**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**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.