**CineCube Report**This is a report on the Avg of hours\_per\_week when occupation is fixed to 'Blue-collar', work is fixed to 'With-Pay', education is fixed to 'Post-Secondary', native country is fixed to 'USA' and marital is fixed to 'Married'. 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 | 41.20 | 33.00 | 40.12 | 40.30 |
|  | Private | 42.69 | 39.81 | 43.32 | 41.70 |
|  | Self-emp | 44.74 | 42.00 | 44.88 | 46.35 |

Here, you can see the answer of the original query. You have specified occupation to be equal to 'Blue-collar', work to be equal to 'With-Pay', education to be equal to 'Post-Secondary', native country to be equal to 'USA', and marital to be equal to 'Married'. 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 Post-grad 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 occupation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Summary for occupation | **Blue-collar** | Other | white-collar |
|  | Gov | **40.31** | 43.96 | 42.43 |
|  | Private | **42.84** | 39.48 | 43.94 |
|  | Self-emp | **45.03** | 50.39 | 46.60 |

In this graphic, we put the original request in context by comparing the value 'Blue-collar' for occupation 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 occupation at level 2 to be equal to ''ALL'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 1 to be equal to ''USA'', and marital at level 2 to be equal to ''Married''.  
Compared to its sibling we observe the following:  
In 1 out of 3 cases Blue-collar has higher value than Other.  
In 2 out of 3 cases Blue-collar has lower value than Other.  
In 3 out of 3 cases Blue-collar has lower value than white-collar.

**Assessing the behavior of occupation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for occupation | Assoc | Post-grad | Some-college | University |
|  | **Blue-collar** | **42.68** | **39.88** | **43.17** | **42.30** |
|  | Other | 42.85 | 46.30 | 43.22 | 44.01 |
|  | white-collar | 42.32 | 45.85 | 42.23 | 45.11 |

In this graphic, we put the original request in context by comparing the value 'Blue-collar' for occupation 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 occupation at level 2 to be equal to ''ALL'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 1 to be equal to ''USA'', and marital at level 2 to be equal to ''Married''.  
Compared to its sibling we observe the following:  
In 4 out of 4 cases Blue-collar has a lower value than Other.  
In 2 out of 4 cases Blue-collar has a higher value than white-collar.  
In 2 out of 4 cases Blue-collar has a lower value than white-collar.

**Assessing the behavior of work**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for work | Assoc | Post-grad | Some-college | University |
|  | **With-Pay** | **42.68** | **39.88** | **43.17** | **42.30** |

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 occupation at level 1 to be equal to ''Blue-collar'', work at level 3 to be equal to ''ALL'', education at level 3 to be equal to ''Post-Secondary'', native country at level 1 to be equal to ''USA'', and marital at level 2 to be equal to ''Married''.

**Assessing the behavior of education**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Summary for education | **Post-Secondary** | Without-Post-Secondary |
|  | Gov | **40.31** | 40.33 |
|  | Private | **42.84** | 42.46 |
|  | Self-emp | **45.03** | 44.39 |

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 occupation at level 1 to be equal to ''Blue-collar'', work at level 2 to be equal to ''With-Pay'', education at level 4 to be equal to ''ALL'', native country at level 1 to be equal to ''USA'', and marital at level 2 to be equal to ''Married''.  
Compared to its sibling we observe that in 2 out of 3 cases Post-Secondary has higher value than Without-Post-Secondary.  
In 1 out of 3 cases Post-Secondary has lower value than Without-Post-Secondary.

**Assessing the behavior of native country**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Summary for native country | Canada | **USA** |
|  | Gov | - | **40.31** |
|  | Private | 43.17 | **42.84** |
|  | Self-emp | 50.00 | **45.03** |

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 occupation at level 1 to be equal to ''Blue-collar'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 2 to be equal to ''North-America'', and marital at level 2 to be equal to ''Married''.  
Compared to its sibling we observe that in 2 out of 3 cases USA has lower value than Canada.  
In 1 out of 3 cases Canada has null value.

**Assessing the behavior of native country**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for native country | Assoc | Post-grad | Some-college | University |
|  | Canada | 40.00 | 20.00 | 50.00 | 46.00 |
|  | **USA** | **42.68** | **39.88** | **43.17** | **42.30** |

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 occupation at level 1 to be equal to ''Blue-collar'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 2 to be equal to ''North-America'', and marital at level 2 to be equal to ''Married''.  
Compared to its sibling we observe that in 2 out of 4 cases USA has a higher value than Canada.  
In 2 out of 4 cases USA has a lower value than Canada.

**Assessing the behavior of marital**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Summary for marital | **Married** | Never-married |
|  | Gov | **40.31** | 36.34 |
|  | Private | **42.84** | 38.24 |
|  | Self-emp | **45.03** | 38.85 |

In this graphic, we put the original request in context by comparing the value 'Married' for marital 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 occupation at level 1 to be equal to ''Blue-collar'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 1 to be equal to ''USA'', and marital at level 3 to be equal to ''ALL''.  
Compared to its sibling we observe that in 3 out of 3 cases Married has higher value than Never-married.

**Assessing the behavior of marital**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Summary for marital | Assoc | Post-grad | Some-college | University |
|  | **Married** | **42.68** | **39.88** | **43.17** | **42.30** |
|  | Never-married | 39.88 | 38.94 | 37.05 | 39.45 |

In this graphic, we put the original request in context by comparing the value 'Married' for marital at level 2 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 occupation at level 1 to be equal to ''Blue-collar'', work at level 2 to be equal to ''With-Pay'', education at level 3 to be equal to ''Post-Secondary'', native country at level 1 to be equal to ''USA'', and marital at level 3 to be equal to ''ALL''.  
Compared to its sibling we observe that in 4 out of 4 cases Married has a higher value than Never-married.

**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 | 40.09 (22) | 30.67 (3) | 39.96 (45) | 40.42 (12) |
|  |  | Local-gov | 41.77 (26) | - | 41.70 (61) | 41.64 (14) |
|  |  | State-gov | 41.92 (13) | 40.00 (1) | 36.05 (22) | 37.43 (7) |
|  | *Private* |  |  |  |  |  |
|  |  | Private | 42.69 (438) | 39.81 (31) | 43.32 (1017) | 41.70 (279) |
|  | *Self-emp* |  |  |  |  |  |
|  |  | Self-emp-inc | 44.29 (7) | 45.00 (2) | 52.44 (25) | 48.00 (15) |
|  |  | Self-emp-not-inc | 44.83 (35) | 41.50 (12) | 43.25 (116) | 45.76 (42) |

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 5 lowest values in blue and the 5 largest in red color.  
Some interesting findings include:  
Column University has 2 of the 5 highest values.  
Column Post-grad has 2 of the 5 lowest values.  
Column Some-college has 2 of the 5 lowest values.

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Assoc* |  | Gov | Private | Self-emp |
|  |  | Assoc-acdm | 41.80 (20) | 42.91 (145) | 44.74 (19) |
|  |  | Assoc-voc | 40.90 (41) | 42.58 (293) | 44.74 (23) |
|  | *Post-grad* |  |  |  |  |
|  |  | Doctorate | - | 60.00 (1) | 47.50 (2) |
|  |  | Masters | 33.00 (4) | 39.13 (30) | 41.08 (12) |
|  | *Some-college* |  |  |  |  |
|  |  | Some-college | 40.12 (128) | 43.32 (1017) | 44.88 (141) |
|  | *University* |  |  |  |  |
|  |  | Bachelors | 40.30 (33) | 41.83 (273) | 45.78 (54) |
|  |  | Prof-school | - | 35.83 (6) | 56.67 (3) |

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 4 lowest values in blue and the 4 largest in red color.  
Some interesting findings include:  
Column Self-emp has 3 of the 4 highest values.  
Column Gov has 2 of the 4 lowest values.  
Column Private has 2 of the 4 lowest values.

**Summary**-In this slide we summarize our findings.  
-Concerning the original query, some interesting findings include:  
-Column Post-grad 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 Blue-collar to its siblings, grouped by occupation and work, we observed the following:  
-  
-In 1 out of 3 cases Blue-collar has higher value than Other.  
-In 2 out of 3 cases Blue-collar has lower value than Other.  
-In 3 out of 3 cases Blue-collar has lower value than white-collar.  
-When we compared Blue-collar to its siblings, grouped by education and occupation, we observed the following:  
-  
-In 4 out of 4 cases Blue-collar has a lower value than Other.  
-In 2 out of 4 cases Blue-collar has a higher value than white-collar.  
-In 2 out of 4 cases Blue-collar has a lower value than white-collar.  
-When we compared Post-Secondary to its siblings, grouped by education and work, we observed the following:  
-In 2 out of 3 cases Post-Secondary has higher value than Without-Post-Secondary.  
-In 1 out of 3 cases Post-Secondary has lower value than Without-Post-Secondary.  
-When we compared USA to its siblings, grouped by native country and work, we observed the following:  
-In 2 out of 3 cases USA has lower value than Canada.  
-In 1 out of 3 cases Canada has null value.  
-When we compared USA to its siblings, grouped by education and native country, we observed the following:  
-In 2 out of 4 cases USA has a higher value than Canada.  
-In 2 out of 4 cases USA has a lower value than Canada.  
-When we compared Married to its siblings, grouped by marital and work, we observed the following:  
-In 3 out of 3 cases Married has higher value than Never-married.  
-When we compared Married to its siblings, grouped by education and marital, we observed the following:  
-In 4 out of 4 cases Married has a higher value than Never-married.  
-  
-Then we analyzed the results by drilling down one level in the hierarchy.  
-When we drilled down work, we observed the following facts:  
-  
-Column University has 2 of the 5 highest values.  
-Column Post-grad has 2 of the 5 lowest values.  
-Column Some-college has 2 of the 5 lowest values.  
-When we drilled down education, we observed the following facts:  
-  
-Column Self-emp has 3 of the 4 highest values.  
-Column Gov has 2 of the 4 lowest values.  
-Column Private has 2 of the 4 lowest values.