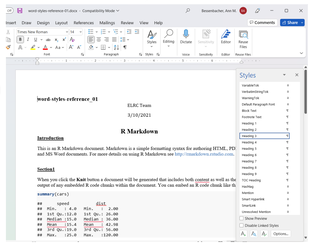
(Re) shaping Evaluation Reports: Building a Report Template in R Markdown

Template Coding Standards to Ensure Standard Reporting

Standard Libraries to load for all basic reports

- library(dplyr)
- library(tidyr)
- library(ggplot2)
- library(ggpubr)
- library(officer)
- library(flextable)
- library(stringr)
- library(forcats)
- library(HH)
- library(psych)
- library(viridis)
- library(RColorBrewer)

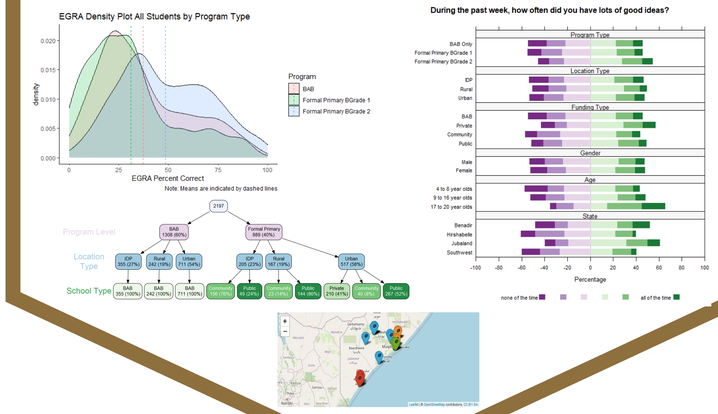
Common Word Styles Reference Document



Standard Code Chunk definitions

knitr::opts_chunk$set(echo=FALSE, warning=FALSE, error=FALSE, include=FALSE, message=FALSE, comment=NA)

A Wide Variety of Data Visualizations Available



4 Advantages of using R Markdown for building Report Templates

1. RMD Reports can be created as Word Docs, HTML, and PDF
2. Standard fonts and headings can be set in a Word template to be used for all reports.
3. A Table of Contents can easily and quickly be included
4. Functions can be created for repetitious tables/graphs

Positively Highlight Subgroup Differences with Tables

The Flextable package was used to create customizable tables because it works well in RMD with as Microsoft Word Output type.

Each subgroup with a mean value more than 0.1 higher than that of the overall mean is indicated by a green box and any subgroup with a mean value more than 0.1 lower than the overall mean is indicated by a purple box. An '*' appears to indicate a statistically significant difference among the subgroup items.

Group		Subgroup	Mean	SD	Diff from Overall Mean
All Formal Primary Students Social Economic Status			**2.36**	**1.25**	
Location Type	*	Urban	2.78	1.19	0.42
		IDP	1.67	1.03	-0.69
		Rural	1.92	1.14	-0.44
School Funding Type	*	Private	2.89	1.08	0.53
		Community	2.03	1.20	-0.34
		Public	2.22	1.26	-0.14
Gender		Male	2.38	1.24	0.02
		Female	2.34	1.26	-0.02
Age	*	4 to 8 year olds	2.10	1.23	-0.26
		9 to 16 year olds	2.43	1.24	0.06
		17 to 20 year olds	2.29	1.50	-0.08
State	*	Benadir	2.58	1.14	0.21
		Hirshabelle	3.17	1.02	0.81
		Jubaland	1.81	1.25	-0.55
		Southwest	2.22	1.15	-0.14

Detailed R coding examples are available online

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Coding Techniques to Protect Participant Anonymity

Custom functions can be created to reuse the same code multiple times to ensure participant anonymity.

```
## check to make sure there are 10 or more Other subgroup members or do not display their values
for (i in 1:length(avg_list)) {
    if(genderothercount>=subgrouplimit){
        dfbasebuild$Other[(i-1)*3+1] <- paste('M', specify_decimal(tempMean$mean[3], 2), sep = ' = ')
        dfbasebuild$Other[i*3-1] <- paste('SD', specify_decimal(tempSd$SD[3], sigdig), sep = ' = ')
        tempminOther <- specify_decimal(tempmin$min[3], 2)
        tempmaxOther <- specify_decimal(tempmax$max[3], 2)
        dfbasebuild$Other[i*3] <- paste('R', (paste(tempminOther, tempmaxOther, sep = '-')), sep = ' =
')
    } else {
        dfbasebuild$Other[(i-1)*3+1] <- "NA"
        dfbasebuild$Other[i*3-1] <- "NA"
        dfbasebuild$Other[i*3] <- "NA"
} }
```


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