**CineCube Report**This is a report on the Avg of hours\_per\_week when native country is fixed to 'USA', education is fixed to 'Post-Secondary', work is fixed to 'With-Pay' and age is fixed to '37-56'. We will start by answering the original query and we complement the result with contextualization and detailed analyses.

**Answer to the original question**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Assoc | Post-grad | Some-college | University |
|  | Gov | 41.54 | 44.82 | 40.83 | 43.11 |
|  | Private | 42.15 | 45.74 | 43.15 | 45.03 |
|  | Self-emp | 45.34 | 50.33 | 48.77 | 48.63 |

Here, you can see the answer of the original query. You have specified native country to be equal to 'USA', education to be equal to 'Post-Secondary', work to be equal to 'With-Pay', and age to be equal to '37-56'. We report on Avg of hours\_per\_week grouped by education at level 2, and work at level 1 .  
You can observe the results in this table. We highlight the largest values with red and the lowest values with blue color.   
Column Assoc has 2 of the 3 lowest values.  
Row Self-emp has 3 of the 3 highest values.  
Row Gov has 2 of the 3 lowest values.  
Row Private has 1 of the 3 lowest values.

**Act I: Putting results in context**In this series of slides we put the original result in context, by comparing the behavior of its defining values with the behavior of values that are similar to them.

**Assessing the behavior of native country**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Summary for native country | Canada | **USA** |
|  | Gov | 46.40 | **42.75** |
|  | Private | 44.74 | **43.94** |
|  | Self-emp | 44.00 | **48.59** |

In this graphic, we put the original request in context by comparing the value 'USA' for native country at level 1 with its sibling values. We highlight the reference cells with bold, the highest value with red and the lowest value with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 2 to be equal to ''North-America'', education at level 3 to be equal to ''Post-Secondary'', work at level 2 to be equal to ''With-Pay'', and age at level 3 to be equal to ''37-56''.  
Compared to its sibling we observe that in 1 out of 3 cases USA has higher value than Canada.  
In 2 out of 3 cases USA has lower value than Canada.

**Assessing the behavior of native country**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for native country | Assoc | Post-grad | Some-college | University |
|  | Canada | 41.25 | 44.50 | 50.09 | 41.93 |
|  | **USA** | **42.42** | **46.09** | **43.56** | **45.33** |

In this graphic, we put the original request in context by comparing the value 'USA' for native country at level 1 with its sibling values. We highlight the reference cells with bold, the highest values with red and the lowest values with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 2 to be equal to ''North-America'', education at level 3 to be equal to ''Post-Secondary'', work at level 2 to be equal to ''With-Pay'', and age at level 3 to be equal to ''37-56''.  
Compared to its sibling we observe that in 3 out of 4 cases USA has a higher value than Canada.  
In 1 out of 4 cases USA has a lower value than Canada.

**Assessing the behavior of education**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Summary for education | **Post-Secondary** | Without-Post-Secondary |
|  | Gov | **42.75** | 40.56 |
|  | Private | **43.94** | 41.68 |
|  | Self-emp | **48.59** | 47.21 |

In this graphic, we put the original request in context by comparing the value 'Post-Secondary' for education at level 3 with its sibling values. We highlight the reference cells with bold, the highest value with red and the lowest value with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 1 to be equal to ''USA'', education at level 4 to be equal to ''ALL'', work at level 2 to be equal to ''With-Pay'', and age at level 3 to be equal to ''37-56''.  
Compared to its sibling we observe that in 3 out of 3 cases Post-Secondary has higher value than Without-Post-Secondary.

**Assessing the behavior of work**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for work | Assoc | Post-grad | Some-college | University |
|  | **With-Pay** | **42.42** | **46.09** | **43.56** | **45.33** |

In this graphic, we put the original request in context by comparing the value 'With-Pay' for work at level 2 with its sibling values. We highlight the reference cells with bold, the highest value with red and the lowest value with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 1 to be equal to ''USA'', education at level 3 to be equal to ''Post-Secondary'', work at level 3 to be equal to ''ALL'', and age at level 3 to be equal to ''37-56''.

**Assessing the behavior of age**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for age | 17-36 | **37-56** | 57-76 | 77-96 |
|  | Gov | 39.56 | **42.75** | 39.48 | 24.83 |
|  | Private | 39.23 | **43.94** | 39.49 | 34.97 |
|  | Self-emp | 46.80 | **48.59** | 39.18 | 30.85 |

In this graphic, we put the original request in context by comparing the value '37-56' for age at level 3 with its sibling values. We highlight the reference cells with bold, the highest values with red and the lowest values with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 1 to be equal to ''USA'', education at level 3 to be equal to ''Post-Secondary'', work at level 2 to be equal to ''With-Pay'', and age at level 4 to be equal to ''17-96''.  
Compared to its sibling we observe the following:  
In 3 out of 3 cases 37-56 has higher value than 17-36.  
In 3 out of 3 cases 37-56 has higher value than 57-76.  
In 3 out of 3 cases 37-56 has higher value than 77-96.

**Assessing the behavior of age**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for age | Assoc | Post-grad | Some-college | University |
|  | 17-36 | 41.30 | 44.48 | 36.86 | 42.48 |
|  | **37-56** | **42.42** | **46.09** | **43.56** | **45.33** |
|  | 57-76 | 39.45 | 42.18 | 37.82 | 39.77 |
|  | 77-96 | 19.33 | 38.36 | 27.45 | 35.70 |

In this graphic, we put the original request in context by comparing the value '37-56' for age at level 3 with its sibling values. We highlight the reference cells with bold, the highest values with red and the lowest values with blue color. We calculate the Avg of hours\_per\_week while fixing native country at level 1 to be equal to ''USA'', education at level 3 to be equal to ''Post-Secondary'', work at level 2 to be equal to ''With-Pay'', and age at level 4 to be equal to ''17-96''.  
Compared to its sibling we observe the following:  
In 4 out of 4 cases 37-56 has a higher value than 17-36.  
In 4 out of 4 cases 37-56 has a higher value than 57-76.  
In 4 out of 4 cases 37-56 has a higher value than 77-96.

**Act II: Explaining results**In this series of slides we will present a detailed analysis of the values involved in the result of the original query. To this end, we drill-down the hierarchy of grouping levels of the result to one level of aggregation lower, whenever this is possible.

**Drilling down the Rows of the Original Result**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *Gov* |  | Assoc | Post-grad | Some-college | University |
|  |  | Federal-gov | 41.83 (48) | 44.04 (48) | 41.33 (132) | 43.96 (121) |
|  |  | Local-gov | 41.67 (89) | 44.63 (246) | 40.59 (190) | 43.15 (231) |
|  |  | State-gov | 40.98 (47) | 45.50 (127) | 40.62 (104) | 42.28 (136) |
|  | *Private* |  |  |  |  |  |
|  |  | Private | 42.15 (672) | 45.74 (546) | 43.15 (1587) | 45.03 (1377) |
|  | *Self-emp* |  |  |  |  |  |
|  |  | Self-emp-inc | 49.50 (40) | 54.29 (70) | 52.34 (119) | 50.93 (187) |
|  |  | Self-emp-not-inc | 43.21 (78) | 47.62 (102) | 46.92 (230) | 47.01 (266) |

In this slide, we expand dimension work by drilling down from level 1 to level 0. For each cell we show both the Avg of hours\_per\_week and the number of tuples that correspond to it in parentheses. We highlight the 6 lowest values in blue and the 6 largest in red color.  
Some interesting findings include:  
Column Post-grad has 2 of the 6 highest values.  
Column University has 2 of the 6 highest values.  
Column Assoc has 3 of the 6 lowest values.  
Column Some-college has 3 of the 6 lowest values.

**Drilling down the Columns of the Original Result**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Assoc* |  | Gov | Private | Self-emp |
|  |  | Assoc-acdm | 42.06 (86) | 43.03 (270) | 45.53 (59) |
|  |  | Assoc-voc | 41.08 (98) | 41.56 (402) | 45.15 (59) |
|  | *Post-grad* |  |  |  |  |
|  |  | Doctorate | 46.17 (64) | 48.68 (84) | 53.00 (47) |
|  |  | Masters | 44.58 (357) | 45.20 (462) | 49.33 (125) |
|  | *Some-college* |  |  |  |  |
|  |  | Some-college | 40.83 (426) | 43.15 (1587) | 48.77 (349) |
|  | *University* |  |  |  |  |
|  |  | Bachelors | 42.70 (440) | 44.62 (1260) | 47.99 (330) |
|  |  | Prof-school | 46.90 (48) | 49.43 (117) | 50.34 (123) |

In this slide, we expand dimension education by drilling down from level 2 to level 1. For each cell we show both the Avg of hours\_per\_week and the number of tuples that correspond to it in parentheses. We highlight the 5 lowest values in blue and the 5 largest in red color.  
Some interesting findings include:  
Column Self-emp has 4 of the 5 highest values.  
Column Gov has 4 of the 5 lowest values.

**Summary**-In this slide we summarize our findings.  
-Concerning the original query, some interesting findings include:  
-Column Assoc has 2 of the 3 lowest values.  
-Row Self-emp has 3 of the 3 highest values.  
-Row Gov has 2 of the 3 lowest values.  
-Row Private has 1 of the 3 lowest values.  
-  
-  
-First, we tried to put the original result in context, by comparing its defining values with similar ones.  
-When we compared USA to its siblings, grouped by native country and work, we observed the following:  
-In 1 out of 3 cases USA has higher value than Canada.  
-In 2 out of 3 cases USA has lower value than Canada.  
-When we compared USA to its siblings, grouped by education and native country, we observed the following:  
-In 3 out of 4 cases USA has a higher value than Canada.  
-In 1 out of 4 cases USA has a lower value than Canada.  
-When we compared Post-Secondary to its siblings, grouped by education and work, we observed the following:  
-In 3 out of 3 cases Post-Secondary has higher value than Without-Post-Secondary.  
-When we compared 37-56 to its siblings, grouped by age and work, we observed the following:  
-  
-In 3 out of 3 cases 37-56 has higher value than 17-36.  
-In 3 out of 3 cases 37-56 has higher value than 57-76.  
-In 3 out of 3 cases 37-56 has higher value than 77-96.  
-When we compared 37-56 to its siblings, grouped by education and age, we observed the following:  
-  
-In 4 out of 4 cases 37-56 has a higher value than 17-36.  
-In 4 out of 4 cases 37-56 has a higher value than 57-76.  
-In 4 out of 4 cases 37-56 has a higher value than 77-96.  
-  
-Then we analyzed the results by drilling down one level in the hierarchy.  
-When we drilled down work, we observed the following facts:  
-  
-Column Post-grad has 2 of the 6 highest values.  
-Column University has 2 of the 6 highest values.  
-Column Assoc has 3 of the 6 lowest values.  
-Column Some-college has 3 of the 6 lowest values.  
-When we drilled down education, we observed the following facts:  
-  
-Column Self-emp has 4 of the 5 highest values.  
-Column Gov has 4 of the 5 lowest values.