Integrated project (Visualising): Maji Ndogo part 3 [MCQ] (Version : 0)

TEST

Correct Answer

Answered in 25.05 Minutes

Question 1/10

What is a key consideration for effective visual communication when designing a Power BI report page?

- [x] Ensure a clear and logical layout that guides the viewer's eye.
- [ ] Use bright colours for all visuals to attract attention.
- [ ] Use as many visuals as possible to show detailed data.
- [ ] Keep all visuals the same size for uniformity.

Explanation:

Using too many visuals can clutter the report.

Overuse of bright colours can be distracting.

Uniform size for all visuals may not be effective for emphasis or hierarchy.

Question 2/10

How would you enable a report user to view details for a specific province on a separate page when they select it on the main page?

- [ ] Use a bookmark to navigate to the specific page.

- [ ] Use a slicer on the main page.
- [x] Implement drill-through functionality.
- [ ] Create a hyperlink in the report.

Explanation:

Drill-through functionality allows users to select an item on one page and see related details on another page.

Slicers filter data but do not navigate to different pages.

Hyperlinks in Power BI do not function in this manner.

Bookmarks are for saving specific views, not for drill-through scenarios.

Question 3/10

The project planners propose an additional 30% increase in the upgrade costs for rural water sources in Sokoto. Which DAX formula would correctly calculate the adjusted cost?

- [x] Sokoto_budget = SUM(infrastructure_cost[Rural_adjusted_cost] * 1.3
- [ ] Sokoto_budget = infrastructure_cost[unit_cost_USD] * 1.3
- [x] Sokoto_budget = infrastructure_cost[Rural_adjusted_cost] * 1.3
- [ ] Sokoto_budget = infrastructure_cost[unit_cost_USD] + (infrastructure_cost[unit_cost_USD] * 0.3)

Explanation:

The correct formula uses Rural_adjusted_cost,

which already accounts for the initial 50% increase, and then multiplies it by 1.3 to apply the additional 30% increase for Sokoto.

Using unit_cost_USD * 1.3 does not account for the initial 50% increase specific to rural areas.

Adding 30% to unit_cost_USD is mathematically similar to multiplying by 1.3 but does not include the initial rural adjustment.

Summing all Rural_adjusted_cost before multiplying does not allow for individual row calculations and would result in an inflated total.

Question 4/10

What does it mean when there are 3696 Install tap(s) in our visuals?

- [x] There are 3696 shared tap sites where additional taps have to be installed.
- [ ] 3696 homes will get new taps installed.
- [x] 3696 shared taps need to be installed across Maji Ndogo.
- [ ] The budget only allows for 3696 taps to be installed at shared tap sites across Maji Ndogo.

Explanation:

The aggregation simplified the visual, but shared tap sites have between 1 and 8 taps that have to be installed. Install tap(s) therefore represent the sites.

3696 shared taps need to be installed at sites across Maji Ndogo is incorrect because Install tap(s) represent the sites.

3696 homes will get new taps installed is incorrect because installed taps refer to shared taps.

The budget allows for only 3696 taps to be installed at shared tap sites is incorrect because no mention of budget requirements was made.

Question 5/10

Which of the following statements is false?

- [ ] The type of aggregated improvement that will be least frequently implemented in Maji Ndogo has over half of its budget allocated to a single province.
- [ ] Sokoto and Kilimani combined use up more than half of the total national budget.
- [x] Hawassa is the only province in Maji Ndogo where there are more people with taps in their homes in rural areas than in urban areas.
- [ ] More people collect water from rivers in rural areas than urban ones.

Explanation:

Akatsi also has more rural homes with working taps and Sokoto has more rural homes with broken taps. So Hawassa is not the only province with more rural homes with taps.

'More people collect water from rivers in rural areas than urban ones' is true.

'The improvement with the least number actually costs the most' is true. Use the aggregated improvements so that all Install X taps nearby are in one category; Install Tap(s).

'Sokoto and Kilimani combined use up more than half of the total budget' is true.

Question 6/10

The total combined budget of Kilimani and Sokoto is:

- [ ] $ 40151475

- [ ] $ 110755775
- [ ] $ 146737375
- [x] $ 79400700

Explanation:

Students have to select multiple provinces.

$ 40151475 is incorrect because it is the budget for Sokoto only.

$ 146737375 is incorrect because it is the total budget.

$ 110755775 is incorrect because it includes Akatsi too.

Question 7/10

Which type of improvement in Sokoto accounts for the highest cost?

- [ ] Installing RO and UV filters
- [x] Drilling wells
- [ ] Installing RO filters
- [ ] Inspecting infrastructure

Explanation:

Installing RO filters is incorrect because nearly half of Sokoto's budget goes to drilling wells.

Installing RO and UV filters is incorrect because nearly half of Sokoto's budget goes to drilling wells.

Inspecting infrastructure is incorrect because nearly

half of Sokoto's budget goes to drilling wells.

Question 8/10

Which towns have the highest budget in their province?

- [ ] Serowe, Abidjan, Yaounde, Zanzibar, and Deka
- [x] Ilanga, Zuri, Amina (Hawassa), Asmara, and Lusaka
- [ ] Harare (Akatsi), Abidjan, Serowe, Amara, and Cheche
- [ ] Zuri, Mrembo, Harare (Kilimani), Isiqalo, and Ilanga

Explanation:

If students set up their provincial pages correctly, then this is a simple lookup on each page.

Zuri, Mrembo, Harare (Kilimani), Isiqalo, and Ilanga is incorrect because these are the towns with the highest total budgets across all provinces.

Serowe, Abidjan, Yaounde, Zanzibar, and Deka is incorrect because these are towns with the smallest budgets.

Harare (Akatsi), Abidjan, Serowe, Amara, and Cheche is incorrect because these are towns with the smallest budgets across Maji Ndogo.

Question 9/10

Which town's budget is this?

Improvement	Quantity	Unit Cost (USD)	Budget
Install RO filter	87	$4 200	$365 400
Install UV and RO filter	104	$3 200	$332 800

Drill well	7	$8 500	$59 500
Install 8 taps nearby	3	$16 000	$48 000
Diagnose local infrastructure	50	$350	$17 500
Install 7 taps nearby	1	$14 000	$14 000
Install 6 taps nearby	1	$12 000	$12 000
Install 5 taps nearby	1	$10 000	$10 000

- [x] Djenne
- [ ] Isiqalo
- [ ] Amina
- [x] Bello

Explanation:

Students are prompted to create provincial drill-through pages with budgets per town. If they have done that, the exercise is to check the budget for each town.

Question 10/10

Which province has the lowest cost per citizen to improve?

Assume that cost per citizen is the budget/population.

- [ ] Hawassa
- [x] Amanzi
- [ ] Sokoto
- [ ] Akatsi

Explanation:

There are multiple ways to solve this. Students can calculate the values from one of the table entries on the main page by hand. Each is done by hand.

cost_per_citizen (Akatsi) = Total cost(Akatsi) / Population(Akatsi)
cost_per_citizen (Akatsi) = $31 355 075/5 993 306 = $5.23/citizen

They can also use a measure to calculate the "average" cost per citizen "per province". It should be:

cost_per_citizen = SUM(Budgeted_improvement_cost)/SUM(number of people served).

Akatsi is incorrect because its cost per citizen = $5.23. The cost per citizen measure is calculated as follows: cost_per_citizen = SUM(Budgeted_improvement_cost)/SUM(number of people served).

Sokoto is incorrect because its cost per citizen = $6.95

Hawassa is incorrect because its cost per citizen = $5.87