



Tplyr Validation Report

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2020-09-01

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Validation Files Information

Specifications

| Specification Name | Last updated by | Last updated date |
|--------------------|-----------------|-------------------|
| specification.Rmd | Nathan Kosiba | 2020-08-31 |

Test case

| Test Case Name | Last updated by | Last updated date |
|----------------|-----------------|-------------------|
| test_cases.Rmd | Nathan Kosiba | 2020-08-31 |

Test code

| Test Code Name | Last updated by | Last updated date |
|----------------|-----------------|-------------------|
| test_cases.R | Nathan Kosiba | 2020-08-31 |

Validation Results

Specifications

- A: Population data can be specified by the user
- B: Treatment variable can be manually specified for population data
- C: Population data subset can be specified on user specified conditions
- D: Header N counts will be specified by combining different subgroups available within the population data
- E: Manual groups can be specified by combining different subgroups
- F: Analysis data can be specified by the user
- G: Analysis data subset can be specified on user specified conditions
- H: Treatment variable can be manually specified for analysis data
- I: n counts of values within a variable can be produced
- J: n counts of values within a group of variables can be produced
- K: Total n counts can be added
- L: Missing n count handling can be specified including presentation and denominator handling
- M: Dummy values can be specified for categories that need to be presented but may not exist within the data
- N: Counts can be produced as n (%)
- O: When producing n (%), the denominator can be specified using the analysis data
- P: When producing n (%), the denominator can be specified using a particular manually specified subset
- Q: When producing n (%), the denominator can be specified using the population data
- R: When producing n (%), the denominator can be specified using grouping of variables
- S: Risk difference including confidence interval can be produced based on specified treatment groupings
- T: Risk difference arguments can be passed forward into prop.test using args parameter

- U: Risk difference can be calculated over user specified cols arguments
- V: Risk difference can be calculated over nested count layers and by variables
- W: The descriptive statistic of n can be produced based on an input variable
- X: The descriptive statistic of mean can be produced based on an input variable
- Y: The descriptive statistic of median can be produced based on an input variable
- Z: The descriptive statistic of IQR/Q1/Q3 can be produced based on an input variable
- AA: The descriptive statistic of standard deviation can be produced based on an input variable
- AB: The descriptive statistic of variance can be produced based on an input variable
- AC: The descriptive statistic of min can be produced based on an input variable
- AD: The descriptive statistic of max can be produced based on an input variable
- AE: The descriptive statistic of missing can be produced based on an input variable
- AF: Custom descriptive statistics can be produced based on an input variable and a specified formula
- AG: Descriptive statistics can be performed across discrete values within a grouping variable or a group of grouping variables
- AH: Multiple statistics can be presented in one line (i.e. combining Q1, Q3 or Min, Max)
- AI: Decimal precision can be specified by the user
- AJ: Integer length can be specified by the user
- AK: Decimal precision can be dynamically created from analysis data
- AL: Integer length can be dynamically created from analysis data
- AM: Presentation format can be specified by the user including desired non-numeric text
- AN: Strings are built to align per user specification within a display
- AO: Descriptive statistic missing values can be set to a user specified string
- AP: Shift n counts of values using two variables, a 'from' and a 'to' variable, can be produced
- AQ: Shift n counts of values within a variable can be produced
- AR: Shift n counts of values within a group of variables can be produced
- AS: Dummy values for shift counts can be specified for categories that need to be presented but may not exist within the data
- AT: Shift counts can be produced as n (%)
- AU: For shift counts when producing n (%), the denominator can be specified using the analysis data
- AV: For shift counts when producing n (%), the denominator can be specified using a particular manually specified subset
- AW: For shift counts when producing n (%), the denominator can be specified using the population data
- AX: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
- AY: Row labels can be manually specified by the user
- AZ: Row labels can be nested to put a subgroup within a parent group
- BA: Summaries can be stacked on top of one another
- BB: Summaries can be sorted based on manual sorting by presentation specified order
- BC: Summaries can be sorted based on count based sorting (either ascending or descending) by a specified treatment group
- BD: Summaries can be sorted based on alphabetical sorting based on data values
- BE: Summaries can be sorted based on a numeric version of the target variable if available
- BF: Summary by variables will be sorted by a numeric variable if available and then by factor
- BG: Nested layers can be sorted independently using different methods
- BH: Independent layers can be sorted using different methods and stacked using common sorting variables
- BI: Count layer default formats can be set at the table level
- BJ: Descriptive statistics layer default formats can be set at the table level
- BK: Shift layer default formats can be set at the table level
- BLL: Option for count layer default formats can be specified by the user
- BM: Option for descriptive statistics layer default formats can be specified by the user
- BN: Option for shift layer default formats can be specified by the user
- BO: Option for a cap on auto precision can be specified by the user

- BP: Option for custom descriptive statistics can be specified by the user for use in the table
- BQ: Option for setting scipen internal option can be specified by the user
- BR: Option for setting quantile algorithm choice can be specified by the user
- BS: Column headers can be added to the output object
- BT: Row breaks can be added between sections based on grouping variables
- BU: Row labels can be masked in a hierarchical fashion
- BV: A table object is returned in a format that is ready to be cosmetically prepared

Matrix

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| T2 | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| T3 | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| T4 | | | | | | X | X | | | | | | | | | | | | | | | | | | | |
| T5 | X | X | | | | X | X | | | | | | | | | | | | | | | | | | | |
| T6 | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| T7 | | | | | | | | | X | | | | | | | | | | | | | | | | | |
| T8 | | | | | | | | | | X | | | | | | | | | | | | | | | | |
| T9 | | | | | | | | | | | X | | | | | | | | | | | | | | | |
| T10 | | | | | | | | | | | | X | | | | | | | | | | | | | | |
| T11 | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| T12 | | | | | | | | | | | | | | X | | | | | | | | | | | | |
| T13 | | | | | | | | | | | | | | | X | | | | | | | | | | | |
| T14 | | | | | | | | | | | | | | | | X | | | | | | | | | | |
| T15 | | | | | | | | | | | | | | | | | X | | | | | | | | | |
| T16 | | | | | | | | | | | | | | | | | | X | | | | | | | | |
| T17 | | | | | | | | | | | | | | | | | | | X | X | | | | | | |
| T18 | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| T19 | | | | | | | | | | | | | | | | | | | | | X | | | | | |
| T20 | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | |
| T21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T22 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T23 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T24 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T25 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T26 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T27 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T28 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T29 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T30 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T31 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T32 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T33 | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T34 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T35 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T36 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T37 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T38 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T39 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T40 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T41 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T42 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T43 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T44 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T45 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T46 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T47 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T48 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T49 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T50 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T51 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T52 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T53 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T54 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T55 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T56 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T57 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T58 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T59 | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T5 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Matrix

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| | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T12 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T13 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T14 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T16 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T17 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T18 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T19 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T20 | X | X | X | X | X | | | | | | | | | | | | | | | | | | | | | |
| T21 | | | | | | X | | | | | | | | | | | | | | | | | | | | |
| T22 | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| T23 | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| T24 | | | | | | | | | X | X | | | | | | | | | | | | | | | | |
| T25 | | | | | | | | | | | X | X | | | | | | | | | | | | | | |
| T26 | | | | | | | | | | | | | X | X | | | | | | | | | | | | |
| T27 | | | | | | | | | | | | | | | X | | | | | | | | | | | |
| T28 | | | | | | | | | | | | | | | | X | | | | | | | | | | |
| T29 | | | | | | | | | | | | | | | | | X | | | | | | | | | |
| T30 | | | | | | | | | | | | | | | | | | X | | | | | | | | |
| T31 | | | | | | | | | | | | | | | | | | | X | | | | | | | |
| T32 | | | | | | | | | | | | | | | | | | | | X | | | | | | |
| T33 | | | | | | | | | | | | | | | | | | | | | X | | | | | |
| T34 | | | | | | | | | | | | | | | | | | | | | | X | | | | |
| T35 | | | | | | | | | | | | | | | | | | | | | | | X | | | |
| T36 | | | | | | | | | | | | | | | | | | | | | | | | X | | |
| T37 | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| T38 | | | | | | | | | | | | | | | | | | | | | | | | | | X |

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|-------------|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|--------------------|----|
| AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV | AW | AX | | |
| T39 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T40 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T41 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T42 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T43 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T44 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T45 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T46 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T47 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T48 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T49 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T50 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T51 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T52 | | | | | | | | | | | | | | | | | | | | | | | | to | |
| T53 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T54 | | | | | | | | | | | | | | | | | | | | | | | | R | |
| T55 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T56 | | | | | | | | | | | | | | | | | | | | | | | | arch | |
| T57 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T58 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T59 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | VALIDATION RESULTS | |
| BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BLL | BM | BN | BO | BP | BQ | BR | BS | BT | BU | BV | | | | |
| T1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| T10 | | | | | | | | | | | | | | | | | | | | | | | | | |

(continued)

| | BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BLL | BM | BN | BO | BP | BQ | BR | BS | BT | BU | BV |
|-----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|
| T11 | | | | | | | | | | | | | | | | | | | | | | |
| T12 | | | | | | | | | | | | | | | | | | | | | | |
| T13 | | | | | | | | | | | | | | | | | | | | | | |
| T14 | | | | | | | | | | | | | | | | | | | | | | |
| T15 | | | | | | | | | | | | | | | | | | | | | | |
| T16 | | | | | | | | | | | | | | | | | | | | | | |
| T17 | | | | | | | | | | | | | | | | | | | | | | |
| T18 | | | | | | | | | | | | | | | | | | | | | | |
| T19 | | | | | | | | | | | | | | | | | | | | | | |
| T20 | | | | | | | | | | | | | | | | | | | | | | |
| T21 | | | | | | | | | | | | | | | | | | | | | | |
| T22 | | | | | | | | | | | | | | | | | | | | | | |
| T23 | | | | | | | | | | | | | | | | | | | | | | |
| T24 | | | | | | | | | | | | | | | | | | | | | | |
| T25 | | | | | | | | | | | | | | | | | | | | | | |
| T26 | | | | | | | | | | | | | | | | | | | | | | |
| T27 | | | | | | | | | | | | | | | | | | | | | | |
| T28 | | | | | | | | | | | | | | | | | | | | | | |
| T29 | | | | | | | | | | | | | | | | | | | | | | |
| T30 | | | | | | | | | | | | | | | | | | | | | | |
| T31 | | | | | | | | | | | | | | | | | | | | | | |
| T32 | | | | | | | | | | | | | | | | | | | | | | |
| T33 | | | | | | | | | | | | | | | | | | | | | | |
| T34 | | | | | | | | | | | | | | | | | | | | | | |
| T35 | | | | | | | | | | | | | | | | | | | | | | |
| T36 | | | | | | | | | | | | | | | | | | | | | | |
| T37 | | | | | | | | | | | | | | | | | | | | | | |
| T38 | | | | | | | | | | | | | | | | | | | | | | |
| T39 | X | | | | | | | | | | | | | | | | | | | | | |
| T40 | | X | | | | | | | | | | | | | | | | | | | | |
| T41 | | | X | | | | | | | | | | | | | | | | | | | |
| T42 | | | | X | | | | | | | | | | | | | | | | | | |
| T43 | | | | | X | | | | | | | | | | | | | | | | | |

(continued)

| | BA | BB | BC | BD | BE | BF | BG | BH | BI | BJ | BK | BLL | BM | BN | BO | BP | BQ | BR | BS | BT | BU | BV |
|-----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|
| T44 | | | | | | X | | | | | | | | | | | | | | | | |
| T45 | | | | | | | X | | | | | | | | | | | | | | | |
| T46 | | | | | | | | X | | | | | | | | | | | | | | |
| T47 | | | | | | | | | X | | | | | | | | | | | | | |
| T48 | | | | | | | | | | X | | | | | | | | | | | | |
| T49 | | | | | | | | | | | X | | | | | | | | | | | |
| T50 | | | | | | | | | | | | | | | | | | | | | | |
| T51 | | | | | | | | | | | | | X | | | | | | | | | |
| T52 | | | | | | | | | | | | | | X | | | | | | | | |
| T53 | | | | | | | | | | | | | | | X | | | | | | | |
| T54 | | | | | | | | | | | | | | | | X | | | | | | |
| T55 | | | | | | | | | | | | | | | | | X | | | | | |
| T56 | | | | | | | | | | | | | | | | | | X | | | | |
| T57 | | | | | | | | | | | | | | | | | | | X | | | |
| T58 | | | | | | | | | | | | | | | | | | | | X | X | |
| T59 | | | | | | | | | | | | | | | | | | | | | | X |

Test Cases

This section contains details of each test executed. Checks verifying each test are included as sub-bullets of their associated test.

- Setup: *No prerequisites required*
 - T1: Population data can be specified by the user and treatment variable can be specified
 - * T1.1: Verify target dataset in table is the same as specified
 - * T1.2: Verify treatment variable in table is the same as specified
 - T2: Population data subset can be specified on user specified conditions
 - * T2.1: Population data created matches data subset as specified
 - T3: Manual groups can be specified by combining different subgroups and header N counts will be specified from these groups within the population data
 - * T3.1: Population groups can be added by combining existing groups
 - * T3.2: Header N counts of combined groups match the combined total of the groups
 - T4: Analysis data can be specified by the user and treatment variable can be specified for the analysis population
 - * T4.1: Verify analysis dataset in layer is the same as specified when inherited from table
 - * T4.2: Verify treatment variable in layer is the same as specified when inherited from table
 - T5: Population data and treatment variable can be specified independent of analysis data and treatment variable
 - * T5.1: Verify population data can be manually specified if not the same as analysis data
 - * T5.2: Verify analysis data can be manually specified if not the same as population data
 - * T5.3: Verify population treatment variable can be manually specified if not the same as analysis treatment variable
 - * T5.4: Verify analysis treatment variable can be manually specified if not the same as population treatment variable
 - T6: Analysis data subset can be specified on user specified conditions
 - * T6.1: Analysis data created matches data subset as specified
 - T7: n counts of values within a variable can be produced
 - * T7.1: Complete data value n counts can be produced within a variable
 - * T7.2: Distinct data value n counts can be produced within a variable
 - T8: n counts of values within a group of variables can be produced
 - * T8.1: Complete data value n counts can be produced within a group of variables
 - * T8.2: Distinct data value n counts can be produced within a group of variables
 - T9: Total n counts can be added
 - * T9.1: Total n count can be added within a layer
 - T10: Missing n count handling can be specified including presentation and denominator handling
 - * T10.1: Missing n count rows can be added within a layer
 - * T10.2: Missing values can be excluded from the layer denominator
 - T11: Dummy values can be specified for categories that need to be presented but may not exist within the data and missing values can be set to a user specified string
 - * T11.1: Values specified by user are presented in the output table
 - * T11.2: Missing values can be set to a user specified string
 - T12: Counts can be produced as n (%)
 - * T12.1: When specified, both n and % can be displayed in a n (%) fashion
 - * T12.2: Distinct n and % can be displayed in a n (%) fashion
 - * T12.3: Distinct and non-distinct n and % can be presented together
 - T13: When producing n (%), the denominator can be specified using the analysis data
 - * T13.1: Check denominators created match counts from analysis data
 - * T13.2: Check % produced use denominators matching counts from analysis data
 - T14: When producing n (%), the denominator can be specified using a particular manually specified subset
 - * T14.1: Check denominators created match counts using specified conditions

- * T14.2: Check % produced use denominators matching counts using specified conditions
- T15: When producing n (%), the denominator can be specified using the population data
 - * T15.1: Check % produced use denominators matching counts from population data
 - * T15.2: Check denominators created match counts from population data
- T16: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
 - * T16.1: Check % produced use denominators matching counts from grouping variables
- T17: Risk difference including confidence interval can be produced based on specified treatment groupings and arguments can be passed through to prop.test
 - * T17.1: Check that risk difference calculated between groupings is correct
 - * T17.2: Check that confidence interval calculated between groupings is correct
 - * T17.3: Arguments passed through to prop.test create the correct output
- T18: Risk difference can be calculated over user specified cols arguments
 - * T18.1: Risk difference estimate and confidence interval can be computed across values of the treatment variable and cols argument
- T19: Risk difference can be calculated over nested count layers and by variables
 - * T19.1: Risk difference estimate and confidence interval can be computed across values of the treatment variable and nested count layer
 - * T19.2: Risk difference estimate and confidence interval can be computed across values of the treatment variable and by variable
 - * T19.3: Risk difference estimate and confidence interval can be computed across values of the treatment variable, nested count layer and by variable
- T20: The descriptive statistics of n, mean, median, IQR, Q1, Q3, standard deviation, variance, min, max, and missing can be produced based on an input variable
 - * T20.1: Check the computed statistic of n matches the expected value
 - * T20.2: Check the computed statistic of mean matches the expected value
 - * T20.3: Check the computed statistic of median matches the expected value
 - * T20.4: Check the computed statistic of IQR matches the expected value
 - * T20.5: Check the computed statistic of Q1 matches the expected value
 - * T20.6: Check the computed statistic of Q3 matches the expected value
 - * T20.7: Check the computed statistic of standard deviation matches the expected value
 - * T20.8: Check the computed statistic of variance matches the expected value
 - * T20.9: Check the computed statistic of min matches the expected value
 - * T20.10: Check the computed statistic of max matches the expected value
 - * T20.11: Check the computed statistic of missing matches the expected value
- T21: Custom descriptive statistics can be produced based on an input variable and a specified formula
 - * T21.1: Check that the computed statistic value matches the value from the specified formula
- T22: Descriptive statistics can be performed across discrete values within a grouping variable or a group of grouping variables
 - * T22.1: Check the statistic values match the values from the specified grouping variable
- T23: Multiple statistics can be presented in one line
 - * T23.1: Check that the output can include multiple statistics on the same line
- T24: Decimal precision and integer length can be specified by the user
 - * T24.1: The output decimal precision and integer length is the same as the user specified values
- T25: Decimal precision and integer length can be dynamically created from analysis data
 - * T25.1: The output decimal precision and integer length is the same as the decimal precision and integer length from the target data variable
- T26: Presentation format can be specified by the user including desired non-numeric text and align per user specification
 - * T26.1: The output string is formatted the same as user specification including non-numeric text and alignment
- T27: Descriptive statistic missing values can be set to a user specified string
 - * T27.1: Missing values can be set to a user specified string

- T28: Shift n counts of values using two variables, a ‘from’ and a ‘to’ variable, can be produced
 - * T28.1: n counts can be created in a shift manner using a from and to variable
- T29: Shift n counts of values within a variable can be produced
 - * T29.1: n counts can be created in a shift manner using a from and to variable and a by variable
- T30: Shift n counts of values within a group of variables can be produced
 - * T30.1: n counts can be created in a shift manner using a from and to variable and multiple by variables
- T31: Dummy values for shift counts can be specified for categories that need to be presented but may not exist within the data
 - * T31.1: Values specified by user for the shift variables are presented in the output table
- T32: Shift counts can be produced as n (%)
 - * T32.1: When specified, both n and % can be displayed in a n (%) fashion for shift layer
- T33: For shift counts when producing n (%), the denominator can be specified using the analysis data
 - * T33.1: Check % produced use denominators matching counts from analysis data
- T34: For shift counts when producing n (%), the denominator can be specified using a particular manually specified subset
 - * T34.1: Check % produced use denominators matching counts using specified conditions
- T35: For shift counts when producing n (%), the denominator can be specified using the population data
 - * T35.1: Check % produced use denominators matching counts from population data
- T36: For shift counts when producing n (%), the denominator can be specified using a grouping of variables
 - * T36.1: Check % produced use denominators matching counts from grouping variables
- T37: Row labels can be manually specified by the user
 - * T37.1: Check row labels in output table match user specified values
- T38: Row labels can be nested to put a subgroup within a parent group
 - * T38.1: Check row labels and nesting in output table match user specified values and nesting
- T39: Summaries can be stacked on top of one another
 - * T39.1: Check multiple summaries mixed between descriptive statistics and count are created they can be stacked
- T40: Summaries can be sorted based on manual sorting by presentation specified order
 - * T40.1: Check that output table has correct count sorting variables matching specified order
- T41: Summaries can be sorted based on count based sorting (either ascending or descending) by a specified treatment group
 - * T41.1: Check that output table has correct count sorting variables for count based sorting
- T42: Summaries can be sorted based on alphabetical sorting based on data values
 - * T42.1: Check that output table has correct count sorting variables for data values
- T43: Summaries can be sorted based on a numeric version of the target variable if available
 - * T43.1: Check that output table has correct count sorting variables for the corresponding numeric variable
- T44: Summary by variables will be sorted by a numeric variable if available and then by factor
 - * T44.1: Check that output table has correct sorting variables for supplied by variables
- T45: Nested layers can be sorted independently using different methods
 - * T45.1: Check that when different methods are supplied for nested layers they are applied correctly
- T46: Independent layers can be sorted using different methods and stacked using common sorting variables
 - * T46.1: Check that when different methods are supplied for independent layers they are applied correctly
- T47: Count layer default formats can be set at the table level
 - * T47.1: Check that count layer formats set at the table level are applied to layers created
 - * T47.2: Check that count layer formats applied at the layer level take precedence over table

- level formats
- T48: Descriptive statistics layer default formats can be set at the table level
 - * T48.1: Check that descriptive statistics layer formats set at the table level are applied to layers created
 - * T48.2: Check that descriptive statistics layer formats applied at the layer level take precedence over table level formats
- T49: Shift layer default formats can be set at the table level
 - * T49.1: Check that shift layer formats set at the table level are applied to layers created
 - * T49.2: Check that shift layer formats applied at the layer level take precedence over table level formats
- T50: Option for count layer default formats can be specified by the user
 - * T50.1: Check that the count layer default formats specified in the option are displayed in the table
- T51: Option for descriptive statistics layer default formats can be specified by the user
 - * T51.1: Check that the descriptive statistics layer default formats specified in the option are displayed in the table
- T52: Option for shift layer default formats can be specified by the user
 - * T52.1: Check that the shift layer default formats specified in the option are displayed in the table
- T53: Option for a cap on auto precision can be specified by the user
 - * T53.1: Check that the cap on auto precision specified by the user is displayed correctly in the table for both integers and decimals
- T54: Option for custom descriptive statistics can be specified by the user for use in the table
 - * T54.1: Check that custom descriptive statistics set in the options can be used and displayed correctly in the table
- T55: Option for setting scipen internal option can be specified by the user
 - * T55.1: Check that scientific notation supplied is displayed correctly in the table
- T56: Option for setting quantile algorithm choice can be specified by the user
 - * T56.1: Check that the quantile algorithm supplied is used in table q1 and q3 calculation
- T57: Column headers can be added to the output object
 - * T57.1: Check that column headers added match those in the output object
- T58: Row breaks can be added between sections based on grouping variables and row labels can be masked in a hierarchical fashion
 - * T58.1: Check that a row break is added between each section based on the supplied grouping variables and row labels can be masked in a hierarchical fashion
- T59: A table object is returned in a format that is ready to be cosmetically prepared
 - * T59.1: Check that the table object can be easily cosmetically prepared

Test Cases Results

[1] “/home/nkosiba/Tplyr/uat/references/output”

| Check | Results | Pass/Fail |
|-------|-------------|-----------|
| T1.1 | As expected | Pass |
| T1.2 | As expected | Pass |
| T2.1 | As expected | Pass |
| T3.1 | As expected | Pass |
| T3.2 | As expected | Pass |
| T4.1 | As expected | Pass |
| T4.2 | As expected | Pass |
| T5.1 | As expected | Pass |
| T5.2 | As expected | Pass |
| T5.3 | As expected | Pass |

(continued)

| Check | Results | Pass/Fail |
|--------|-------------|-----------|
| T5.4 | As expected | Pass |
| T6.1 | As expected | Pass |
| T7.1 | As expected | Pass |
| T7.2 | As expected | Pass |
| T8.1 | As expected | Pass |
| T8.2 | As expected | Pass |
| T9.1 | As expected | Pass |
| T10.1 | As expected | Pass |
| T11.1 | As expected | Pass |
| T12.1 | As expected | Pass |
| T12.2 | As expected | Pass |
| T12.3 | As expected | Pass |
| T13.1 | As expected | Pass |
| T13.2 | As expected | Pass |
| T14.1 | As expected | Pass |
| T14.2 | As expected | Pass |
| T15.1 | As expected | Pass |
| T15.2 | As expected | Pass |
| T16.1 | As expected | Pass |
| T17.1 | As expected | Pass |
| T17.2 | As expected | Pass |
| T17.3 | As expected | Pass |
| T18.1 | As expected | Pass |
| T19.1 | As expected | Pass |
| T19.2 | As expected | Pass |
| T19.3 | As expected | Pass |
| T20.1 | As expected | Pass |
| T20.2 | As expected | Pass |
| T20.3 | As expected | Pass |
| T20.4 | As expected | Pass |
| T20.5 | As expected | Pass |
| T20.6 | As expected | Pass |
| T20.7 | As expected | Pass |
| T20.8 | As expected | Pass |
| T20.9 | As expected | Pass |
| T20.10 | As expected | Pass |
| T20.11 | As expected | Pass |
| T21.1 | As expected | Pass |
| T22.1 | As expected | Pass |
| T23.1 | As expected | Pass |
| T24.1 | As expected | Pass |
| T25.1 | As expected | Pass |
| T26.1 | As expected | Pass |
| T27.1 | As expected | Pass |
| T28.1 | As expected | Pass |
| T29.1 | As expected | Pass |
| T30.1 | As expected | Pass |
| T31.1 | As expected | Pass |
| T32.1 | As expected | Pass |
| T33.1 | As expected | Pass |

(continued)

| Check | Results | Pass/Fail |
|-------|-------------|-----------|
| T34.1 | As expected | Pass |
| T35.1 | As expected | Pass |
| T36.1 | As expected | Pass |
| T37.1 | As expected | Pass |
| T38.1 | As expected | Pass |
| T39.1 | As expected | Pass |
| T40.1 | As expected | Pass |
| T41.1 | As expected | Pass |
| T42.1 | As expected | Pass |
| T43.1 | As expected | Pass |
| T44.1 | As expected | Pass |
| T45.1 | As expected | Pass |
| T46.1 | As expected | Pass |
| T47.1 | As expected | Pass |
| T47.2 | As expected | Pass |
| T48.1 | As expected | Pass |
| T48.2 | As expected | Pass |
| T49.1 | As expected | Pass |
| T49.2 | As expected | Pass |
| T50.1 | As expected | Pass |
| T51.1 | As expected | Pass |
| T52.1 | As expected | Pass |
| T53.1 | As expected | Pass |
| T54.1 | As expected | Pass |
| T55.1 | As expected | Pass |
| T56.1 | As expected | Pass |
| T57.1 | As expected | Pass |
| T58.1 | As expected | Pass |
| T59.1 | As expected | Pass |

System Information

R version 3.6.2 (2019-12-12) Platform: x86_64-pc-linux-gnu (64-bit) Running under: Ubuntu 18.04.4 LTS

Matrix products: default BLAS: /usr/lib/x86_64-linux-gnu/blas/libblas.so.3.7.1 LAPACK: /usr/lib/x86_64-linux-gnu/lapack/liblapack.so.3.7.1

locale: [1] LC_CTYPE=C.UTF-8 LC_NUMERIC=C LC_TIME=C.UTF-8

[4] LC_COLLATE=C.UTF-8 LC_MONETARY=C.UTF-8 LC_MESSAGES=C.UTF-8

[7] LC_PAPER=C.UTF-8 LC_NAME=C LC_ADDRESS=C

[10] LC_TELEPHONE=C LC_MEASUREMENT=C.UTF-8 LC_IDENTIFICATION=C

attached base packages: [1] stats graphics grDevices utils datasets methods base

other attached packages: [1] rlang_0.4.6 forcats_0.4.0 readr_1.3.1 tidyr_1.0.2

[5] tibble_3.0.1 ggplot2_3.2.1 tidyverse_1.3.0 Tplyr_0.1.1

[9] purrr_0.3.4 stringr_1.4.0 kableExtra_1.2.1 knitr_1.28

[13] testthat_2.3.1 dplyr_0.8.4 plyr_1.8.5

loaded via a namespace (and not attached): [1] clisymbols_1.2.0 tidyselect_1.0.0 xfun_0.12 haven_2.2.0
 [5] lattice_0.20-38 colorspace_1.4-1 vctrs_0.3.1 generics_0.0.2
 [9] htmltools_0.5.0 viridisLite_0.3.0 yaml_2.2.1 pillar_1.4.4
 [13] glue_1.4.1 withr_2.1.2 DBI_1.1.0 dbplyr_1.4.2
 [17] readxl_1.3.1 modelr_0.1.5 prompt_1.0.0 lifecycle_0.2.0
 [21] cellranger_1.1.0 munsell_0.5.0 gtable_0.3.0 rvest_0.3.5
 [25] evaluate_0.14 fansi_0.4.1 broom_0.5.4 Rcpp_1.0.3
 [29] scales_1.1.0 backports_1.1.5 jsonlite_1.6.1 webshot_0.5.2
 [33] fs_1.3.1 hms_0.5.3 digest_0.6.25 stringi_1.4.5
 [37] grid_3.6.2 cli_2.0.2 tools_3.6.2 magrittr_1.5
 [41] lazyeval_0.2.2 crayon_1.3.4 pkgconfig_2.0.3 ellipsis_0.3.1
 [45] xml2_1.3.2 reprex_0.3.0 lubridate_1.7.4 assertthat_0.2.1 [49] rmarkdown_2.1 httr_1.4.1 rstudioapi_0.11
 R6_2.4.1
 [53] nlme_3.1-142 compiler_3.6.2

Manual Check Completion History

| Check | Output File Reviewed | Response | Log |
|-------|----------------------|----------|-----------------------------|
| T59.1 | test_59.rtf | TRUE | nkosiba:2020-09-01 13:38:31 |