

Waffle Chart in SAS

DV06

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Waffle Chart Usage

- Waffle chart can be used to represent parts-to-whole relationship
- Effective for showing KPIs, indicating a metric completed to its Target / Goal
- Meaningful when percentages do not exceed 100%
- Similar graphs to consider in this category are:



Stacked Bar Graph



Donut Chart



Pie Chart

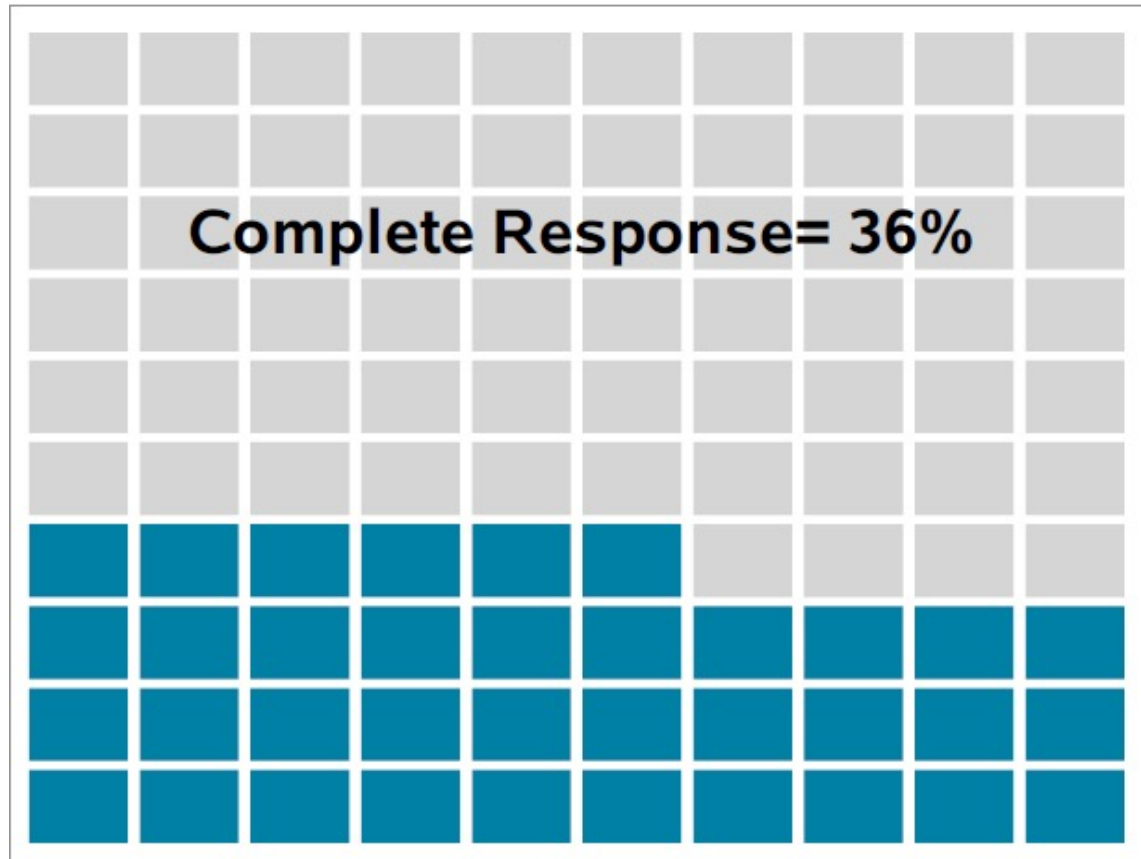


Sunburst Diagram



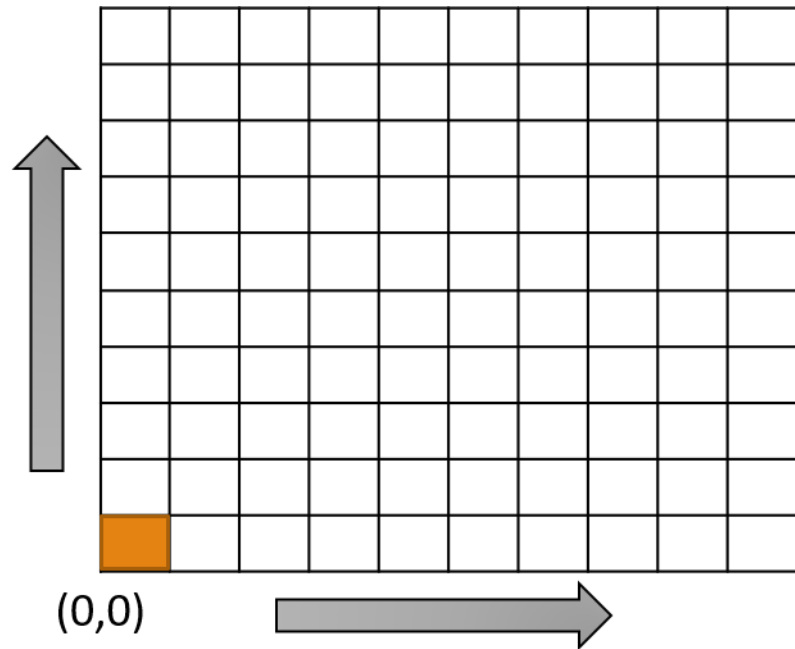
Treemap

Waffle Chart Layout



- Consists of a 10x10 grid where each block represents 1% adding to 100% overall
- Filled squares indicate % metric completion (36 colored squares = 36% in this example)
- Light background to enhance pre-attentive visual properties

Creating a Square



A square can be created with **'RECTANGLE'** annotation function as below:

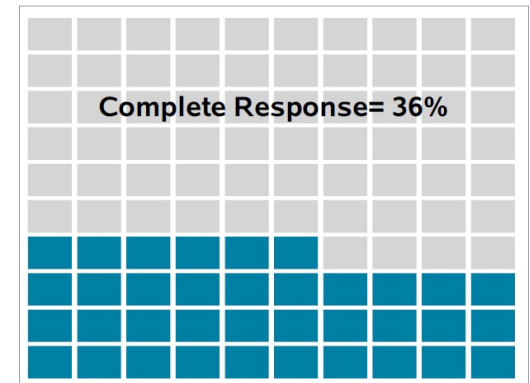
```
data anno;  
  retain function 'RECTANGLE'  
    height 10 width 10  
    drawspace 'WALLPERCENT'  
    anchor 'BOTTOMLEFT';  
  x1=0; y1=0;  
run;
```

Creating multiple squares

```
data anno;  
  retain function 'RECTANGLE' width 9 height 9 drawspace  
    'WALLPERCENT' anchor 'BOTTOMLEFT' display 'FILL' percent 0;  
  
  %do row=1 %to 10 %by 1;  
    %do col=1 %to 10 %by 1;  
      x1=(&col*10-10);  
      y1=(&row*10-10);  
      output;  
    %end;  
  %end;  
run;
```

Highlighting Metric

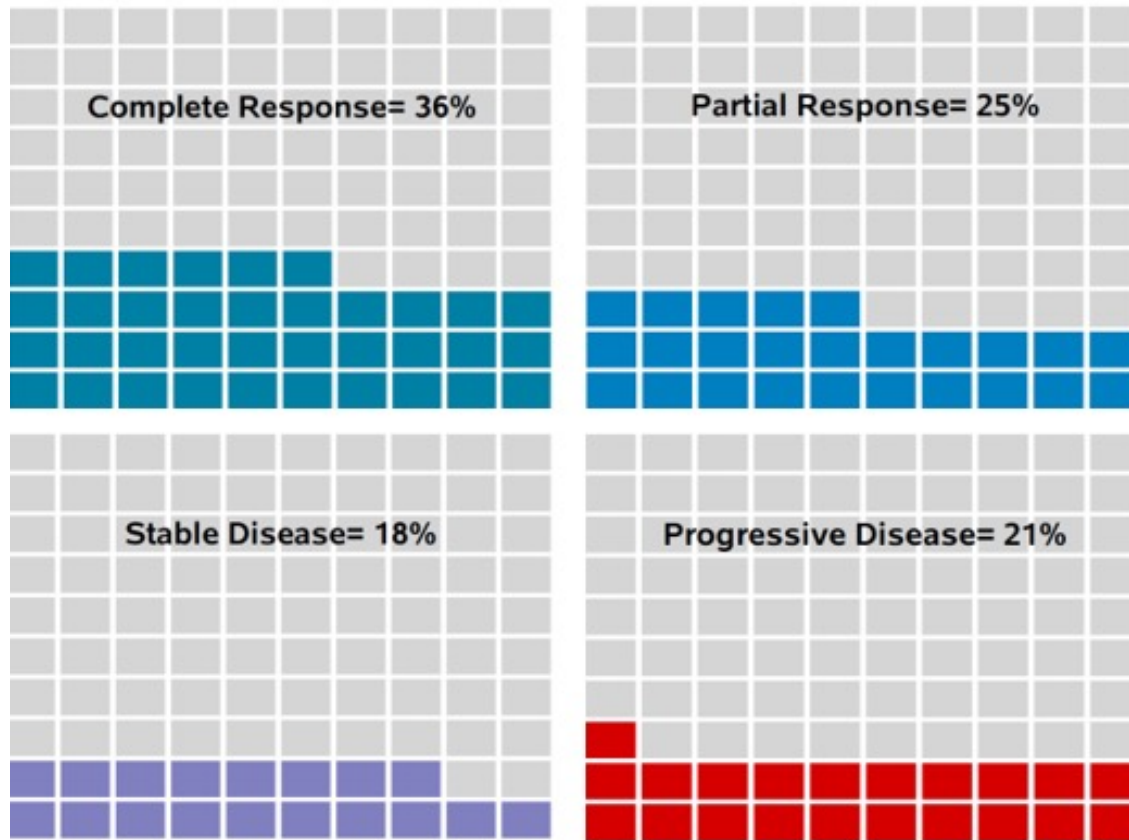
```
%do row=1 %to 10 %by 1;  
    %do col=1 %to 10 %by 1;  
  
        percent + 1;  
        if percent <= &target then fillcolor = "&target_col.";  
        else fillcolor = "&background_col";  
  
        x1=(&col*10-10);  
        y1=(&row*10-10);  
        output;  
    %end;  
%end;
```



Rendering the Chart

```
proc sgplot data= summary_data sganno = anno
              nowall noborder;
    scatter x=xmax y=ymax / markerattrs=(size=0);
    xaxis values=(0 to 100 by 10) display=none;
    yaxis values=(0 to 100 by 10) display=none;
run;
```

Multiple Waffle charts



- SAS GTL can be used to design a template with a container, like LATTICE, with 2x2 rows
- SAS annotation and chart statements (as seen earlier) can then be embedded within each block of 2x2 grid
- Final chart can be rendered with PROC SGRENDER

Conclusion

- Waffle charts are an easy way to show KPIs to the end user
- Multiple waffle charts can be combined to show multiples metrics at once
- Chart can be created with only a few lines of code
- When percentages exceed 100%, consider other chart types like Bullet Chart