**AUDIT TRAIL**

Overview:

* Created the workbook infant mortality rate in Kenyan counties that calculates the infant mortality rate for each county and forecasts the mortality rate for the next 10 years.

Data:

* The data was provided as a hard copy. Keyed in the data from the provided material.
* The data had no issues. Data errors may arise from manually keying in the data.

Assumptions:

* Rounded up the live births for each county since we cannot have number of lives in decimal places.

Calculation worksheets:

* **Sheet 1** (Raw data): This sheet contains the raw data
* **Sheet 2** (live births and IMR): In this sheet calculates the live births for each county as well as their IMRs using the formulas specified in the answers section.
* **Sheet 3** (Top 10 IMR countries): This sheet has the top 10 counties with the highest IMR as well as a graphical representation of the same. The formulas used are also specified in the answers section.
* **Sheet 4** (Forecasted IMR): This sheet contains the forecasted mortality rates using (No), as the mortality rate at 2023.
* **Sheet 5** (Sensitivity analysis): This sheet I performed sensitivity analysis for the first 2 counties using WHAT IF? Analysis.

**METHODOLOGY**

3.used the **=ROUND(0.3\*[@[Population ]],0)** function in excel to calculate the rounded Live births since there cannot be a fraction of live births(decimal places)**.** Proceeded to calculate the IMR (infant mortality rate) for each county using the formula **=([@[Under 5 Mortality]]/[@[Live births]])\*1000**

4. To identify the counties with the highest and lowest IMR, I used the formula **=INDEX(Table2[County],MATCH(MAX(Table2[2023 (IMR)Infant mortality rate]),Table2[2023 (IMR)Infant mortality rate],0))** and **=INDEX(Table2[County],MATCH(MAX(Table2[2023 (IMR)Infant mortality rate]),Table2[2023 (IMR)Infant mortality rate],0))** respectively.

**ANS**= Garissa and Samburu respectively

5. Calculated Kenya’s average IMR using the formula **=AVERAGE([2023 (IMR)Infant mortality rate])**

**ANS=** 18.7387

6.No. of counties with an IMR of greater than 25 are 15

Calculated this using the formula **=COUNTIF(Table2[[#Data],[#Totals],[2023 (IMR)Infant mortality rate]],">25")**

7.The ten counties with the highest IMR:

|  |
| --- |
| Bomet |
| Busia |
| Garissa |
| Kisumu |
| Laikipia |
| Machakos |
| Marsabit |
| Nandi |
| Siaya |
| Vihiga |

Got these counties by first using conditional formatting to highlight the top to IMRs then transferred these values to an new sheet and used the formula **=VLOOKUP(A2:A11,I3:J49,2,FALSE)** to lookup the counties.

8.Use a bar chart to represent the 10 counties. Used a smaller scale so that the difference in the bars is visible.

10. Forecasted the IMR for the 10 counties using the formula **=$B5\*EXP(-$B$16\*C$3)** for the next 10 years up to 2033