



# Tplyr Validation Report

Nathan Kosiba

2020-10-07

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## Validation Files Information

### Specifications

Specification Name	Last updated by	Last updated date
specification.Rmd	Nathan Kosiba	2020-09-24

### Test case

Test Case Name	Last updated by	Last updated date
test_cases.Rmd	Nathan Kosiba	2020-10-06

### Test code

Test Code Name	Last updated by	Last updated date
test_cases.R	Nathan Kosiba	2020-10-07

## 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
- BW: Count layers can process a cols argument and separate population data passed from the table level along with normal count layer processing
- BX: Count layers can process a cols argument, separate population data, and a defined subset passed from the table level along with normal count layer processing

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
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
T21																								
T22																								
T23																								
T24																								
T25																								
T26																								
T27																								
T28																								
T29																								
T30																								
T31																								
T32																								
T33																								

(continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
T34																								
T35																								
T36																								
T37																								
T38																								
T39																								
T40																								
T41																								
T42																								
T43																								
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T59																								
T60																								
T61																								

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
T1																								
T2																								

(continued)

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
T3																								
T4																								
T5																								
T6																								
T7																								
T8																								
T9																								
T10																								
T11																								
T12																								
T13																								
T14																								
T15																								
T16																								
T17																								
T18																								
T19																								
T20	X	X	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																								

Matrix

Atomus Research

VALIDATION RESULTS



(continued)

	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
T36																								
T37																								
T38																								
T39																								
T40																								
T41																								
T42																								
T43																								
T44																								
T45																								
T46																								
T47																								
T48																								
T49																								
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T54																								
T55																								
T56																								
T57																								
T58																								
T59																								
T60																								
T61																								

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BLL	BM	BN	BO	BP	BQ	BR	BS	BT
T1																								
T2																								
T3																								
T4																								

Matrix

Atomus Research

VALIDATION RESULTS

Tp<sub>1</sub>yr UAT 10

(continued)

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BLL	BM	BN	BO	BP	BQ	BR	BS	BT
T5																								
T6																								
T7																								
T8																								
T9																								
T10																								
T11																								
T12																								
T13																								
T14																								
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T26																								
T27																								
T28																								
T29																								
T30																								
T31																								
T32																								
T33																								
T34																								
T35	X																							
T36		X																						
T37			X																					

Matrix

Atomus Research

VALIDATION RESULTS

Tp<sub>1</sub>yr UAT 11

(continued)

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BLL	BM	BN	BO	BP	BQ	BR	BS	BT
T38				X																				
T39					X																			
T40						X																		
T41							X																	
T42								X																
T43									X															
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	
T59																								X
T60																								
T61																								

	BU	BV	BW	BX
T1				
T2				
T3				
T4				
T5				
T6				

Matrix

Atomus Research

VALIDATION RESULTS

<i>(continued)</i>				
	BU	BV	BW	BX
T7				
T8				
T9				
T10				
T11				
T12				
T13				
T14				
T15				
T16				
T17				
T18				
T19				
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T34				
T35				
T36				
T37				
T38				
T39				
T40				

*(continued)*

	BU	BV	BW	BX
T41				
T42				
T43				
T44				
T45				
T46				
T47				
T48				
T49				
T50				
T51				
T52				
T53				
T54				
T55				
T56				
T57				
T58	X			
T59		X		
T60			X	
T61				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
- T60: Count layers can process a cols argument and separate population data passed from the table level along with normal count layer processing
  - \* T60.1: Test that n and % results are accurate when the combination of the cols argument and separate population data are applied
  - \* T60.2: Test that risk difference results are accurate when the combination of the cols argument and separate population data are applied
  - \* T60.3: Test that header N values produced are accurate when the combination of the cols argument and separate population data are applied
- T61: Count layers can process a cols argument, separate population data, and a defined subset passed from the table level along with normal count layer processing
  - \* T61.1: Test that n and % results are accurate when the combination of the cols argument, separate population data, and a defined subset are applied
  - \* T61.2: Test that risk difference results are accurate when the combination of the cols argument, separate population data, and a defined subset are applied
  - \* T61.3: Test that header N values produced are accurate when the combination of the cols argument, separate population data, and a defined subset are applied

## Test Cases Results

[1] “/home/nathan.kosiba/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
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

*(continued)*

Check	Results	Pass/Fail
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
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
T60.1	As expected	Pass
T60.2	As expected	Pass
T60.3	As expected	Pass
T61.1	As expected	Pass
T61.2	As expected	Pass
T61.3	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/openblas/libblas.so.3 LAPACK: /usr/lib/x86\_64-linux-gnu/libopenblas-p0.2.20.so

locale: [1] LC\_CTYPE=C.UTF-8 LC\_NUMERIC=C LC\_TIME=C.UTF-8 LC\_COLLATE=C.UTF-8 LC\_MONETARY=C.UTF-8

[6] LC\_MESSAGES=C.UTF-8 LC\_PAPER=C.UTF-8 LC\_NAME=C LC\_ADDRESS=C LC\_TELEPHONE=C

[11] LC\_MEASUREMENT=C.UTF-8 LC\_IDENTIFICATION=C

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

other attached packages: [1] rlang\_0.4.7 kableExtra\_1.2.1 knitr\_1.30 shinydashboard\_0.7.1 testthat\_2.3.1

[6] forcats\_0.4.0 stringr\_1.4.0 dplyr\_1.0.2 purrr\_0.3.4 readr\_1.3.1

[11] tidyr\_1.0.2 tibble\_3.0.1 ggplot2\_3.2.1 tidyverse\_1.3.0 Tplyr\_0.1.3

[16] shiny\_1.5.0

loaded via a namespace (and not attached): [1] Rcpp\_1.0.5 lubridate\_1.7.4 lattice\_0.20-38 clisymbols\_1.2.0 assertthat\_0.2.1 digest\_0.6.25

[7] packrat\_0.5.0 prompt\_1.0.0 mime\_0.9 R6\_2.4.1 cellranger\_1.1.0 backports\_1.1.5

[13] reprex\_0.3.0 evaluate\_0.14 httr\_1.4.1 pillar\_1.4.4 lazyeval\_0.2.2 readxl\_1.3.1

[19] rstudioapi\_0.11 rmarkdown\_2.4 webshot\_0.5.2 munsell\_0.5.0 broom\_0.5.4 xfun\_0.18

[25] compiler\_3.6.2 httpuv\_1.5.2 modelr\_0.1.5 pkgconfig\_2.0.3 htmltools\_0.5.0 tidyselect\_1.1.0 [31] viridis-Lite\_0.3.0 fansi\_0.4.1 crayon\_1.3.4 dbplyr\_1.4.2 withr\_2.1.2 later\_1.0.0

[37] grid\_3.6.2 nlme\_3.1-142 jsonlite\_1.6.1 xtable\_1.8-4 gtable\_0.3.0 lifecycle\_0.2.0

[43] DBI\_1.1.0 magrittr\_1.5 scales\_1.1.0 cli\_2.0.2 stringi\_1.4.5 fs\_1.3.1

[49] promises\_1.1.0 xml2\_1.3.2 ellipsis\_0.3.1 generics\_0.0.2 vctrs\_0.3.4 tools\_3.6.2

[55] glue\_1.4.1 hms\_0.5.3 yaml\_2.2.1 rsconnect\_0.8.16 fastmap\_1.0.1 colorspace\_1.4-1 [61] rvest\_0.3.5 haven\_2.2.0

## Manual Check Completion History

Check	Output File Reviewed	Response	Log
T59.1	test_59.rtf	TRUE	nathan.kosiba:2020-10-07 19:01:59