EDA_Literacy_07

Group K

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1. Loading the dataset

```
## # A tibble: 6 x 29
##   ISO3   DataId Indicator Value Precision DHS_CountryCode CountryName SurveyYear
##   <chr>  <chr>  <chr>     <chr> <chr>     <chr>           <chr>       <chr>
## 1 #coun~ #meta~ #indicat~ #ind~ #indicat~ <NA>            #country+n~ #date+year
## 2 ZAF    563770 Women wi~ 11.8  1         ZA              South Afri~ 2016
## 3 ZAF    563771 Women wh~ 76.2  1         ZA              South Afri~ 2016
## 4 ZAF    563772 Women wh~ 8.2   1         ZA              South Afri~ 2016
## 5 ZAF    563773 Women wh~ 3.5   1         ZA              South Afri~ 2016
## 6 ZAF    563769 Women fo~ 0.1   1         ZA              South Afri~ 2016
## # i 21 more variables: SurveyId <chr>, IndicatorId <chr>, IndicatorOrder <dbl>,
## #   IndicatorType <chr>, CharacteristicId <dbl>, CharacteristicOrder <dbl>,
## #   CharacteristicCategory <chr>, CharacteristicLabel <chr>,
## #   ByVariableId <chr>, ByVariableLabel <chr>, IsTotal <dbl>,
## #   IsPreferred <dbl>, SDRID <chr>, RegionId <lgl>, SurveyYearLabel <dbl>,
## #   SurveyType <chr>, DenominatorWeighted <dbl>, DenominatorUnweighted <dbl>,
## #   CILow <lgl>, CIHigh <lgl>, LevelRank <lgl>
```

2. Data Overview

Glimpse and summary statistics

```
## Rows: 21
## Columns: 29
## $ ISO3                  <chr> "#country+code", "ZAF", "ZAF", "ZAF", "ZAF", "Z~
## $ DataId                <chr> "#meta+id", "563770", "563771", "563772", "5637~
## $ Indicator             <chr> "#indicator+name", "Women with secondary or hig~
## $ Value                 <chr> "#indicator+value+num", "11.8", "76.2", "8.2", ~
## $ Precision             <chr> "#indicator+precision", "1", "1", "1", "1", "1"~
## $ DHS_CountryCode       <chr> NA, "ZA", "ZA", "ZA", "ZA", "ZA", "ZA", "ZA", "~
## $ CountryName           <chr> "#country+name", "South Africa", "South Africa"~
## $ SurveyYear            <chr> "#date+year", "2016", "2016", "2016", "2016", "~
## $ SurveyId              <chr> "#survey+id", "ZA2016DHS", "ZA2016DHS", "ZA2016~
## $ IndicatorId           <chr> "#indicator+code", "ED_LITR_W_SCH", "ED_LITR_W_~
## $ IndicatorOrder        <dbl> NA, 231233010, 231233020, 231233030, 231233040,~
## $ IndicatorType         <chr> NA, "I", "I", "I", "I", "I", "I", "T", "I", "D"~
## $ CharacteristicId      <dbl> NA, 10000, 10000, 10000, 10000, 10000, 10000, 1~
## $ CharacteristicOrder   <dbl> NA, 10000, 10000, 10000, 10000, 10000, 10000, 1~
```

```
## $ CharacteristicCategory <chr> NA, "Total 15-49", "Total 15-49", "Total 15-49"~
## $ CharacteristicLabel    <chr> NA, "Total 15-49", "Total 15-49", "Total 15-49"~
## $ ByVariableId           <chr> "#indicator+label+code", "0", "0", "0", "0", "0~
## $ ByVariableLabel        <chr> "#indicator+label", NA, NA, NA, NA, NA, NA, NA,~
## $ IsTotal                <dbl> NA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ IsPreferred            <dbl> NA, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ SDRID                  <chr> NA, "EDLITRWSCH", "EDLITRWRDW", "EDLITRWRDP", "~
## $ RegionId               <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
## $ SurveyYearLabel        <dbl> NA, 2016, 2016, 2016, 2016, 2016, 2016, 2016, 2~
## $ SurveyType             <chr> NA, "DHS", "DHS", "DHS", "DHS", "DHS", "DHS", "~
## $ DenominatorWeighted    <dbl> NA, 8514, 8514, 8514, 8514, 8514, 8514, 8514, 8~
## $ DenominatorUnweighted  <dbl> NA, 11805, 11805, 11805, 11805, 11805, 11805, 1~
## $ CILow                  <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
## $ CIHigh                 <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
## $ LevelRank              <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
```

```
##      ISO3              DataId           Indicator            Value
##  Length:21          Length:21          Length:21          Length:21
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##   Precision         DHS_CountryCode    CountryName         SurveyYear
##  Length:21          Length:21          Length:21          Length:21
##  Class :character   Class :character   Class :character   Class :character
##  Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
##
##
##    SurveyId          IndicatorId        IndicatorOrder      IndicatorType
##  Length:21          Length:21          Min.   :231233010   Length:21
##  Class :character   Class :character   1st Qu.:231233058   Class :character
##  Mode  :character   Mode  :character   Median :231233615   Mode  :character
##                                        Mean   :231233614
##                                        3rd Qu.:231234162
##                                        Max.   :231234220
##                                        NA's   :1
##  CharacteristicId CharacteristicOrder CharacteristicCategory
##  Min.   :10000    Min.   :10000       Length:21
##  1st Qu.:10000    1st Qu.:10000       Class :character
##  Median :10000    Median :10000       Mode  :character
##  Mean   :10000    Mean   :10000
##  3rd Qu.:10000    3rd Qu.:10000
##  Max.   :10000    Max.   :10000
##  NA's   :1        NA's   :1
##  CharacteristicLabel ByVariableId       ByVariableLabel       IsTotal
##  Length:21           Length:21          Length:21          Min.   :1
##  Class :character    Class :character   Class :character   1st Qu.:1
##  Mode  :character    Mode  :character   Mode  :character   Median :1
##                                                            Mean   :1
##                                                            3rd Qu.:1
```

```
##                                                         Max.   :1
##                                                         NA's   :1
##  IsPreferred    SDRID           RegionId       SurveyYearLabel
##  Min.   :1    Length:21          Mode:logical   Min.   :2016
##  1st Qu.:1    Class :character   NA's:21        1st Qu.:2016
##  Median :1    Mode  :character                  Median :2016
##  Mean   :1                                      Mean   :2016
##  3rd Qu.:1                                      3rd Qu.:2016
##  Max.   :1                                      Max.   :2016
##  NA's   :1                                      NA's   :1
##  SurveyType        DenominatorWeighted DenominatorUnweighted  CILow
##  Length:21         Min.   :3202        Min.   : 3179         Mode:logical
##  Class :character  1st Qu.:3202        1st Qu.: 3179         NA's:21
##  Mode  :character  Median :5858        Median : 7492
##                    Mean   :5858        Mean   : 7492
##                    3rd Qu.:8514        3rd Qu.:11805
##                    Max.   :8514        Max.   :11805
##                    NA's   :3           NA's   :3
##  CIHigh        LevelRank
##  Mode:logical  Mode:logical
##  NA's:21       NA's:21
##
##
##
##
##
```

3. Data Quality

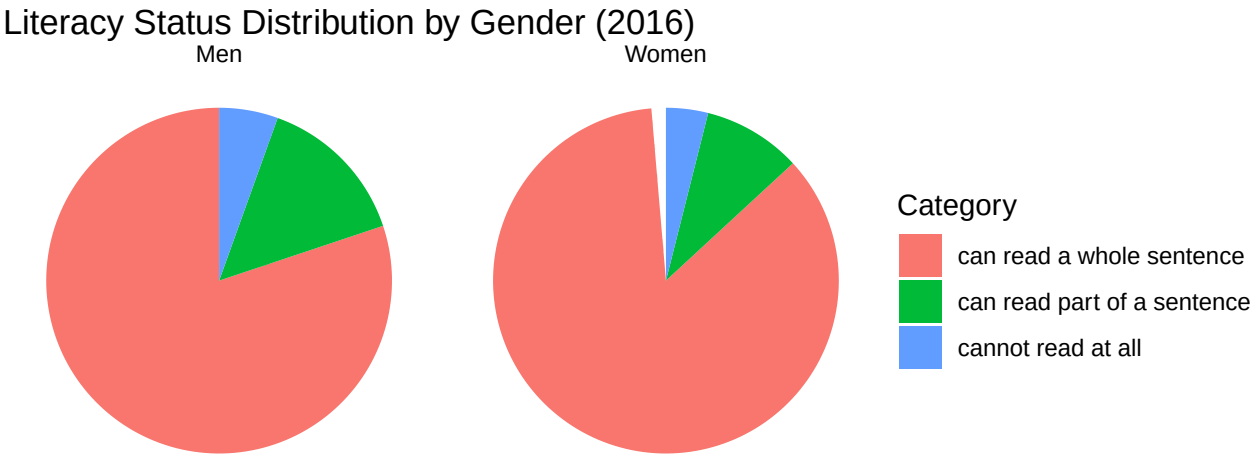
Missing values per column

```
##                   ISO3                 DataId              Indicator
##                      0                      0                      0
##                  Value              Precision        DHS_CountryCode
##                      0                      0                      1
##            CountryName             SurveyYear               SurveyId
##                      0                      0                      0
##            IndicatorId         IndicatorOrder          IndicatorType
##                      0                      1                      1
##       CharacteristicId    CharacteristicOrder CharacteristicCategory
##                      1                      1                      1
##    CharacteristicLabel           ByVariableId        ByVariableLabel
##                      1                      0                     20
##                IsTotal            IsPreferred                  SDRID
##                      1                      1                      1
##               RegionId       SurveyYearLabel             SurveyType
##                     21                      1                      1
##    DenominatorWeighted  DenominatorUnweighted                  CILow
##                      3                      3                     21
##                 CIHigh             LevelRank
##                     21                     21
```

Dupilcates

```
## [1] 0
```

4. Visualizations



5. Summary Tables

```
## Warning: There were 4 warnings in ‘summarise()‘.
## The first warning was:
## i In argument: ‘across(...)‘.
## Caused by warning in ‘min()‘:
## ! no non-missing arguments to min; returning Inf
## i Run ‘dplyr::last_dplyr_warnings()‘ to see the 3 remaining warnings.
```

Table 1: Summary Statistics for Key Numeric Variables in the Literacy Dataset

Variable	Statistic	Value
CIHigh	mean	NaN
CIHigh	sd	NA
CIHigh	min	Inf
CIHigh	max	-Inf
CILow	mean	NaN
CILow	sd	NA
CILow	min	Inf
CILow	max	-Inf
DenominatorUnweighted	mean	7492.000
DenominatorUnweighted	sd	4438.040
DenominatorUnweighted	min	3179.000
DenominatorUnweighted	max	11805.000
DenominatorWeighted	mean	5858.000
DenominatorWeighted	sd	2733.001
DenominatorWeighted	min	3202.000
DenominatorWeighted	max	8514.000
Value	mean	1364.555
Value	sd	3203.736
Value	min	0.000
Value	max	11805.000

6. Data dictionary

Table 2: Data Dictionary for the DHS Literacy Dataset

Column	DataType	Description
ISO3	character	ISO3 country code (e.g., ZAF for South Africa)
DataId	character	Unique metadata ID for the dataset row
Indicator	character	Name of the literacy indicator (e.g., Women who can read a whole sentence)
Value	numeric	Numeric value of the indicator (percentage or count)
Precision	numeric	Number of decimal places / precision of the value
DHS_CountryCode	character	Two-letter DHS country code (e.g., ZA)
CountryName	character	Full country name
SurveyYear	numeric	Year the DHS survey was conducted
SurveyId	character	Unique ID for the DHS survey (e.g., ZA2016DHS)

Column	DataType	Description
IndicatorId	character	Unique indicator code from DHS (e.g., ED_LITR_W_SCH)
IndicatorOrder	numeric	Order of the indicator in the dataset
IndicatorType	character	Indicator type (I = indicator, D = denominator, U = unweighted denominator, T = total)
CharacteristicId	numeric	ID for the population characteristic (e.g., age/sex group)
CharacteristicOrder	numeric	Order of the characteristic within the dataset
CharacteristicCategory	character	Category of the characteristic (e.g., Total 15-49)
CharacteristicLabel	character	Label describing the population characteristic (e.g., Women 15–49)
ByVariableId	character	ID for breakdown variables (if applicable, usually 0 for none)
ByVariableLabel	character	Label for breakdown variable (NA if not applicable)
IsTotal	numeric	1 if the row represents a total, 0 otherwise
IsPreferred	numeric	1 if the row is the preferred record for this indicator, 0 otherwise
SDRID	character	Short DHS reference code for the indicator
RegionId	character	Region identifier (NA for national surveys)
SurveyYearLabel	numeric	Year label for the survey (redundant with SurveyYear)
SurveyType	character	Type of survey (e.g., DHS)
DenominatorWeighted	numeric	Weighted denominator used to calculate the indicator (number of women/men surveyed, weighted)
DenominatorUnweighted	numeric	Unweighted denominator used (raw number of women/men surveyed)
CILow	numeric	Lower bound of the confidence interval (if available)
CIHigh	numeric	Upper bound of the confidence interval (if available)
LevelRank	numeric	Level rank (optional; indicates hierarchy/order of indicators)