Relative Deprivation and Social Justice Revisited

 [**Final draft**: 2 July 2021]

Introduction

This paper reports on:

1: Retrieval of data from a national survey conducted by the late Prof. Garry Runciman[1] in Great Britain (1961-62).

Book: W G Runciman
Relative Deprivation and Social Justice (RKP 1966)

Fieldwork: 1962-63, Research Services Ltd (RSL)

2: Creation of an SPSS ***.sav** file containing all original variables.

3: Retrieval and restoration of a reduced data set created by Dr Annette Scambler at the University of Surrey and used for teaching Sociology undergraduates.

Page Contents

SPSS setup files

References

[1] See author's page: https://surveyresearch.weebly.com/sn-28-relative-deprivation-and-social-justice-1962-63.html

Acknowledgments

Dr Jane Fielding [2]

. . Senior Lecturer (University of Surrey). In 2001, to help me get started with **SPSS for Windows**, Jane kindly sent me her entire course notes (and had to explain how to open a blank syntax file!).

Major Lester [3] **(SPSS UK)**
. . CEO of SPSS UK in 2001 who arranged for SPSS France to supply an evaluation version of SPSS 11 for Windows

SPSS France [4]
. . for supplying an evaluation version of SPSS 11 for Windows **(**later extended to a 5-year free licence) which enabled the author's reviews [5] of Julie Pallant's SPSS Survival Manual (2001 and later editions) conservation of valuable research materials, subsequent conversion of teaching materials for his Survey Analysis Workshop (SPSS),[6] publication in 2009 of his website, Journeys in Survey Research [7] and its subsequent maintenance and development.

SPSS Inc/IBM SPSS
. . for accepting the author's website as eligible for SPSS Academic Author status and for continuation of the free licence.

Susan Cadogan and colleagues [8] **(UKDS)**
. . for arranging release of the original raw data in binary card-image format.

Dr Mario Giesel
. . Data Scientist, Mediaplus Gruppe Munich for provision of the SPSS macro to automatically create a new set of variables from complex specifications.

Theoretical background

A useful introduction to the theoretical background of Runciman's book can be found in:

Rose, David (September 2006) 'Social Comparisons and Social Order: Issues Relating to a Possible Restudy of W.G. Runciman's Relative Deprivation and Social Justice' [9]
(ISER Working Paper 2006-48. Colchester: University of Essex)

Rose claims a replication of the survey would be too expensive. He seems unaware of the SSRC Survey Unit Quality of Life in Britain [10] surveys, of which the 1975 wave partly replicates Runciman's questions on consumer aspirations.

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3 https://www.surrey.ac.uk/people/jane-fielding
4 See page 2 of Old Dog, Old Tricks for the author's introduction to SPSS for Windows on a PC after decades of using SPSS-X on mainframes https://surveyresearch.weebly.com/old-dog-old-tricks-using-spss-syntax-to-beat-the-mouse-trap.html
5 https://surveyresearch.weebly.com/julie-pallant-spss-survival-manual.html
6 https://surveyresearch.weebly.com/1-survey-analysis-workshop-spss.html
7 https://surveyresearch.weebly.com/
8 https://www.ukdataservice.ac.uk/about-us/people/team/
9 https://www.iser.essex.ac.uk/files/iser_working_papers/2006-48.pdf
10 **https://surveyresearch.weebly.com/ssrc-survey-unit-quality-of-life-in-britain-surveys-1971-1975.html**

UK Data Service holdings

Catalogue: UKDS SN28 **Persistent identifier**: 10.5255/UKDA-SN-28-1

Citation: (1976). *Relative Deprivation and Social Justice, 1962*. [data collection]. UK Data Service. SN: 28, http://doi.org/10.5255/UKDA-SN-28-1

Data history:

1962-63 Original data on multi-punched 80-column Hollerith cards.

1966 SPSS file generated by Dr Annette Scambler at Surrey University for teaching students in Sociology.

Box 1: The Runciman study

THE RUNCIMAN STUDY

The original study data for the RUNCIMAN file is based on data which was collected by Runciman, and which formed the basis for the book 'Relative Deprivation and Social Justice', 1966. The data found in the RUNCIMAN file was reconstructed from the raw data and is subject to certain inaccuracies. Minor differences will be found between the results quoted in the book, and the results computed from the data file. The DEPRIVED file which is used for this exercise contains a selected number of the original RUNCIMAN variables.

Original data and two copies irretrievably lost.

1974 Data re-punched at Essex from the original questionnaires, but Runciman issues a disclaimer on coding (see extract from UKDS SN28 User Guide [11] below).

Box 2: Source of data set

3. Source of the Data Set

The original data set and both the two copies made in 1962 have been lost or destroyed. The data set held by the Archive has been newly compiled by the Archive from the interview schedules and details of the coding procedure may be supplied on request on the discretion of the Director of the Archive. The schedules are in the possession of the under-signed and may be consulted on application. In the compilation of the new data set by the Archive, neither the original coding instructions used by Research Services nor such re-codings as were used in the preparation of the published tables were followed. The under-signed therefore disclaims all responsibility for any discrepancies between the published tables and tables which might result from analysis of the Archive data set.

February, 1974

W.G. Runciman,
Trinity College, Cambridge.

[11] http://doc.ukdataservice.ac.uk/doc/28/mrdoc/pdf/sn28userguide.pdf

Raw data: The raw data used in this report are on binary (multi-punched) card images which UKDS is unwilling to release to inexperienced users.

2014 Retrieval by John Hall (from multi-punched binary card-images) of the full original data set used by Runciman: creation of an SPSS ***.sav** file for use with SPSS for Windows, now deposited with UKDS.

The restored file addresses the reservations made by Runciman himself.

Recreation of Dr Scambler's reduced SPSS file used for teaching.

2014-2021 Modifications to correct variable attributes and improve labelling.
Construction of a sample exercise typical of what would be allocated to students.

Documentation:

User Guide: sn28userguide.pdf (Dr. Annette Scambler, University of Surrey)

Page	Content
1 - 2	Description of survey, note on access, disclaimer by Runciman (1974)
3 - 4	Research methods exercise
5 - 9	Technical notes on SPSS file, syntax and use of computer
10 - 11	General information; exercise notes (December, 1975)
12 - 23	Codebook with marginal frequencies (Scambler 1975)
24 - 28	Facsimile questionnaire (reproduced from the book, pp352 – 370)

The original data were deposited at the SSRC Survey Archive, but there was no SPSS file until 1966, when one was generated at Surrey University by Dr Annette Scambler, using a subset of variables for teaching Sociology undergraduates. Her SPSS syntax files were written for SPSS-X on a mainframe computer: they dated from the 1970s and were unusable by SPSS for Windows.

In 2014 the author, who has extensive experience of 1970s SPSS syntax, retrieved Dr Scambler's original 1975 setup files, rewrote them for use with SPSS for Windows and recreated the original SPSS saved file she used for teaching.

SPSS files: Dr Scambler's original SPSS setup files were written in 1966 for use with SPSS-X on the CDC7600 [12] mainframe computer at Surrey, using (now obsolete) syntax with Fortran-type sub-commands[13] to read data from 80-column card-images. Such commands had to be replaced with equivalent commands[14] for use with SPSS for Windows.

sn0028.sav (SPSS-X, Essex 1966)

Restored 2014 by John Hall: this is the version now available from UKDS.
Variable names are all lower case: all labels in UPPER CASE.
Some missing values and levels of measurement are missing or incorrect.

280 variables
1415 cases

deprived.sav (SPSS-X, Scambler, June 1975)

This is Dr Scambler's shortened SPSS file (prepared at Surrey University) for teaching Sociology undergraduates, later archived on the DEC-10 at Essex.

103 variables
1415 cases

SPSS for Windows files:

deprived_2.sav (SPSS for Windows, John Hall, 2014)

104 variables (Scambler's 103 variables, plus case number)
1415 cases

RDSJ.sav (SPSS for Windows, John Hall, 2014)

280 variables + 16 derived variables.
1415 cases

sn28jfh6.sav (SPSS 27 for Windows, John Hall, May 2021)

300 variables
1415 cases

This file is being extensively updated, using SPSS syntax, to:

Specify correct levels of measurement
Add/correct missing values
Change variable labels from UPPER CASE to Mixed Case
Change value labels from UPPER CASE to Mixed Case.

It will be deposited at UKDS along with the associated SPSS *.sps setup files.

deprived_3.sav (SPSS for Windows, John Hall, June 2021)

115 variables (103 variables, plus case number, plus 11 derived variables)

[12] https://en.wikipedia.org/wiki/CDC_7600
[13] Eg. **N OF CASES**, **INPUT FORMAT**, **READ INPUT DATA**
[14] Eg. **DATA LIST, VARIABLE LEVEL**, **ADD VALUE LABELS**

Relative deprivation measures

In his survey, Runciman presented respondents with a checklist of 7 "materialist" consumer items:

Item	varname
Television	**tv**
Telephone	**phone**
Car	**car**
Refrigerator	**fridge**
Washing machine	**washmach**
Record player	**recordpl**
Central heating	**cheating**

For each item he asked:

Does your household **have** . . . ?
[Yes, No, DK]

	Name	Label
45	tv	DO YOU HAVE TV
46	phone	DO YOU HAVE PHONE
47	car	DO YOU HAVE CAR
48	fridge	DO YOU HAVE FRIDGE
49	washmach	DO YOU HAVE WASHING MACHINE
50	recordpl	DO YOU HAVE RECORD PLAYER
51	cheating	DO YOU HAVE CENTRAL HEATING

IF NO; Would you **like** . . . ?
[Yes, No, DK]

52	wanttv	WOULD YOU LIKE TV
53	wantphn	WOULD YOU LIKE PHONE
54	wantcar	WOULD YOU LIKE CAR
55	wantfrg	WOULD YOU LIKE FRIDGE
56	wantwash	WOULD YOU LIKE WASHING MACHINE
57	wantrpl	WOULD YOU LIKE RECORD PLAYER
58	wantch	WOULD YOU LIKE CENTRAL HEATING

IF YES: Do you **expect to get** . . . in next year or so . . . ?
[Yes, No, DK]

59	tvsoon	IS TV EXPECTED NEXT 2-3 YRS
60	phnsoon	IS PHONE EXPECTED NEXT 2-3 YRS
61	carsoon	IS CAR EXPECTED NEXT 2-3 YRS
62	frgsoon	IS FRIDGE EXPECTED NEXT 2-3 YRS
63	washsoon	IS WASHING MACHINE EXPECTED NEXT 2-3 YRS
64	rplsoon	IS R.PLAYER EXPECTED NEXT 2-3 YRS
65	chsoon	IS CENTRAL HEATING EXPECTED NEXT 2-3 YRS

He also presented respondents with a checklist of 6 "aspirational" items:

Item	varname
A house of your own[15]	**ownhouse**
A fur coat for your wife [sic!!]	**furcoat**
Do you already go abroad for holidays?	**abroad**
Do you already have a spare bedroom for family and friends to stay?	**travel** **sparebed**
Do you already use first class travel?	**trainfst**
Do you already use private education?	**educfee**

A similar series of questions was asked of each of these:

Do you already **have** . . . ?
[Yes, No, DK]

	Name	Label
93	ownhouse	DO YOU OWN HOUSE
94	furcoat	DOES WIFE HAVE FUR COAT
95	travel	DO YOU GO ABROAD FOR HOLIDAYS
96	sparebed	DO YOU HAVE SPARE BEDROOM
97	trainfst	DO YOU USE FIRST CLASS TRAVEL
98	educfee	DO YOU USE PRIVATE EDUCATION

IF NO; Do you **want**/Would you **like**?
[Yes, No, DK]

	Name	Label
99	lkhouse	DO YOU WANT OWN HOUSE
100	lkcoat	DO YOU WANT FUR COAT FOR WIFE
101	lktravel	DO YOU WANT HOLIDAYS ABROAD
102	lkbed	DO YOU WANT SPARE BEDROOM
103	lkfsttr	DO YOU WANT FIRST CLASS TRAVEL
104	lkedfee	DO YOU WANT PRIVATE EDUCATION

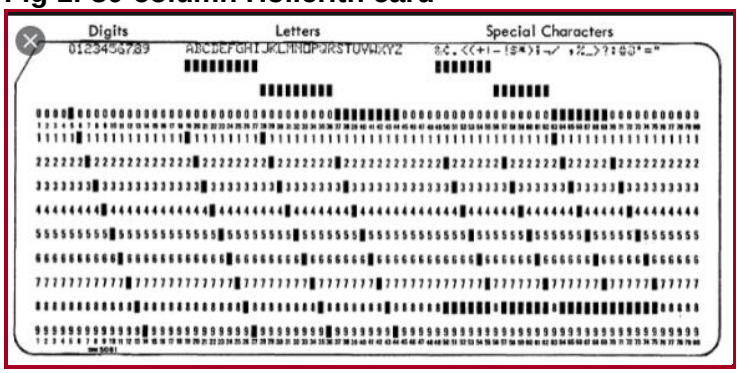
IF YES: Are others **managing to afford**?
[Yes, No, DK]

	Name	Label
105	othhouse	DO OTHERS OWN HOUSE
106	othcoat	DO OTHERS HAVE FUR COAT
107	othtrav	DO OTHERS HAVE HOLIDAY ABROAD
108	othbed	DO OTHERS HAVE SPARE BEDROOM
109	othfsttr	DO OTHERS HAVE FIRST CLASS TRAVEL
110	othedfee	DO OTHERS HAVE PRIVATE EDUCATION

[15] The wording in this list is from the user guide: it may not be the same as in the original questionnaire

The Runciman data were originally punched on 80-column Hollerith cards [16]

Fig 1: 80-column Hollerith card



These cards have 12 punching positions. The digits 0 to 9 plus the upper and lower zones (usually denoted '**+**' and '**–**') were single-punched. The letters A to Z had two hole-punches in the same column: special characters had combinations of three punches in the same column.

It was standard practice by commercial agencies to punch data for more than one variable in a single column. For instance, for each household member, data for three variables were punched in a single column: codes 1 and 2 were used for sex of the respondent, codes 3 to 6 for marital status and codes 7 to 9, 0, X and Y for occupational status. Because multi-punching and upper and lower zones were used, the data for all variables were first read in as alpha, then recoded to numeric. For the "materialist" goods list, this yielded one code per item.

1	"Yes, already have"
9	"Don't know if already have"
2	" Don't have, don't want"
8	" DK if want"
3	" 'Want and expect to get"
4	" Want, but don't expect to get"
5	" Want, but don't know if expect to get"

However, the data in file **sn0028.sav** from UKDS are stored as three variables for each item, which makes analysis complex and difficult. It is better to create a single unique code for each item by combining the three binary codes as follows:

Question flow to split binary data:

Does your household **have** . ?
Yes, 1 → code as **1**
No, 2 → → → IF NO:
DK **9**
Would you **like** . ?
Yes, 1 → → → IF YES :
No, 2 → code as **2**
DK **8**
Do you **expect to get** .
. . in next year or so . . . ?
Yes 1 → code as **3**
No 2 → code as **4**
DK **5**

New unique values in **red**.

[16] using positions 0 to 9 and the '**+**' and '**–**' (upper and lower zone) positions: in some cases data for more than one variable were punched in a single column:

Table 1: Television

tv1 Have/want tv

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, already have	1185	83.7	84.0	84.0
	No, but want	65	4.6	4.6	88.6
	No, but don't want	161	11.4	11.4	100.0
	Total	1411	99.7	100.0	
Missing	No but don't know if want	2	.1		
	System	2	.1		
	Total	4	.3		
Total		1415	100.0		

Table 2: Telephone

phone1 Have/want phone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	322	22.8	23.1	23.1
	2 No, but want	242	17.1	17.4	40.5
	3 No, but don't want	827	58.4	59.5	100.0
	Total	1391	98.3	100.0	
Missing	4 No but don't know if want	23	1.6		
	System	1	.1		
	Total	24	1.7		
Total		1415	100.0		

Table 3: Car

car1 Have/want car

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	540	38.2	38.6	38.6
	2 No, but want	383	27.1	27.4	65.9
	3 No, but don't want	477	33.7	34.1	100.0
	Total	1400	98.9	100.0	
Missing	4 No but don't know if want	12	.8		
	System	3	.2		
	Total	15	1.1		
Total		1415	100.0		

Table 4: Refrigerator

fridge1 Have/want fridge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	495	35.0	35.5	35.5
	2 No, but want	504	35.6	36.1	71.6
	3 No, but don't want	397	28.1	28.4	100.0
	Total	1396	98.7	100.0	
Missing	4 No but don't know if want	17	1.2		
	System	2	.1		
	Total	19	1.3		
Total		1415	100.0		

Table 5: Washing machine

washmach1 Have/want washmach

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	702	49.6	50.1	50.1
	2 No, but want	258	18.2	18.4	68.5
	3 No, but don't want	441	31.2	31.5	100.0
	Total	1401	99.0	100.0	
Missing	4 No but don't know if want	13	.9		
	System	1	.1		
	Total	14	1.0		
Total		1415	100.0		

Table 6

recplayer1 Have/want recplayer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	512	36.2	36.7	36.7
	2 No, but want'	150	10.6	10.8	47.5
	3 No, but don't want	733	51.8	52.5	100.0
	Total	1395	98.6	100.0	
Missing	4 No, but don't know if want	19	1.3		
	System	1	.1		
	Total	20	1.4		
Total		1415	100.0		

Table 7

cheating1 Have/want cheating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes, already have	83	5.9	6.0	6.0
	2 No, but want	525	37.1	38.0	44.0
	3 No, but don't want	774	54.7	56.0	100.0
	Total	1382	97.7	100.0	
Missing	4 No but don't know if want	31	2.2		
	System	2	.1		
	Total	33	2.3		
Total		1415	100.0		

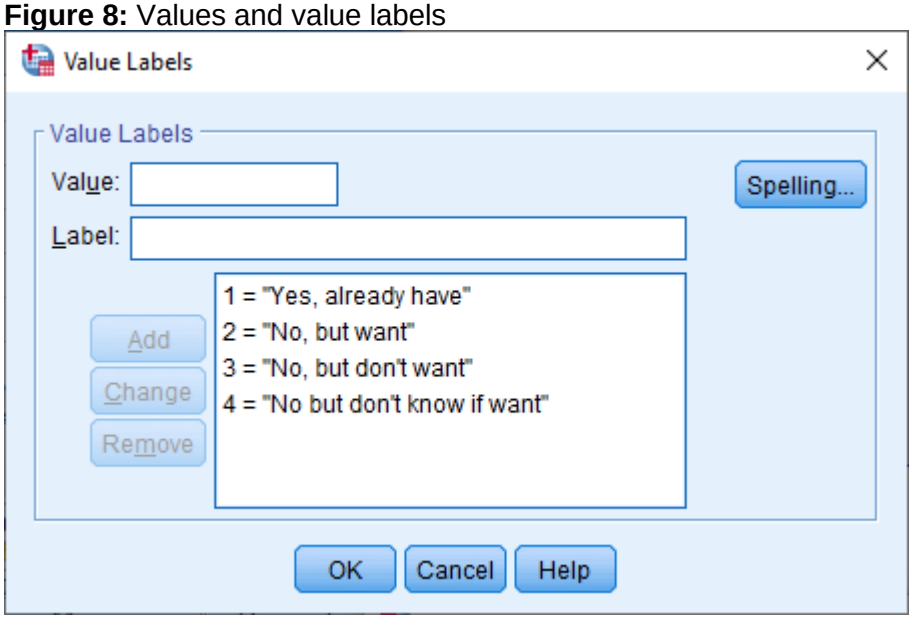
The new variables are appended to the file:

Figure 7: End of file in **Variable View**

	Name	Measure	Label	Values
105	phone1	Ordinal	Have/want phone	{1, Yes have}...
106	car1	Ordinal	Have/want car	{1, Yes have}...
107	tv1	Ordinal	Have/want tv	{1, Yes have}...
108	fridge1	Ordinal	Have/want fridge	{1, Yes have}...
109	washmach1	Ordinal	Have/want washmach	{1, Yes have}...
110	recplayer1	Ordinal	Have/want recplayer	{1, Yes have}...
111	cheating1	Ordinal	Have/want cheating	{1, Yes have}...

. . with new values and labels:

Figure 8: Values and value labels



Sample exercise

Boxed items in the following text are **extracts** snipped from Annette Scambler's User Guide.[17]

There are no specific exercises set: students are allocated questions, asked to perform analyses and to comment on their results. Variables used in the following examples have been selected by the author as typical of student exercises in data analysis.

Hyperlinks are to pages and/or files on the author's website Journeys in Survey Research

1. The student is referred to Mike Procter's handout 'Bivariate Relationships between Categorical Variables' for information on how contingency tables are created.
   NB : One crosstabulates variables together and the result is a contingency table.
   Make sure you understand what a frequency distribution and a joint frequency distribution are.

[**NB:** Mike Procter's handout is not included in the user guide.]

See: Block 2: Analysing one variable [18]
Block 3: Analysing two variables (and sometimes three) [19]
. . especially 3.1 Two variables (CROSSTABS) [20]

2. Creating a hypothesis and preparing the data
   a. With reference to the nature of the independent variable you have been allocated, select your dependent and control variables.

Example:

Here's a typical task which might be set for students.

Hypothesis: Respondents who describe themselves as working class are more likely to vote Labour

Dependent variable: votenow

Q 22(a) If there was a General Election Co tomorrow, which party would you support?

Independent variable: **class**

Q 20(a) What social class would you say you belonged to?	Upper/Upper Middle	1
	Middle	2
	Lower Middle	3
DO NOT READ OUT LIST	Working	4
	Other D K none etc	5

[17] http://doc.ukdataservice.ac.uk/doc/28/mrdoc/pdf/sn28userguide.pdf
[18] https://surveyresearch.weebly.com/block-2-analysing-one-variable.html
[19] https://surveyresearch.weebly.com/block-3-analysing-two-variables-and-sometimes-three.html
[20] https://surveyresearch.weebly.com/31-two-variables-crosstabs.html

Sample SPSS work-through

Task1: Choose a **dependent** variable and an **independent** variable.

Dependent: votenow Q.22a: How would vote if General Election now?

Independent: class Q20.a: Self-assigned social class

Task2: Produce **frequency distributions** for the dependent and independent variables.

Frequency distributions

frequencies votenow class.

[**NB:** For the purpose of this exercise the main figures of interest are in the **Valid Percent** column.]

Table 8: Frequencies for **votenow**

votenow Q.22a: Party political preference

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Conservative	429	30.3	**31.1**	31.1
	2 Liberal	277	19.6	**20.1**	51.2
	3 Labour	521	36.8	**37.8**	88.9
	4 Other	6	.4	**.4**	89.3
	5 None-dk	147	10.4	**10.7**	100.0
	Total	1380	97.5	100.0	
Missing	0 Non response	35	2.5		
Total		1415	100.0		

Table 9: Frequencies for **class**

class Q.20a: Social class of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Upper-upper mid	31	2.2	**2.2**	2.2
	2 Middle	457	32.3	**32.3**	34.5
	3 Lower middle	110	7.8	**7.8**	42.3
	4 Working	574	40.6	**40.6**	82.8
	5 Other dk	243	17.2	**17.2**	100.0
	Total	1415	100.0	100.0	

Task 3: Produce **two-way contingency tables** for the dependent and independent variables.

> b. With the help of Mike's handout work out the process for creating a two-way crosstab using dependent and independent variables only.

[**NB:** Mike Procter's handout is not included in the user guide.]

```
crosstabs class by votenow.
```

. . displays **class** in the rows and **votenow** in the columns.

Table 12: Two-way contingency table **class** by **votenow**

class Q.20a: Social class of respondent * votenow Q.22a: Party political preference Crosstabulation

Count

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
class Q.20a: Social class of respondent	Upper-upper mid	22	7	2	0	0	**31**
	Middle	213	94	91	2	50	450
	Lower middle	33	32	28	0	14	107
	Working	101	103	297	3	51	555
	Other dk	60	41	103	1	32	237
Total		429	277	521	6	147	**1380**

[**NB**: There are 35 cases missing from this table because they did not answer Q.22a.]

The number of cases with valid data for both **class** and **votenow** has been reduced from **1415** to **1380**.

From this table it is difficult to ascertain the relationship, if any, between **class** and **votenow** as the cells contain only raw data **counts**. [Note the word **Count** at top left of the table.]

The figures need to be **standardised** to make it easier to compare the distributions.

One way of doing this is to calculate, within each category of the independent variable **class**, the percentage who state a political preference for any category of the dependent variable **votenow**.

The figures in each row need to be expressed as a **percentage** of the **total number of cases in that row**.

There are only **31** cases in Upper-upper mid: this is not enough to use as a base for percentages.

A rule of thumb is that percentages **should not be calculated for fewer than 40 cases.** [21]
Standard practice when **n < 40** is to enter the row counts in cells [in square brackets] instead.

To get **row percentages** for the table:

```
crosstabs class by votenow  /cells  row.
```

[21] When N = 40, a single case is 2.5%: moving a case from one category to another makes a net difference of 5%.

Table 13:

class Q.20a: Social class of respondent * votenow Q.22a: Party political preference Crosstabulation

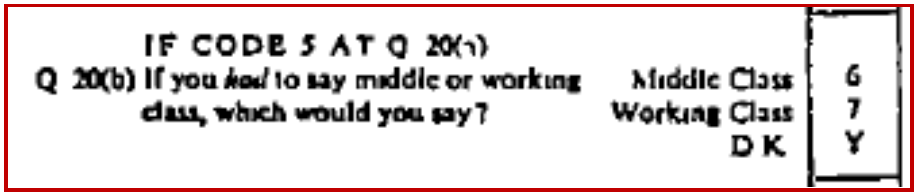
% within class Q.20a: Social class of respondent

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
class Q.20a: Social class of respondent	Upper-upper mid	71.0%	22.6%	6.5%			100.0%
	Middle	47.3%	20.9%	20.2%	0.4%	11.1%	100.0%
	Lower middle	30.8%	29.9%	26.2%		13.1%	100.0%
	Working	18.2%	18.6%	53.5%	0.5%	9.2%	100.0%
	Other dk	25.3%	17.3%	43.5%	0.4%	13.5%	100.0%
Total		31.1%	20.1%	37.8%	0.4%	10.7%	100.0%

Working class people (**53.5%**) are more likely to vote Labour. (**NB**: **[n]** in top row added manually by author)

This table makes it easier to compare the voting preferences of the different social classes, but the bases for percentages are not shown. The figures appear to support the initial hypothesis that working class people are more likely to vote Labour. Indeed, there is quite a steep gradient from **6.5%** of upper-middle and middle class to **53.5%** of working class respondents saying they would vote Labour.

In response to Q.20(a) 32 respondents did not indicate a social class, so are not included in this table. These respondents were therefore asked a supplementary question.


IF CODE 5 AT Q 20(1)
Q 20(b) If you had to say middle or working class, which would you say?
Middle Class 6
Working Class 7
D K Y

In the file this variable is **wchclass** 'Q.20b: Middle class or working class'

frequencies wchclass**.**

Table 14: Frequencies for **wchclass** 'Q.20b: Middle class or working class'

wchclass Q.20b: Middle class or working class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not applicable	1172	82.8	82.8	82.8
	Middle class	**70**	4.9	4.9	87.8
	Working class	**160**	11.3	11.3	99.1
	Dont know	13	.9	.9	100.0
	Total	1415	100.0	100.0	

In response to Q.20b, 130 extra people (**70** middle and **160** working) now indicate a social class.

crosstabs wchclass by votenow /cells row.

Table 15: Two-way contingency table of **wchclass** by **votenow**

wchclass Q.20b: Middle class or working class * votenow Q.22a: Party political preference Crosstabulation

% within wchclass Q.20b: Middle class or working class

		votenow Q.22a: Party political preference					
		Conservative	Liberal	Labour	Other	None-dk	Total
wchclass Q.20b: Middle class or working class	Not applicable	32.3%	20.6%	36.6%	0.4%	10.1%	100.0%
	Middle class	42.9%	22.9%	**22.9%**		11.4%	100.0%
	Working class	17.9%	14.7%	**53.8%**	0.6%	12.8%	100.0%
	Dont know	18.2%	18.2%	27.3%		36.4%	100.0%
Total		31.1%	20.1%	37.8%	0.4%	10.7%	100.0%

In response to Q.20b, working class people (**53..8%**) are more likely than middle class (**22.9%**) to vote Labour.

Dichotomising the variables

It will be easier later to work with variables containing only two categories (i.e **dichotomised**).

Dependent variable

Dependent variable **votenow** can be grouped into Labour and Non-Labour.

```
* Encoding: UTF-8.
title Dichotomise votenow.
*Dichotomise vote Labour/Not Labour.
recode votenow (3=1)(1,2,4,5=2) into labvote.
formats labvote (f1.0).
variable level labvote  (nominal).
variable labels labvote 'Dichotomised vote: Labour/Not Labour'.
value labels 1 'Labour' 2 'Not Labour'.
frequencies labvote.
```

Table 18: Frequency count for derived dependent variable **labvote**

labvote Labour or Non-Labour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Labour	521	36.8	37.8	37.8
	Not Labour	859	60.7	62.2	100.0
	Total	1380	97.5	100.0	
Missing	System	35	2.5		
Total		1415	100.0		

It is good practice to check that the new variable **labvote** has been correctly derived.

```
*Check combination.
crosstabs labvote by votenow.
```

Table 19: Contingency table to check Labour and non-Labour voters.

labvote Labour or Non-Labour * votenow Q.22a: Party political preference Crosstabulation

Count

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
labvote Labour or Non-Labour	Labour	0	0	521	0	0	521
	Not Labour	429	277	0	6	147	859
Total		429	277	521	6	147	1380

There are no Not-Labour voters in the Labour row and no Labour voters in the Not-Labour row. It is safe to proceed using derived variable **labvote**.

Combining social class variables

To ensure that all cases have a value for self-ascribed social class, the two variables **class** and **wchclass** need to be combined.

Multiplying the value of **class** by 10 and adding it to the value of **wchclass** produces a 2-digit value for a **temporary intermediate** variable **dummyclass** (which will not be saved). Thus someone coded **1** 'Upper middle' for **class** and **0** for **wchclass** becomes **10** for **dummyclass**, someone coded **5** for **class** and **1** for **wchclass** becomes **51**. Values **10**, **20**, **30** and **40** for **dummyclass** will be those with values **1** to **4** for **class**. Values **51** and **52** will be those with code **5** 'Don't know' for **class** and codes **1** 'Middle class' or **2** 'Working class' for **wchclass**. Value **53** will be those with value **5** 'Don't know' for **class** and value **3** for **wchclass**.

Figure 9: Coding for intermediate dummy variable **dummyclass**.

Variable Values

Value		Label
dummyclass	10	Already Upper middle
	20	Already Middle class
	30	Already Lower Middle
	40	Already Working class
	51	Middle class at Q20b
	52	Working class at Q20b
	53[a]	DK at Q20b

a. Missing value

[See page 52 for SPSS setup file]

```
frequencies dummyclass.
```

Table 16: Frequency count for intermediate dummy variable **dummyclass**.

dummyclass Intermediate dummy variable for social class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Already Upper middle	31	2.2	2.2	2.2
	Already Middle class	457	32.3	32.6	34.8
	Already Lower Middle	110	7.8	7.8	42.7
	Already Working class	574	40.6	40.9	83.6
	Middle class at Q20b	**70**	4.9	5.0	88.6
	Working class at Q20b	**160**	11.3	11.4	100.0
	Total	1402	99.1	100.0	
Missing	53	**13**	.9		
Total		1415	100.0		

130 respondents replied "Don't know" at question Q20a (variable **votenow**). When asked the supplementary question Q20b (variable **wchvote**) **70** said they would describe themselves as Middle class and **160** as Working class. Only **13** cases remain with no self-described social class.

```
*Check combination.
crosstabs dummyclass by wchclass /missing include.
```

Table 17: Two-way contingency table to check combination.

dummyclass Intermediate dummy variable for social class * wchclass Q.20b: Middle class or working class Crosstabulation

Count

		wchclass Q.20b: Middle or working class				
		Not applicable	Middle class	Working class	Dont know	Total
dummyclass Intermediate dummy variable for social class	Already Upper middle	31	0	0	0	31
	Already Middle class	457	0	0	0	457
	Already Lower Middle	110	0	0	0	110
	Already Working class	574	0	0	0	574
	Middle class at Q20b	0	**70**	0	0	70
	Working class at Q20b	0	0	**160**	0	160
	53	0	0	0	13	13
Total		1172	70	160	13	1415

Of the 130 "Don't know" cases for **votenow**, and asked the supplementary question, **70** now describe themselves as Middle class and **160** as Working class. There are no mis-classified cases. The 2-digit combinations for **dummyclass** can be grouped into two categories in a new variable **newclass**:

```
*Derive new class variable.
recode dummyclass (10, 20, 30, 51=1) (40, 52 =2) into newclass.
missing values newclass (53).
formats newclass (f1.0).
variable level newclass (nominal).
variable labels newclass 'Social class'.
value labels newclass 1 'Middle class' 2 'Working class' 3 'DK'.
frequencies newclass.
```

Table 20: Frequencies for derived independent variable **newclass**

newclass Social class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Middle class	668	47.2	47.6	47.6
	Working class	734	51.9	52.4	100.0
	Total	**1402**	99.1	100.0	
Missing	System	13	.9		
Total		1415	100.0		

By combining responses for **class** and **wchclass**, the number of people identifying themselves as being in a social class has increased from **1380** to **1402**. Only 13 cases remain unallocated to a social class.

This method of combining two variables into one is a very useful analytical trick.

crosstabs newclass by votenow/ cells row.

Table 21: Two-way contingency table for **newclass** by **votenow**.

newclass Social class * votenow Q.22a: Party political preference Crosstabulation

% within newclass Social class

		votenow Q.22a: Party political preference					
		Conservative	Liberal	Labour	Other	None-dk	Total
newclass Social class	Middle class	45.3%	22.6%	**20.8%**	0.3%	10.9%	100.0%
	Working class	18.1%	17.7%	**53.6%**	0.6%	10.0%	100.0%
Total		31.2%	20.1%	37.8%	0.4%	10.4%	100.0%

Working class people (**53.6%**) are more likely to vote **Labour** than Middle class people (**20.8%**).

Table 21 above is known as a **zero-order** table, defined as such because there is no control variable. Tables with one control variable are known as **1st order** tables; those with two control variables as **2nd order** tables, and so on.

An important statistic for the next stage of analysis is the **percentage point difference** between middle class (**20.8%**) and working class (**53.6%** **)** voting Labour. This statistic **-32.8** (calculated as **20.8%** minus **53.6%**) is known as **epsilon** (the Greek letter **Ɛ**)

Further analysis will investigate what happens to this epsilon value **-32.8** when introducing control variables.

Task 4: Selecting control variables.

What other variable(s) might also affect voting intention?

Try to think of some and then check to see if there are any corresponding variables in the file.

Possible candidates for control variables are:

Candidate	Variable	Question
Home ownership	**ownhouse**	Q.13a: Do you own house?
Age	**age**	Q.31a: Respondents age [grouped]
Sex	**sex**	Q.31a: Respondents sex [Interviewer assessed]

First, check the frequencies for these variables:

frequencies ownhouse.

Table 22: Frequencies for **ownhouse** Q.13a: Do you own house?

ownhouse Q.13a: Do you own house

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	633	44.7	44.8	44.8
	2 No	780	55.1	55.2	100.0
	Total	1413	99.9	100.0	
Missing	0 Non response	1	.1		
	3 Dont know	1	.1		
	Total	2	.1		
Total		1415	100.0		

frequencies age.

Table 23: Frequencies for **age** Q.31a: Respondents age [grouped]

age Q.31a: Respondents age [grouped]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 21-29	143	10.1	10.1	10.1
	2 30-39	256	18.1	18.1	28.2
	3 40-45	175	12.4	12.4	40.6
	4 46-49	123	8.7	8.7	49.3
	5 50-59	327	23.1	23.1	72.4
	6 60-69	242	17.1	17.1	89.5
	7 70+	149	10.5	10.5	100.0
	Total	1415	100.0	100.0	

```
frequencies sex.
```

Table 25: Frequencies for **sex** Q.31a: Respondents sex [Interviewer assessed]

sex Q.31a: Respondents sex [Interviewer assessed]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Man head-house	593	41.9	41.9	41.9
	2 Man not head	56	4.0	4.0	45.9
	3 Woman hswife	721	51.0	51.0	96.8
	4 Not housewife	45	3.2	3.2	100.0
	Total	1415	100.0	100.0	

[**NB**: This is a bizarre way to record sex: it needs reducing to two groups.]

```
recode sex (1,2=1)(3,4=2) into rsex.
formats rsex (n1).
variable labels rsex 'Sex of respondent'.
value labels rsex 1 'Men' 2 'Women'.
variable level rsex (nominal).
frequencies rsex.
```

Table 26: Frequencies for **rsex** Sex of respondent

rsex Sex of respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Men	649	45.9	45.9	45.9
	Women	766	54.1	54.1	100.0
	Total	1415	100.0	100.0	

Dichotomising the control variables

[**NB:** Variable **ownhouse** is already dichotomous.]

Task 6: Dichotomise **age**.

Variable **age** has too many age groups for elaboration: the resultant three-way contingency tables would be enormous. It needs to be reduced to two groups, preferably of approximately equal size. The closest we can get to two equal size groups is:

```
*Dichotomise age.
frequencies age.
recode age ( 2 3 4=1)(5 6 7=2) into age2.
variable level age2  (nominal).
formats age2 (f1.0).
variable labels age2  'Dichotomised age'.
value labels age2 1 'Under 50' 2 '50 and over'.
frequencies age2.
```

Table 24: Frequencies for **age2** (Dichotomised age)

age2 Dichotomised age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 50	554	39.2	43.6	43.6
	50 and over	718	50.7	56.4	100.0
	Total	1272	89.9	100.0	
Missing	System	143	10.1		
Total		1415	100.0		

All control variables are now dichotomised.

Task 5: Elaboration [22]

> c. Elaborate by introducing your control variable.

Dependent: **votenow** Q.22a: How would vote if General Election now?
Independent: **newclass** Dichotomised social class

Possible control variables:

ownhouse Q.13a: Do you own house?
age Q.31a: Respondents age [grouped]
rsex Sex of respondent

Before producing three-way or multi-way contingency tables (which can have enormous numbers of cells) it is best to produce two-way contingency tables for the control variables and the dependent variable.

```
crosstabs ownhouse by votenow /cells row.
```

Table 27: Two-way contingency table for control variable **ownhouse**

ownhouse Q.13a: Do you own house * votenow Q.22a: Party political preference Crosstabulation

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
ownhouse Q.13a: Do you own house	Yes	39.7%	25.4%	**24.8%**	0.2%	9.9%	100.0%
	No	24.1%	15.8%	**48.2%**	0.7%	11.2%	100.0%
Total		31.0%	20.1%	37.8%	0.4%	10.7%	100.0%

Owners (**24.8%**) are less likely to vote Labour than non-owners (**48.2%**)
Epsilon Ɛ = **-23.4** (owners **24.8%** minus non-owners **48.2%**)

```
crosstabs age2 by votenow /cells row.
```

Table 28: Two-way contingency table for control variable **age2**

age2 Dichotomised age * votenow Q.22a: Party political preference Crosstabulation

% within age2 Dichotomised age

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
age2	Under 50	29.6%	19.9%	**41.9%**	0.2%	8.5%	100.0%
	50 and over	33.3%	20.8%	**33.7%**	0.4%	11.8%	100.0%
Total		31.7%	20.4%	37.3%	0.3%	10.3%	100.0%

The under 50s are more likely to vote Labour (**41.9%**) than those aged 50 and over (**33.7%**).
Epsilon **Ɛ** = **+8.2** (**41.9%** minus **33.7%**)

[**NB:** The author's convention is to use **blue** for positive epsilons and **red** for negative]

[22] See page 32 of **Statistical notes to accompany the course**
[https://surveyresearch.weebly.com/uploads/2/9/9/8/2998485/statistical_notes_2013_.pdf]

crosstabs rsex by votenow /cells row.

Table 29: Two-way contingency table for control variable **rsex**

rsex Sex of respondent * votenow Q.22a: Party political preference Crosstabulation

		votenow Q.22a: Party political preference					Total
		Conservative	Liberal	Labour	Other	None-dk	
rsex Sex of respondent	Male	28.0%	21.1%	**40.3%**	0.6%	9.9%	100.0%
	Female	33.6%	19.2%	**35.6%**	0.3%	11.3%	100.0%
Total		31.1%	20.1%	37.8%	0.4%	10.7%	100.0%

Men (**40.3%**) are more likely to vote Labour than women (**35.6%**)
Epsilon Ɛ = **+4.7** (Men **40.3%** minus women **35.6%**)

Derived variables **newclass labvote age2** and **rsex** are appended to the file:

Figure 9: End of file in **Variable View**

	Name	Measure	Label
297	newclass	Nominal	Dichotomised Social class
298	labvote	Nominal	Dichotomised vote: Labour/Not Labour
299	age2	Nominal	Dichotomised age
300	rsex	Nominal	Sex of respondent

Elaboration [23]

Three-way contingency tables

Dependent:	**votenow**	Q.22a: How would vote if General Election now?
Independent:	**newclass**	Dichotomised social class
Control:	**ownhouse**	Q.13a: Do you own house?

Table 26: Three-way contingency table: **newclass** by **vote** controlling for **ownhouse**

crosstabs newclass by votenow by ownhouse /cells row.

newclass * votenow Q.22a: Party political preference * ownhouse Q.13a: Do you own house Crosstabulation

% within newclass

ownhouse Q.13a: Do you own house			votenow Q.22a: Party political preference					
			Conservative	Liberal	Labour	Other	None-dk	Total
Yes	newclass	Middle class	49.7%	25.7%	**15.2%**		9.4%	100.0%
		Working class	25.0%	25.0%	**39.7%**	0.4%	9.9%	100.0%
	Total		40.3%	25.4%	24.6%	0.2%	9.6%	100.0%
No	newclass	Middle class	39.2%	18.7%	**28.3%**	0.7%	13.1%	100.0%
		Working class	14.8%	14.2%	**60.3%**	0.6%	10.0%	100.0%
	Total		23.9%	15.9%	48.4%	0.7%	11.2%	100.0%
Total	newclass	Middle class	45.2%	22.7%	**20.9%**	0.3%	11.0%	100.0%
		Working class	18.1%	17.7%	**53.6%**	0.6%	10.0%	100.0%
	Total		31.1%	20.1%	37.9%	0.4%	10.5%	100.0%

Working class people are more likely than middle class to vote Labour, overall (53.6%:20.9%, **Ɛ** = **+32.7**) and within house ownership.
Owners (39.7%:15.2%, **Ɛ**= **+24.5**) Non-owners (60.3%:28.3%, **Ɛ**=**+31.7**)

The zero-order epsilon of **+32.7** has been partitioned into **+24.5** and **+31.7**

[23] See page 32 of **Statistical notes to accompany the course** https://surveyresearch.weebly.com/uploads/2/9/9/8/2998485/statistical_notes_2013_.pdf

Dependent: votenow Q.22a: How would vote if General Election now?
Independent: newclass Dichotomised social class
Control: age2 Dichotomised age

crosstabs newclass by votenow by age2 /cells row.

Table 27: Three-way contingency table: **newclass** by **votenow** controlling for **age2**

newclass * votenow Q.22a: Party political preference * age2 Dichotomised age Crosstabulation

% within newclass

age2 Dichotomised age			votenow Q.22a: Party political preference					
			Conservative	Liberal	Labour	Other	None-dk	Total
Under 50	newclass	Middle class	44.1%	24.9%	**22.2%**		8.8%	100.0%
		Working class	16.2%	14.7%	**61.2%**	0.4%	7.6%	100.0%
	Total		29.7%	19.7%	42.3%	0.2%	8.2%	100.0%
50 and over	newclass	Middle class	48.3%	20.5%	**19.6%**	0.3%	11.3%	100.0%
		Working class	19.9%	21.3%	**46.4%**	0.5%	11.7%	100.0%
	Total		33.3%	20.9%	33.8%	0.4%	11.5%	100.0%
Total	newclass	Middle class	46.4%	22.4%	**20.7%**	0.2%	10.2%	100.0%
		Working class	18.3%	18.5%	**52.8%**	0.5%	9.9%	100.0%
	Total		31.7%	20.4%	37.5%	0.3%	10.1%	100.0%

Working class people are more likely than middle class to vote Labour, both overall (52.8%:20.7%, **Ɛ** = **+32.1**) and within age groups.
Under 50 (61.2%:22.2%, **Ɛ**= **+39.0**) 50 and over (46.4%:19.6%, **Ɛ**=**+26.8**)

The zero-order epsilon of **+32.1** has been partitioned into **+39.0** and **+26.8**

Dependent:	**votenow**	Q.22a: How would vote if General Election now?
Independent:	**newclass**	Dichotomised social class
Control	**rsex**	Sex of respondent

crosstabs newclass by votenow by rsex /cells row.

Table 28: Three-way contingency table: **class** by **votenow** controlling for **rsex**

			votenow Q.22a: Party political preference					
rsex Sex of respondent			1 Conservative	2 Liberal	3 Labour	4 Other	5 None-dk	Total
1 Male		1 Middle class	42.9%	21.4%	**23.9%**	0.4%	11.4%	100.0%
		2 Working class	16.2%	20.6%	**54.3%**	0.9%	8.0%	100.0%
	Total		28.3%	21.0%	40.5%	0.6%	9.5%	100.0%
2 Female		1 Middle class	47.1%	23.5%	**18.5%**	0.3%	10.6%	100.0%
		2 Working class	19.9%	15.1%	**53.0%**	0.3%	11.8%	100.0%
	Total		33.6%	19.3%	35.6%	0.3%	11.2%	100.0%
Total		1 Middle class	45.3%	22.6%	**20.8%**	0.3%	10.9%	100.0%
		2 Working class	18.1%	17.7%	**53.6%**	0.6%	10.0%	100.0%
	Total		31.2%	20.1%	37.8%	0.4%	10.4%	100.0%

Working class people are more likely than middle class to vote Labour,
both overall (53.6%:20.8%, **Ɛ** = **+29.7**) and within sex groups.
Male (54.3%:23.9%, **Ɛ**= **+30.5**) Female (53.0%:18.9%, **Ɛ**=**+34.1**)

The zero-order epsilon of **+29.7** has been partitioned into **+30.5** and **+34.1**

[**NB:** Tables 26, 27 and 28 above do not display the row counts on which percentages are based.]

SPSS can produce tables in which the cells display both row percent and count, but they are quite cluttered and can be very large. The only way of displaying row counts as well as percentages in is to add:

/cells count row.

to the **crosstabs** command:

crosstabs newclass by votenow by ownhouse /cells count row.

Table 29: Three-way contingency table: **class** by **votenow** controlling for **ownhouse**

newclass * votenow Q.22a: Party political preference * ownhouse Q.13a: Do you own house Crosstabulation

ownhouse Q.13a: Do you own house				votenow Q.22a: Party political preference					Total
				Conservative	Liberal	Labour	Other	None-dk	
Yes	newclass	Middle class	Count	186	96	57	0	35	374
			% within class	49.7%	25.7%	15.2%	0.0%	9.4%	100.0%
		Working class	Count	58	58	92	1	23	232
			% within class	25.0%	25.0%	39.7%	0.4%	9.9%	100.0%
	Total		Count	244	154	149	1	58	606
			% within class	40.3%	25.4%	24.6%	0.2%	9.6%	100.0%
No	newclass	Middle class	Count	111	53	80	2	37	283
			% within class	39.2%	18.7%	28.3%	0.7%	13.1%	100.0%
		Working class	Count	71	68	289	3	48	479
			% within class	14.8%	14.2%	60.3%	0.6%	10.0%	100.0%
	Total		Count	182	121	369	5	85	762
			% within class	23.9%	15.9%	48.4%	0.7%	11.2%	100.0%
Total	newclass	Middle class	Count	297	149	137	2	72	657
			% within class	45.2%	22.7%	20.9%	0.3%	11.0%	100.0%
		Working class	Count	129	126	381	4	71	711
			% within class	18.1%	17.7%	53.6%	0.6%	10.0%	100.0%
	Total		Count	426	275	518	6	143	1368
			% within class	31.1%	20.1%	37.9%	0.4%	10.5%	100.0%

crosstabs newclass by votenow by age2 /cells count row.

Table 30: Three-way contingency table: **class** by **votenow** controlling for **age2**

newclass * votenow Q.22a: Party political preference * age2 Dichotomised age Crosstabulation

age2 Dichotomised age				votenow Q.22a: Party political preference					
				Conservative	Liberal	Labour	Other	None-dk	Total
Under 50	newclass	Middle class	Count	115	65	58	0	23	261
			%	44.1%	24.9%	22.2%	0.0%	8.8%	100.0%
		Working class	Count	45	41	170	1	21	278
			%	16.2%	14.7%	61.2%	0.4%	7.6%	100.0%
	Total		Count	160	106	228	1	44	539
			%	29.7%	19.7%	42.3%	0.2%	8.2%	100.0%
50 and over	newclass	Middle class	Count	158	67	64	1	37	327
			%	48.3%	20.5%	19.6%	0.3%	11.3%	100.0%
		Working class	Count	73	78	170	2	43	366
			%	19.9%	21.3%	46.4%	0.5%	11.7%	100.0%
	Total		Count	231	145	234	3	80	693
			%	33.3%	20.9%	33.8%	0.4%	11.5%	100.0%
Total	newclass	Middle class	Count	273	132	122	1	60	588
			%	46.4%	22.4%	20.7%	0.2%	10.2%	100.0%
		Working class	Count	118	119	340	3	64	644
			%	18.3%	18.5%	52.8%	0.5%	9.9%	100.0%
	Total		Count	391	251	462	4	124	1232
			%	31.7%	20.4%	37.5%	0.3%	10.1%	100.0%

crosstabs newclass by votenow by rsex /cells count row.

Table 31: Three-way contingency table: **class** by **votenow** controlling for **rsex**

newclass * votenow Q.22a: Party political preference * rsex Sex of respondent Crosstabulation

rsex Sex of respondent				votenow Q.22a: Party political preference					Total
				Conservative	Liberal	Labour	Other	None-dk	
Male	newclass	Middle class	Count	120	60	67	1	32	280
			%	42.9%	21.4%	23.9%	0.4%	11.4%	100.0%
		Working class	Count	55	70	184	3	27	339
			%	16.2%	20.6%	54.3%	0.9%	8.0%	100.0%
	Total		Count	175	130	251	4	59	619
			%	28.3%	21.0%	40.5%	0.6%	9.5%	100.0%
Female	newclass	Middle class	Count	178	89	70	1	40	378
			%	47.1%	23.5%	18.5%	0.3%	10.6%	100.0%
		Working class	Count	74	56	197	1	44	372
			%	19.9%	15.1%	53.0%	0.3%	11.8%	100.0%
	Total		Count	252	145	267	2	84	750
			%	33.6%	19.3%	35.6%	0.3%	11.2%	100.0%
Total	newclass	Middle class	Count	298	149	137	2	72	658
			%	45.3%	22.6%	20.8%	0.3%	10.9%	100.0%
		Working class	Count	129	126	381	4	71	711
			%	18.1%	17.7%	53.6%	0.6%	10.0%	100.0%
	Total		Count	427	275	518	6	143	1369
			%	31.2%	20.1%	37.8%	0.4%	10.4%	100.0%

Although both counts and percentages are now displayed, the tables are quite cluttered and difficult to interpret: every cell in the output displays both counts and row %. You certainly couldn't publish them like this.

Summary

ownhouse
The zero-order epsilon of **+32.7** has been partitioned into **+24.5** for owners and **+31.7** for non-owners

age2
The zero-order epsilon of **-32.1** has been partitioned into **-39.0** for under 50 and **-26.8** for 50 and over

rsex

The zero-order epsilon of **-32.8** has been partitioned into **-30.5** for men and **-34.5** for women.

These tables are now very cluttered and difficult to interpret. Every cell in the output displays both counts and row %: you certainly could not publish them like this.

Custom Tables

Tables 29 to 31 above are very cluttered as they display % and count in each cell. However, a solution is available in SPSS.

SPSS command **CTABLES** can produce tables displaying both row percentages the row total counts on which they are based. **CTABLES** gives much more control of output, but (unless you use the GUI) the syntax can get very complex to the uninitiated (i.e. me!). For analysing one variable, the default output can be very sparse, but at least frequency distributions don't contain totally meaningless cumulative percentages totals for nominal variables.

Within the **CTABLES** command, tables must be specified one at a time with **/table**.

To display the variables in **rows**:

```
ctables /table by <variable>
        /table by <variable> .
```

To display the variables in **columns**:

```
ctables /table <variable>
        /table <variable> .
```

1: Initial frequency counts (rows)

```
*To display dependent variable in rows.
ctables  /table by votenow.
```

Table 32: votenow displayed **horizontally in row**

votenow Q.22a: Party political preference

Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count
429	277	521	6	147

The table displays only counts for each category, but not the total count. To include the row total add: /categories variables= votenow total=yes .

```
ctables  /table by votenow  /categories variables=  votenow total=yes .
```

Table 33: votenow displayed horizontally in row with row total added.

votenow Q.22a: Party political preference

		Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count	Total Count
newclass	Middle class	298	149	137	2	72	658
	Working class	129	126	381	4	71	711

2: Initial frequency counts (columns)

```
*To display independent variable in columns.
ctables   /table newclass .
```

Table 34: newclass, displayed vertically in column

			Count
newclass	Social class	1 Middle class	668
		2 Working class	734

The table displays only counts for each category, but not the total count. To include the row total add: /categories variables= newclass total=yes .

```
ctables   /table newclass  /categories variables=  newclass total=yes .
```

Table 35: newclass, displayed vertically in column in row with column total added.

		Count
newclass	Middle class	668
	Working class	734
	Total	1402

```
*To display control variables in columns.
ctables   /table ownhouse.
```

Table 36; ownhouse displayed **vertically in column**

		Count
ownhouse Q.13a: Do you own house	Yes	633
	No	780

```
ctables   /table age2 .
```

Table 37: age2 displayed **vertically in column**

		Count
age2 Dichotomised age	1 Under 50	554
	2 50 and over	718

```
ctables   /table rsex .
```

Table 38: rsex displayed **vertically in column**

		Count
rsex Sex of respondent	1 Male	649
	2 Female	766

3: Contingency tables

```
*Zero order tables: row counts only.
ctables  /table newclass by votenow
```

Table 39: Newclass by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count
newclass	Middle class	298	149	137	2	72
	Working class	129	126	381	4	71

```
ctables          /table ownhouse by votenow
```

Table 40: ownhouse by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count
ownhouse Q.13a: Do you own house	Yes	244	156	152	1	61
	No	184	121	369	5	86

```
ctables          /table age2 by votenow
```

Table 41: age2 by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count
age2 Dichotomised age	Under 50	161	108	228	1	46
	50 and over	232	145	235	3	82

```
ctables          /table rsex by votenow .
```

Table 42: rsex by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Count	Liberal Count	Labour Count	Other Count	None-dk Count
rsex Sex of respondent	Men	175	132	252	4	62
	Women	254	145	269	2	85

To produce tables with row percent based on row totals.

```
*Zero order tables: row percentages based on row total counts.
ctables  /table newclass by votenow [rowpct.count].
```

Table 43: Newclass by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %
newclass	Middle class	45.3%	22.6%	20.8%	0.3%	10.9%
	Working class	18.1%	17.7%	53.6%	0.6%	10.0%
Epsilon		**-27.1**	**-4.9**	**+32.8**	**+0.3**	**-1.0**

```
ctables  /table ownhouse by votenow [rowpct.count].
```

Table 44: **ownhouse** by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %
ownhouse Q.13a: Do you own house	Yes	39.7%	25.4%	24.8%	0.2%	9.9%
	No	24.1%	15.8%	48.2%	0.7%	11.2%
Epsilon		**+15.7**	**+9.6**	**-23.5**	**-0.5**	**-1.3**

```
ctables  /table age2 by votenow [rowpct.count].
```

Table 45: **age2** by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %
age2 Dichotomised age	Under 50	29.6%	19.9%	41.9%	0.2%	8.5%
	50 and over	33.3%	20.8%	33.7%	0.4%	11.8%
Epsilon		**-3.7**	**-1.0**	**+8.2**	**-0.2**	**-3.3**

```
ctables  /table rsex by votenow [rowpct.count].
```

Table 46: **rsex** by **votenow**

		votenow Q.22a: Party political preference				
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %
rsex Sex of respondent	Male	28.0%	21.1%	40.3%	0.6%	9.9%
	Female	33.6%	19.2%	35.6%	0.3%	11.3%
Epsilon		**-5.6**	**+1.9**	**+4.7**	**+0.4**	**-1.3**

CTABLES can produce tables with both row percentages and the row total counts used as a base.

For each /table subcommand add:

```
 [rowpct.count totals [count]]
/categories variables=  <row variable> total=yes .

*Zero order table for the independent variable: both row percent and row totals.
ctables  /table newclass by votenow [rowpct.count totals [count]]
                /categories variables=  votenow total=yes .
```

Table 45: newclass by votenow

		votenow Q.22a: Party political preference					
		Conservative	Liberal	Labour	Other	None-dk	Total
		Row N %	Row N %	Row N %	Row N %	Row N %	Count
newclass	Middle class	45.3%	22.6%	20.8%	0.3%	10.9%	658
	Working class	18.1%	17.7%	53.6%	0.6%	10.0%	711
Epsilon		-27.1	-4.9	+32.8	+0.3	-1.0	

```
*Zero order tables for the control variables: both row percent and row totals.
ctables  /table ownhouse by votenow [rowpct.count totals [count]]
                /categories variables=  votenow total= yes .
```

Table 46: ownhouse by votenow

		votenow Q.22a: Party political preference					
		Conservative	Liberal	Labour	Other	None-dk	Total
		Row N %	Row N %	Row N %	Row N %	Row N %	Count
ownhouse Q.13a:	Yes	39.7%	25.4%	24.8%	0.2%	9.9%	614
Do you own house	No	24.1%	15.8%	48.2%	0.7%	11.2%	765
Epsilon		**+15.7**	**+9.6**	**-23.5**	**-0.5**	**-1.3**	

```
ctables  /table age2 by votenow [rowpct.count totals [count]]
                /categories variables=  votenow total=yes .
```

Table 47: age2 by votenow

		votenow Q.22a: Party political preference					
		Conservative	Liberal	Labour	Other	None-dk	Total
		Row N %	Row N %	Row N %	Row N %	Row N %	Count
age2	Under 50	29.6%	19.9%	41.9%	0.2%	8.5%	544
Dichotomised age	50 and over	33.3%	20.8%	33.7%	0.4%	11.8%	697
Epsilon		-3.7	-1.0	+8.2	-0.2	-3.3	

```
ctables  /table rsex by votenow [rowpct.count totals [count]]
              /categories variables=  votenow total=yes .
```

Table 48: rsex by votenow

		votenow Q.22a: Party political preference					
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %	Total Count
rsex Sex of respondent	Male	28.0%	21.1%	40.3%	0.6%	9.9%	625
	Female	33.6%	19.2%	35.6%	0.3%	11.3%	755
Epsilon		**-5.6**	**+1.9**	**+4.7**	**+0.4**	**-1.3**	

The above tables do not have column totals for the **votenow** groups: they are not needed.

It is now much easier visually to compare the **votenow** groups and also to calculate the **epsilons** (percentage point differences).

[**NB**: The epsilons were produced separately by copying the tables [24] into Excel, performing the calculations and then copying the epsilons back into Word]

For elaboration purposes you need to compare these conditional distributions with the original distribution to see how it has been **partitioned** when controlling for test variables. More test variables can be added at any stage.

Summary tables can be useful.

Step 1: Prepare a blank table:

People earning £12,000 or more per annum from full time paid work

(n = 100%)	All	Non-manual	Manual
All	**%** ( )	**%** ( )	**%** ( )
Men	**%** ( )	**%** ( )	**%** ( )
Women	**%** ( )	**%** ( )	**%** ( )

[24] For a fully worked example, see Appendix 2 in 3.2.1.7 Earnings differences 2009: Elaboration

Step 2: For each cell, enter % and the (n) on which it is based.

People earning £12,000 or more per annum from full time paid work

%	All	Non-manual	Manual
All	**38.7%** (1242)	49.2% (699)	25.2% (543)
Men	49.5% (834)	68.8% (401)	31.6% (433)
Women	16.7% (408)	22.8% (298)	0.0% (110)

Step 3: Calculate **first order** epsilons (percentage point differences) separately for sex and type of work.

%	All	Non-manual	Manual	First order epsilon
All	**38.7%** (1242)	49.2% (699)	25.2% (543)	**+24.0**
Men	49.5% (834)	68.8% (401)	31.6% (433)	
Women	16.7% (408)	22.8% (298)	0.0% (110)	
First order epsilon	**+32.8**			

Step 3: Calculate **second order** epsilons (percentage point differences) for all combinations of sex and type of work.

People earning £12,000 or more per annum from full time paid work

%	All	Non-manual	Manual	First order epsilon	Second order epsilon
All	**38.7%** (1242)	49.2% (699)	25.2% (543)	**+24.0**	
Men	49.5% (834)	68.8% (401)	31.6% (433)		**+37.2**
Women	16.7% (408)	22.8% (298)	0.0% (110)		**+22.8**
First order epsilon	**+32.8**				
Second order epsilon		**+46.0**	**+31.6**		

d. Select the appropriate statistics for the explanation of your results. These statistics will be computed by the SPSS package.

NB: If you have sufficient time available you should adopt the more sophisticated procedure whereby you crosstabulate the dependent and independent variables together first, and on the basis of the outcome, then select the control and elaborate.

What we can do is to create two new codes thus:

Old codes 1,2 = 1 (new code)
Old codes 3,4 = 2 (new code) These are the required codes

Old code 5 = Missing data code

5. Discussion

Discuss your results explaining the association of your variables using eg, percentage difference, Chi square, Phi (Gamma equivalent). Justify your hypothesis.

Deprivation measures in SSRC Survey Unit Quality of Life in Britain survey, 1975

The author used the same idea, the same coding scheme, and almost the same items, for the SSRC Survey Unit Quality of Life in Britain Survey, 1975. Fieldwork for both surveys was done by Research Services Ltd (RSL) who used Donovan Data Systems for computer processing and initial analysis.

The 1975 SSRC QoL questionnaire asked about:

A washing machine
Central heating
A car or van
A refrigerator
Colour TV
Your own telephone
A second home for weekends/holidays
A holiday of 4 or more nights away from home
[If YES] Was that holiday abroad?

Figure 2: Facsimile question QD.1 for "materialist' items (SSRC 1975)

Quest. No. — - 10 - — Serial No (1)-(4) Card Class (6)-[3] — J.8909

INTERVIEWER NOTE: SECTION D - STANDARD OF LIVING

QD.1 Now I would like to talk about your standard of living today.
(ASK QUESTIONS 'A', 'B', 'C' AS APPROPRIATE FOR EACH ITEM (a) - (i)) →

	'A' Do you have?			'B' (IF 'NO' TO A) Would you like (one)?			'C' (IF 'YES' TO B) Do you expect to get one in the next year or so?			
	YES	DK	NO	YES	DK	NO	YES	NO	DK	O.U.O.
a) a washing machine	1	9	ASK B	ASK C	8	2	3	4	5	(7)
b) central heating	1	9	ASK B	ASK C	8	2	3	4	5	(8)
c) a car or van (in household)	1	9	ASK B	ASK C	8	2	3	4	5	(9)
d) a refrigerator	1	9	ASK B	ASK C	8	2	3	4	5	(10)
e) colour T.V.	1	9	ASK B	ASK C	8	2	3	4	5	(11)
f) your own telephone	1	9	ASK B	ASK C	8	2	3	4	5	(12)
g) a second home for weekends/ holidays	1	9	ASK B	ASK C	8	2	3	4	5	(13)
h) Apart from short stays with friends or relatives, have you had a holiday of 4 or more nights away from home in the last 12 months?	1	9	ASK B	ASK C	8	2	3	4	5	(14)
i) (IF "YES" TO (h) ASK): Was that abroad?	1	9	ASK B	ASK C	8	2	3	4	5	(15)
j) (IF "NO" TO EITHER (h) or (i) ASK: Have you ever had a holiday abroad?	1	9	ASK B	ASK C	8	2	3	4	5	(16)

The codes for questions D.1(a) to D.1(j) were punched in columns 7 to 16 of card 3.

For each item a) to h) in the list, the questions asked were:

Do you **have** XX?
Yes
No
DK

If NO Would you **like** XX.?
Yes
No
DK

If YES
Do you **expect to get** XX in the next year or so .?
Yes
No
DK

For item h)

Have you had a holiday of 4 or more nights away from home **in the last 12 months**?
Yes
DK
No

If YES Was that abroad?
Yes
DK
No

If NO to either a holiday of 4 nights or a holiday abroad **in the last 12 months**
Have you ever had a holiday abroad?
Yes
DK
No

If NO Would you like a holiday abroad
Yes
DK
No

If YES Do you expect to get one in the next year or so?
Yes
DK
No

The coding scheme for all items was:

1"Yes, already have"
9 "Don't know if already have"
2 " Don't have, don't want"
8 " DK if want"
3 " 'Want and expect to get"
4 " Want, but don't expect to get"
5 " Want, but don't know if expect to get"

The codes for these items were punched in columns 7 to 16 of card 3 and read in as:
VAR307 to VAR316 using the **positional**[25] variable naming convention

Figure 3: 'Materialist' variables in file **Variable View**

117	var307	Numeric	1	0	QD1A WASHING MACHINE
118	var308	Numeric	4	0	QD1B CENTRAL HEATING
119	var309	Numeric	4	0	QD1C CAR OR VAN
120	var310	Numeric	4	0	QD1D REFRIGERATOR
121	var311	Numeric	4	0	QD1E COLOUR TELEVISION
122	var312	Numeric	4	0	QD1F OWN TELEPHONE
123	var313	Numeric	4	0	QD1G SECOND HOME FOR WEEKENDS HOLID...
124	var314	Numeric	1	0	QD1H HOLIDAY AWAY FROM HOME
125	var315	Numeric	1	0	QD1I HOLIDAY ABROAD
126	var316	Numeric	4	0	QD1J HOLIDAY ABROAD EVER

Note that, in the 1960s, SPSS could not accept **Mixed Case**. All labels are in **UPPER CASE**. All variable names had to start with **VAR**. **VAR001** to **VAR100** was allowed, but not **Q1** to **Q100**. The data were supplied by RSL on 80-column Hollerith[26] cards on which, for each household member, data for three variables were punched in a single column. In column **55** of card **7** codes **1** and **2** were used for **sex of the respondent**, codes **3** to **6** for **marital status** and codes **7** to **9**, **0**, **X (-)** and **Y (+)** for **occupational status**. The same coding was used in columns 56 to 62 for up to seven additional members of the household. This was standard practice at RSL and many other agencies.

Figure 4: Facsimile question for household composition (SSRC 1975)

.

Sex		Marital Status				Normal occupation status						
						Has paid job			No paid job			
M	F	Sin-gle	Mar-ried	Wid-ow	Sep or Div	Full Time 30+ hrs per week	Part Time 8-29 hrs p.w.	Part Time Un-der 8 hs p.w.	Re-tired from Full Time job	Stu-dent	House-wife Dis-abled Unemp-loyed	Off. use only
1	2	3	4	5	6	7	8	9	0	X	Y	(55)
1	2	3	4	5	6	7	8	9	0	X	Y	(56)
1	2	3	4	5	6	7	8	9	0	X	Y	(57)
1	2	3	4	5	6	7	8	9	0	X	Y	(58)
1	2	3	4	5	6	7	8	9	0	X	Y	(59)
1	2	3	4	5	6	7	8	9	0	X	Y	(60)
1	2	3	4	5	6	7	8	9	0	X	Y	(61)
1	2	3	4	5	6	7	8	9	0	X	Y	(62)

←

[25] See https://surveyresearch.weebly.com/block-1-from-questionnaire-to-spss-saved-file.html
[26] See page 7 above.

The codes for each person in the household were originally multi-punched on a single column on 80-column Hollerith cards (including the **+** [12] and **–** [11] positions, 2 cards per case). The codes indicated a unique series of responses for each item. Donovan Data Systems was able to read multi-punched data, but in 1970 SPSS could not.

These multi-punches were spread out spread out on an additional card 9 (using **MUTOS**[27]) as three separate variables for each person, then read in as alpha and recoded to numeric. Sex of respondent (41) marital status of respondent (42) and occupational status of respondent (43) were spread out on card 9 columns 41- 43 and the data read into SPSS as **var941 var942** and **var943**, using the **positional**[28] variable naming convention.

Figure 5: Respondent variables in **Variable View**

421	var941	Numeric	1	0	XXX SEX OF RESPONDENT
422	var942	Numeric	1	0	XXX MARITAL STATUS OF RESPONDENT
423	var943	Numeric	1	0	XXX OCCUPATIONAL STATUS OF RESPONDENT

Sex, marital status and occupational status of all other household members were spread out on card **9** columns **44** to **64**. These data were then read into SPSS as variables **VAR944** TO **VAR964**

For each household, the data look like this:

Figure 6: Variables for all household members **Variable View**

421	var941	Numeric	1	0	XXX SEX OF RESPONDENT
422	var942	Numeric	1	0	XXX MARITAL STATUS OF RESPONDENT
423	var943	Numeric	1	0	XXX OCCUPATIONAL STATUS OF RESPONDENT
424	var944	Numeric	1	0	XXX SEX OF 2ND ADULT
425	var945	Numeric	1	0	XXX MARITAL STATUS OF 2ND ADULT
426	var946	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 2ND ADULT
427	var947	Numeric	1	0	XXX SEX OF 3RD ADULT
428	var948	Numeric	1	0	XXX MARITAL STATUS OF 3RD ADULT
429	var949	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 3RD ADULT
430	var950	Numeric	1	0	XXX SEX OF 4TH ADULT
431	var951	Numeric	1	0	XXX MARITAL STATUS OF 4TH ADULT
432	var952	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 4TH ADULT
433	var953	Numeric	1	0	XXX SEX OF 5TH ADULT
434	var954	Numeric	1	0	XXX MARITAL STATUS OF 5TH ADULT
435	var955	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 5TH ADULT
436	var956	Numeric	1	0	XXX SEX OF 6TH ADULT
437	var957	Numeric	1	0	XXX MARITAL STATUS OF 6TH ADULT
438	var958	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 6TH ADULT
439	var959	Numeric	1	0	XXX SEX OF 7TH ADULT
440	var960	Numeric	1	0	XXX MARITAL STATUS OF 7TH ADULT
441	var961	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 7TH ADULT
442	var962	Numeric	1	0	XXX SEX OF 8TH ADULT
443	var963	Numeric	1	0	XXX MARITAL STATUS OF 8TH ADULT
444	var964	Numeric	1	0	XXX OCCUPATIONAL STATUS OF 8TH ADULT

[27] Written by Peter Wakeford (Director of Computer Services at LSE in the 1970s)
[28] See https://surveyresearch.weebly.com/block-1-from-questionnaire-to-spss-saved-file.html

SPSS setup files

The syntax below was the author's attempt (inefficient long way round) to generate matching variables with new values derived from the initial combinations of values for each consumer item:

Television

```
* Encoding: UTF-8.
title 'Material goods'.
subtitle 'Television'.

*Check combinations.
count tv1a = tv (2) wanttv (1)
 /tv1b = tv (2) wanttv (2)
 /tv1c = tv (2) wanttv (3).
frequencies tv1a tv1b tv1c.

*Create new variable.
compute tv1=tv.
do if
    tv1a=2.
compute tv1 =2.
else if
   tv1b=2.
compute tv1 =3.
else if
   tv1c=2.
compute tv1 =4.
end if.
variable level tv1 (ordinal).
formats tv1a to tv1 (n1).
variable labels tv1 'Have/want tv'.
value labels tv1 1 'Yes have' 2 'no but want' 3 'no but not want' 4 'No but DK'.
frequencies tv1.
delete variables tv1a tv1b tv1c.
```

Telephone

```
subtitle 'Telephone'.

*Check combinations.
count phone1a = phone (2) wantphn (1)
 /phone1b = phone  (2) wantphn (2)
 /phone1c =  phone  (2) wantphn (3).
frequencies phone1a phone1b phone1c.

*Create new variable.
compute phone1=phone.
do if
    phone1a=2.
compute phone1 =2.
else if
   phone1b=2.
compute phone1 =3.
else if
   phone1c=2.
compute phone1 =4.
end if.
variable level phone1 (ordinal).
formats phone1a to phone1c  phone1 (n1).
variable labels phone1 'Have/want phone'.
value labels phone1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies phone1.
delete variables phone1a phone1b phone1c.
```

Car

```
title 'Material goods: Car'.
freq car.
subtitle 'Car'.

*Check combinations.
count car1a = car (2) wantcar (1)
 /car1b = car (2) wantcar (2)
 /car1c = car (2) wantcar (3).
frequencies  car1a car1b car1c.

*Create new variable.
compute car1=car.
do if
    car1a=2.
compute car1 =2.
else if
   car1b=2.
compute car1 =3.
else if
   car1c=2.
compute car1 =4.
end if.
variable level car1 (ordinal)
formats car1a to car1c  car1 (n1).
variable labels car1 'Have/want car'.
value labels car1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies car1.
delete variables car1a car1b car1c.
```

Refrigerator

```
title 'Material goods: fridge'.
freq fridge.
subtitle 'Refrigerator'.

*Check combinations.
count fridge1a = fridge (2) wantfrg (1)
 /fridge1b = fridge (2) wantfrg (2)
 /fridge1c = fridge (2) wantfrg (3).
frequencies var fridge1a fridge1b fridge1c.

*Create new variable.
compute fridge1=fridge.
do if
    fridge1a=2.
compute fridge1 =2.
else if
   fridge1b=2.
compute fridge1 =3.
else if
   fridge1c=2.
compute fridge1 =4.
end if.
variable level fridge1 (ordinal).
formats fridge1a to fridge1c  fridge1 (n1).
variable labels fridge1 'Have/want fridge'.
value labels fridge1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies fridge1.
delete variables var fridge1a fridge1b fridge1c.
```

Washing machine

```
title 'Material goods: washing machine'.
freq washmach.
subtitle 'washmach'.

*Check combinations.
count washmach1a = washmach (2) wantwashmach (1)
 /washmach1b = washmach (2) wantwashmach (2)
 /washmach1c = washmach (2) wantwashmach (3).
frequencies washmach1a washmach1b washmach1c.

*Create new variable.
compute washmach1=washmach.
do if
    washmach1a=2.
compute washmach1 =2.
else if
   washmach1b=2.
compute washmach1 =3.
else if
   washmach1c=2.
compute washmach1 =4.
end if.
formats washmach1a to washmach1c  washmach1 (n1).
variable level washmach1 (ordinal).
variable labels washmach1 'Have/want washmach'.
value labels washmach1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies washmach1.
delete variables washmach1a washmach1b washmach1c.
```

Record player

```
title 'Material goods: Record player'.
frequencies recordpl.

*Check combinations.
count recplayer1a = recordpl (2) wantrpl(1)
 /recplayer1b =recordpl (2) wantrpl(2)
 /recplayer1c = recordpl (2) wantrpl(3).
frequencies recplayer1a  recplayer1b recplayer1c.

*Create new variable.
compute recplayer1=recordpl.
do if
    recplayer1a=2.
compute recplayer1 =2.
else if
   recplayer1b=2.
compute recplayer1 =3.
else if
   recplayer1c=2.
compute recplayer1 =4.
end if.
variable level recplayer1 (ordinal).
formats recplayer1 to recplayer1c (n1).
variable labels recplayer1 'Have/want recplayer'.
value labels recplayer1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies recplayer1.
delete variables recplayer1a  recplayer1b recplayer1c.
```

Central heating

```
title 'Material goods: Central heating.
frequencies cheating.

*Check combinations.
count cheating1a = cheating (2) cheating(1)
 /cheating1b =cheating (2) cheating(2)
 /cheating1c = cheating (2) cheating(3).
frequencies cheating1a  cheating1b cheating1c.

*Create new variable.
compute cheating1=cheating.
do if
    cheating1a=2.
compute cheating1 =2.
else if
   cheating1b=2.
compute cheating1 =3.
else if
   cheating1c=2.
compute cheating1 =4.
end if.
variable level cheating1 (ordinal).
formats cheating to cheating1c (n1).
variable labels cheating1 'Have/want cheating'.
value labels cheating1 1 'Yes have' 2 'No but want' 3 'No but not want' 4 'No but DK'.
frequencies cheating1.
delete variables cheating1a  cheating1b cheating1c.
```

The above syntax works, but is very long-winded and repetitive.

SPSS macro

Following a request to the SPSS-X forum[29], Dr Mario Giesel **(**Data Scientist, Mediaplus Gruppe, Munich) kindly supplied the much shorter and more efficient macro below to create all of the derived variables above.

```
* Encoding: UTF-8.
DEFINE !format (!POS !CMDEND)
PRESERVE.
SET PRINTBACK = ON MPRINT = ON.
!DO !v  !IN (!1) /* Loop over format arguments*/

!LET !XX1 = !CONCAT(!v,"1")
!LET !XX1a = !CONCAT(!v,"1a")
!LET !XX1b = !CONCAT(!v,"1b")
!LET !XX1c = !CONCAT(!v,"1c")
!LET !XX = !v

!IF (!v = 'tv') !THEN !LET !wantXX = wanttv !IFEND
!IF (!v = 'phone') !THEN !LET !wantXX = wantphn !IFEND
!IF (!v = 'car') !THEN !LET !wantXX = wantcar !IFEND
!IF (!v = 'fridge') !THEN !LET !wantXX = wantfrg !IFEND
!IF (!v = 'washmach') !THEN !LET !wantXX = wantwash !IFEND
!IF (!v = 'recordpl') !THEN !LET !wantXX = wantrpl !IFEND
!IF (!v = 'cheating') !THEN !LET !wantXX = wantch !IFEND

count !XX1a = !XX (2) !wantXX (1)
 /!XX1b = !XX (2) !wantXX (2)
 /!XX1c = !XX (2) !wantXX (3).
frequencies !XX1a !XX1b !XX1c.
compute !XX1=!XX.
do if
    !XX1a=2.
compute !XX1 =2.
else if
   !XX1b=2.
compute !XX1 =3.
else if
   !XX1c=2.
compute !XX1 =4.
end if.
formats !XX1a to !XX1 (n1).
variable labels !XX1 !QUOTE(!CONCAT('Have/want ', !XX)).
value labels !XX1
1 'Yes, already have' 2 'No, but want' 3 "No, but don't want" 4 "No, but don't know if want".
!DOEND
RESTORE.
!ENDDEFINE.
```

[29] **To subscribe:** Send an email to LISTSERV@LISTSERV.UGA.EDU with no subject, no signature, but only the words: SUB SPSSX-L <your name>

SPSS setup file dummyclass.sps to create new social class variable

```
title 'Derive new class variable'.
*temporarily disable missing values for class.
missing values class wchclass ().
execute.
*Combine variables to form intermediate dummy variable dummyclass.
compute dummyclass = class * 10 + wchclass.
formats dummyclass (n2).
missing values dummyclass (53).
variable labels dummyclass 'Intermediate dummy variable for social class'.
value labels dummyclass
        10 'Already Upper middle '
        20 'Already Middle class'
        30 'Already Lower Middle '
        40 'Already Working class'
        51 'Middle class at Q20b'
        52 'Working class at Q20b'.
        53 'DK at Q20b'.
frequencies dummyclass.
```

Epsilon calculations in Excel

```
ctables  /table newclass by votenow [rowpct.count totals [count]]
                /categories variables=  votenow total=yes
```

		votenow Q.22a: Party political preference					
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %	Total Count
newclass	Middle class	45.3%	22.6%	20.8%	0.3%	10.9%	658
	Working class	18.1%	17.7%	53.6%	0.6%	10.0%	711

Copy table to Excel

		votenow Q.22a: Party political preference					
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %	Total Count
newclass	Middle class	45.3%	22.6%	20.8%	0.3%	10.9%	658
	Working class	18.1%	17.7%	53.6%	0.6%	10.0%	711

Calculate epsilons as cell value for Working class minus cell value for Middle class

[= (D5-D4)*100 : Hypothesis is that Working class are more likely to vote Labour.]

		votenow Q.22a: Party political preference					
		Conservative Row N %	Liberal Row N %	Labour Row N %	Other Row N %	None-dk Row N %	Total Count
newclass	Middle class	45.3%	22.6%	20.8%	0.3%	10.9%	658
	Working class	18.1%	17.7%	53.6%	0.6%	10.0%	711
Epsilon		-27.1	-4.9	32.8	0.3	-1.0	

[**NB:** Epsilons may be rounded]

Copy back to Word, but formats not always compatible between Word and SPSS.

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Section 9 **Elaboration** in

Hall J F and Ring A J (1989, 2013)
Statistical notes to accompany course