

Descriptive Strategies Research: Survey Analysis

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Why are surveys important?



Surveys matter to us. We always read them in the newspapers, in magazines and in the internet. Banks, schools, firms- they all do surveys one time or another.

Numbers have always had an effect on determining the impression on something.



What is survey research?

- A survey research is a standardized research instrument to measure behaviors, thoughts and opinions and convert them into hard data.
- Surveys are the most popular form of method used in quantitative research.
- Data can be collected through questionnaires or interviews. Questionnaires with close-ended questions are used in quantitative research while open-ended are used in qualitative research.

Using survey as a research method

- Surveys are the easiest way to collect large amounts of data in the shortest period of time
- It is inexpensive and can be quickly and easily administered.
- Surveys can also be used to collect data about a range of topics like personal facts, opinions, past behaviors, attitudes or thoughts.





Surveys in second language learning

- Surveys are also used in second language teaching and learning. We determine how good a teacher is by getting our students to do surveys.
- Surveys are important. It gives you a basis to understand how things are running in your environment.

Survey research can be used for two purposes:





What is descriptive statistics research?

"A descriptive statistics research is any research that describes a setting or events in numerical terms", Brown J.D & Rodgers T.S (2008) *Doing Second Language Research (pp. 118)*

Whenever we quantify or apply numbers to data in order to organize, summarize, or better understand the information, we are using statistical methods.

Experiencing descriptive statistics research

 Most teachers whether trained or untrained have preconceived beliefs and ideas about how language is learned and taught. Their beliefs are important as that is what creates their way of teaching.

Which element do you emphasize more on?

- Pronunciation
- Vocabulary
- Grammar
- Conversational strategies



Example: Pie Chart of Major Linguistics Elements



Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 119)



Prior knowledge using authentic texts

Research on accessing prior knowledge using authentic texts on students between ages 8-12.

My theory can only hold weight if I can explain my research and findings with statistical terms.

Learner and Teacher Beliefs

- Survey research is useful for almost any aspect of language.
- Likert Scale is commonly used: respondents register their reactions on a 'scale'.

Strongly Agree	Agree	Disagree	Strongly Disagree
4	3	2	1

Exercise 5.3 Language Teaching/Learning Beliefs Questionnaire

- Divided into two parts
- Open-response items
- Selected-response items



The Relationship of Reading Attitudes Between L1 and L2: An Investigation of Adult EFL Learners in Japan

- Survey research method is used.
- Questionnaire: 3 sections

First Section	Demographic information
Second Section	Students' affective reactions towards reading in L1
Third Section	Students' affective reactions towards reading in L2

Junko Yamashita (2007), TESOL Quarterly 41(1), pp 81-107

Compiling Descriptive Data

- Exercise 5.4
- Try compiling the data shown in Table 5.1 (pg 119 into a tabulated data.

Positive Impression	Negative Impression	Neutral
7	2	4

Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 122)

- Exercise 5.5
- Tabulate the data according to class/groups

(example is shown on page 123)



Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 123)



Analyzing Descriptive Data

- Data can be shown in the form of frequencies, percentages or graphs.
- Data can also be described through *descriptive statistics*.
- Descriptive statistics used to characterize/describe a set of numbers in terms of central tendency and to show how the numbers disperse, or vary, around the center.

Topics;



- Frequencies and percentages
- Graphical display of data
- Central tendency
- Dispersion

Frequencies and percentages

• Raw frequencies ;-

– There were <u>six</u> males and <u>eleven</u> females.

• Percentages ;-

 Calculated by dividing the total number in 1 category by the total number in all category by the total number in all category in all category is and multiply the result by 1(

– e.g. percentage for male;

(total no. in 1 category ÷ total in all categories) x 100

(6 ÷ 17) x 100 = (0.353) x 100 = 35.3% → 35%

Answer:
$$64.7\% \rightarrow 65\%$$

Telling people that our study included 35% males & 65% females may be clearer than saying that we studied six males and eleven females.



 However, other people may find the raw frequencies clearer than the percentages. So, it will be best to report both the raw frequencies and percentages.



- 52.9% strongly agree, 23.5% agree, 17.6% disagree and 5.9% strongly disagree.
- The total is 99.9% not 100%. This difference is called *rounding error*.

Graphical display of data

• Histogram

incy		
x		
X		
X		
X		
X		
X	х	
X	X	
X	X	
X	Х	
X	Х	
x	x	
Females	Males	_
	x x x x x x x x x x x x x x x x Females	X X X X X X X X X X X X X X X X X X X



Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 126)

Ages of seventeen people:

21, 22, 24, 24, 25, 26, 26, 26, 27, 27, 27



Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 126)

• Pie chart







Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 127)

Central Tendency

- Can be defined as :
 - The propensity of a set of numbers to cluster around a particular value.
- Three statistics are often used to find central tendency:
 - 1) mean
 - 2) mode
 - 3) median



Mean



- Mean is also known as average.
- The formula is;

M=<u>ΣX</u> N

M = mean Σ = sum of (add up) X = values N = number of values 24, 26, 26, 27, 28, 29, 29, 29, 31, 32



Mode

• Mode is a value in a set of numbers occurs most frequently.

24, 26, 26, 27, 28, 29, 29, 29, 31, 32



24, 26, 26, 26, 27, 28, 29, 29, 29, 31, 32



Median

 Median is the point in the distribution below which 50% of the values lie & above which 50% lie.

24, 26, 26, 26, 27, 28, 29, 29, 29, 31, 32

Median is 28

24, 26, 26, 27, 28, 29, 29, 29, 31, 32

Median is 28.5



Try this...



Group A	Group B
65	54
61	53
60	51
54	50
50	50
50	50
47	49
41	47
22	46

Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 130)



Dispersion



Group A is widely spread out from 22 to 65 years.

Group B is narrowly spread out from 46 to 54 years.

In descriptive statistics, this is referred to as dispersion.

3 Primary Ways of Examining Dispersion

1. Low-high

Involves finding the lowest value and the highest value in a set of numbers.

E.g;

24 26 26 27 28 29 29 29 31 32 .: lowest age = 24, highest age = 32 So, the low-high is 24 to 32 or 24-32.



2. Range

- the highest value minus the lowest value plus one.
 - Formula : Range = H L + 1
 H is high number
 L is low number

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E.g;
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24 26 26 27 28 29 29 29 31 32 Range = 32 - 24 + 1 = 9 So, the range is 9, including 24 and 32

Check this possible numbers; 24, 25, 26, 27, 28, 29, 30, 31, 32 = 9



3. Standard deviation

$$SD = \sqrt{\frac{\Sigma(X-M)^2}{N}}$$

SD = standard deviation

- X = values
- M = mean of the values
- N = number of values



24 26 26 27 28 29 29 29 31 32

Mean = 28.1, N = 10 Now, find the $\Sigma(X-M)^2$ How??



<u>X</u>
24
26
26
27
28
29
29
29
31
32

<u>M</u>
28.1
28.1
28.1
28.1
28.1
28.1
28.1
28.1
28.1
28.1

<u>X-M</u>		(<u>X-M) ²</u>
-4.1		16.81
-2.1		4.41
-2.1		4.41
-1.1		1.21
-0.1		.01
0.9		.81
0.9		.81
0.9		.81
2.9		8.41
3.9		15.21
	$\Sigma(X-M)^2 = 52.90$	
	2(7 10) = 52.50	

Then, apply to the formula.







Normal distribution

- Commonly referred to as bell curve. Large set of ages : 22 to 82
 - Mean : 52

Standard deviation : 10



Brown J.D & Rodgers T.S (2008) Doing Second Language Research (pp. 136)



References

- Brown J.D & Rodgers T.S (2008) *Doing Second Language Research (pp. 118-136)*
- Yamashita, J. (2007), The Relationship of Reading Attitudes Between L1 and L2: An Investigation of Adult EFL Learners in Japan, *TESOL Quarterly* 41(1), pp 81-107