COMPARATIVE ANALYSIS_GITEGA_NOVEMBER 2024

1. DATA COMPARISON OF MANUAL STATION VS AUTOMATIC STATION

1.1.TEMPERATURE

1.1.1. EXTREMES TEMPERATURE

i. Maximum temperature

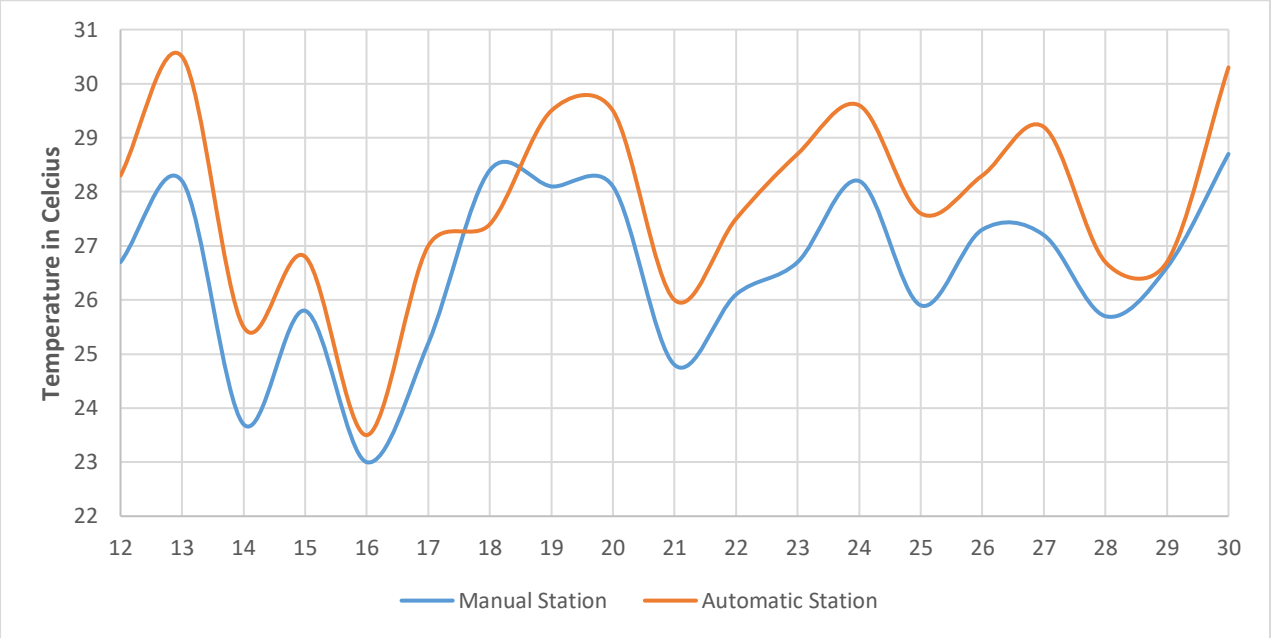

Figure 1: Daily Maximum temperature recorded by Automatic and Manual stations.

Figure 1 shows that maximum temperature readings from two stations align closely. However, on November 18, 2024, the automatic station recorded a higher temperature than the manual station. This discrepancy occurred because the Stevenson screen was left open for an extended period during a field visit. Corrective measures are required to address this issue.

ii. Minimum temperature

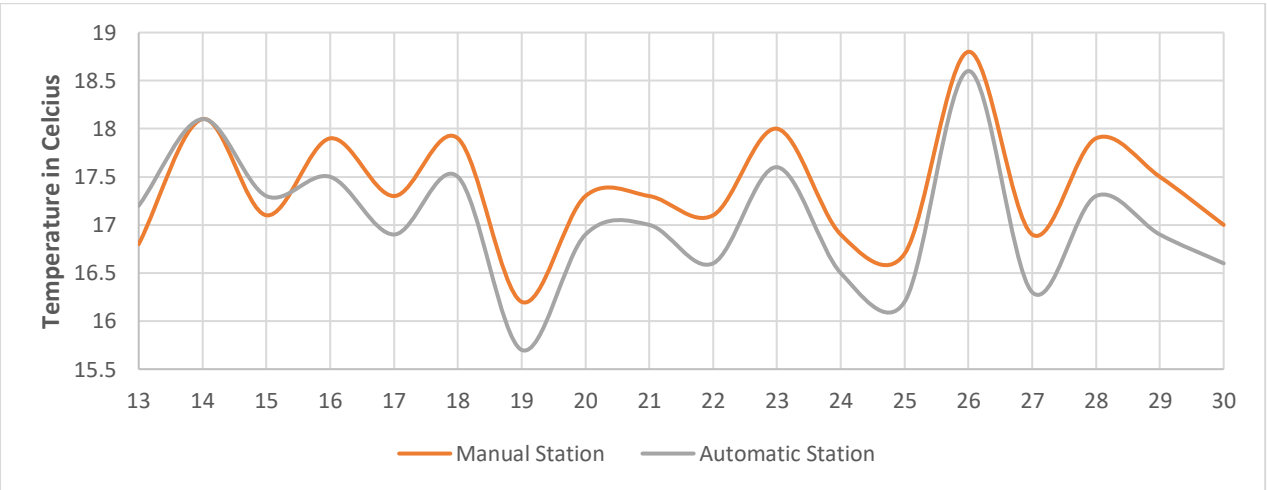

Figure 2: Minimum temperature

Figure 2 indicates that the minimum temperature readings from both stations are consistent.

1.2.RAINFALL

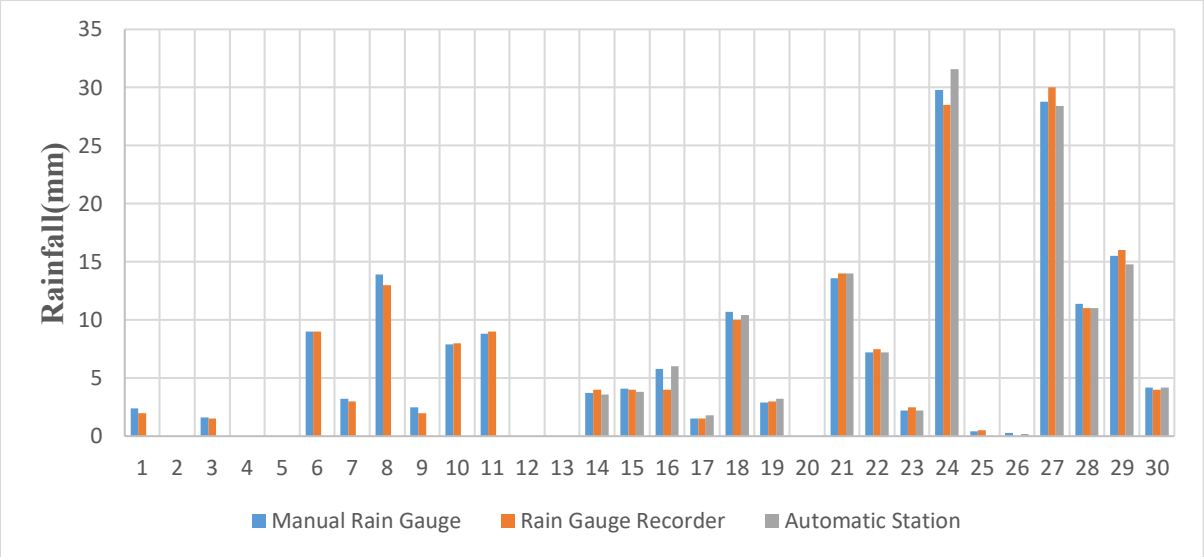

Figure 3: Rainfall

Figure 3 demonstrates that both recorders capture values that are closely aligned, showing a strong correlation in the data. It is worth noting that the automatic recordings began on November 14, 2024.

1.3.HOURLY DATA

i. Thermograph and Digital thermometer

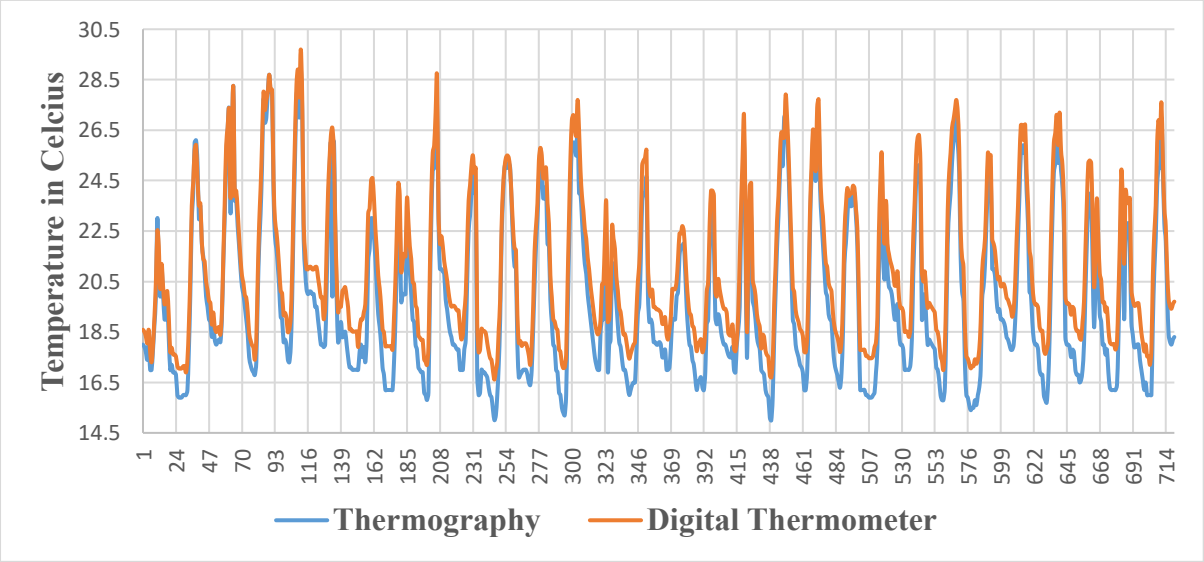

Figure 4: Thermograph vs Digital thermometer

The thermograph and digital thermometer exhibit a strong correlation, with an R-squared value of 0.9775.

ii. Hygrograph and Digital hygrometer

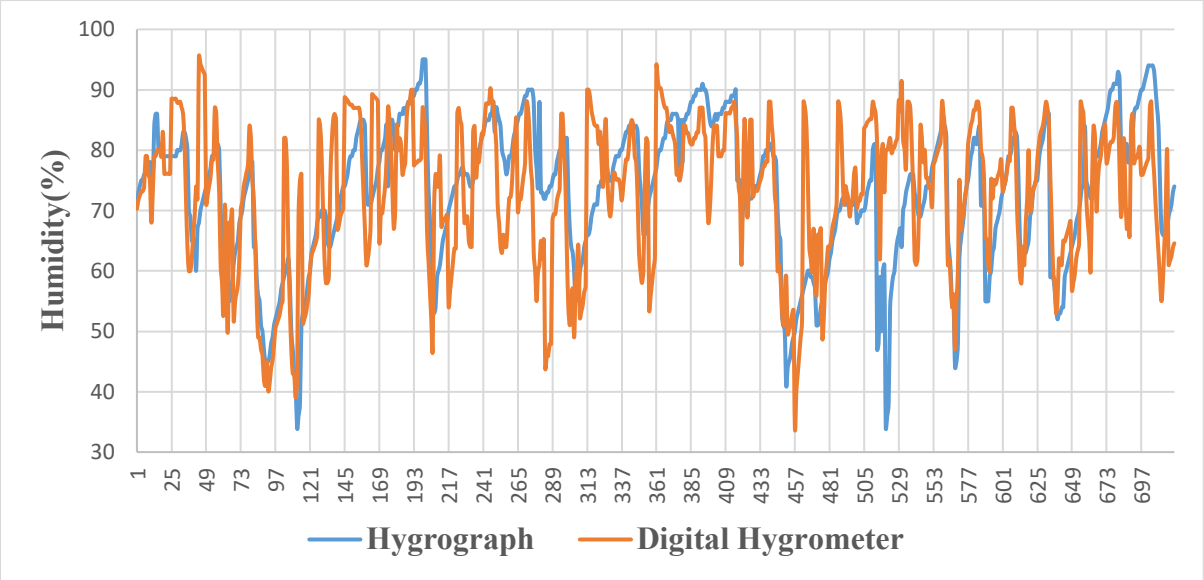

Figure 5: Hygrograph and Digital hygrometer

The readings from the hygrograph and digital hygrometer show a weak correlation, with an R-squared value of only 0.3849. Notably, a significant difference of 46 was observed on November 22, 2024, at 15:00.