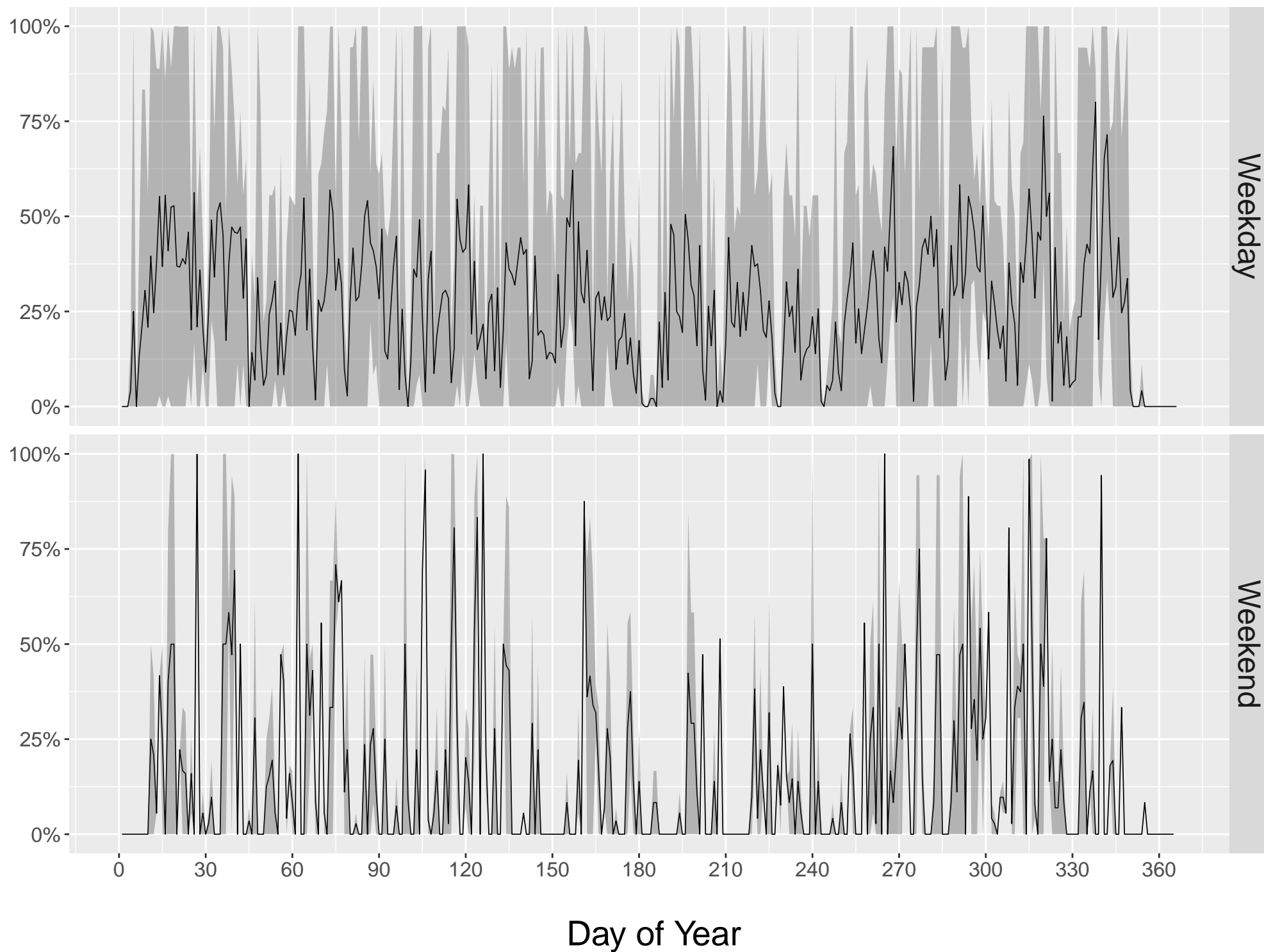
Utilization



Day of Year

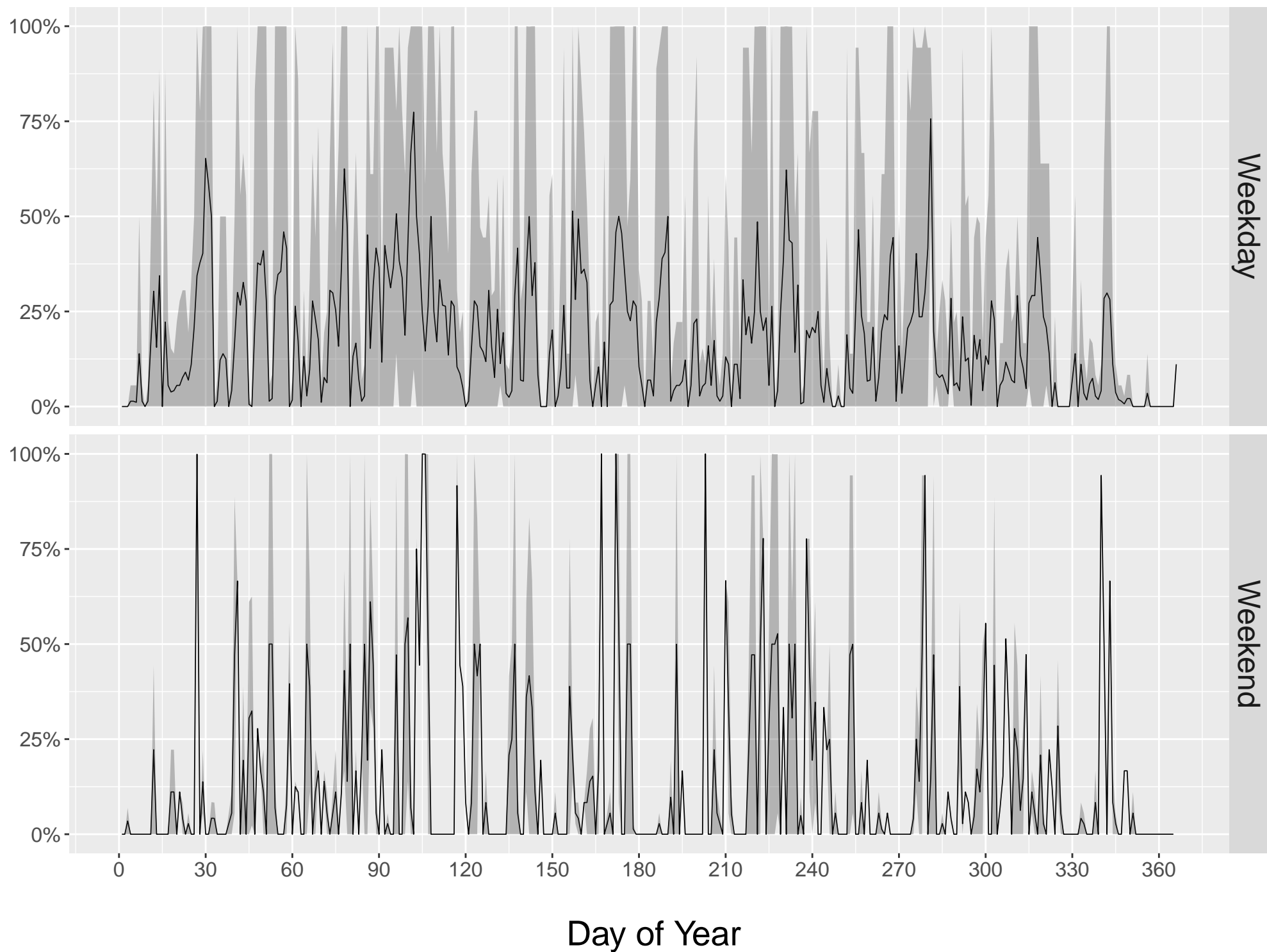
Room 'A' Utilization Rates

Min, Mean, & Max Utilization



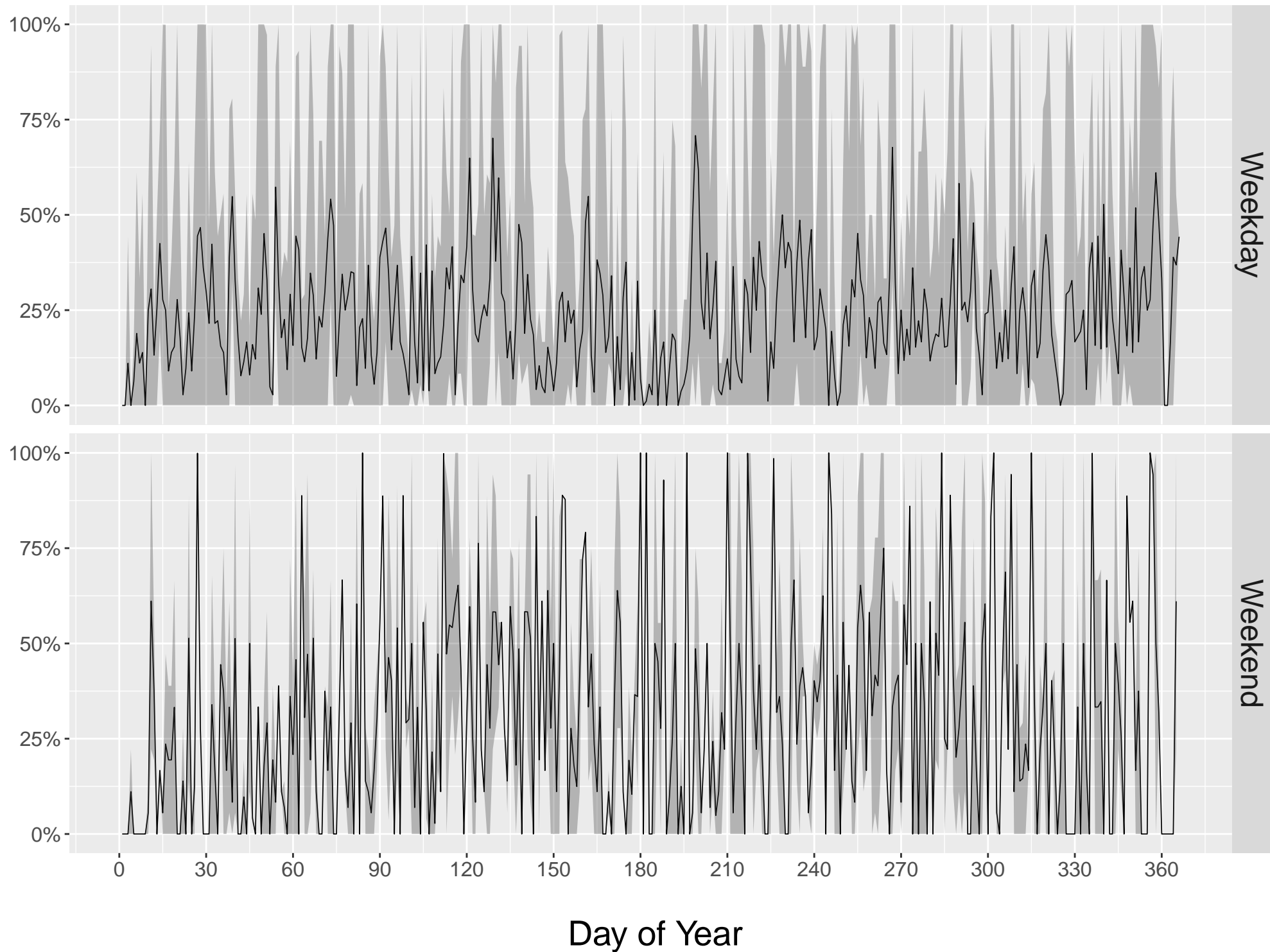
Room 'B' Utilization Rates

Min, Mean, & Max Utilization



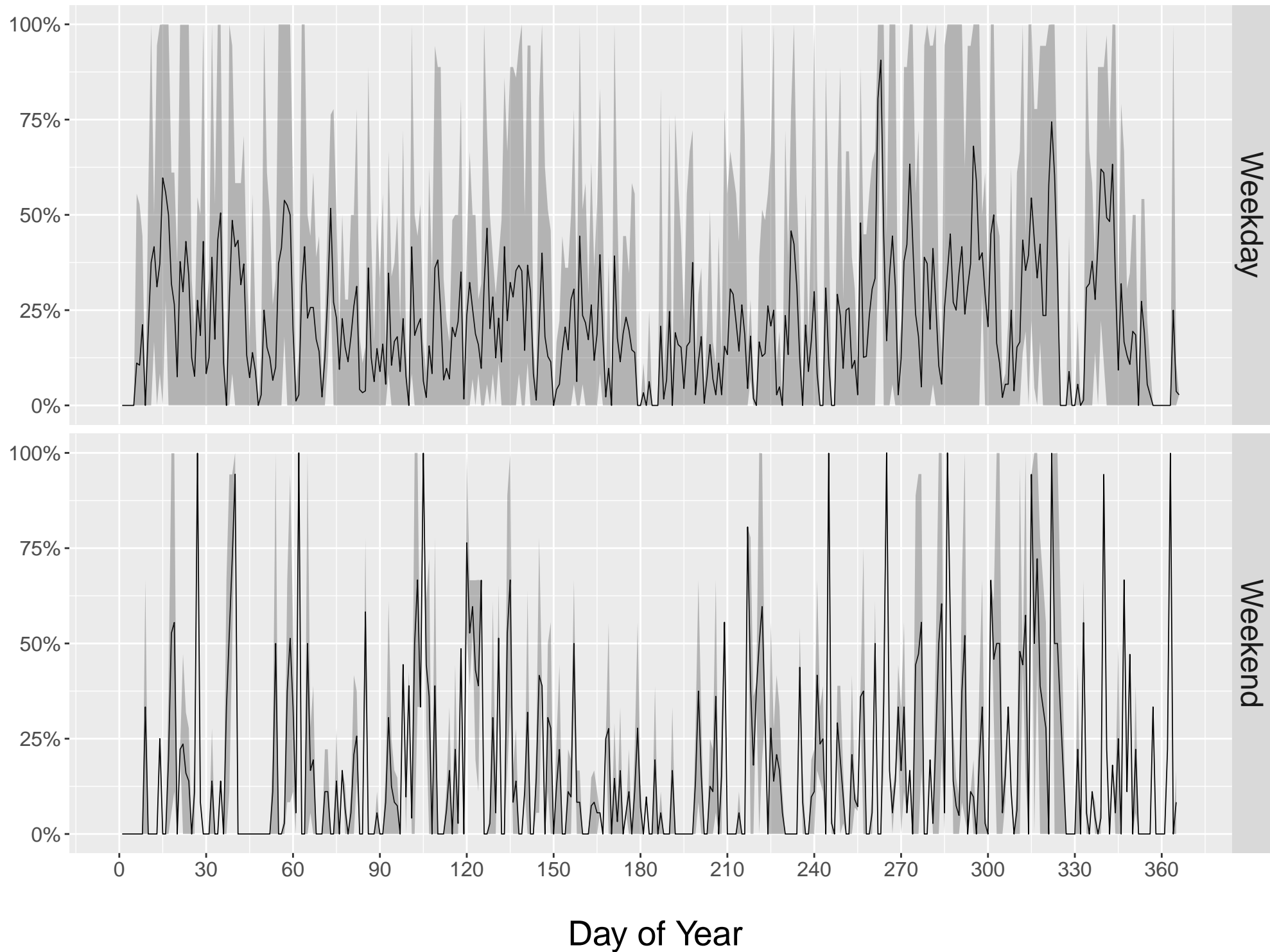
Room 'C' Utilization Rates

Min, Mean, & Max Utilization



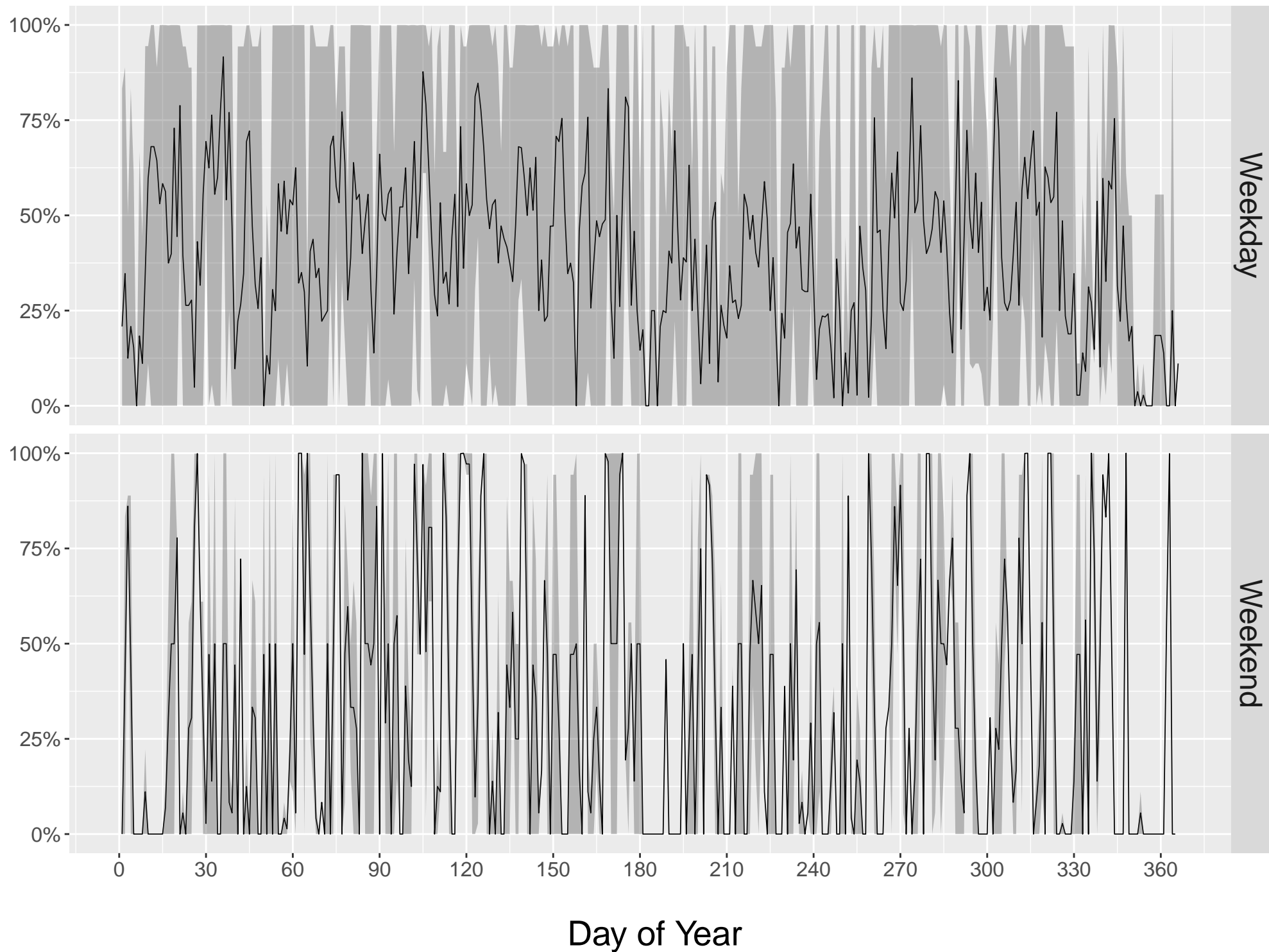
Room 'D' Utilization Rates

Min, Mean, & Max Utilization



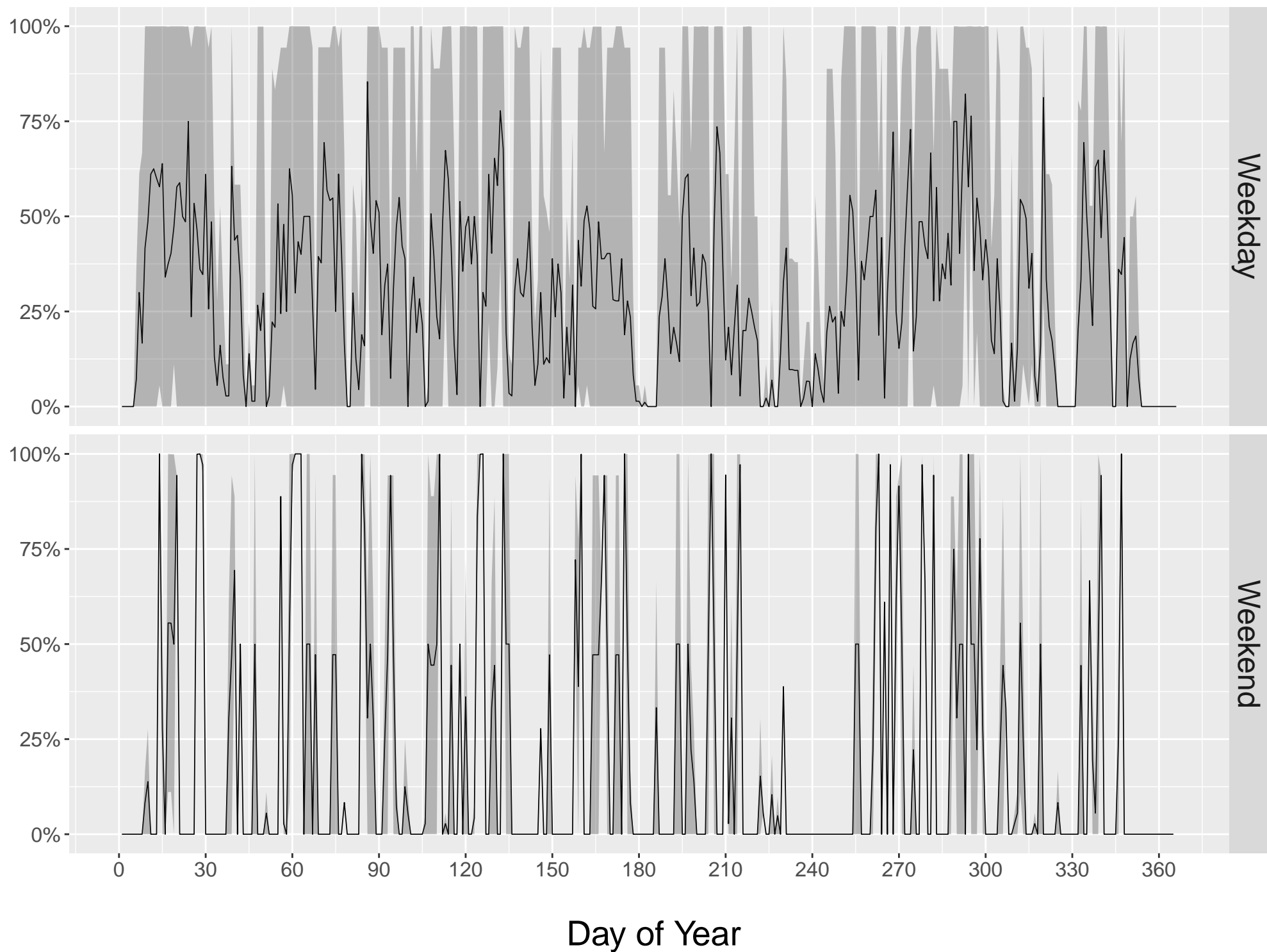
Room 'E' Utilization Rates

Min, Mean, & Max Utilization



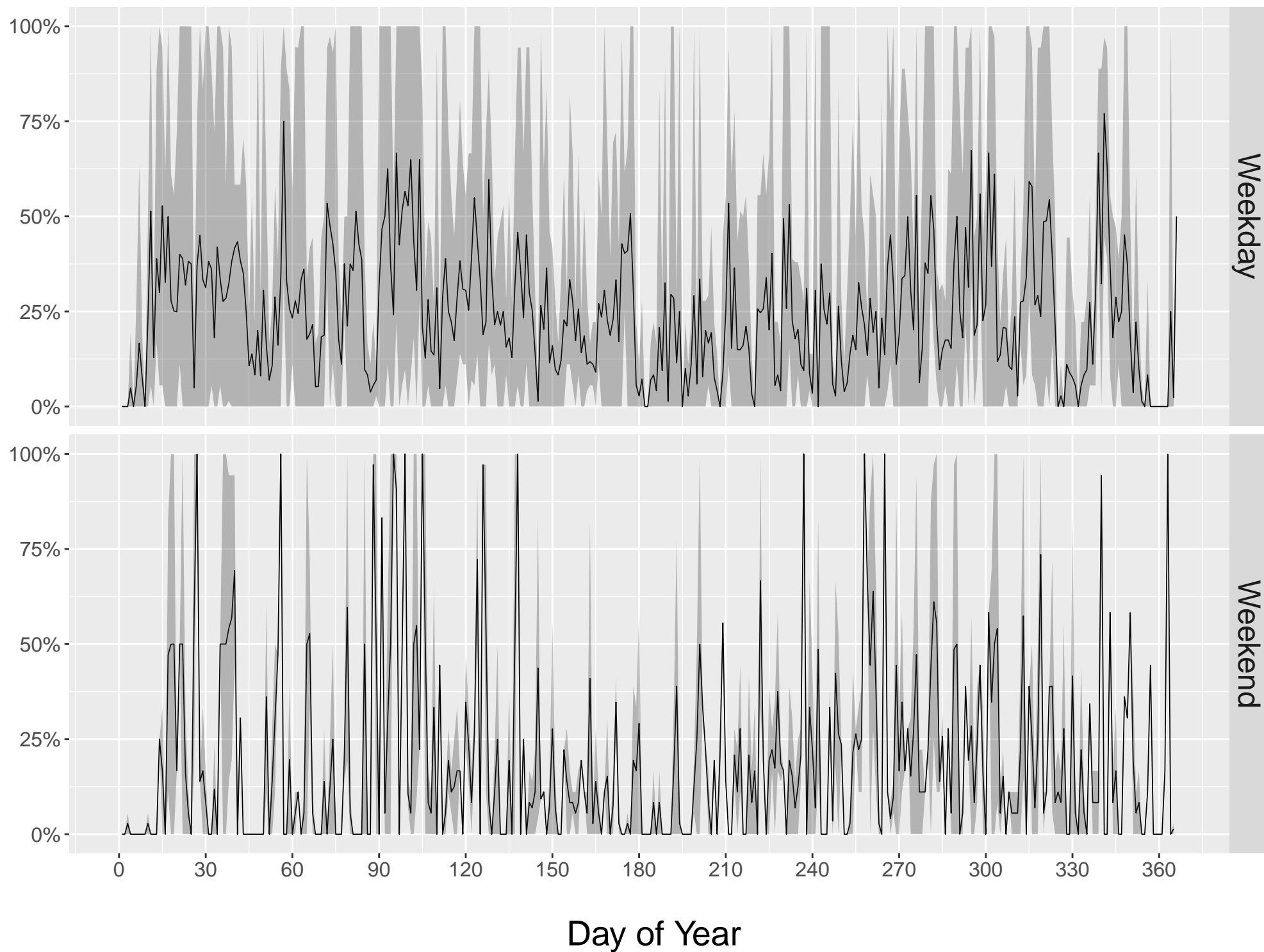
Room 'F' Utilization Rates

Min, Mean, & Max Utilization



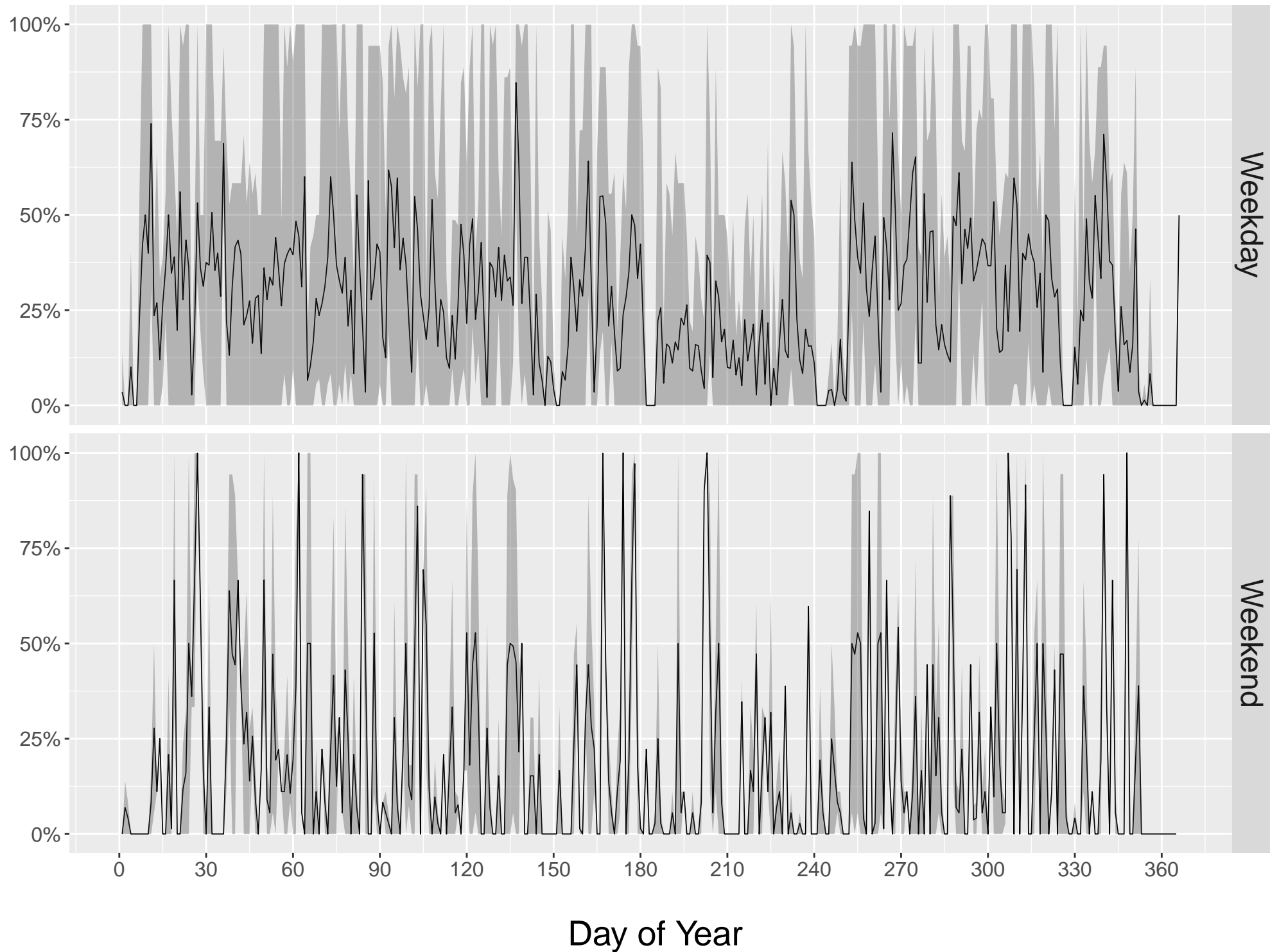
Room 'G' Utilization Rates

Min, Mean, & Max Utilization



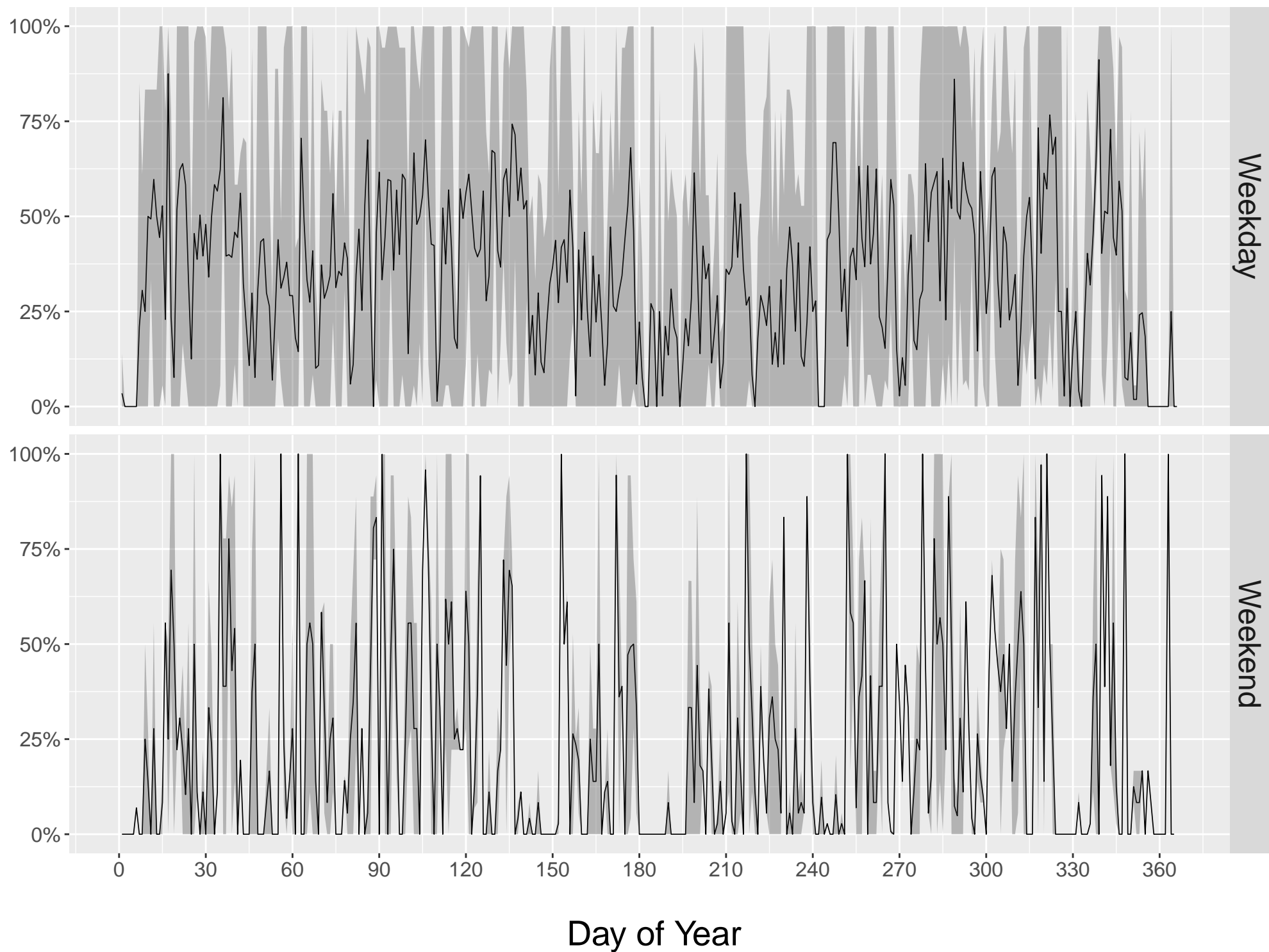
Room 'H' Utilization Rates

Min, Mean, & Max Utilization



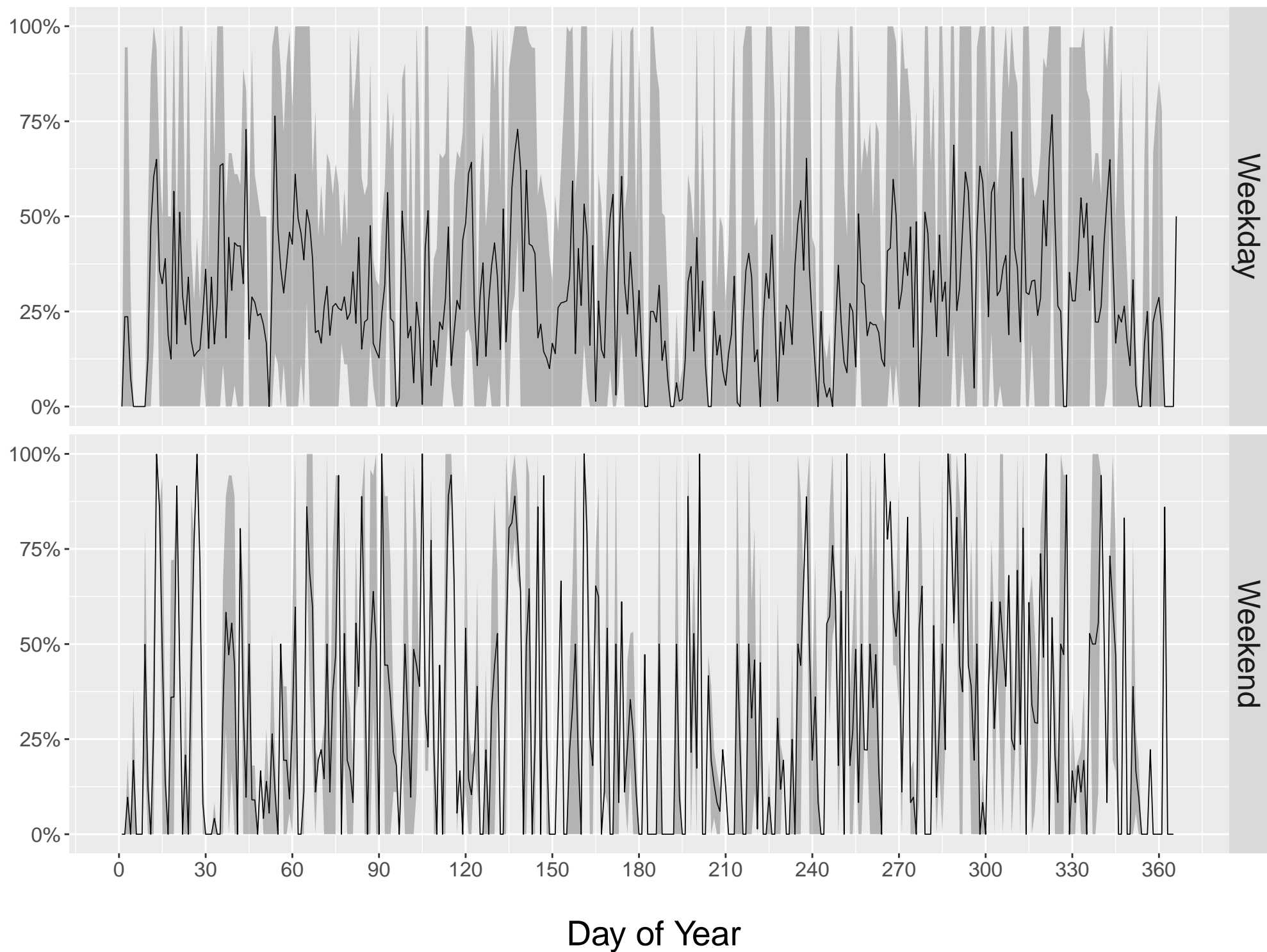
Room 'I' Utilization Rates

Min, Mean, & Max Utilization



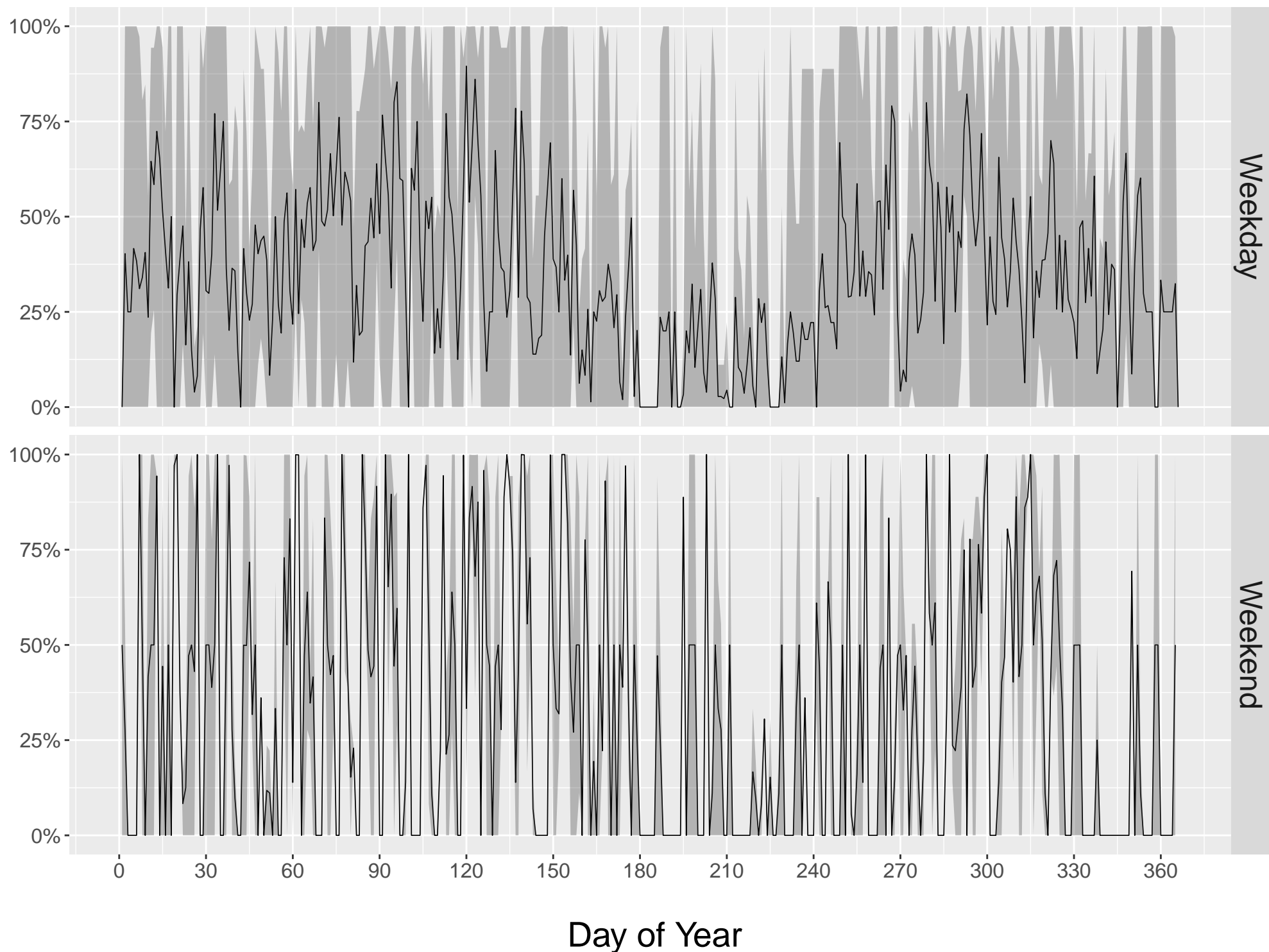
Room 'J' Utilization Rates

Min, Mean, & Max Utilization



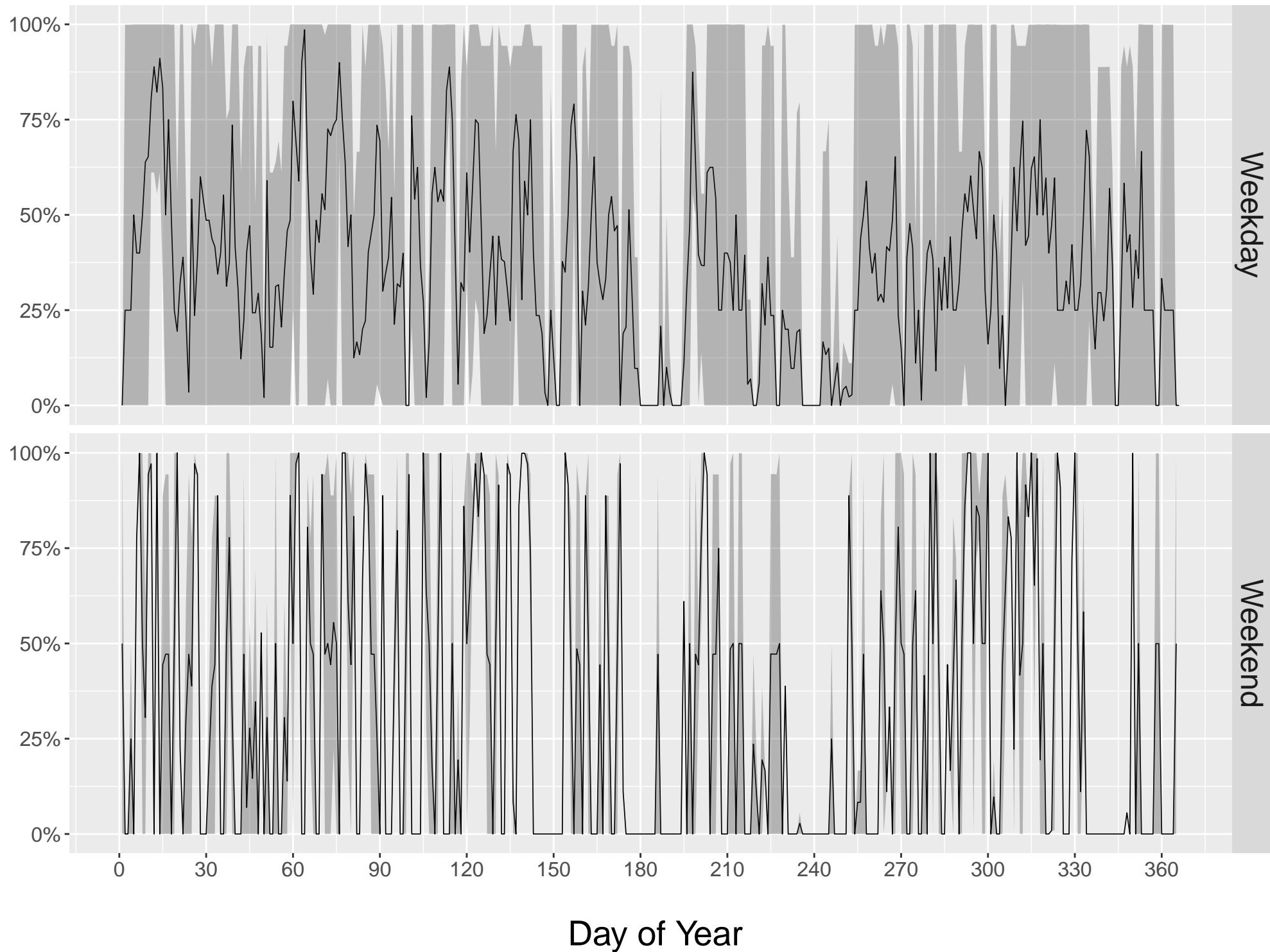
Room 'K' Utilization Rates

Min, Mean, & Max Utilization



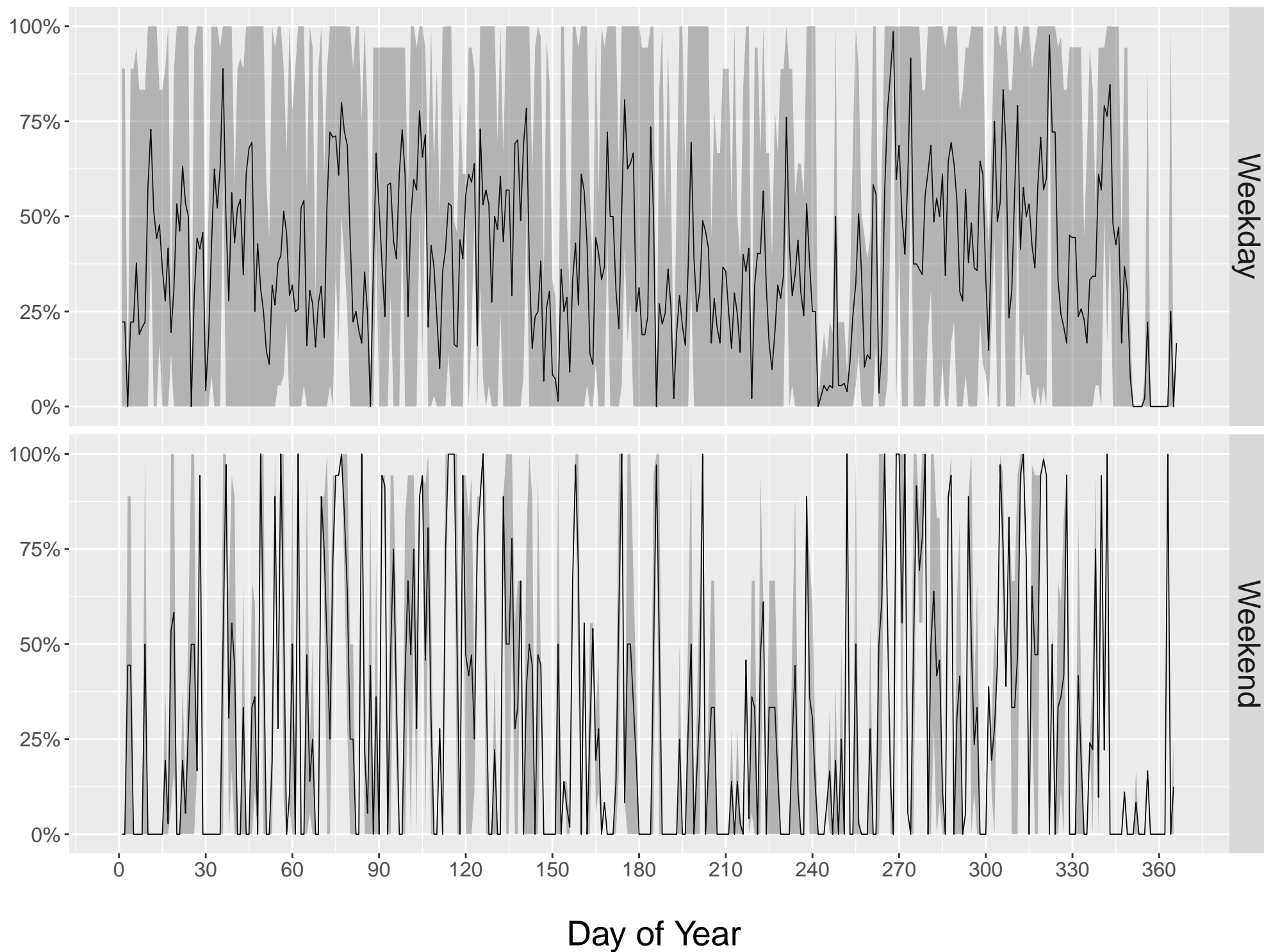
Room 'L' Utilization Rates

Min, Mean, & Max Utilization



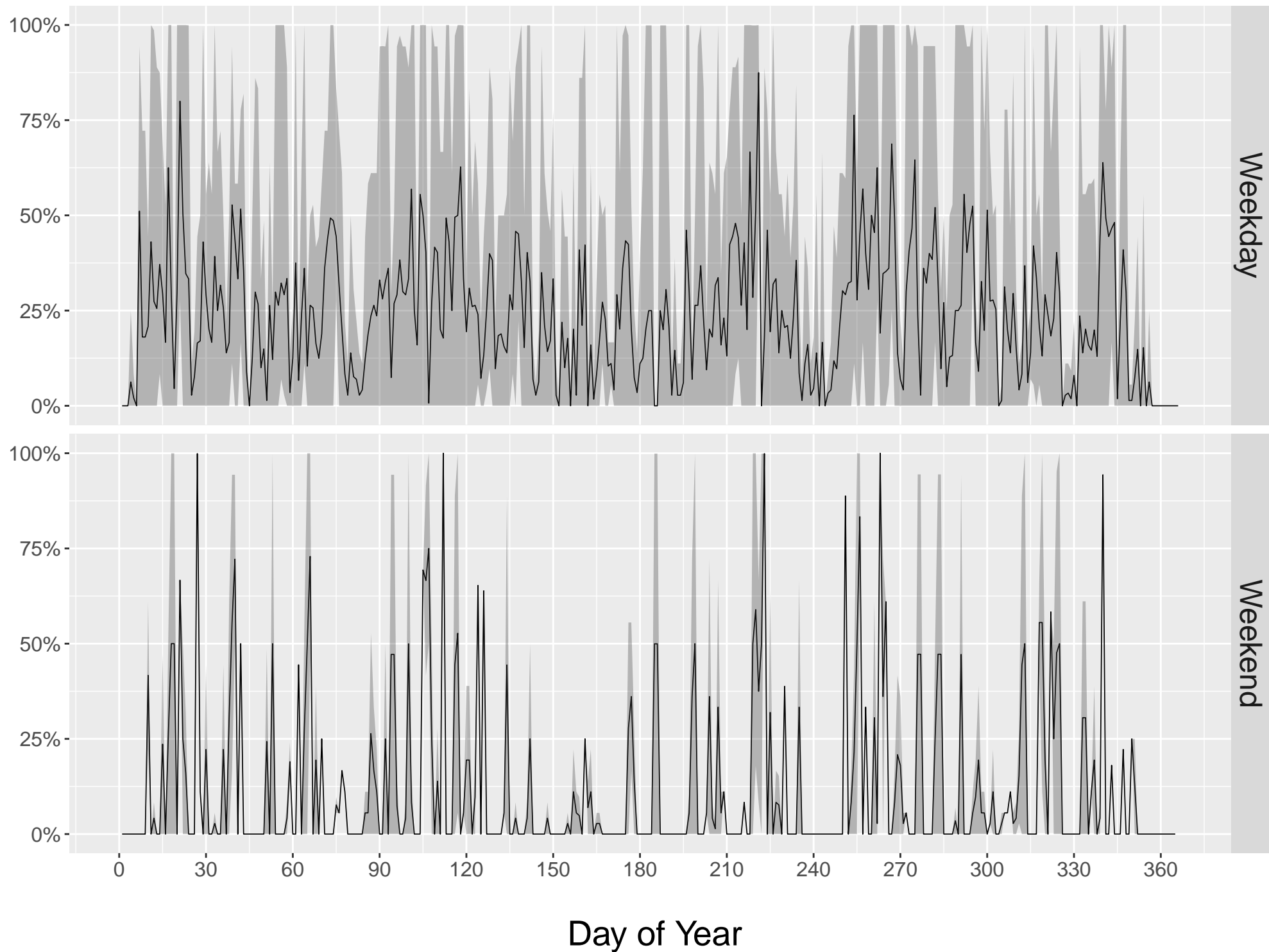
Room 'M' Utilization Rates

Min, Mean, & Max Utilization



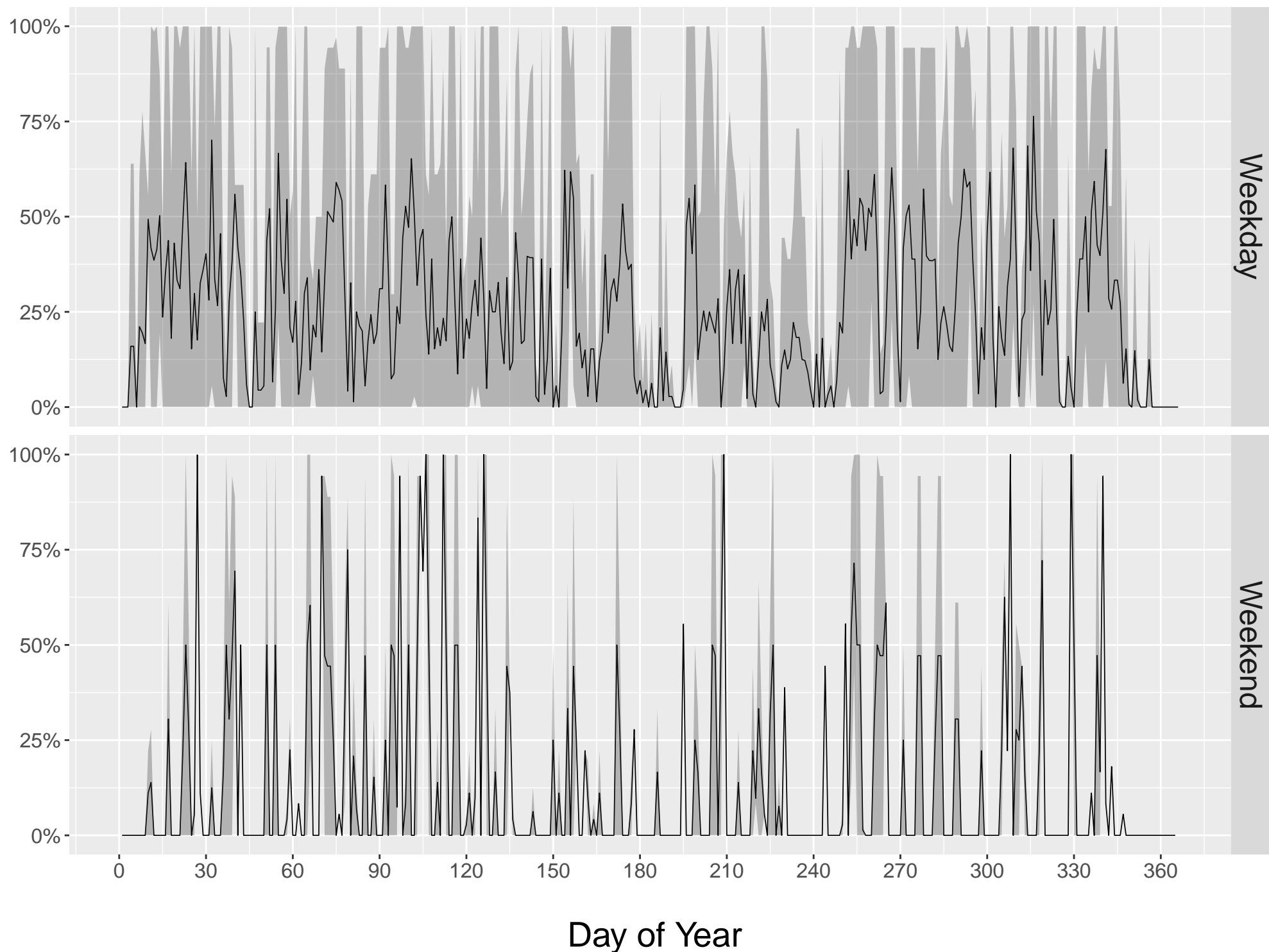
Room 'N' Utilization Rates

Min, Mean, & Max Utilization



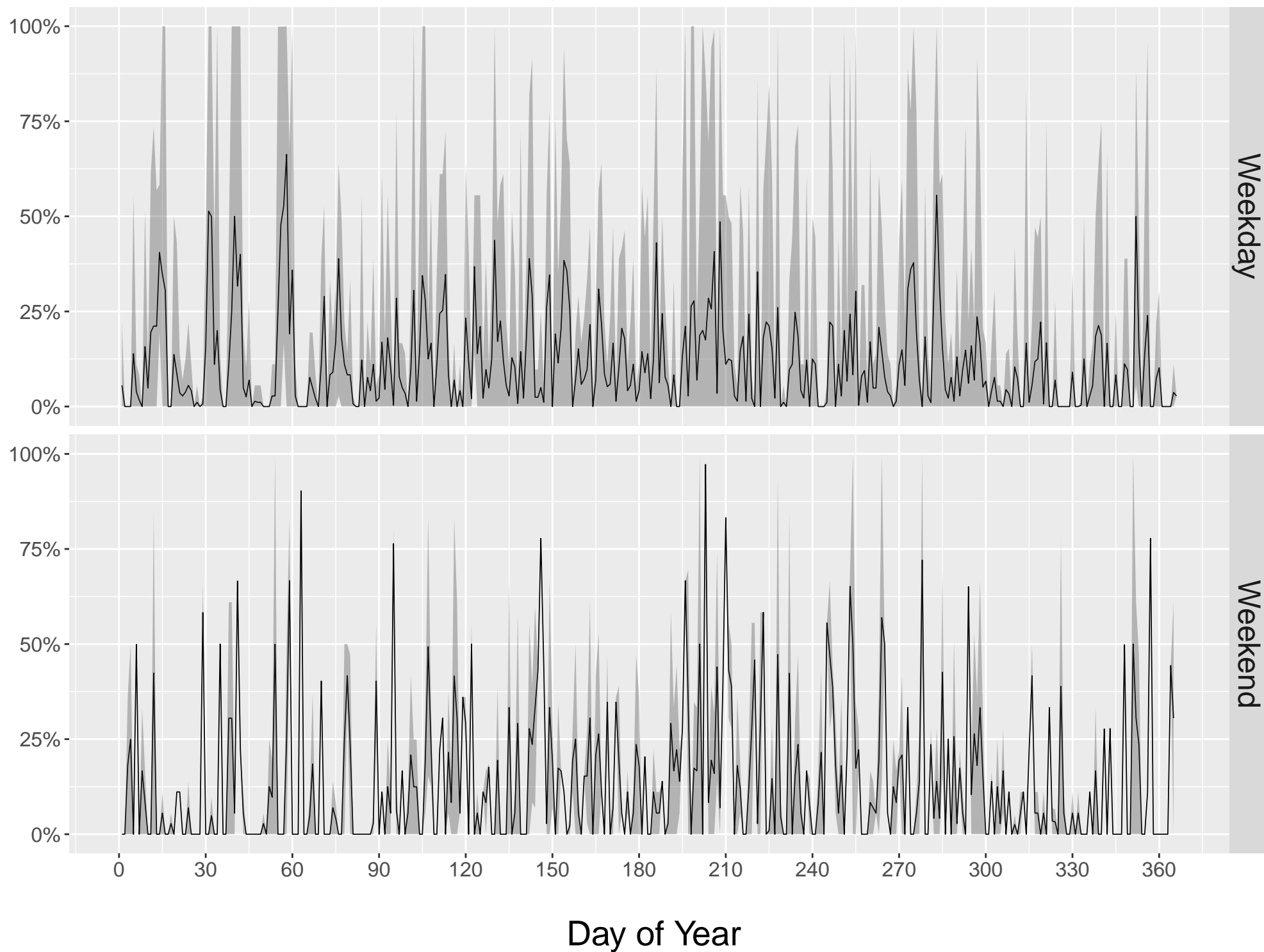
Room 'O' Utilization Rates

Min, Mean, & Max Utilization



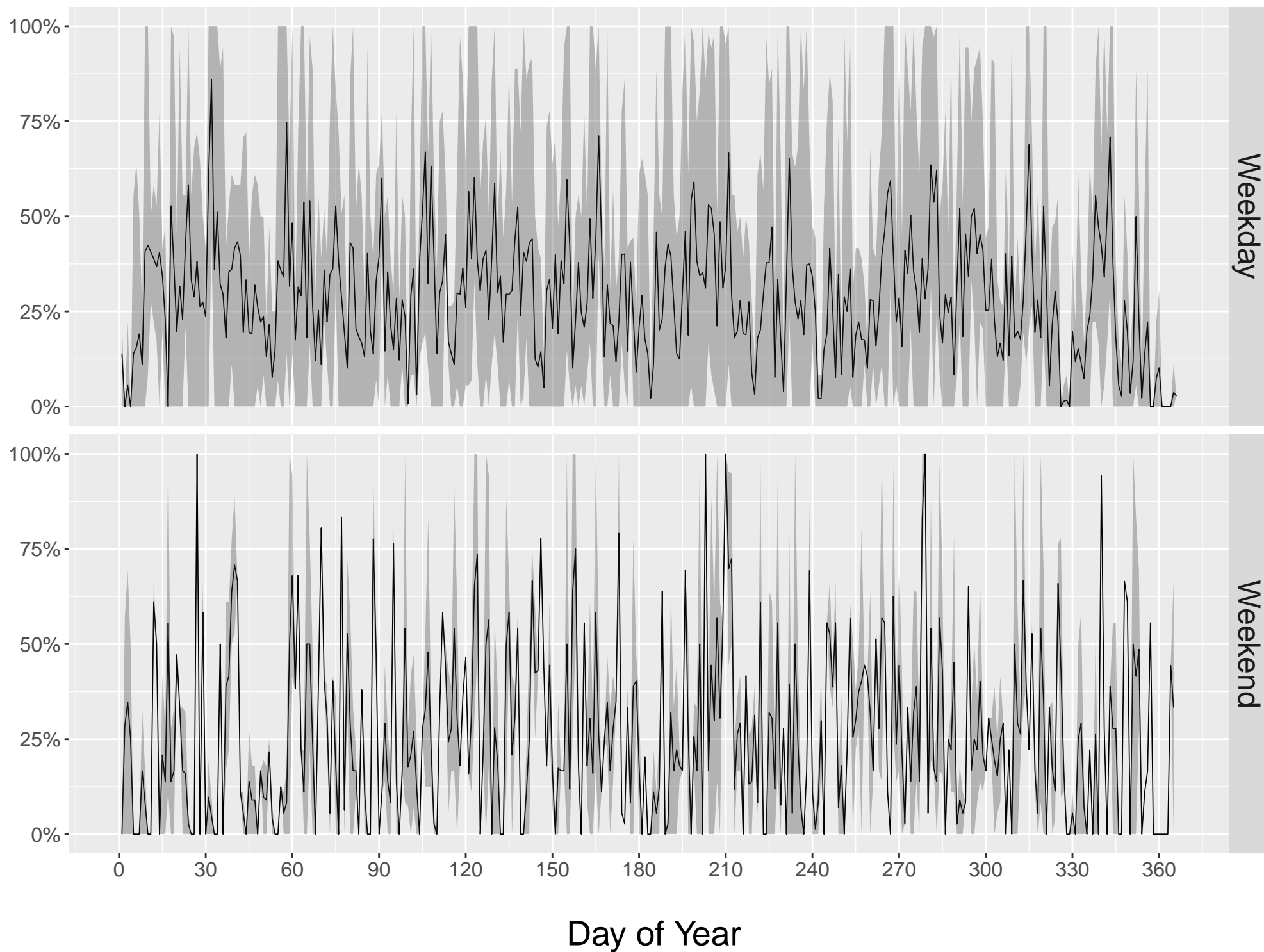
Room 'P' Utilization Rates

Min, Mean, & Max Utilization



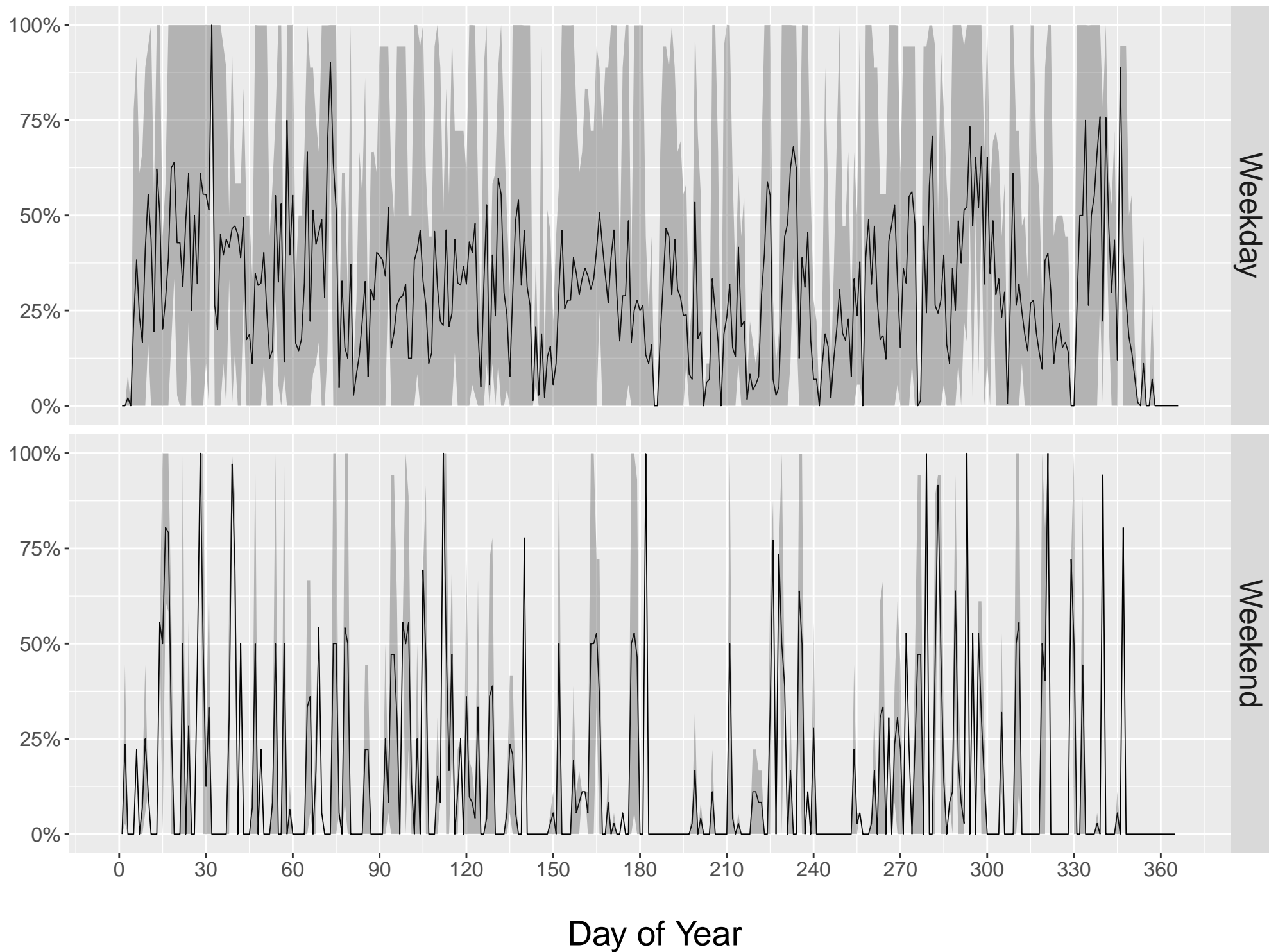
Room 'Q' Utilization Rates

Min, Mean, & Max Utilization



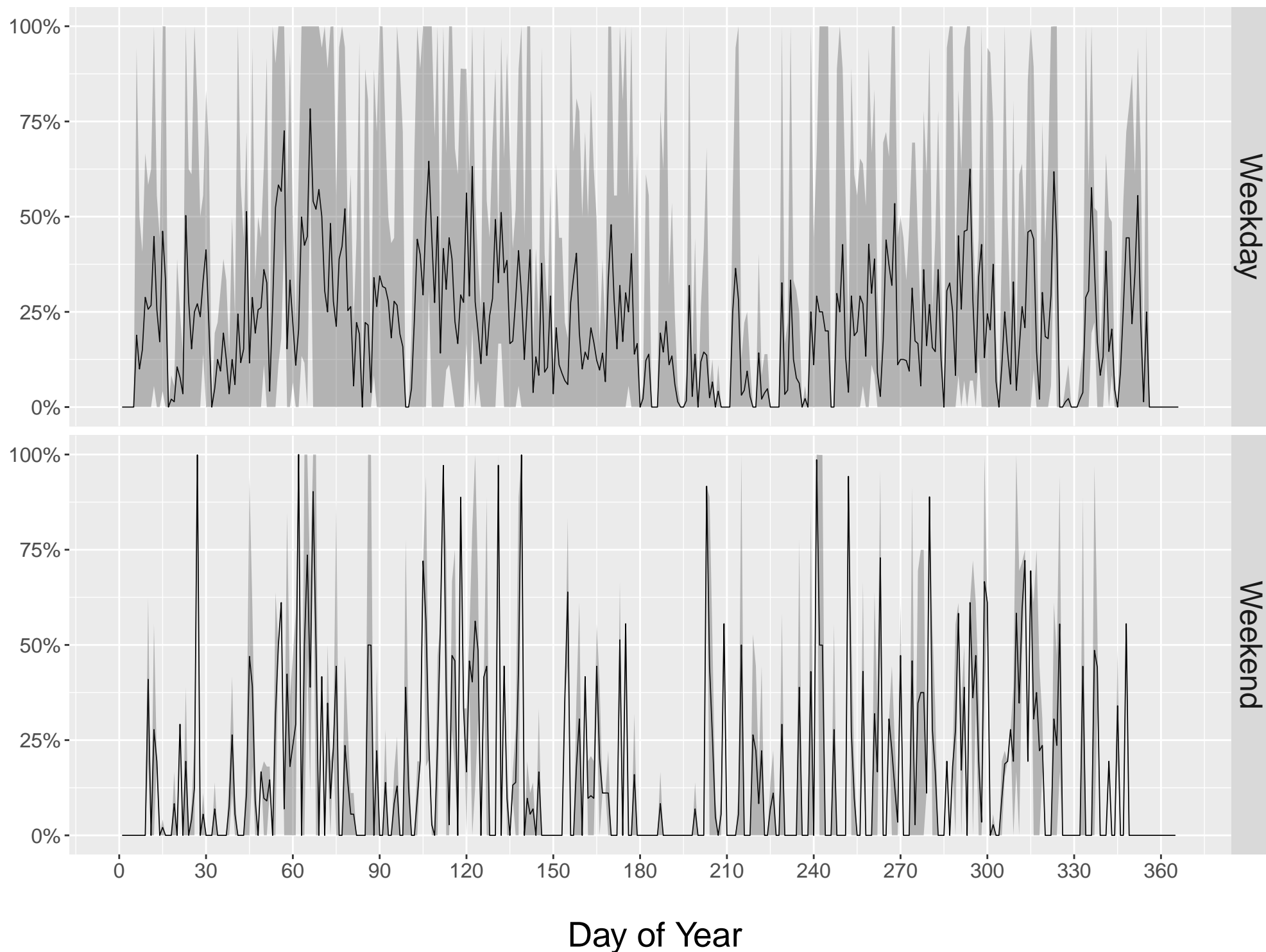
Room 'R' Utilization Rates

Min, Mean, & Max Utilization



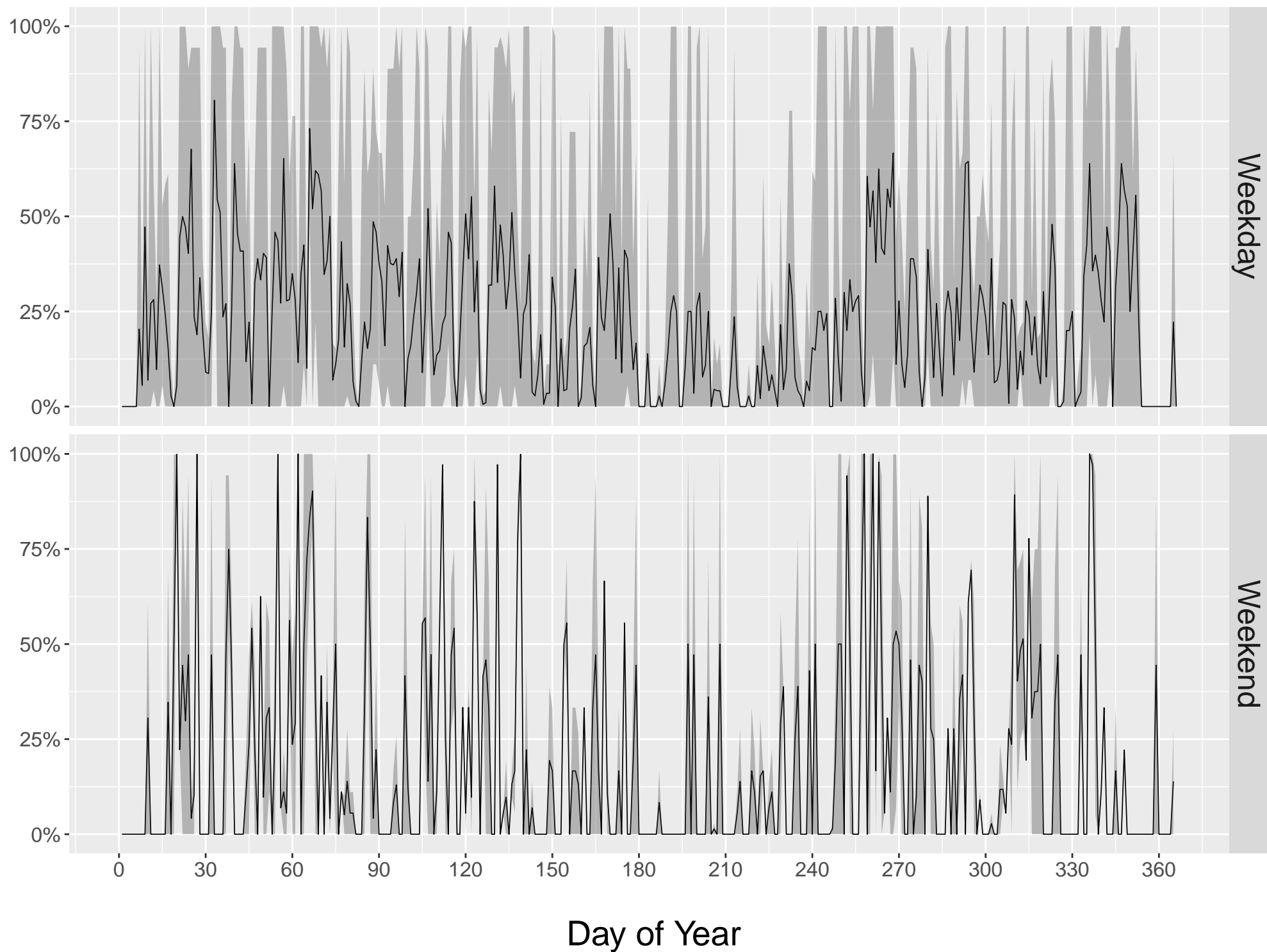
Room 'S' Utilization Rates

Min, Mean, & Max Utilization



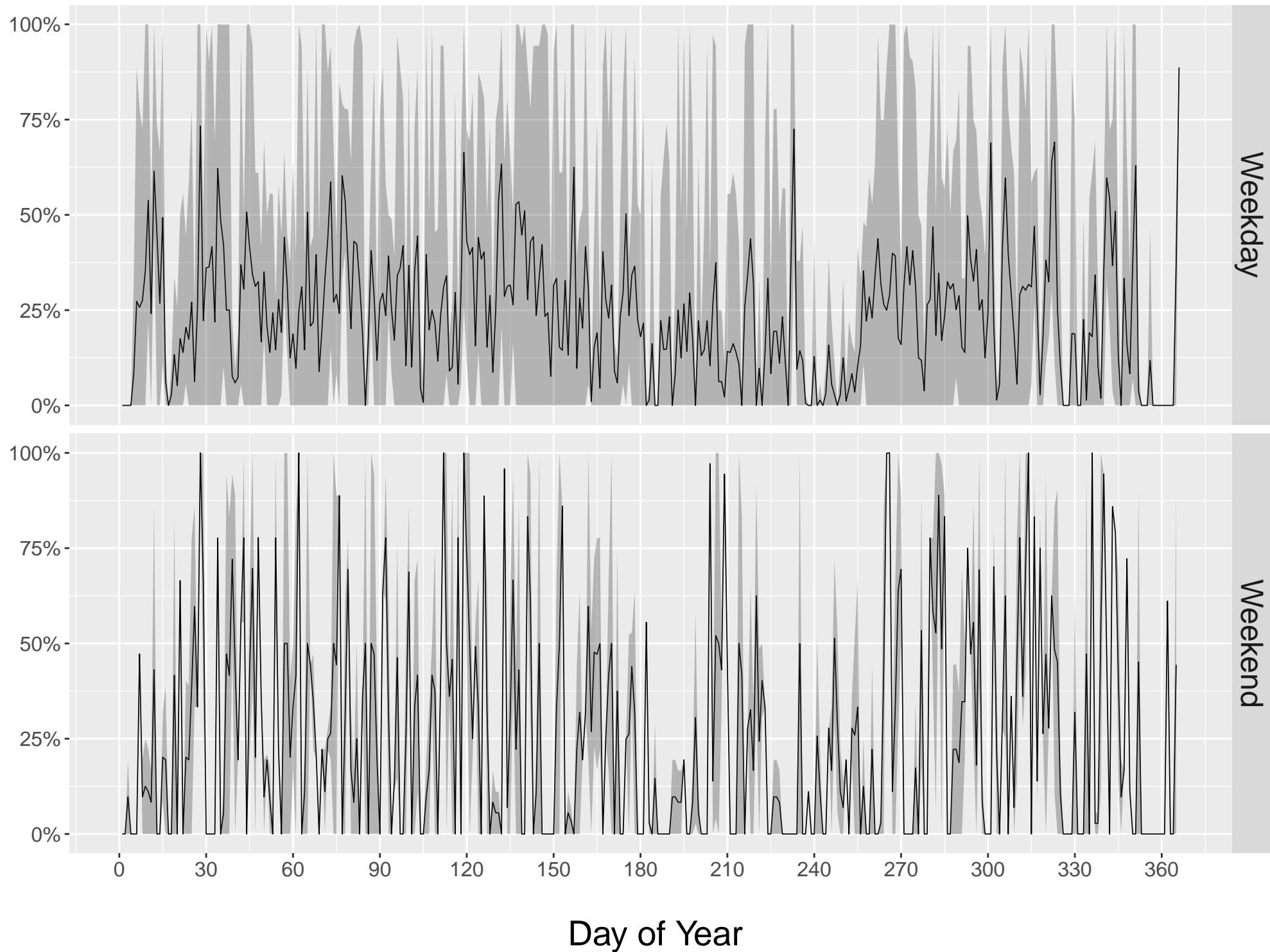
Room 'T' Utilization Rates

Min, Mean, & Max Utilization



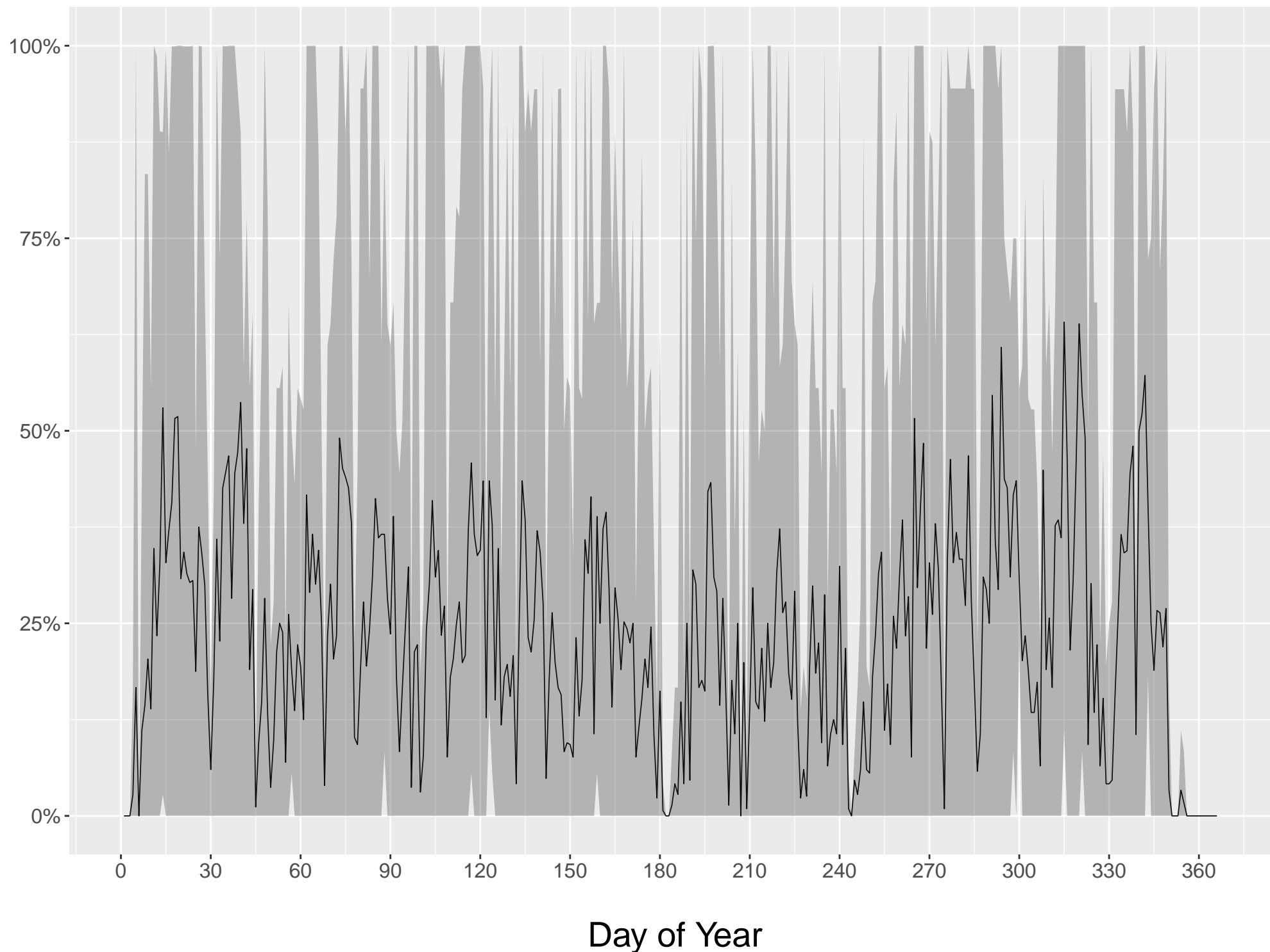
Room 'U' Utilization Rates

Min, Mean, & Max Utilization



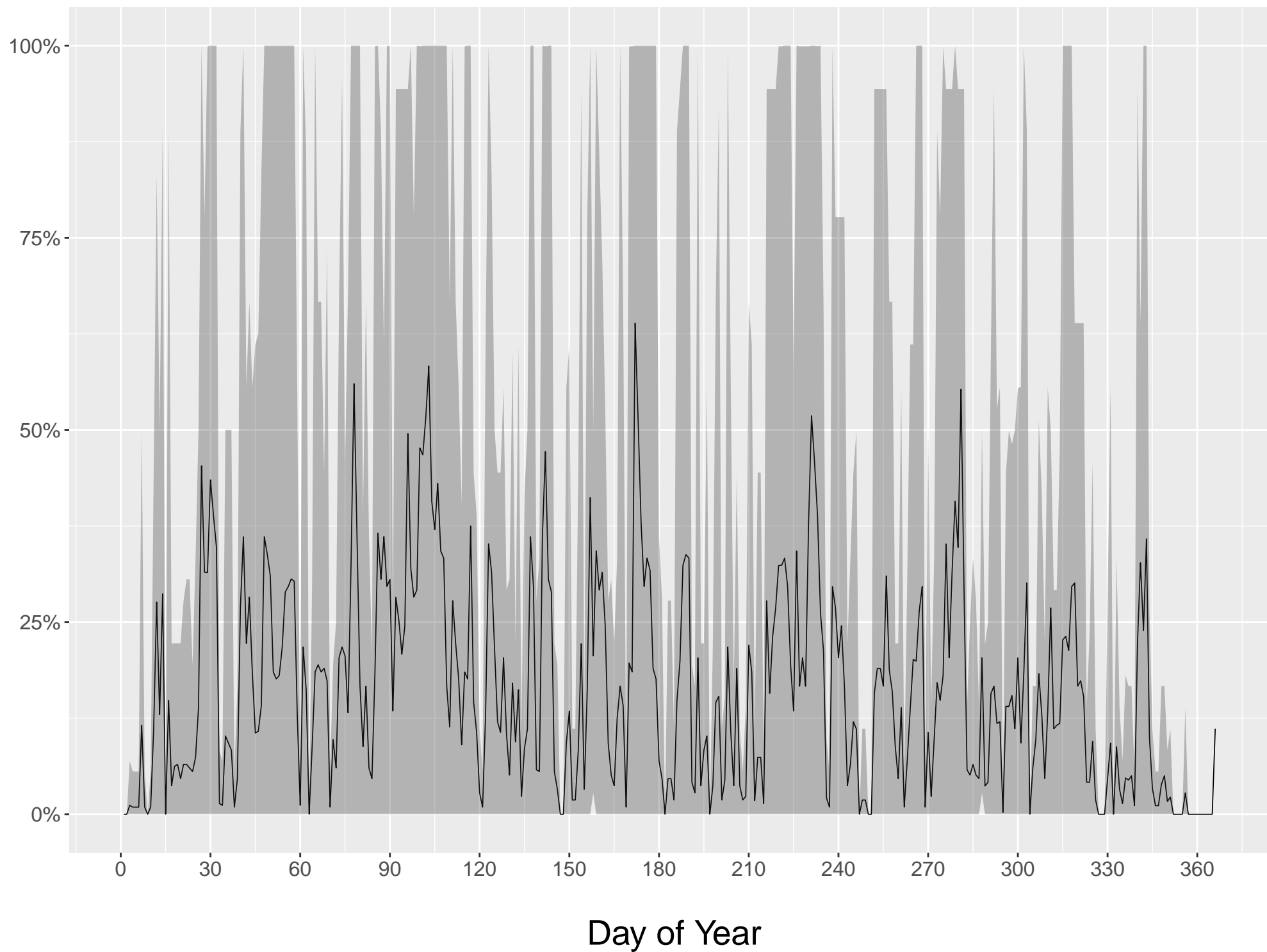
Room 'A' Utilization Rates

Min, Mean, & Max Utilization



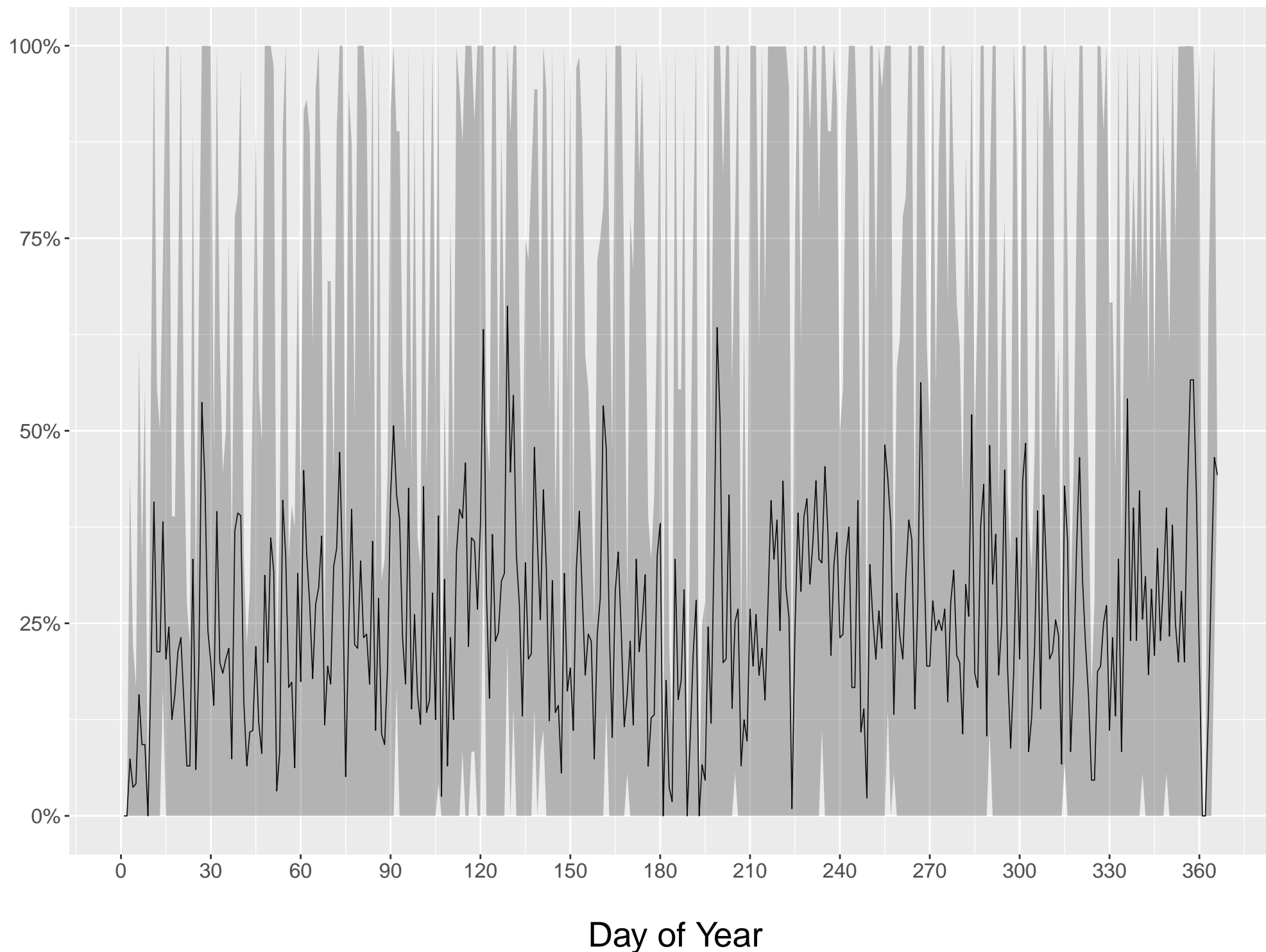
Room 'B' Utilization Rates

Min, Mean, & Max Utilization



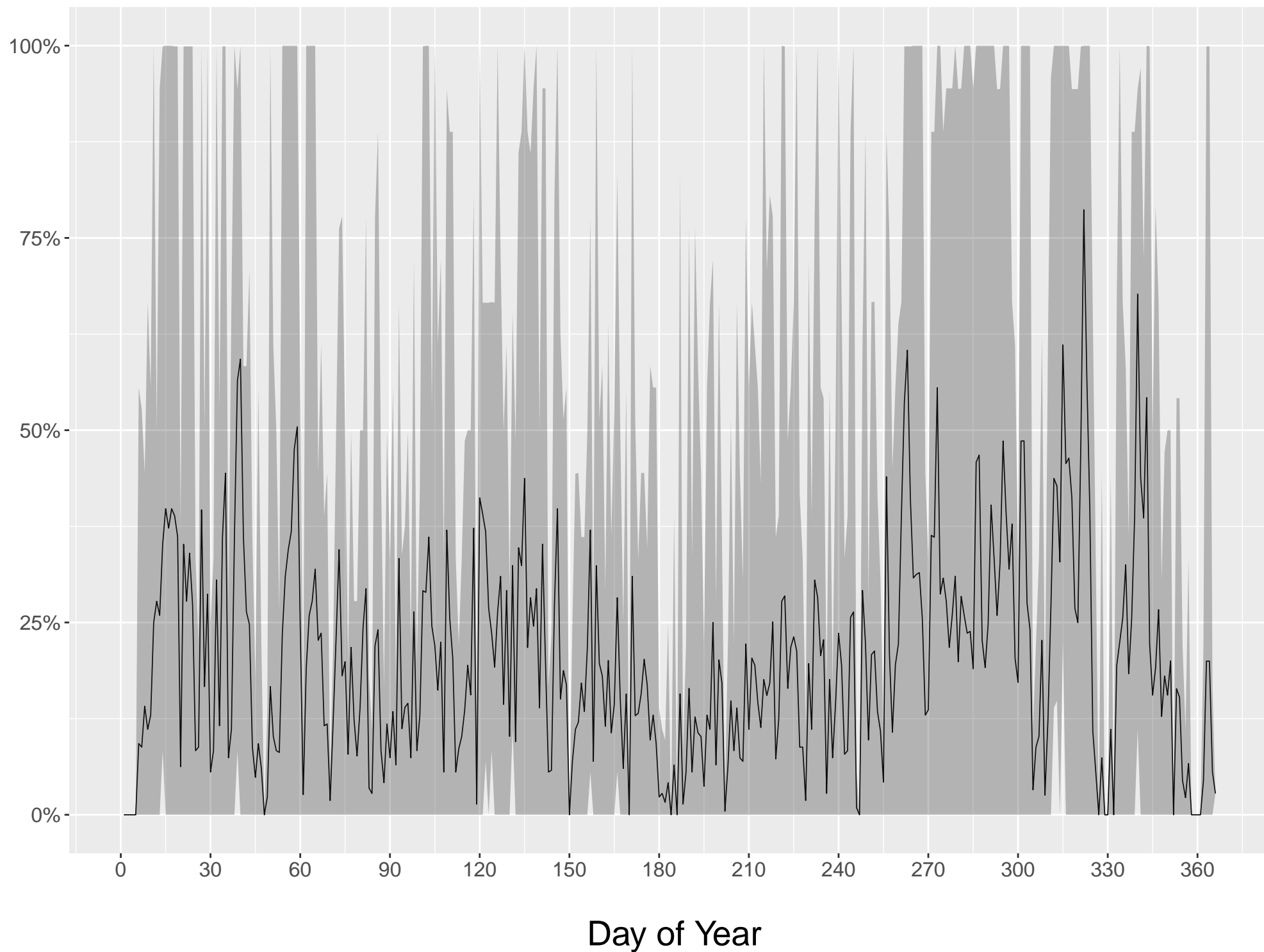
Room 'C' Utilization Rates

Min, Mean, & Max Utilization



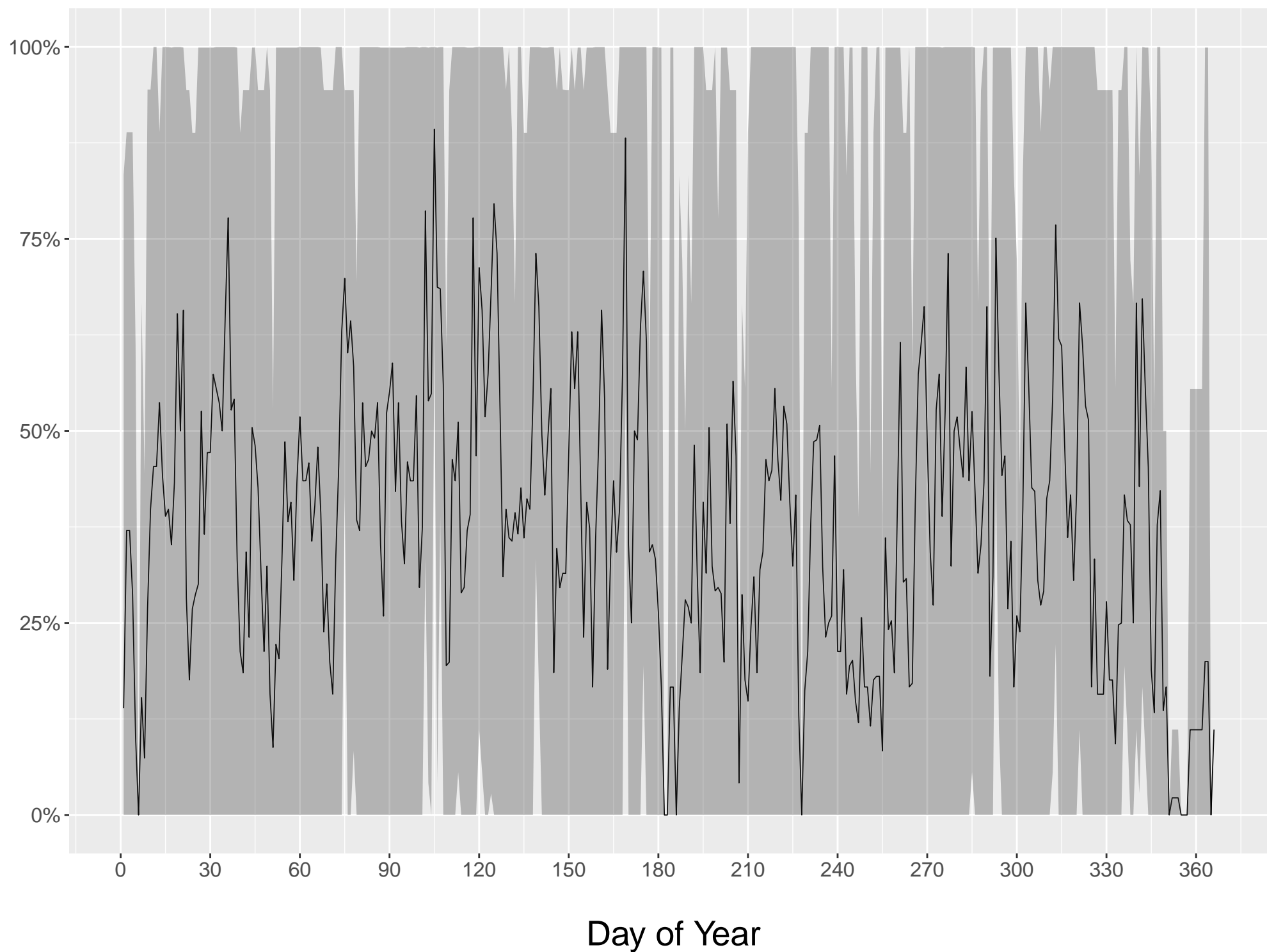
Room 'D' Utilization Rates

Min, Mean, & Max Utilization



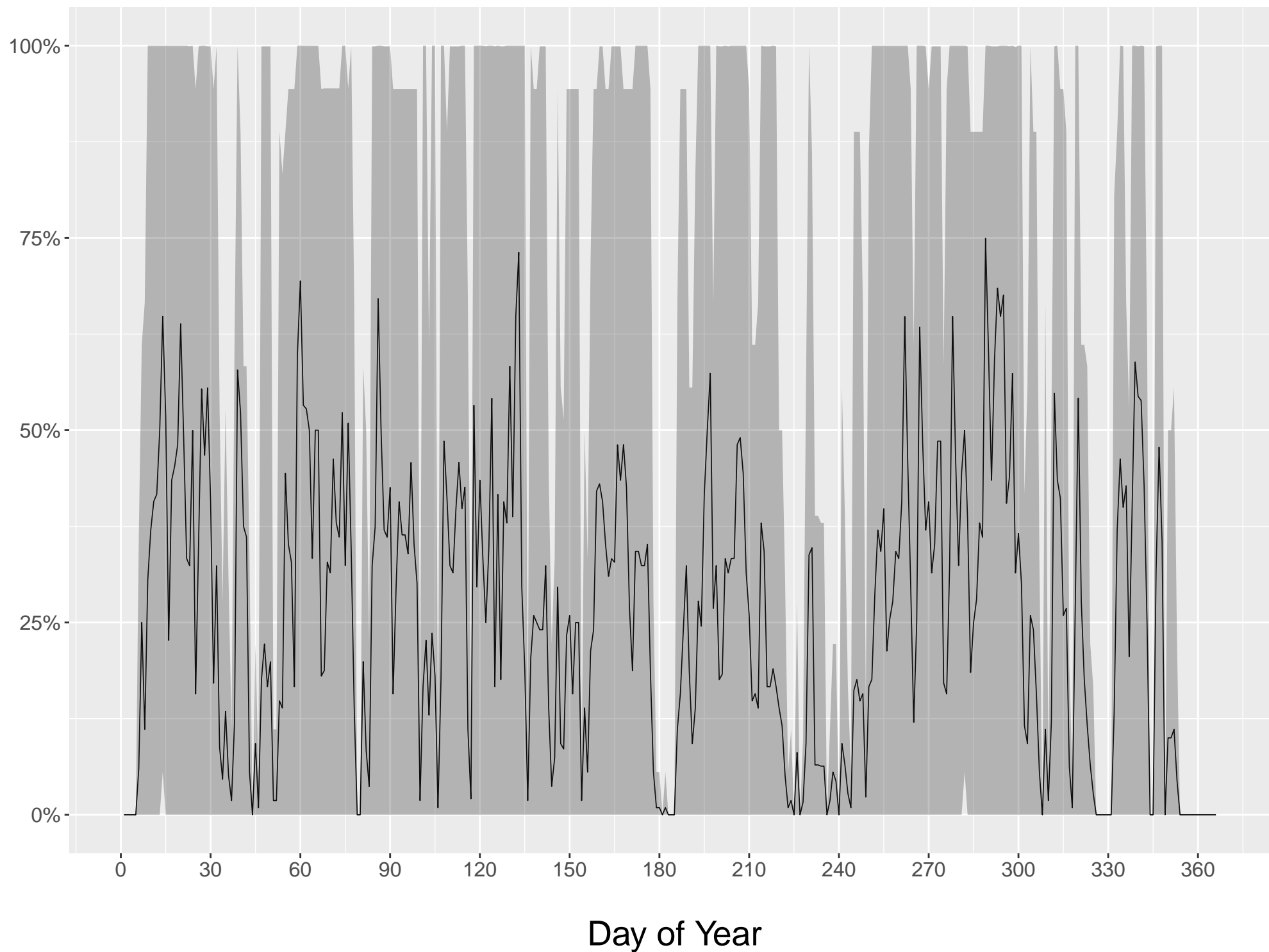
Room 'E' Utilization Rates

Min, Mean, & Max Utilization



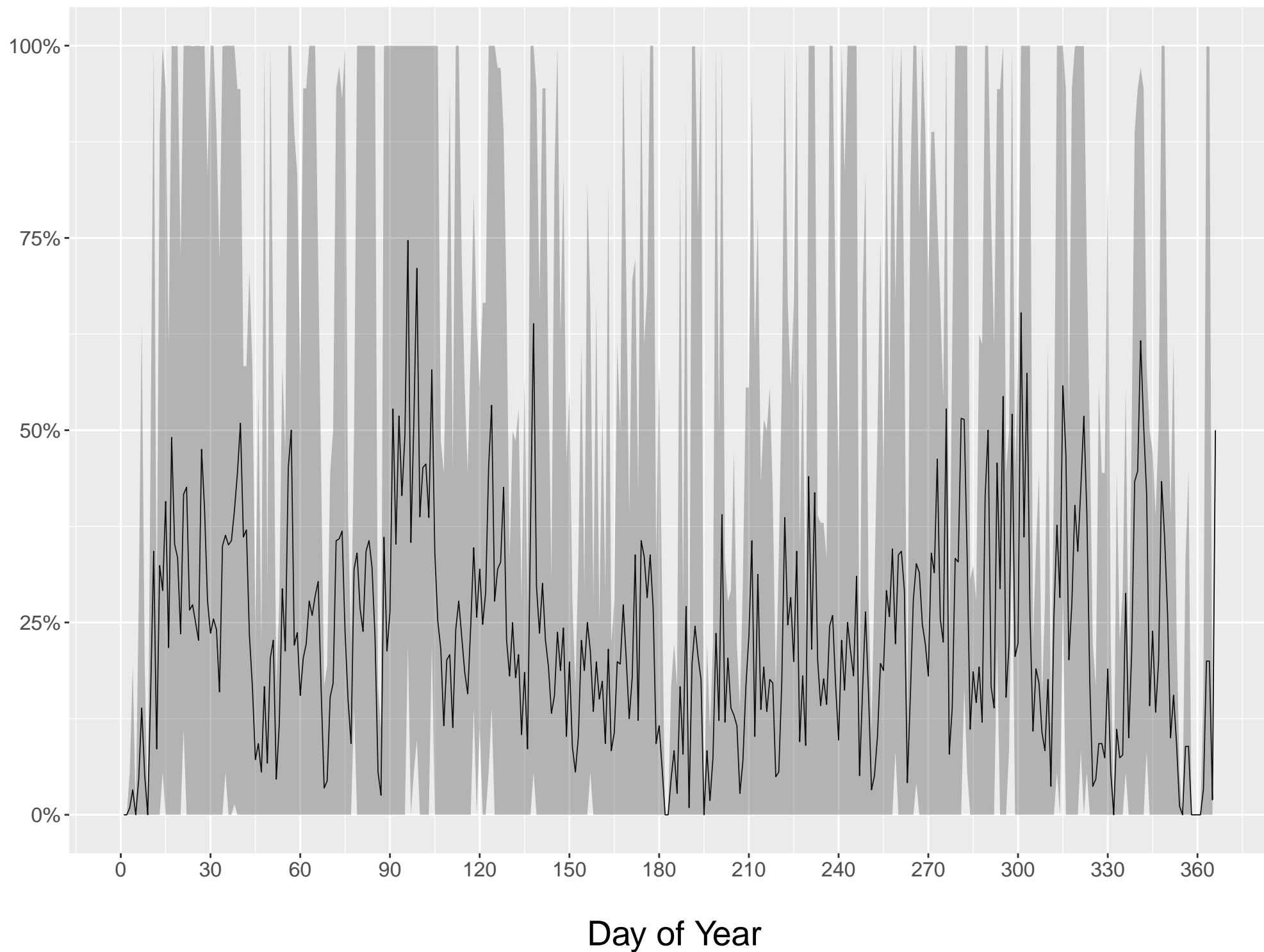
Room 'F' Utilization Rates

Min, Mean, & Max Utilization



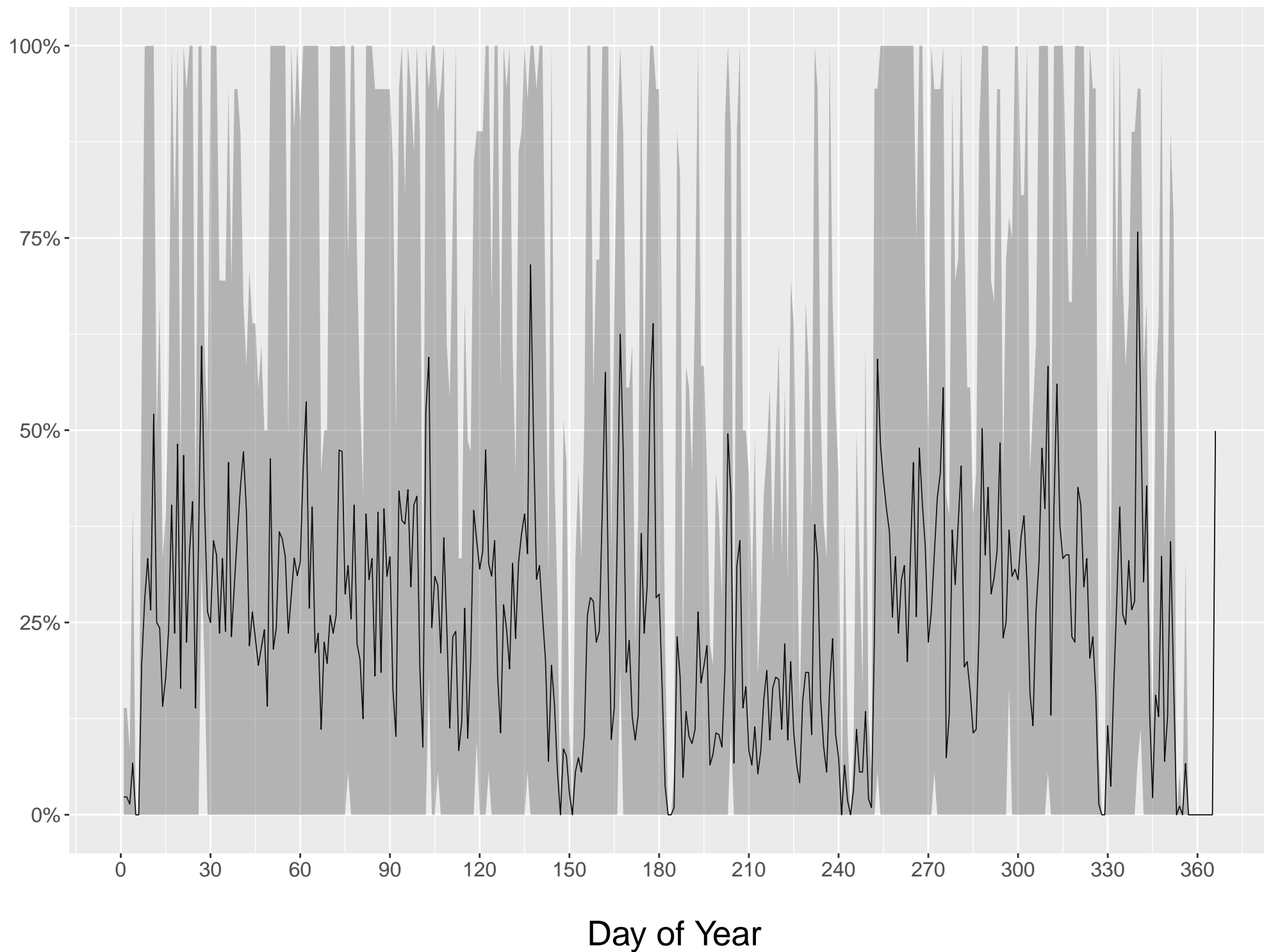
Room 'G' Utilization Rates

Min, Mean, & Max Utilization



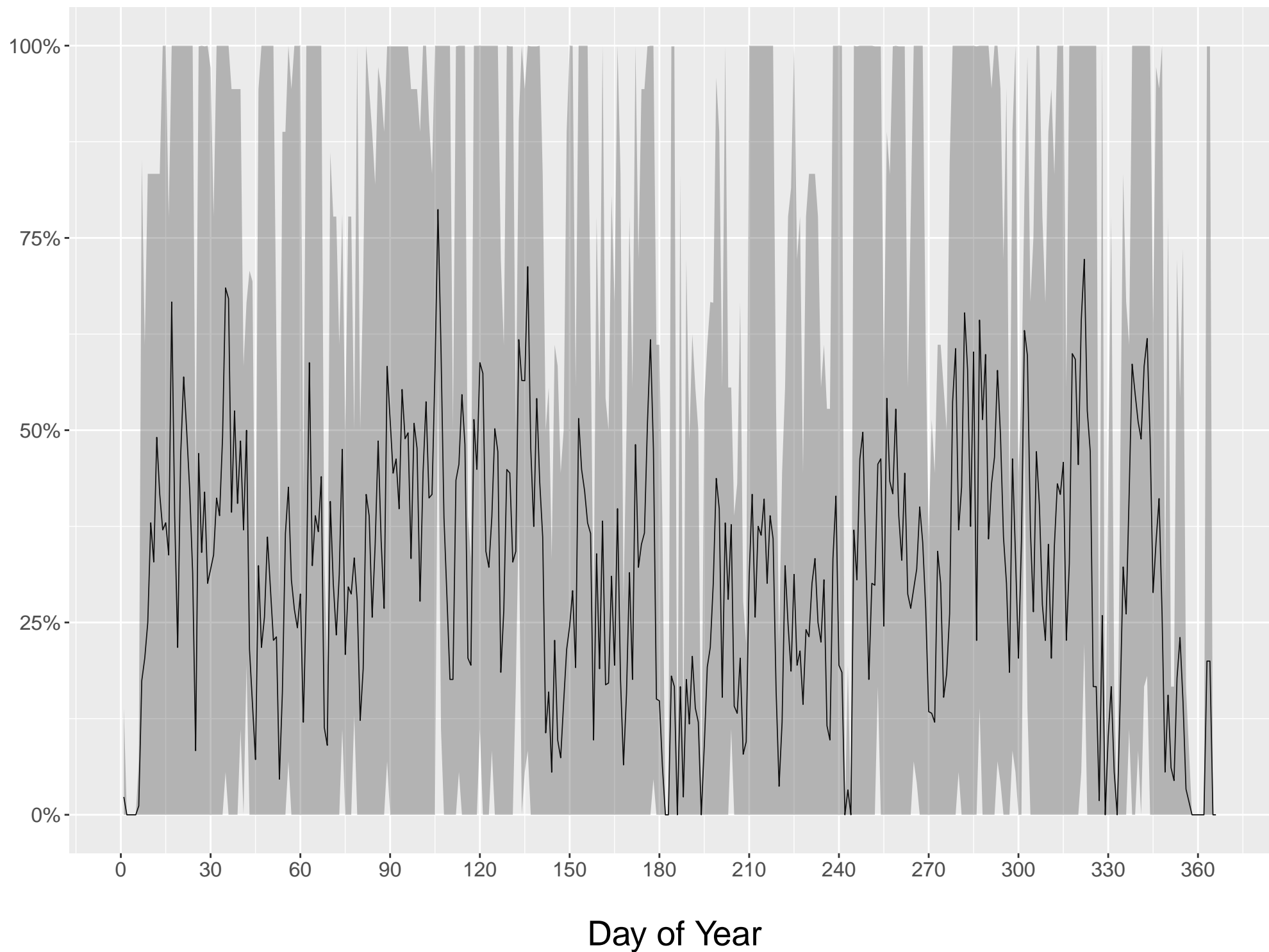
Room 'H' Utilization Rates

Min, Mean, & Max Utilization



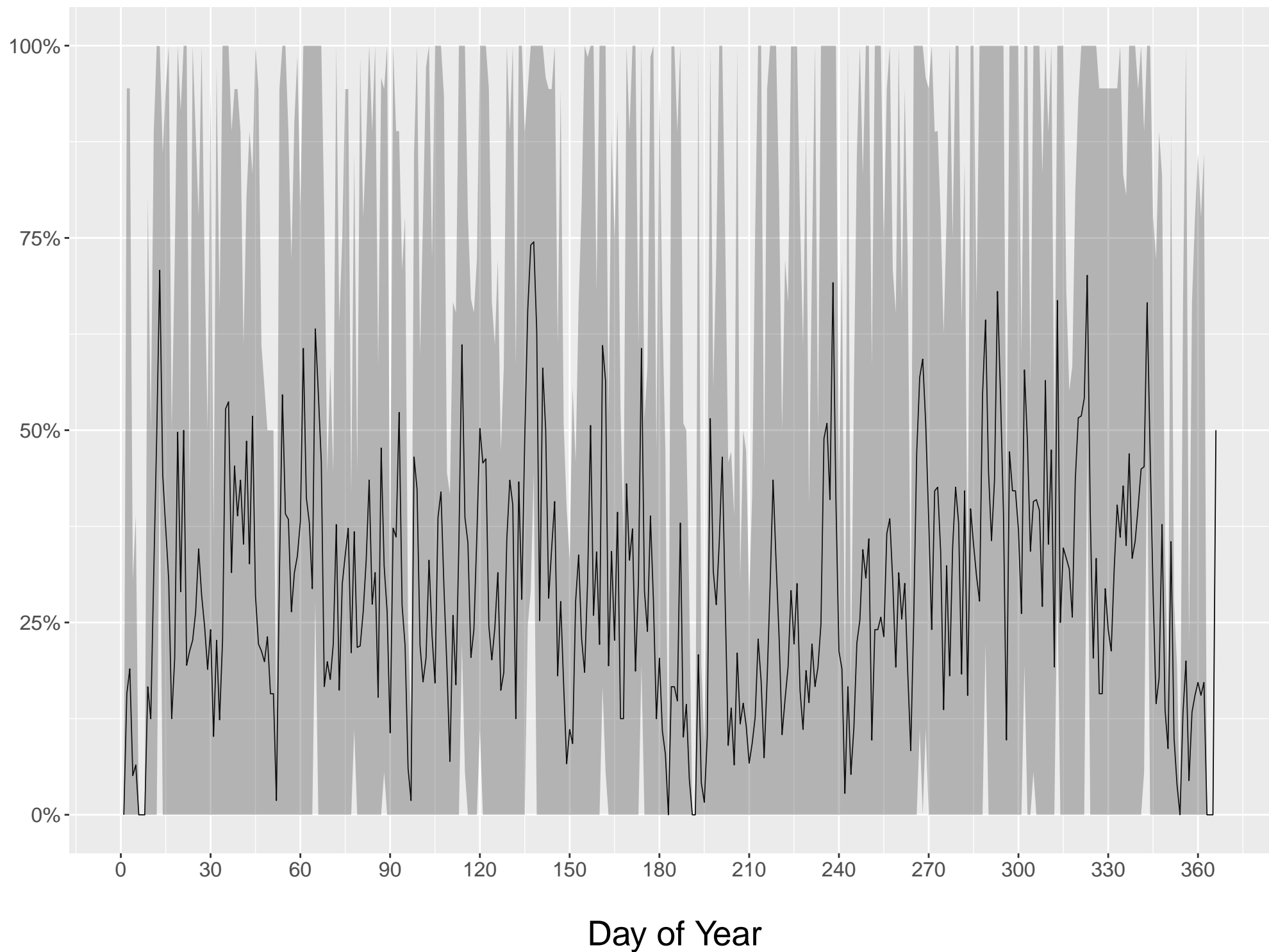
Room 'I' Utilization Rates

Min, Mean, & Max Utilization



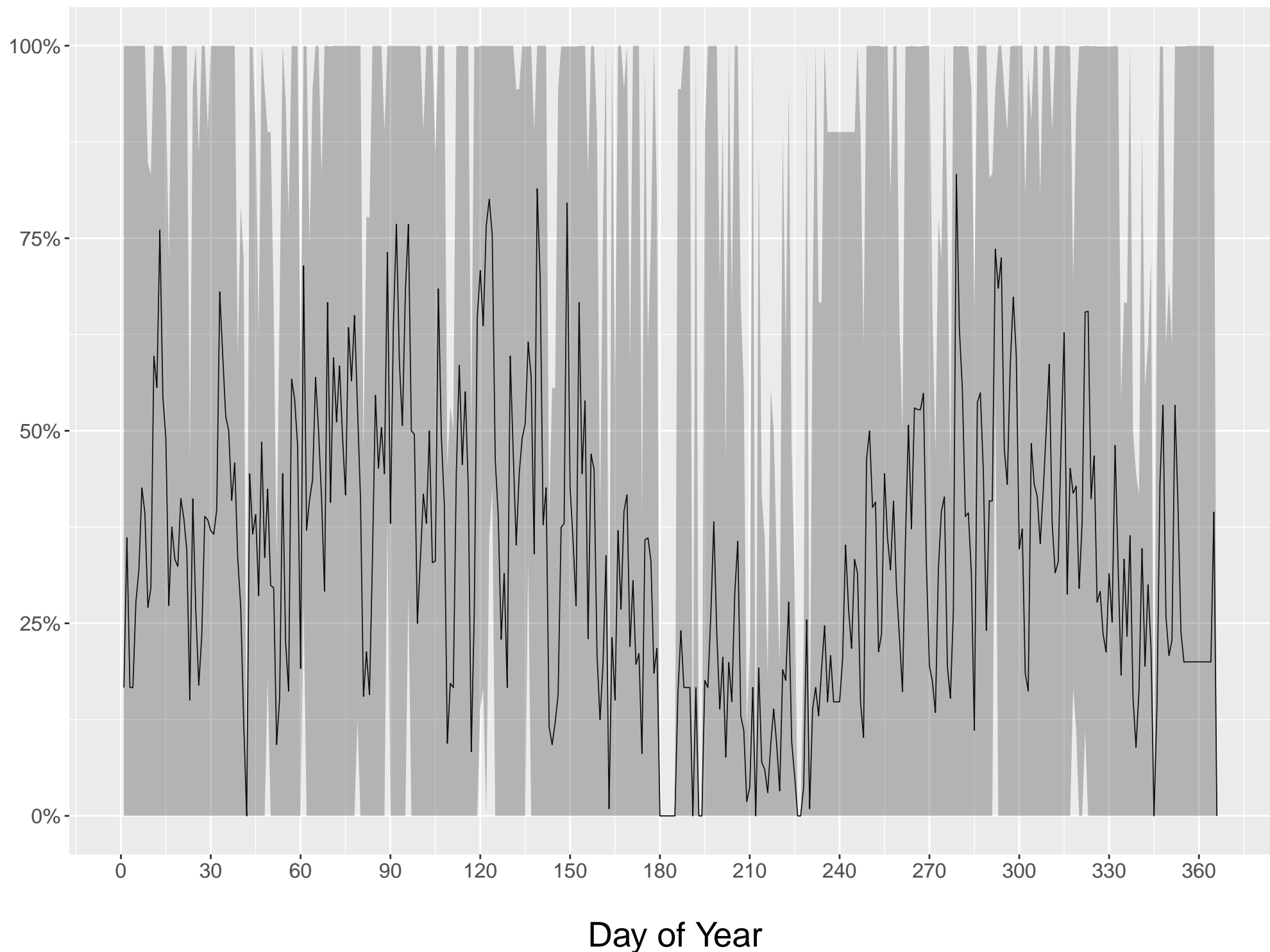
Room 'J' Utilization Rates

Min, Mean, & Max Utilization



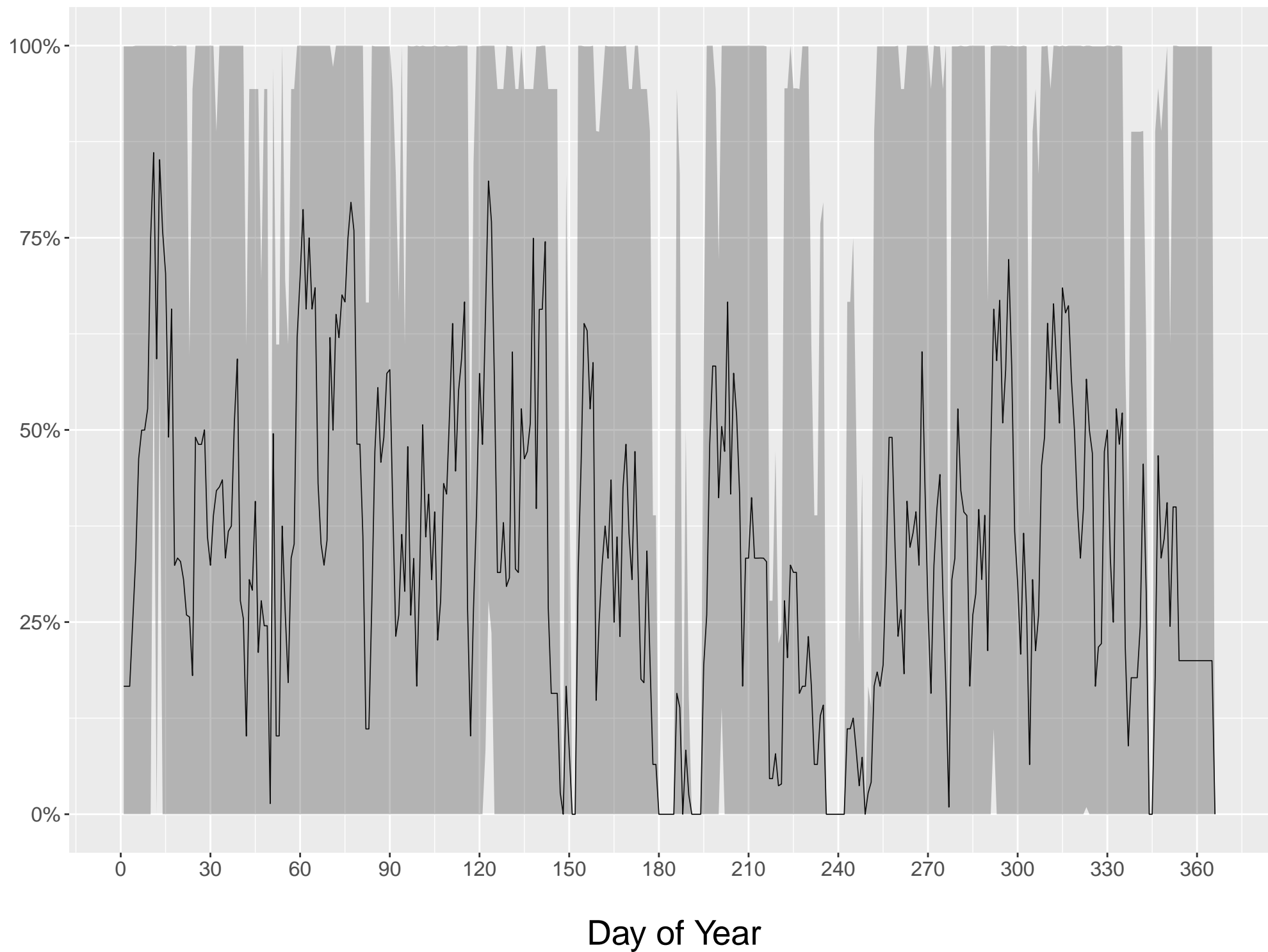
Room 'K' Utilization Rates

Min, Mean, & Max Utilization



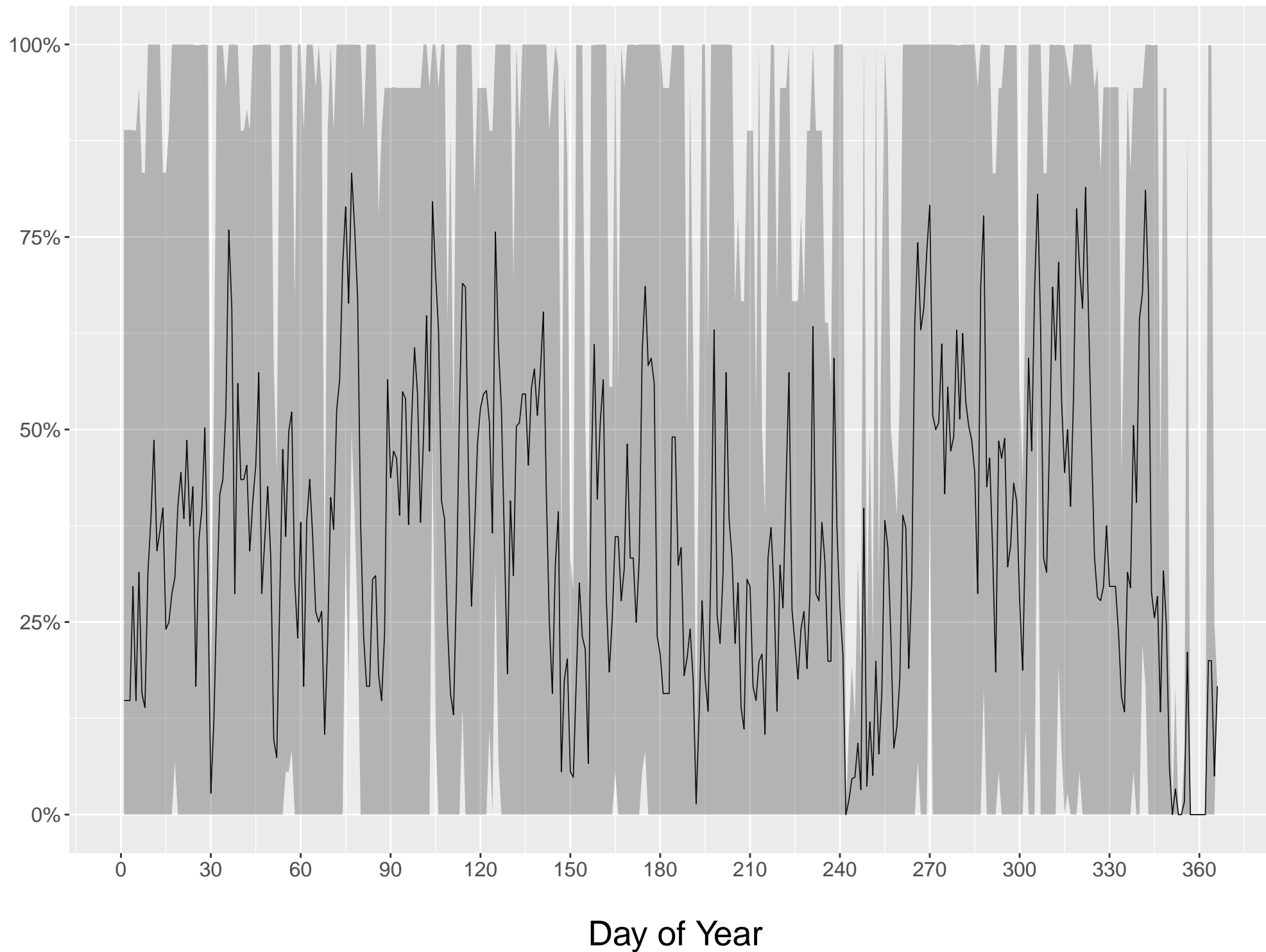
Room 'L' Utilization Rates

Min, Mean, & Max Utilization



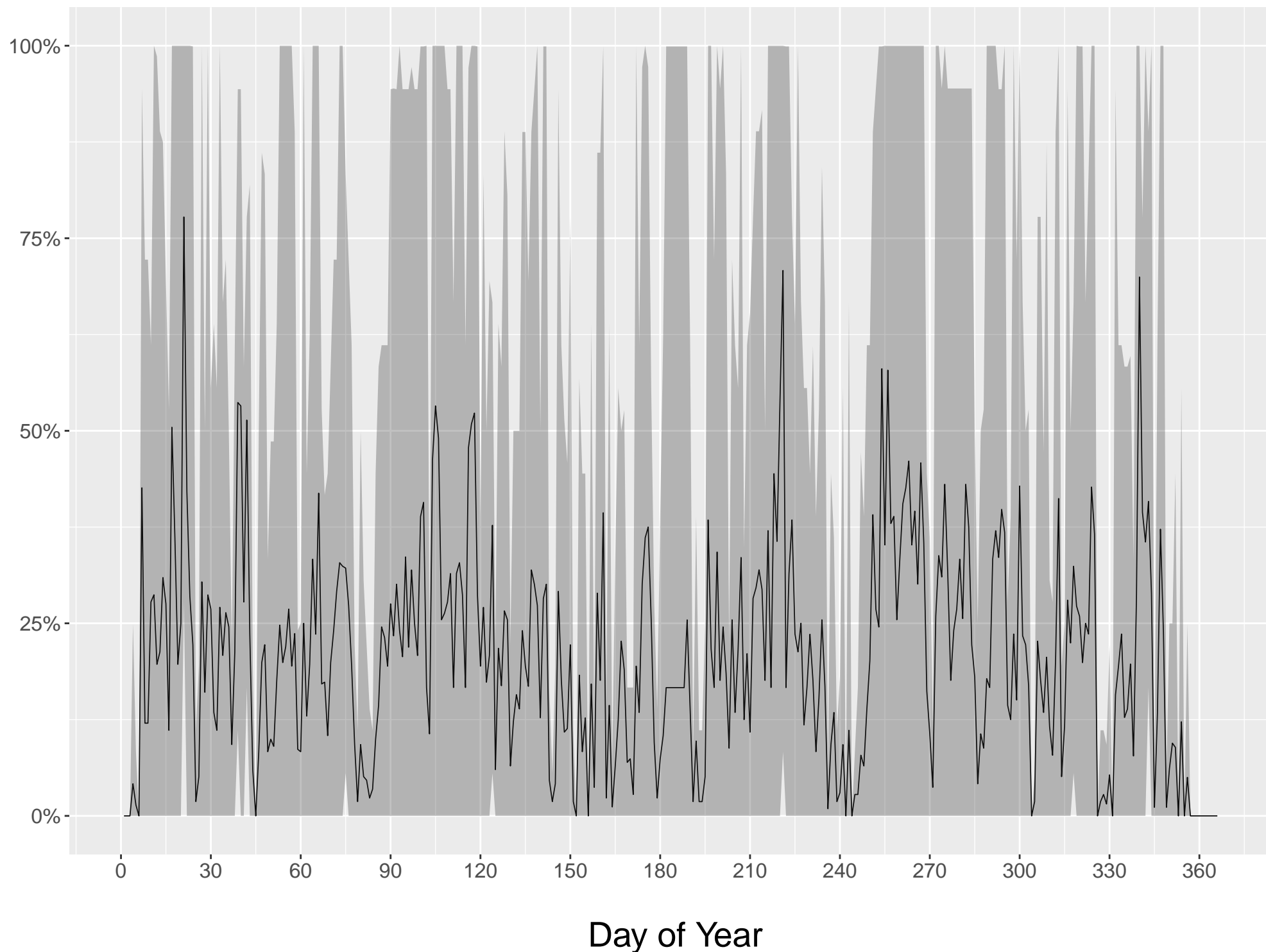
Room 'M' Utilization Rates

Min, Mean, & Max Utilization



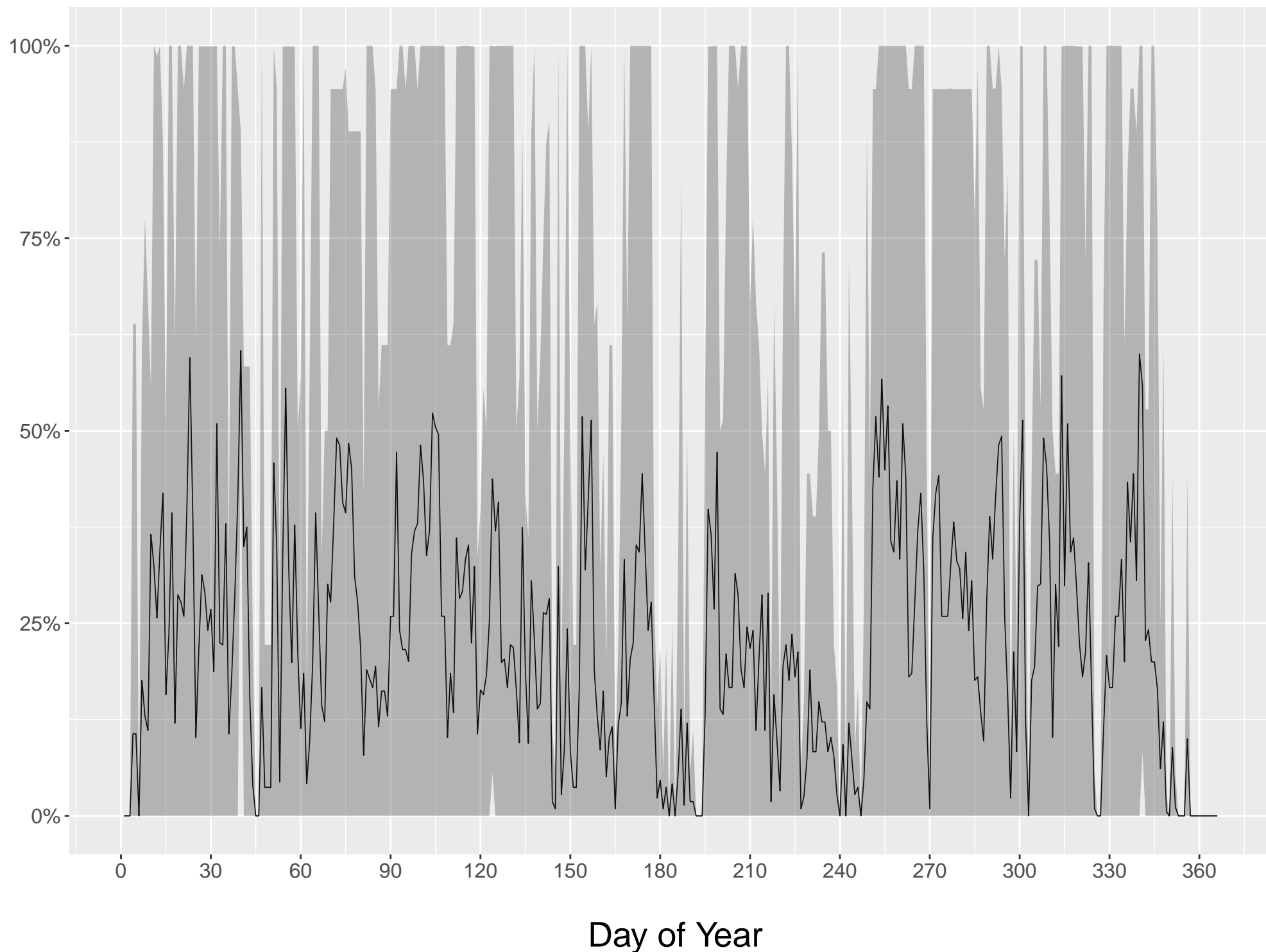
Room 'N' Utilization Rates

Min, Mean, & Max Utilization



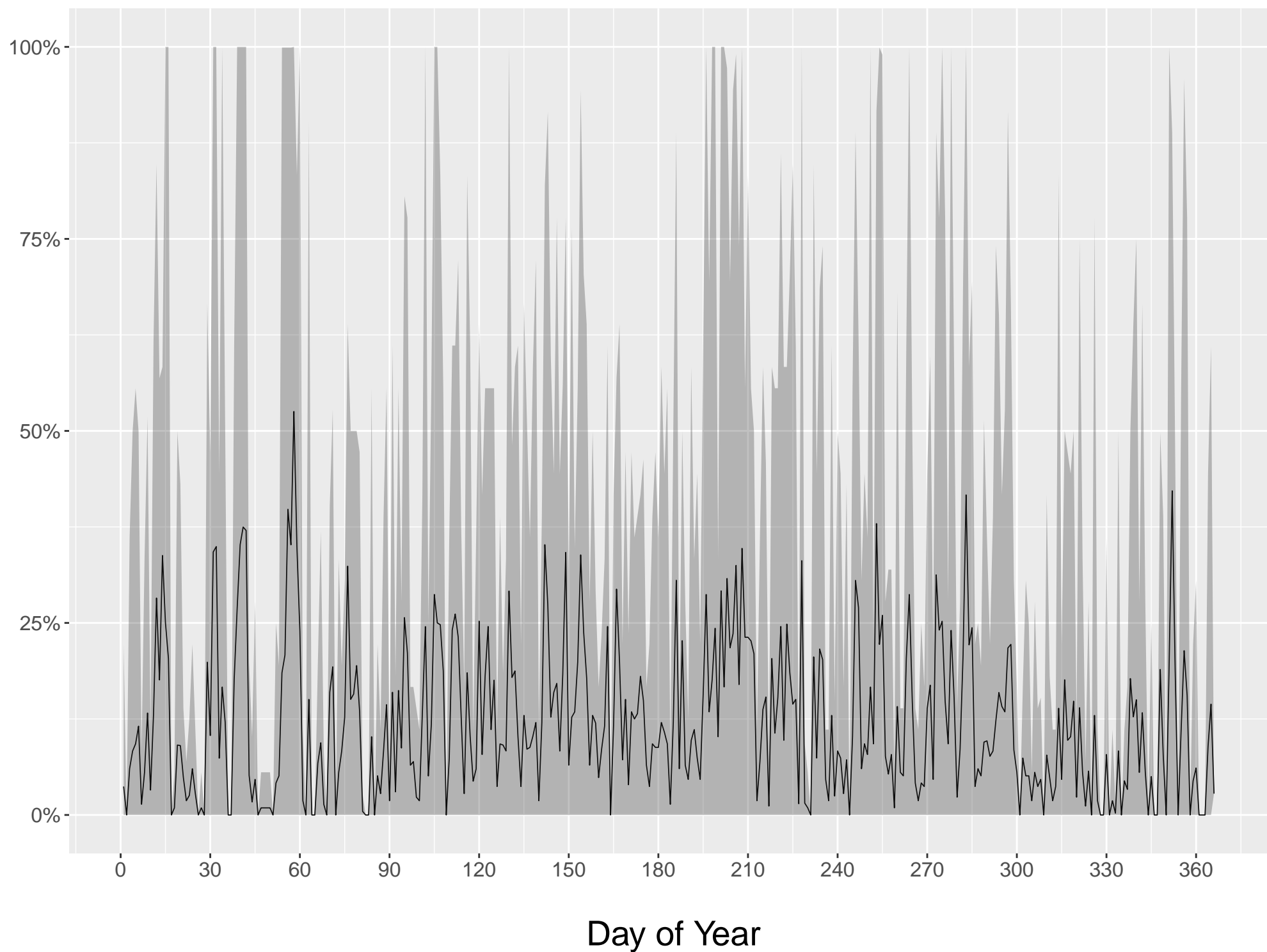
Room 'O' Utilization Rates

Min, Mean, & Max Utilization



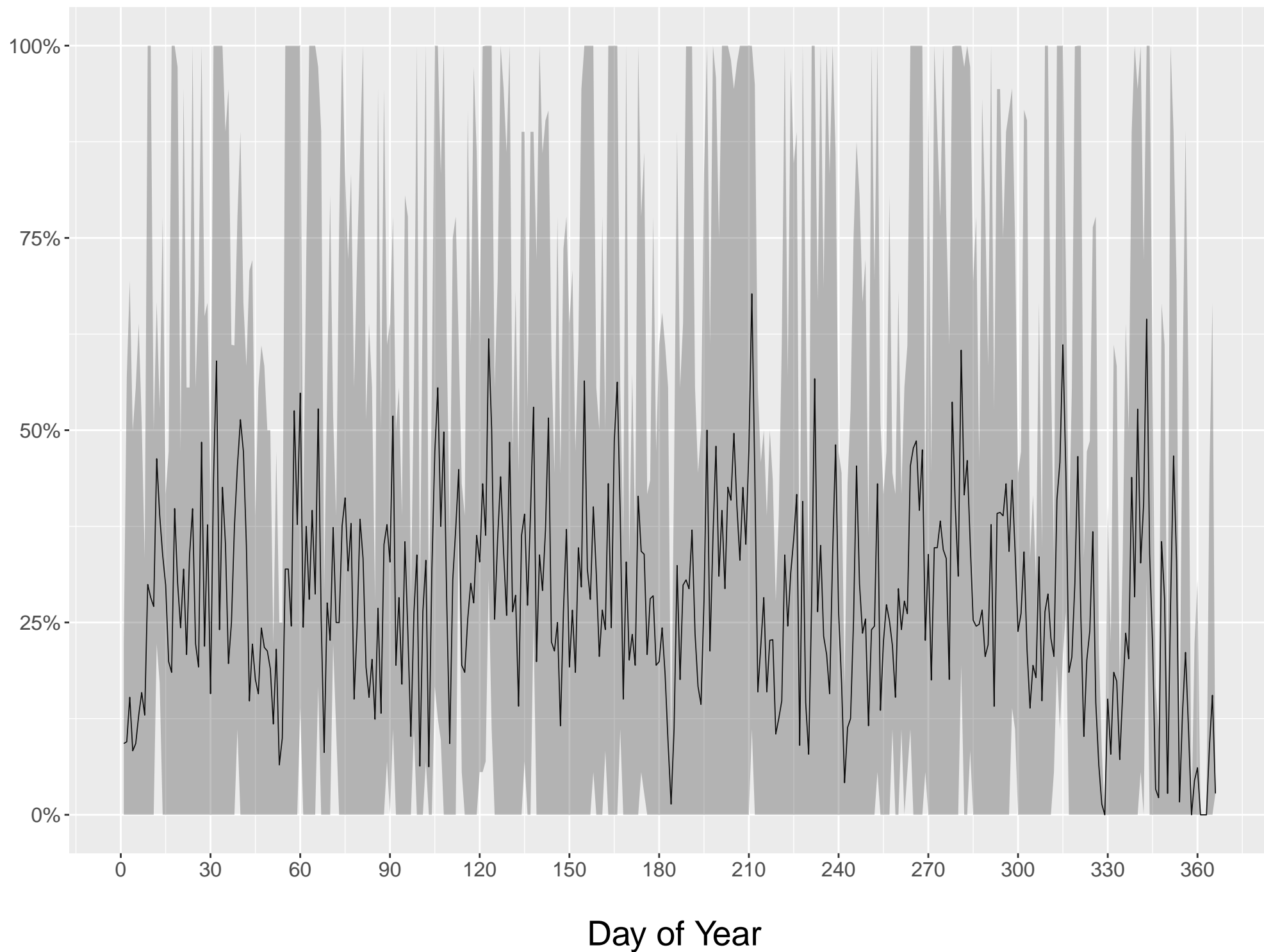
Room 'P' Utilization Rates

Min, Mean, & Max Utilization



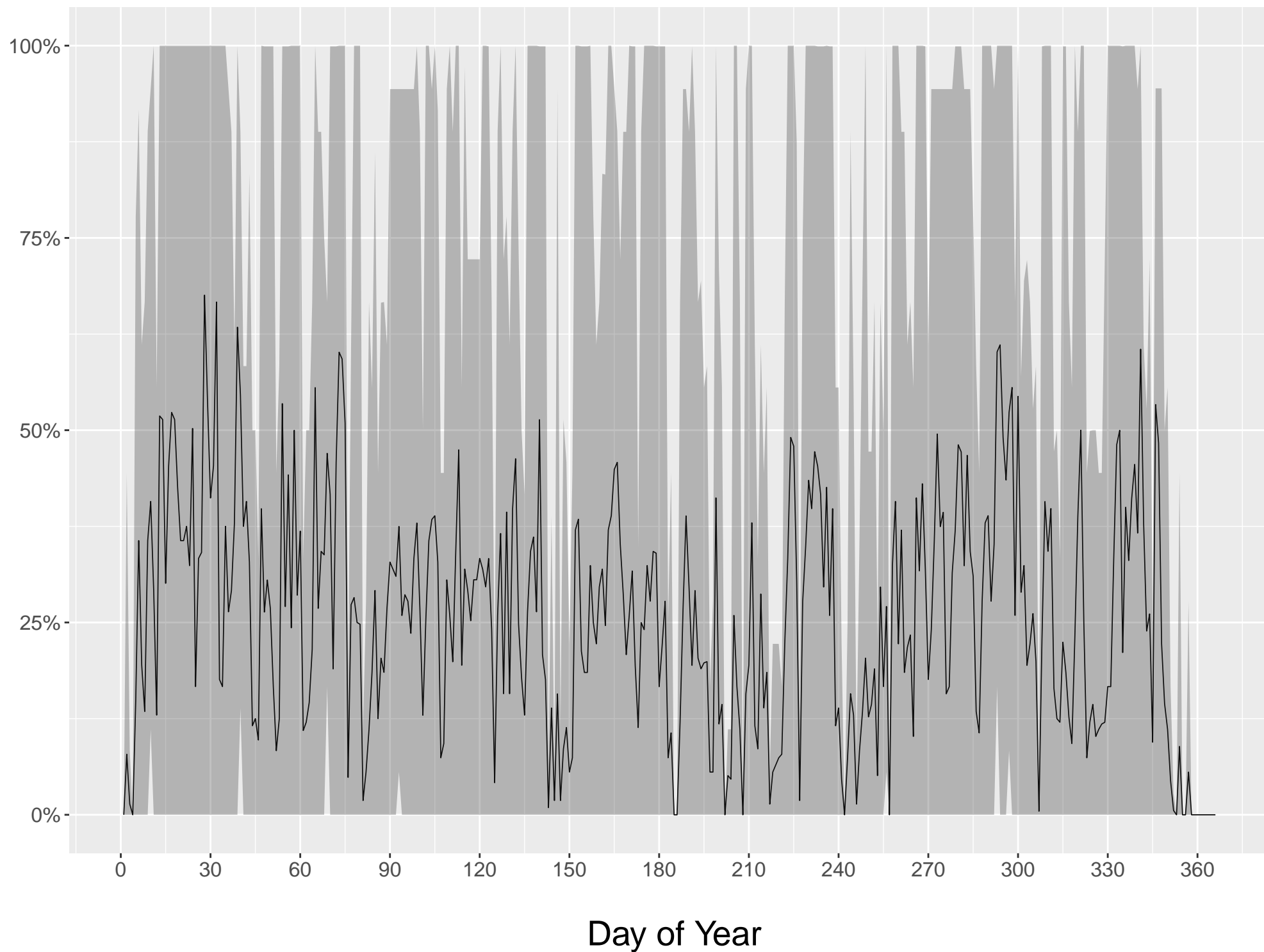
Room 'Q' Utilization Rates

Min, Mean, & Max Utilization



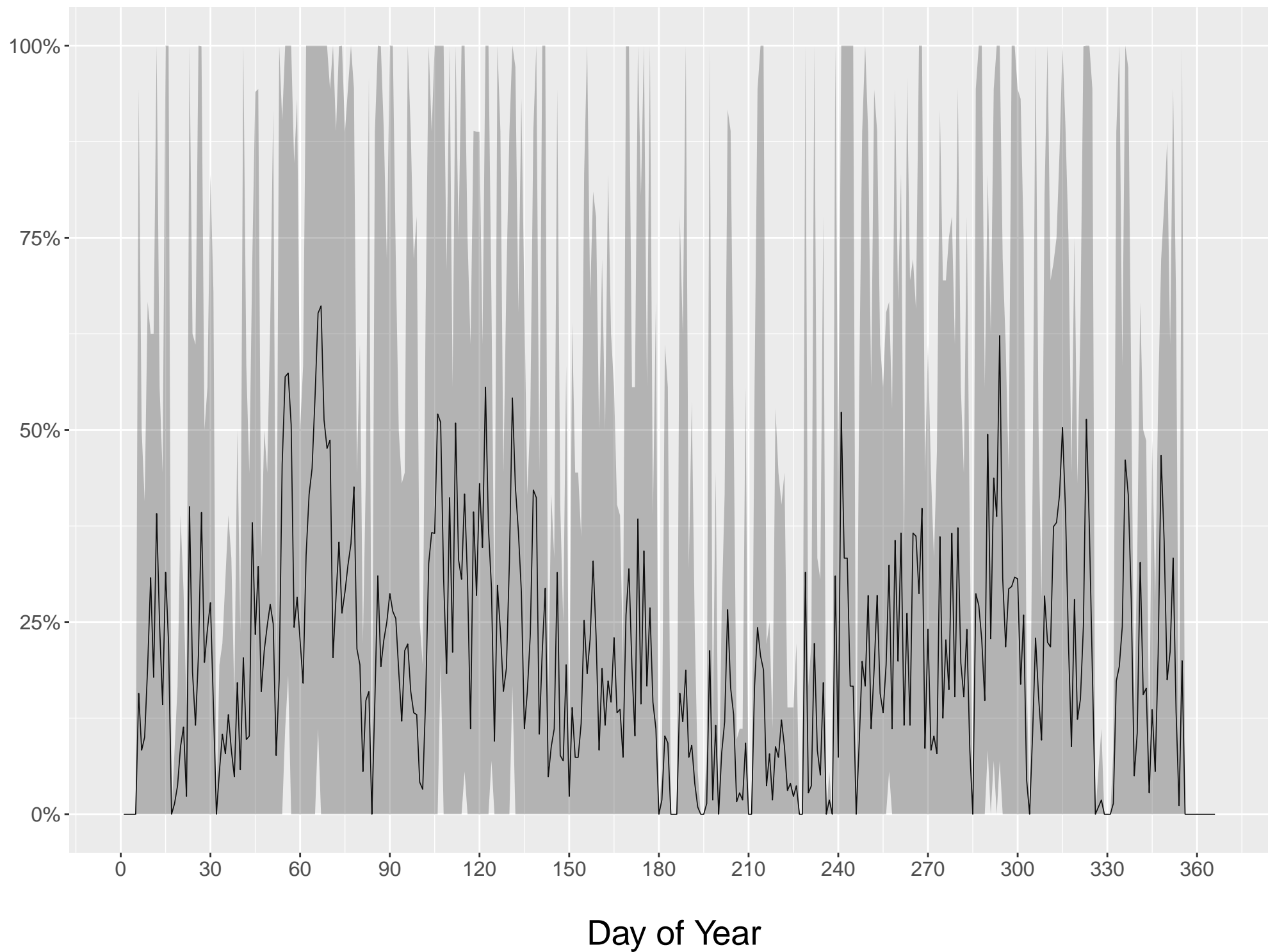
Room 'R' Utilization Rates

Min, Mean, & Max Utilization



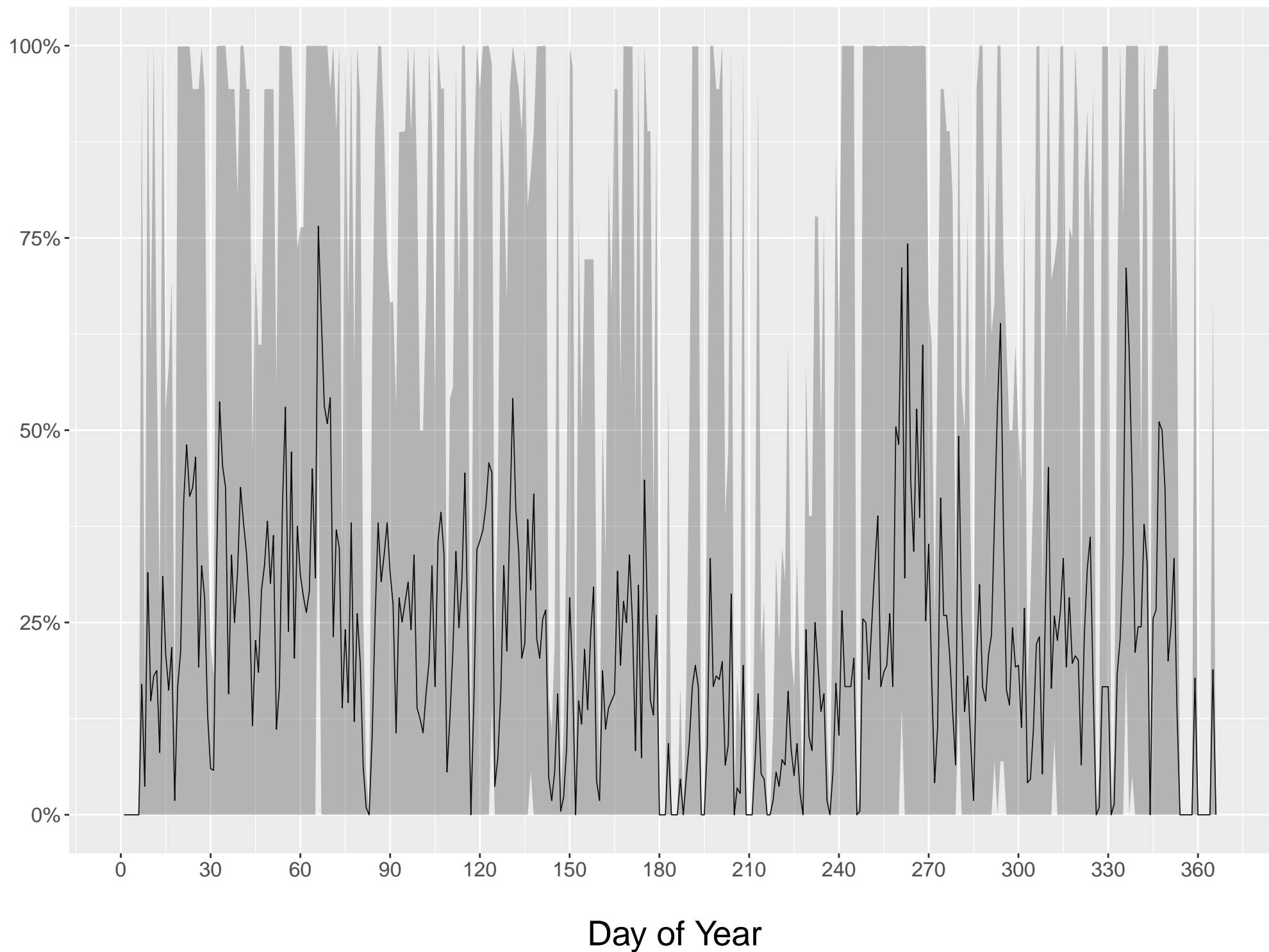
Room 'S' Utilization Rates

Min, Mean, & Max Utilization



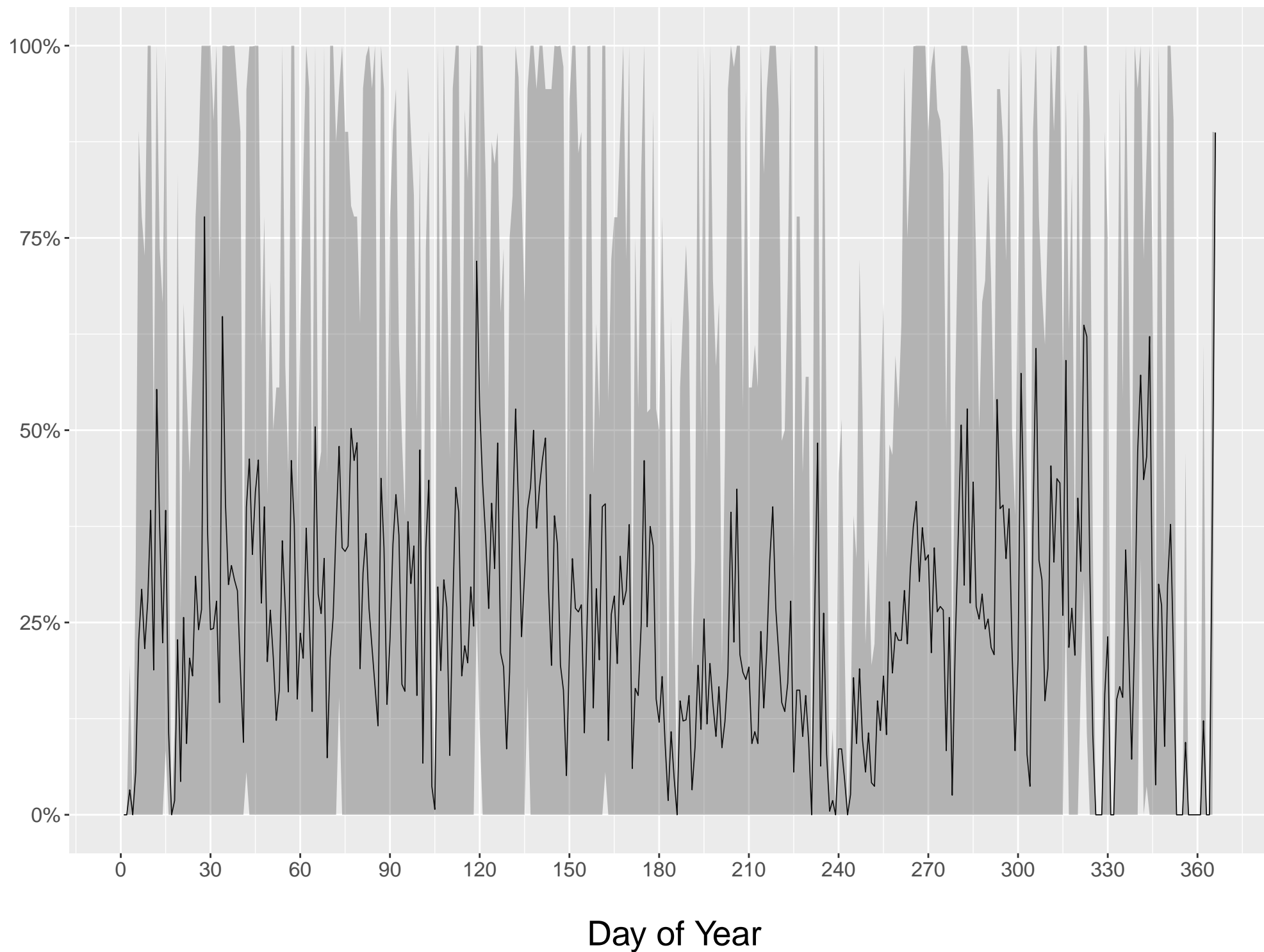
Room 'T' Utilization Rates

Min, Mean, & Max Utilization

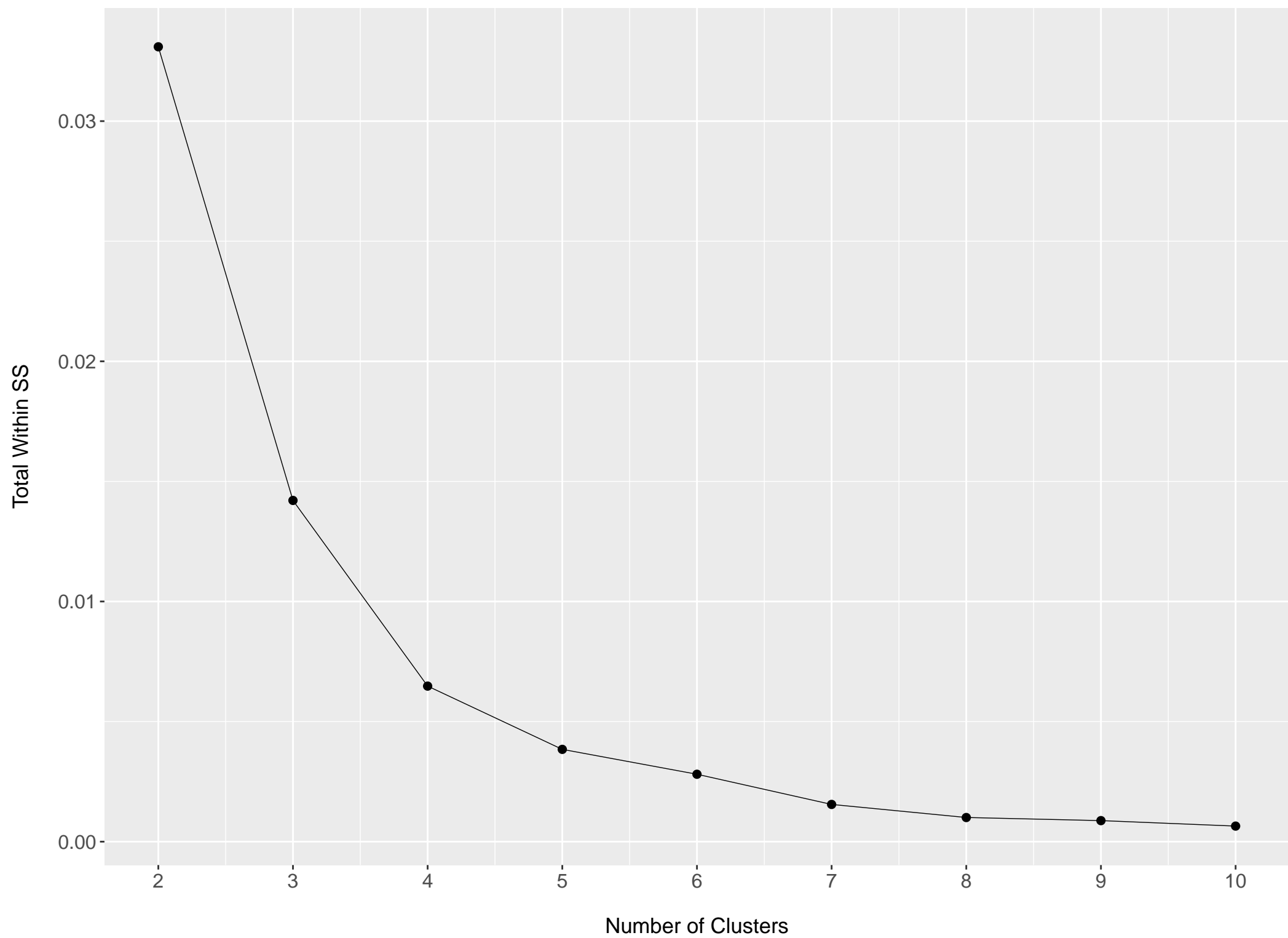


Room 'U' Utilization Rates

Min, Mean, & Max Utilization

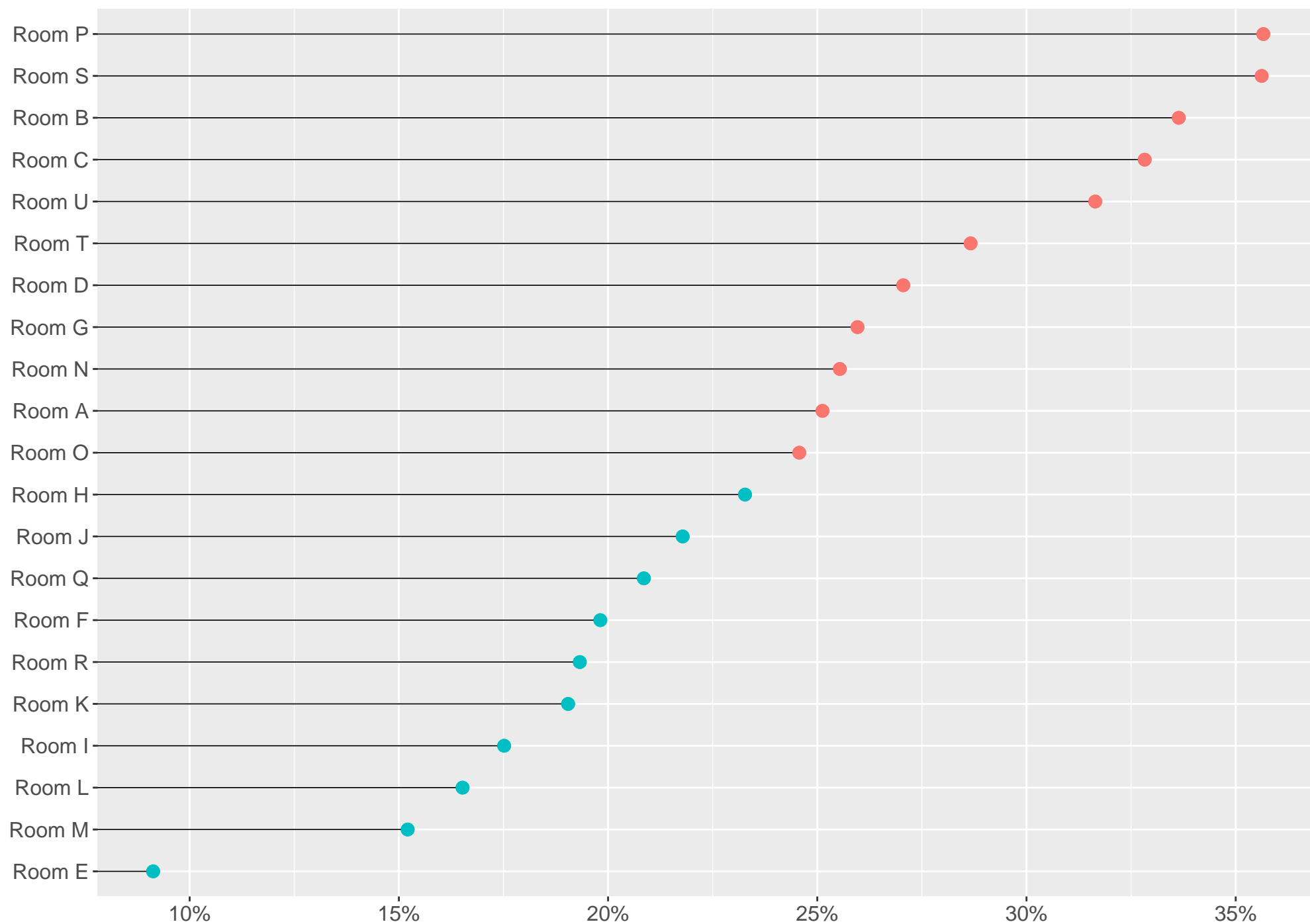


Monday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Monday: 2 – Means Grouping by Mean Utilization

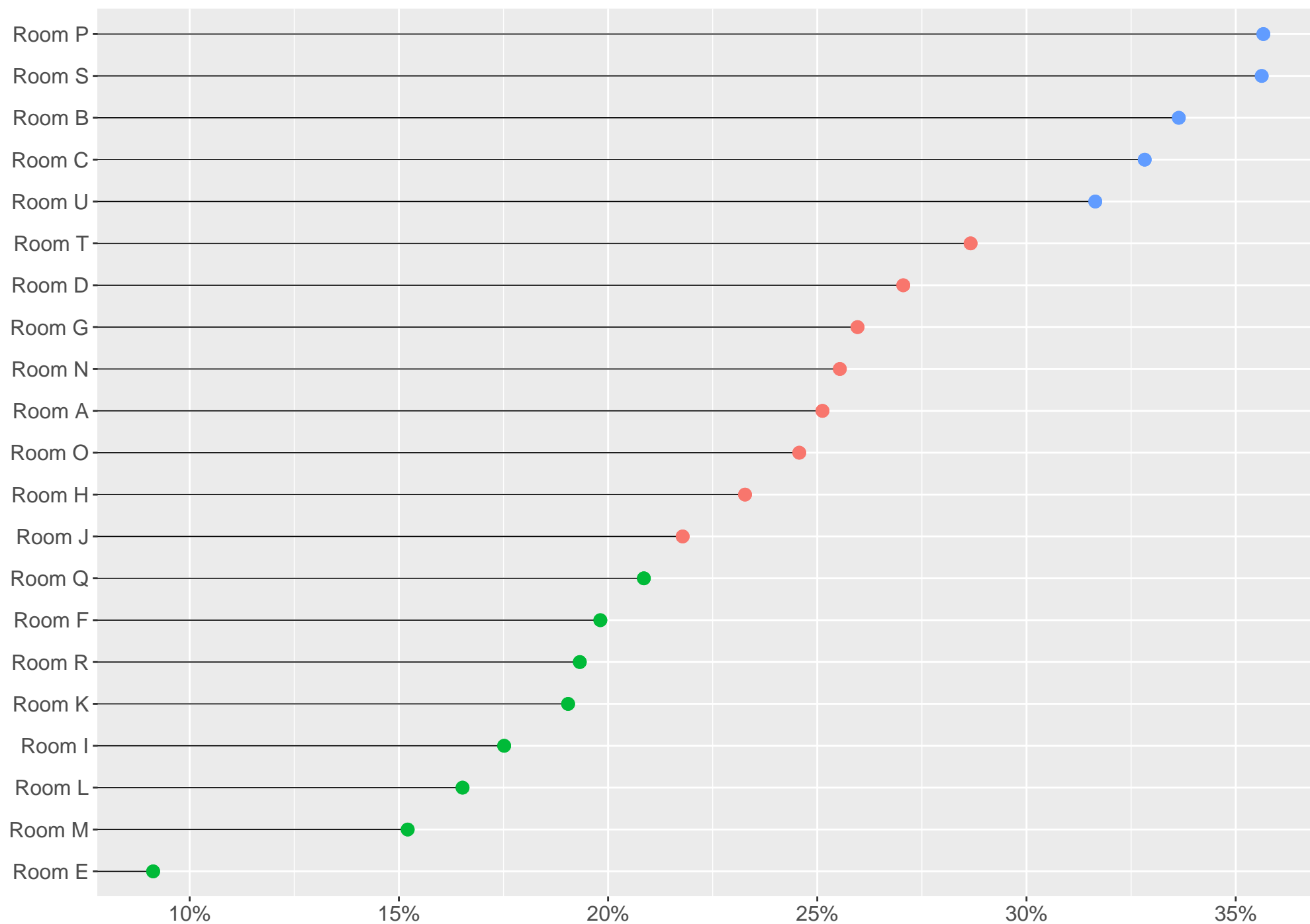
Room



Mean Utilization

Monday: 3 – Means Grouping by Mean Utilization

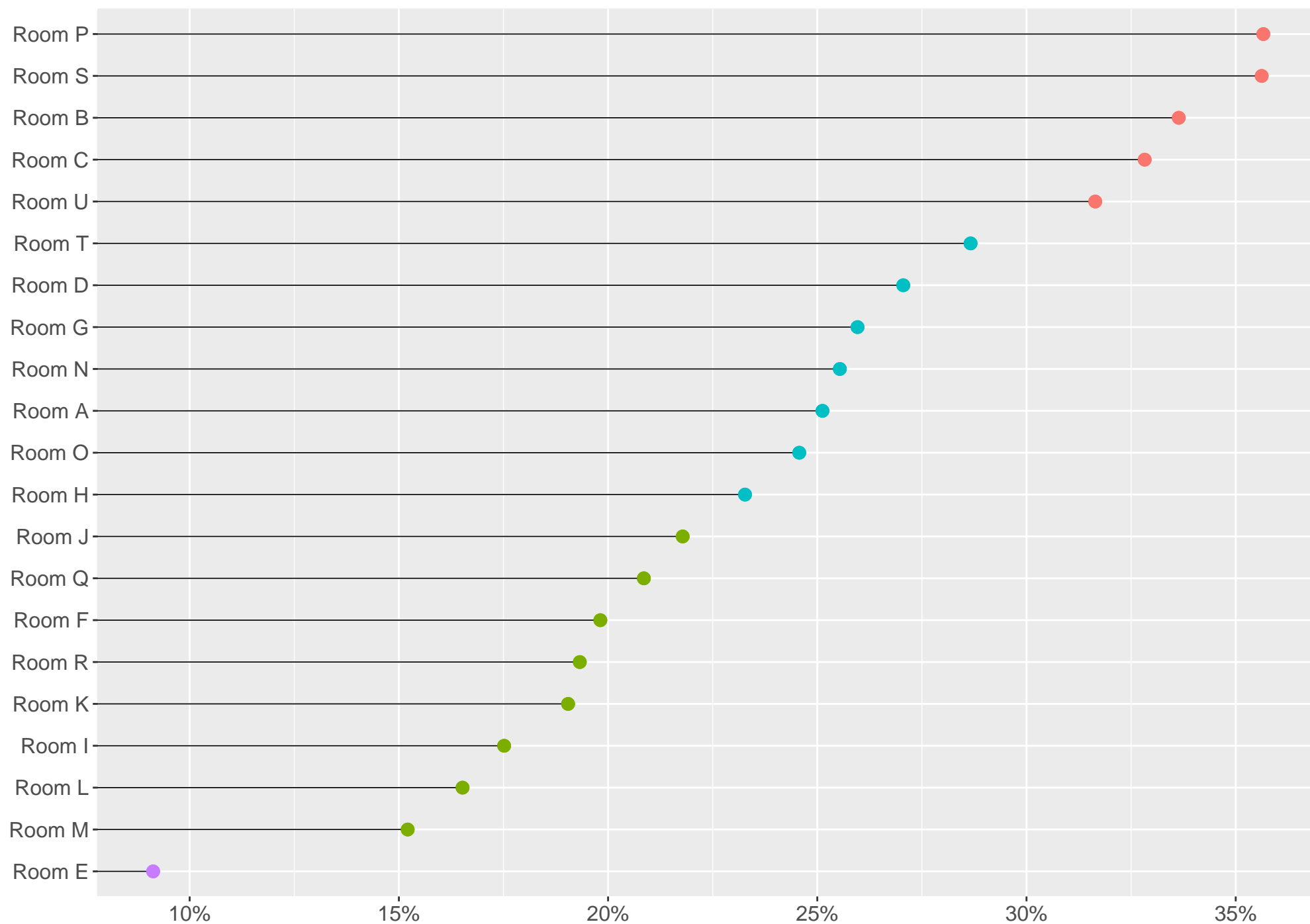
Room



Mean Utilization

Monday: 4 – Means Grouping by Mean Utilization

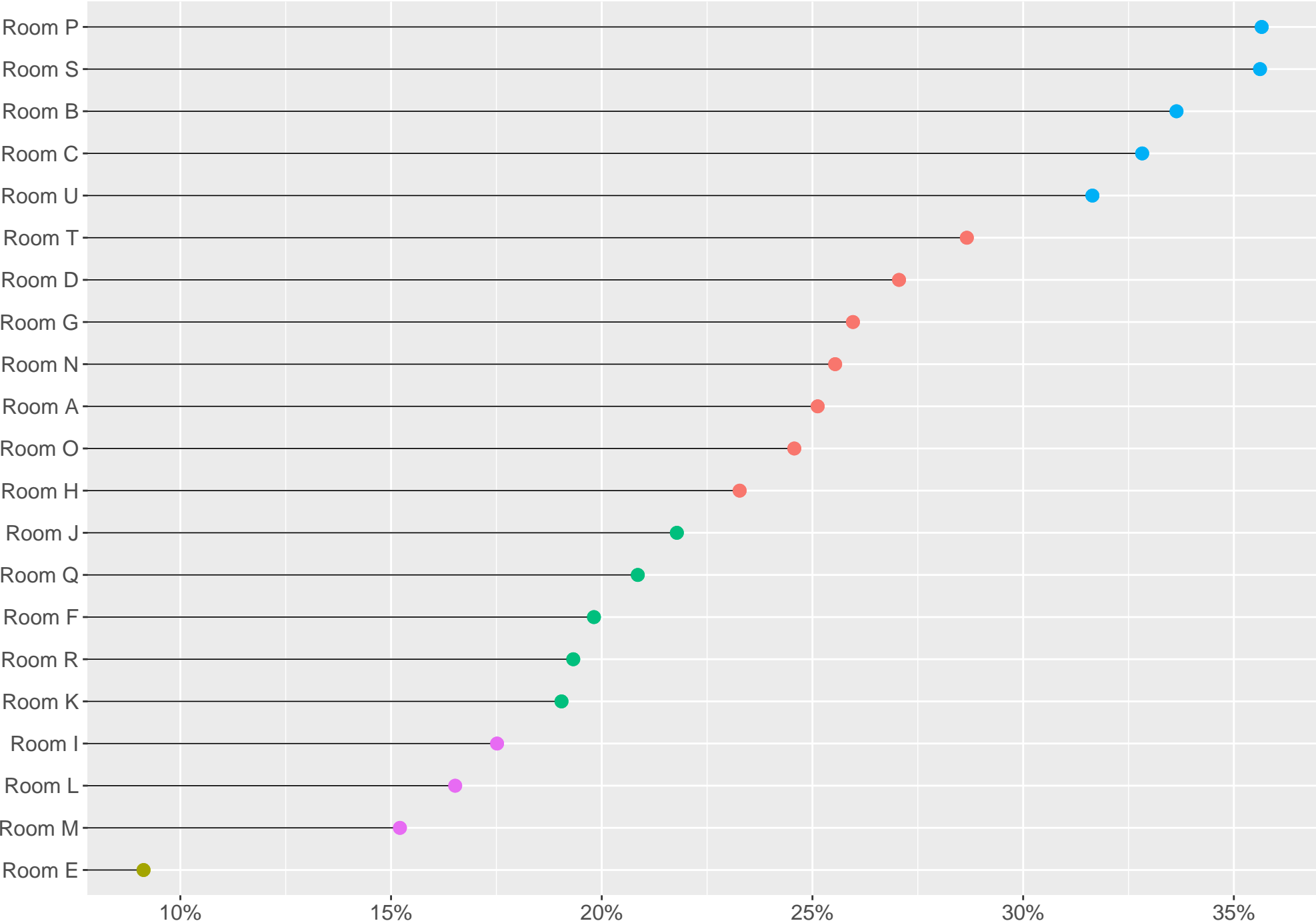
Room



Mean Utilization

Monday: 5 – Means Grouping by Mean Utilization

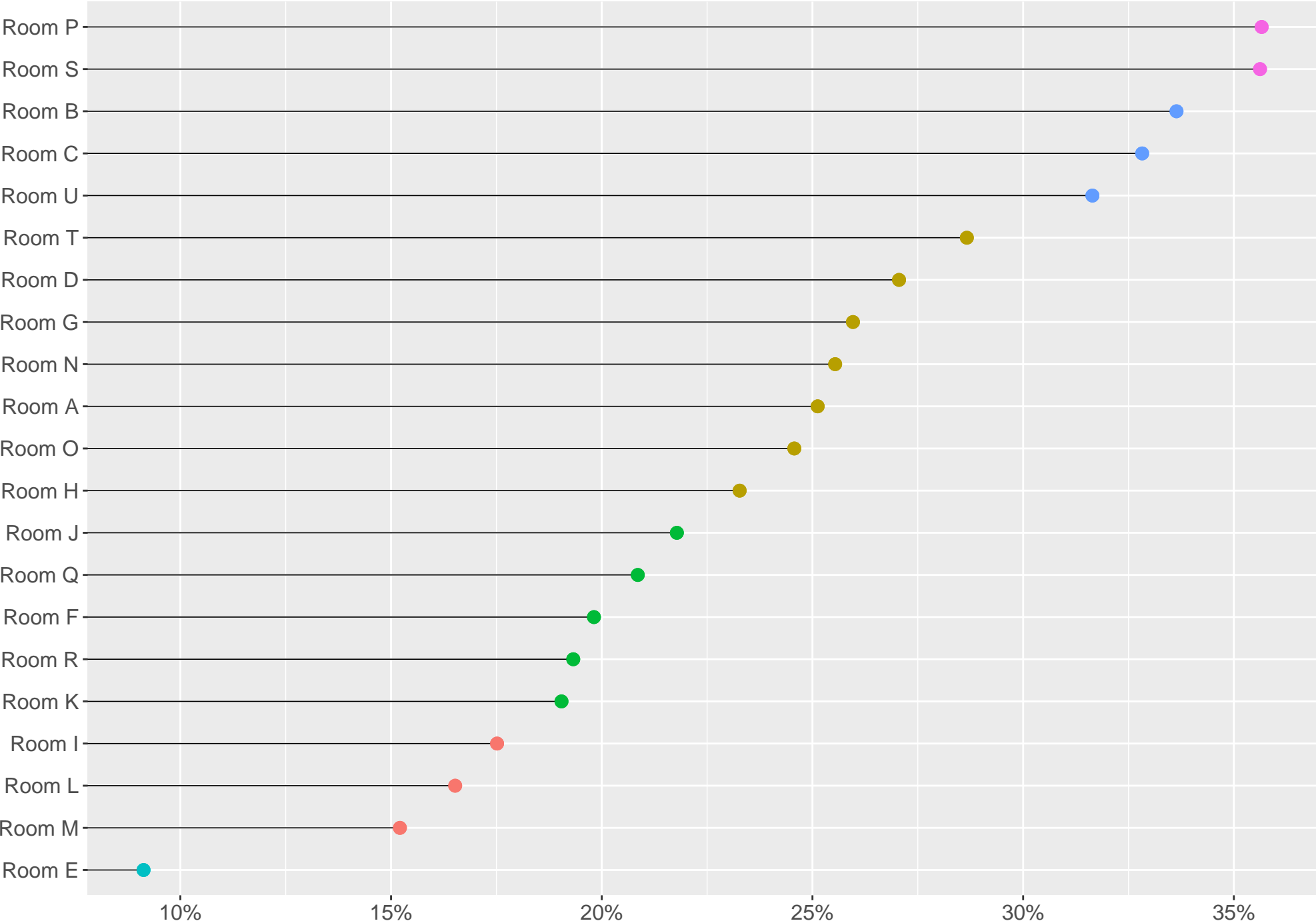
Room



Mean Utilization

Monday: 6 – Means Grouping by Mean Utilization

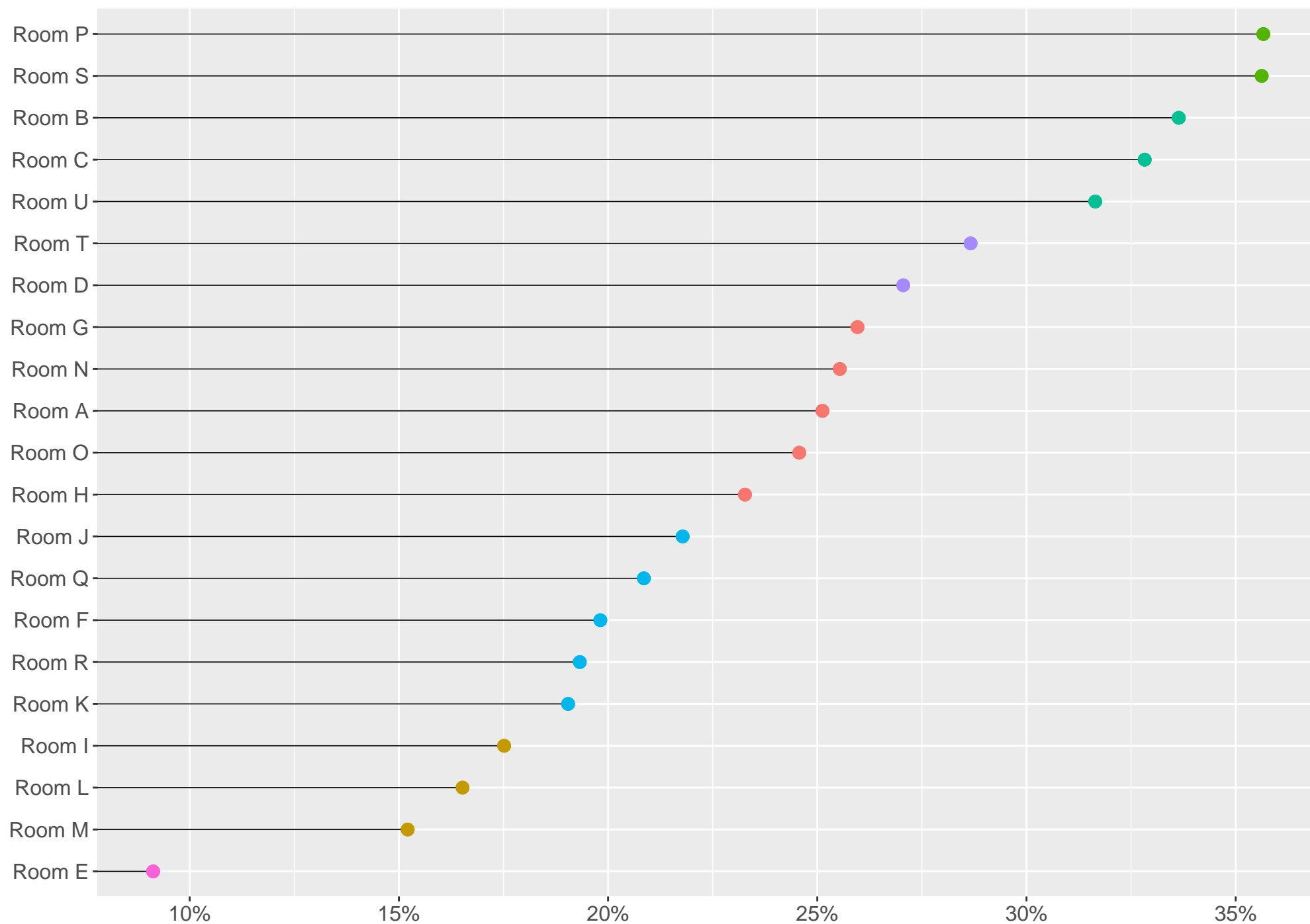
Room



Mean Utilization

Monday: 7 – Means Grouping by Mean Utilization

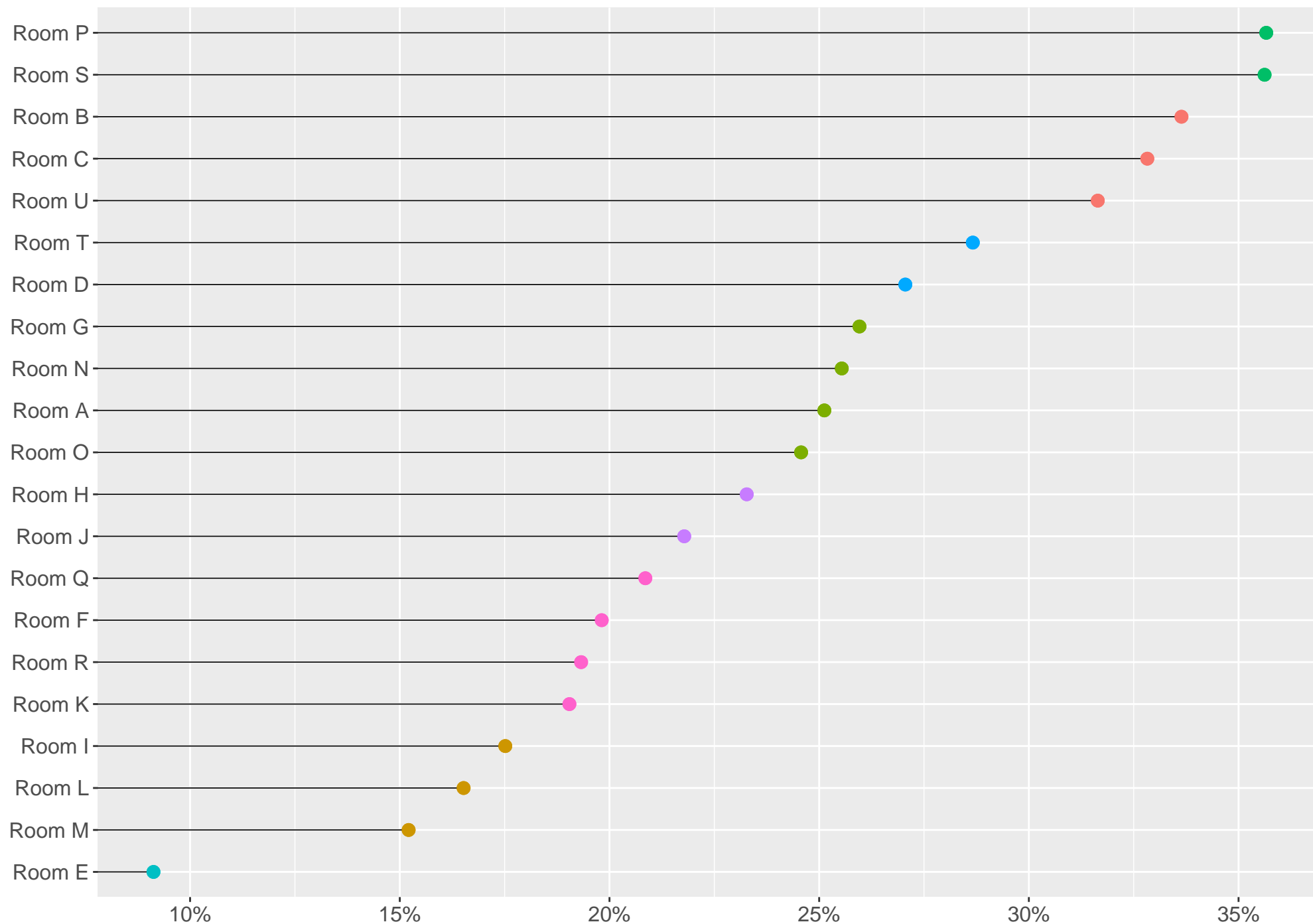
Room



Mean Utilization

Monday: 8 – Means Grouping by Mean Utilization

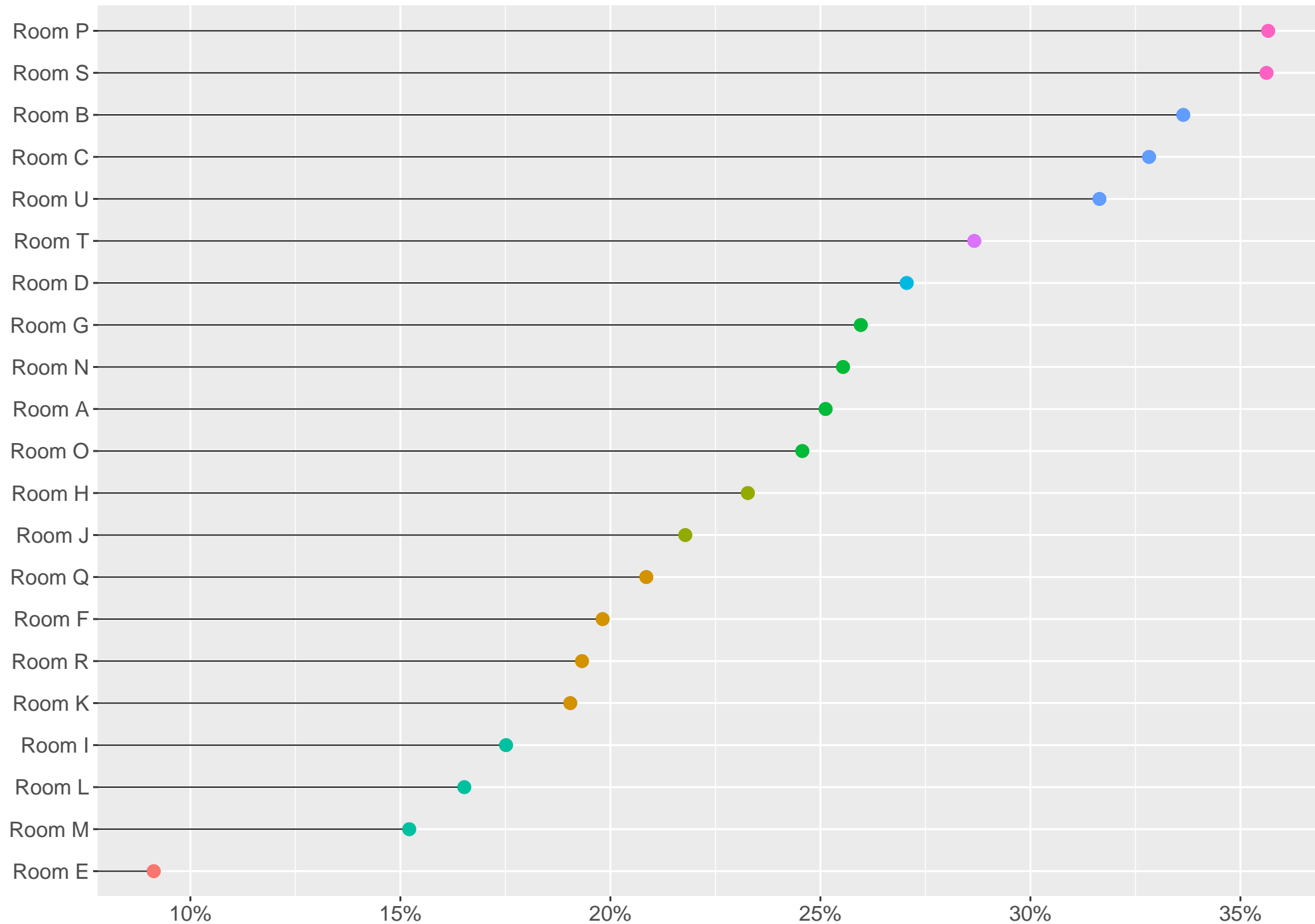
Room



Mean Utilization

Monday: 9 – Means Grouping by Mean Utilization

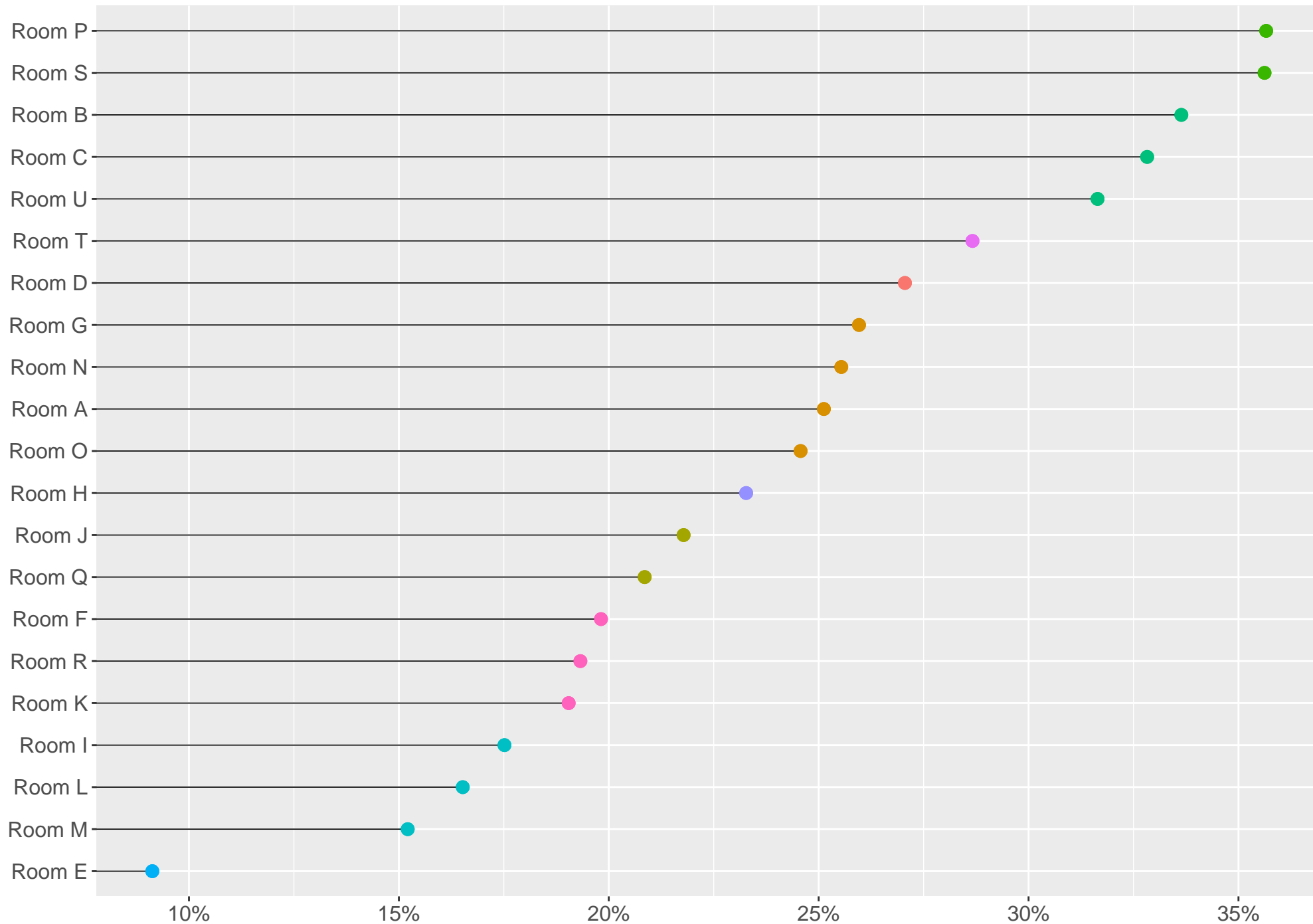
Room



Mean Utilization

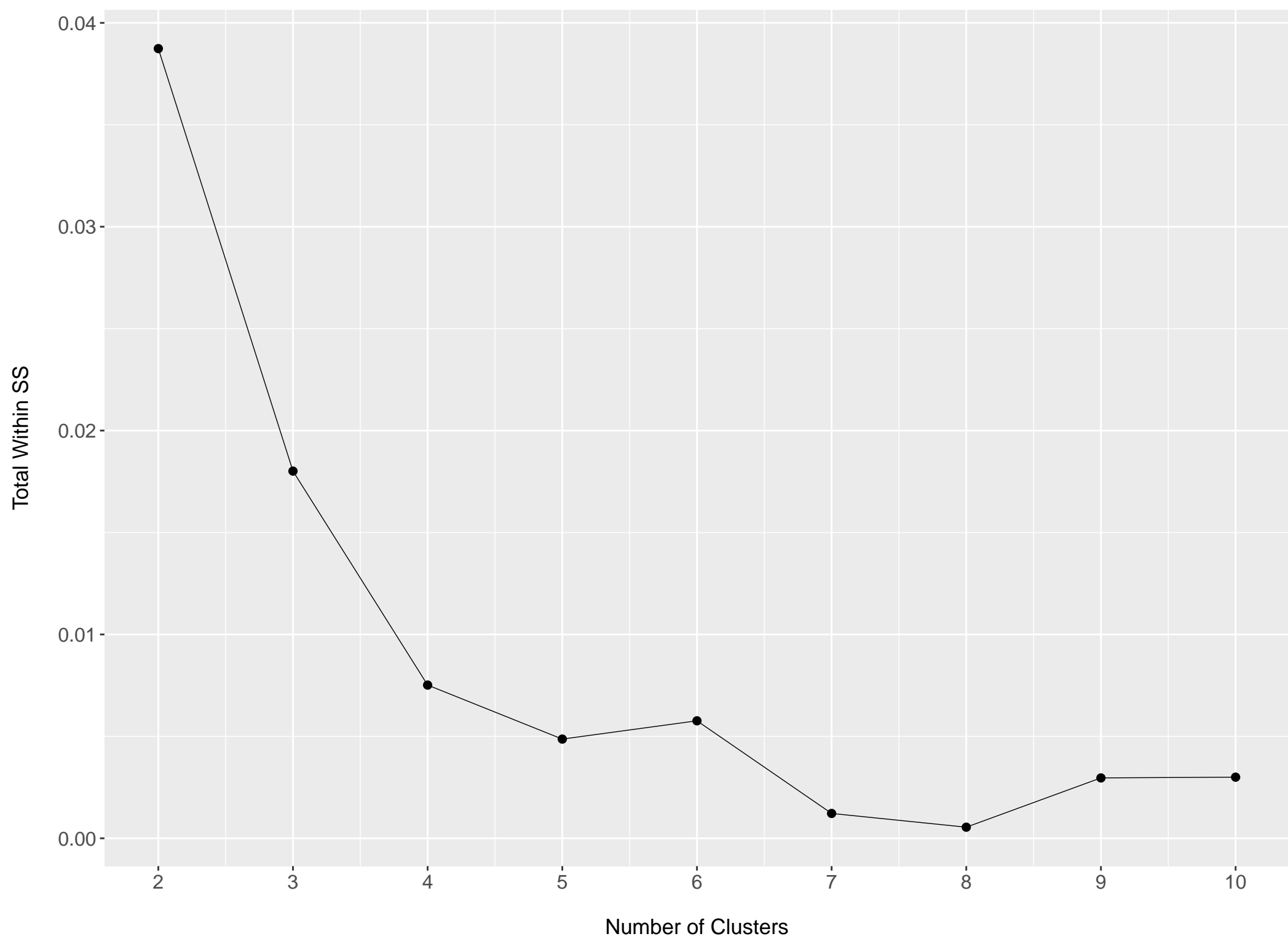
Monday: 10 – Means Grouping by Mean Utilization

Room



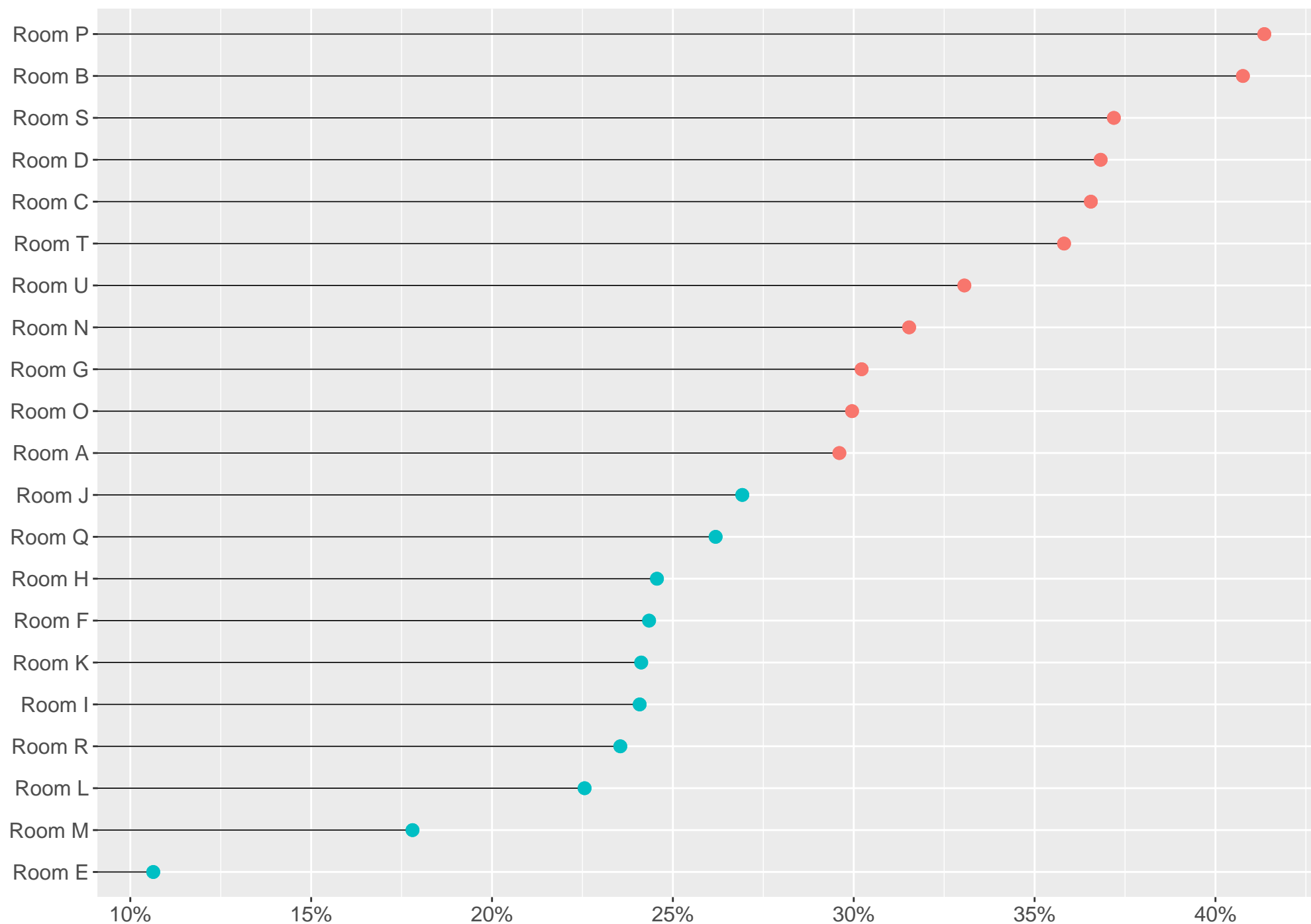
Mean Utilization

Tuesday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Tuesday: 2 – Means Grouping by Mean Utilization

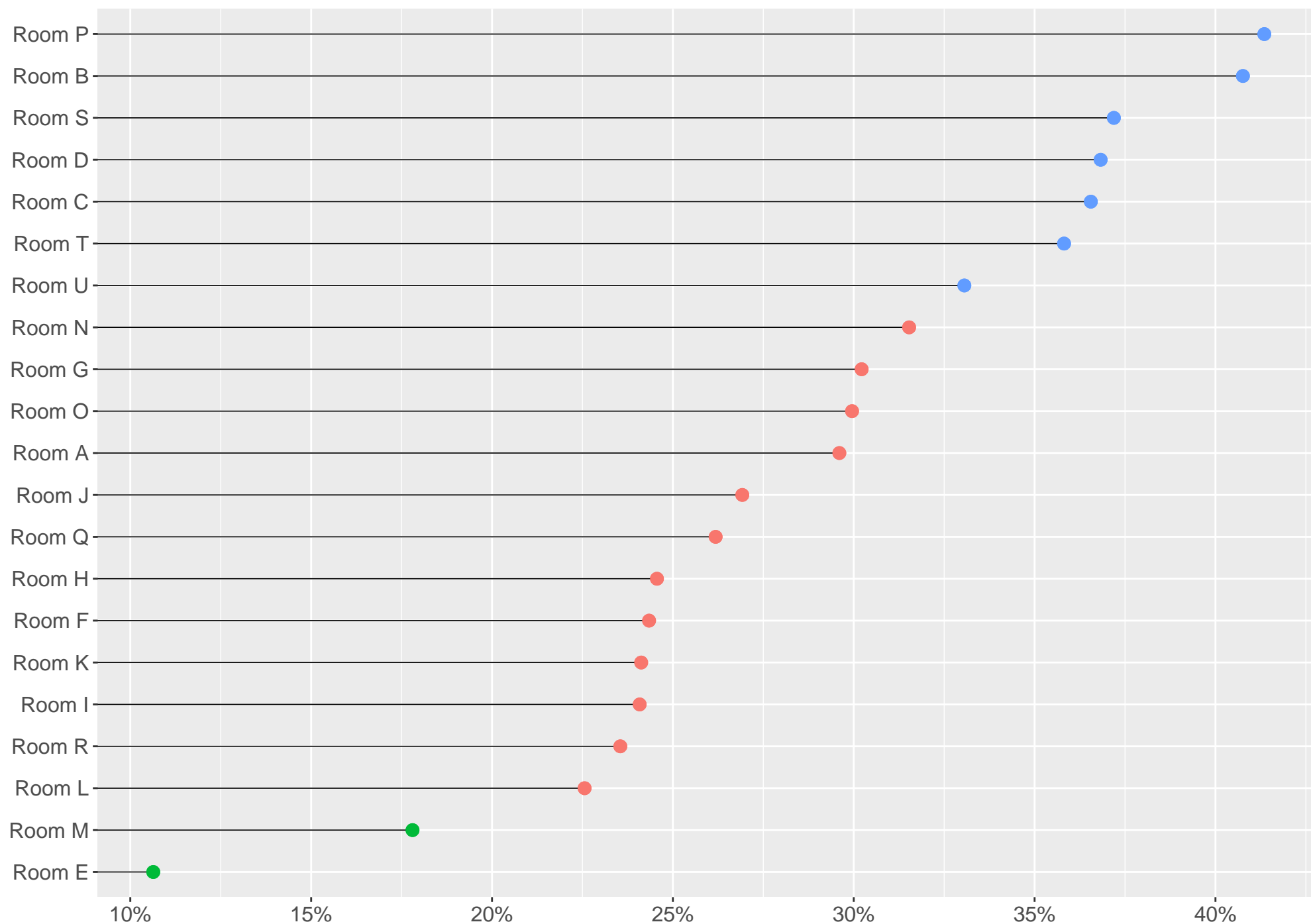
Room



Mean Utilization

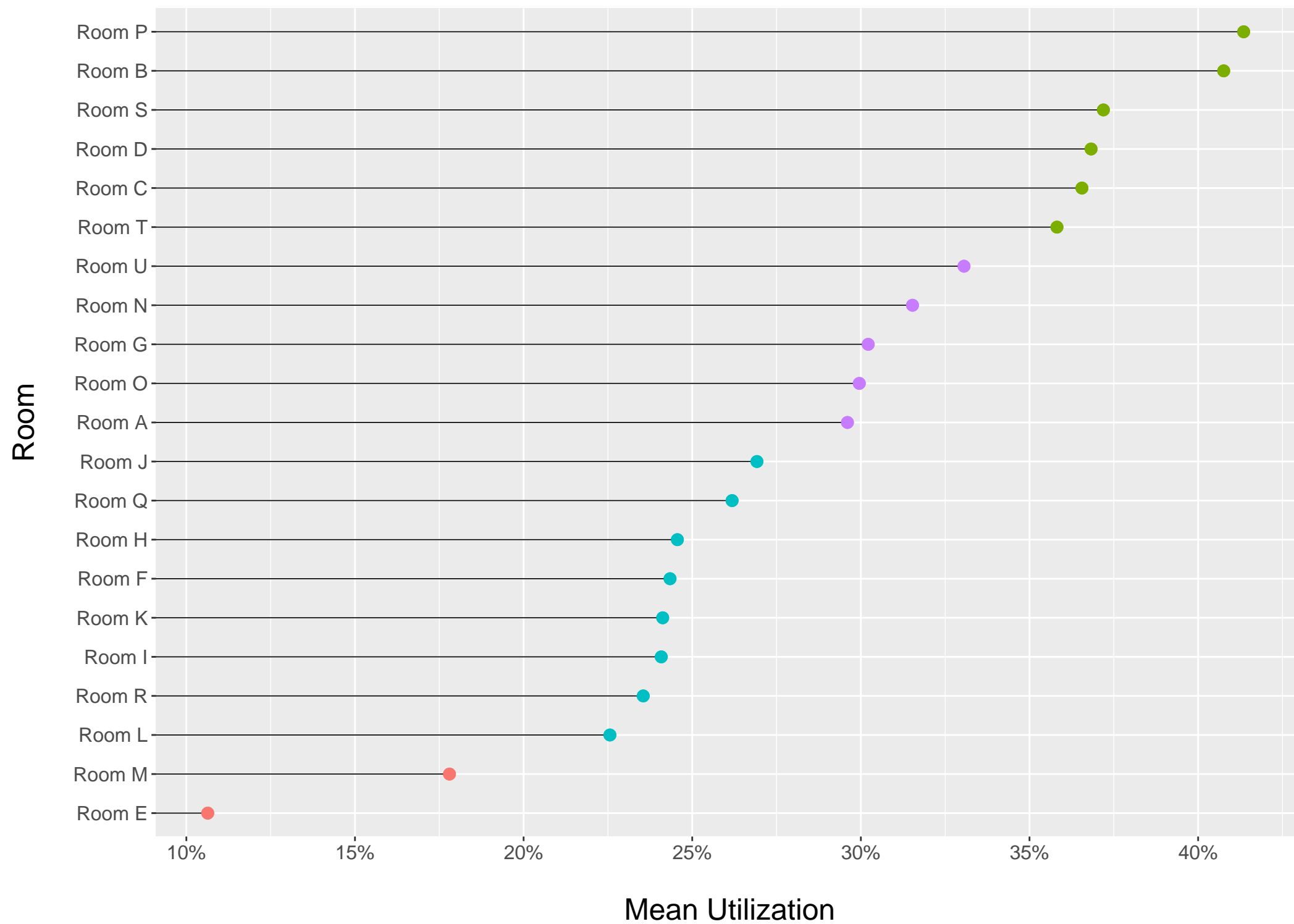
Tuesday: 3 – Means Grouping by Mean Utilization

Room

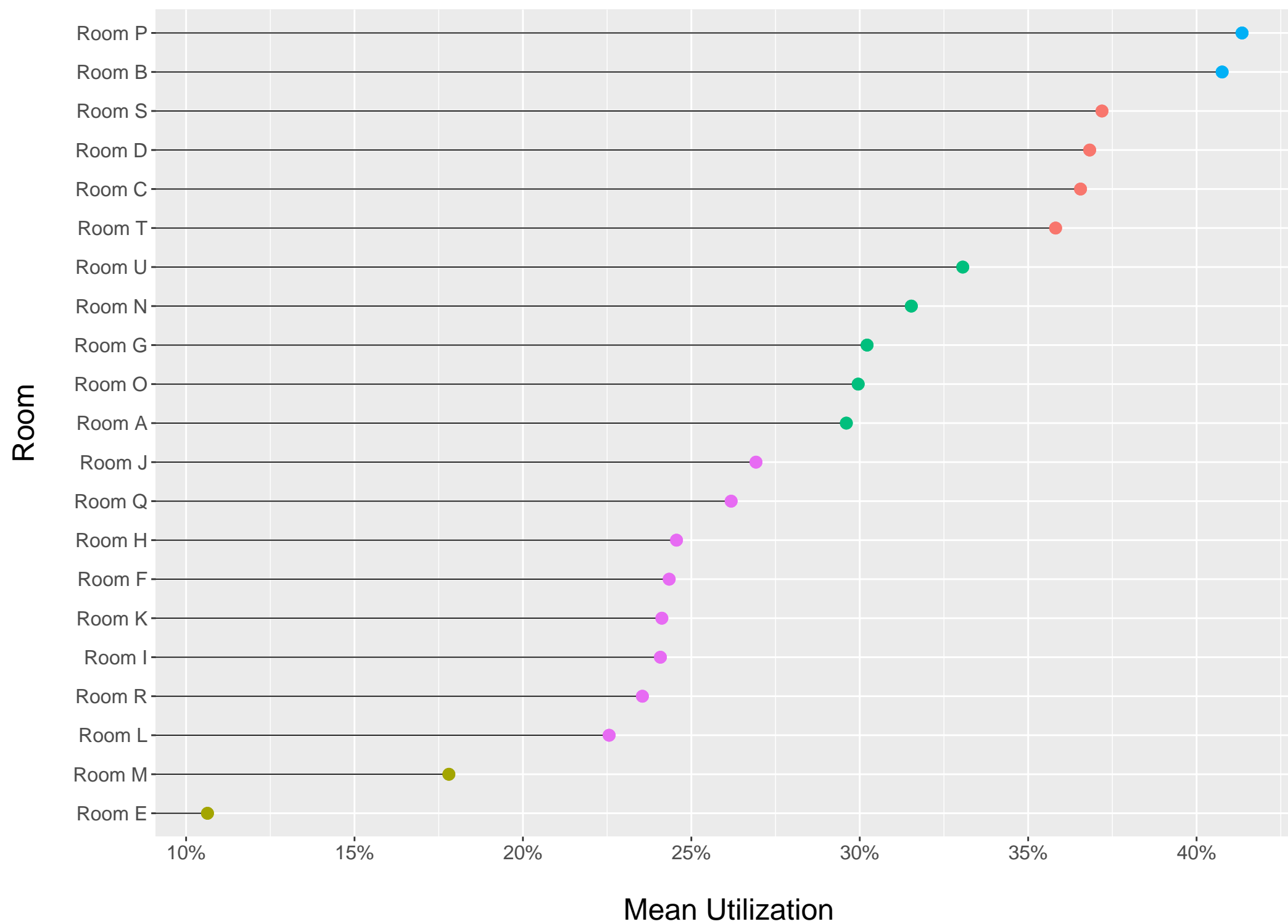


Mean Utilization

Tuesday: 4 – Means Grouping by Mean Utilization

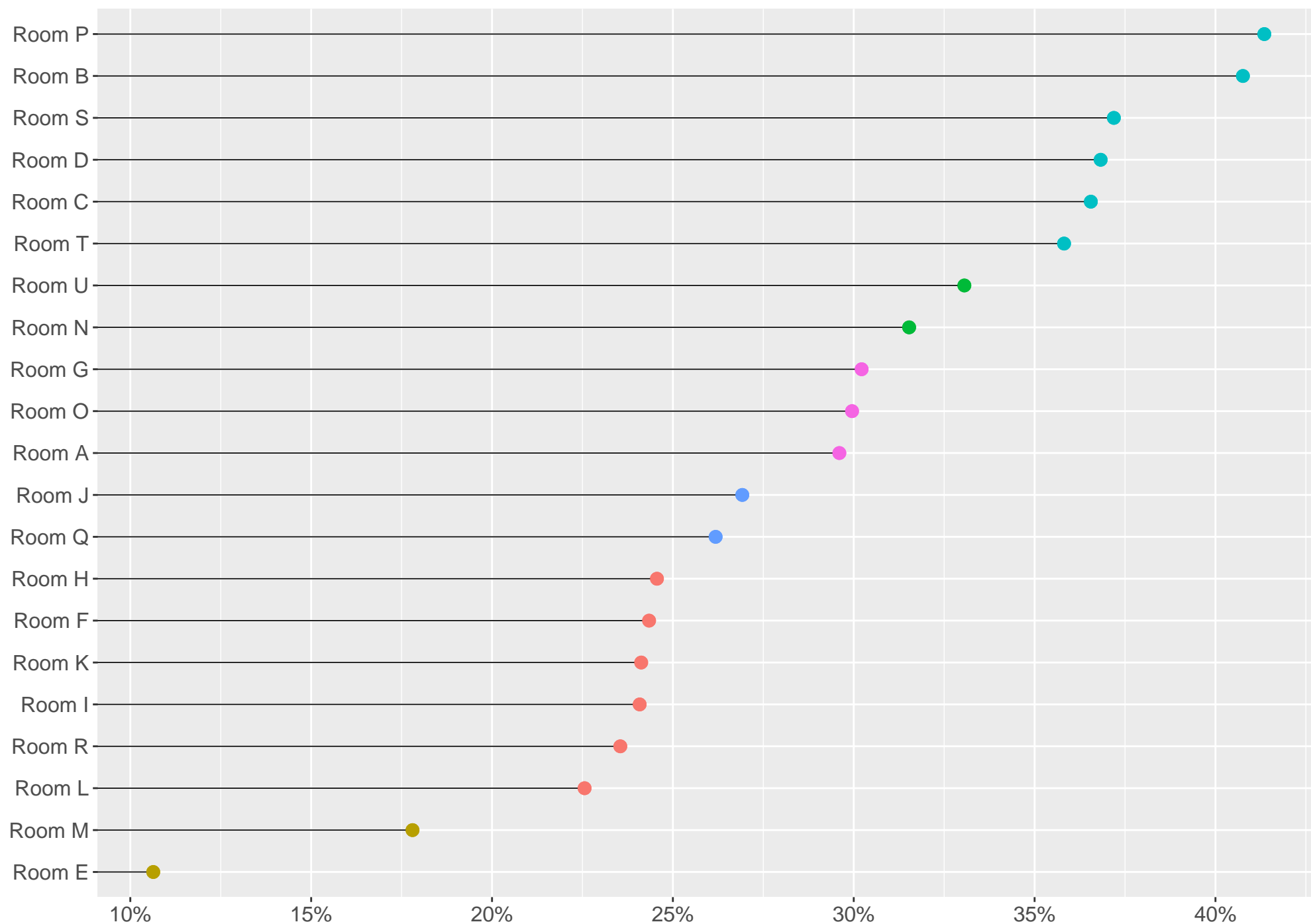


Tuesday: 5 – Means Grouping by Mean Utilization



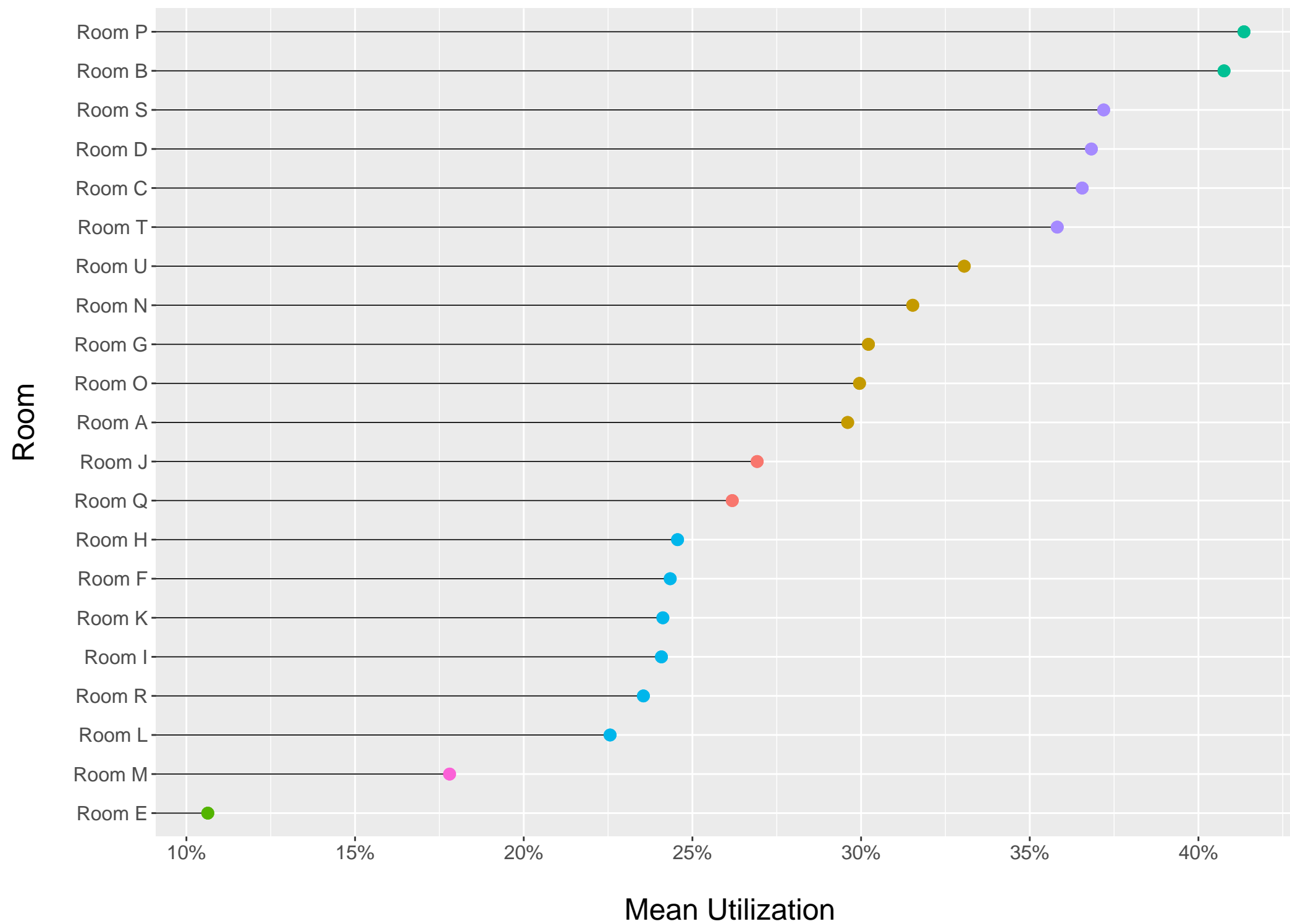
Tuesday: 6 – Means Grouping by Mean Utilization

Room

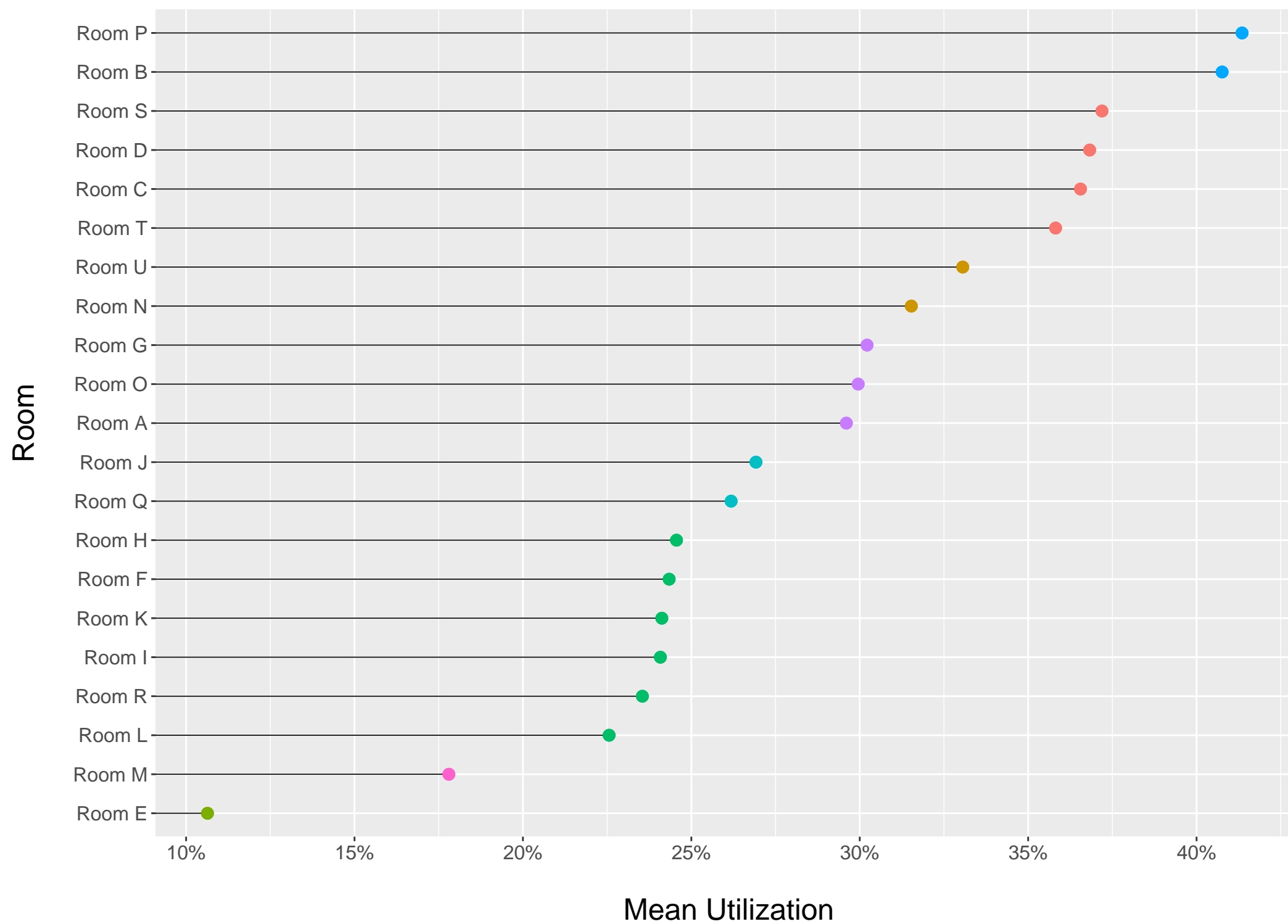


Mean Utilization

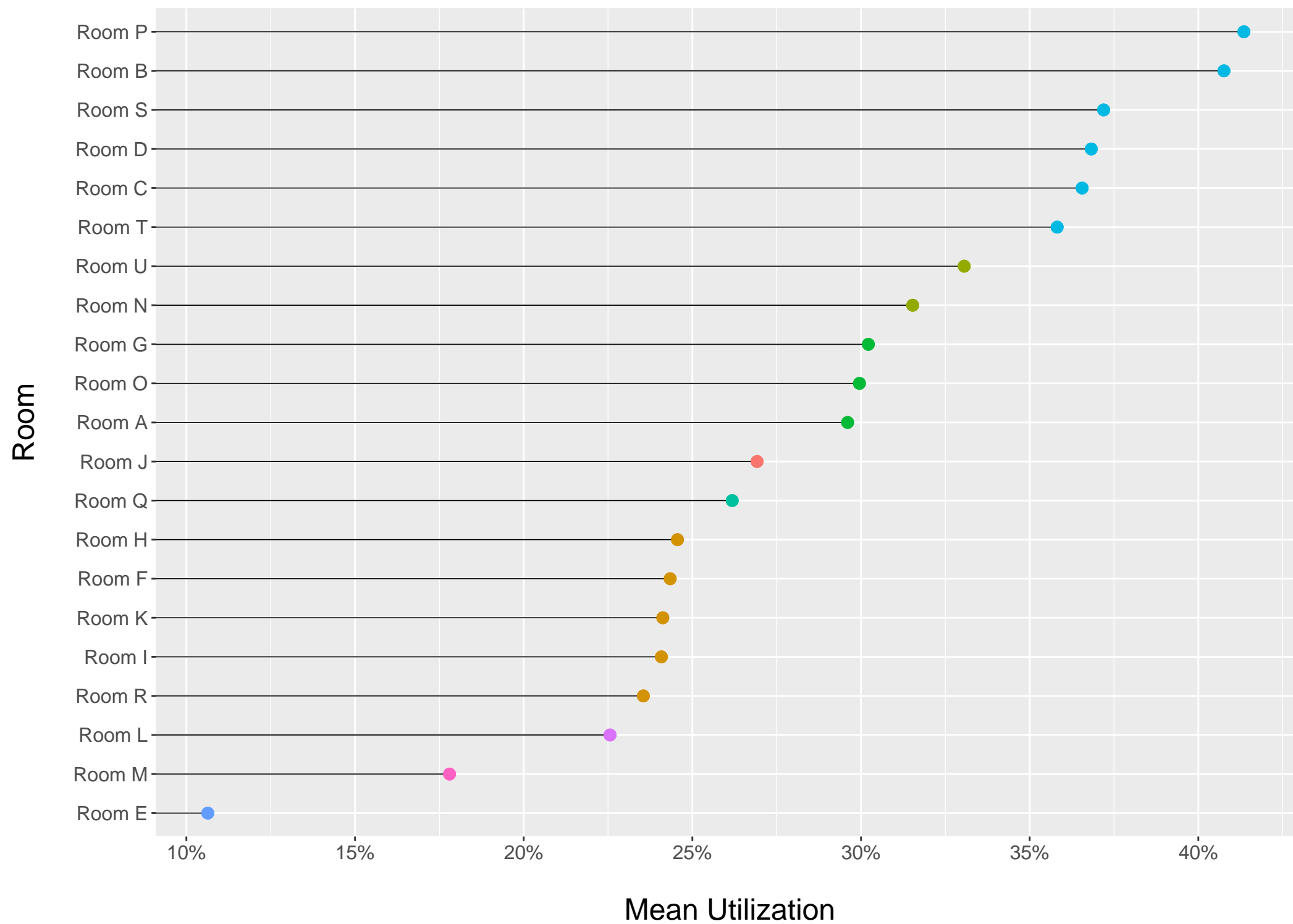
Tuesday: 7 – Means Grouping by Mean Utilization



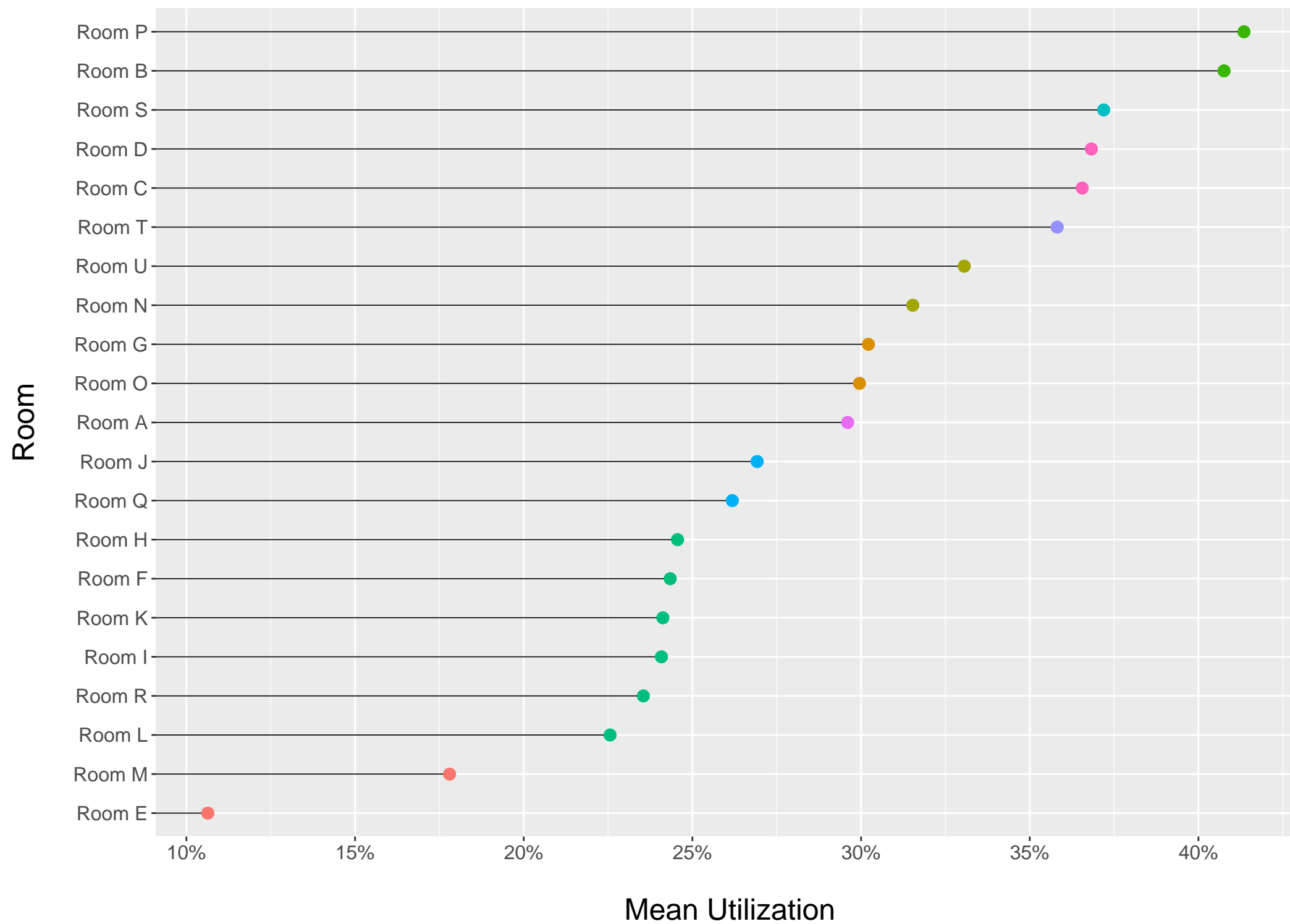
Tuesday: 8 – Means Grouping by Mean Utilization



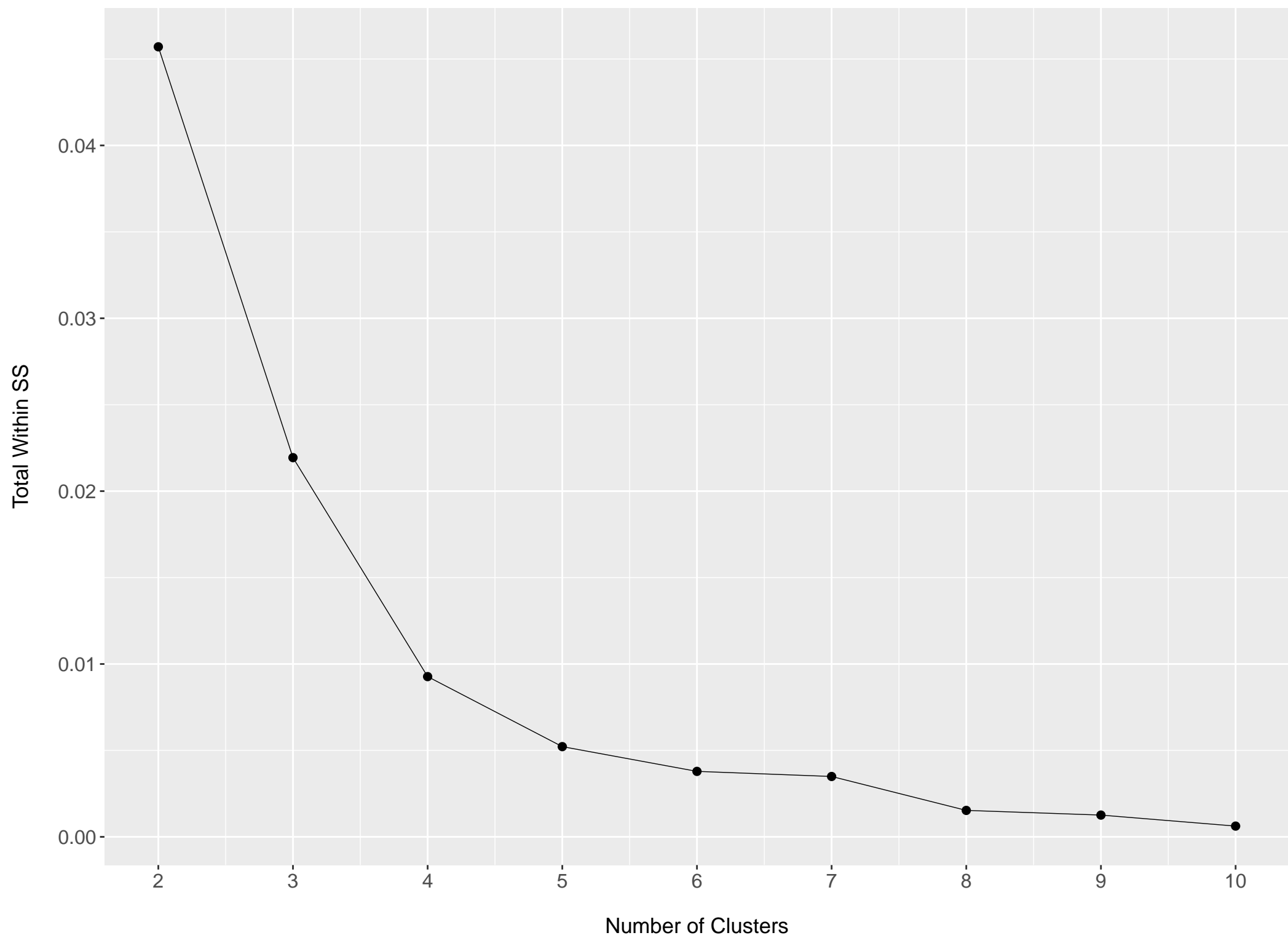
Tuesday: 9 – Means Grouping by Mean Utilization



Tuesday: 10 – Means Grouping by Mean Utilization

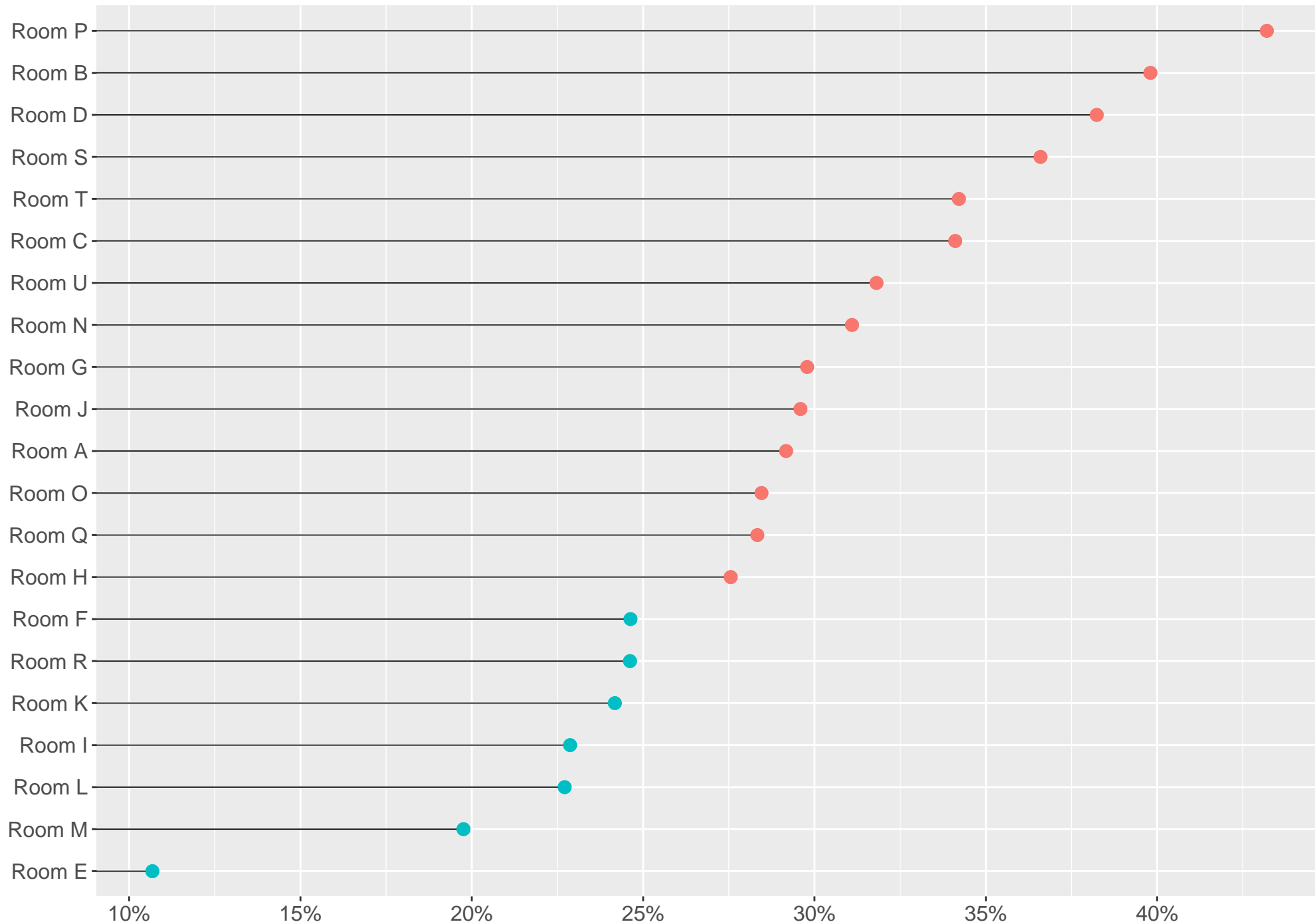


Wednesday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Wednesday: 2 – Means Grouping by Mean Utilization

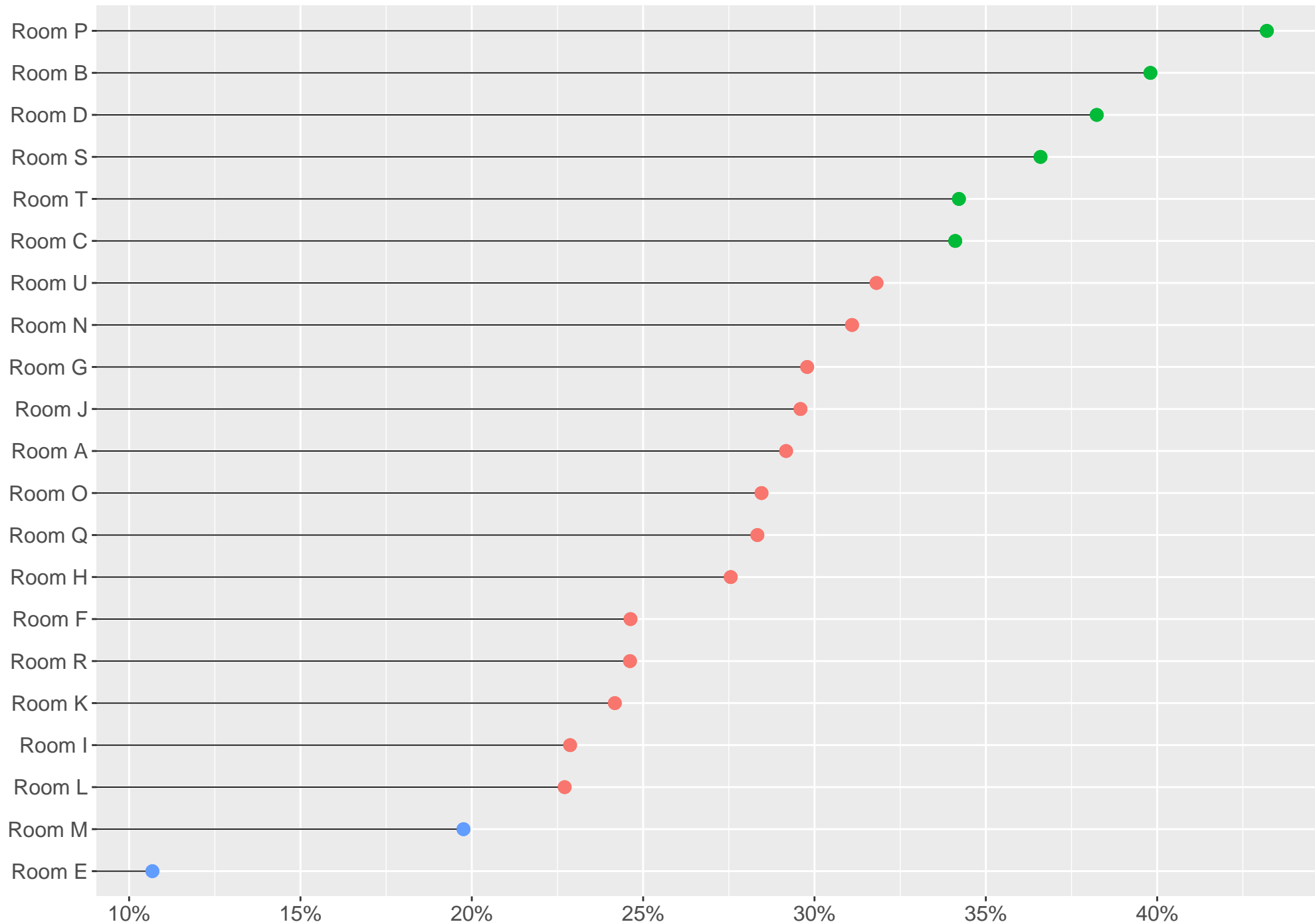
Room



Mean Utilization

Wednesday: 3 – Means Grouping by Mean Utilization

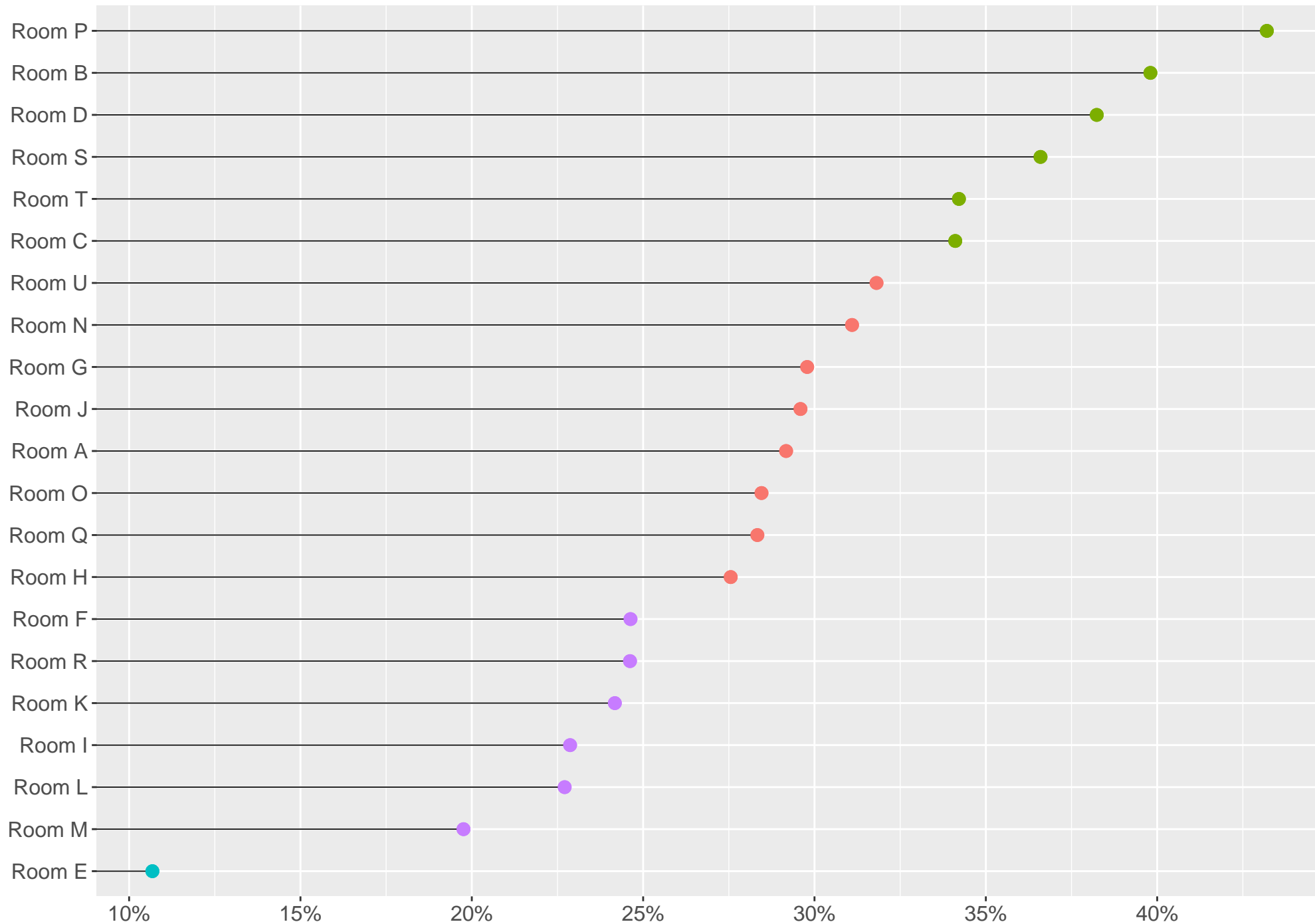
Room



Mean Utilization

Wednesday: 4 – Means Grouping by Mean Utilization

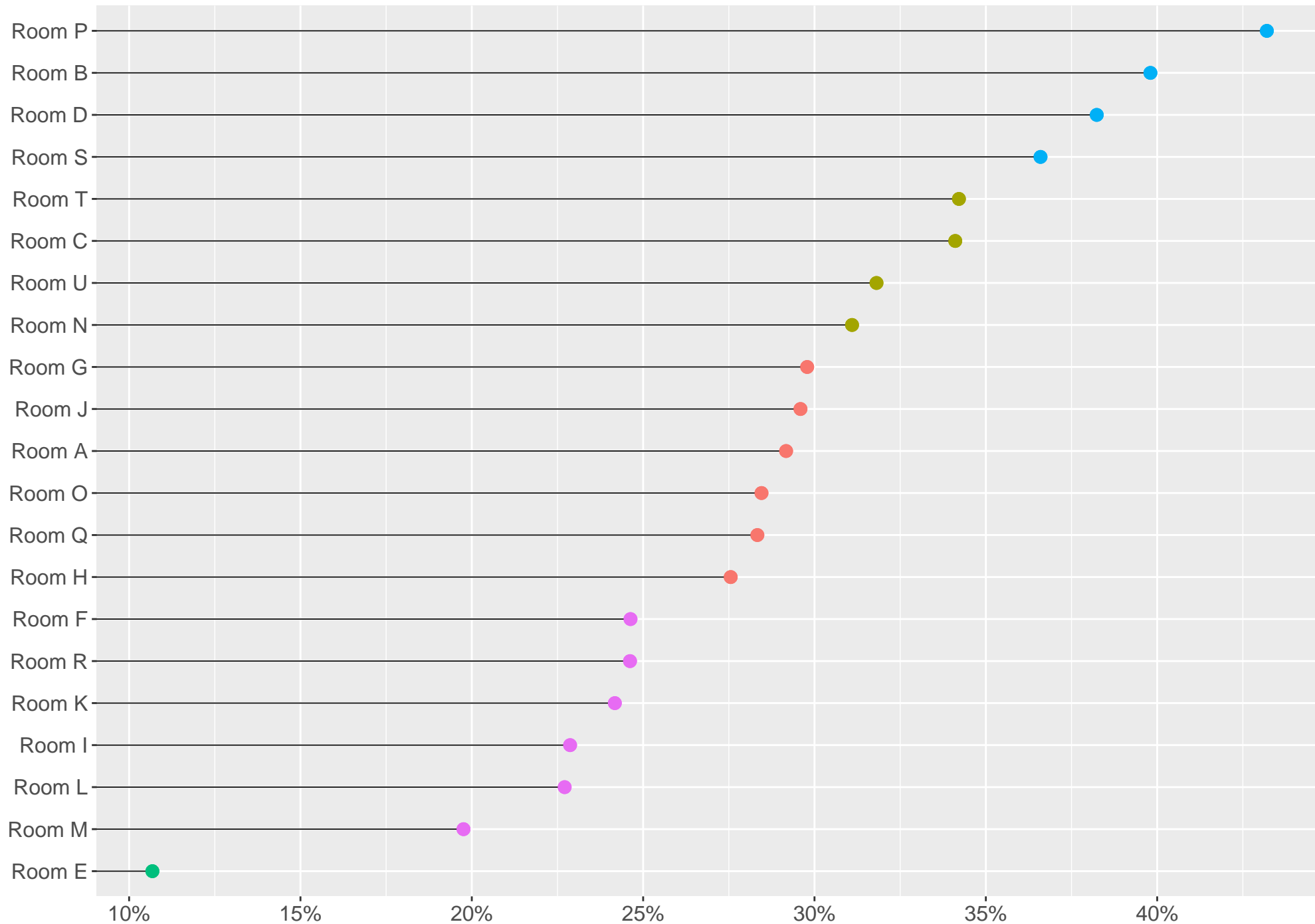
Room



Mean Utilization

Wednesday: 5 – Means Grouping by Mean Utilization

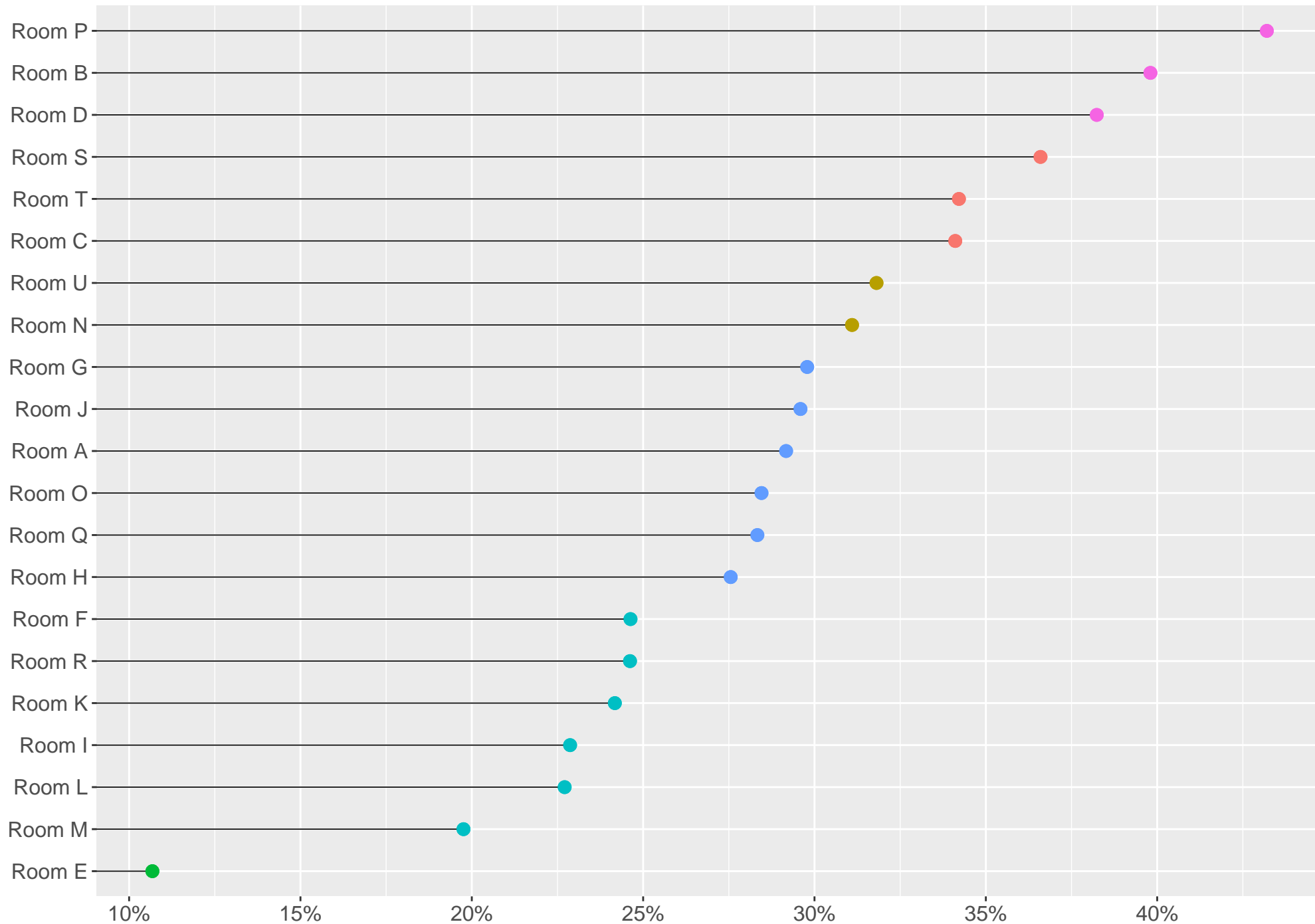
Room



Mean Utilization

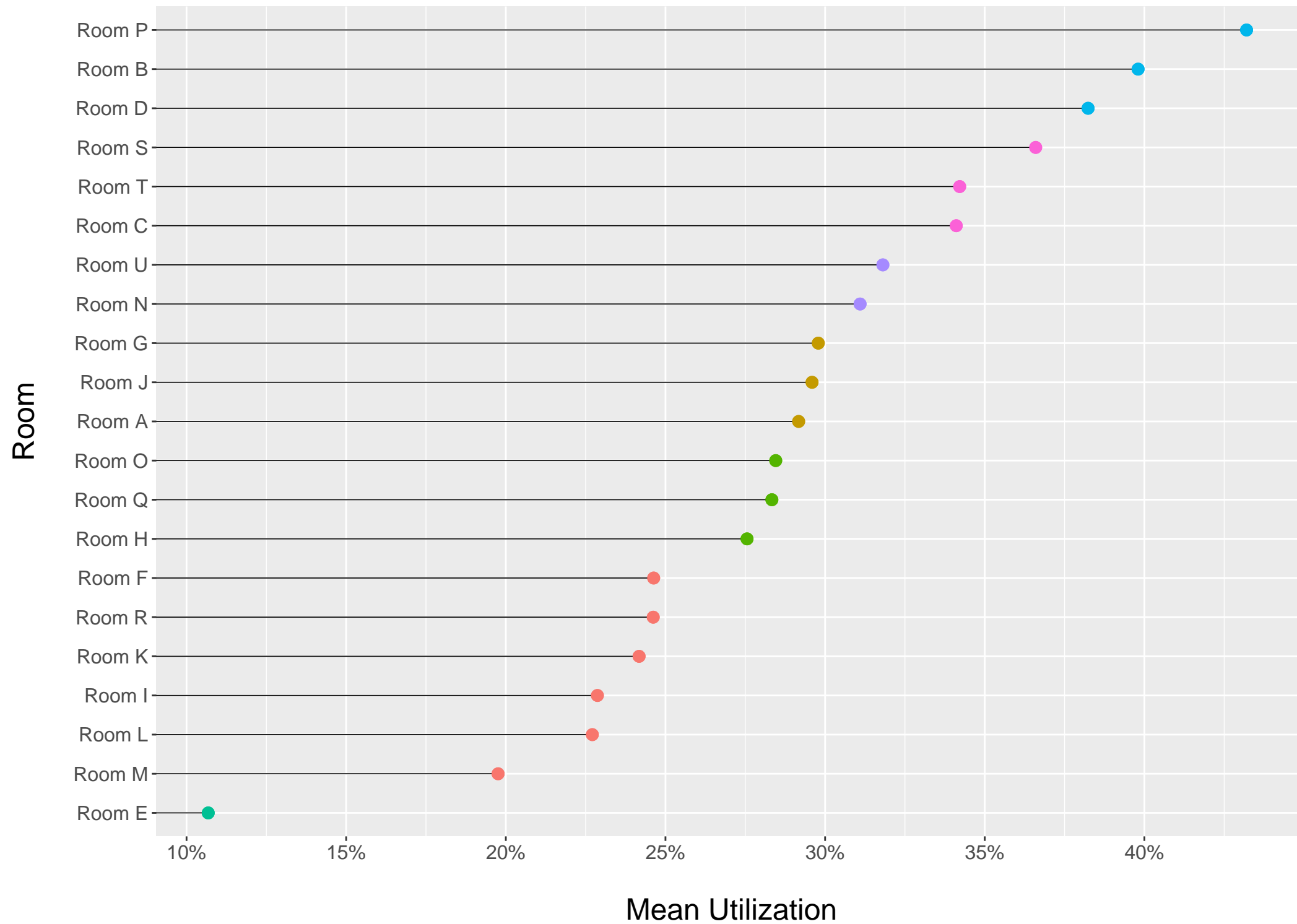
Wednesday: 6 – Means Grouping by Mean Utilization

Room



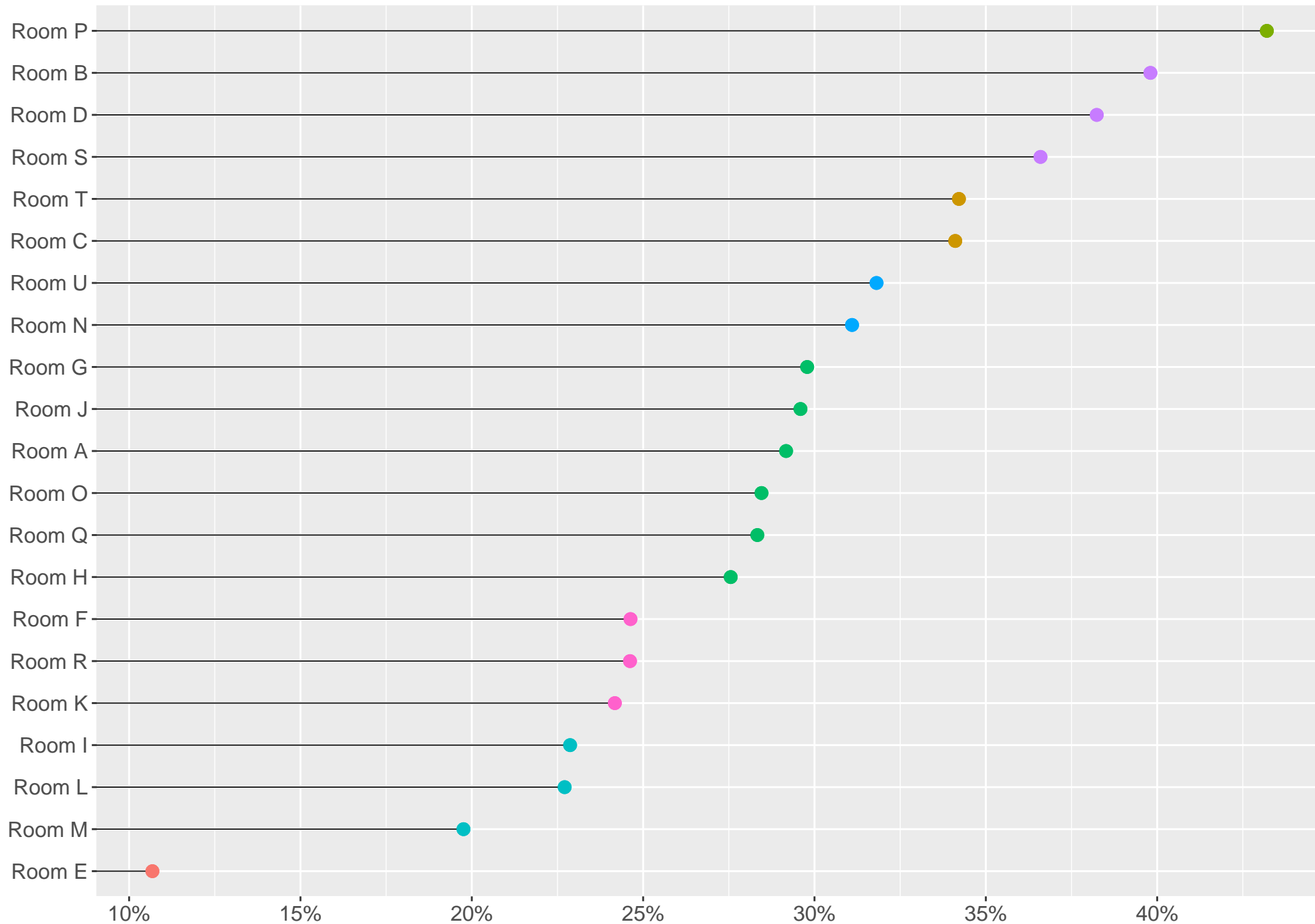
Mean Utilization

Wednesday: 7 – Means Grouping by Mean Utilization



Wednesday: 8 – Means Grouping by Mean Utilization

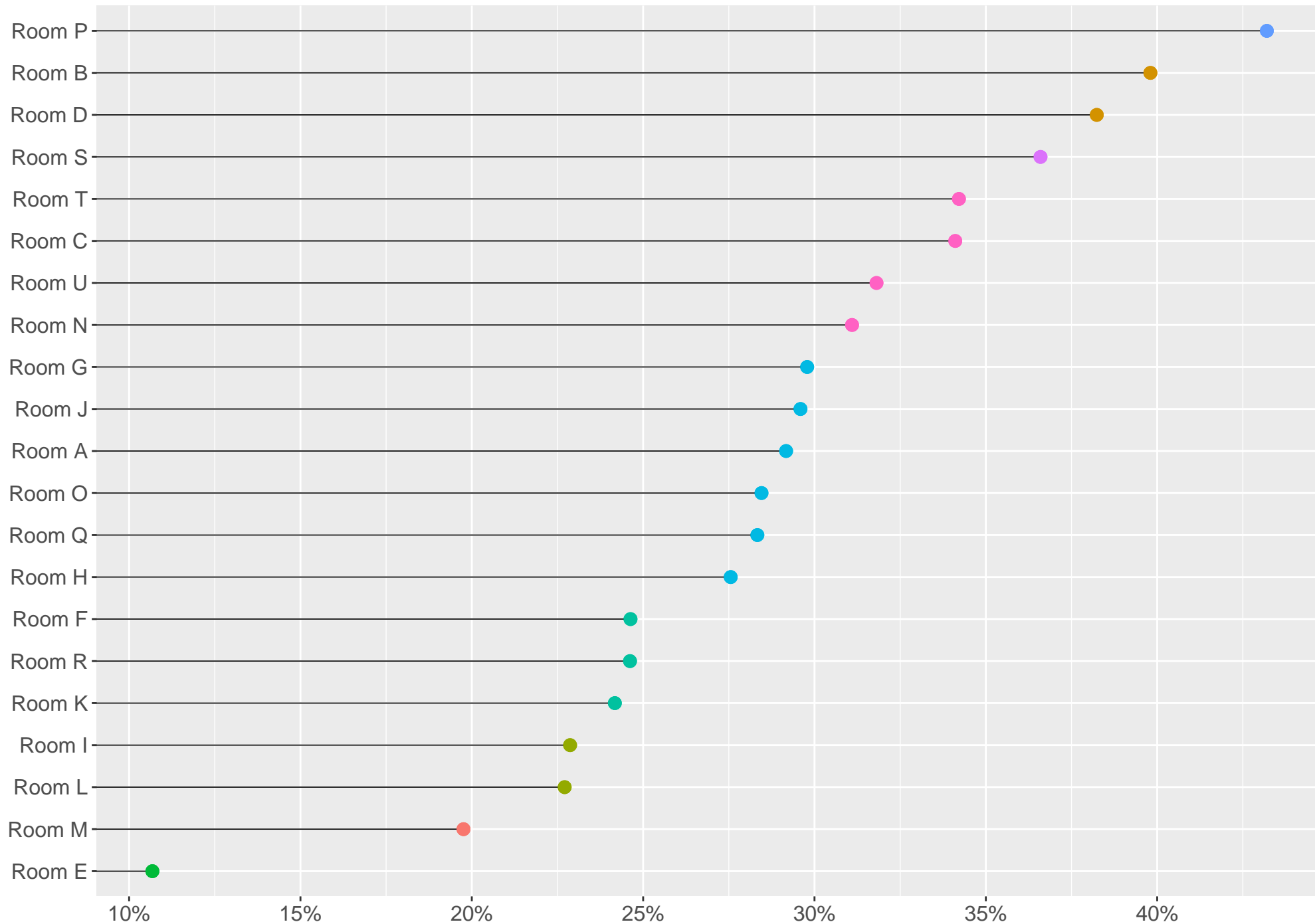
Room



Mean Utilization

Wednesday: 9 – Means Grouping by Mean Utilization

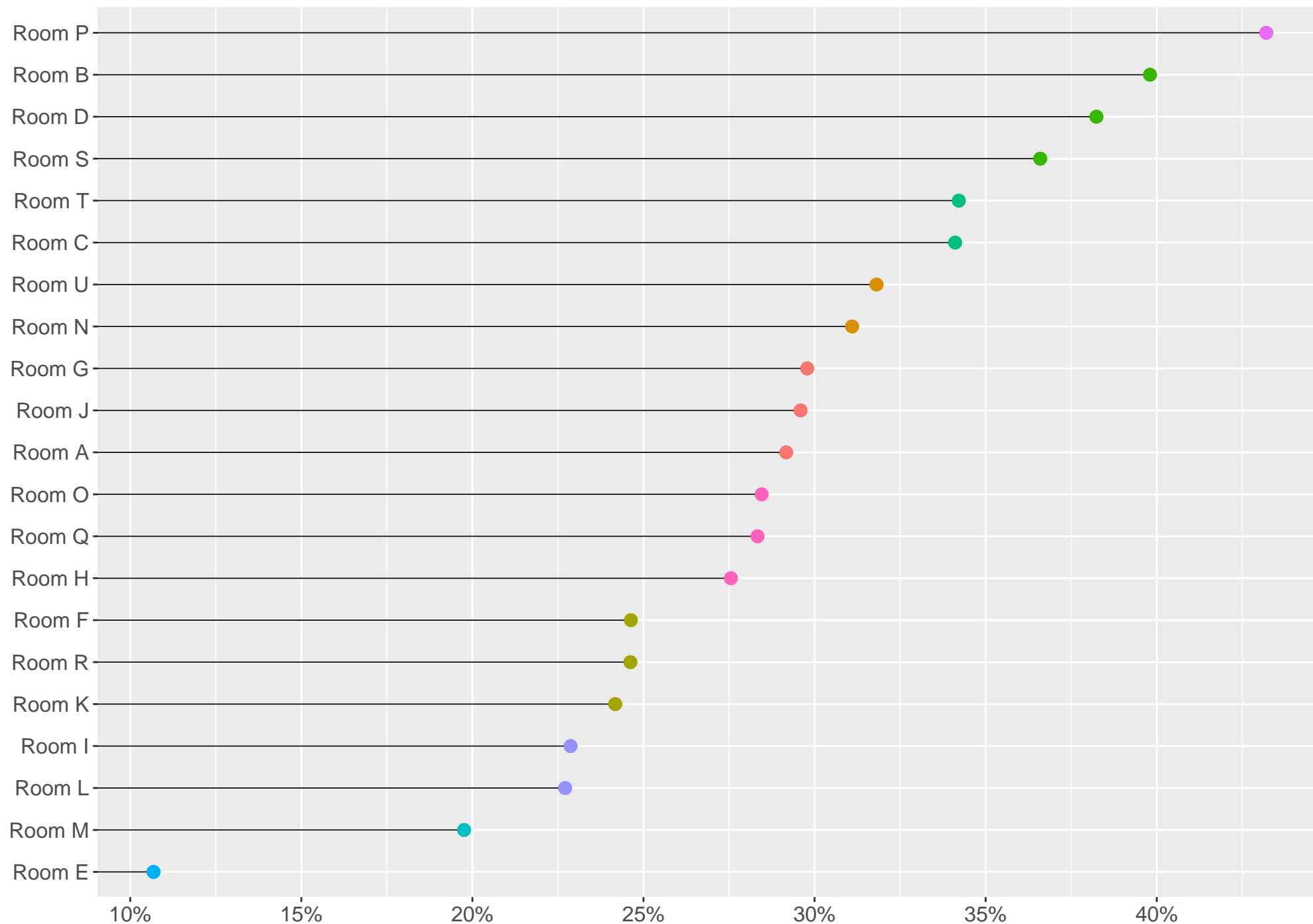
Room



Mean Utilization

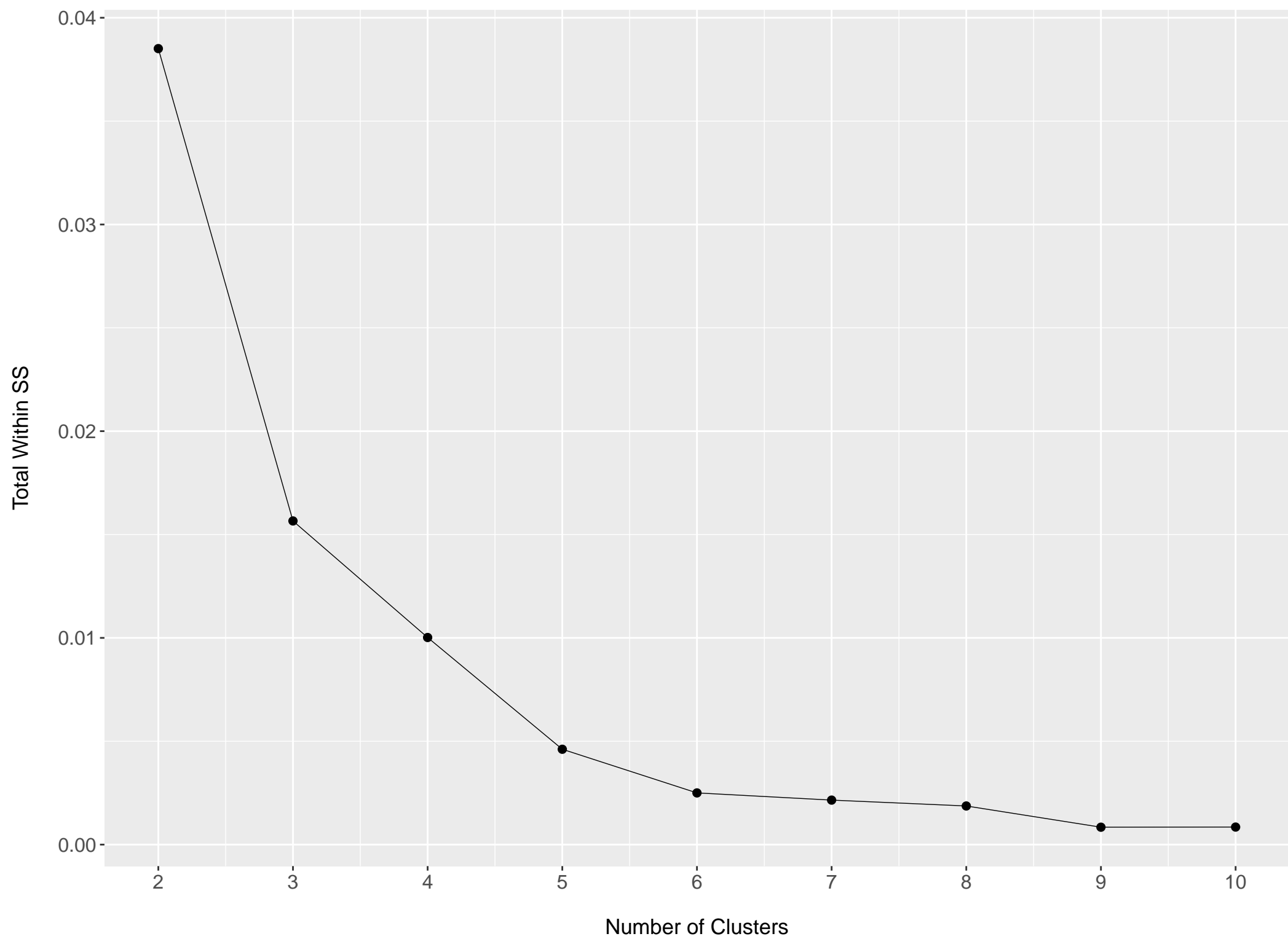
Wednesday: 10 – Means Grouping by Mean Utilization

Room



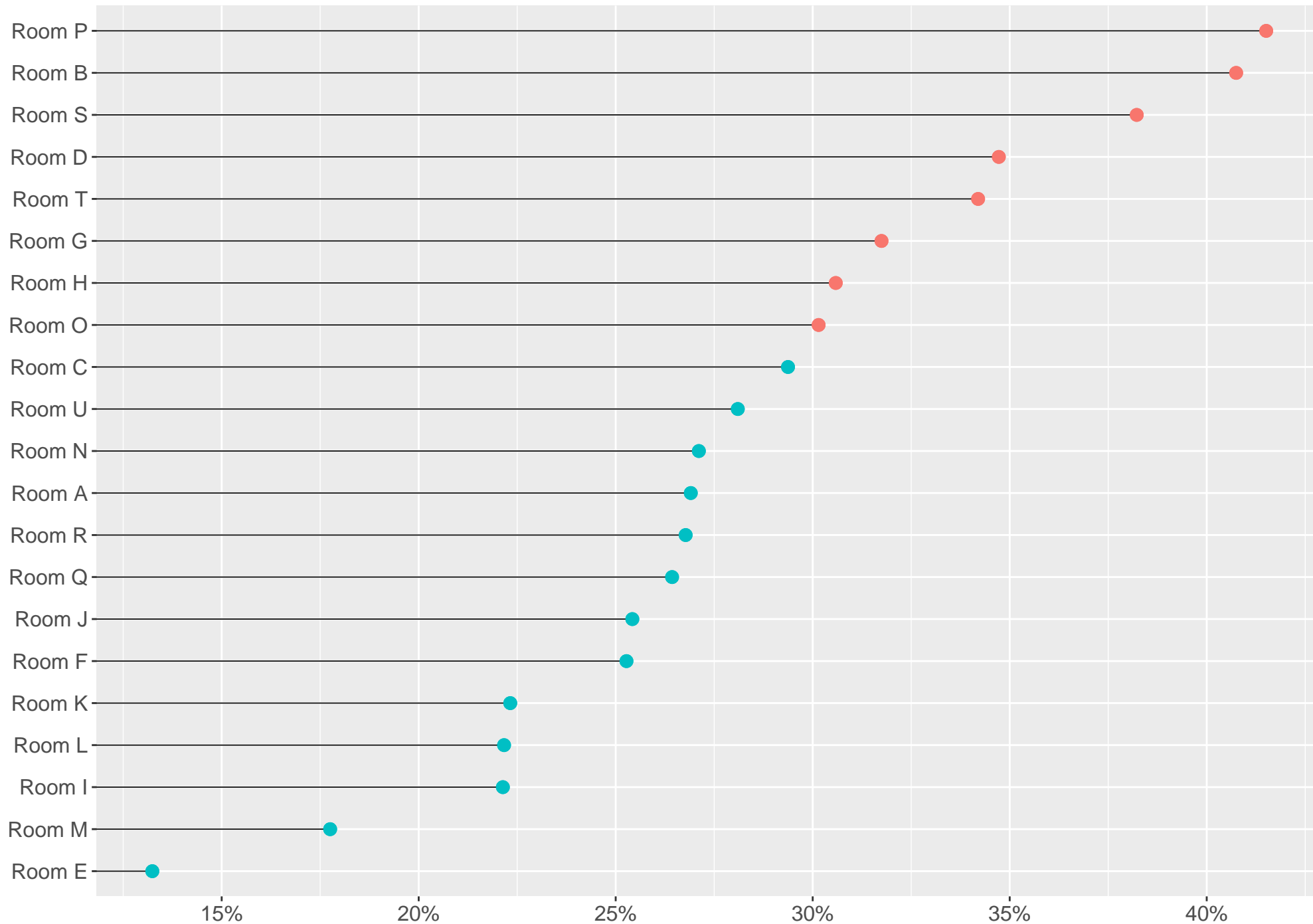
Mean Utilization

Thursday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Thursday: 2 – Means Grouping by Mean Utilization

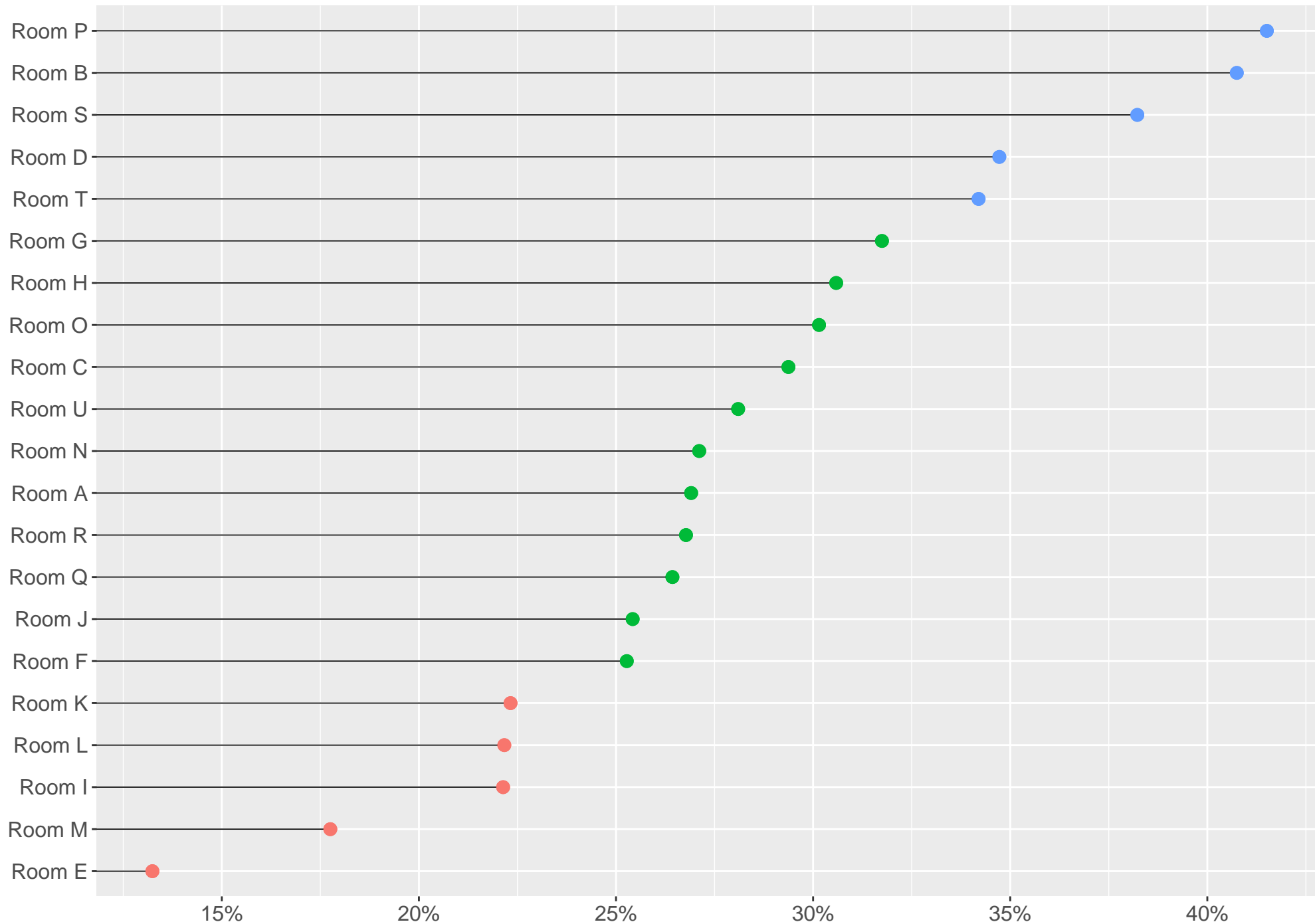
Room



Mean Utilization

Thursday: 3 – Means Grouping by Mean Utilization

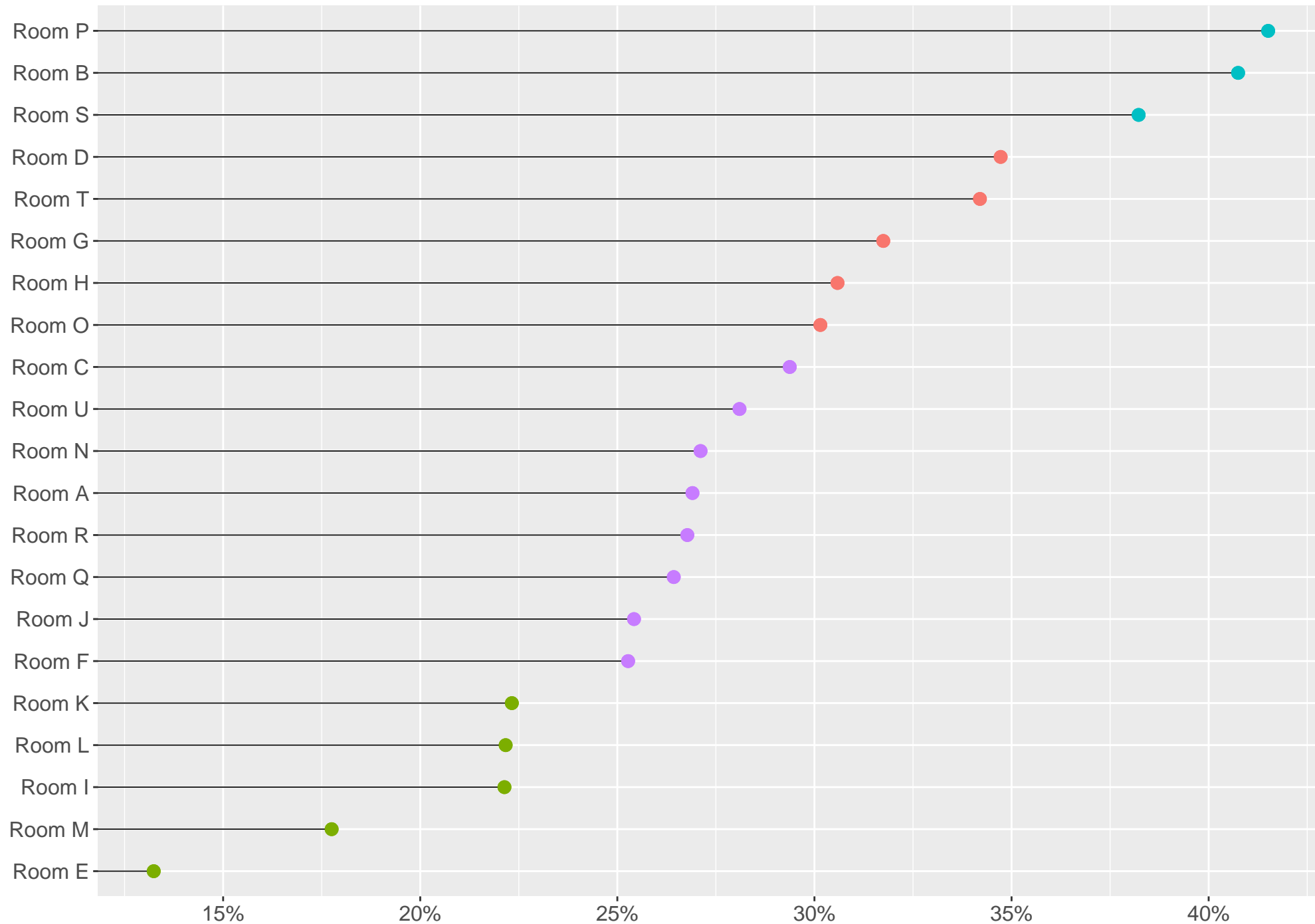
Room



Mean Utilization

Thursday: 4 – Means Grouping by Mean Utilization

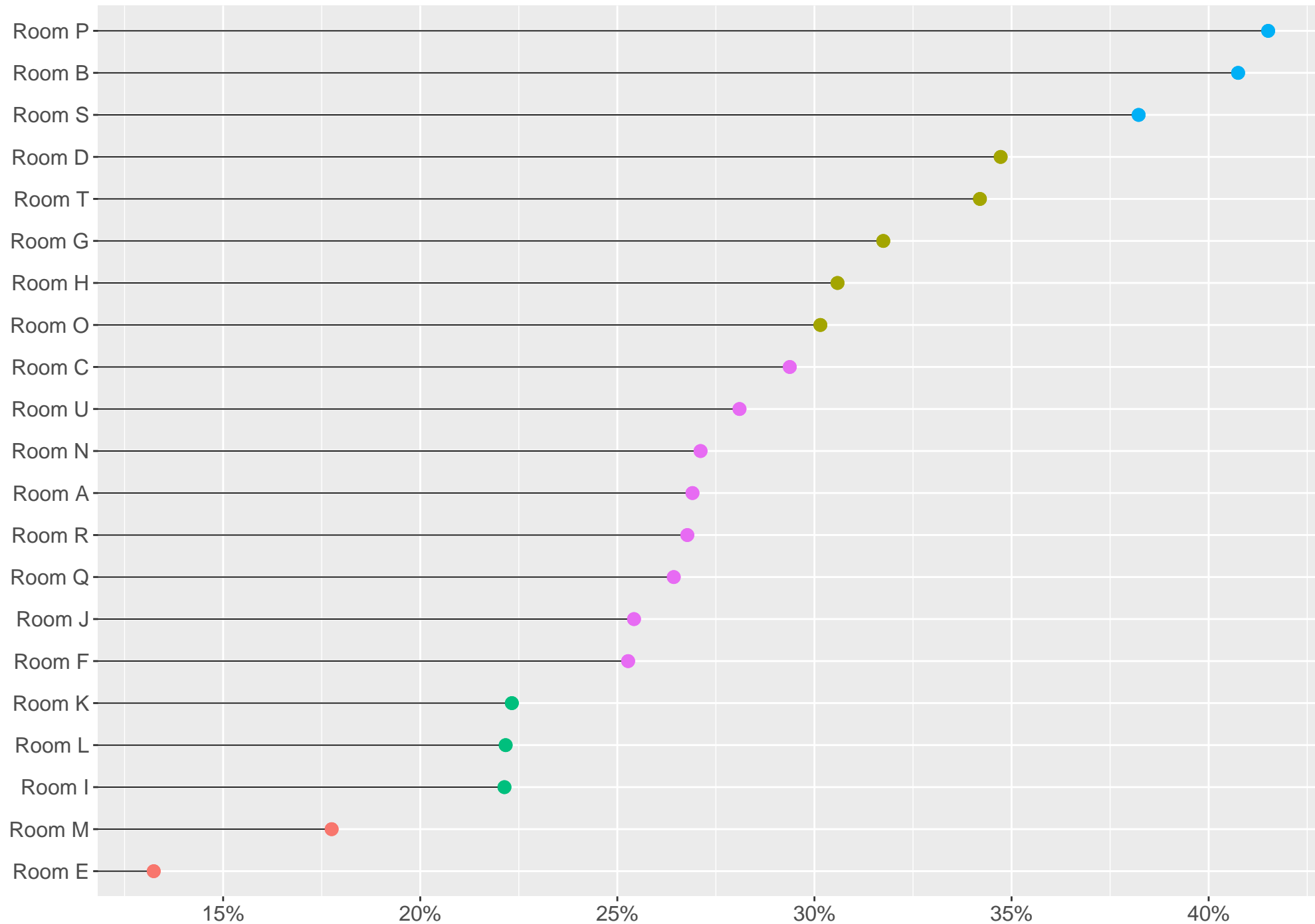
Room



Mean Utilization

Thursday: 5 – Means Grouping by Mean Utilization

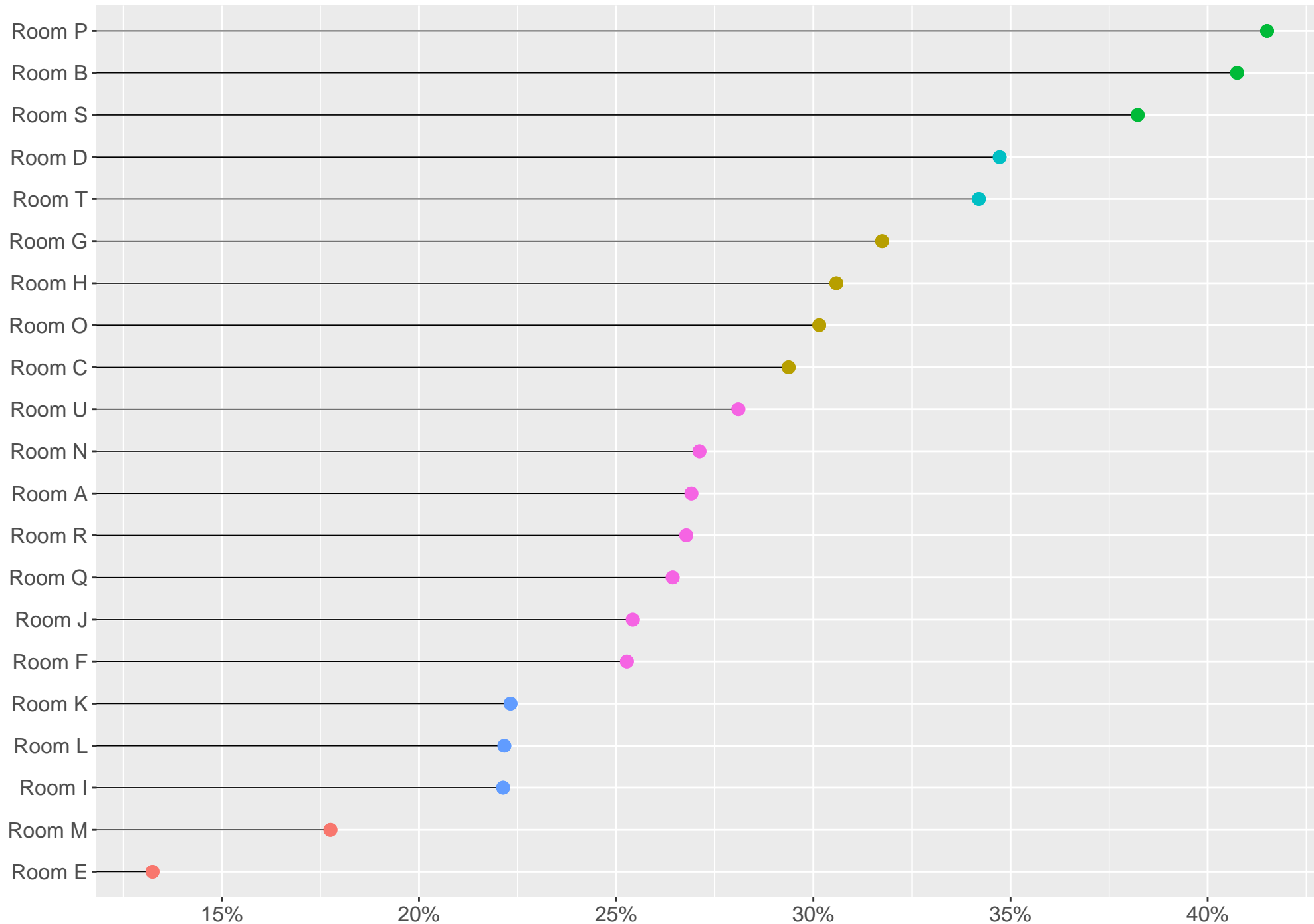
Room



Mean Utilization

Thursday: 6 – Means Grouping by Mean Utilization

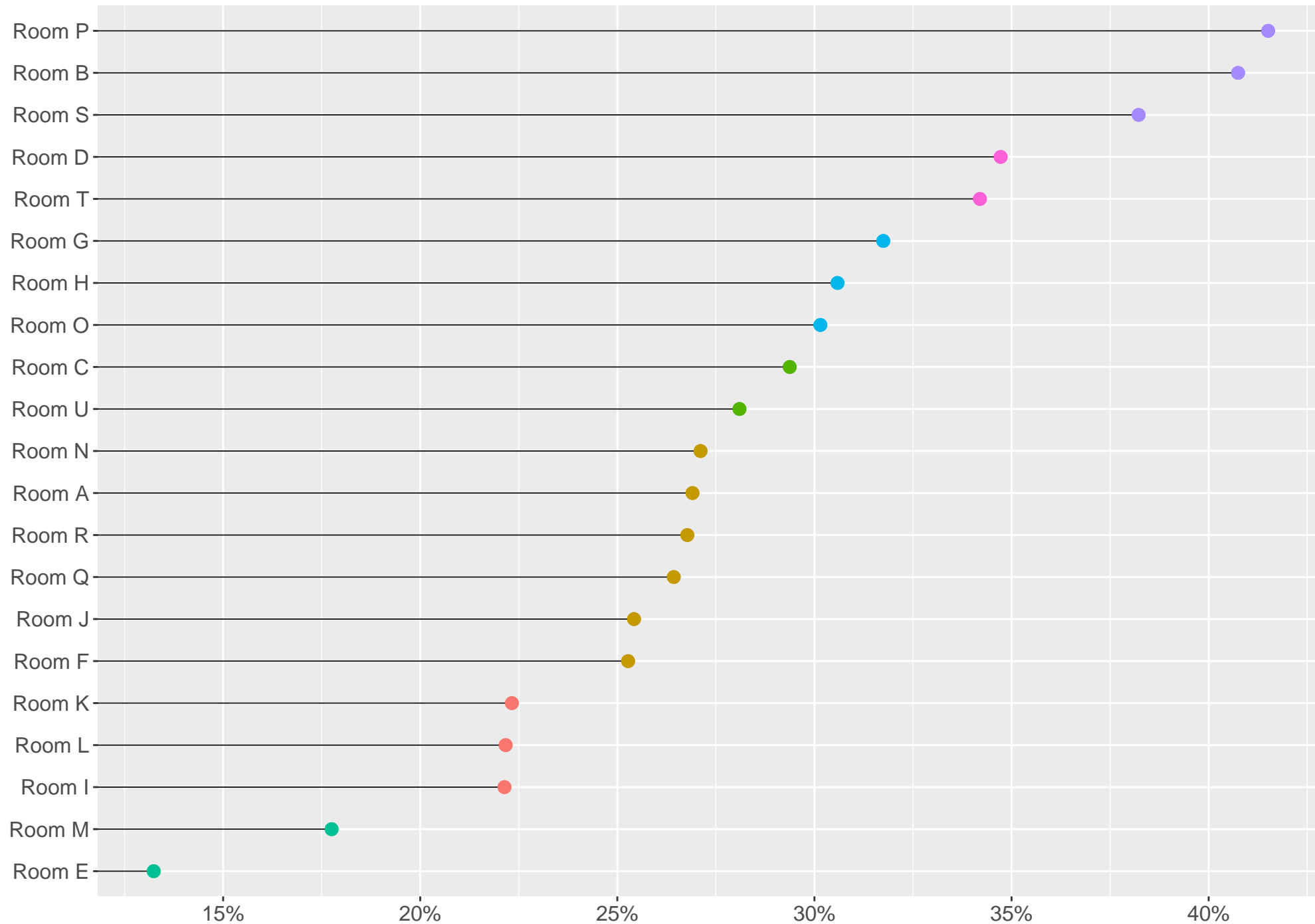
Room



Mean Utilization

Thursday: 7 – Means Grouping by Mean Utilization

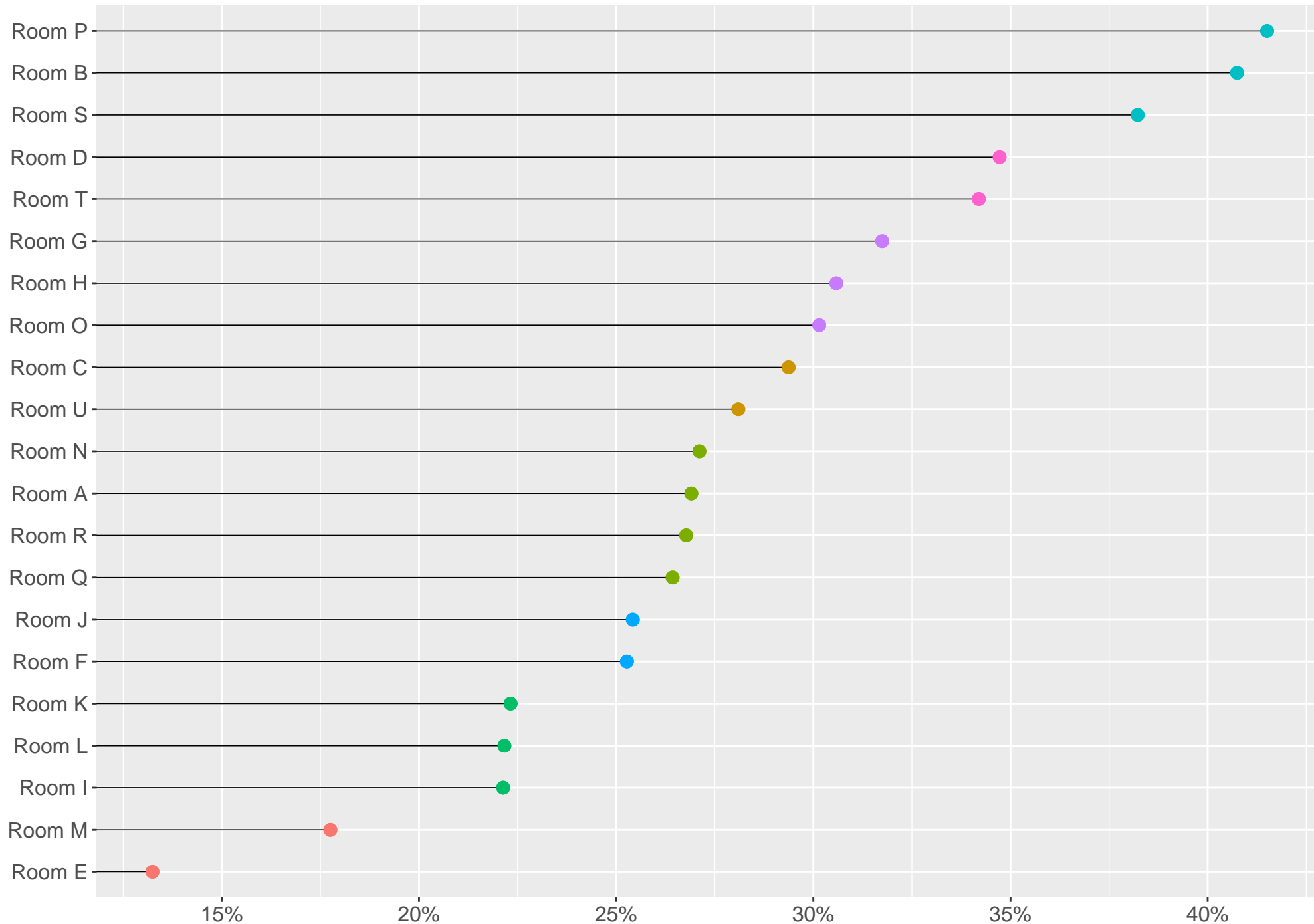
Room



Mean Utilization

Thursday: 8 – Means Grouping by Mean Utilization

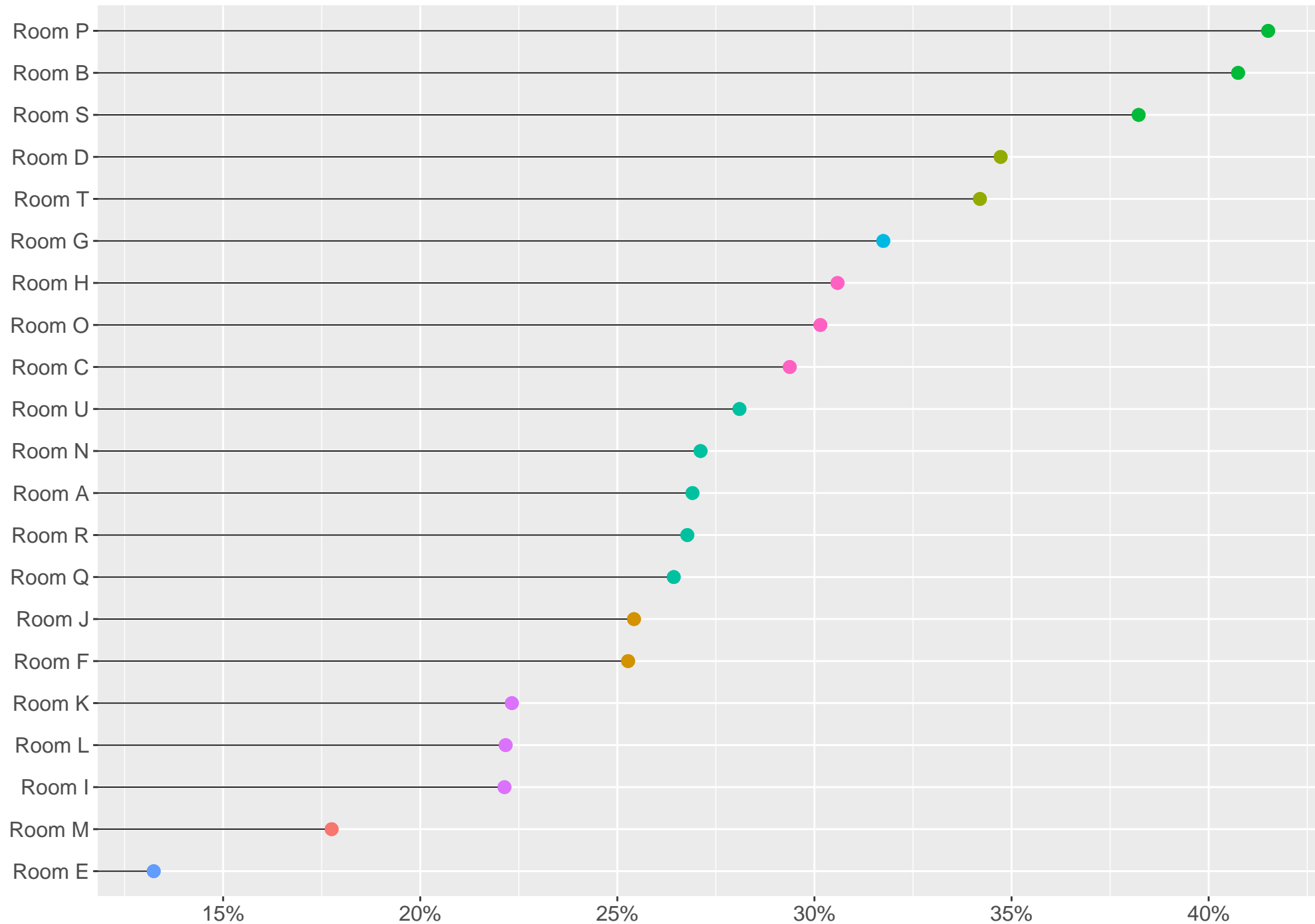
Room



Mean Utilization

Thursday: 9 – Means Grouping by Mean Utilization

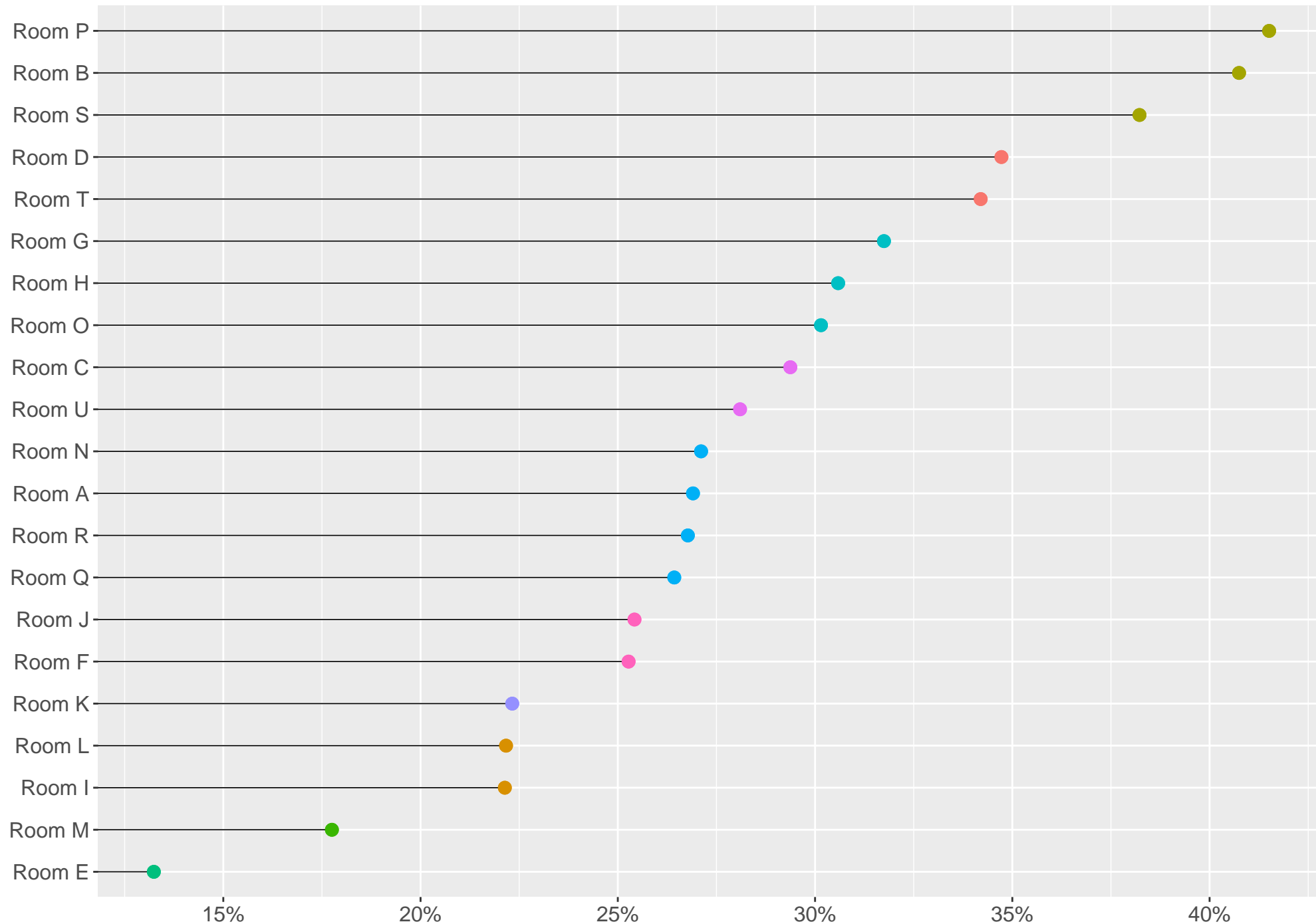
Room



Mean Utilization

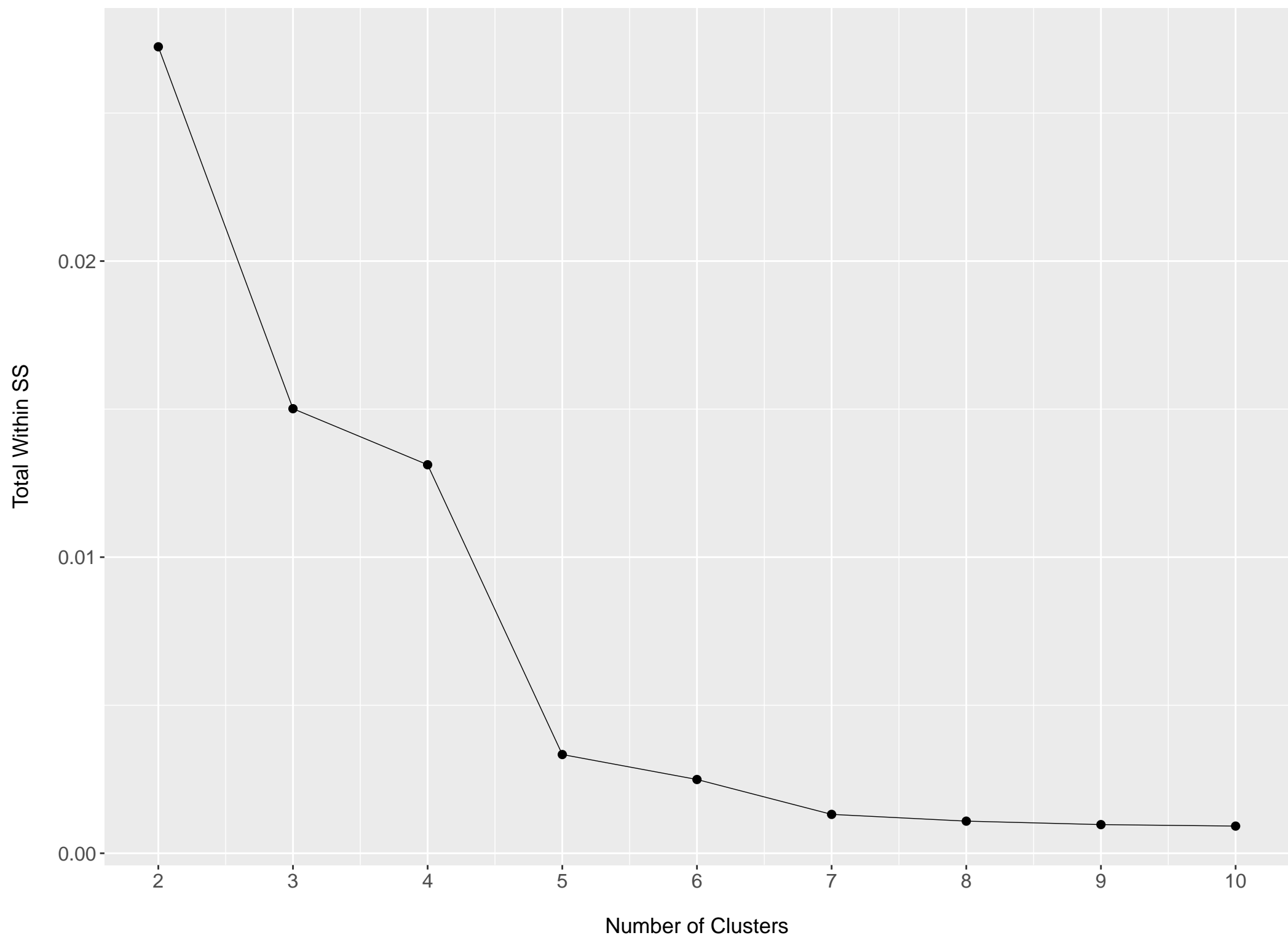
Thursday: 10 – Means Grouping by Mean Utilization

Room



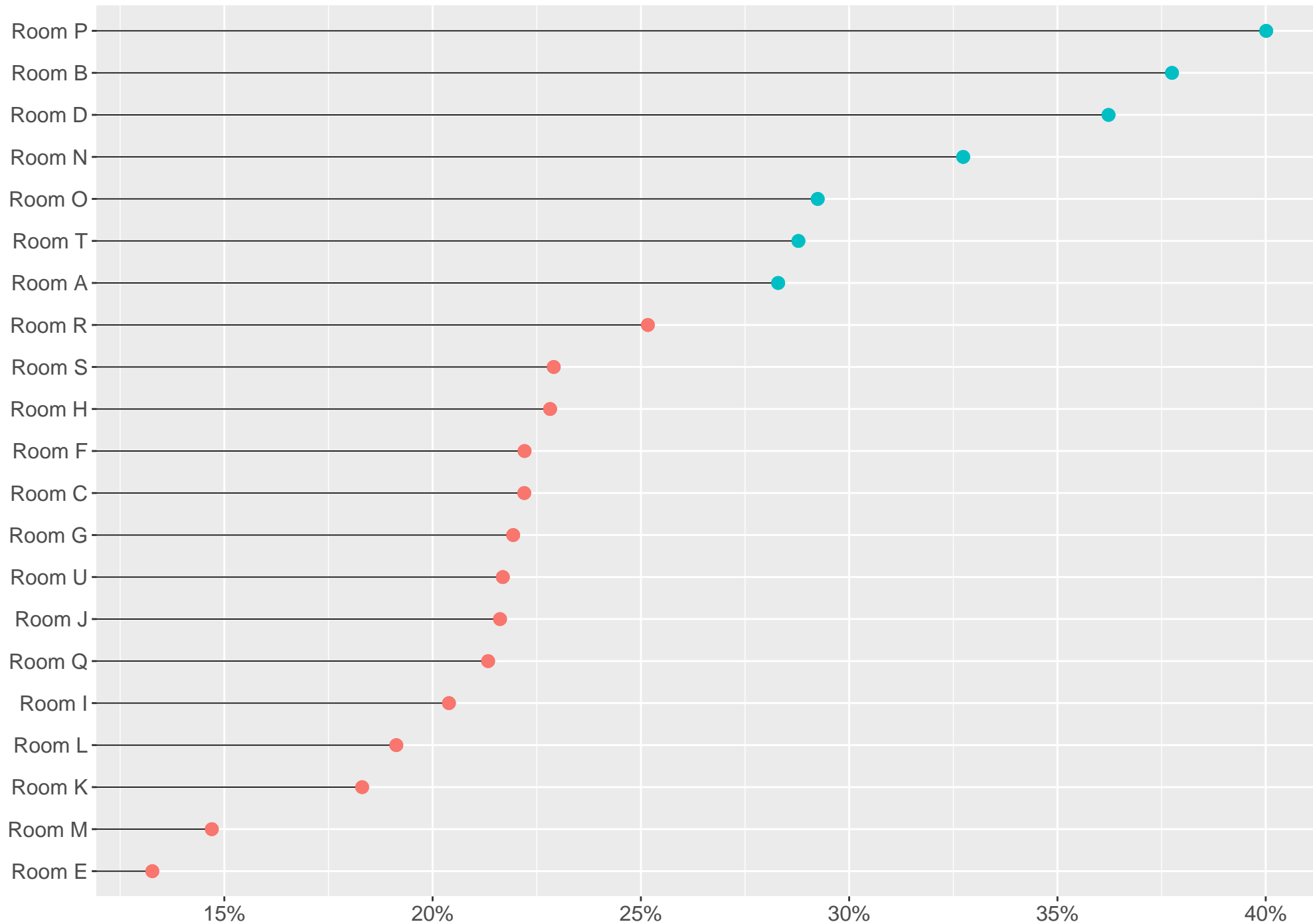
Mean Utilization

Friday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Friday: 2 – Means Grouping by Mean Utilization

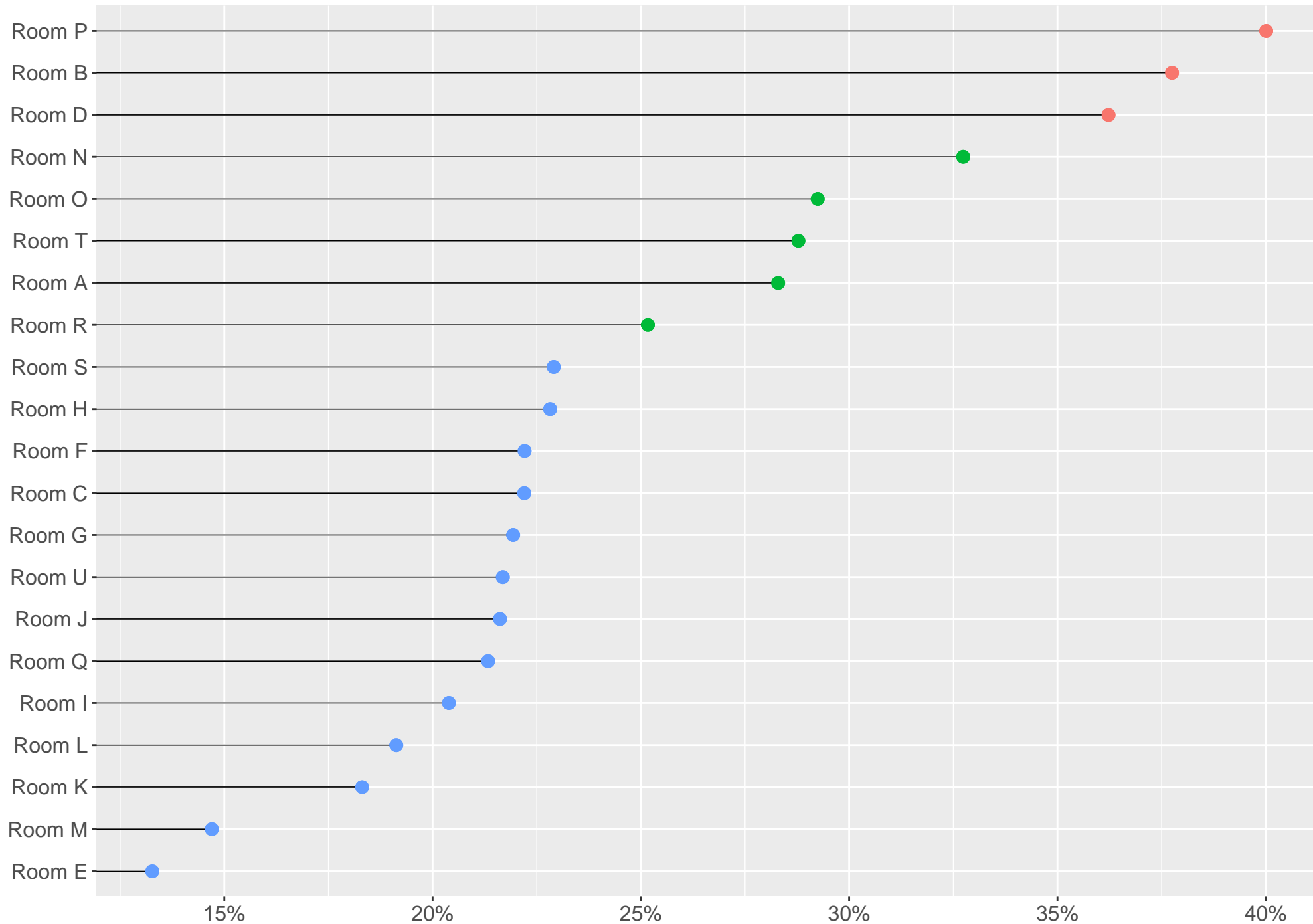
Room



Mean Utilization

Friday: 3 – Means Grouping by Mean Utilization

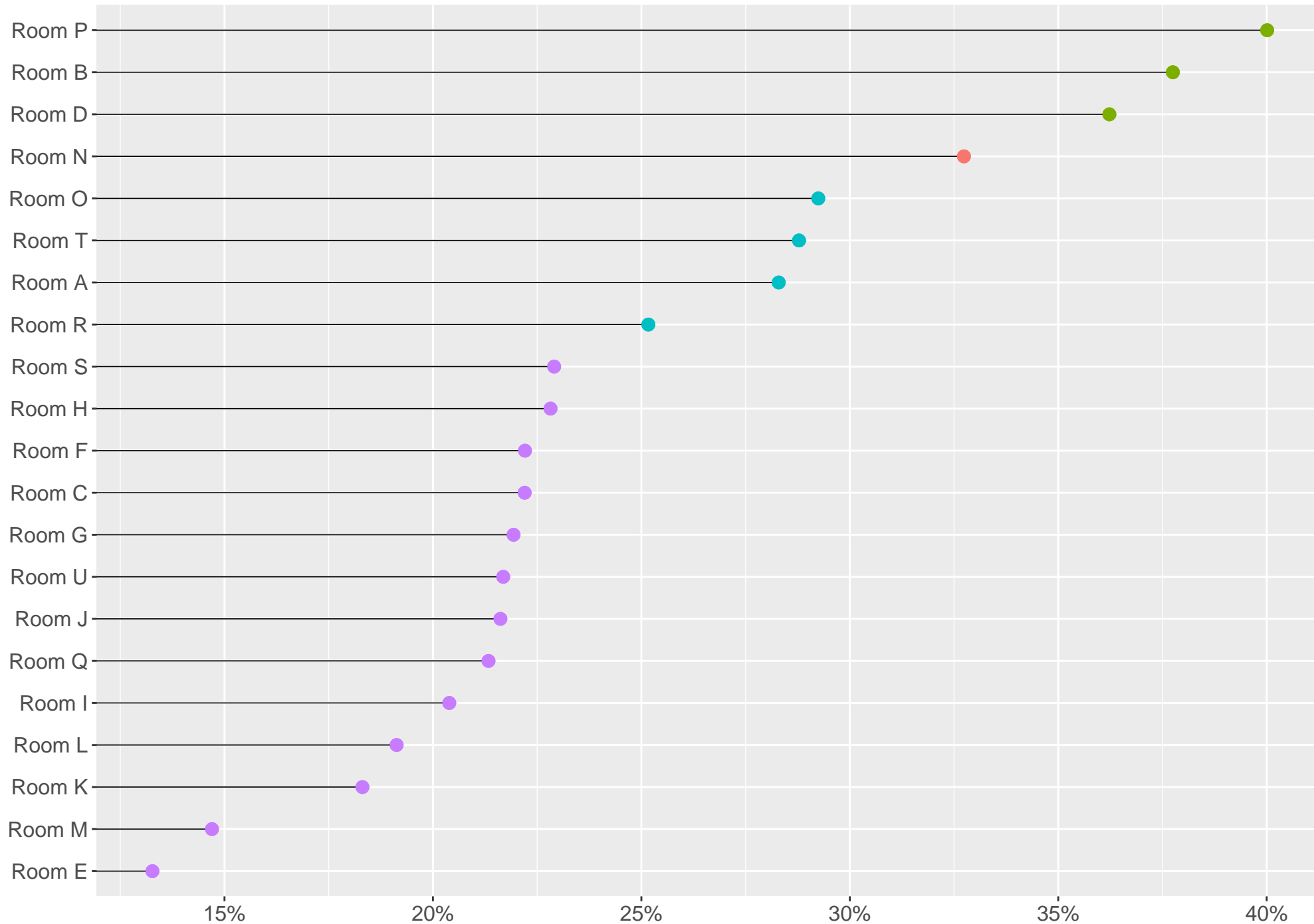
Room



Mean Utilization

Friday: 4 – Means Grouping by Mean Utilization

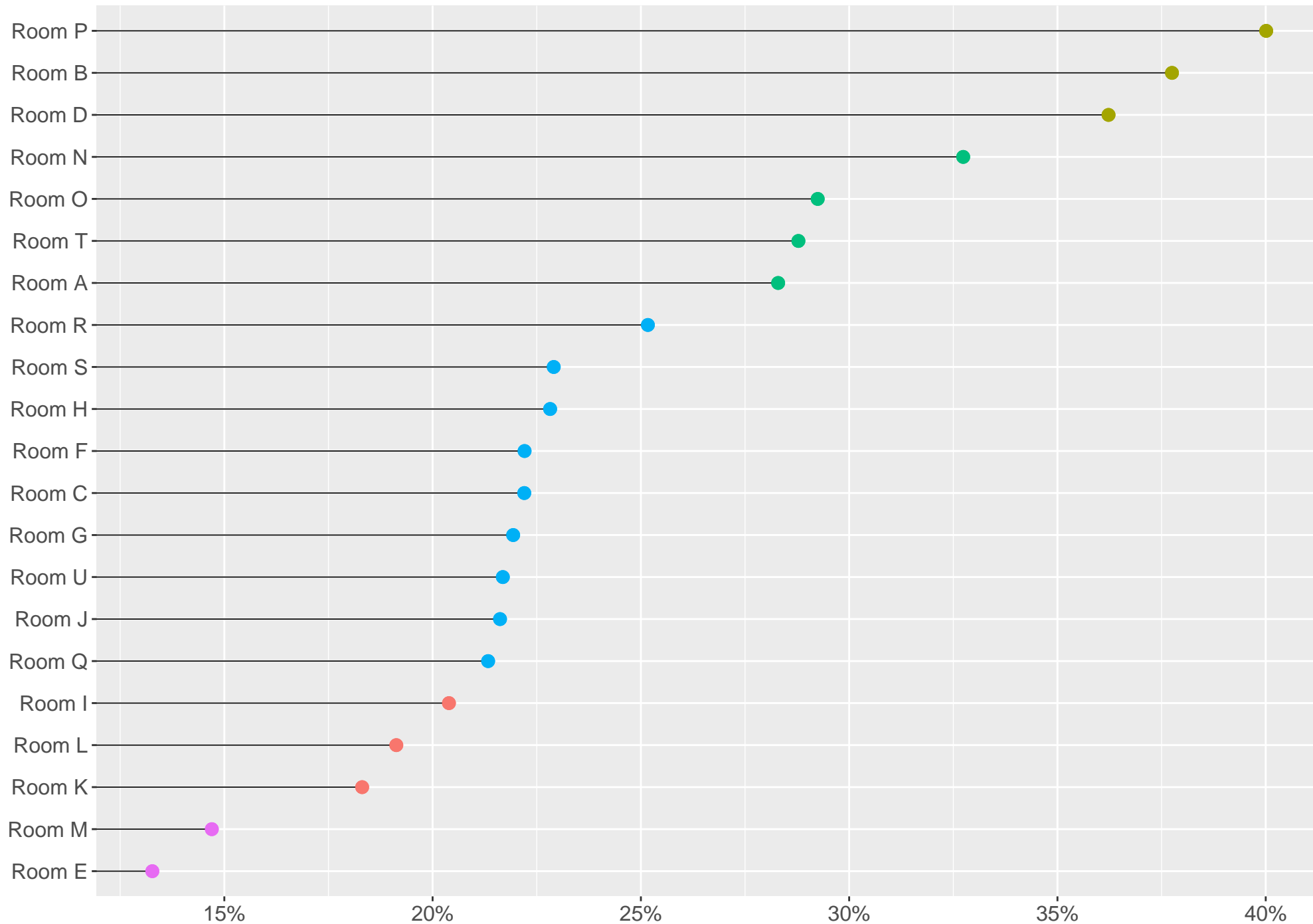
Room



Mean Utilization

Friday: 5 – Means Grouping by Mean Utilization

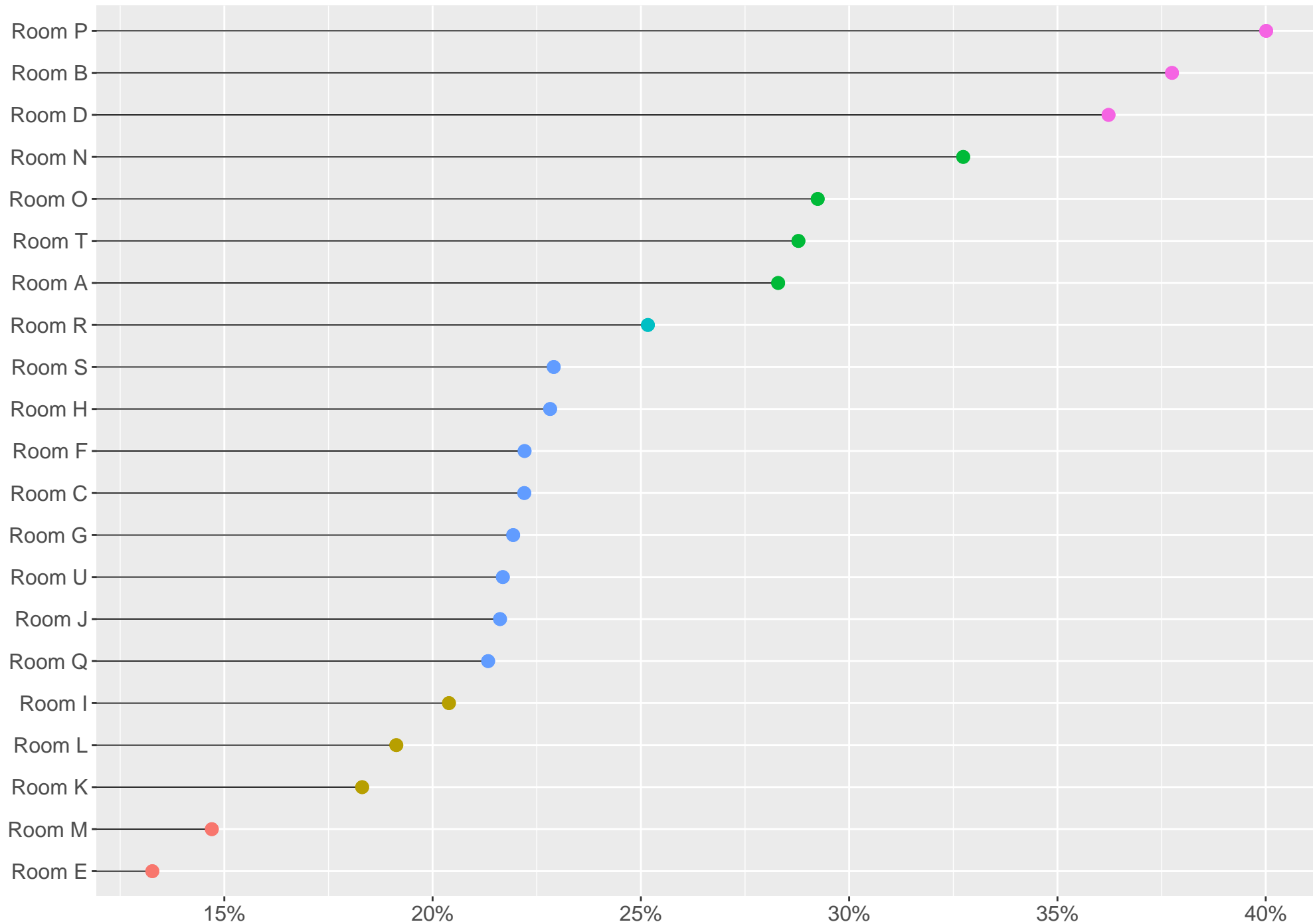
Room



Mean Utilization

Friday: 6 – Means Grouping by Mean Utilization

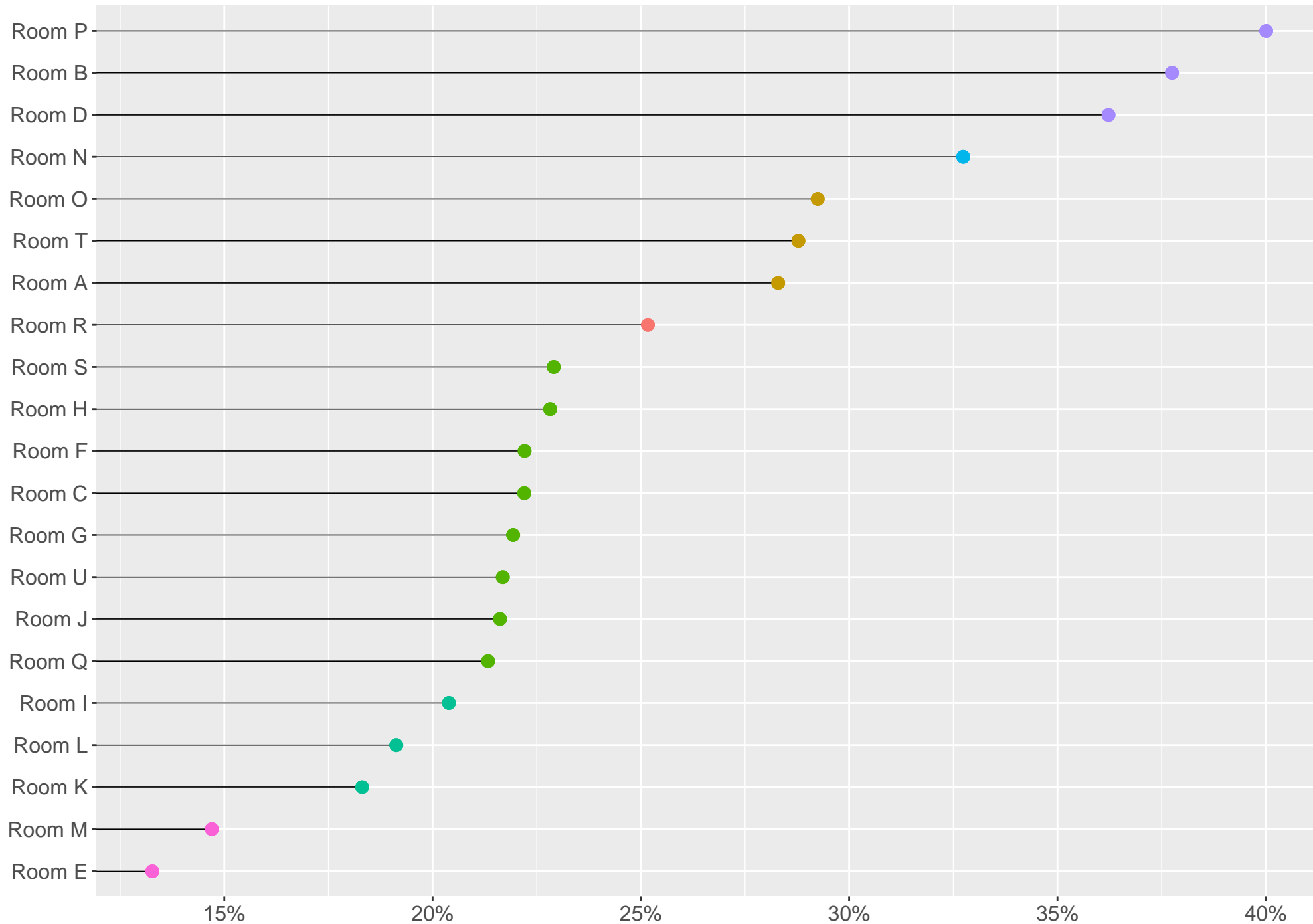
Room



Mean Utilization

Friday: 7 – Means Grouping by Mean Utilization

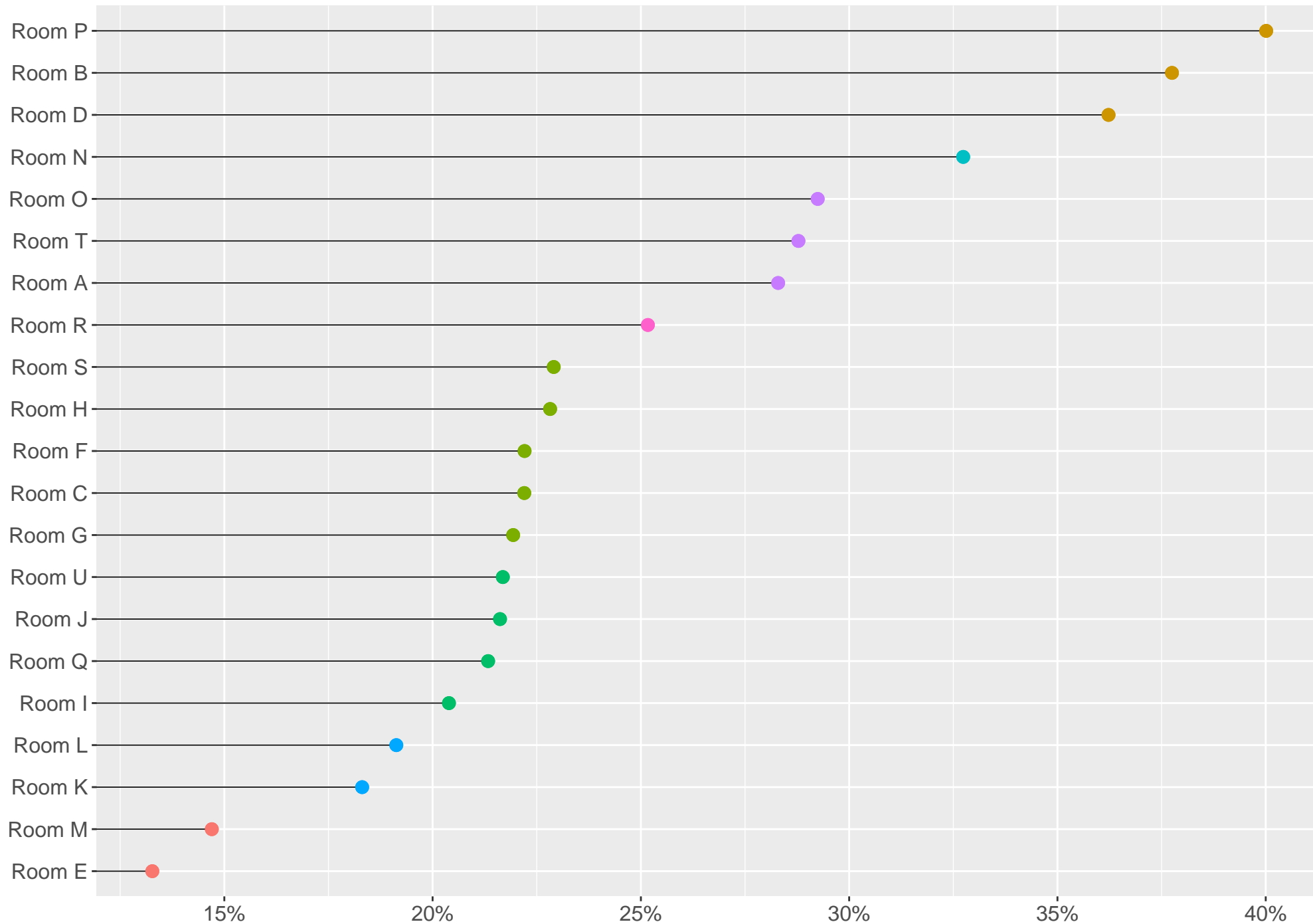
Room



Mean Utilization

Friday: 8 – Means Grouping by Mean Utilization

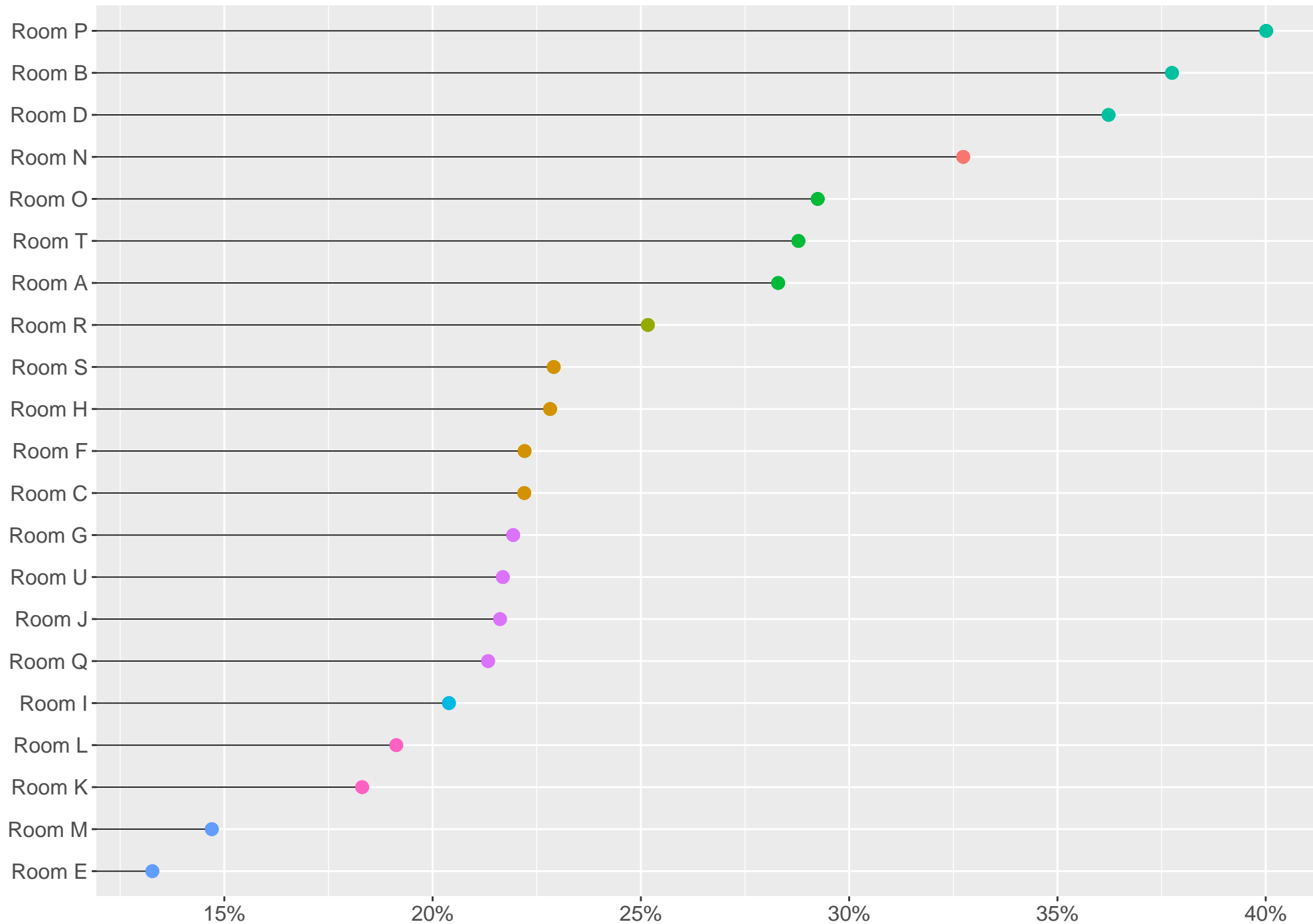
Room



Mean Utilization

Friday: 9 – Means Grouping by Mean Utilization

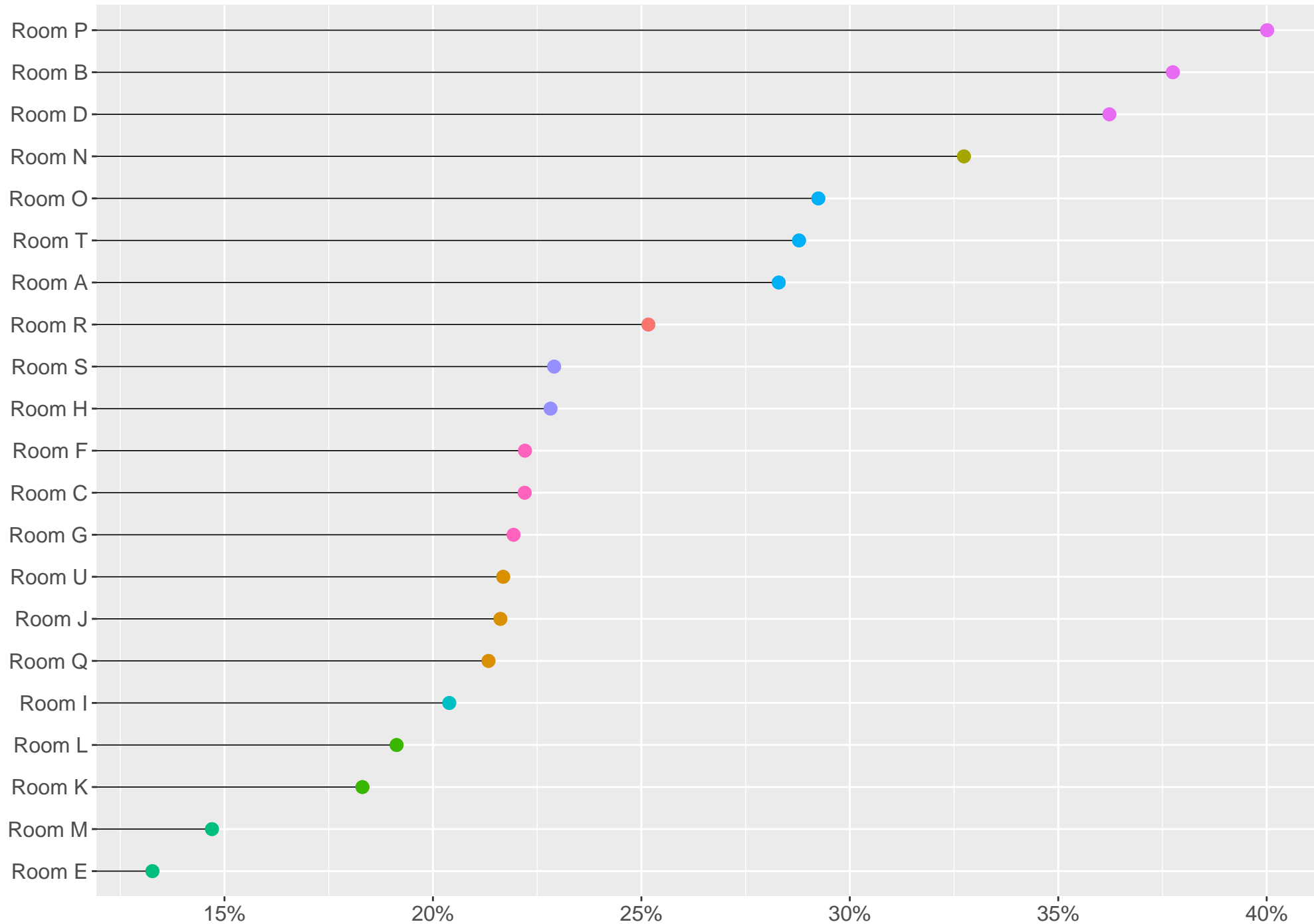
Room



Mean Utilization

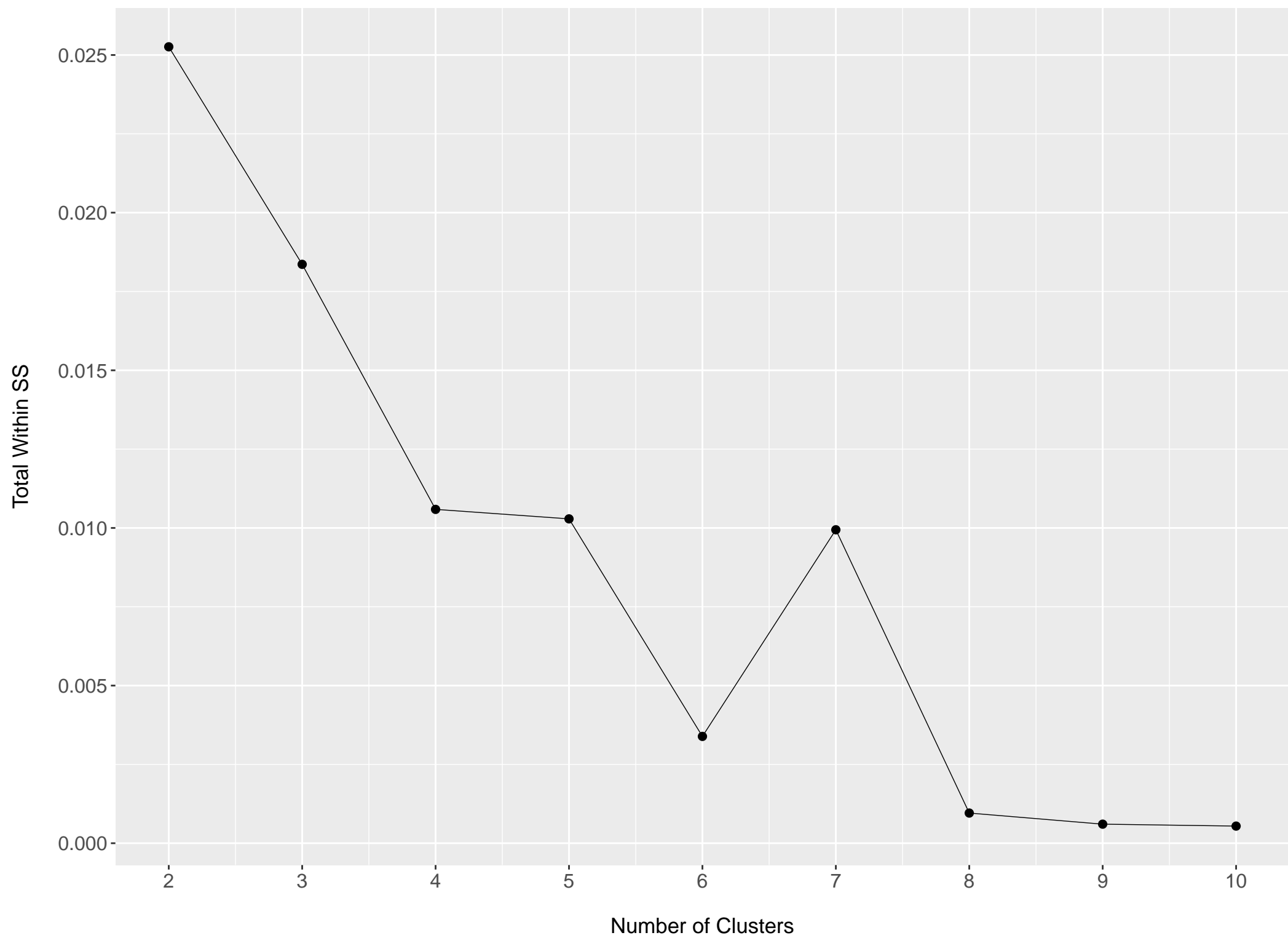
Friday: 10 – Means Grouping by Mean Utilization

Room



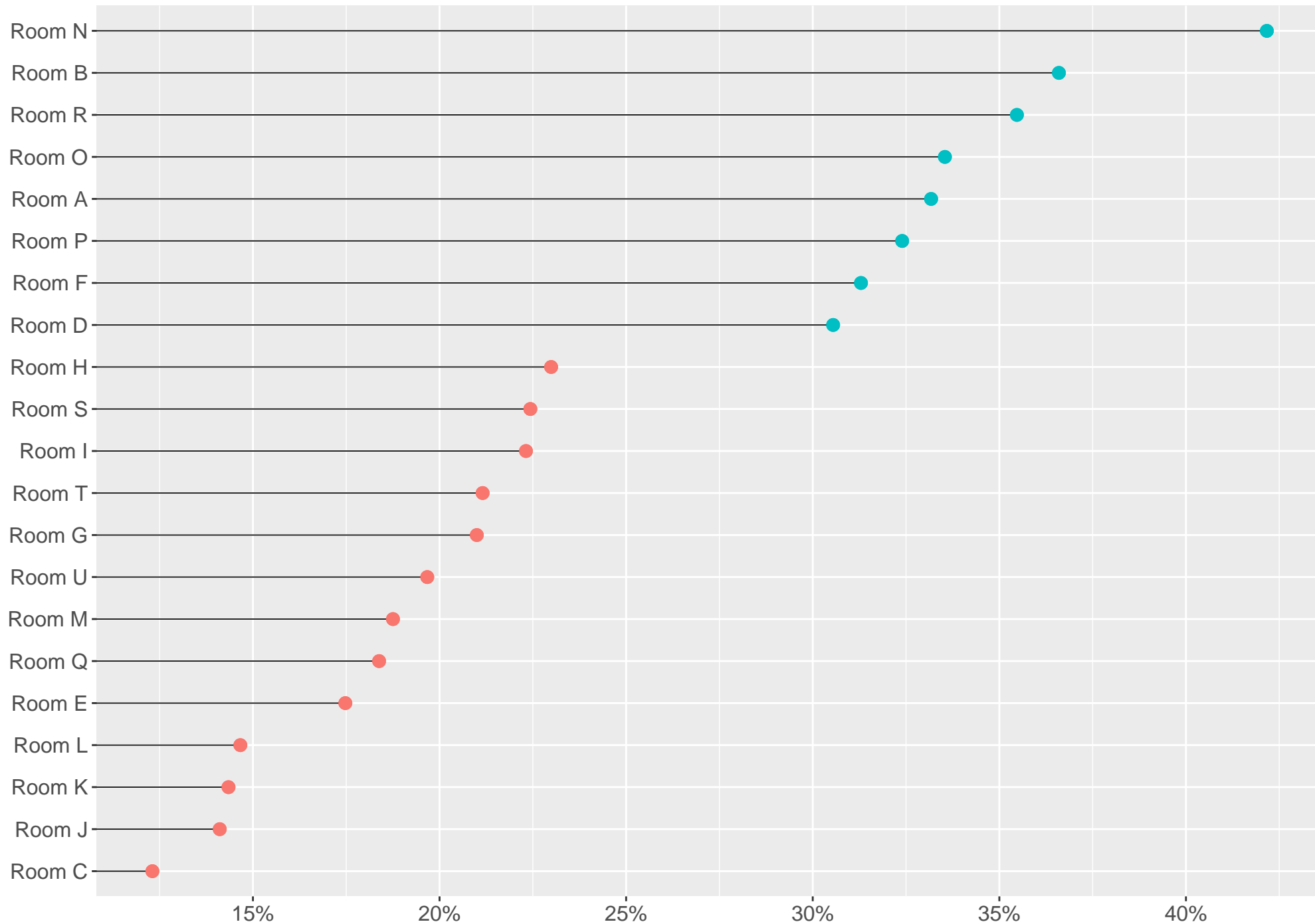
Mean Utilization

Saturday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Saturday: 2 – Means Grouping by Mean Utilization

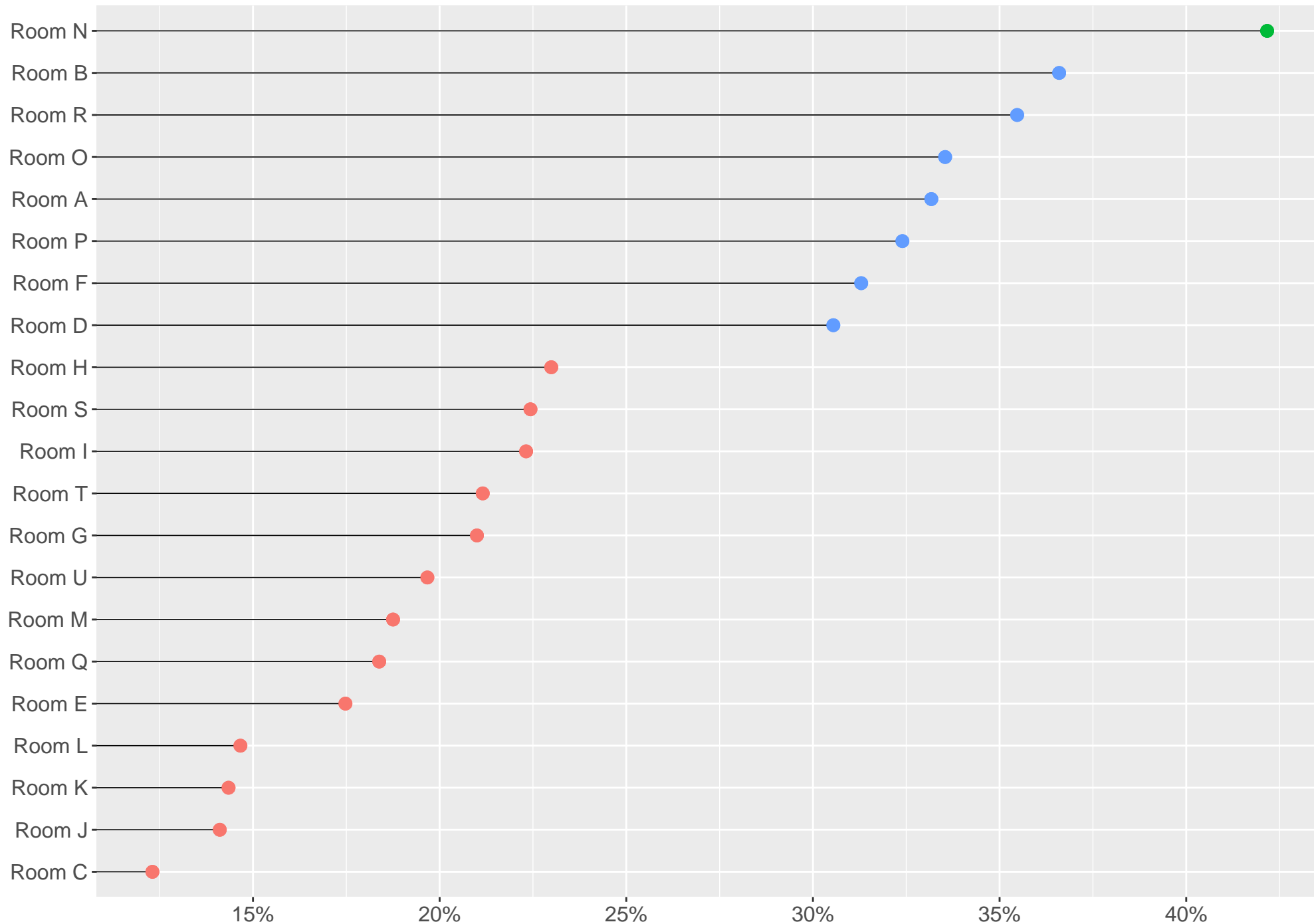
Room



Mean Utilization

Saturday: 3 – Means Grouping by Mean Utilization

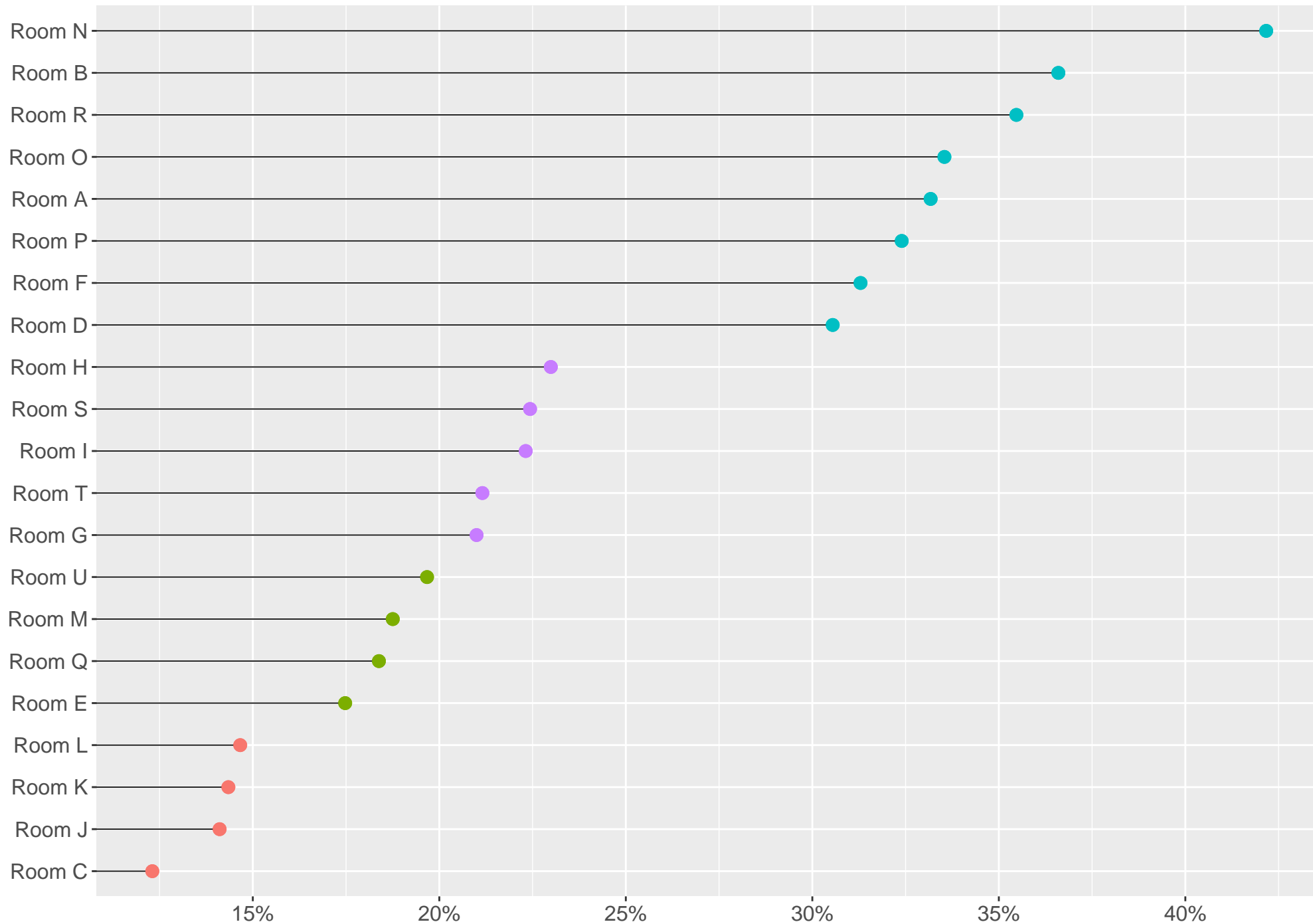
Room



Mean Utilization

Saturday: 4 – Means Grouping by Mean Utilization

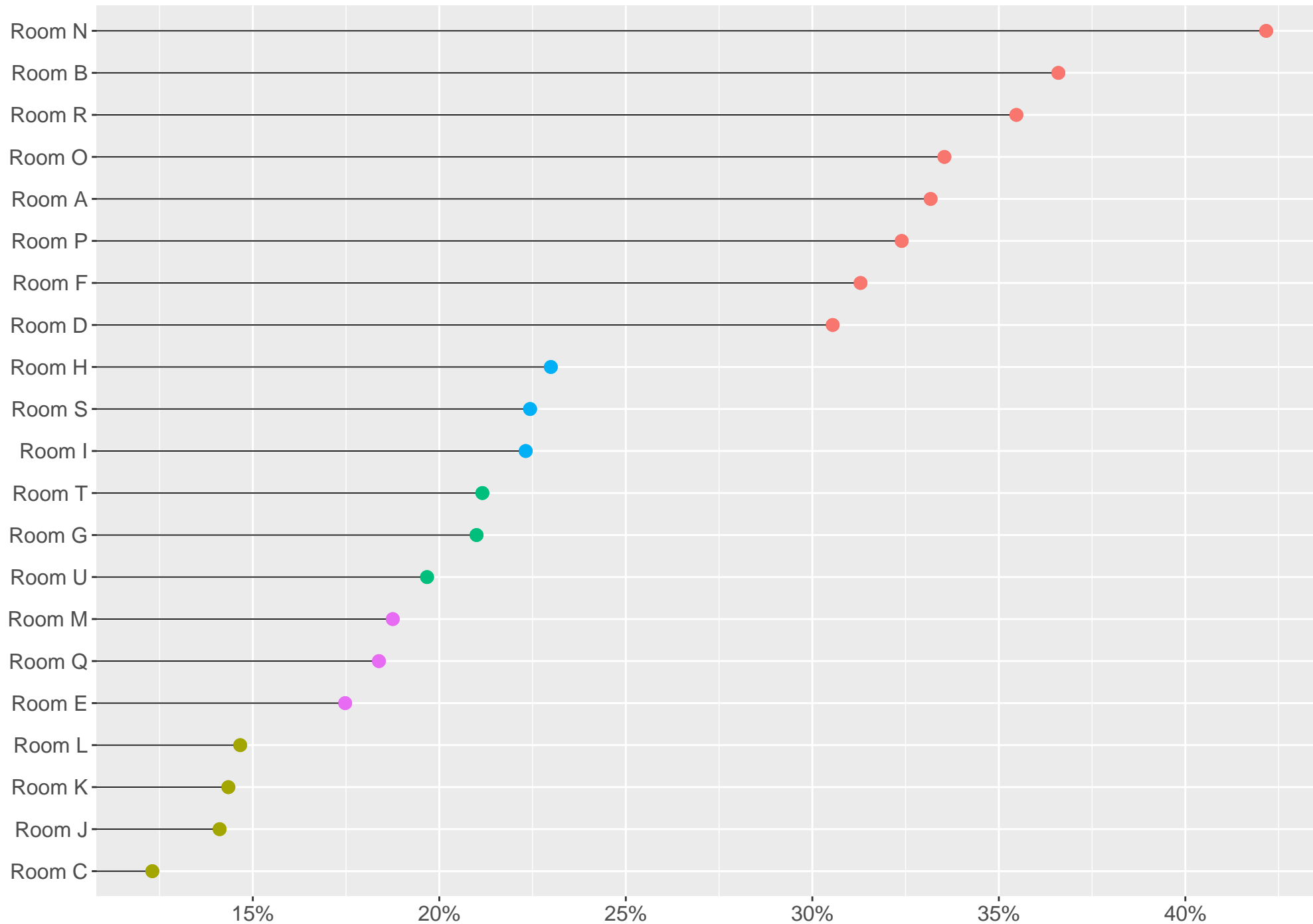
Room



Mean Utilization

Saturday: 5 – Means Grouping by Mean Utilization

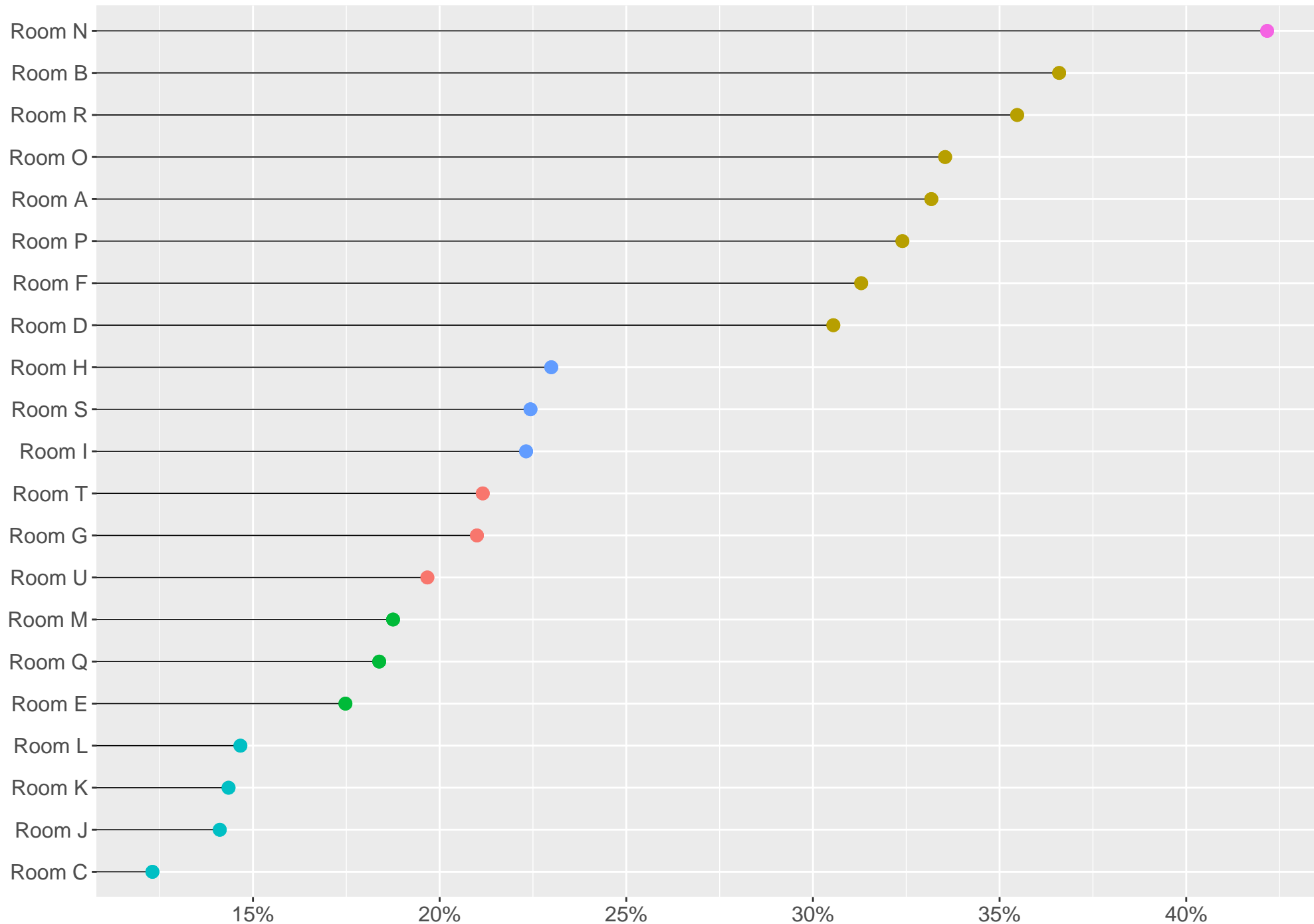
Room



Mean Utilization

Saturday: 6 – Means Grouping by Mean Utilization

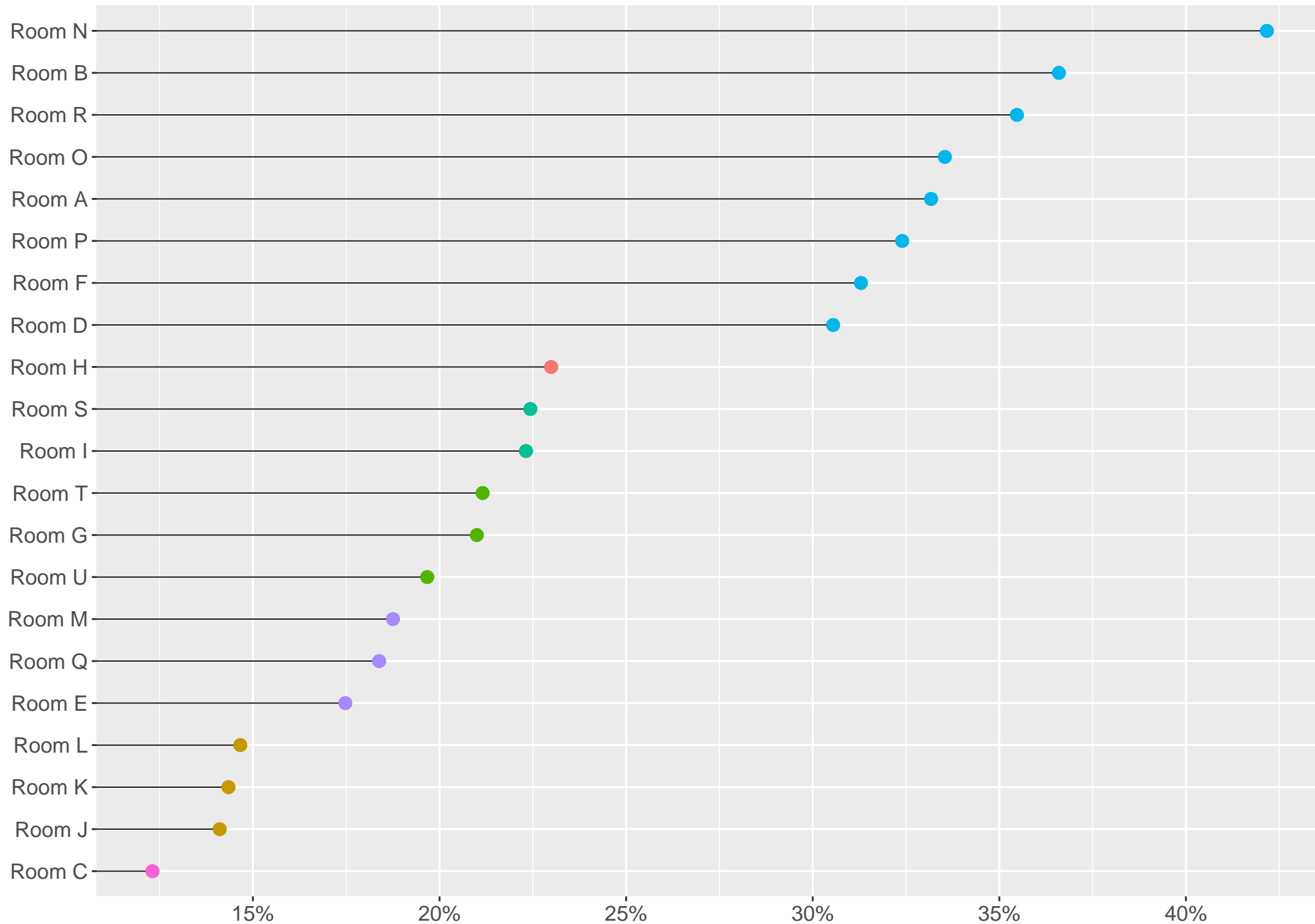
Room



Mean Utilization

Saturday: 7 – Means Grouping by Mean Utilization

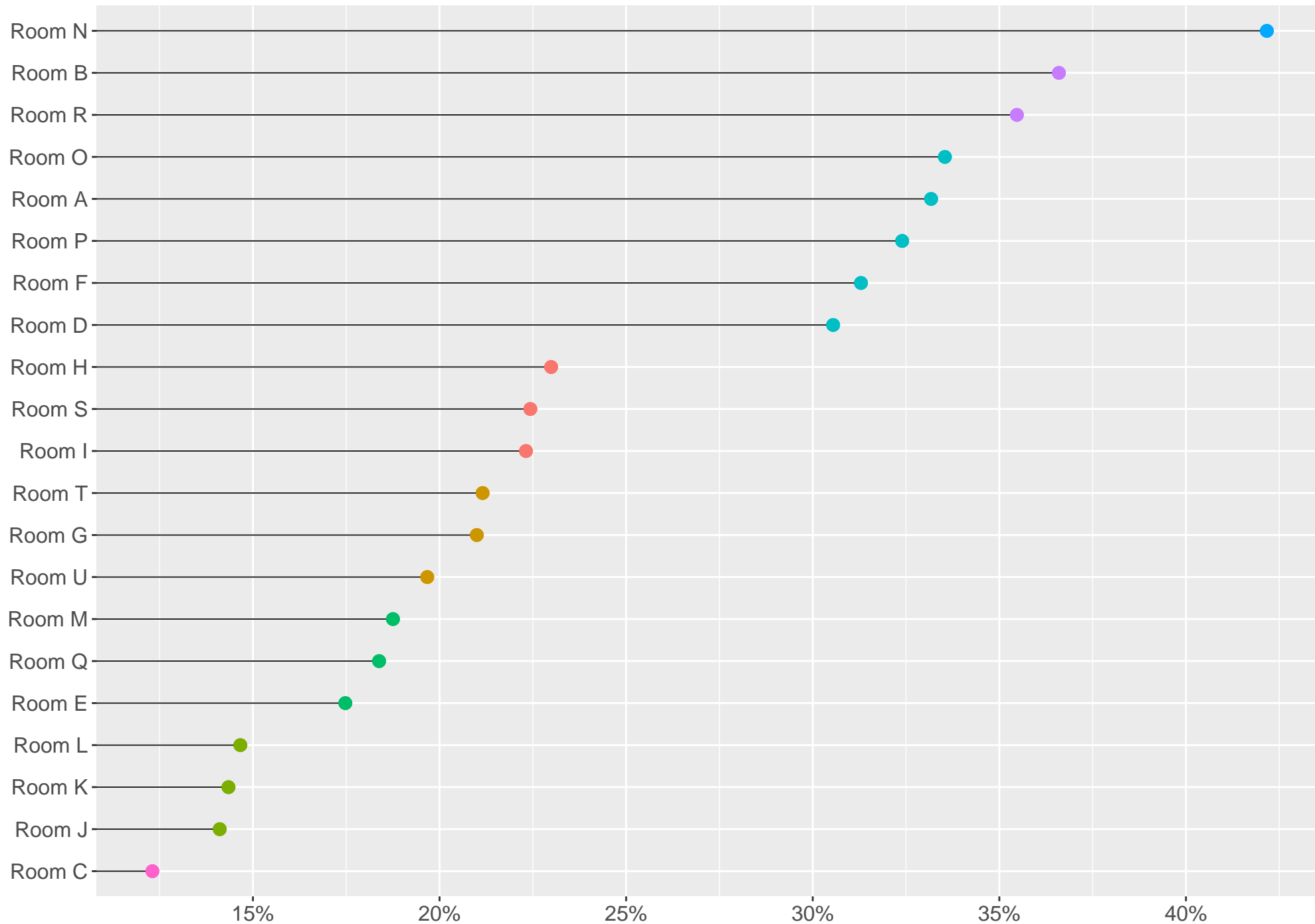
Room



Mean Utilization

Saturday: 8 – Means Grouping by Mean Utilization

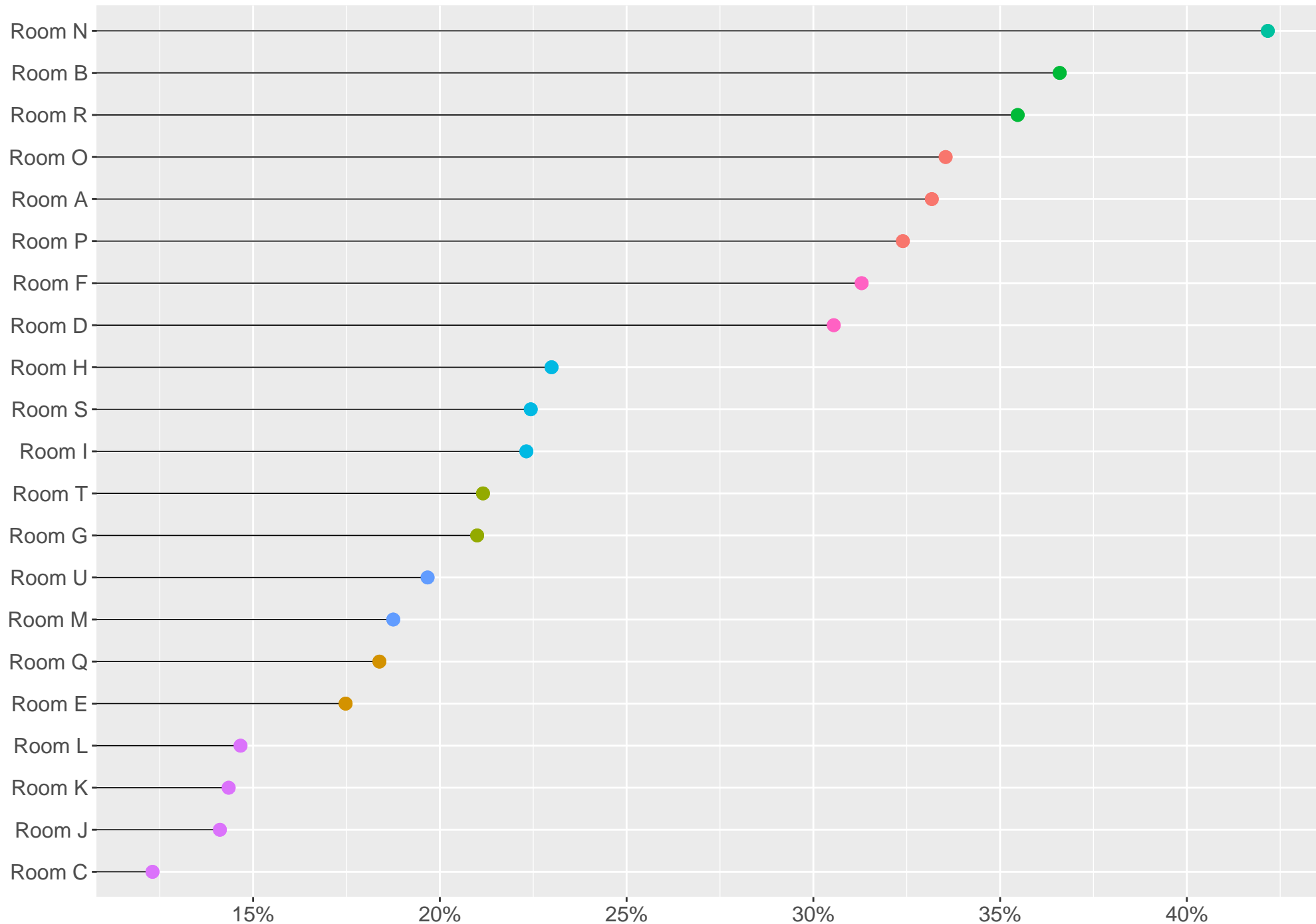
Room



Mean Utilization

Saturday: 9 – Means Grouping by Mean Utilization

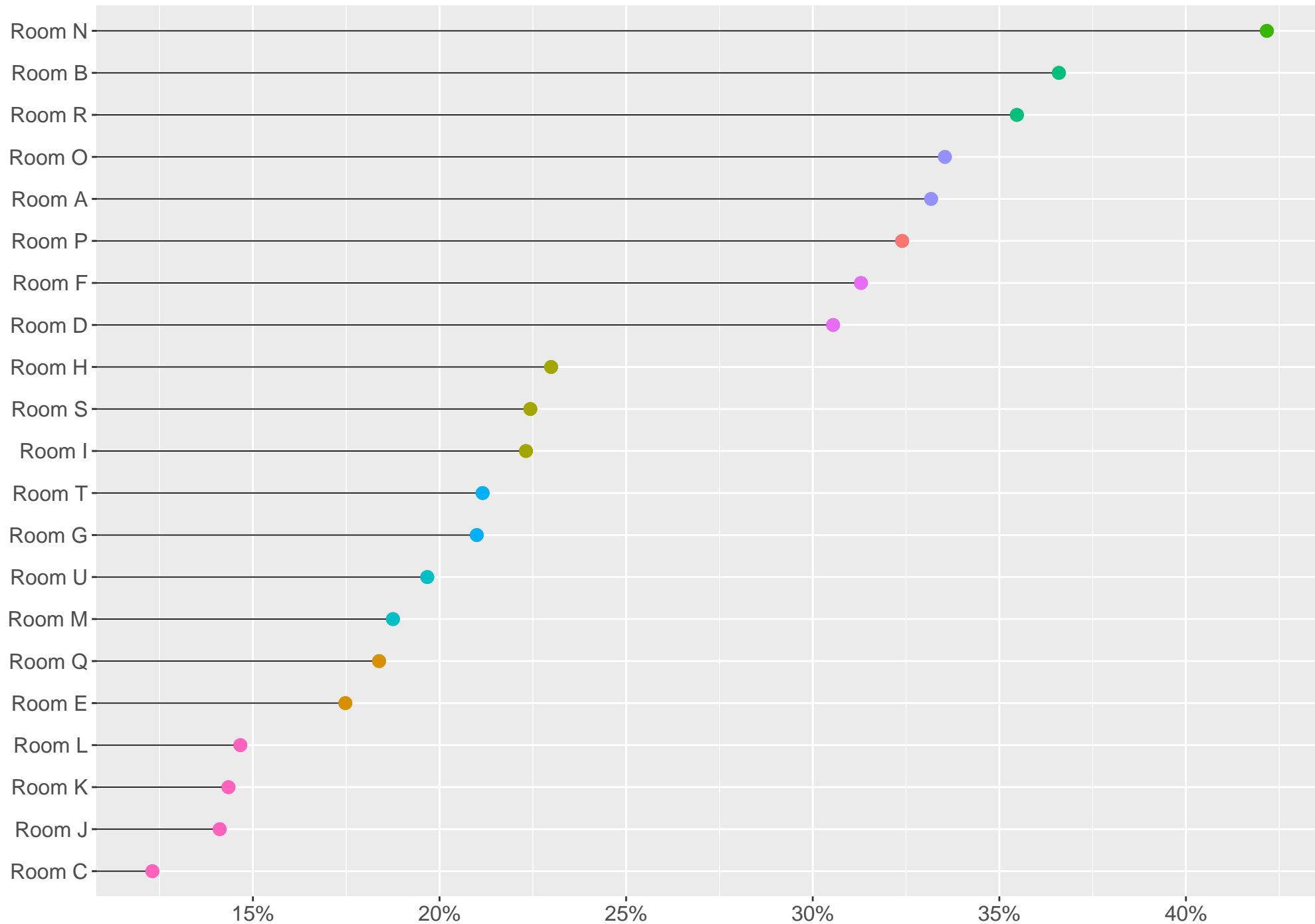
Room



Mean Utilization

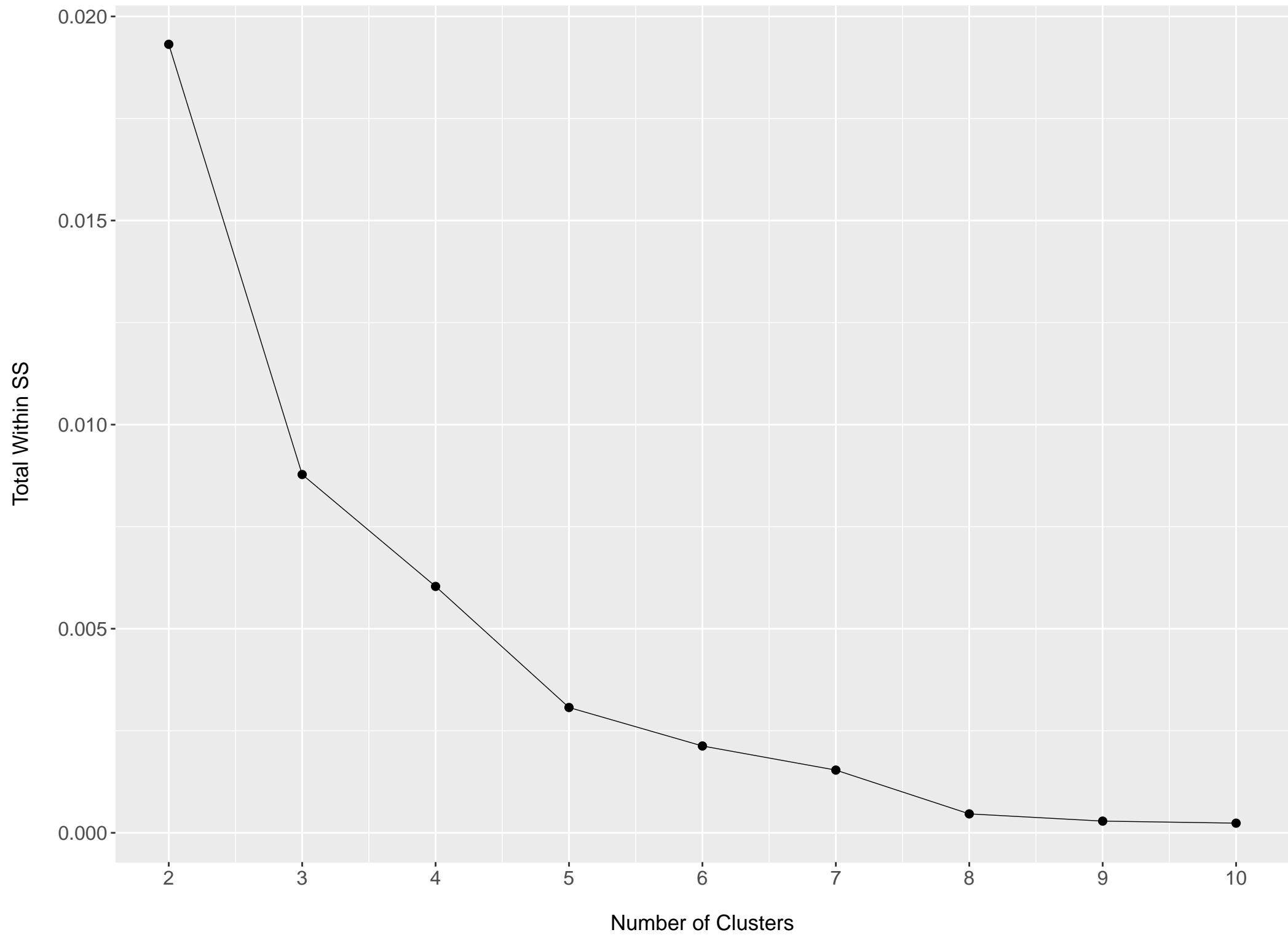
Saturday: 10 – Means Grouping by Mean Utilization

Room



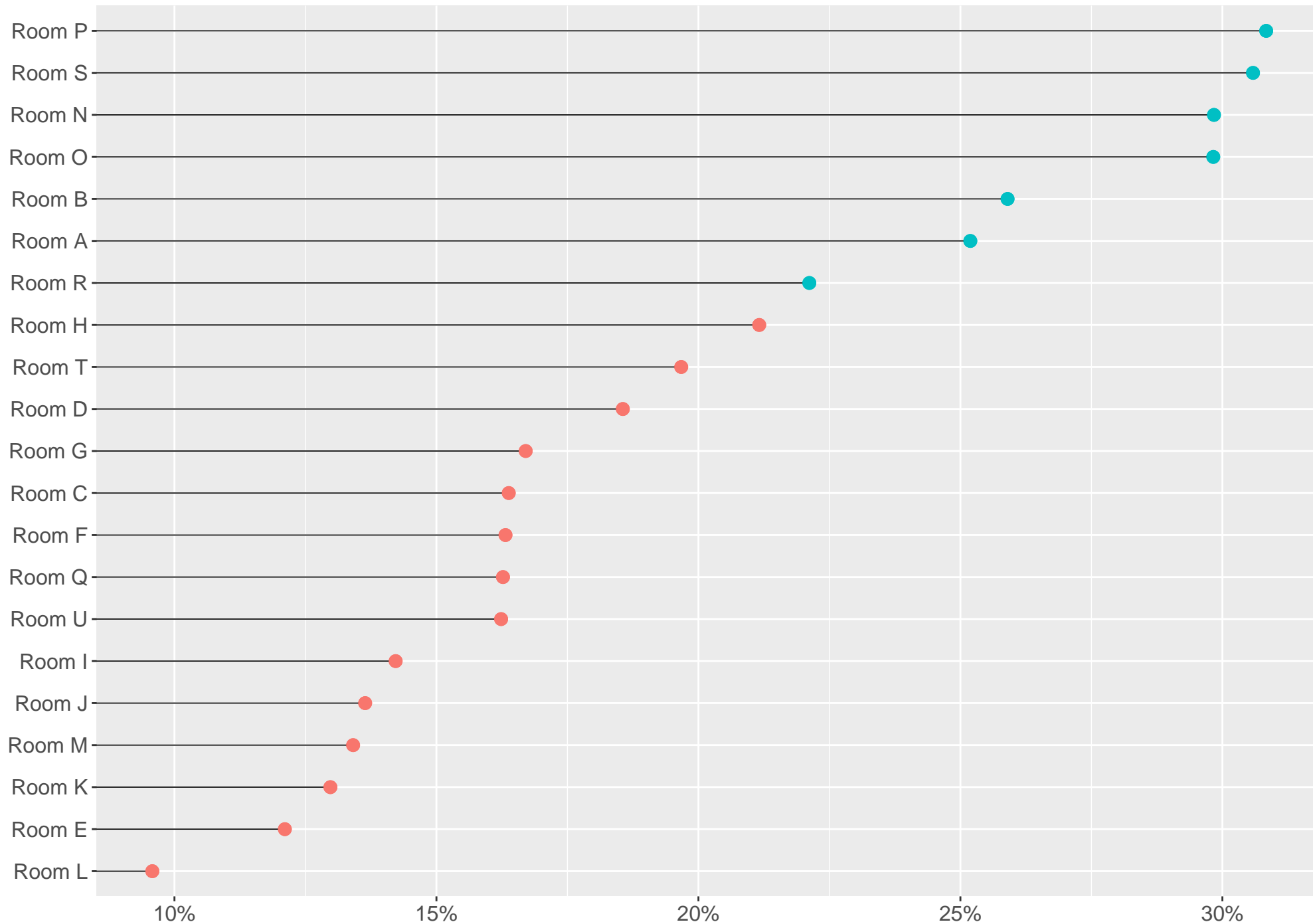
Mean Utilization

Sunday: Total Within SS versus Number of Clusters for K-Means Grouping by Mean Utilization



Sunday: 2 – Means Grouping by Mean Utilization

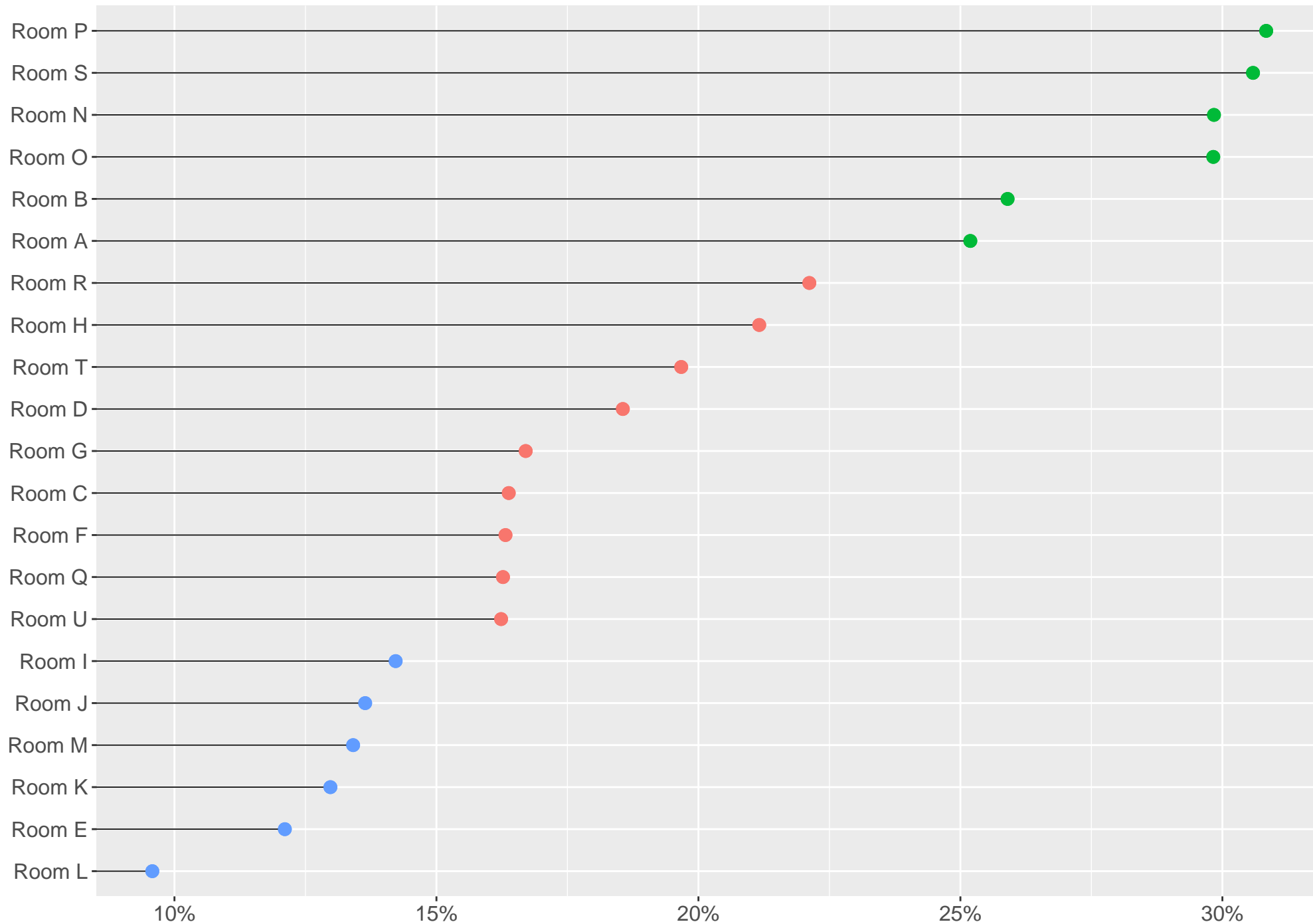
Room



Mean Utilization

Sunday: 3 – Means Grouping by Mean Utilization

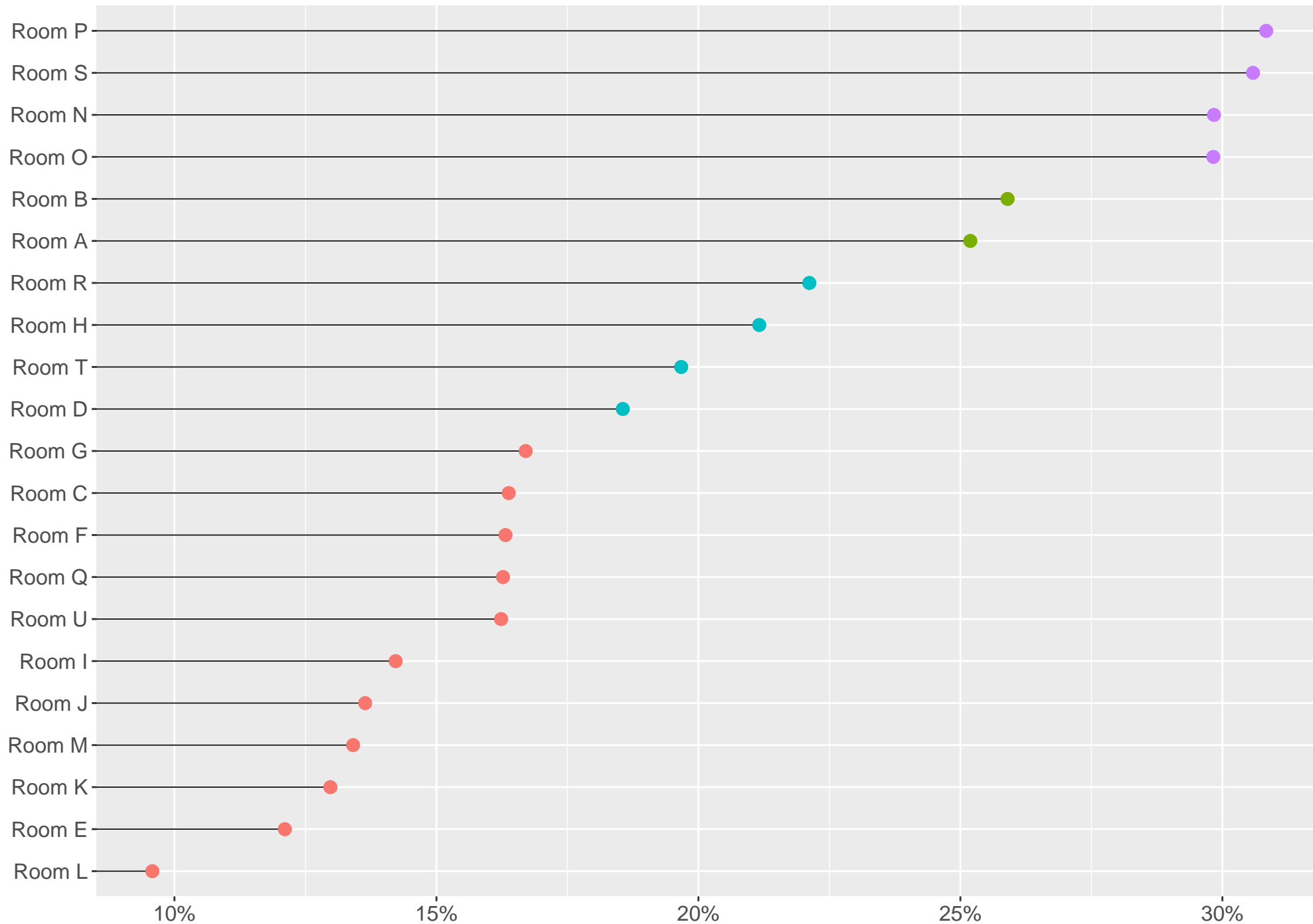
Room



Mean Utilization

Sunday: 4 – Means Grouping by Mean Utilization

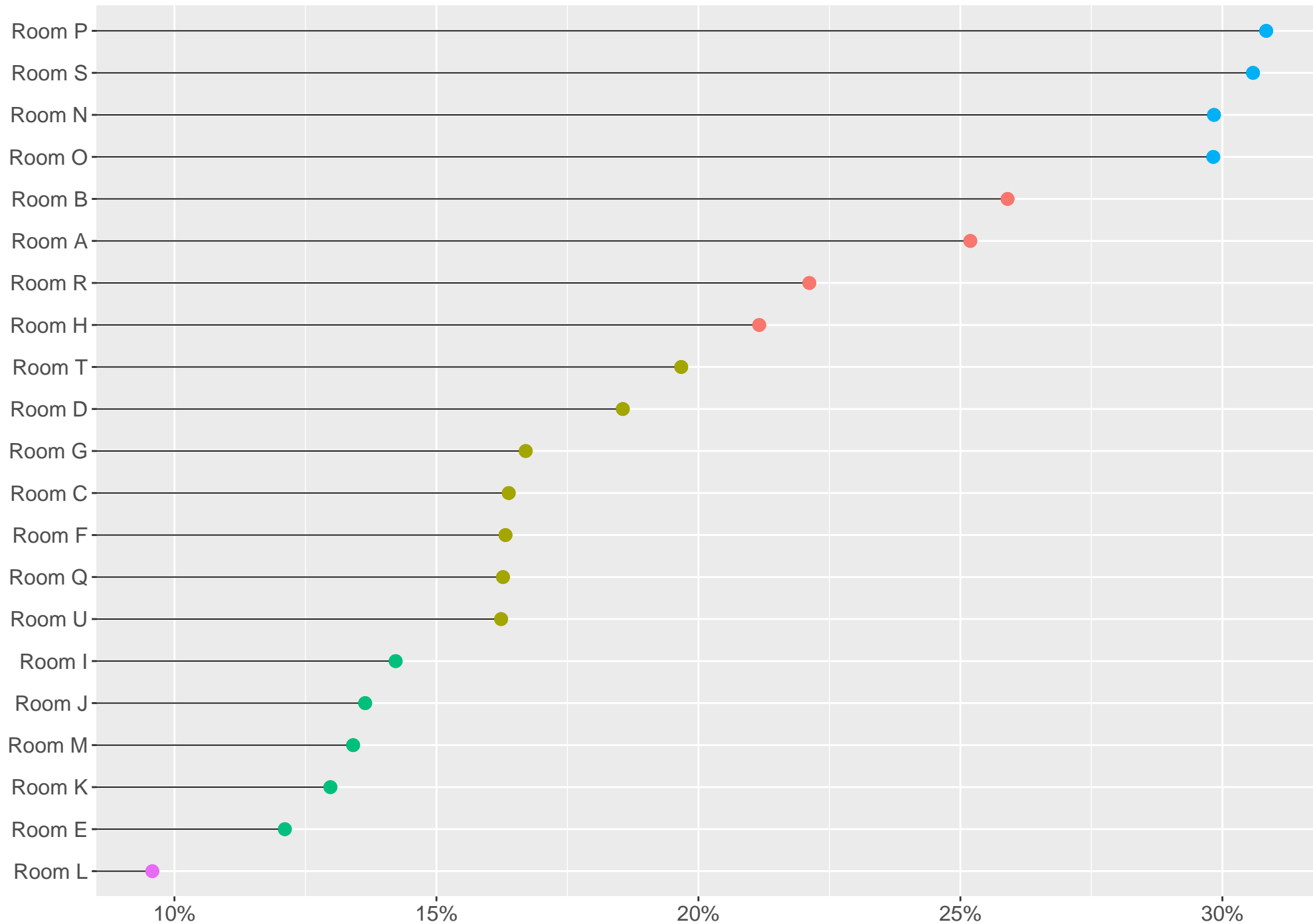
Room



Mean Utilization

Sunday: 5 – Means Grouping by Mean Utilization

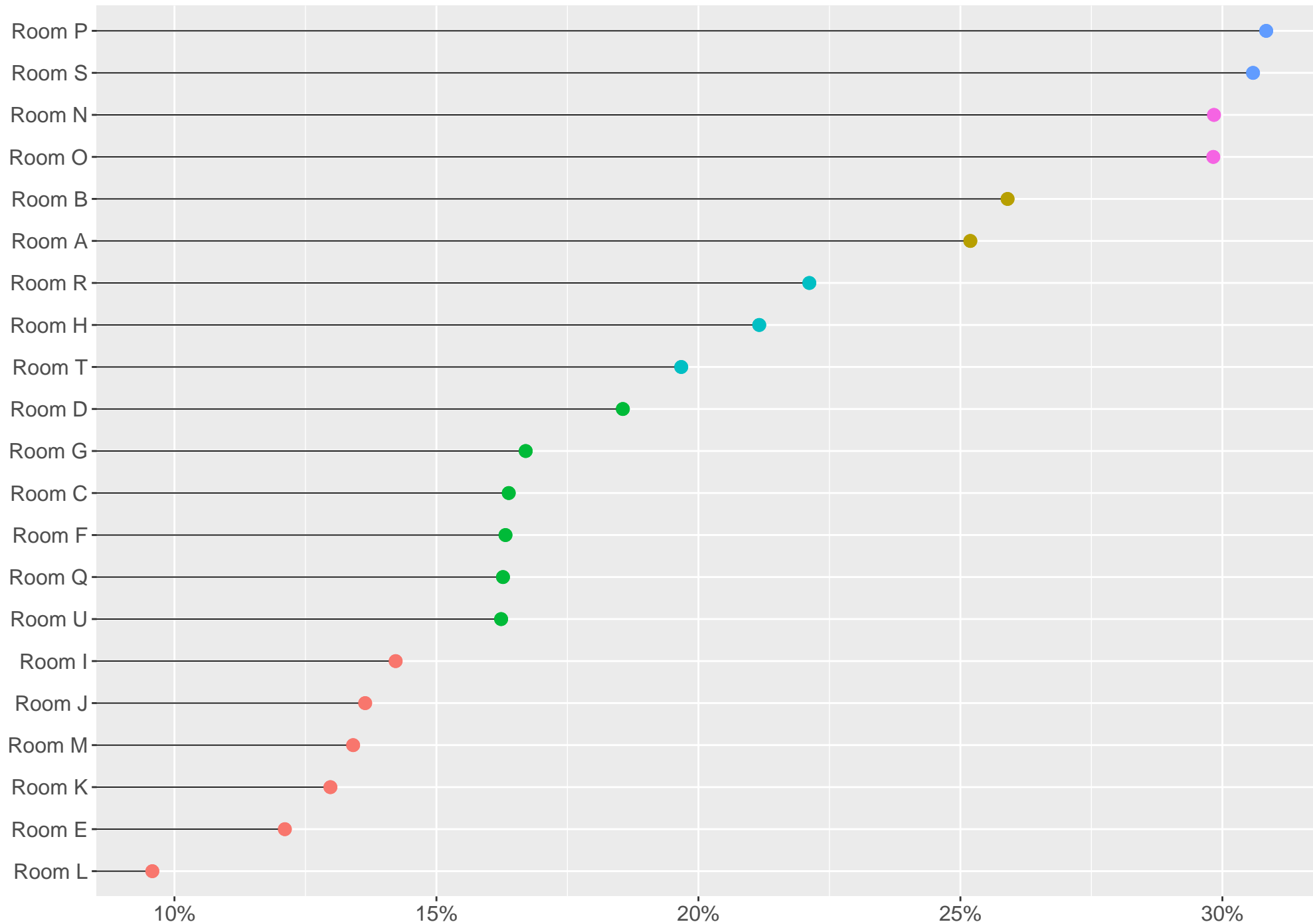
Room



Mean Utilization

Sunday: 6 – Means Grouping by Mean Utilization

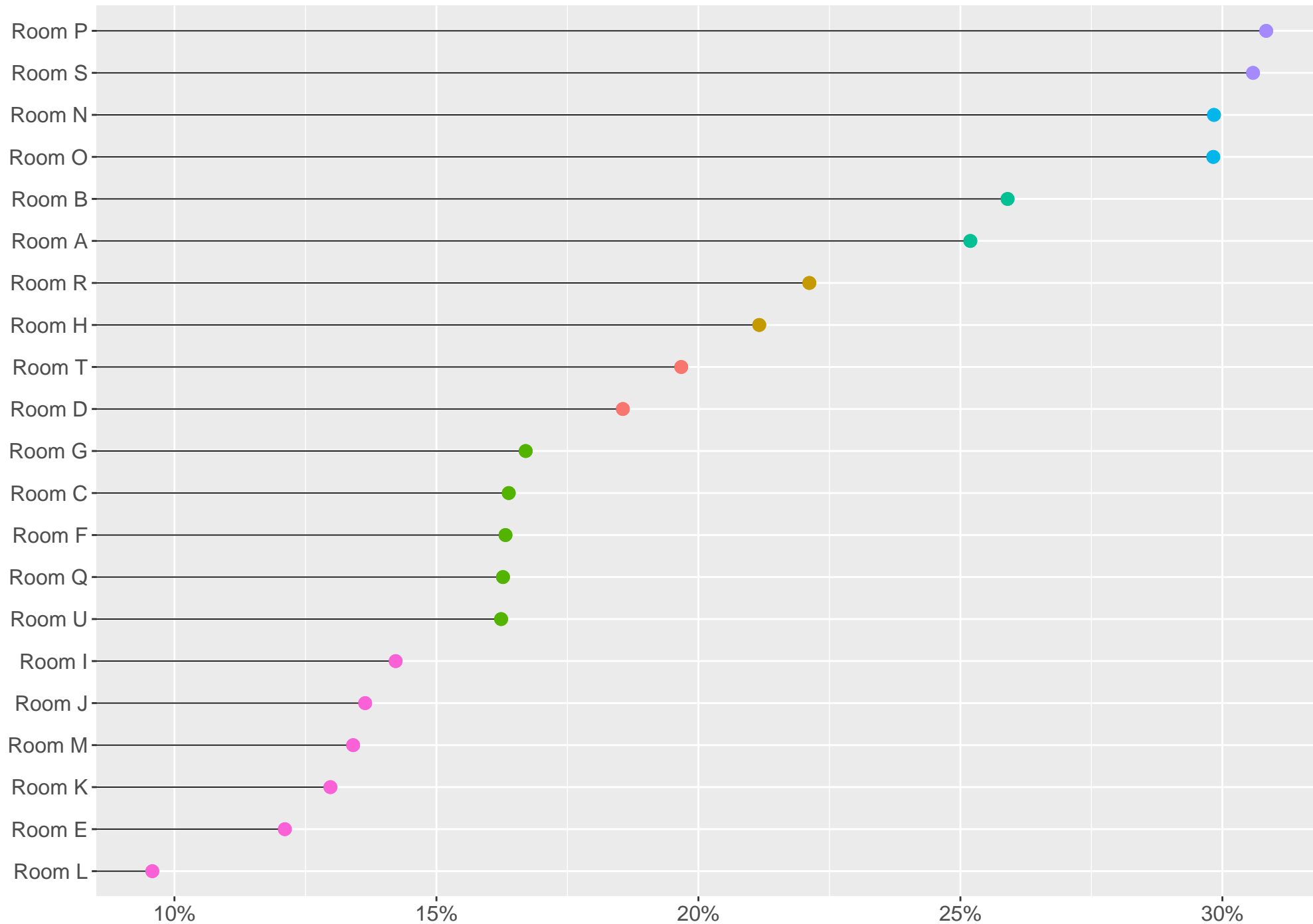
Room



Mean Utilization

Sunday: 7 – Means Grouping by Mean Utilization

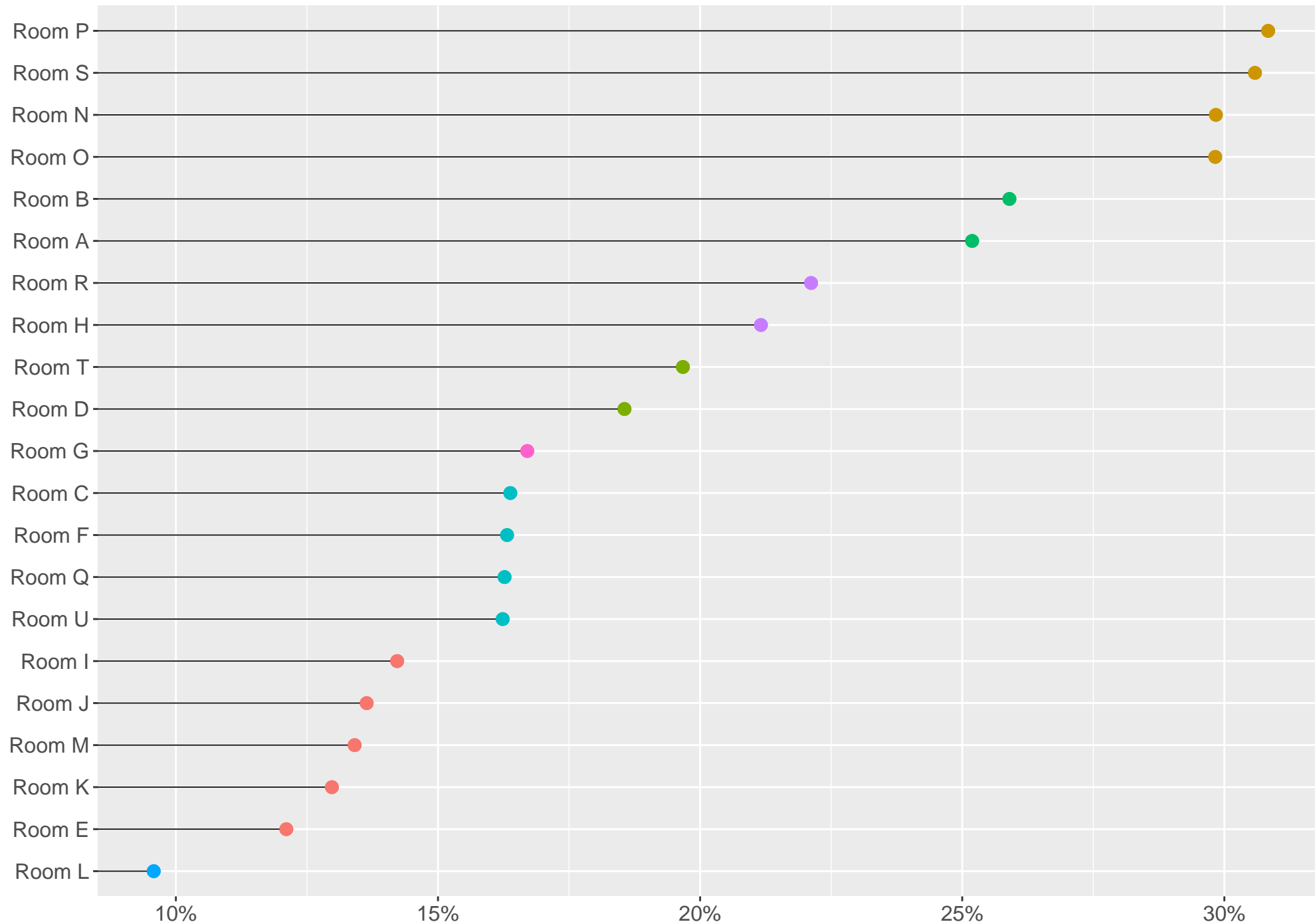
Room



Mean Utilization

Sunday: 8 – Means Grouping by Mean Utilization

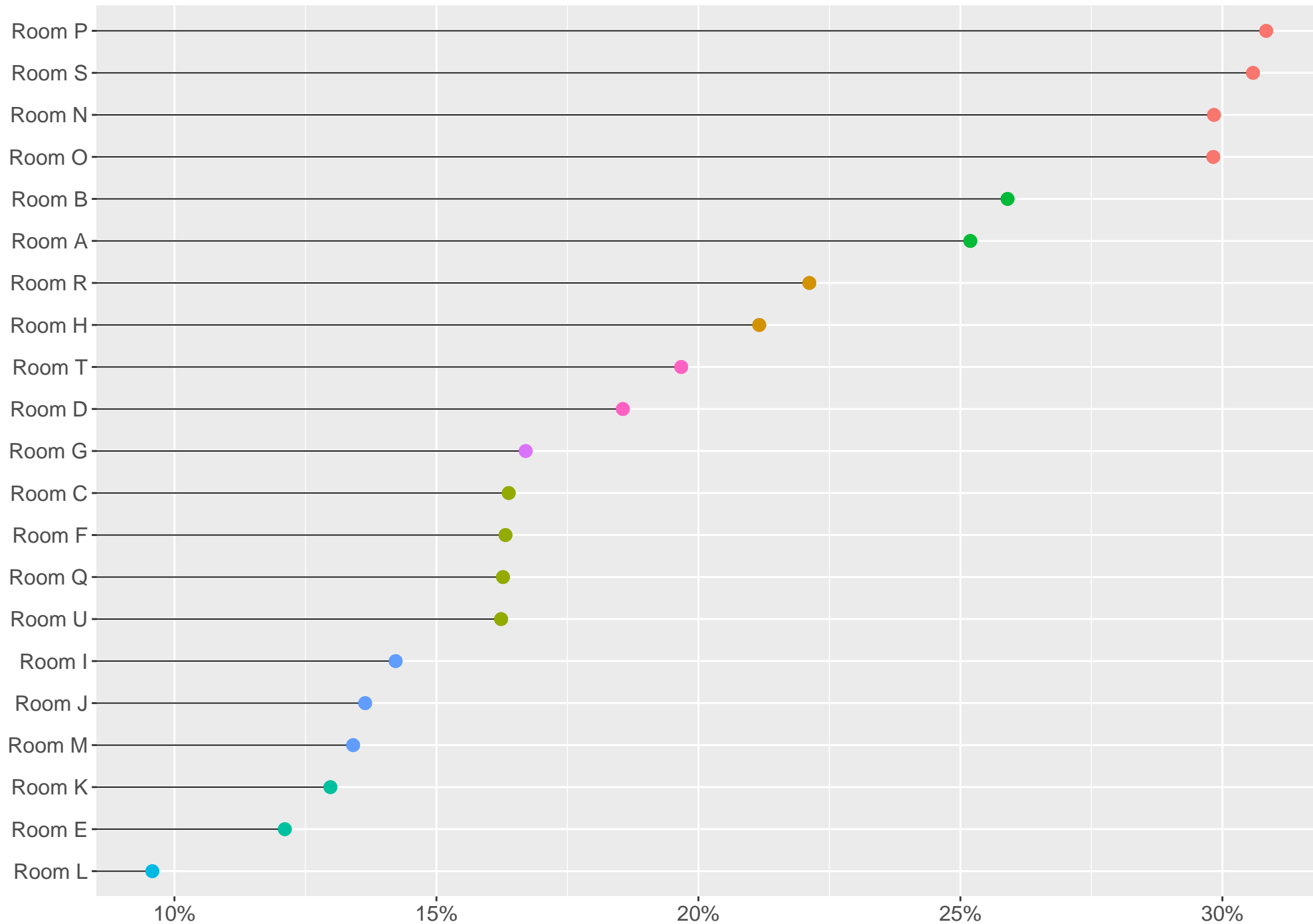
Room



Mean Utilization

Sunday: 9 – Means Grouping by Mean Utilization

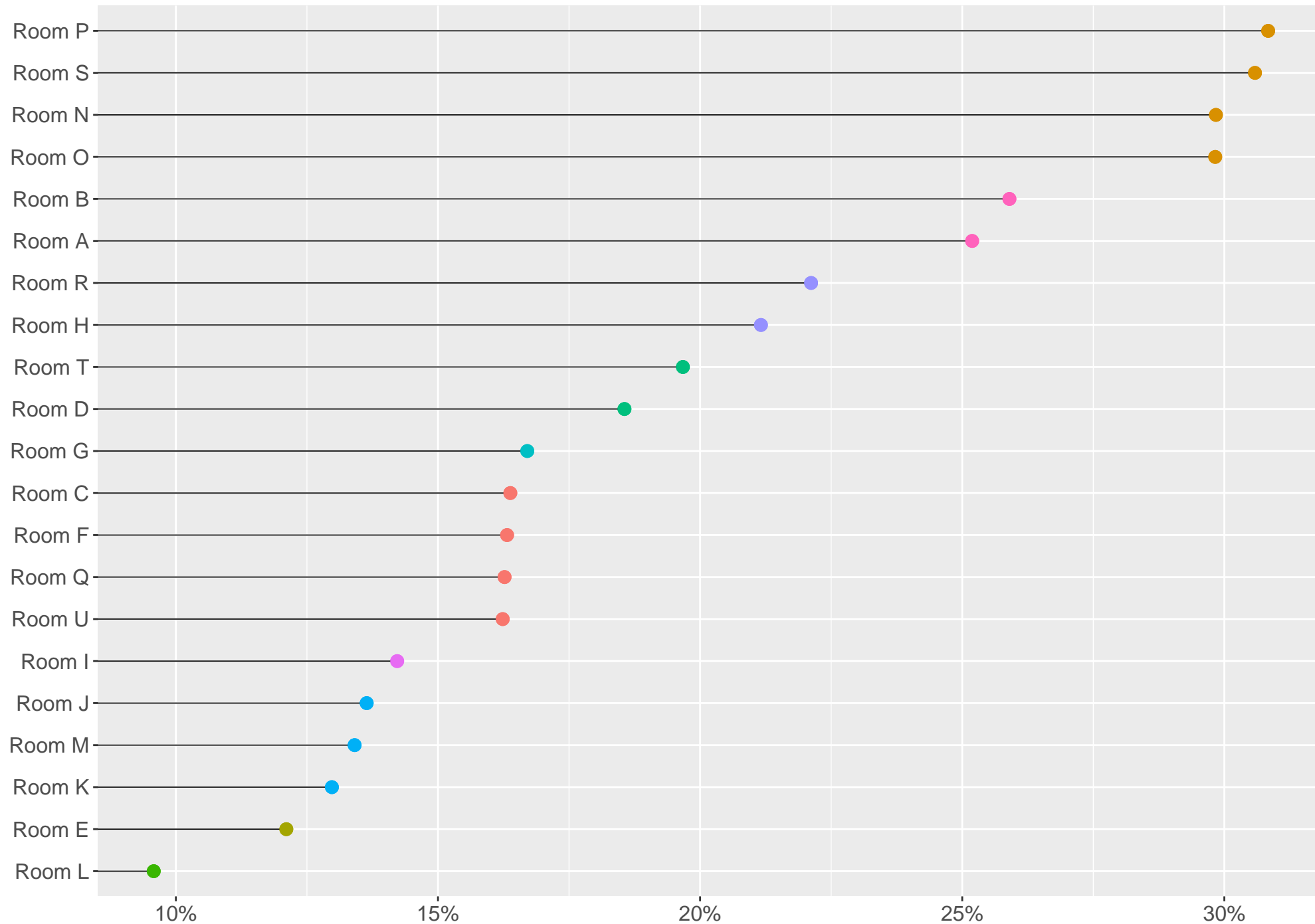
Room



Mean Utilization

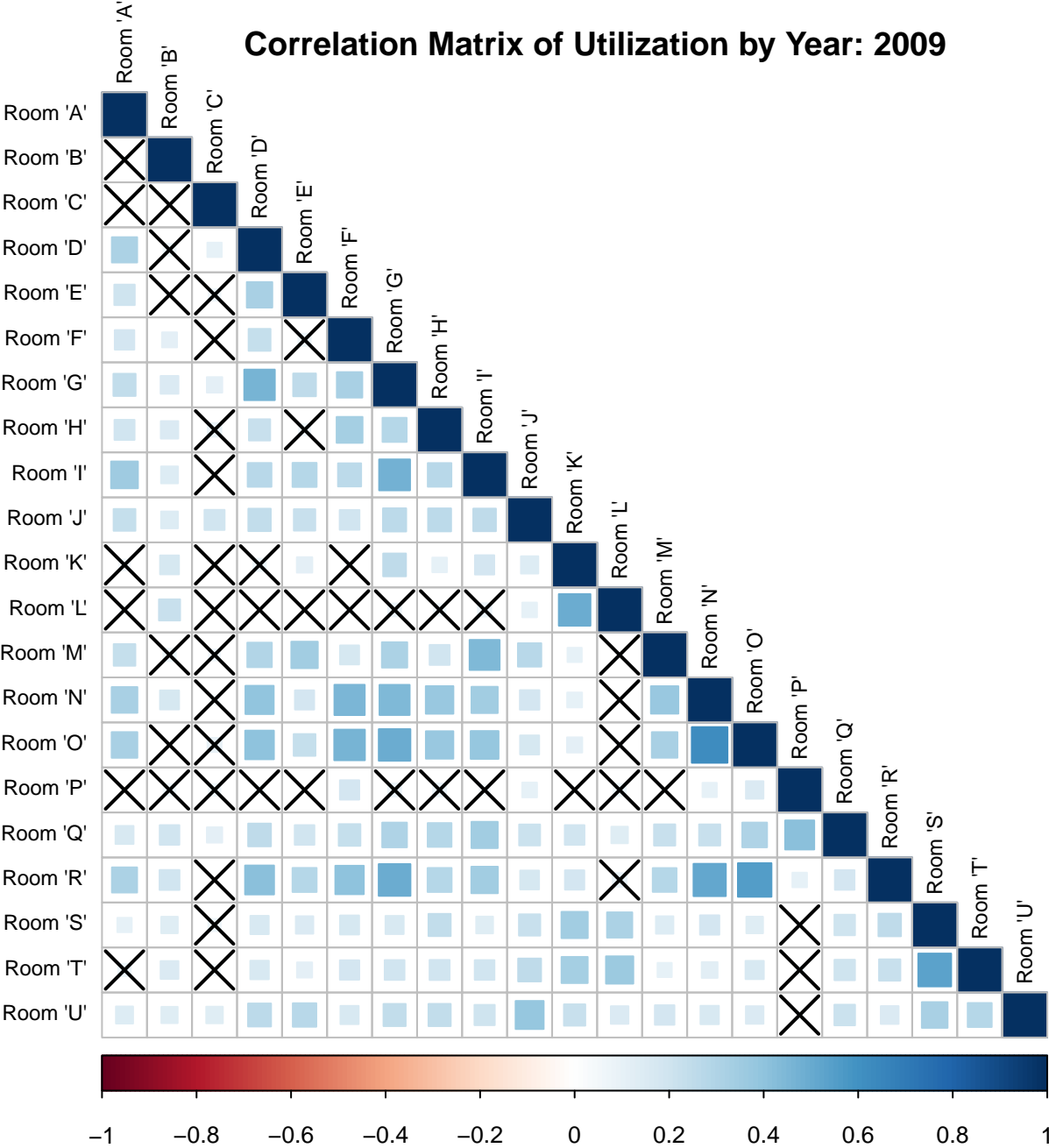
Sunday: 10 – Means Grouping by Mean Utilization

Room

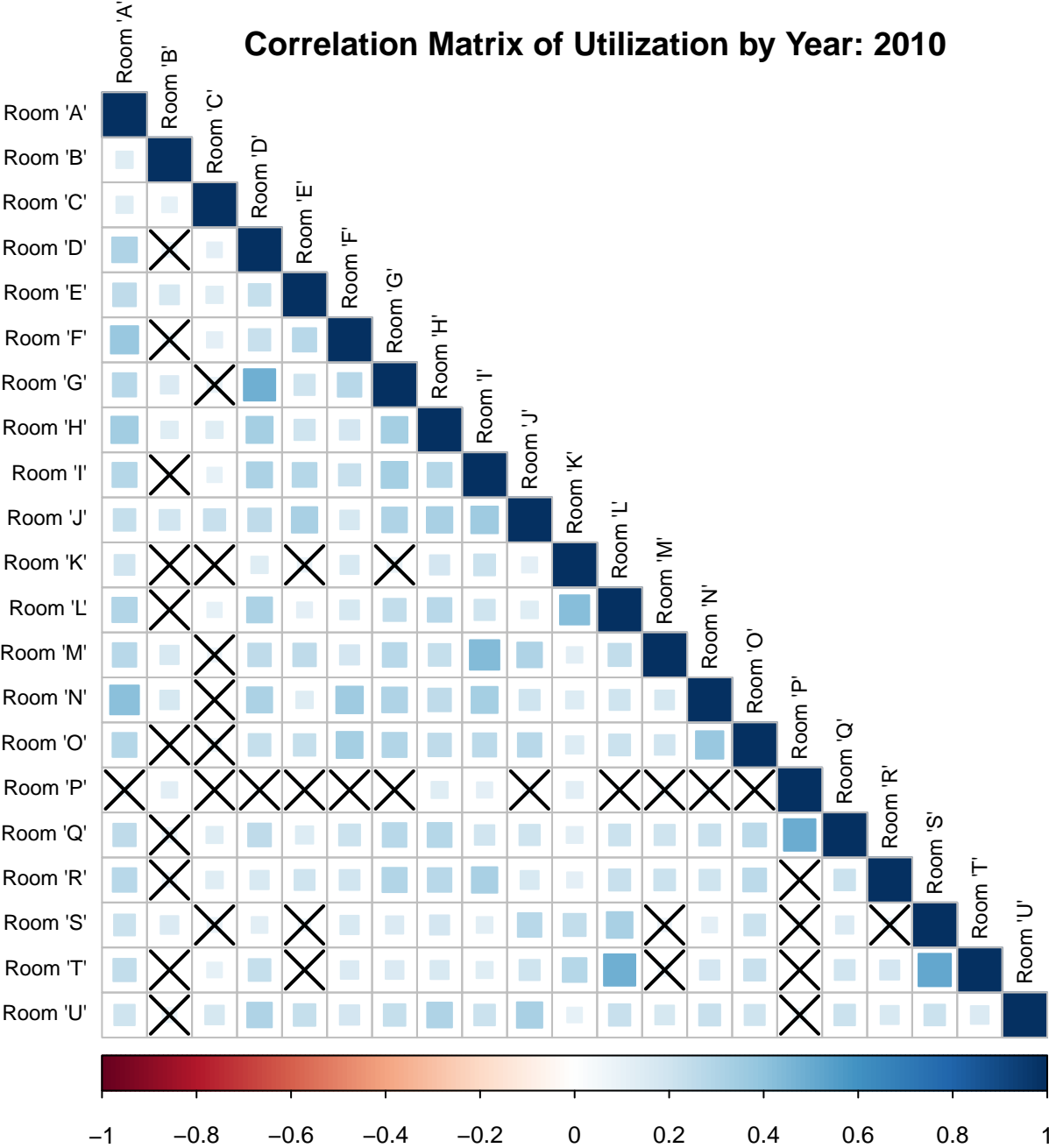


Mean Utilization

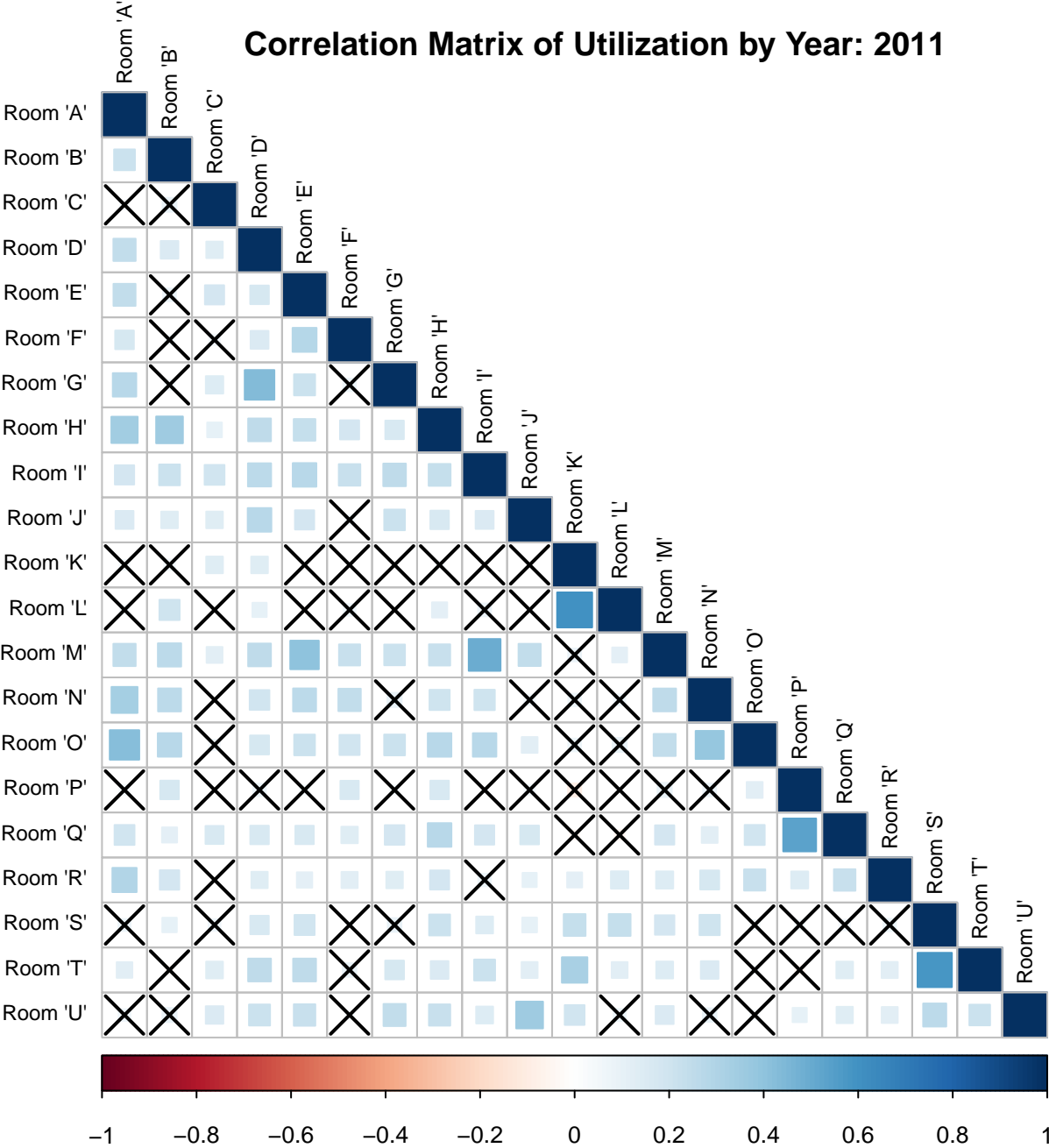
Correlation Matrix of Utilization by Year: 2009



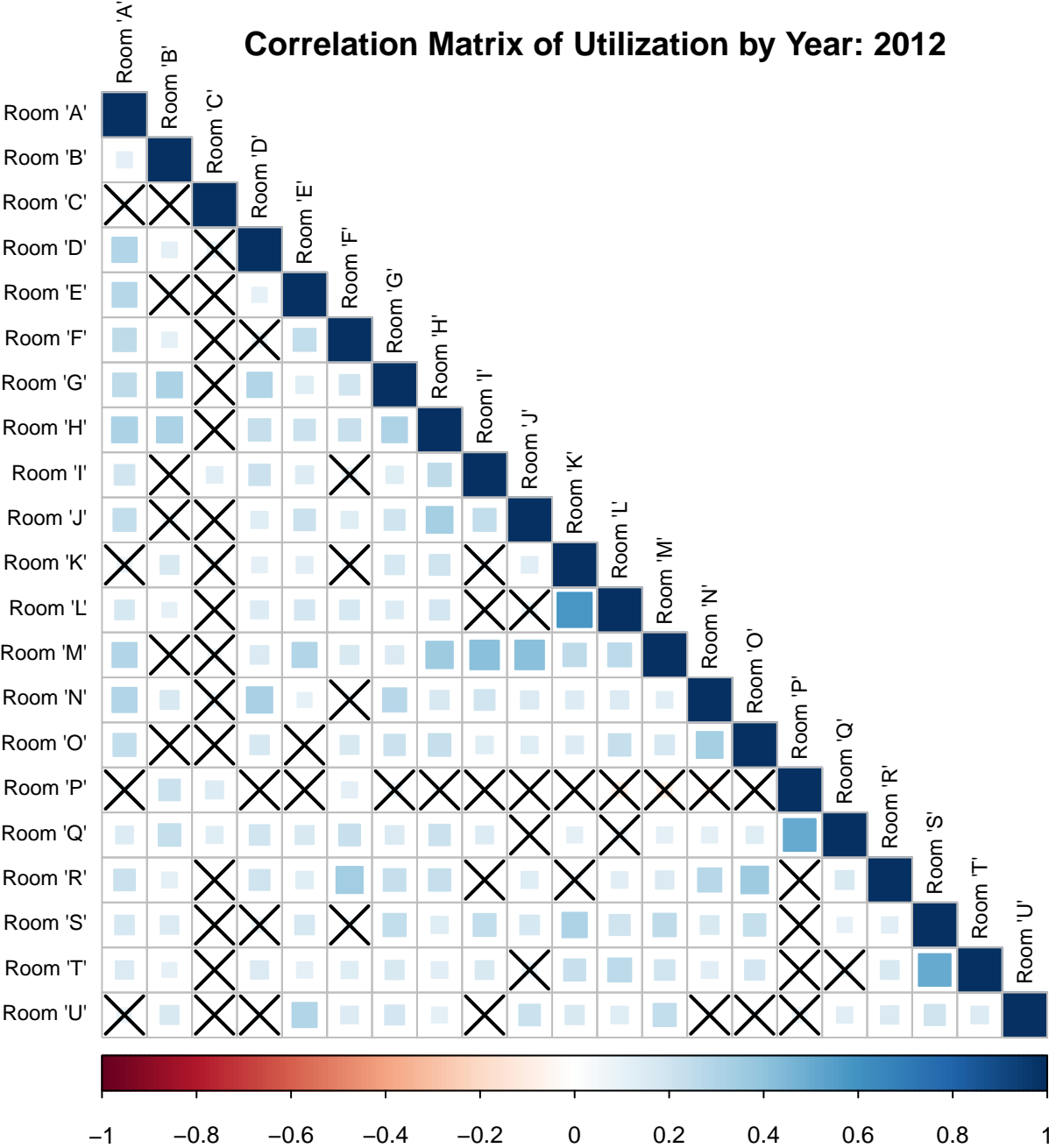
Correlation Matrix of Utilization by Year: 2010



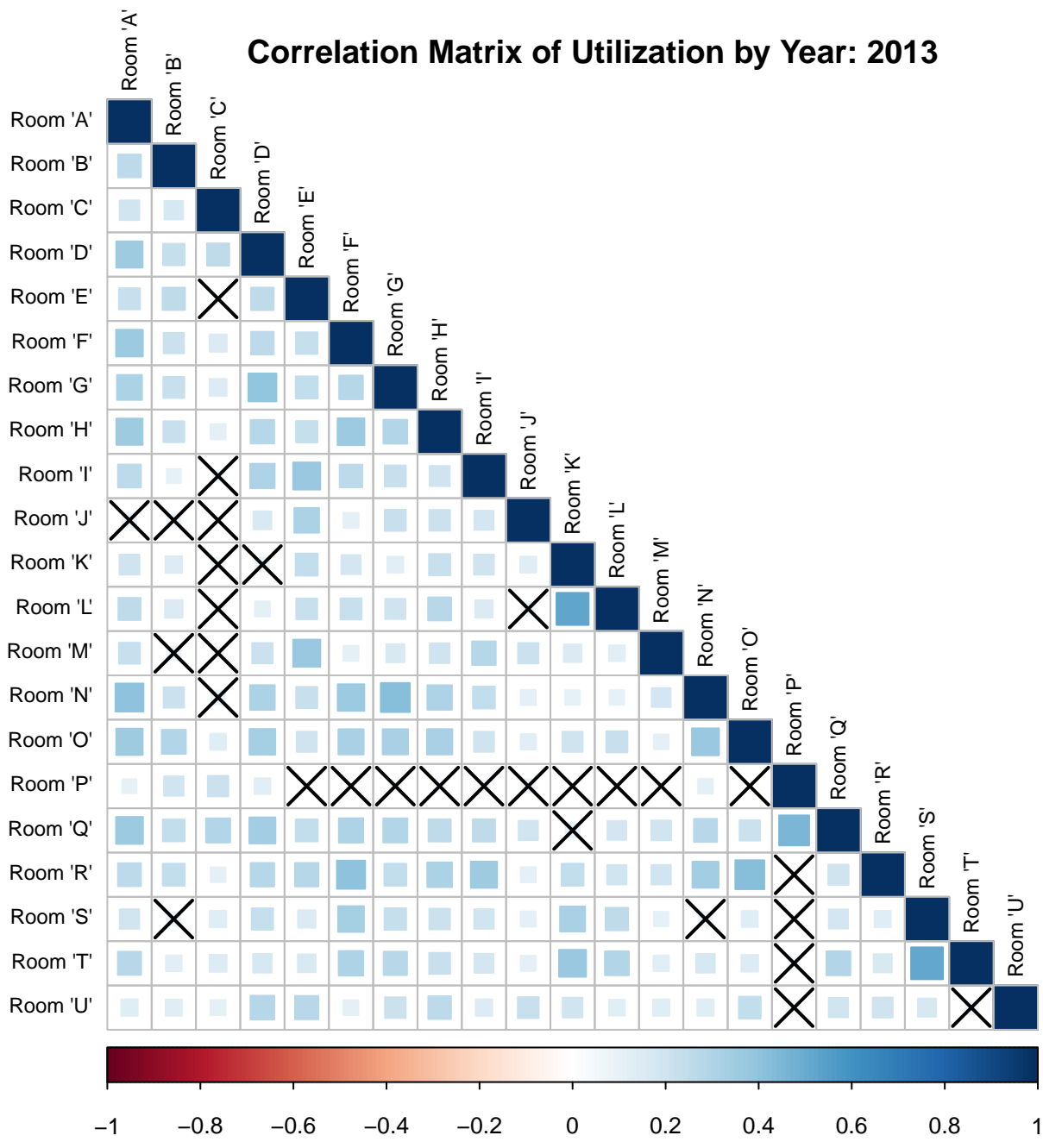
Correlation Matrix of Utilization by Year: 2011



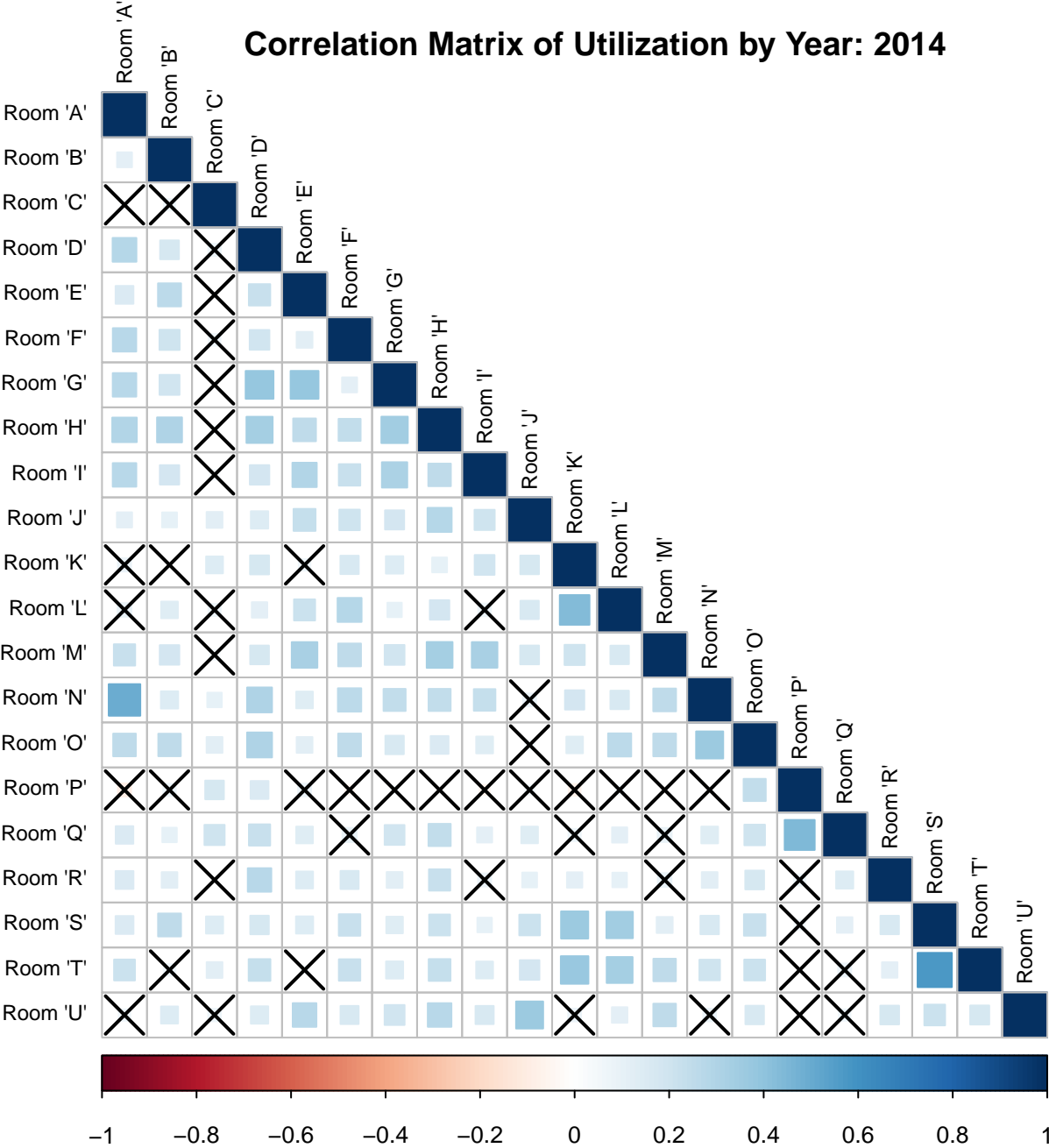
Correlation Matrix of Utilization by Year: 2012



Correlation Matrix of Utilization by Year: 2013

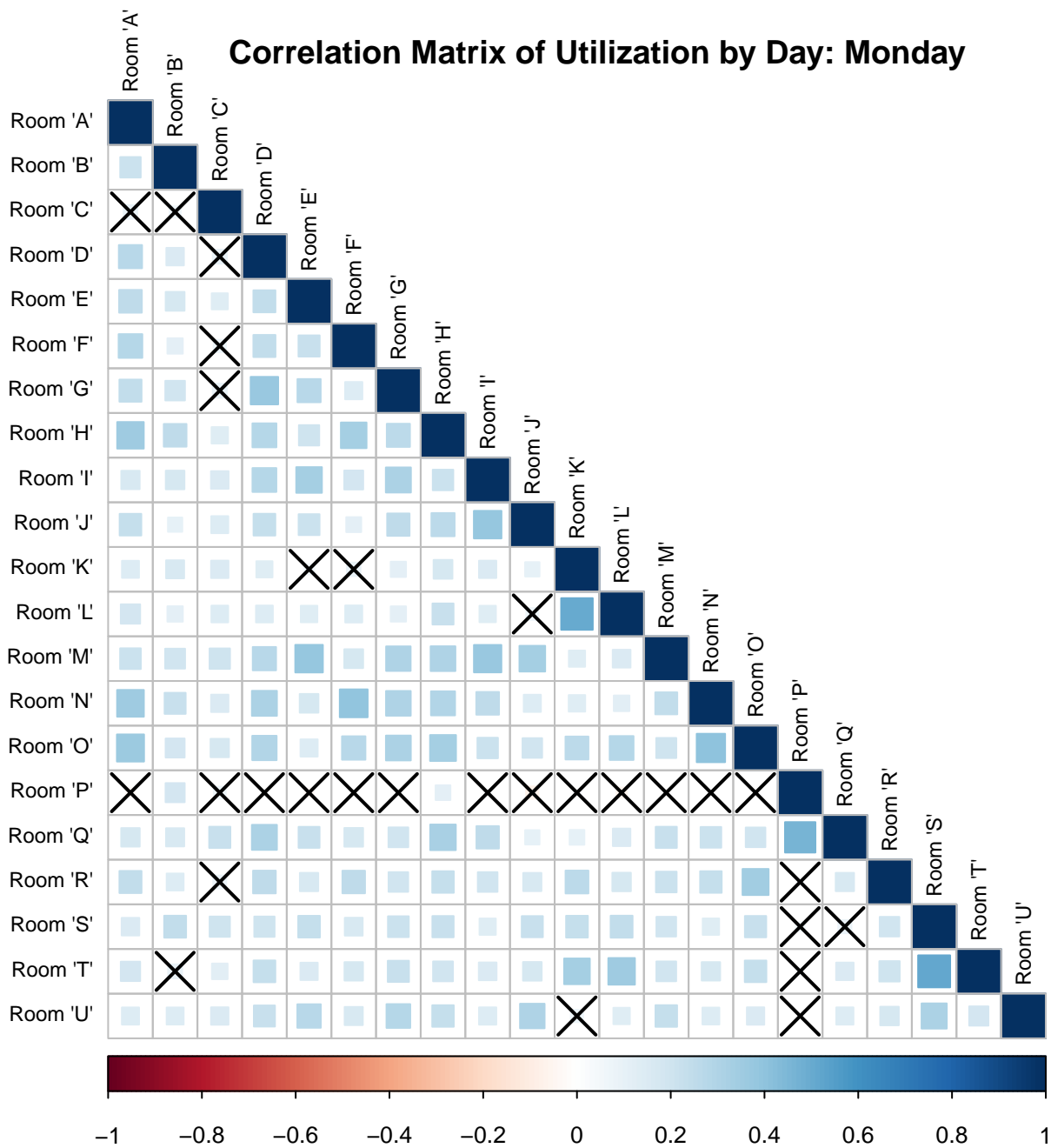


Correlation Matrix of Utilization by Year: 2014

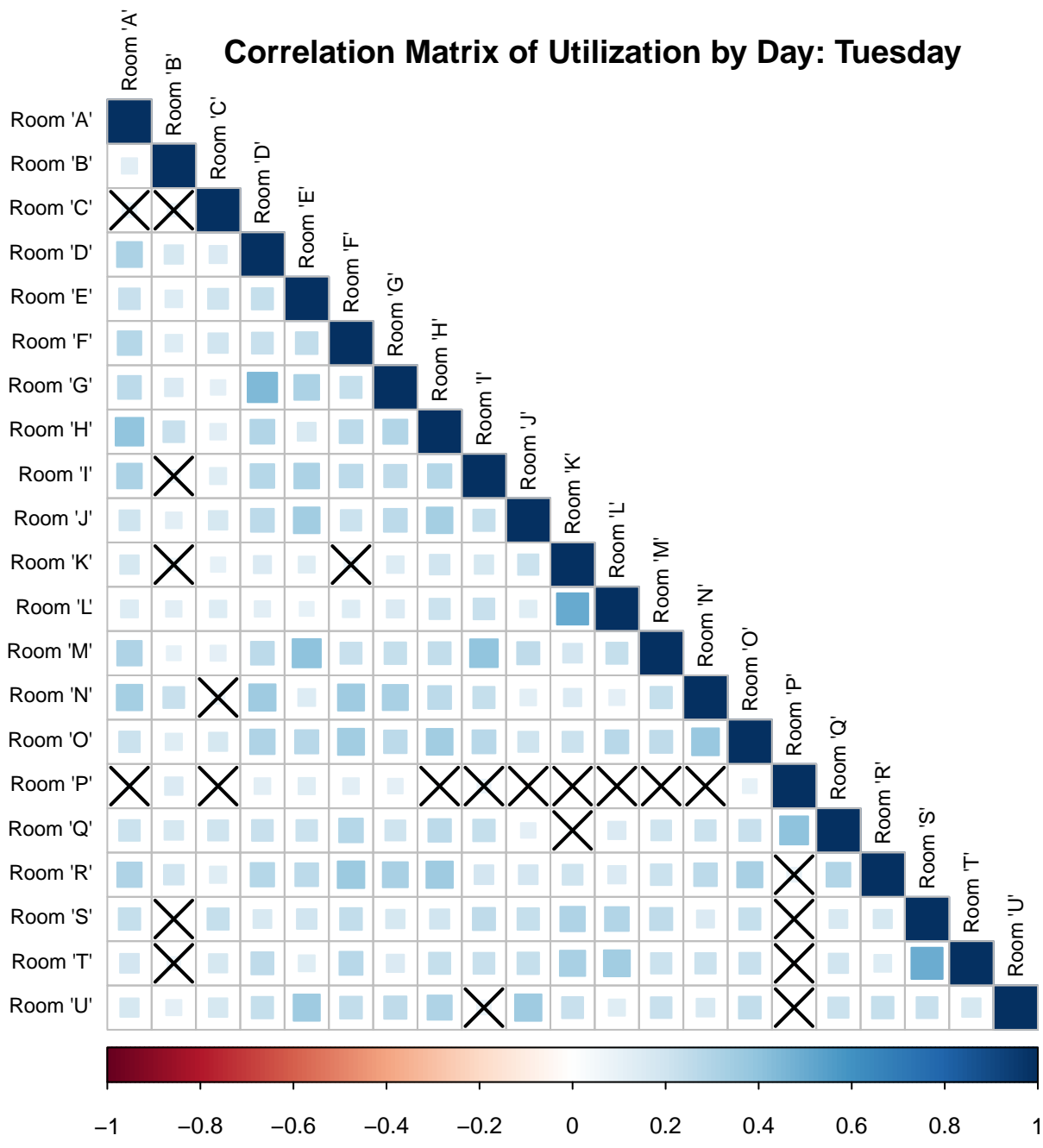


Correlation Matrix of Utilization by Day: Monday

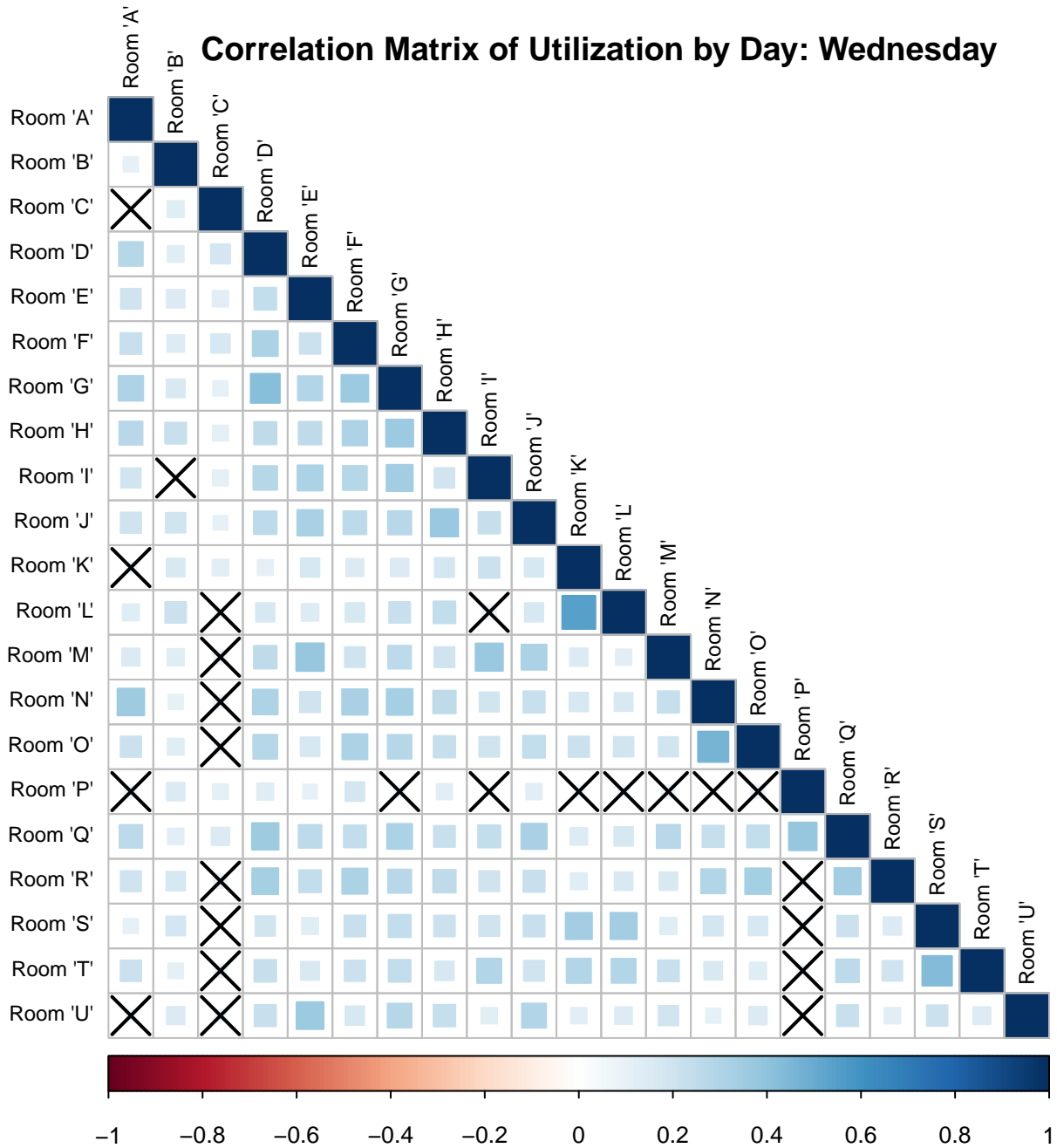
The heatmap displays the correlation between the utilization of 20 rooms (A through U) on Monday. The diagonal represents a correlation of 1.0 for each room. The lower triangle shows the pairwise correlations between different rooms. The color scale at the bottom indicates the strength and direction of the correlation, ranging from -1 (dark red) to 1 (dark blue). Black 'X' marks are present in several cells, indicating missing or zero correlation data.



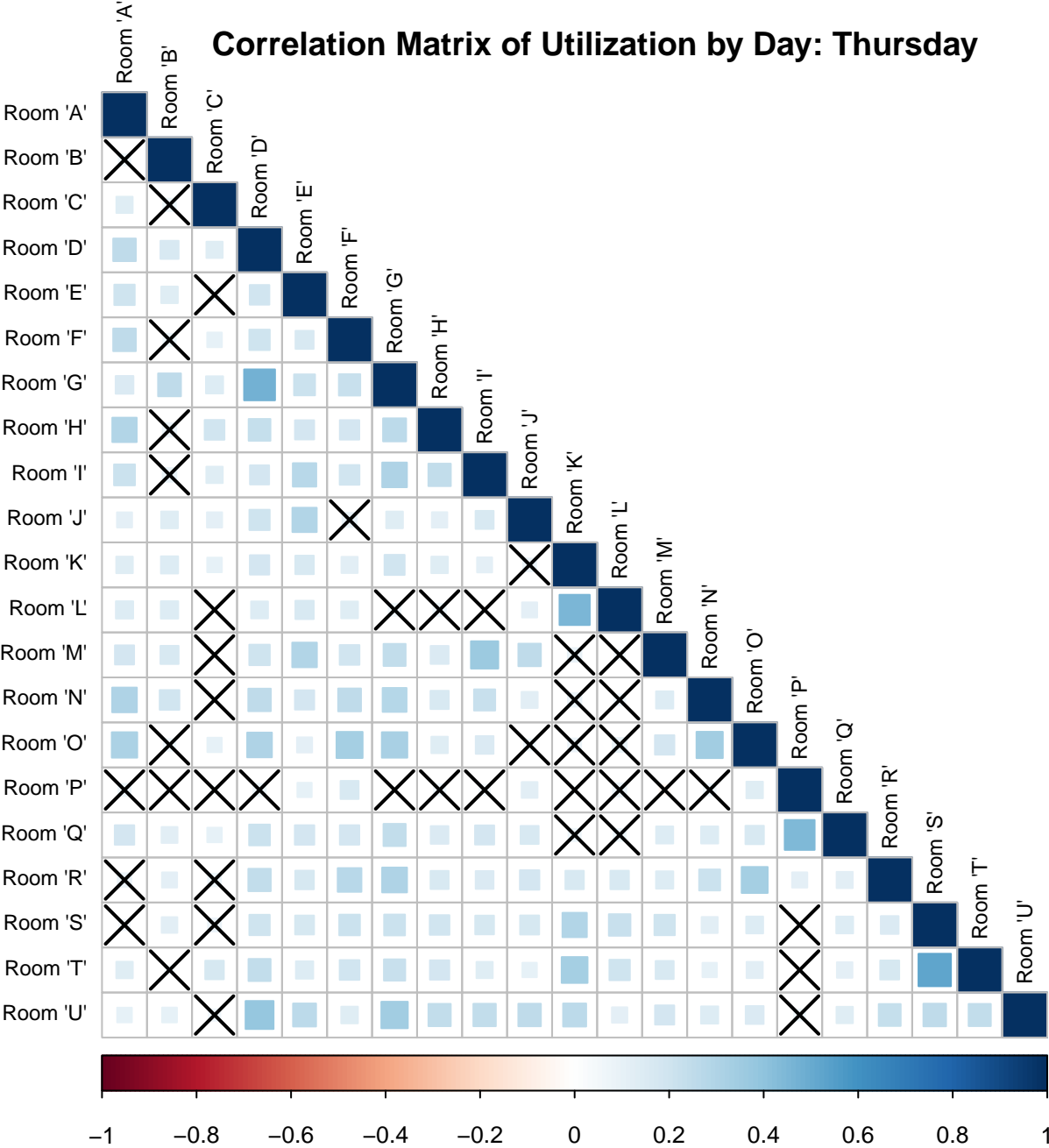
Correlation Matrix of Utilization by Day: Tuesday



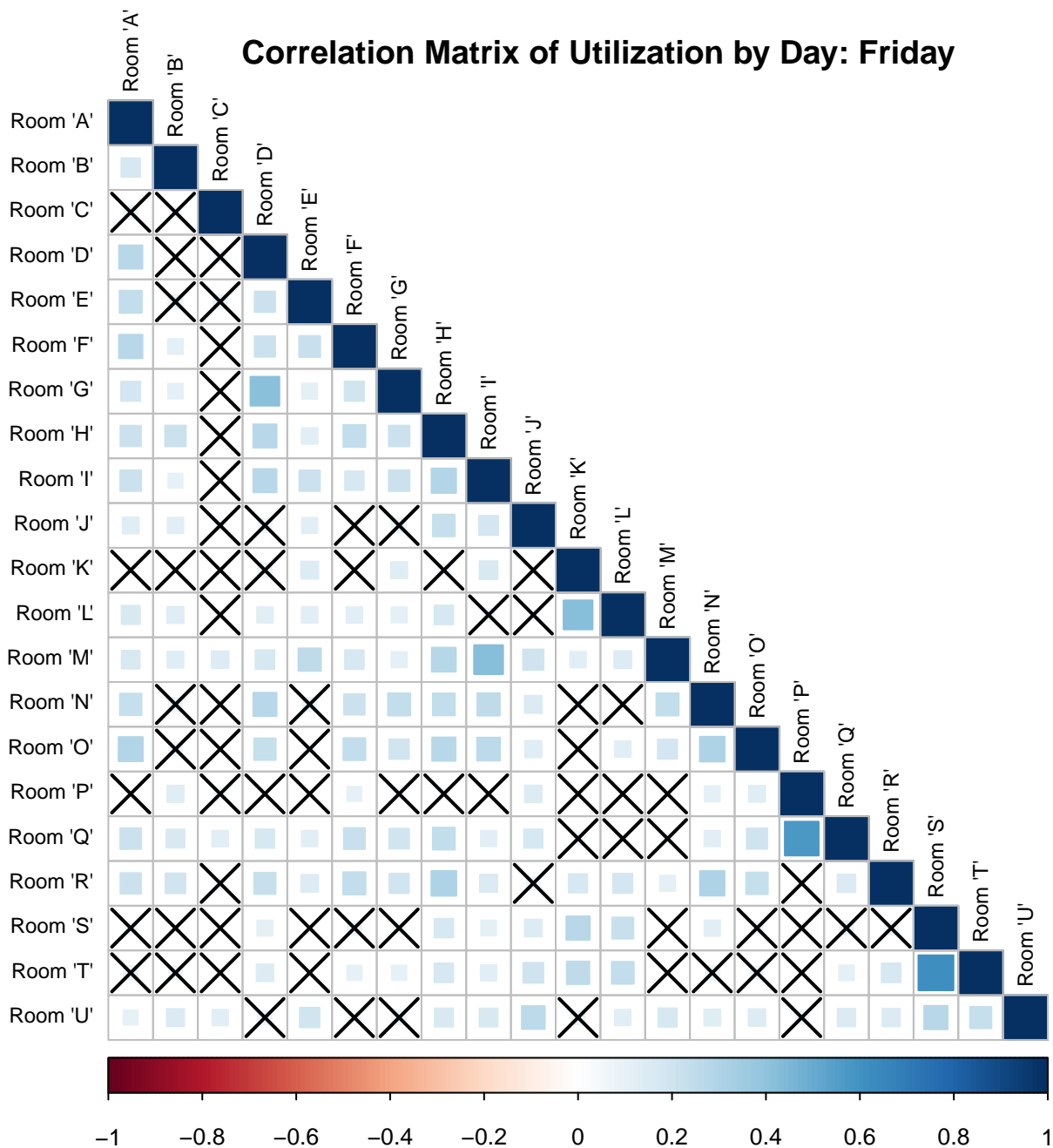
Correlation Matrix of Utilization by Day: Wednesday



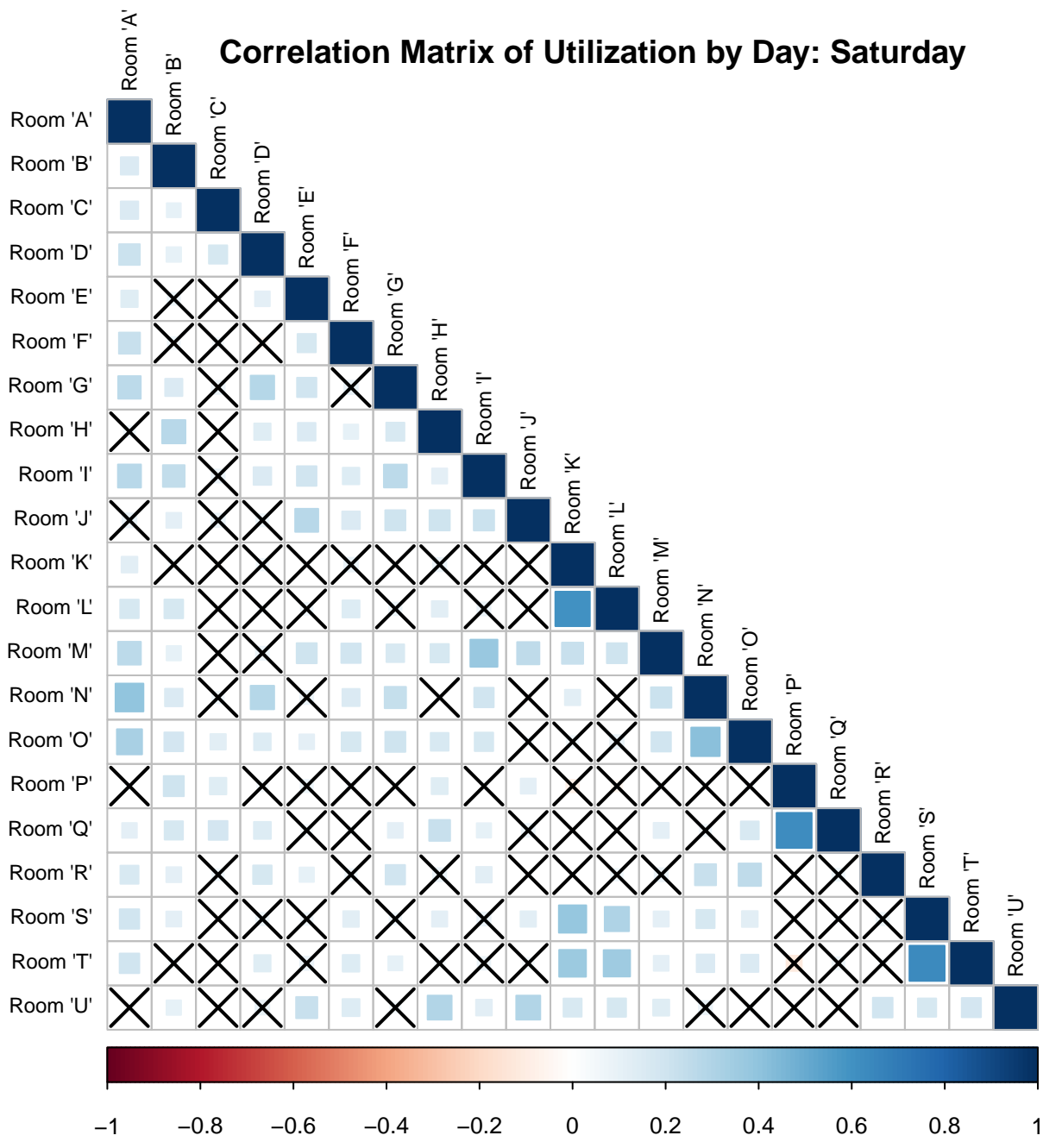
Correlation Matrix of Utilization by Day: Thursday



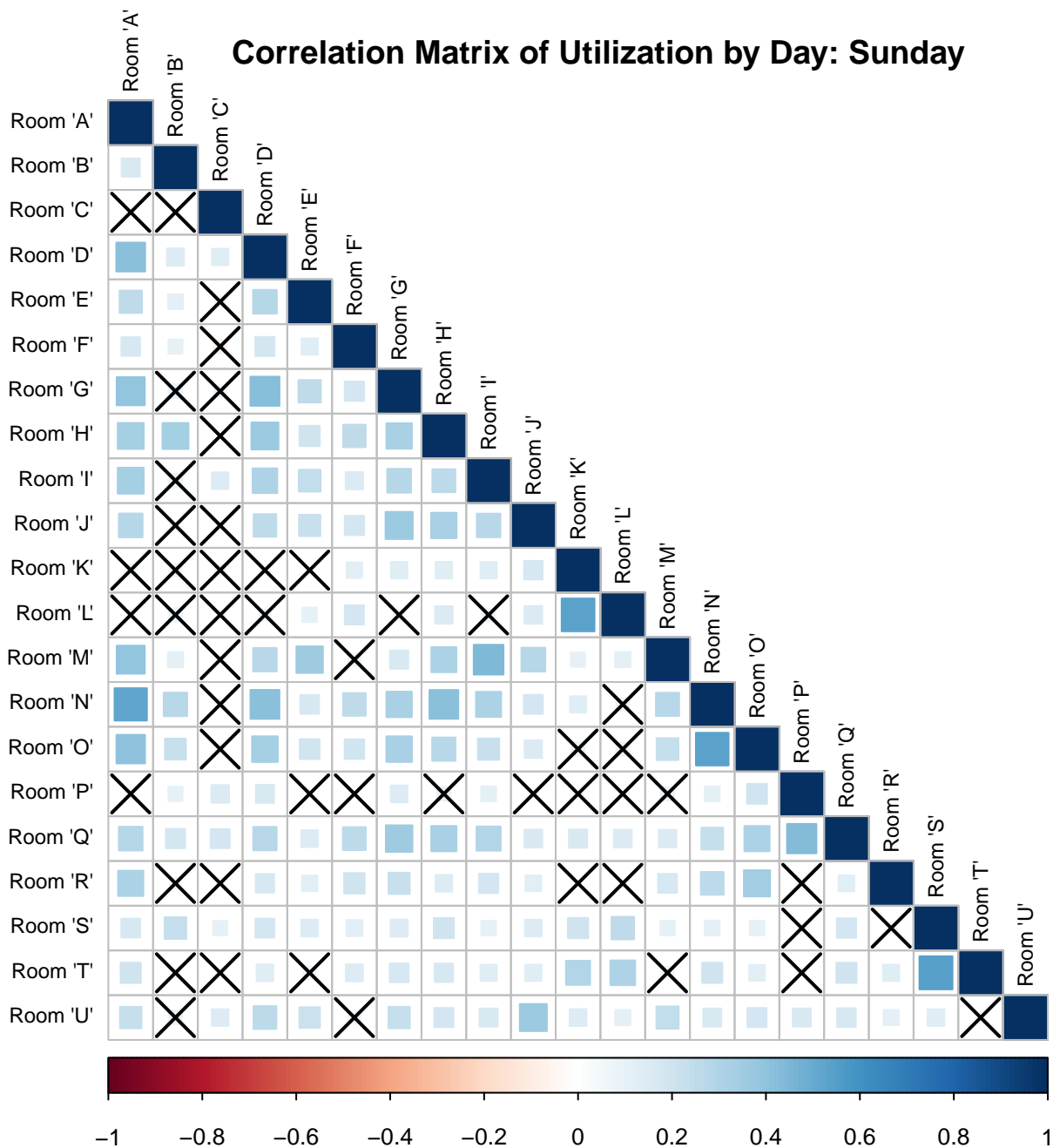
Correlation Matrix of Utilization by Day: Friday



Correlation Matrix of Utilization by Day: Saturday



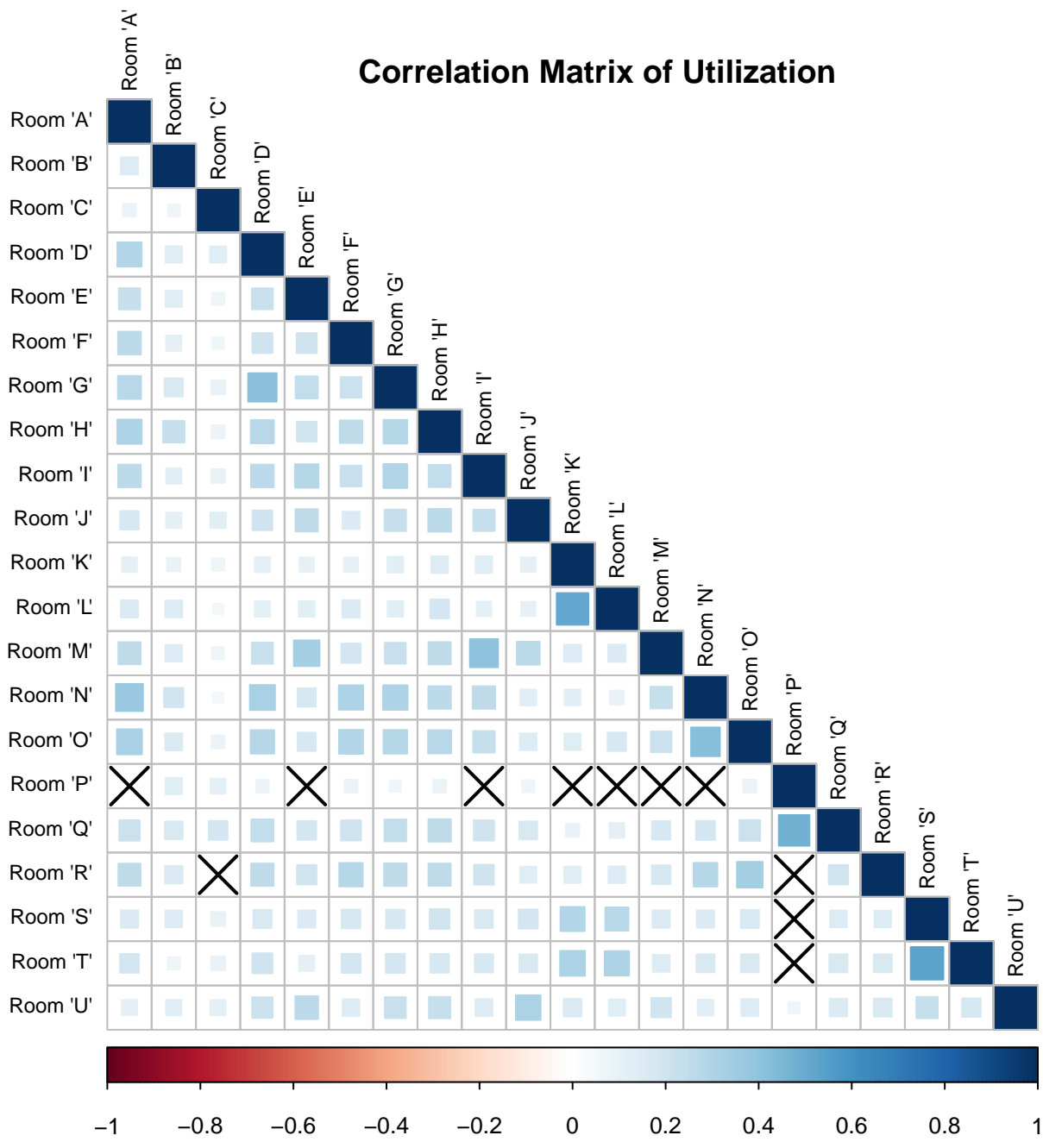
Correlation Matrix of Utilization by Day: Sunday



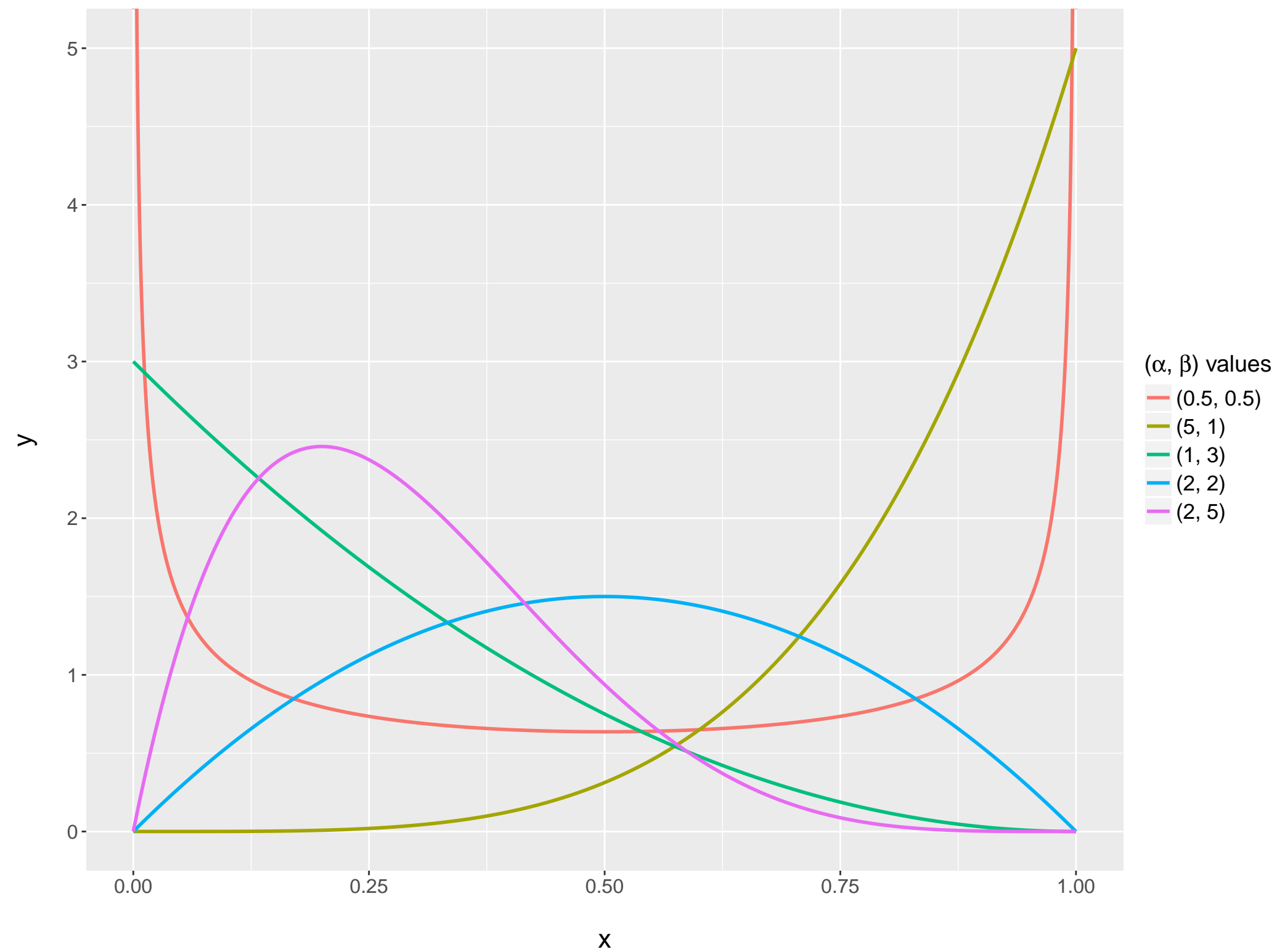
Correlation Matrix of Utilization

The heatmap displays the correlation matrix for 20 rooms, labeled 'Room 'A'' through 'Room 'U''. The diagonal elements are all 1.0, represented by dark blue squares. Rooms 'P', 'R', and 'S' have 'X' marks on the diagonal. The color scale ranges from -1 (dark red) to 1 (dark blue). The matrix is symmetric, with the lower triangle being a mirror image of the upper triangle. The rooms are ordered alphabetically from A to U.

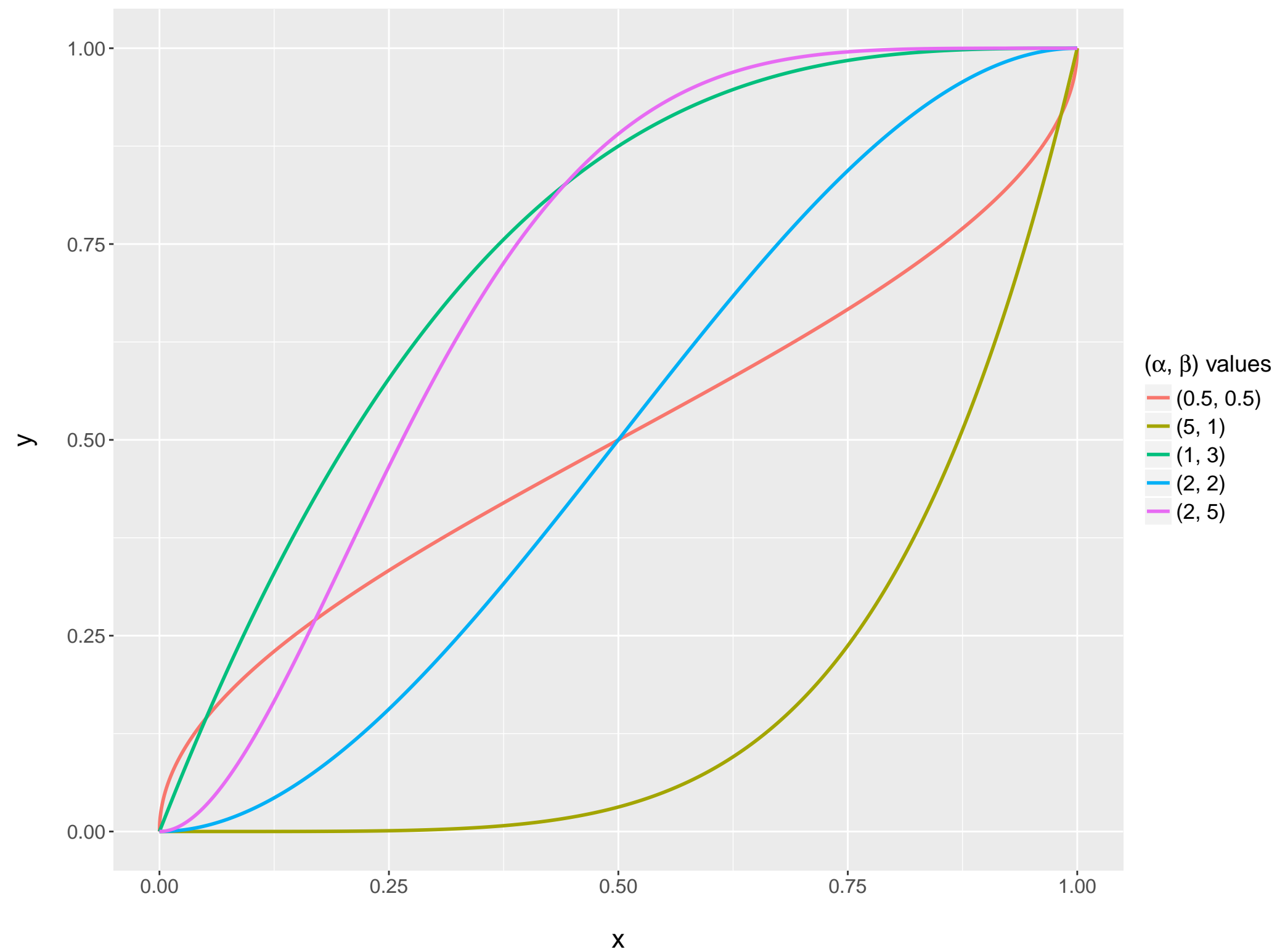
	Room 'A'	Room 'B'	Room 'C'	Room 'D'	Room 'E'	Room 'F'	Room 'G'	Room 'H'	Room 'I'	Room 'J'	Room 'K'	Room 'L'	Room 'M'	Room 'N'	Room 'O'	Room 'P'	Room 'Q'	Room 'R'	Room 'S'	Room 'T'	Room 'U'						
Room 'A'	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0						
Room 'B'	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9						
Room 'C'	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
Room 'D'	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7						
Room 'E'	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6						
Room 'F'	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.5						
Room 'G'	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.4						
Room 'H'	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2	0.3						
Room 'I'	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1	0.2						
Room 'J'	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.1						
Room 'K'	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0						
Room 'L'	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.8	0.7	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0					
Room 'M'	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.7	0.6	0.5	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0				
Room 'N'	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.6	0.5	0.4	0.6	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0			
Room 'O'	0.4	0.5	0.6	0.7	0.8	0.9	0.5	0.4	0.3	0.2	0.5	0.7	0.8	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0		
Room 'P'	0.5	0.6	0.7	0.8	0.9	0.6	0.5	0.4	0.3	0.2	0.6	0.8	0.9	0.9	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	
Room 'Q'	0.6	0.7	0.8	0.9	0.7	0.6	0.5	0.4	0.3	0.2	0.7	0.9	0.8	0.7	0.6	0.9	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0
Room '																											



Probability density of Gamma function for several (α, β) pairs



Cumulative distribution of Gamma function for several (α, β) pairs



PDF and CDF of Gamma function for several (α, β) pairs

