

# **NP Trends Survey Data Preparation Guide**

Thiya      Jesse Lecy      Hannah Martin

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# Preface

This is a Guide Book for preparing survey data from the Nonprofit Trends project.



# 1 R Setup

The following R packages are used throughout the data preparation guide:

- **haven**: import data from Stata and SAS
- **dplyr**: data wrangling
- **tidyr**: data wrangling
- **epoxy**: quarto document text
- **memisc**: survey data tools
  
- **labelled**: memisc helper package

```
library( haven )  
library( dplyr )
```

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':

`filter`, `lag`

The following objects are masked from 'package:base':

`intersect`, `setdiff`, `setequal`, `union`

## 1 R Setup

```
library( tidyr )  
library( epoxy )  
library( memisc )
```

Loading required package: lattice

Loading required package: MASS

Attaching package: 'MASS'

The following object is masked from 'package:dplyr':

select

Attaching package: 'memisc'

The following objects are masked from 'package:dplyr':

collect, recode, rename, syms

The following objects are masked from 'package:stats':

contr.sum, contr.treatment, contrasts

The following object is masked from 'package:base':

as.array



```
library( labelled )
```



## 2 Generating Qualtrics Dictionaries

Working with qualtrics files can be tricky because surveys can utilize question families that contain multiple levels of responses. As a result, variables belong to variable groups. The raw qualtrics names are not very helpful, so dictionary crosswalk files have been created to facilitate data preparation workflow.

### Example Variable Family:

QUALTRICS		
VARIABLE NAME	NEW NAME	LABEL
Staff#1_1_1	Staff_Fulltime_2021	Number of full time staff in 2021
Staff#1_2_1	Staff_Parttime_2021	Number of part time staff in 2021
Staff#1_3_1	Staff_Boardmmbr_2021	Number of Board Members in 2021
Staff#2_1_1	Staff_Fulltime_2022	Number of full time staff in 2022
Staff#2_2_1	Staff_Parttime_2022	Number of part time staff in 2022
Staff#2_3_1	Staff_Boardmmbr_2022	Number of Board Members in 2022

Some utility scripts have been written to extract variable dictionary elements from qualtrics survey file exports and convert them into a basic crosswalk file.

## 2.1 Qualtrics File to Crosswalk

```
# source( "../data-dictionaries/R/00-data-processing-utils.R" )

URL <- "https://raw.githubusercontent.com/UrbanInstitute/nccs-nptrends/main/00-data-processing-utils.R"
source( URL )

#####
#####      DATA DICTIONARY
#####

# USE LEGACY = TRUE
# FOR THE YEAR 2 DATA DICTIONARY,
# FALSE FOR SUBSEQUENT YEARS

d <-
  read_survey(
    "data-raw/wave-02-qualtrics-download-29mar23.csv",
    legacy = T )

head( as.data.frame(d) )

# exports data dictionary

dd <- extract_colmap( d )

# add group variables
# and factor labels

dd <-
  dd %>%
  mutate( group_name = append_groups(qname) ) %>%
```

## 2.2 Dictionary Files

```
group_by( group_name ) %>%
mutate( group_n = n(),
        group_name = ifelse( group_n > 1, group_name, "" ),
        is_group = ifelse( group_n > 1, "1", "0" ),
        group_levels = ifelse( group_n > 1, get_categories(description), "" ) ) %>%
ungroup() %>%
mutate( type = ifelse( group_n > 1, "factor", "" ) ) %>%
select( qname, is_group, group_name, group_n, group_levels,
        description, main, sub )

write.csv( dd, "../data-dictionaries/dd-nptrends-wave-02.csv" )
```

## 2.2 Dictionary Files

After generating the skeleton of the crosswalk file from the script, it would be completed by a research assistant by providing information for fields marked **user** in the table:

DD VARIABLE	DESCRIPTION	SOURCE
q	question number (order)	qualtrix
vname_raw	variable name (from qualtrix export)	qualtrix
vname	variable name (final)	user
vlabel	variable label	user
type	data type (numeric, character, factor, logical, date)	user
group	group name	r script
group_lev1	factor levels	user

## 2 Generating Qualtrics Dictionaries

DD VARIABLE	DESCRIPTION	SOURCE
group_lev2	second factor level for double-grouped variables (e.g. finances__1__1)	user
group_lev_draft	parsed categories (clean up and use as group_lev labels)	r script
add_noise	add noise to this variable to anonymize?	user
description	survey question full	qualtrix
main	survey question sub	qualtrix
sub	survey question response categories (kindof)	qualtrix

These steps need to be completed each year. Most of the completed dictionaries can be reused if questions are not changing, but note that changes to the order of the questions in the survey can change the qualtrics naming conventions, and any new questions added would need documentation.

These dictionary crosswalk files are utilized in subsequent steps.

### 2.2.1 Preview

```
dd <- readxl::read_xlsx( "../data-dictionaries/dd-nptrends-wave-02.xlsx", sheet = "dd")
head( dd[30:50,] )
```

```
# A tibble: 6 x 13
```

## 2.2 Dictionary Files

```

      q  vname  vname_raw  vlabel  type  group  group_lev1  group_lev2  group_lev_draft
<dbl> <chr> <chr>      <chr>  <chr> <chr> <chr>      <chr>      <chr>
1    30 Addr~ MainAddr~ Nonpr~ char~ Main~ address    <NA>      City and State
2    31 Addr~ MainAddr~ Nonpr~ char~ Main~ address    <NA>      ZIP Code
3    32 PrgS~ ProgChan~ Indic~ bool~ Prog~ number of~ increase  Increased the ~
4    33 PrgS~ ProgChan~ indic~ bool~ Prog~ number of~ decrease  Dcrsuced the n~
5    34 PrgS~ ProgChan~ indic~ bool~ Prog~ services  suspend   Suspended or p~
6    35 PrgS~ ProgChan~ Indic~ bool~ Prog~ people se~ increase  Increased the ~
# i 4 more variables: add_noise <chr>, description <chr>, main <chr>, sub <chr>

```





**Part I**

**YEAR TWO DATA**



Load the data needed to process the second year survey results.



## **Part II**

# **Required R Packages**



This chapter will utilize the following packages:

```
library( haven )  
library( dplyr )  
library( tidyr )  
library( epoxy )  
library( memisc )  
library( labelled )
```





## **Part III**

# **Load the Data**



```

# LOAD DATA DICTIONARY
dd <-
  readxl::read_xlsx(
    "../data-dictionaries/dd-nptrends-wave-02.xlsx",
    sheet = "data dictionary" )

# USE RAW VNAME IF VNAME IS EMPTY:
dd$vname[ is.na(dd$vname) ] <-
  dd$vname_raw[ is.na(dd$vname) ]

# LOAD QUALTRICS SURVEY DATA
fpath <- "DATA-PREP/02-year-two/01-data-raw/"
fname <- "wave-02-qualtrics-download-29mar23.csv"
survey_df <- readr::read_csv( paste0( fpath, fname ) )
survey_df <- survey_df[ -(1:2), ] # drop qualtrics headers

fname <- "YEAR-02-COMPLETE-CASE-CODES.csv"
cases <- read.csv( paste0(fpath,fname) )

cases <- dplyr::select( cases, EIN, Completion_Status )
survey_df <- merge( survey_df, cases, by="EIN", all.x=T )

survey_df <-
  survey_df %>%
  dplyr::filter( Completion_Status %in% c("Complete","Partial_keep") ) %>%
  dplyr::select( - Completion_Status )

```

Note the raw data is challenging because it contains qualtrics encodings and missing values need context to be used correctly (e.g. were the questions skipped by skip logic, or by the respondent?).

```
survey_df[ 1:6, 51:55 ] %>% pandero::pandero() # data peek
```

PeopleServed#2_2	DemandNextYear	Staff#1_1_1	Staff#1_2_1	Staff#1_3_1
-99	Increase	60	30	-99
-99	Increase	3	4	9
-99	Increase	3	1	10
-99	Increase	13	2	11
N/A	Increase	1	-99	14
N/A	Increase	1	8	11

# **Part IV**

## **Data Workflow**



The following chapters describe the workflow used to import qualtrics data and apply cleaning and transformation steps to prepare the restricted use file and public use file for subsequent analysis:

1. Renaming columns
2. Drop nuisance columns (survey deployment attributes)
3. Add meaningful labels to response values
4. Dropping duplicates, incomplete responses and test responses

## Renaming Columns

Columns referencing survey questions are renamed with the help of a data dictionary to improve readability.

```
torename <-  
  dd %>%  
  dplyr::select( vname, vname_raw ) %>%  
  tidyr::drop_na()
```

### Examples:

```
[1] "DemandNextYear" "Staff#1_1_1"      "Staff#1_2_1"      "Staff#1_3_1"
```

Give the data meaningful names so that it is easier to work with.

```
survey_df <-  
  survey_df %>%  
  dplyr::rename_at(  
    vars( torename$vname_raw ),  
    ~ torename$vname )
```

### Examples:

```
[1] "Dmnd_NxtYear"          "Staff_Fulltime_2021"  "Staff_Parttime_2021"  
[4] "Staff_Boardmbr_2021"
```

## Drop Nuisance Fields

Many of the exported qualtrics fields contain non-useful metadata or are empty. These have been labeled as “DROP” in the **group** field. Remove these for convenience.

```
# SELECT COLUMNS TO DROP:  
DROP_THESE <- dd$vname[ dd$group == "DROP" ] |> na.omit()  
  
survey_df <-  
  survey_df %>%  
  dplyr::select( -any_of( DROP_THESE ) )
```



## **Part V**

# **Add Survey Weights**



```
# ADD SURVEY WEIGHTS
fpath <- "DATA-PREP/00-sample-framework/"
fname <- "year2wt.csv"
wt2 <- readr::read_csv( paste0( fpath, fname ) )

survey_df <- merge( survey_df, wt2, by.x="EIN", by.y="ein", all.x=TRUE )
```



**Part VI**

**Groups of Variables**



Each group of survey questions comes with its own set of valid inputs that must be recoded separately. For example, “N/A”’s are options for some survey questions and not for others, and some survey questions allow for manual text inputs.

The below code chunk separates all survey questions into their respective categories before further separating each category into numeric, text or NA inputs.

NA questions here refer to “Check here if not applicable to your organization” questions in the survey, where a “C” indicates that the respondent has checked the N/A box.

- 15 questions about **CHANGES TO PROGRAMS AND SERVICES**
- 4 questions about the **NUMBER OF PEOPLE EACH ORGANIZATION SERVES**
- 1 question about **OVERALL PROGRAM DEMAND**
- 27 questions about **STAFF NUMBERS**
- 2 questions about **DONOR AND VOLUNTEER IMPORTANCE**
- 11 questions about **CHANGES TO LEADERSHIP**
- 26 questions about **THE RACE AND GENDER OF CEOS AND BOARD CHAIRS**
- 8 questions about **CHANGES TO ORGANIZATIONAL FINANCES**
- 2 questions about **CARES FUNDING**
- 2 questions about **FINANCIAL RESERVES**
- 9 questions about **REVENUE SOURCES**
- 26 questions about **FUNDRAISING SOURCES**
- 2 questions about **DONOR TYPES IN FUNDRAISING**
- 7 questions about **FUNDRAISING YIELDS**
- 11 questions about **FUNDRAISING STRATEGY CHANGES**
- 1 questions about **MAJOR GIFT AMOUNTS**

- **13** questions about **EXTERNAL AFFAIRS**
- **1** questions about **FUTURE CONCERNS**



### 3 Relabeling Qualtrics Variables

Qualtrics uses some random values like -99 to encode for things like skipped questions, “not sure” categories, or “not applicable” answers. Currently one needs to a dictionary to look up every variable to understand what each value means.

In addition, some response categories are confusing because they equate to a missing response. For example, from an analytical perspective an answer of “not sure” and skipping the question completely both equate to a missing value when the response categories are yes or no.

The **memisc** package was designed for working with survey data. It allows you to label response categories in the data and also designate different types of missingness (e.g. Unsure, N/A, and -99 can all be coded as missing).

Several factor and boolean variables in this survey data set have inconsistent coding. They are recoded in this section and the decision criteria are documented for inspection and review.



## 4 Yes/No Questions

Original Value	Description	Recode Value	Code as Missing ?
Yes	Yes	1	No
No	No	0	No
Unsure	Unsure	97	Yes
N/A	Not Applicable	98	Yes
-99	Incomplete	99	Yes
NA	Unanswered	NA	Yes

```
# APPLY TO COLUMNS K:
bool_qns <-
  c( program_change_qns_bool,
      fundraise_qns_bool,
      cares_qns_bool,
      finance_chng_qns_bool,
      leadership_chng_qns_bool )

COLUMNS <- bool_qns

# VALUES THAT NEED RECODING
RULES <- c(
  " Yes    ==>>  1    ",
  " No     ==>>  0    ",
  " Unsure ==>>  97   ",
```

#### 4 Yes/No Questions

```
      "  N/A    =>>   98  ",
      "  -99    =>>   99  "  )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( 0, 1, 97, 98, 99 )
labels <- c( "No", "Yes", "Unsure", "Not Applicable", "N/A" )
missing <- c( 97, 98, 99 )

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

#### Example:

PrgSrvc\_IncrNum — ‘TYPE: boolean’

“Indicates an increase in number of programs or services”

Storage mode:

character

Measurement:

nominal

Missing values:

97, 98, 99

Values and labels

N  
 Valid  
 Total  
 0  
 'No'  
 268  
 40  
 .  
 1  
 38  
 .  
 8  
 1  
 'Yes'  
 400  
 59  
 .  
 9  
 57  
 .  
 9  
 97  
 M

#### 4 Yes/No Questions

‘Unsure’

1

0

.

1

98

M

‘Not Applicable’

6

0

.

9

99

M

‘N/A’

11

1

.

6

NA

M

5

0

42

.

7

QUESTION TXT:

3. In the last year (between January 2021-December 2021), did your organization make any of the following changes to your Programs, as compared to 2020? - Increased the number of programs or services





## 5 Single Checkboxes

These questions are presented as a checkbox to the respondent. They indicate an affirmative answer to the question.

### 5.1 Seek or Receive Fundraising Questions

These checkboxes are ticked by the respondent to indicate if they have sought or received funding from a specific source.

Original Value	Description	Recode Label	Recode Value	Code as Missing?
(select all that apply)	Checkbox Checked	Yes	1	No
-99	Checkbox Unchecked	No	0	No
NA	Unanswered	NA	NA	Yes

```
# APPLY TO COLUMNS K:
COLUMNS <- fundraise_skrcv_qns_bool

# VALUES THAT NEED RECODING

RULES <- c(
```

## 5 Single Checkboxes

```
" (select all that apply) ==> 1 ",
" -99 ==> 0 " )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( "0", "1" )
labels <- c( "No", "Yes" )
missing <- "UNSURE"

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

FndRaise\_LocGvtGrnt\_Seek — ‘TYPE: boolean’

“indicates if nonprofit sought a local government grant”

Storage mode:

character

Measurement:

nominal

Missing values:

UNSURE

Values and labels

### 5.1 Seek or Receive Fundraising Questions

N  
Valid  
Total  
0  
'No'  
317  
46  
.  
8  
45  
.  
9  
1  
'Yes'  
361  
53  
.  
2  
52  
.  
2  
NA  
M

## 5 Single Checkboxes

13

1

.

9

QUESTION TXT:

9. In the last year (2021), did your organization seek or receive revenue from any of the followi... - Did you SEEK or APPLY for this funding?  
- Local government grants - (select all that apply)

## 5.2 Race and Gender Checkboxes

These checkboxes are ticked by the respondent to indicate if their CEO or board chair belong to a specified race or gender identity.

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Asian/Pacific Islander	Checkbox Checked	Yes	1	No
Black/African American	Checkbox Checked	Yes	1	No
Latinx/Hispanic	Checkbox Checked	Yes	1	No
Native American/American Indian	Checkbox Checked	Yes	1	No
White	Checkbox Checked	Yes	1	No

## 5.2 Race and Gender Checkboxes

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Man	Checkbox Checked	Yes	1	No
Woman	Checkbox Checked	Yes	1	No
Trans	Checkbox Checked	Yes	1	No
Gender non-conforming/Not Binary	Checkbox Checked	Yes	1	No
Other (please specify)	Checkbox Checked	Yes	1	No
0	Checkbox Unchecked	No	0	No
-99	Incomplete	Incomplete	99	Yes
NA	Unanswered	NA	NA	Yes

```
# APPLY TO COLUMNS K:
COLUMNS <- race_gender_qns_bool

# VALUES THAT NEED RECODING

RULES <- c(
  "          Asian/Pacific Islander ==> 1 ",
  "          Black/African American ==> 1 ",
  "          Latinx/Hispanic         ==> 1 ",
  " Native American/American Indian ==> 1 ",
  "                               White ==> 1 ",
  "                               Man   ==> 1 "
```

## 5 Single Checkboxes

```
      "                Woman    ==>    1    ",
      "                Trans    ==>    1    ",
      "Gender non-conforming/Non-Binary    ==>    1    ",
      "      Other (please specify):    ==>    1    ",
      "                -99    ==>    x    ",
      "                0    ==>    0    " )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( "0", "1", "x" )
labels <- c( "No", "Yes", "Incomplete" )
missing <- "x"

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

CEOrace\_AAAP — ‘TYPE: boolean’

“race of CEO”

Storage mode:

character

Measurement:

nominal

## 5.2 Race and Gender Checkboxes

Missing values:

x

Values and labels

N

Valid

Total

0

‘No’

48

98

.

0

6

.

9

1

‘Yes’

1

2

.

0

0

.

## 5 Single Checkboxes

1

x

M

‘Incomplete’

2

0

.

3

NA

M

640

92

.

6

QUESTION TXT:

15.a. Which of the following best describes the race/ethnicity for your organization’s current Chief Executive (i.e., Executive Director or CEO)?  
(Select all that apply) - Selected Choice - Asian/Pacific Islander

### 5.3 N/A Checkboxes

These questions are presented as a checkbox to the user to indicate that a question is not applicable. “Yes” here means “Yes, this question is not applicable”.



### 5.3 N/A Checkboxes

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
C	Yes, this question is not applicable	Yes	1	No
N/A	Yes, this question is not applicable	Yes	1	No
-99	Incomplete	No	0	No
NA	Unanswered	NA	NA	Yes

```
na_bool_qns <-
  c( staff_qns_bool,
      reserve_qns_bool,
      people_served_qns_bool )

# APPLY TO COLUMNS K:
COLUMNS <- na_bool_qns

# VALUES THAT NEED RECODING

RULES <- c(
  "      C      ==>>  1  ",
  "    -99      ==>>  0  ",
  "    N/A      ==>>  1  " )

rules <- parse_rules( RULES )
```

## 5 Single Checkboxes

```
pattern <- rules[[ "pattern" ]]  
replace <- rules[[ "replace" ]]  
  
# MEMISC LABELS AND MISSING VALUE CODES  
values <- c( "0", "1" )  
labels <- c( "No", "Yes" )  
missing <- NULL  
  
# RECODE VARIABLES  
survey_df <-  
  survey_df %>%  
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

Staff\_Fulltime\_NA — ‘TYPE: boolean’

“Number of full time staff not applicable”

Storage mode:

character

Measurement:

nominal

Values and labels

N

Valid

Total

0

‘No’

### 5.3 N/A Checkboxes

638

92

.

9

92

.

3

1

‘Yes’

49

7

.

1

7

.

1

NA

M

4

0

.

6

QUESTION TXT:

## *5 Single Checkboxes*

STAFF & VOLUNTEERS      6. How many (paid and unpaid) people in your organization will have worke... - Check here if not applicable for your organization - Full-time paid staff (35 or more hours /week) - C

## 6 Multi-selection Inputs

These questions offer the user with multiple options to select one from. Since the options are ordered categories, they are coded on an ordinal scale.

### 6.1 Increase - Decrease Questions

There 2 questions that ask respondents to define changes via an increase or decrease relative to previous years. They are recoded on an ordinal scale.

### 6.2 Changes in Demand Questions

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Increase	Increase	Increase	2	No
Stay the same	Stay the same	Unchanged	1	No
Decrease	Decrease	Decrease	0	No
-99	Incomplete	No	99	Yes
NA	Unanswered	NA	NA	Yes

## 6 Multi-selection Inputs

```
# APPLY TO COLUMNS K:
COLUMNS <- demand_fct_qns

# VALUES THAT NEED RECODING

RULES <- c(

      "      Decrease    =>>    0  ",
      "    Stay the same =>>    1  ",
      "      Increase    =>>    2  ",
      "          -99      =>>    x   )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( 2, 1, 0, "x" )
labels <- c( "Increase", "Unchanged", "Decrease", "Incomplete" )
missing <- "x"

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

Dmnd\_NxtYear — ‘TYPE: factor’

“Demand for programs or services next year”

Storage mode:

## 6.2 Changes in Demand Questions

character

Measurement:

nominal

Missing values:

x

Values and labels

N

Valid

Total

0

‘Decrease’

17

2

.

5

2

.

5

1

‘Unchanged’

148

21

.

## 6 *Multi-selection Inputs*

9

21

.

4

2

‘Increase’

512

75

.

6

74

.

1

x

M

‘Incomplete’

10

1

.

4

NA

M

4

60



### 6.3 Changes in Fundraising Questions

0

.

6

QUESTION TXT:

5. In the next year, do you anticipate the demand for your programs to decrease, stay the same, or increase?

### 6.3 Changes in Fundraising Questions

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Increased significantly (by more than 10%)	Largest Increase	Increase Significantly	5	No
Increased moderately (by less than 10%)	Second Largest Increase	Increase Moderately	4	No
Stayed more or less the same	Third Largest Increase	Unchanged	3	No
Decreased moderately (by less than 10%)	Fourth Largest Increase	Decrease Moderately	2	No

## 6 Multi-selection Inputs

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Decreased significantly (by more than 10%)	Fifth Largest Increase	Decrease Significantly	1	No
Unsure	Unsure	Unsure	99	Missing
-99	Incomplete	Incomplete	98	Yes
N/A	Not Applicable	Not Applicable	97	Yes
NA	Unanswered	NA	NA	Yes

```
# APPLY TO COLUMNS K:
COLUMNS <- fundraise_change_qns_fct

# VALUES THAT NEED RECODING

RULES <- c(

  "    Increased significantly (by more than 10%)    ==>>    5    ",
  "    Increased moderately (by less than 10%)      ==>>    4    ",
  "    Stayed more or less the same                  ==>>    3    ",
  "    Decreased moderately (by less than 10%)       ==>>    2    ",
  "    Decreased significantly (by more than 10%)    ==>>    1    ",
  "    Unsure                                           ==>>    0    ",
  "    -99                                              ==>>    X    ",
  "    N/A                                              ==>>   N/A    )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]
```

### 6.3 Changes in Fundraising Questions

```
# MEMISC LABELS AND MISSING VALUE CODES
values <- c( 5, 4, 3, 2, 1, 0, "X", "N/A" )
labels <- c( "Increase Significantly", "Increase Moderately",
             "Unchanged", "Decrease Moderately", "Decrease Significantly",
             "Unsure", "Incomplete", "Not Applicable" )
missing <- c( "X" )

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

#### Example:

FndRaise\_Overall\_Chng — ‘TYPE: factor’

“change in overall donations”

Storage mode:

character

Measurement:

nominal

Missing values:

X

Values and labels

N

Valid

Total

0

## 6 Multi-selection Inputs

‘Unsure’

12

1

.

9

1

.

7

1

‘Decrease Significantly’

80

12

.

6

11

.

6

2

‘Decrease Moderately’

77

12

.

1

64

### 6.3 Changes in Fundraising Questions

11

.

1

3

‘Unchanged’

161

25

.

4

23

.

3

4

‘Increase Moderately’

169

26

.

7

24

.

5

5

‘Increase Significantly’

6 Multi-selection Inputs

133

21

.

0

19

.

2

N/A

‘Not Applicable’

2

0

.

3

0

.

3

X

M

‘Incomplete’

33

4

.

8

66

### 6.3 *Changes in Fundraising Questions*

NA

M

24

3

.

5

QUESTION TXT:

8.c. To the best of your knowledge, has each of the following categories of donations to your org... - In 2021 compared to 2020 - Overall donations





## 7 Level of Importance Questions

There are 2 questions that ask respondents to rank the importance of volunteers and donors respectively. However, both sets of options' are not identical. Hence, they are recoded to common values for reproducibility.

### 7.1 Volunteer Importance

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Essential - we depend entirely on volunteers to carry out our mission and goals	Maximum Importance	Essential	5	No
Very important - we depend on volunteers for a wide range of tasks, but not all	Second Most Important	Very Important	4	No

*7 Level of Importance Questions*

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Somewhat important - we depend on volunteers for several key tasks	Third Most Important	Somewhat Important	3	No
Not very important - we depend on volunteers for only non-essential tasks	Fourth Most Important	Not Very Important	2	No
Not at all important - we could carry out our mission and goals without using volunteers	Fifth Most Important	Not At All Important	1	No
We do not use volunteers	Sixth Most Important	Not Used	0	No
-99	Incomplete	Incomplete	99	Yes
NA	Unanswered	NA	NA	Yes

## 7.1 Volunteer Importance

```
# APPLY TO COLUMNS K:
COLUMNS <- volimportance_qns_fct

# VALUES THAT NEED RECODING

RULES <- c(

"          Essential - we depend entirely on volunteers to carry out our mission and goals
"          Very important - we depend on volunteers for a wide range of tasks, but not all
"          Somewhat important - we depend on volunteers for several key tasks
"          Not very important - we depend on volunteers for only non-essential tasks
" Not at all important - we could carry out our mission and goals without using volunteers
"                                     We do not use volunteers
"                                     -99

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( 5, 4, 3, 2, 1, 0, "X" )
labels <- c( "Essential", "Very Important", "Somewhat Important",
            "Not Very Important", "Not At All Important", "Not Used",
            "Incomplete" )
missing <- c( "X" )

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

VollImportance — 'TYPE: factor'

## 7 Level of Importance Questions

“Importance of volunteers to organization”

Storage mode:

character

Measurement:

nominal

Missing values:

X

Values and labels

N

Valid

Total

0

‘Not Used’

45

6

.

6

6

.

5

1

‘Not At All Important’

39

72

## 7.1 Volunteer Importance

5

.

7

5

.

6

2

‘Not Very Important’

74

10

.

9

10

.

7

3

‘Somewhat Important’

188

27

.

6

27

.

*7 Level of Importance Questions*

2

4

‘Very Important’

200

29

.

4

28

.

9

5

‘Essential’

135

19

.

8

19

.

5

X

M

‘Incomplete’

6

74

## 7.2 Donor Importance

0

.

9

NA

M

4

0

.

6

QUESTION TXT:

7. How important were volunteers – other than board members – to the work your organization conducted in 2021?

## 7.2 Donor Importance

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Essential, we depend entirely on individual donations to carry out our mission and goals	Maximum Importance	Essential	5	No

*7 Level of Importance Questions*

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Very important, we depend on individual donations for a wide range of activities, but not all	Very Important	4	No	
Important, we depend on individual donations for several key activities	Third Most Important	Somewhat Important	3	No
Not very important, we depend on individual donations for only non-essential activities	Fourth Most Important	Not Very Important	2	No



## 7.2 Donor Importance

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Not at all important, we could carry out our mission and goals without donations from individuals	Fifth Most Important	Not At All Important	1	No
We do not receive donations from individuals	Sixth Most Important	Not Used	0	No
-99	Incomplete	Incomplete	99	Yes
NA	Unanswered	NA	NA	Yes

```
# APPLY TO COLUMNS K:
COLUMNS <- donimportance_qns_fct

# VALUES THAT NEED RECODING

RULES <- c(
  "          Essential, we depend entirely on individual donations to carry out our mission",
  "    Very important, we depend on individual donations for a wide range of activities, bu",
  "          Important, we depend on individual donations for several key a",
  "          Not very important, we depend on individual donations for only non-essential a",
  " Not at all important, we could carry out our mission and goals without donations from in
```

## 7 Level of Importance Questions

```
"                                     We do not receive d
"

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values  <- c(5, 4, 3, 2, 1, 0, "X" )
labels  <- c( "Essential", "Very Important",
              "Somewhat Important", "Not Very Important",
              "Not At All Important", "Not Used", "Incomplete")
missing <- c( "X" )

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

DonImportance — ‘TYPE: factor’

“importance of donors to organization”

Storage mode:

character

Measurement:

nominal

Missing values:

X

## 7.2 Donor Importance

Values and labels

N

Valid

Total

0

‘Not Used’

18

2

.

6

2

.

6

1

‘Not At All Important’

24

3

.

5

3

.

5

2

*7 Level of Importance Questions*

‘Not Very Important’

56

8

.

2

8

.

1

3

‘Somewhat Important’

132

19

.

4

19

.

1

4

‘Very Important’

282

41

.

5

80

## 7.2 Donor Importance

40

.

8

5

‘Essential’

168

24

.

7

24

.

3

X

M

‘Incomplete’

7

1

.

0

NA

M

4

0

*7 Level of Importance Questions*

.

6

QUESTION TXT:

8. How important were donations from individuals (including direct donations and indirect donations through federated giving programs, United Way, and donor advised funds, or in-kind donations) to the work of your organization in 2021?

## 8 Frequency Questions

These questions ask respondents to rank the frequency at which they engage in an activity.

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Frequently	Most Frequent	Frequently	4	No
Almost all the time	Second Most Frequent	More Often Than Not	3	No
Occasionally	Third Most Frequent	Occasionally	2	No
Rarely	Fourth Most Frequent	Rarely	1	No
Never	Fifth Most Frequent	Occasionally	0	No
-99	Incomplete	Incomplete	99	Yes
NA	Unanswered	NA	NA	Yes

```
# APPLY TO COLUMNS K:
COLUMNS <- extaffairs_qns_fct

# VALUES THAT NEED RECODING

RULES <- c(
```

## 8 Frequency Questions

```
"      Frequently    =>> 4  ",
"    Almost all the time =>> 3  ",
"      Occasionally  =>> 2  ",
"          Rarely    =>> 1  ",
"          Never     =>> 0  ",
"          -99       =>> X   " )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

# MEMISC LABELS AND MISSING VALUE CODES
values <- c( 4, 3, 2, 1, 0, "X" )
labels <- c( "Frequently", "More Often than Not",
             "Occasionally", "Rarely", "Never", "Incomplete" )
missing <- c( "X" )

# RECODE VARIABLES
survey_df <-
  survey_df %>%
  recode_columns( k=COLUMNS, pattern, replace, values, labels, missing )
```

### Example:

ExtAffairs\_GenEd — ‘TYPE: factor’

“frequency of activities aimed at educating the general public about a specific policy issue and/or the interests of certain groups”

Storage mode:

character

Measurement:

nominal



Missing values:

X

Values and labels

N

Valid

Total

0

‘Never’

167

29

.

0

24

.

2

1

‘Rarely’

98

17

.

0

14

.

## 8 Frequency Questions

2

2

‘Occasionally’

149

25

.

9

21

.

6

3

‘More Often than Not’

45

7

.

8

6

.

5

4

‘Frequently’

116

20

86

.

2

16

.

8

X

M

‘Incomplete’

10

1

.

4

NA

M

106

15

.

3

QUESTION TXT:

EXTERNAL AFFAIRS 16. During the last two years (2020-2021), how often did your organization conduct the following activities? (Including at the local, county, state, or federal level). - Educate the general public about a specific policy issue and/or the interests of certain groups



## 9 Integer Inputs

These questions accept an integer input from users to indicate the number of staff they have, people they served, or donors they have.

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Whole Number	Number of Staff, People or Donors	NA	Integer Value	No
N/A	Not Applicable	NA	-1	Yes
-99	Incomplete	NA	-2	Yes
NA	Unanswered	NA	NA	Yes

```
int_qns <-  
  c( staff_qns_int,  
      people_served_qns_int,  
      fundraise_donor_qns_int )  
  
COLUMNS <- int_qns  
  
survey_df[ COLUMNS ] <-  
  survey_df[ COLUMNS ] %>%  
    lapply( recode_x, pattern=c("N/A","-99"), replace=c("Inf","Inf") )  
  
survey_df[ COLUMNS ] <-
```

## 9 Integer Inputs

```
survey_df[ COLUMNS ] %>%  
  lapply( as.numeric )  
  
survey_df[ COLUMNS ] <-  
  survey_df[ COLUMNS ] %>%  
  lapply( memisc::as.item, missing.values=Inf )  
  
survey_df[ COLUMNS ] <- purrr::map( COLUMNS, add_q_details, survey_df )
```

### Example:

Staff\_Fulltime\_2021 — ‘TYPE: integer’

“Number of full time staff”

Storage mode:

double

Measurement:

interval

Missing values:

Inf

Values and labels

N

Percent

M

(unlab.mss.)

61

8

90

.  
8  
NA  
M  
4  
0  
.  
6  
Min:  
0  
.  
000  
Max:  
3000  
.  
000  
Mean:  
17  
.  
119  
Std.Dev.:  
122  
.

*9 Integer Inputs*

704

QUESTION TXT:

STAFF & VOLUNTEERS      6. How many (paid and unpaid) people  
in your organization will have worke... - 2021 - Full-time paid staff (35 or  
more hours /week) - (best estimate)



## 10 Numeric Inputs

These questions accept a numeric input from users to denote dollar values. For some variables, additional processing is done to remove commas and “\$” signs.

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
Dollar Amount	Dollar Amount	NA	Numeric Value	No
-99	Incomplete	NA	-1	Yes
NA	Unanswered	NA	NA	Yes

```
numeric_qns <-  
  c( majorgift_qn_num,  
      reserve_qns_num,  
      cares_qns_num,  
      finance_revenue_qns_num )  
  
COLUMNS <- numeric_qns  
  
survey_df[ COLUMNS ] <-  
  survey_df[ COLUMNS ] %>%  
  lapply( keep_numbers )  
  
survey_df[ COLUMNS ] <-  
  survey_df[ COLUMNS ] %>%
```

## 10 Numeric Inputs

```
lapply( memisc::as.item, missing.values=Inf )  
survey_df[ COLUMNS ] <- purrr::map( COLUMNS, add_q_details, survey_df )
```

### Example:

FndRaise\_MajGift\_Amt — ‘TYPE: numeric’

“donation amount considered a major gift”

Storage mode:

double

Measurement:

interval

Missing values:

Inf

Values and labels

N

Percent

M

(unlab.mss.)

18

2

.

6

NA

M

25

3

.

6

Min:

0

.

010

Max:

1000000

.

000

Mean:

5935

.

894

Std.Dev.:

44801

.

714

QUESTION TXT:

## *10 Numeric Inputs*

8.b. What is the smallest donation amount that your organization would consider to be a major gift? - \$

## 11 Text Inputs

These questions allow the user to enter raw text as answers. All non-text values are converted to NAs.

```
text_qns <-
  c( staff_qns_text,
      finance_chng_qns_text,
      finance_revenue_qns_text,
      fundraise_qns_text,
      leadership_chng_qns_text,
      primary_cncrn_qn_text,
      program_change_qns_txt,
      race_gender_qns_text)

survey_df[ text_qns ] <-
  survey_df[ text_qns ] %>%
  lapply( recode_x, pattern="-99", replace=NA )

survey_df[ text_qns ] <-
  survey_df[ text_qns ] %>%
  lapply( memisc::as.item )

survey_df[ text_qns ] <- purrr::map( text_qns, add_q_details, survey_df )

codebook( survey_df[ text_qns[1] ] )
```

=====

## 11 Text Inputs

Staff\_Other\_Text\_2021 'TYPE: text'

"Description of other staff"

---

Storage mode: character

Measurement: nominal

Min: "Book keeper"

Max: "we are a part time organization"

QUESTION TXT:

STAFF & VOLUNTEERS 6. How many (paid and unpaid) people in  
your organization will have worke... - 2021 - Other (please  
specify): - Text

### Example:

Staff\_Other\_Text\_2021 — 'TYPE: text'

"Description of other staff"

Storage mode:

character

Measurement:

nominal

Min:

"Book keeper"

Max:

“we are a part time organization”

QUESTION TXT:

STAFF & VOLUNTEERS      6. How many (paid and unpaid) people  
in your organization will have worke... - 2021 - Other (please specify): -  
Text





## 12 Reconcile Demographic Variables

### 12.1 Adding Race and Gender Answers from Year 1 Survey

Questions about the race and gender of CEOs and Board Chairs are only presented to users if they indicate that a leadership change has occurred in Year 2 of the survey. Hence, we will need to impute in race and gender responses for participants who did not indicate a change in leadership.

#### 12.1.1 Identifying cases for imputation

These respondents indicate that there were no changes to their CEO in year 2.

```
have.changes <-  
  ( survey_df$LeadershipChng_HireCEO == 1 |  
    survey_df$LeadershipChng_IntrmCEO == 1 )  
  
no_ceo_chng_ein <-  
  survey_df %>%  
  dplyr::filter( ! have.changes ) %>%  
  dplyr::pull("EIN")  
  
no_bchair_chng_ein <-  
  survey_df %>%
```

## 12 Reconcile Demographic Variables

```
dplyr::filter( LeadershipChng_ChngBC != 1 ) %>%  
dplyr::pull("EIN")
```

### 12.1.2 Processing Year 1 Data

In Year 1, the survey questions for race and gender are encoded in a single factor variable instead of the multiple boolean variables in Year 2. We will have to wrangle the data from Year 1 into a format for Year 2.

```
fpath      <- "DATA-PREP/01-year-one/02-data-intermediate/"  
fname      <- "wave-01-data-intermediate.csv"  
year1_raw <- readr::read_csv( paste0( fpath, fname ) )
```

```
# Wrangle Data for Year 1 Responses on CEO race and Gender  
year1_CEOchng <- year1_raw %>%  
  dplyr::select(EIN, CEOrace, CEOgender) %>%  
  dplyr::filter(EIN %in% no_ceo_chng_ein,  
                ! CEOrace %in% c(-99, NA),  
                ! CEOgender %in% c(-99, NA)) %>%  
  dplyr::mutate(  
    CEOrace = dplyr::case_match(  
      CEOrace,  
      1 ~ "AAPI", 2 ~ "Black", 3 ~ "Hisp", 4 ~ "NativeAm", 5 ~ "White", 6 ~ "Oth",  
      .default = "Oth"  
    ),  
    CEOgender = dplyr::case_match(  
      CEOgender,  
      1 ~ "Man", 2 ~ "Woman", 3 ~ "Trans", 4 ~ "NB", 5 ~ "Oth",  
      .default = "Oth"  
    ),  
    race_check = 1,  
    gender_check = 1
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
) %>%
tidyr::pivot_wider(
  names_from = CEOrace,
  names_glue = "CEOrace_{CEOrace}",
  values_from = race_check,
  values_fill = 0
) %>%
tidyr::pivot_wider(
  names_from = CEOgender,
  names_glue = "CEOgender_{CEOgender}",
  values_from = gender_check,
  values_fill = 0
)

# Wrangle Data for Year 1 Responses on Board Chair Race and Gender
year1_BCchng <- year1_raw %>%
  dplyr::select(EIN, BCrace, BCgender) %>%
  dplyr::filter(EIN %in% no_bchair_chng_ein,
    ! BCrace %in% c(-99, NA),
    ! BCgender %in% c(-99, NA)) %>%
  dplyr::mutate(
    BCrace = dplyr::case_match(
      BCrace,
      1 ~ "AAPI", 2 ~ "Black", 3 ~ "Hisp", 4 ~ "NativeAm", 5 ~ "White", 6 ~ "Bi", 7 ~ "Oth",
      .default = "Oth"
    ),
    BCgender = dplyr::case_match(
      BCgender,
      1 ~ "Man", 2 ~ "Woman", 3 ~ "Trans", 4 ~ "NB", 5 ~ "Oth",
      .default = "Oth"
    ),
    race_check = 1,
    gender_check = 1
```

## 12 Reconcile Demographic Variables

```
) %>%
tidyr::pivot_wider(
  names_from = BCrace,
  names_glue = "BChairrace_{BCrace}",
  values_from = race_check,
  values_fill = 0
) %>%
tidyr::pivot_wider(
  names_from = BCgender,
  names_glue = "BChairgender_{BCgender}",
  values_from = gender_check,
  values_fill = 0
)
```

### 12.1.3 Create Biracial Categories in Year 2

Since the Year 1 data has an indicator for biracial CEOs and Board Chairs, we will have to create a boolean Biracial indicator variable in the Year 2 data that returns a 1 if a CEO or Board Chair belongs to 2 or more racial groups.

```
race_ceo_qns_bool <-
  race_gender_qns_bool[ grepl( "CEOrace", race_gender_qns_bool ) ]

race_bchair_qns_bool <-
  race_gender_qns_bool[ grepl( "BChairrace", race_gender_qns_bool ) ]

race_qns <- c( race_ceo_qns_bool, race_bchair_qns_bool )

RULES <- c(
  "    Yes ==> 1    ",
  "    No  ==> 0    " )
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

survey_df[ race_qns ] <-
  survey_df[ race_qns ] %>%
  lapply( recode_x, pattern, replace )

survey_df[ race_qns ] <-
  survey_df[ race_qns ] %>%
  lapply( as.numeric )

survey_df <-
  survey_df %>%
  dplyr::rowwise() %>%
  dplyr::mutate(
    CEOrace_Bi = ifelse(dplyr::between(
      sum(dplyr::c_across(tidyselect::all_of(race_ceo_qns_bool))), na.rm = TRUE), 2, 6
    ), 1, 0),
    BChairrace_Bi = ifelse(dplyr::between(
      sum(dplyr::c_across(tidyselect::all_of(race_bchair_qns_bool))), na.rm = TRUE), 2, 6
    ), 1, 0)
  )
```

### 12.1.4 Merge Year 1 Race and Gender Variables with Year 2

```
race_ceo_qns_bool <- c( race_ceo_qns_bool, "CEOrace_Bi" )

for (race_var in race_ceo_qns_bool){
  survey_df <-
    survey_df %>%
```

## 12 Reconcile Demographic Variables

```
dplyr::mutate(
  !! race_var := ifelse(
    EIN %in% year1_CEOchnge$EIN,
    year1_CEOchnge[[race_var]],
    .data[[race_var]] )
)
}

gender.qs <- grepl( "CEOgender", race_gender_qns_bool )
gender_ceo_qns_bool <- race_gender_qns_bool[ gender.qs ]

COLUMNS <- gender_ceo_qns_bool

RULES <- c(
  "    Yes    ==>  1    ",
  "    No     ==>  0    " )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

survey_df[ COLUMNS ] <-
  survey_df[ COLUMNS ] %>%
  lapply( recode_x, pattern, replace )

survey_df[ COLUMNS ] <-
  survey_df[ COLUMNS ] %>%
  lapply( as.numeric )

# lapply( survey_df[ COLUMNS ], table )

for ( gender_var in gender_ceo_qns_bool ){
  survey_df <-
    survey_df %>%
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
dplyr::mutate(

  !! gender_var := ifelse(

    EIN %in% year1_CEOchnge$EIN & gender_var %in% names( year1_CEOchnge ),
    year1_CEOchnge[[ gender_var ]],
    .data[[ gender_var ]]

  )

)

}

race_bchair_qns_bool <- c(race_bchair_qns_bool, "BChairrace_Bi")

COLUMNS <- race_bchair_qns_bool

RULES <- c(

  " Yes ==> 1 ",
  " No  ==> 0 "

)

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

survey_df[ COLUMNS ] <-
  survey_df[ COLUMNS ] %>%
  lapply( recode_x, pattern, replace )

# lapply( survey_df[ COLUMNS ], table )

survey_df[ COLUMNS ] <-
  survey_df[ COLUMNS ] %>%
```

## 12 Reconcile Demographic Variables

```
lapply( as.numeric )

for (race_var in race_bchair_qns_bool){
  survey_df <- survey_df %>%
    dplyr::mutate(
      !! race_var := ifelse(
        EIN %in% year1_BCchng$EIN,
        year1_BCchng[[race_var]],
        .data[[race_var]]
      )
    )
}

gender_bchair_qns_bool <-
  race_gender_qns_bool[ grepl("BChairgender", race_gender_qns_bool) ]

COLUMNS <- gender_bchair_qns_bool

RULES <- c(
  "      Yes ==> 1  ",
  "      No  ==> 0  ",
  "    Female ==> 1  ",
  "    Male  ==> 1  " )

rules <- parse_rules( RULES )
pattern <- rules[[ "pattern" ]]
replace <- rules[[ "replace" ]]

survey_df[ COLUMNS ] <-
  survey_df[ COLUMNS ] %>%
    lapply( recode_x, pattern, replace )

# lapply( survey_df[ COLUMNS ], table )
```



## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
survey_df[ COLUMNS ] <-  
  survey_df[ COLUMNS ] %>%  
  lapply( as.numeric )  
  
for (gender_var in gender_bchair_qns_bool){  
  survey_df <- survey_df %>%  
  dplyr::mutate(  
    !! gender_var := ifelse(  
      EIN %in% year1_BCchng$EIN & gender_var %in% names(year1_BCchng),  
      year1_BCchng[[gender_var]],  
      .data[[gender_var]]  
    )  
  )  
}
```

### 12.1.5 Recode New Race and Gender Variables

```
create_survey_item <- function(  
  survey_data,  
  qns,  
  recode_vals,  
  recode_labs,  
  missing_vals ){  
  
  survey_data <-  
    survey_data %>%  
    purrr::modify_at(  
      .at = qns,  
      .f = memisc::as.item,  
      labels = structure(  
        .Data = recode_vals,
```

## 12 Reconcile Demographic Variables

```
      names = recode_labs ),  
      missing.values = missing_vals )  
  
  return( survey_data )  
}
```

```
survey_df <- create_survey_item(  
  survey_df,  
  race_ceo_qns_bool,  
  recode_vals = c(0, 1, 99),  
  recode_labs = c("No", "Yes", "Incomplete"),  
  missing_vals = c(99)  
)
```

```
survey_df <- create_survey_item(  
  survey_df,  
  gender_ceo_qns_bool,  
  recode_vals = c(0, 1, 99),  
  recode_labs = c("No", "Yes", "Incomplete"),  
  missing_vals = c(99)  
)
```

```
survey_df <- create_survey_item(  
  survey_df,  
  race_bchair_qns_bool,  
  recode_vals = c(0, 1, 99),  
  recode_labs = c("No", "Yes", "Incomplete"),  
  missing_vals = c(99)  
)
```

```
survey_df <- create_survey_item(  
  survey_df,  
  gender_bchair_qns_bool,
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
recode_vals = c(0, 1, 99),  
recode_labs = c("No", "Yes", "Incomplete"),  
missing_vals = c(99)  
)
```

### 12.1.6 Create single Race/Gender column

While our race and gender columns are individual binary columns, this is not the case for year 1 and 3 results. Both those years contain single columns for race and gender variables for CEOs and Board Chairs respectively. For easier comparability, we create a new variable aggregating race and gender values for all our individual binary columns.

#### 12.1.6.1 Aggregated Race Variable

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
1	Asian/Pacific Islander	AAPI	1	No
1	Black/African American	Black	2	No
1	Latinx/Hispanic	Hisp	3	No
1	Native American/Indian	NativeAm	4	No
1	White	White	5	No
1	Bi/Multi-racial	Bi	6	No

## 12 Reconcile Demographic Variables

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
1	Other (please specify)	Oth	7	No
0	Checkbox Unchecked	NA	Yes	

```
# Create New Race variables
survey_df <- survey_df %>%
  dplyr::mutate(
    CEOrace = dplyr::case_when(
      CEOrace_AAPI == 1 ~ 1,
      CEOrace_Black == 1 ~ 2,
      CEOrace_Hisp == 1 ~ 3,
      CEOrace_NativeAm == 1 ~ 4,
      CEOrace_White == 1 ~ 5,
      CEOrace_Bi == 1 ~ 6,
      CEOrace_Oth == 1 ~ 7,
      .default = NA
    ),
    BChairrace = dplyr::case_when(
      BChairrace_AAPI == 1 ~ 1,
      BChairrace_Black == 1 ~ 2,
      BChairrace_Hisp == 1 ~ 3,
      BChairrace_NativeAm == 1 ~ 4,
      BChairrace_White == 1 ~ 5,
      BChairrace_Bi == 1 ~ 6,
      BChairrace_Oth == 1 ~ 7,
      .default = NA
    )
  )
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
# Create Survey Item
survey_df <- create_survey_item(
  survey_df,
  c("CEOrace", "BChairrace"),
  recode_vals = c(1, 2, 3, 4, 5, 6, 7),
  recode_labs = c("AAPI", "Black", "Hisp", "NativeAm", "White", "Bi", "Oth"),
  missing_vals = c()
)
```

### 12.1.6.2 Aggregated Gender Variable

Original Value	Description	Recode Label	Recode Value	Code as Missing ?
1	Man	Man	1	No
1	Woman	Woman	2	No
1	Trans	Trans	3	No
1	Gender non-conforming/Non-Binary	NB	4	No
1	Other (please specify)	Oth	5	No
0	Checkbox Unchecked	NA	Yes	

```
# Create New Race variables
survey_df <- survey_df %>%
  dplyr::mutate(
    CEOgender = dplyr::case_when(
      CEOgender_Man == 1 ~ 1,
      CEOgender_Woman == 1 ~ 2,
```

## 12 Reconcile Demographic Variables

```
    CEOgender_Trans == 1 ~ 3,
    CEOgender_NB == 1 ~ 4,
    CEOgender_Oth == 1 ~ 5,
    .default = NA
  ),
  BChairgender = dplyr::case_when(
    BChairgender_Man == 1 ~ 1,
    BChairgender_Woman == 1 ~ 2,
    BChairgender_Trans == 1 ~ 3,
    BChairgender_NB == 1 ~ 4,
    BChairgender_Oth == 1 ~ 5,
    .default = NA
  ))

# Create Survey Item
survey_df <- create_survey_item(
  survey_df,
  c("CEOgender", "BChairgender"),
  recode_vals = c(1, 2, 3, 4, 5),
  recode_labs = c("Man", "Woman", "Trans", "NB", "Oth"),
  missing_vals = c()
)
```

### 12.1.7 Validate Results

We can see that the number of valid responses for race and gender questions concerning the CEO and Board Chair have increased.

```
race_gender_qns <-
  c( race_gender_qns_bool,
      "CEOrace", "CEOgender", "BChairrace", "BChairgender" )
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
show_html( codebook( survey_df[ race_gender_qns ] ) )
```

CEOrace\_AAPI

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

467

99

.

8

67

.

6

## 12 Reconcile Demographic Variables

1

‘Yes’

1

0

.

2

0

.

1

NA

M

223

32

.

3

CEOrace\_Black

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels



### 12.1 Adding Race and Gender Answers from Year 1 Survey

N  
Valid  
Total  
0  
'No'  
462  
98  
.  
7  
66  
.  
9  
1  
'Yes'  
6  
1  
.  
3  
0  
.  
9  
NA  
M

## 12 Reconcile Demographic Variables

223

32

.

3

CEOrace\_Hisp

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

464

99

.

1

67

.

118

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
1
1
'Yes'
4
0
.
9
0
.
6
NA
M
223
32
.
3
CEOrace_NativeAm
Storage mode:
double
Measurement:
nominal
Missing values:
99
```

## 12 Reconcile Demographic Variables

Values and labels

N

Valid

Total

0

'No'

464

99

.

1

67

.

1

1

'Yes'

4

0

.

9

0

.

6

NA

120

## 12.1 Adding Race and Gender Answers from Year 1 Survey

M

223

32

.

3

CEOrace\_White

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

12

2

.

6

1

## 12 Reconcile Demographic Variables

```
.  
7  
1  
'Yes'  
456  
97  
.  
4  
66  
.  
0  
NA  
M  
223  
32  
.  
3  
CEOrace_Oth  
Storage mode:  
double  
Measurement:  
nominal  
Missing values:
```

## 12.1 Adding Race and Gender Answers from Year 1 Survey

99

Values and labels

N

Valid

Total

0

‘No’

468

100

.

0

67

.

7

1

‘Yes’

0

0

.

0

0

.

0

## *12 Reconcile Demographic Variables*

NA

M

223

32

.

3

CEOgender\_Man

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

454

97

.

0

124



## 12.1 Adding Race and Gender Answers from Year 1 Survey

65

.

7

1

‘Yes’

14

3

.

0

2

.

0

NA

M

223

32

.

3

CEOgender\_Woman

Storage mode:

double

Measurement:

nominal

## 12 Reconcile Demographic Variables

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

14

3

.

0

2

.

0

1

‘Yes’

454

97

.

0

65

.

126

## 12.1 Adding Race and Gender Answers from Year 1 Survey

7

NA

M

223

32

.

3

CEOgender\_\_Trans

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

48

98

.

## 12 Reconcile Demographic Variables

0

6

.

9

1

'Yes'

1

2

.

0

0

.

1

NA

M

642

92

.

9

CEOgender\_NB

Storage mode:

double

Measurement:

128

## 12.1 Adding Race and Gender Answers from Year 1 Survey

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

467

99

.

8

67

.

6

1

‘Yes’

1

0

.

2

0

## 12 Reconcile Demographic Variables

.

1

NA

M

223

32

.

3

CEOgender\_Oth

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

'No'

468

100

130

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
.  
0  
67  
.  
7  
1  
'Yes'  
0  
0  
.  
0  
0  
.  
0  
NA  
M  
223  
32  
.  
3  
BChairrace__AAPI  
Storage mode:  
double
```

## 12 Reconcile Demographic Variables

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

491

99

.

4

71

.

1

1

‘Yes’

3

0

.

6

132



## 12.1 Adding Race and Gender Answers from Year 1 Survey

0  
.  
4  
NA  
M  
197  
28  
.  
5  
BChairrace\_Black  
Storage mode:  
double  
Measurement:  
nominal  
Missing values:  
99  
Values and labels  
N  
Valid  
Total  
0  
'No'  
472

## 12 Reconcile Demographic Variables

95

.

5

68

.

3

1

'Yes'

22

4

.

5

3

.

2

NA

M

197

28

.

5

BChairrace\_Hisp

Storage mode:

134

## 12.1 Adding Race and Gender Answers from Year 1 Survey

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

477

96

.

6

69

.

0

1

‘Yes’

17

3

.

## 12 Reconcile Demographic Variables

4

2

.

5

NA

M

197

28

.

5

BChairrace\_NativeAm

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

136

## 12.1 Adding Race and Gender Answers from Year 1 Survey

490

99

.

2

70

.

9

1

‘Yes’

4

0

.

8

0

.

6

NA

M

197

28

.

5

BChairrace\_White

## *12 Reconcile Demographic Variables*

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

34

6

.

9

4

.

9

1

‘Yes’

460

93

138

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
.  
1  
66  
.  
6  
NA  
M  
197  
28  
.  
5  
BChairrace__Oth  
Storage mode:  
double  
Measurement:  
nominal  
Missing values:  
99  
Values and labels  
N  
Valid  
Total  
0
```

## 12 Reconcile Demographic Variables

‘No’

492

99

.

6

71

.

2

1

‘Yes’

2

0

.

4

0

.

3

NA

M

197

28

.

5

140



## 12.1 Adding Race and Gender Answers from Year 1 Survey

BChairgender\_Man

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

410

83

.

0

59

.

3

1

‘Yes’

84

## 12 Reconcile Demographic Variables

17

.

0

12

.

2

NA

M

197

28

.

5

BChairgender\_Woman

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

142

## 12.1 Adding Race and Gender Answers from Year 1 Survey

0  
'No'  
83  
16  
.  
8  
12  
.  
0  
1  
'Yes'  
411  
83  
.  
2  
59  
.  
5  
NA  
M  
197  
28  
.

## 12 Reconcile Demographic Variables

5

BChairgender\_\_Trans

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

164

100

.

0

23

.

7

1

‘Yes’

144

## 12.1 Adding Race and Gender Answers from Year 1 Survey

```
0
0
.
0
0
.
0
NA
M
527
76
.
3
BChairgender__NB
Storage mode:
double
Measurement:
nominal
Missing values:
99
Values and labels
N
Valid
```

## 12 Reconcile Demographic Variables

Total

0

‘No’

494

100

.

0

71

.

5

1

‘Yes’

0

0

.

0

0

.

0

NA

M

197

28

146

## 12.1 Adding Race and Gender Answers from Year 1 Survey

.

5

BChairgender\_Oth

Storage mode:

double

Measurement:

nominal

Missing values:

99

Values and labels

N

Valid

Total

0

‘No’

492

99

.

6

71

.

2

1

## 12 Reconcile Demographic Variables

‘Yes’

2

0

.

4

0

.

3

NA

M

197

28

.

5

CEOrace

Storage mode:

double

Measurement:

nominal

Values and labels

N

Valid

Total

148



## 12.1 Adding Race and Gender Answers from Year 1 Survey

1

‘AAPI’

1

0

.

2

0

.

1

2

‘Black’

6

1

.

3

0

.

9

3

‘Hisp’

3

0

.

## 12 Reconcile Demographic Variables

6  
0  
.  
4  
4  
'NativeAm'  
4  
0  
.  
9  
0  
.  
6  
5  
'White'  
454  
97  
.  
0  
65  
.  
7  
6

## 12.1 Adding Race and Gender Answers from Year 1 Survey

‘Bi’

0

0

.

0

0

.

0

7

‘Oth’

0

0

.

0

0

.

0

NA

M

223

32

.

3

## 12 Reconcile Demographic Variables

CEOgender

Storage mode:

double

Measurement:

nominal

Values and labels

N

Valid

Total

1

‘Man’

14

3

.

0

2

.

0

2

‘Woman’

453

96

.

152

## 12.1 Adding Race and Gender Answers from Year 1 Survey

8

65

.

6

3

‘Trans’

1

0

.

2

0

.

1

4

‘NB’

0

0

.

0

0

.

0

5

## 12 Reconcile Demographic Variables

‘Oth’

0

0

.

0

0

.

0

NA

M

223

32

.

3

BChairrace

Storage mode:

double

Measurement:

nominal

Values and labels

N

Valid

Total

## 12.1 Adding Race and Gender Answers from Year 1 Survey

1

‘AAPI’

3

0

.

6

0

.

4

2

‘Black’

20

4

.

0

2

.

9

3

‘Hisp’

14

2

.

## 12 Reconcile Demographic Variables

8  
2  
.  
0  
4  
'NativeAm'  
3  
0  
.  
6  
0  
.  
4  
5  
'White'  
453  
91  
.  
7  
65  
.  
6  
6  
  
156



## 12.1 Adding Race and Gender Answers from Year 1 Survey

‘Bi’

0

0

.

0

0

.

0

7

‘Oth’

1

0

.

2

0

.

1

NA

M

197

28

.

5

## 12 Reconcile Demographic Variables

BChairgender

Storage mode:

double

Measurement:

nominal

Values and labels

N

Valid

Total

1

‘Man’

84

17

.

0

12

.

2

2

‘Woman’

408

82

.

158

## 12.1 Adding Race and Gender Answers from Year 1 Survey

6

59

.

0

3

‘Trans’

0

0

.

0

0

.

0

4

‘NB’

0

0

.

0

0

.

0

5

## 12 Reconcile Demographic Variables

‘Oth’

2

0

.

4

0

.

3

NA

M

197

28

.

5

## 13 Summary Statistics

- 15 questions about **CHANGES TO PROGRAMS AND SERVICES**
- 4 questions about the **NUMBER OF PEOPLE EACH ORGANIZATION SERVES**
- 1 question about **OVERALL PROGRAM DEMAND**
- 27 questions about **STAFF NUMBERS**
- 2 questions about **DONOR AND VOLUNTEER IMPORTANCE**
- 11 questions about **CHANGES TO LEADERSHIP**
- 26 questions about **THE RACE AND GENDER OF CEOS AND BOARD CHAIRS**
- 8 questions about **CHANGES TO ORGANIZATIONAL FINANCES**
- 2 questions about **CARES FUNDING**
- 2 questions about **FINANCIAL RESERVES**
- 9 questions about **REVENUE SOURCES**
- 26 questions about **FUNDRAISING SOURCES**
- 2 questions about **DONOR TYPES IN FUNDRAISING**
- 7 questions about **FUNDRAISING YIELDS**
- 11 questions about **FUNDRAISING STRATEGY CHANGES**
- 1 questions about **MAJOR GIFT AMOUNTS**
- 13 questions about **EXTERNAL AFFAIRS**
  
- 1 questions about **FUTURE CONCERNS**



## 14 CHANGES TO PROGRAMS AND SERVICES

PrgSrvc\_IncrNum — ‘TYPE: boolean’

“Indicates an increase in number of programs or services”

Storage mode:

character

Measurement:

nominal

Missing values:

97, 98, 99

Values and labels

N

Valid

Total

0

‘No’

268

40

## 14 CHANGES TO PROGRAMS AND SERVICES

.

1

38

.

8

1

‘Yes’

400

59

.

9

57

.

9

97

M

‘Unsure’

1

0

.

1

98

M

164



‘Not Applicable’

6

0

.

9

99

M

‘N/A’

11

1

.

6

NA

M

5

0

.

7

QUESTION TXT:

#### 14 CHANGES TO PROGRAMS AND SERVICES

3. In the last year (between January 2021-December 2021), did your organization make any of the following changes to your Programs, as compared to 2020? - Increased the number of programs or services

PrgSrvc\_DcrsNum — 'TYPE: boolean'

"indicates a decrease in number of programs or services"

Storage mode:

character

Measurement:

nominal

Missing values:

97, 98, 99

Values and labels

N

Valid

Total

0

'No'

547

83

.

4

79

.

2

1

'Yes'

109

16

.

6

15

.

8

97

M  
'Unsure'  
3  
0  
.  
4  
98  
M  
'Not Applicable'  
13  
1  
.  
9  
99  
M  
'N/A'  
14  
2  
.  
0  
NA  
M  
5  
0  
.  
7  
QUESTION TXT:

3. In the last year (between January 2021-December 2021), did your organization make any of the following changes to your Programs, as compared to 2020? - Decreased the number of programs or services  
PrgSrvc\_Suspend — 'TYPE: boolean'  
"indicates the suspension of programs or services"

## 14 CHANGES TO PROGRAMS AND SERVICES

Storage mode:  
character  
Measurement:  
nominal  
Missing values:  
97, 98, 99  
Values and labels  
N  
Valid  
Total  
0  
'No'  
451  
68  
.  
2  
65  
.  
3  
1  
'Yes'  
210  
31  
.  
8  
30  
.  
4  
97  
M  
'Unsure'  
1  
0  
.

1  
 98  
 M  
 'Not Applicable'  
 10  
 1  
 .  
 4  
 99  
 M  
 'N/A'  
 14  
 2  
 .  
 0  
 NA  
 M  
 5  
 0  
 .  
 7

QUESTION TXT:

3. In the last year (between January 2021-December 2021), did your organization make any of the following changes to your Programs, as compared to 2020? - Suspended or paused services

PrgSrvc\_IncrSrvc — 'TYPE: boolean'

"Indicates an increase in number of people served"

Storage mode:

character

Measurement:

nominal

Missing values:

## 14 CHANGES TO PROGRAMS AND SERVICES

97, 98, 99  
Values and labels  
N  
Valid  
Total  
0  
'No'  
227  
35  
.  
2  
32  
.  
9  
1  
'Yes'  
418  
64  
.  
8  
60  
.  
5  
97  
M  
'Unsure'  
19  
2  
.  
7  
98  
M  
'Not Applicable'  
13

1  
 .  
 9  
 99  
 M  
 'N/A'  
 9  
 1  
 .  
 3  
 NA  
 M  
 5  
 0  
 .  
 7

QUESTION TXT:

3. In the last year (between January 2021-December 2021), did your organization make any of the following changes to your Programs, as compared to 2020? - Increased the number of people served  
 PrgSrvc\_DcrsSrvc — 'TYPE: boolean'  
 "indicates a decrease in number of people served"  
 Storage mode:  
 character  
 Measurement:  
 nominal  
 Missing values:  
 97, 98, 99  
 Values and labels  
 N  
 Valid  
 Total

## 14 CHANGES TO PROGRAMS AND SERVICES

0  
'No'  
493  
78  
.  
4  
71  
.  
3  
1  
'Yes'  
136  
21  
.  
6  
19  
.  
7  
97  
M  
'Unsure'  
21  
3  
.  
0  
98  
M  
'Not Applicable'  
20  
2  
.  
9  
99  
M