Levels of Measurement

Nominal

Ordinal

Interval

Q6.
Are you registered as a Democrat, a Republican, another party, or are you registered as a decline-to-state or independent voter?

Q38.
Generally speaking, how much interest would you say you have in politics—a great deal, a fair amount, only a little, or none?

D1
What is your age?

D1A
Could you please tell me if you are between the ages
of...?

1. 18 to 24
2. 25 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 or older

Q27.
Overall, do you approve or disapprove of the way the
U.S. Congress is handling its job?
1 approve
2 disapprove
8 [VOL] don't know
9 [VOL] refuse

Q3.
Overall, do you approve or disapprove of the way that
    the California Legislature is handling its job?

1 approve
2 disapprove
8 [VOL] don't know
9 [VOL] refuse

Two Questions

1. Is more support expressed for state government than the federal?

2. Is opinion more divided on one of the questions? In other words, is there more variation on one question than the other?

CA Legis

	Freq	Percent	Valid %	Cumul %
disapp	644	37.8	38.2	38.2
dk	290	17.0	17.2	55.5
approve	750	44.0	44.5	100.0
Total	1684	98.8	100.0	

US Congress

	Freq	Percent	Valid %	Cumul %
disapp	1149	67.4	67.5	67.5
dk	126	7.4	7.4	74.9
approve	428	25.1	25.1	100.0
Total	1703	99.9	100.0	

MJprop

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	575	33.7	42.2	42.2
	dk	74	4.3	5.4	47.7
	yes	712	41.8	52.3	100.0
	Total	1361	79.9	100.0	
Missing	System	343	20.1		
Total		1704	100.0		

MJimp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	notatall	68	4.0	5.1	5.1
	not too	158	9.3	11.9	17.1
	somewhat	424	24.9	32.0	49.1
	very	674	39.6	50.9	100.0
	Total	1324	77.7	100.0	
Missing	System	380	22.3		
Total		1704	100.0		

MJlegal

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	757	44.4	44.5	44.5
	dk	70	4.1	4.1	48.6
	yes	873	51.2	51.4	100.0
	Total	1700	99.8	100.0	
Missing	System	4	.2		
Total		1704	100.0		

MJtry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	913	53.6	54.6	54.6
	not recent	522	30.6	31.2	85.8
	recent	238	14.0	14.2	100.0
	Total	1673	98.2	100.0	
Missing	System	31	1.8		
Total		1704	100.0		

Measures of Central Tendency

Nominal   Mode

Ordinal   Median

Interval   Mean

$$\overline{X} = \frac{\sum X}{N}$$

SPSS Command for Measures of Central Tendency

fre var = q27 q3
   /statistics = mode median mean.

	Q27 Congress	Q3 Assembly
Mode	.00	1.00
Median	.00	.50
Mean	.29	.53

Source: October 2016 PPIC

Marijuana Items: PPIC October 2015

Q21. Proposition 64 is called the "Marijuana Legalization. Initiative
    Statute." It legalizes marijuana under state law, for use by adults
    21 or older and imposes state taxes on sales and cultivation. It
    also provides for industry licensing and establishes standards for
    marijuana products and allows local regulation and taxation. The
    fiscal impacts are additional tax revenues ranging from high
    hundreds of millions of dollars to over $1 billion dollars annually,
    mostly dedicated to specific purposes and reduced criminal justice
    costs of tens of millions of dollars annually. If the election were
    held today, would you vote yes or no on Proposition 64?

        1 yes
            2 no
            8   don't know (volunteered)
            9   refuse (volunteered)

Q22. How important to you is the outcome of the vote on Proposition 64—
    is it very important, somewhat important, not too important, or not
    at all important?

            1   very important
            2   somewhat important
            3   not too important
            4   not at all important
            8   don't know (volunteered)
            9   refuse (volunteered)

Q36. Next, in general, do you think the use of marijuana should be
legal, or not?

            1   yes, legal
            2   no, not legal
            8   don't know (volunteered)
            9   refuse (volunteered)

Q36a. Keeping in mind that all of your answers in the survey are
confidential, have you ever tried marijuana? (IF YES, ASK: have you
used marijuana in the last 12 months?)

            1   yes have tried marijuana, used in the past year
            2   yes, have tried marijuana, not in the past year
            3   no, have not tried marijuana
            8   [VOL] don't know
            9   [VOL] refuse

fre var q21 q22 q36 q36a
  /statistics mode median mean stdev variance skew kurtosis.

Recodes and lables for MJ items inPPIC Oct 2016.
recode q21 (1=1) (2=0) (8 =.5) into MJprop.
value labels MJprop 1 'yes' .5 'dk' 0 'no'.
recode q22 (1=1) (2=.66) (3=.33) (4=0) into MJimp.
value labels MJimp 1 'very' .66 'somewhat' .33 'not too' 0
'notatall'.
recode q36 (1=1) (2=0) (8 =.5) into MJlegal.
value labels MJlegal 1 'yes' .5 'dk' 0 'no'.
recode q36a (1=1) (2=.5) (3=.0) into MJtry.
value labels MJtry 1 'recent' .5 'not recent' 0 'no'.

fre var MJprop MJimp MJlegal Mjtry
  /statistics mode median mean stdev variance skew kurtosis.

Dichotomy.
recode q21 (1=1) (2=0) into MJpropD.
value labels MJpropD 1 'yes' .0 'no'.
recode q22 (1=1) (2=.66) (3=.33) (4=0) into MJimp.
value labels MJimp 1 'very' .66 'somewhat' .33 'not too' 0
'notatall'.
recode q36 (1=1) (2=0) (8 =.5) into MJlegalD.
value labels MJlegal 1 'yes' 0 'no'.
recode q36a (1=1) (2=.5) (3=.0) into MJtry.
value labels MJtry 1 'recent' .5 'not recent' 0 'no'.

fre var MJpropD MJimp MJlegalD Mjtry
  /statistics mode median mean stdev variance skew kurtosis.

Comparing 4 measures of Attitudes toward Marijuana

Statistics

		MJprop D	MJimp	MJlegal D	MJtry
N	Valid	1287	1324	1630	1673
	Missing	417	380	74	31
Mean		.5532	.7598	.5356	.2983
Median		1.0000	1.0000	1.0000	.0000
Mode		1.00	1.00	1.00	.00

EXAMINE VARIABLES=MJPropD MJimp MJLegalD MJtry
 /PLOT NONE
 /PERCENTILES(25,75) round.

Statistics

		MJpropD	MJimp	MJlegalD	MJtry
N	Valid	1287	1324	1630	1673
	Missing	417	380	74	31
Mean		.55	.76	.54	.30
Median		1.00	1.00	1.00	.00
Mode		1.00	1.00	1.00	.00
IQR		1.00	.34	1.00	.50

Sample Variance

$$s^2 = \frac{\sum(x - \bar{x})^2}{n - 1}$$

Sample Standard Deviation

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

$$sd(Y) = sd_Y = s_Y = \sqrt{var(Y)} = \sqrt{\frac{\sum_{i=1}^{n}(Y_i - \bar{Y})^2}{n - 1}}$$

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

Adding Commands for Measures of Variation

fre var = q27 q3
    /statistics = mode median mean stddev var.

Comparing variation in approval of US Congress and Cal Assembly

	Q27 Congress	Q3 Assembly
Std dev	.432	.454
Variance	.187	.206

Source: October 2016 PPIC

Comparing variation on four indicators of Attitude toward Marijana

Statistics

	MJpropD	MJimp	MJlegalD	MJtry
Std. Deviation	.497	.290	.499	.362
Variance	.247	.084	.249	.131

Source: Oct 2016 PPIC

Comparing variation on four indicators of Attitude toward Marijuana

Statistics

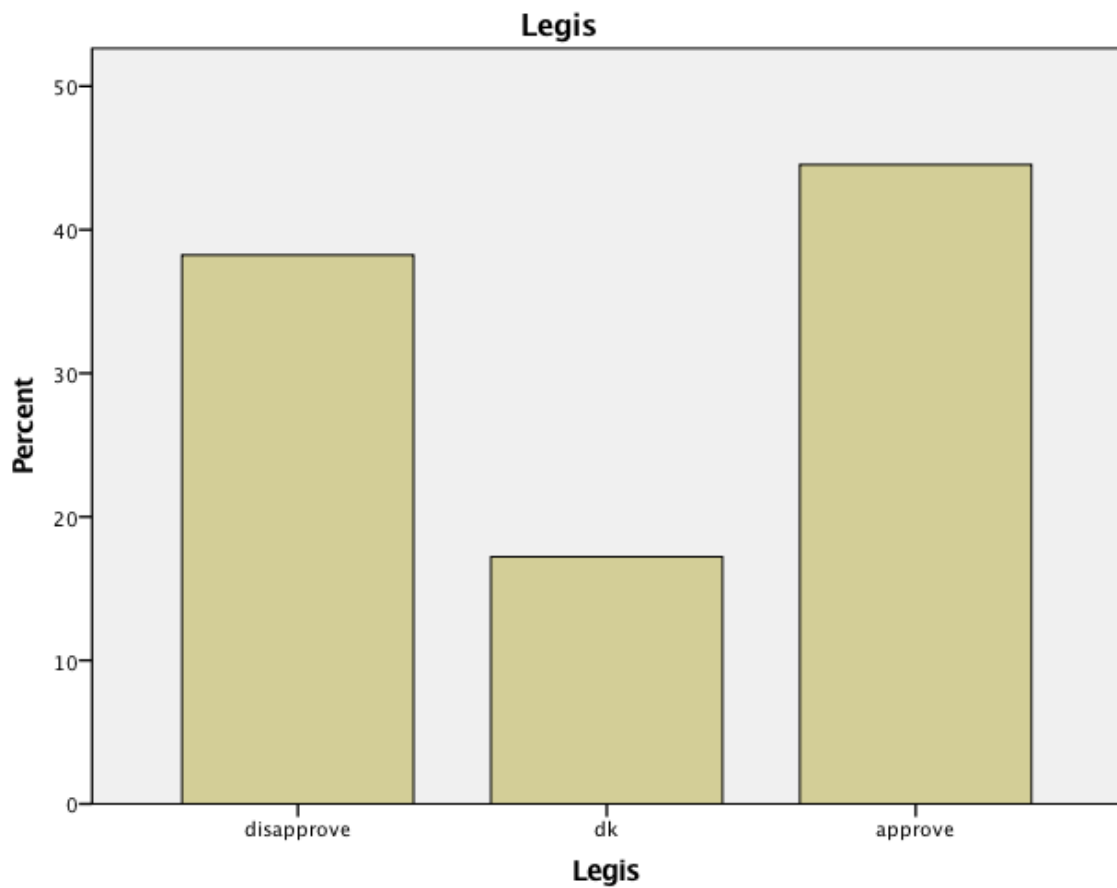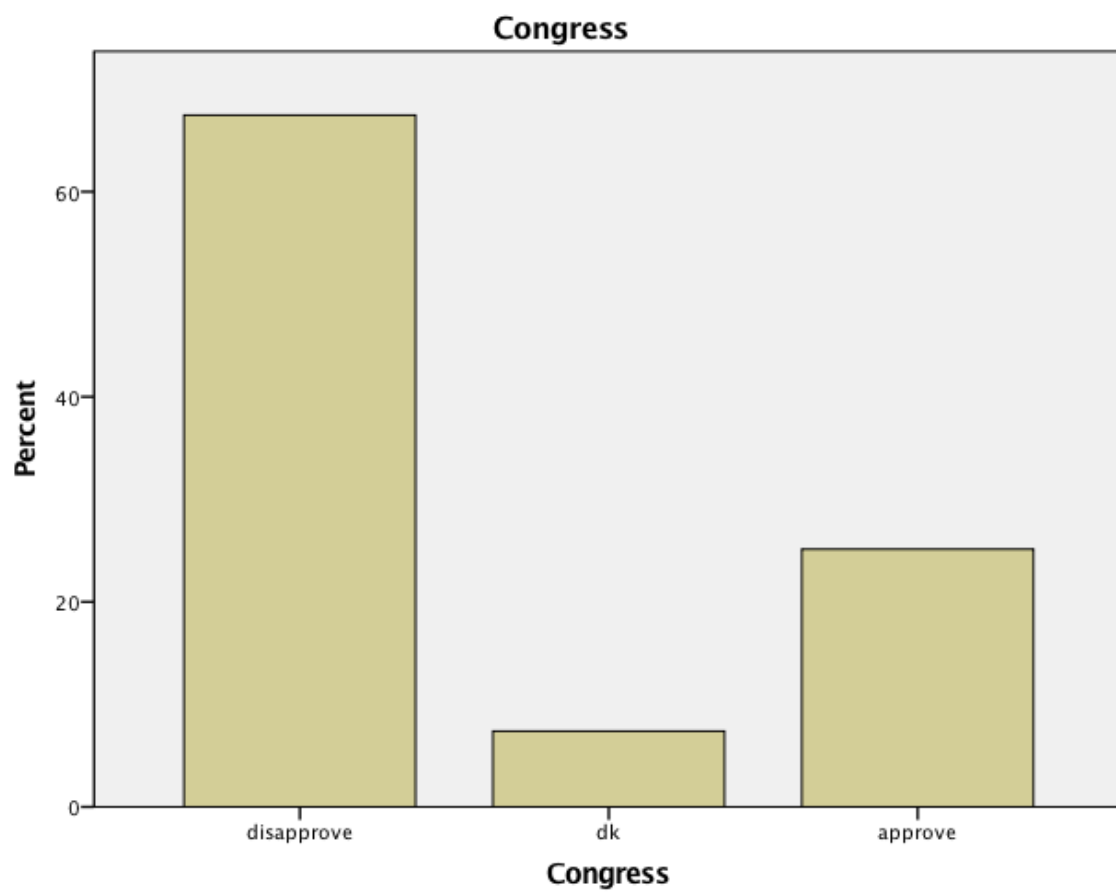|		MJpropD	MJimp	MJlegalD	MJtry
N	Valid	1287	1324	1630	1673
	Missing	417	380	74	31
Mean		.55	.76	.54	.30
Median		1.00	1.00	1.00	.00
Mode		1.00	1.00	1.00	.00
IQR		1.00	.34	1.00	.50
Std. Deviation		.50	.29	.50	.36
Variance		.25	.08	.25	.13

Source: PPIC Oct 2016 survey

Adding Commands for Measures of Shape

fre var = q27 q3
  /statistics = mode median mean stddev var skew kurtosis.

Comparing skew & kurtosis in US Congress and Cal Assembly

	Q27 US Congress	Q3 Cal Assembly
skew	.932	-.124
kurtosis	-1.012	-1.776

Source: October 2016 PPIC

Comparing skew & kurtosis on four indicators of Attitude toward Drought

	Q15 (ordinal) h2oprob	Q15a (ordinal) poxdo	Q16 (ordinal) reduce25	Q1 (dichotomous) h2oissue
skew	-1.424	-1.002	-.297	.396
kurtosis	.639	.042	-.841	-1.845

Source: May 2015 PPIC

Univariate Statistics on MJ Indicators

		MJpropD	MJimp	MJlegalD	MJtry
N	Valid	1287	1324	1630	1673
	Missing	417	380	74	31
Mean		.55	.76	.54	.30
Median		1.00	1.00	1.00	.00
Mode		1.00	1.00	1.00	.00
IQR		1.00	.34	1.00	.50
Std. Deviation		.50	.29	.50	.36
Variance		.25	.08	.25	.13
Skew		-.21	-1.03	-.14	.78
Kurtosis		-1.96	.23	-1.98	-.72

Source: Oct 2016 PPIC survey

Adding Commands for Graphics

fre var = q27 q3
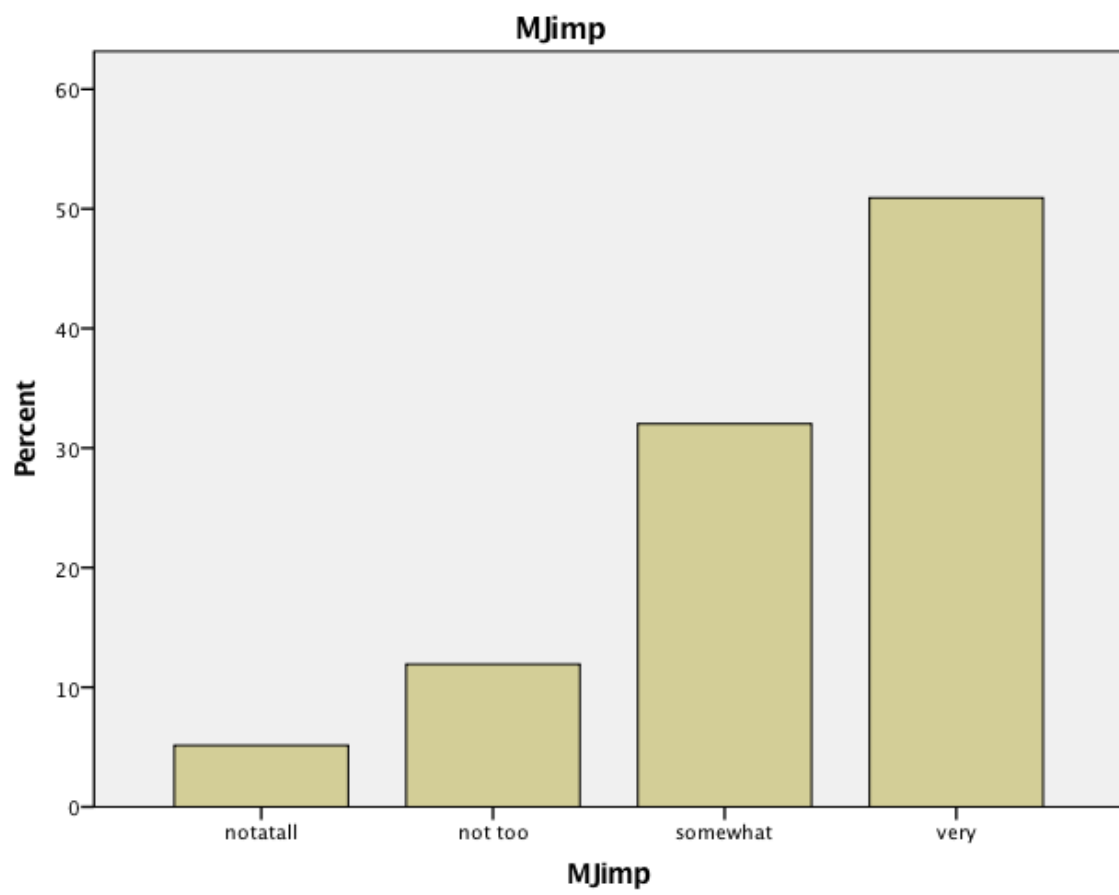 /statistics = mode median mean stddev var skew kurtosis.
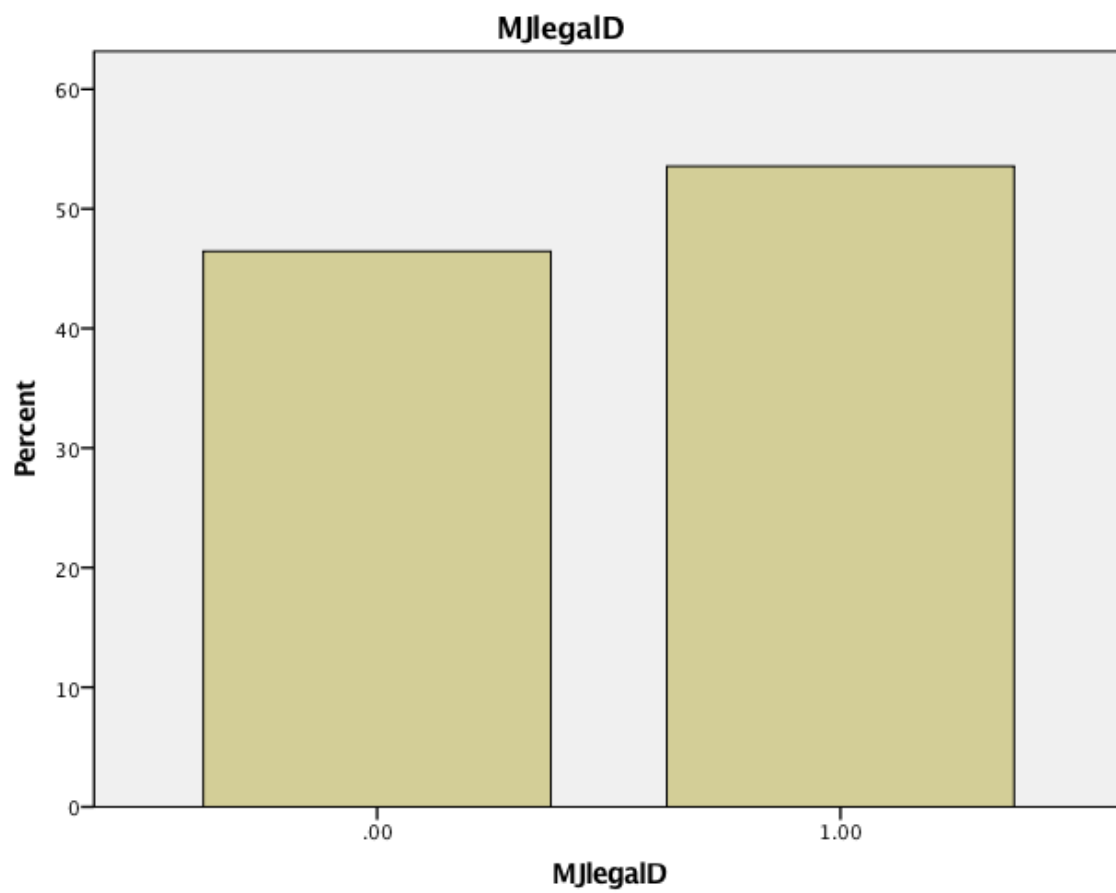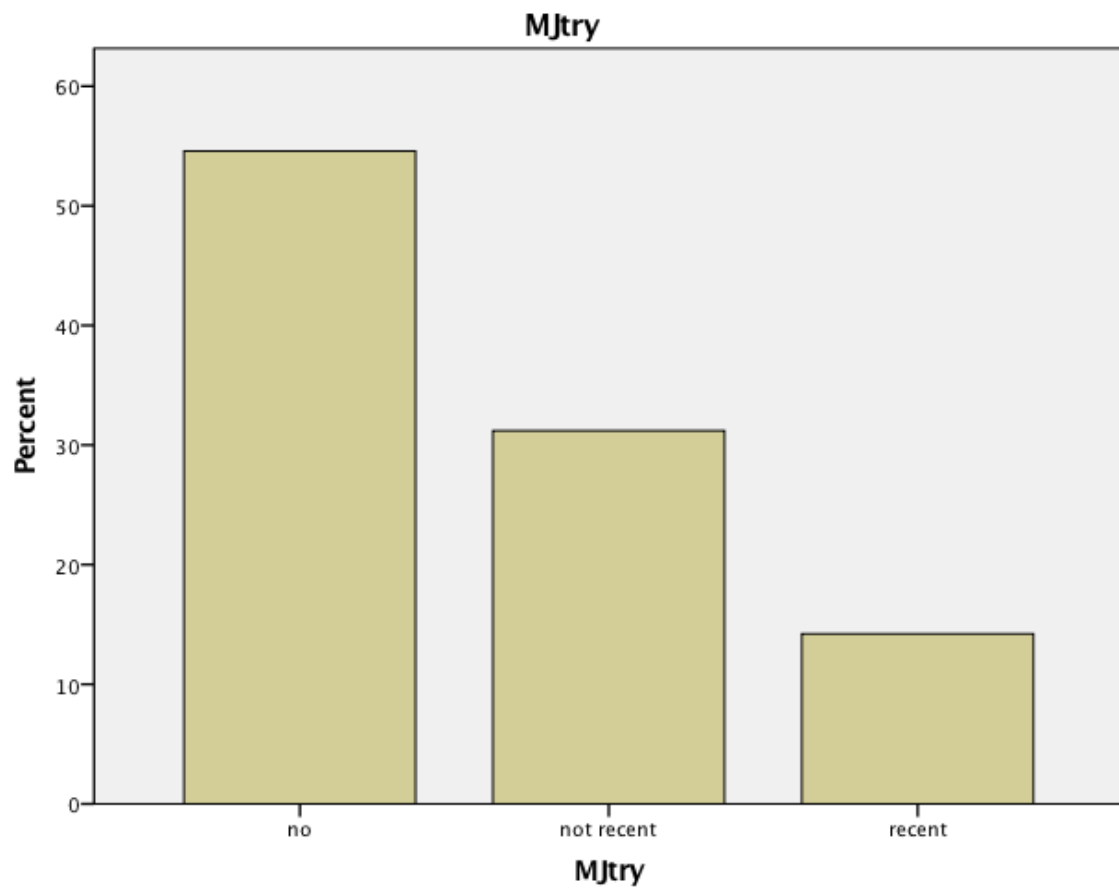 /barchart percent.
  /piechart percent.

Congress

MJimp
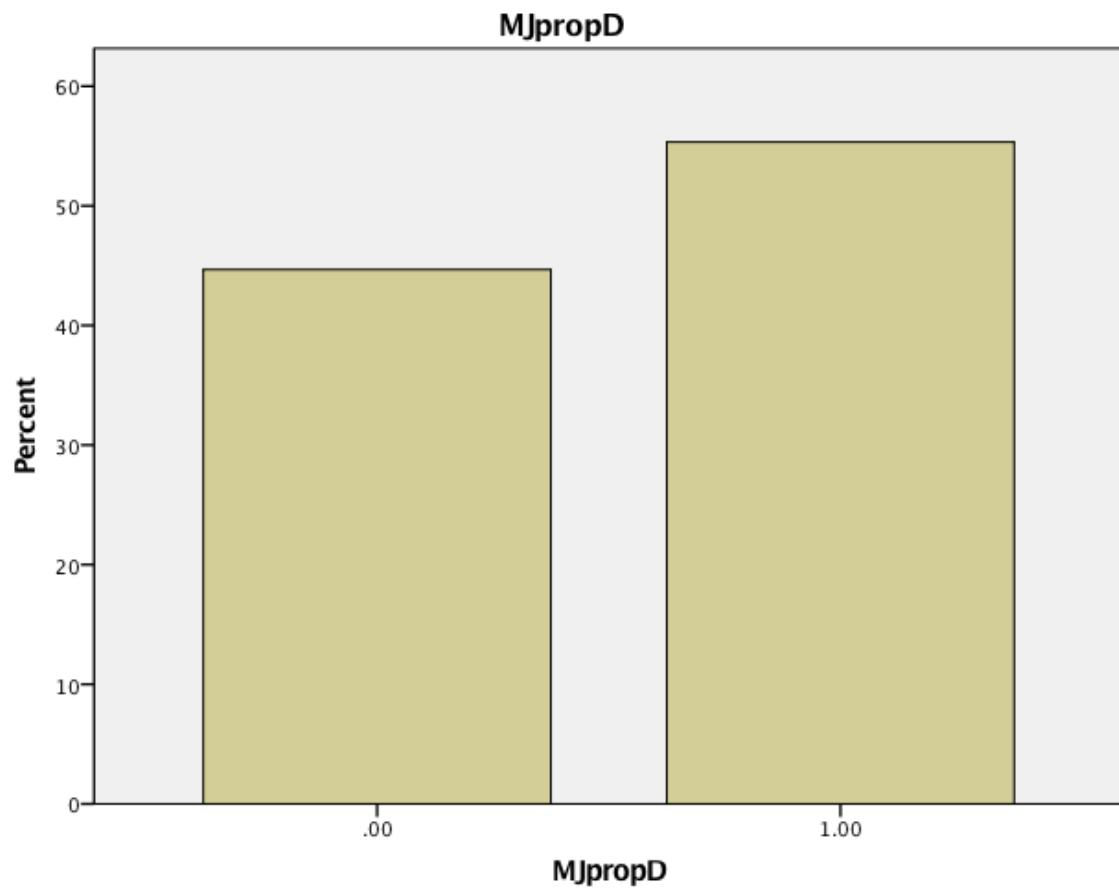
MJlegalD

MJtry

```
examine variables=MJPropD MJImp MJLegalD MJTry
 /compare variable
 /plot=boxplot.
```

Actual SPSS Syntax

missing values q3 (9).
recode q3 (1=1) (2=0) (8=.5) into CalLeg.
Value labels CalLeg 1 'approve' .5 'dk' 0 'disappv'.
fre var CalLeg
  /statistics mode median mean var stddev skew kurtosis.

missing values q27 (9).
recode q27 (1=1) (2=0) (8=.5) into USCong.
Value labels USCong 1 'approve' .5 'dk' 0 'disappv'.
fre var USCong CalLeg
  /statistics mode median mean var stddev skew kurtosis.

recode q21 (1=1) (2=0) into MJpropD.
value labels MJprop 1 'yes' 0 'no'.
recode q22 (1=1) (2=.66) (3=.33) (4=0) into MJimp.
value labels MJimp 1 'very' .66 'somewhat' .33 'not too' 0 'notatall'.
recode q36 (1=1) (2=0) into MJlegalD.
value labels MJlegal 1 'yes' 0 'no'.
recode q36a (1=1) (2=.5) (3=.0) into MJtry.
value labels MJtry 1 'recent' .5 'not recent' 0 'no'.

fre var MJpropD MJimp MJlegalD Mjtry
  /statistics mode median mean stdev variance skew kurtosis
  /barchart percent.

http://www.lrz.de/~wlm/wlmspss.htm