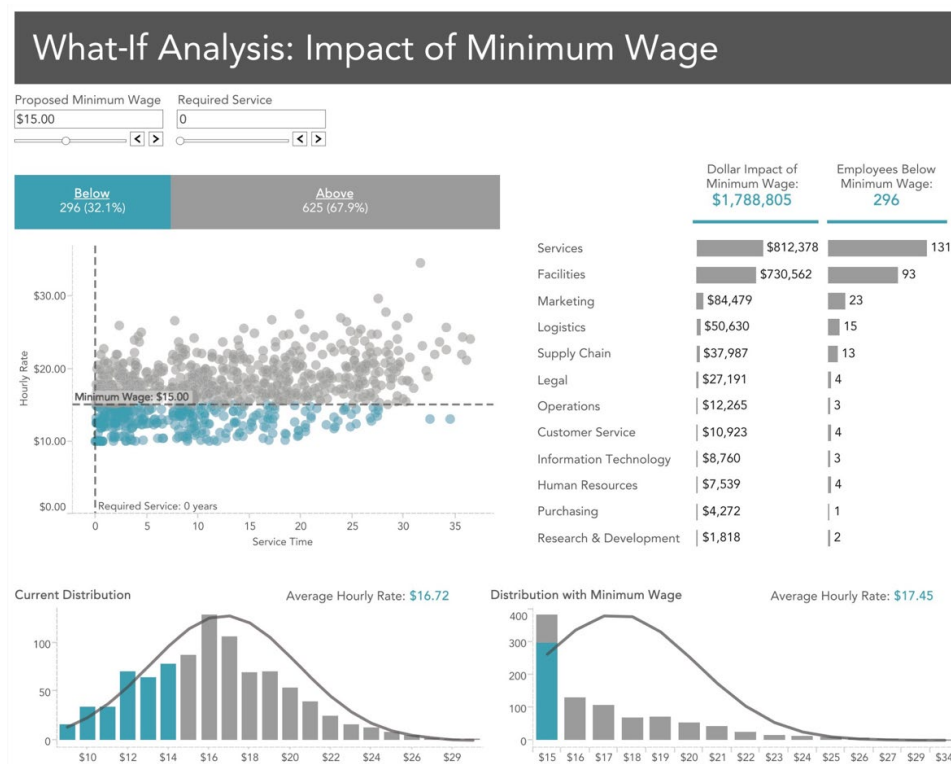


SAP Analytics Cloud

- Minimum Wage Analysis (Simulation) -



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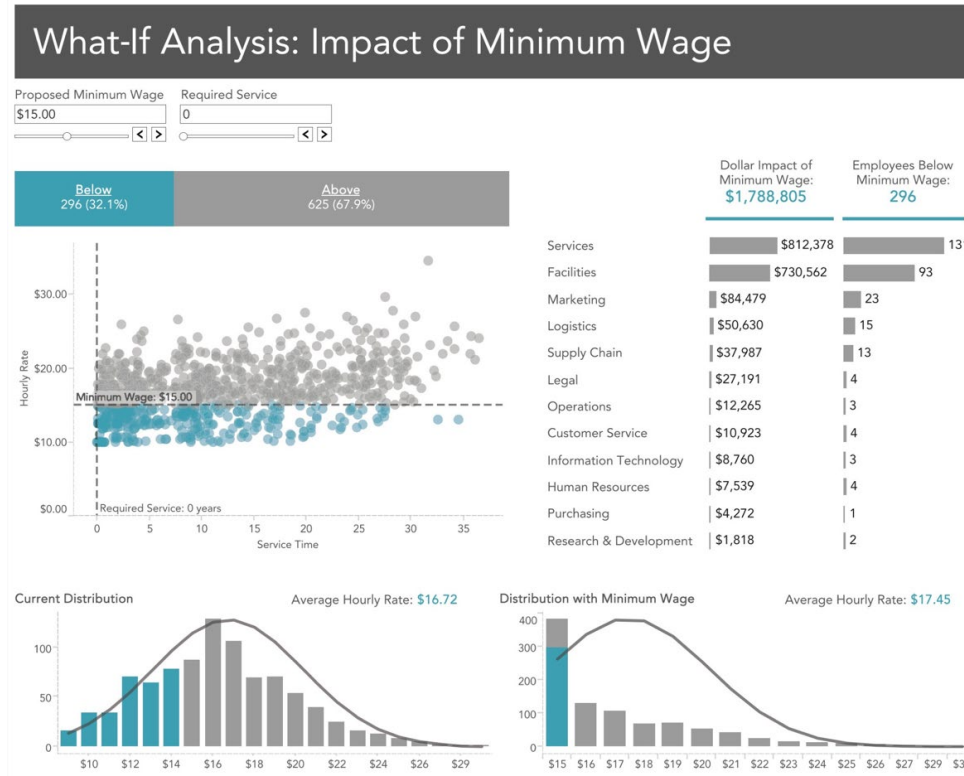
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2 SAP Analytics Cloud – Minimum Wage Impact Analysis


2.1 Minimum Wage Impact Analysis - Introduction

The dashboard on the Minimum Wage Impact Analysis is part of the Big Book of Dashboards (<https://www.bigbookofdashboards.com/>), and in the following sections, we will outline, how you can leverage SAP Analytics Cloud to create such a scenario, and provide the functionality to your users.



The Minimum Wage Impact Analysis provides your users with the ability to set a minimum wage as well as a minimum number of years being with the company. Based on those two factors combined, the dashboard then shows, which of the employees will benefit of a new minimum wage and how big the impact will be for the different departments in the company. In addition, the dashboard will visualize the current distribution of the hourly wage as well as the distribution after the changes.

2.2 Minimum Wage Impact Analysis – Creating the Data Model

	Scenario:
	In this scenario, we will upload a local file and setup the data model in SAP Analytics Cloud so that we can then start creating our dashboard.
	Objectives <ul style="list-style-type: none"> • Uploading the local data • Creating the data model

For the dashboard, we will use a simple data model, showing the hourly rate and the company start date for each employee. Based on that information, we should be able to provide the necessary information for the dashboard.

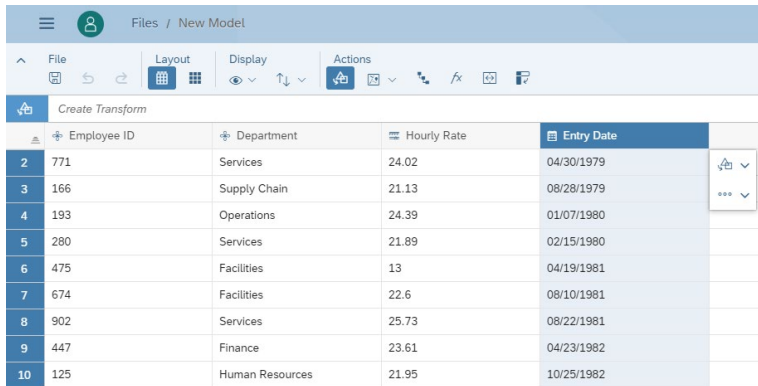
Employee ID	Department	Hourly Rate	Entry Date
771	Services	24.02	4/30/1979
166	Supply Chain	21.13	8/28/1979
193	Operations	24.39	1/7/1980
280	Services	21.89	2/15/1980
475	Facilities	13.00	4/19/1981
674	Facilities	22.60	8/10/1981
902	Services	25.73	8/22/1981
447	Finance	23.61	4/23/1982
125	Human Resources	21.95	10/25/1982
474	Facilities	13.00	4/11/1983
629	Marketing	18.90	5/30/1983
830	Facilities	19.65	9/5/1983
543	Supply Chain	23.12	1/3/1984
243	Marketing	34.57	3/6/1984
38	Marketing	17.33	11/16/1984
7	Human Resources	21.57	4/5/1985

Figure 1: Sample Data Set

The above figure shows a subset of the sample data set. Based on the employee entry data we can calculate the number of years in the company and with the hourly rate combined, we can then calculate, which of the employees will benefit from the minimum wage change and how big the impact will be for the company overall.

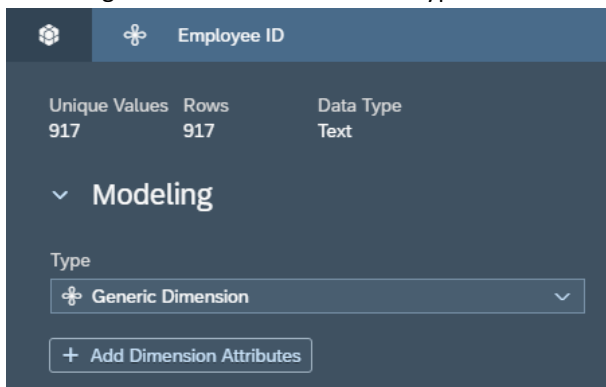
You can download a sample data set in form of an XLS file - SAP_Analytics_Cloud_Sample_Wage_Analysis - from here: <https://sapanalyticcloudbook.com/sample-stories>

1. Logon to the SAP Analytics Cloud system.
2. In SAP Analytics Cloud select the menu Create > Model.
3. Select the option Import a file from your Computer.
4. Click Select Source File.
5. Point to the XLS file as part of this exercise (Sample_MinimumWageDashboard.xls).
6. Click Import.



	Employee ID	Department	Hourly Rate	Entry Date
2	771	Services	24.02	04/30/1979
3	166	Supply Chain	21.13	08/28/1979
4	193	Operations	24.39	01/07/1980
5	280	Services	21.89	02/15/1980
6	475	Facilities	13	04/19/1981
7	674	Facilities	22.6	08/10/1981
8	902	Services	25.73	08/22/1981
9	447	Finance	23.61	04/23/1982
10	125	Human Resources	21.95	10/25/1982

7. Click on the column header Employee ID.
8. On the right-hand side make sure the type is set to Generic Dimension.



Employee ID

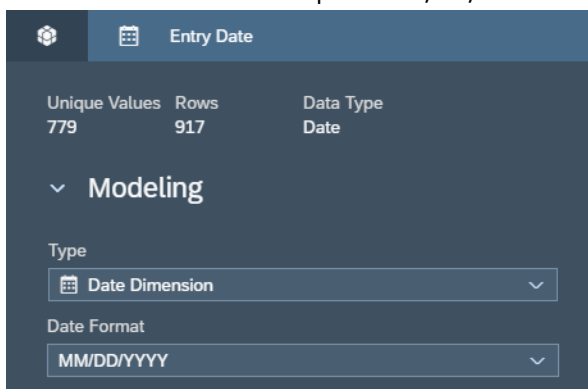
Unique Values: 917 Rows: 917 Data Type: Text

Modeling

Type: Generic Dimension

[+ Add Dimension Attributes](#)

9. Click on the column header Department.
10. On the right-hand side make sure the type is set to Generic Dimension.
11. Click on the column header for Hourly Rate.
12. Make sure the type is set to Measure.
13. Click on the column header for Entry Date.
14. Ensure the type is set to Date Dimension.
15. Set the Date Format to the option MM/DD/YYYY.



Entry Date

Unique Values: 779 Rows: 917 Data Type: Date

Modeling


Type: Date Dimension

Date Format: MM/DD/YYYY

16. Click Create Model (bottom right).
17. Click Create.
18. Select a folder for your new model.

19. Enter a name for the new model, for example: Sample Wage Analysis.
20. Click OK.
21. Save your changes and close the model.

2.3 Minimum Wage Impact Analysis – Creating the Dashboard

	Scenario:
	In this scenario, we will use the local model from the previous steps in SAP Analytics Cloud and create the different visualizations based on the overall layout of the dashboard.
	Objectives <ul style="list-style-type: none"> • Creating the necessary visualizations • Creating the required calculations

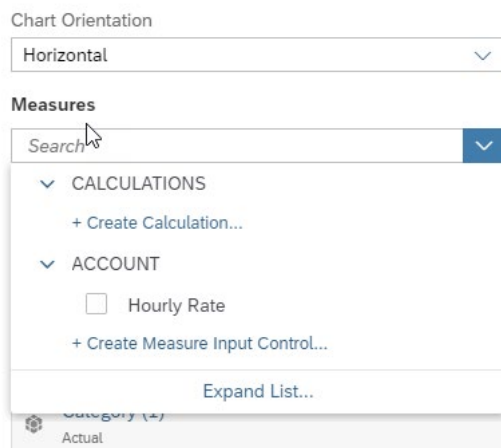
Before we start with the actual steps creating the dashboard in SAP Analytics Cloud, let's go through the steps conceptually to make sure we understand all elements that we need to calculate and setup.

- We will need to provide our users with the ability to set a new minimum wage and the ability to set a minimum number of years with the company, so that we can set those conditions on the fly. We will use Input Controls for this in SAP Analytics Cloud.
- We will have to calculate the differences in the Hourly Rate for each Employee and then also create aggregates for the department level, so that we can visualize the impact of the new minimum wage for the company.
- We also need to count the employees that will be impacted, based on the two conditions (wage and years of service), so that we can visualize the percentage of employees that will be impacted.

1. Logon to SAP Analytics Cloud.
2. Select the menu Create > Story.
3. Select the option Add a Canvas Page.
4. Select the option to add a Chart.
5. When being asked to select a model, select the model we created in the previous steps.
6. You will now have an empty canvas with an empty chart.

As first step we will create the two Input Controls, allowing use to set the new minimum wage as well as the required number of years in the company.

7. Select the chart on the canvas.
8. Click the Add Measure for the Measure option.



9. Click Create Calculation.
10. Select the option Calculated Measure.

11. On the right-hand side, you can now create Input Controls, which also can be used as part of calculations.
12. Click Create New for the category Input Controls.

13. Enter fnInput_MinimumWage as Name.
14. Select the option Static List.
15. Open the list of options for the Values field.
16. Select the option Select by Range.
17. Enter 10 as Minimum.
18. Enter 25 as Maximum.
19. Set the option Increment to 1.
20. Click OK.
21. Click OK.

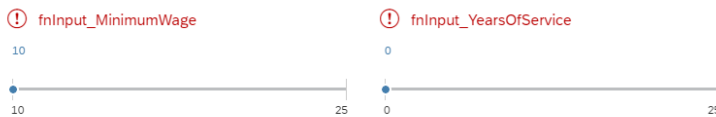
Now we are back in the formula editor. We need a second Input Control, so that we can set the minimum number of years of service as an input.

22. Click Create New for the category Input Controls.
23. Enter fnInput_YearsOfService as Name.
24. Select the option Static List.
25. Open the list of options for the Values field.
26. Select the option Select by Range.
27. Enter 0 as Minimum.
28. Enter 25 as Maximum.
29. Set the option Increment to 1.
30. Click OK.
31. Click OK.
32. Click Cancel for the formula editor.

We now created the two Input Controls and we can close the formula editor without having to create a formula right now

33. You should now have two Input Controls on the canvas and you can resize them.

34. Resize both Input Controls, so that you see the complete control and place them next too each other as shown below.

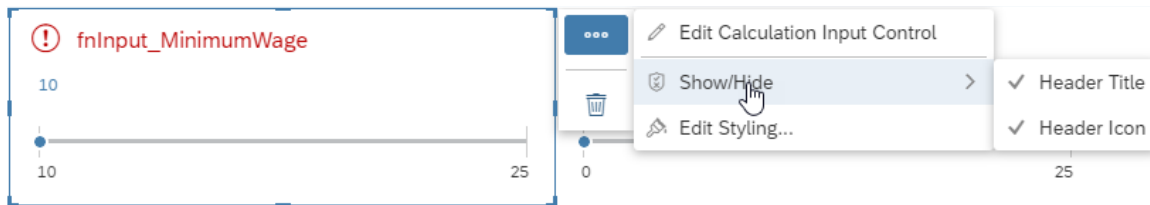


35. Select the first Input Control for the Minimum Wage input.

36. Open the context menu in the top right corner.

37. Select the menu Show / Hide

38. Hide the Header Icon.



39. Repeat the step for the second Input Control.

40. Now double-click on the header for the Input Control for the Minimum Wage.

41. Change the header to the text Minimum Wage.

42. Now double-click on the header for the Input Control for the Years of Service.

43. Change the header to the text Minimum Years of Service.

At this point we have the two input values available, so that we can now calculate how many employees are impacted by the change and how big the impact would be for each department and for the company. The following is a list of calculated measure and aggregated measures, which we do need for our dashboard.

- We need a calculated measure, which calculates the years of service for each employee.
- We need a calculated measure, which indicates on an Employee Level, if the employee is impacted by the change or not.
- We need to calculate on an Employee Level, what the variance between the existing hourly rate and the new minimum hourly rate would be.
- We need to aggregate the impact on the hourly rate to a monthly level and to department level.
- We need to count the number of employees that are impacted and those that are not impacted by the minimum wage change and we need to aggregate these counts to a department level and to an overall total.

We will use the previously created empty chart to create the calculations. After we finalized the formulas we will then remove the chart and start building the visualizations for our dashboard.

1. Navigate to the previously created chart.
2. Open the Builder panel on the right-hand side.
3. Click on Add Measures.
4. Select the option Create Calculation.
5. Set the Type to Date Difference.
6. Enter fn_EmployeeYearsOfService as Name.

Calculation Editor

Type: Date Difference

Name: fn_EmployeeYearsOfService

Properties (A-B)

Result Granularity: Year

Time (A): Current Date

Time (B): Entry Date

☐ Use current date if NULL or empty date

Time-zone Offset For Current Date: Local Time

Dimension Context: Entry Date, Employee ID

Result Aggregation Operation: SUM

OK Cancel

7. Set the Result Granularity to the value Year.
8. Ensure that Time (A) is set to Current Date.
9. Ensure that Time (B) is set to Entry Date.
10. Set the Result Aggregation Operation to SUM.
11. Set the Dimension Context to the Employee ID (Entry Date will be added automatically).
12. Click OK.

We are basically subtracting the Entry Date from the Current Date and aggregating the number of days per employee and showing it on a granularity level of year.

13. Select the chart on the canvas.
14. Click on Add Measures.
15. Select the option Create Calculation.
16. Set the Type to Calculated Measure.
17. Enter fn_EmployeeImpacted as Name.
18. Enter a formula like shown below:

```
(
  ["Sample Wage Analysis":Hourly_Rate] < [@fnInput_MinimumWage]
)
AND
(
  [#fn_EmployeeYearsOfService]>[@fnInput_YearsOfService]
)
```

The formula uses the previously created Input Controls and compares them against the Hourly Rate and the Years of Service calculation. Both validations are combined with a logical AND, so only if both items are true, then the formula overall will return a 1.

19. Click OK.
20. Select the chart on the canvas.
21. Click on Add Measures.
22. Select the option Create Calculation.
23. Set the Type to Calculated Measure.
24. Enter fn_EmployeeHourlyRateVariance as Name.
25. Enter a formula like shown below:

```
IF( [#fn_EmployeeImpacted] = 1 ,
[@fnInput_MinimumWage]-["Sample Wage Analysis":Hourly_Rate],
0)
```

The formula will calculate the variance on the hourly rate for those employees that will be impacted.

26. Click OK.
27. Select the chart on the canvas.
28. Click on Add Measures.
29. Select the option Create Calculation.
30. Set the Type to Calculated Measure.
31. Enter fn_EmployeeHourlyRateVariance_Month as Name.
32. Enter a formula like shown below:

```
[#fn_EmployeeHourlyRateVariance]*20
```

The formula will use the calculated variance and multiply it with 20, assuming an average of 20 working days per month.

33. Click OK.
34. Select the chart on the canvas.
35. Click on Add Measures.
36. Select the option Create Calculation.
37. Set the Type to Aggregation.
38. Enter fn_AggrMonth_HourlyRateImpact as Name.
39. Set the Operation to SUM.
40. Set the Measure to fn_EmployeeHourlyRateVariance_Month.
41. Set the Aggregation Dimensions to Employee ID.
42. Click OK.

Calculation Editor

Type: Aggregation

Name: fn_AggrMonth_HourlyRateImpact

Properties

Operation: SUM

Measure: fn_EmployeeHourlyRateVariance_Month

Aggregation Dimensions: Employee ID

+ Add a Dimension

☐ Use conditional aggregation

OK Cancel

43. Select the chart on the canvas.
44. Click on Add Measures.
45. Select the option Create Calculation.
46. Set the Type to Calculated Measure.
47. Enter fn_EmployeeNewHourlyRate as Name.
48. Enter a formula like shown below:

```
IF( [#fn_EmployeeImpacted] = 1 ,  
  [@fnInput_MinimumWage],  
  ["Sample Wage Analysis":Hourly_Rate])
```

49. Click OK.

At this point we have the calculations for the variance in the hourly rate and we have the formula to recognize those employees that will be impacted. We now need to create the calculation to count those impacted employees and we need to create the aggregation of the hourly rate variance on a department level.

1. Select the chart on the canvas.
2. Click on Add Measures.
3. Select the option Create Calculation.
4. Set the Type to Aggregation.
5. Enter fn_EmployeeCount_Impacted as Name.

Calculation Editor

Type	Aggregation	Name	fn_EmployeeCount_Impacted
Properties Operation COUNT excl. 0, NULL		Measure fn_EmployeeImpacted	
Aggregation Dimensions Employee ID			
<input type="checkbox"/> Use conditional aggregation			

OK Cancel

6. Set the Operation to COUNT excl. 0, NULL
7. Set the Measure to fn_EmployeeImpacted.
8. Set the Aggregation Dimensions to Employee ID.

We are using the formula we created previously to indicate if the employee is impacted by the wage change or not and we use the operation to Count the values excluding 0 and Null values. In our example, the formula indicating the impact is returning either a 0 or a 1, so by counting the values and excluding 0 and Null from the count, we are automatically only counting the values with 1, so we are counting only employees that are impacted.

9. Select the chart on the canvas.
10. Click on Add Measures.
11. Select the option Create Calculation.
12. Set the Type to Aggregation.
13. Enter fn_TotalEmployeeCount as Name.

Calculation Editor

Type	Aggregation	Name	fn_TotalEmployeeCount
Properties Operation COUNT		Measure Hourly Rate	
Aggregation Dimensions Employee ID			
<input type="checkbox"/> Use conditional aggregation			

OK Cancel

14. Set the Operation to COUNT.
15. Set the Measure to Hourly Rate.
16. Set the Aggregation Dimensions to Employee ID
17. Click OK.

We now have a calculated measure for the Employee Count for those employees that are impacted, and we have the total employee count. Based on those two measures, we can also now create the calculated measure for the count of employees that are not impacted.

18. Select the chart on the canvas.
19. Click on Add Measures.
20. Select the option Create Calculation.
21. Set the Type to Calculated Measure.
22. Enter fn_EmployeeCount_Not_Impacted as Name.
23. Enter the following formula:

[#fn_TotalEmployeeCount] - [#fn_EmployeeCount_Impacted]

24. Click OK.

In addition to the employee count, we also need to aggregate the impact on the hourly rate.

1. Select the chart on the canvas.
2. Click on Add Measures.
3. Select the option Create Calculation.
4. Set the Type to Aggregation.
5. Enter fn_AggrMonth_HourlyRateImpact as Name.
6. Set the Operation to SUM.
7. Set the Measure to the calculation fn_EmployeeHourlyRateVariance_Month
8. Set the Aggregation Dimensions to Employee ID.
9. Click OK.

We also need two formulas representing the values that have been configured for the two Input Controls, so that we can use those values as dynamic reference lines for the scatter plot.

1. Select the chart on the canvas.
2. Click on Add Measures.
3. Select the option Create Calculation.
4. Set the Type to Calculated Measure.
5. Enter fn_ReferenceLineMinimumWage as Name.
6. Enter the following formula:

[@Minimum Wage]

7. Click OK.
8. Select the chart on the canvas.
9. Click on Add Measures.
10. Select the option Create Calculation.
11. Set the Type to Calculated Measure.
12. Enter fn_ReferenceLineYearsOfService as Name.
13. Enter the following formula:

[@Minimum Years of Service]

14. Click OK.

At this point we have all formulas that we need to visualize the information as outlined in the beginning.


1. Remove any additional elements from the canvas, except for the two input controls. Your canvas should only contain the two input controls for now.
2. Navigate to the Insert toolbar.
3. Use the option to add a new chart.
4. When being asked to select the model, ensure you select the previously created model from this exercise.
5. Set the chart type to then Comparison > Stacked Bar / Column chart.
6. Click Add Measures.
7. Select these two measures:
 - fn_EmployeeCount_Impacted
 - fn_EmployeeCount_Not_Impacted
8. Click Add Dimension.
9. Add dimension Category.
10. Open the context menu (top right) for the chart.
11. Select the menu Show / Hide.
12. Ensure that all elements are set to Hide, except the Data Labels.
13. Scroll down to the Color area in the Builder Panel.
14. Set a blue color for the measure fn_EmployeeCount_Impacted.
15. Set a light grey color for the measure fn_EmployeeCount_Not_Impacted.
16. Enable the option Show Chart as 100%.


As next step we will create the scatter plot chart.

1. Navigate to the Insert toolbar.
2. Use the option to add a new chart.
3. Set the chart type to the option Correlation > Scatterplot.
4. Move the chart below the stacked bar chart.
5. Click Add Measure for the X-Axis option.
6. Select measure fn_EmployeeYearsOfService.
7. Click Add Measure for the Y-Axis option.
8. Select measure Hourly Rate.
9. Click Add Dimension for the Dimensions option.
10. Select dimension Employee ID.
11. Open the context menu for the chart (top right corner).
12. Select the menu Edit Axis.

Edit Axis

X-Axis


Minimum Value 


Maximum Value 

Dynamically Set Min/Max

☐



Y-Axis

Minimum Value 

Maximum Value 

Dynamically Set Min/Max


☐

13. Set the Minimum Value for the X-Axis to 0.
14. Set the Minimum Value for the Y-Axis to 0.
15. Click Apply.

From a visual aspect point of view, we would like to add reference lines into the chart representing the values that have been set for the new minimum wage and years of service. We will use the two formulas we created previously for this.


1. Select the scatter plot chart on the canvas.
2. Open the context menu in the top right corner.
3. Select the option Add Reference Line.

 Create Reference Line

Type





Fixed ☐ ☐ Dynamic

Axis

X-Axis 

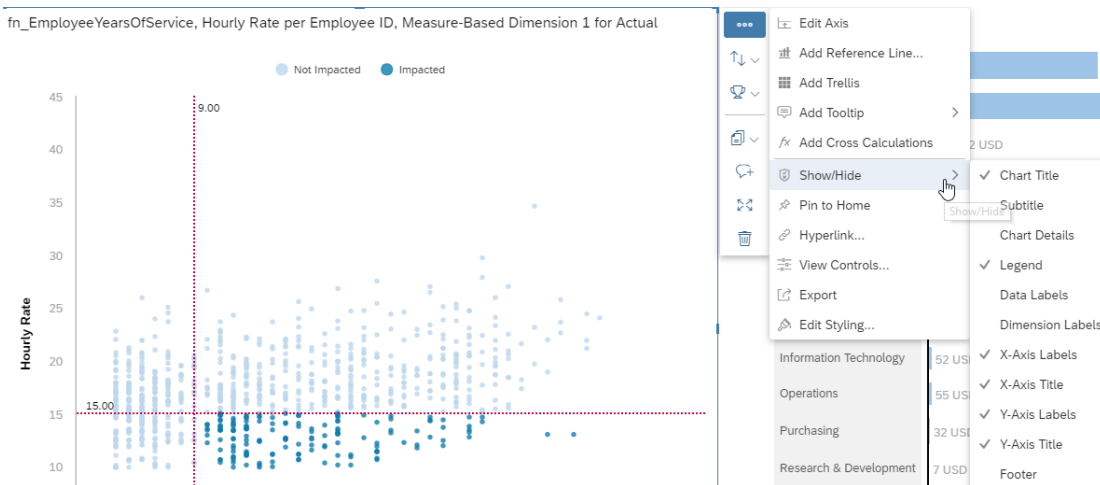
Value

Label

Above  Below  Line  Label 

4. Set the Type to Dynamic.
5. Set the Axis to X-Axis.
6. Set the Measure to the calculation `fn_ReferenceLineYearsOfService`.
7. Set the Aggregation to Max.
8. Set the Reference Line color to Red.
9. Click OK.

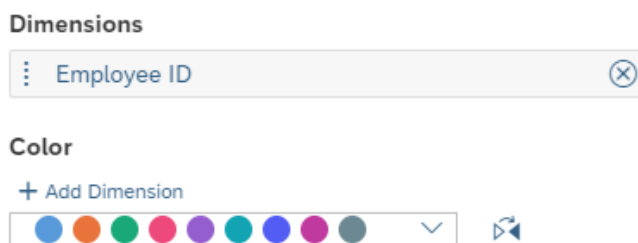
10. Select the scatter plot chart on the canvas.
11. Open the context menu in the top right corner.
12. Select the option Add Reference Line.
13. Set the Type to Dynamic.
14. Set the Axis to Y-Axis.
15. Set the Measure to the calculation fn_ReferenceLineMinimumWage.
16. Set the Aggregation to Max.
17. Set the Reference Line color to Red.
18. Click OK.
19. Select the scatter plot on canvas.
20. Open the context menu in the top right corner.
21. Select the Show / Hide menu.



22. Ensure that all items except the following four are hidden:
 - X-Axis Labels
 - X-Axis Title
 - Y-Axis Labels
 - Y-Axis Title

We also would like to visualize by using color in the scatter plot, which employees are impacted, and which are not impacted by the change. The scatter plot does provide the option to add a dimension for the color. In our example, we don't have a dimension yet that contains this information, but we do have a measure that contains the information and we can create a measure-based dimension based on this measure.

1. Select the scatter plot chart.
2. On the right-hand side in the Builder Panel click the Add Dimension for the color area.



3. Select the option Create Calculated Dimension.
4. Select the option Measure Based Dimension.
5. Enter fn_D_EmployeeImpacted as Name.
6. Select the calculation fn_EmployeeImpacted for the Measure.

7. Ensure the option Use measure values as dimension members is disabled.

Calculation Editor

Type: Measure-Based Dimension

Name: fn_D_EmployeeImpacted

Properties

Measure: fn_EmployeeImpacted

☐ Use measure values as dimension members

Member Name: []

Measure Values: \geq Lower bound $<$ Upper bound

+ Add a Member

Dimension Context: Category

Filter Context

Dimensions: Click to Select a Dimension...

Values or Input Controls: Click to Select Values...

+ Add a Dimension

OK Cancel

8. Enter Impacted for the first Member Name.

9. Enter 1 as Lower bound value.

10. Leave the Upper bound value empty.

11. Click Add a Member to add a second row.

12. Enter Not Impacted as Member Name.

13. Enter 0 as Lower bound value.

14. Enter 1 as Upper bound value.

15. Set the Employee ID as Dimension content.

Calculation Editor

Type: Measure-Based Dimension

Name: fn_D_EmployeeImpacted

Properties

Measure: fn_EmployeeImpacted

☐ Use measure values as dimension members

Member Name: []

Measure Values: \geq 1 $<$ Upper bound

Member Name: []

Measure Values: \geq 0 $<$ 1

+ Add a Member

Dimension Context: Category, Employee ID

Filter Context

Dimensions: Click to Select a Dimension...

Values or Input Controls: Click to Select Values...

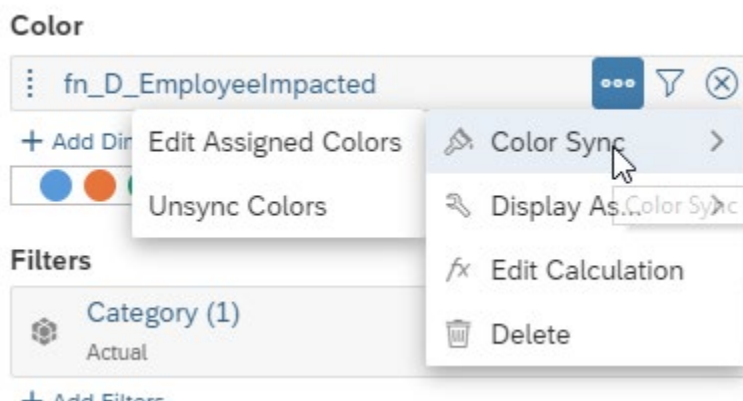
+ Add a Dimension

OK Cancel

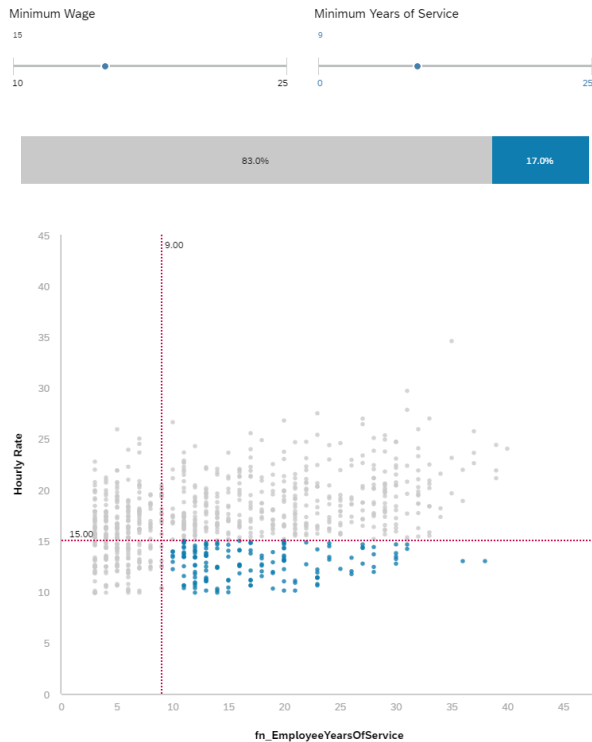
16. Click OK.

17. Navigate to the Color area in the Builder Panel.

18. Open the menu for the new measure-based dimension.

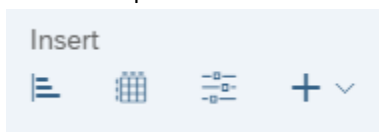


19. Select the menu Color Sync > Edit Assigned Colors.
20. Select the blue color for the Impacted value and the light grey color for the Not Impacted value.
21. Click Apply.
22. Your dashboard should look as shown below:



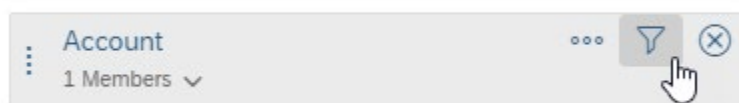
As next steps we will add a table with in-cell charts next to the scatter plot.

1. Navigate to the Insert menu.
2. Select the option to insert a table.



3. Place the table on the right-hand side of the scatter plot.
4. Select the table and navigate to the Builder Panel.
5. Click Add Measure / Dimensions for the Rows section.
6. Add dimension Department.
7. Click on the Filter icon for dimension Account in the Columns section.

Columns



+ Add Measures/Dimensions

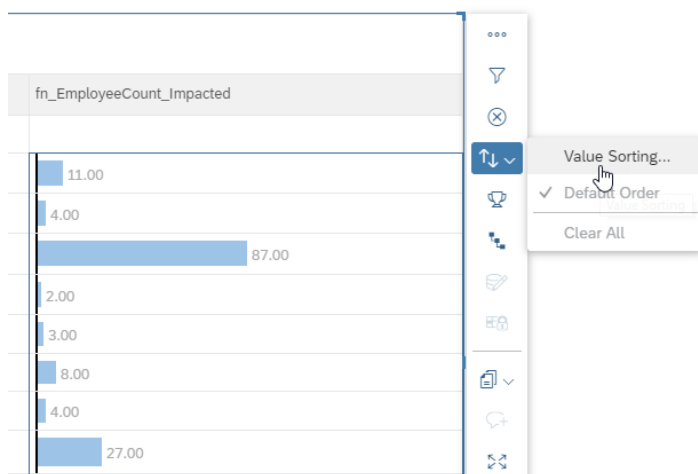
8. Click on Clear Selection (bottom right) to remove any selected measures.
9. Select the following measures for the Columns:
 - fn_AggrMonth_HourlyRateImpact
 - fn_EmployeeCount_Impacted

10. Click OK.
11. Select the column header for the first measure.

Sample Wage Analysis

ACCOUNT	fn_AggrMonth_HourlyRateImpact	fn_EmployeeCount_Impacted
DEPARTMENT		
Customer Service	3	11.00
Engineering	1	4.00
Facilities	7.2	87.00
Finance		2.00
Human Resources	223.20	3.00
Information Technology	224.40	2.00

12. Select the option In-Cell Chart.
13. Repeat the step for the second measure.
14. Select the table on the canvas.
15. Open the context menu.
16. Select the Sort option.



17. Click Value Sorting.
18. Set the Type to Descending.
19. Set the Account to the measure fn_AggrMonth_HourlyRateImpact.

Create Value Sorting

Type	Direction
Descending	Vertical

☒ Break Grouping

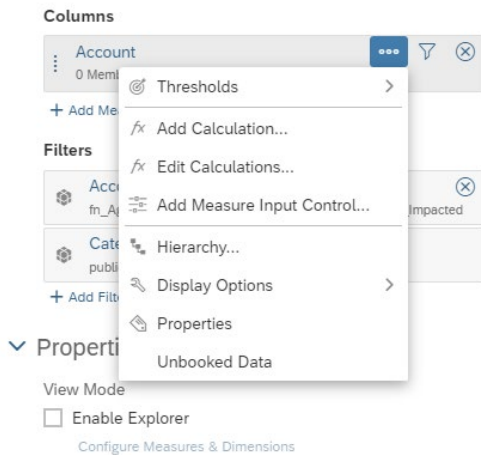
Related Dimension

* Account

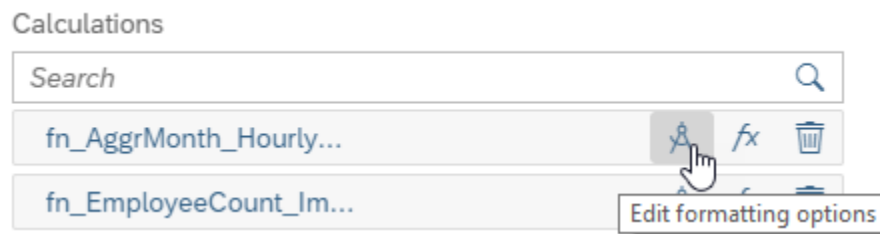
fn_AggrMonth_HourlyRateImpact

OK Cancel

20. Click OK.
21. Select the table on the canvas.
22. Open the menu for the Account dimension in the Columns.



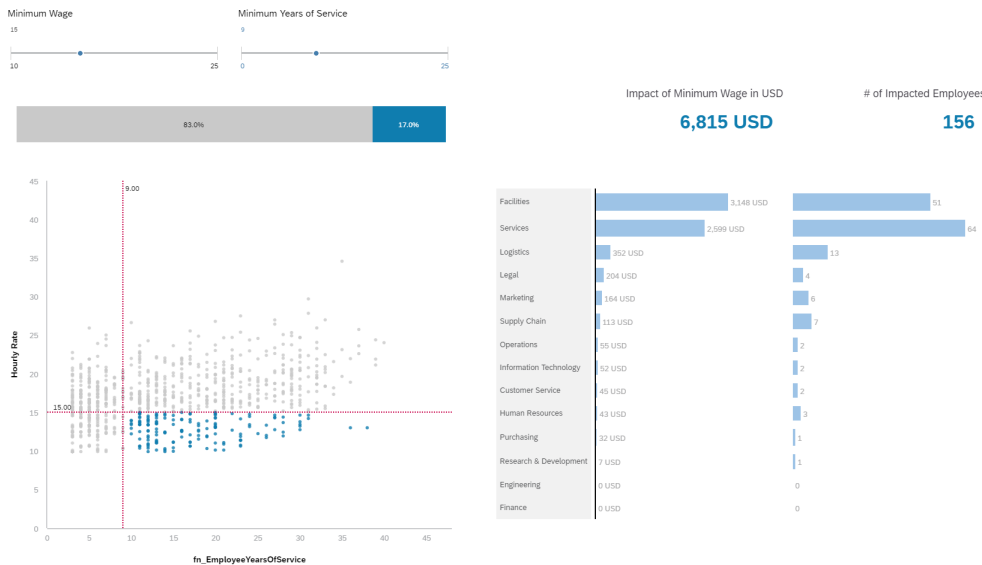
23. Select the menu Edit Calculations.
24. Scroll to the calculation fn_AggrMonth_HourlyRateImpact.
25. Use the far-left icon to change the formatting options.



26. Disable the option Use unit of underlying measures.
27. Set the Decimal Places to 0.
28. Set the Unit to USD.
29. Click OK.
30. Scroll to the calculation fn_EmployeeCount_Impacted.
31. Use the far-left icon to change the formatting options.
32. Set the Decimal Places to 0.
33. Click OK.
34. Click Done.
35. Select the table on the canvas.
36. Open the context menu.
37. Use the Show / Hide menu and ensure all elements – including the Grid – are hidden.
38. Select the table on the canvas.
39. Open the Styling panel on the right-hand side.
40. Select the top row of the table, which contains the column headers.
41. Set the Fill color to White.
42. Set the Font color to White.
43. Navigate to the Insert menu.
44. Select the option to insert a new chart.
45. Set the chart type to Indicator > Numeric Point.
46. Place the new chart above the table.
47. Open the Builder Panel for the new Numeric Pointer chart.
48. Click Add Measure for the Primary Value.

49. Select measure `fn_AggrMonth_HourlyRateImpact`.
50. Open the context menu for the chart.
51. Use the Show / Hide option and ensure everything – except the Primary Value – is hidden.
52. Select the chart on the canvas.
53. Open the Styling Panel for the chart.
54. Select the Primary Value with a click.
55. In the Styling Panel, set the Font Size to 32 and configure a right alignment.
56. Set the Font Color to the blue we used for the Impacted set of Employees previously.
57. Navigate to the Insert menu.
58. Select the option to insert a new chart.
59. Set the chart type to Indicator > Numeric Point.
60. Place the new chart above the table, next to the first Numeric Pointer.
61. Open the Builder Panel for the new Numeric pointer chart.
62. Click Add Measure for the Primary Value.
63. Select measure `fn_EmployeeCount_Impacted`.
64. Open the context menu for the chart.
65. Use the Show / Hide option and ensure everything – except the Primary Value – is hidden.
66. Select the chart on the canvas.
67. Open the Styling Panel for the chart.
68. Select the Primary Value with a click.
69. In the Styling Panel, set the Font Size to 32 and configure a right alignment.
70. Set the Font Color to the blue we used for the Impacted set of Employees previously.
71. Navigate to the Insert menu in the toolbar.
72. Click on the “+” sign and select the option to insert a Text object.
73. Place the Text object above the first Numeric Pointer chart.
74. Use a double-click on the Text object.
75. Enter the following text: Impact of Minimum Wage in USD.
76. Select the Text object.
77. Open the Styling panel for the Text object.
78. Double-Click to select the text.
79. Set the Font Size to 20.
80. Set the alignment to a right alignment.
81. Navigate to the Insert menu in the toolbar.
82. Click on the “+” sign and select the option to insert a Text object.
83. Place the Text object above the first Numeric Pointer chart.
84. Use a double-click on the Text object.
85. Enter the following text: Number of Impacted Employees.
86. Select the Text object.
87. Open the Styling panel for the Text object.
88. Double-Click to select the text.
89. Set the Font Size to 20.
90. Set the alignment to a right alignment.

91. Your overall dashboard should now look like shown below:



The last two elements are the charts showing the distribution of the hourly rate before and after the change. Normally we would use a Histogram chart type for this and use the hourly rate as the measure for the binning on the X-Axis and use the count of the employees, but we also would like to show how many of the employees are impacted and how many are not impacted, based on both factors: the minimum wage as well as the years of service. For those reasons, we will use a column chart and create manually the binning by using a measure-based dimension.

1. Navigate to the Insert toolbar.
2. Use the option to insert a new chart and place the new chart below the scatter plot.
3. Open the Builder panel for the chart.
4. Set the chart type to the Comparison > Stacked Bar / Column chart.
5. Click add Measure for the Measure area.
6. Add the following two measures:
 - fn_EmployeeCount_Not_Impacted
 - fn_EmployeeCount_Impacted
7. Click Add Dimension for the Dimensions option.
8. Select the option Created Calculated Dimension.
9. Set the Type to Measure-Based Dimension.
10. Set the Name to Hourly Rate (before change).
11. Set the Measure to Hourly Rate.
12. Use the Add a Member option to create members from 8 to 26.
13. Define the members as follows:

• 8	Lower bound >= 8	Upper bound < 9
• 9	Lower bound >= 9	Upper bound < 10
• 10	Lower bound >= 10	Upper bound < 11
•	and so on	

Calculation Editor

Measure
Hourly Rate

☐ Use measure values as dimension members

Member Name 1

10	≥	10	<	11	⊗
11	≥	11	<	12	⊗
12	≥	12	<	13	⊗
13	≥	13	<	14	⊗
14	≥	14	<	15	⊗
15	≥	15	<	16	⊗
16	≥	16	<	17	⊗
17	≥	17	<	18	⊗
18	≥	18	<	19	⊗
19	≥	19	<	20	⊗
20	≥	20	<	21	⊗
21	≥	21	<	22	⊗
22	≥	22	<	23	⊗
23	≥	23	<	24	⊗
24	≥	24	<	25	⊗
9	≥	9	<	10	⊗
8	≥	8	<	9	⊗
25	≥	25	<	26	⊗
26	≥	26	<	Upper bound	⊗

+ Add a Member

Dimension Context
Category, Employee ID

14. Set the Dimension Context to Employee ID.

15. Click OK.

16. Select the newly configured chart and open the context menu (top right corner).

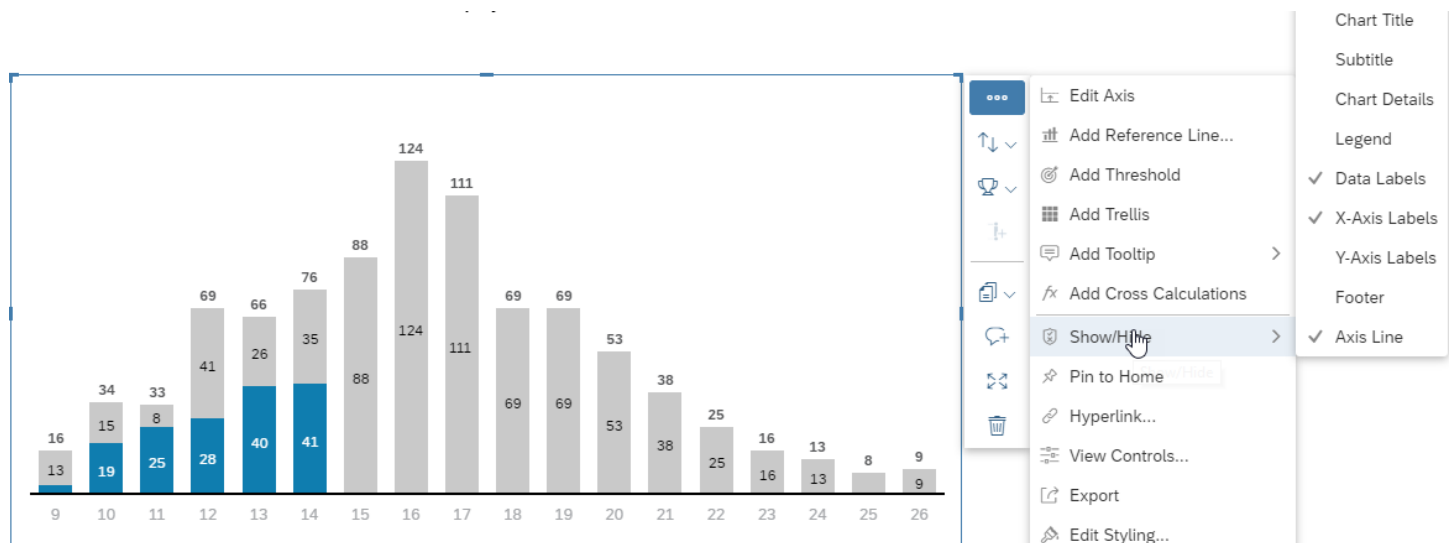
17. Use the Show / Hide menu.

18. Ensure that the following elements are visible:

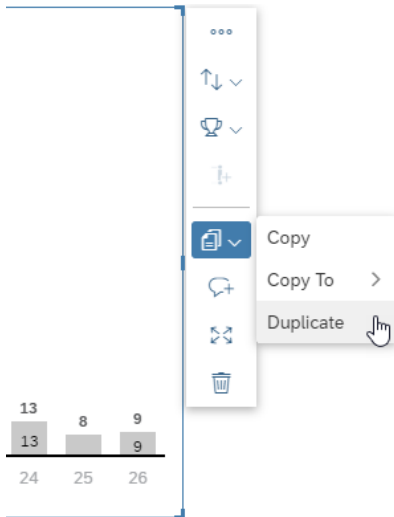
- Chart Title
- Data Labels
- X-Axis Labels
- Axis Line

19. Ensure all other elements are hidden.

20. Use the Show / Hide menu.

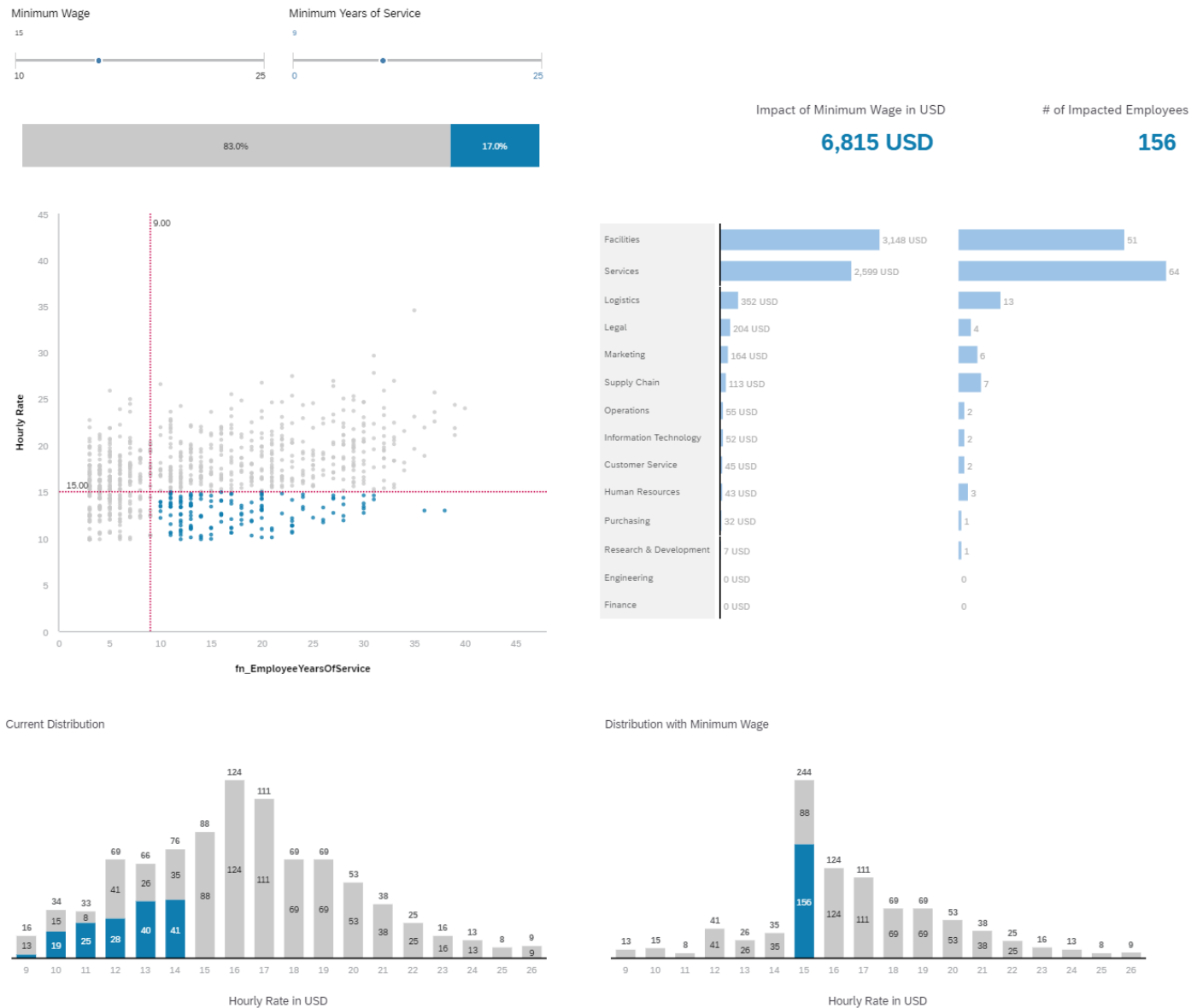


21. Use a double-click to select the Chart Title.
22. Enter the text Current Distribution as new chart title.
23. Navigate to the Insert menu in the toolbar.
24. Select the option to Insert a Text.
25. Move the textbox below the X-Axis of the chart.
26. Enter the text : Hourly Rate in USD.
27. Select the chart.
28. Navigate to the Builder Panel.
29. Ensure the assigned color for the two measures matches our previous configuration.
30. Select the chart on the canvas.
31. Open the context menu in the top right corner.



32. Select the option to Duplicate the chart.
33. Move the newly generated chart to the right-hand side of the previous chart.
34. Double-Click into the chart title of the duplicated chart.
35. Enter the text: Distribution with Minimum Wage.
36. Now select the text we added – Hourly Rate in USD – and also duplicate it and place it below the second chart.
37. Select the duplicated chart on the right-hand side.
38. Remove the currently configured dimension.
39. Click Add Dimension for the Dimensions option.
40. Select the option Created Calculated Dimension.
41. Set the Type to Measure-Based Dimension.
42. Set the Name to Hourly Rate (after change).
43. Set the Measure to the calculation `fn_EmployeeNewHourlyRate`.
44. Use the Add a Member option to create members from 8 to 26.
45. Define the members as follows:
 - 8 Lower bound \geq 8 Upper bound $<$ 9
 - 9 Lower bound \geq 9 Upper bound $<$ 10
 - 10 Lower bound \geq 10 Upper bound $<$ 11
 - and so on
46. Set the Dimension Context to Employee ID.
47. Click OK.
48. Select the chart.
49. Navigate to the Builder Panel.
50. Ensure the assigned color for the two measures matches our previous configuration.

51. Your dashboard should now look like the screen shown below:



Your user also should have the ability to set the new Minimum Wage and the required number of years of service by using the Input Controls and the impact will become visible right away.

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