Summary and Interpretation of the Data Visualisations

The results are based on visual analysis of twelve time-binned eye-tracking charts, displaying individual participant data points and mean trend lines. All metrics were aggregated into 15 bins of 50,000 ms, covering approximately 00750 seconds, and calculated using both Attention and Fixation classification filters. Patterns were identified by comparing changes in mean values across bins, the spread of participant data, and consistency between corresponding Attention and Fixation charts.

Across all behavioural eye-movement measures (fixation starts, visit starts, total glance duration, and total whole-fixation duration), values remain near zero from bins 1-10, followed by a sharp increase from bin 11 onwards. This sudden change, visible as a steep rise in the mean trend lines and the emergence of non-zero participant data, indicates the onset of a distinct phase of visual engagement. Activity peaks at bins 12-13 and then declines towards bins 14-15, suggesting reduced engagement or task completion towards the end of the session.

The number of fixation starts increases most strongly during the active phase, peaking at approximately 50-52 events under the Attention filter and around 60-65 events under the Fixation filter. Visit starts show the same temporal pattern but at lower magnitudes, peaking at approximately 15-16 visits, indicating increased re-entries to areas of interest during peak engagement. Higher values under the Fixation filter are expected due to its broader event definition and do not alter the overall interpretation.

Duration-based measures support these findings. Total glance duration and total whole-fixation duration rise sharply after bin 10, peak at bins 12-13 (around 26,000-27,000 ms for glance duration), and then decrease. A small rebound in the final bin suggests either renewed attention during a concluding task segment or the influence of fewer participants contributing data at this stage.

Pupil diameter measures show more gradual temporal change. Average pupil diameter and average whole-fixation pupil diameter both decline towards the end of the session, with a pronounced drop at bin 15. This consistent end-of-task reduction, observed across both filters, may reflect reduced cognitive load or fatigue, assuming stable lighting conditions.

Across all measures, substantial between-participant variability is evident during the active phase, as shown by wide data dispersion within bins. Despite this, the strong alignment of trends across metrics and across Attention and Fixation filters indicates a robust overall pattern: a clearly defined late-onset period of visual engagement followed by declining behavioural and physiological indicators of attention.