

STREET MOBILITY PROJECT User Guide for Analysing the Health and Neighbourhood Mobility Survey

ШП

March 2017

STREET MOBILITY PROJECT TOOLKIT: MEASURING THE EFFECTS OF BUSY ROADS ON LOCAL PEOPLE

INTRODUCTION

The following User Guide shows how you can analyse data collected from the Health and Neighbourhood Mobility Survey. You can find the Health and Neighbourhood Mobility Survey questionnaire at <u>www.ucl.ac.uk/street-mobility/toolkit</u>. We have created a Microsoft Excel file as one way to handle the survey data. You can download this from the project website at <u>www.ucl.ac.uk/street-mobility/toolkit</u>.

The following User Guide shows examples of how you can analyse the data from the Health and Neighbourhood Mobility Survey using pivot tables and charts in Microsoft Excel. This is not the only way to analyse the data, but it is simple and quick, so learning how to use pivot tables will probably save you time.¹

¹ This User Guide assumes some familiarity with Excel. A useful summary of basic tips to using Excel 2013 can be found here: <u>www.siumed.edu/lib/classes/excel/Excel2013-Basics.pdf</u>. This User Guide is designed for people using PCs. Some instructions would be different on a Mac.





Arts & Humanities Research Council



THE HEALTH AND NEIGHBOURHOOD MOBILITY SURVEY DATABASE

The Microsoft Excel file is a randomly generated database that contains responses from 100 participants to the Health and Neighbourhood Mobility Survey, as an example. The Survey itself contains 14 questions covering topics such as:

- demographics (gender, age, length of time lived at the address);
- perceived health; and
- travel and mobility (e.g. whether factors such as the speed of traffic, amount of traffic, or lack of crossing points affect walking around the local area).

Some of the questions require only one answer. Other questions ask the survey respondent to tick all the response options that apply to them.

In practice, we expect that you would manually enter the residents' answers on the paper version of the questionnaire into a computer database such as Excel, giving each answer a numerical code, such as 0 for 'No' and 1 for 'Yes' for easier analysis.

Below is a screen shot of the Excel file (worksheet titled "**Raw-data**") that you can download from the Street Mobility Project website:

A 4	в	C D	E	F	GH	11		K	11	M	N	0	Р	Q	R	s	т	Ш	V	W	Y	V	7	۵۵	AB	AC	AD	AE	AF	AG	AH	AI	AJ	Ak	AL	AM	AN
																																					Q14H Other
2 1	1 5	5 6	-1	1	3 4	1	2	2	3	3	2	2	4	4	1	4	1	2	3	4	2	1	1	3	2	3	5	1	1	1	0	1	1	0	0	0	-1
3 2	2 4	18	-1	2	2 3	2	3	2	4	2	4	1	1	3	1	1	4	1	2	1	1	3	1	1	3	3	4	2	1	0	0	1	1	0	0	0	-1
4 3	2 4	1 8	-1	3	1 2	1	4	1	1	2	3	2	3	1	3	2	4	3	3	1	3	3	1	2	3	3	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
5 4	1 5	5 26	-1	-2	1 2	1	1	4	4	3	3	3	2	2	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	1	3	4	2	0	0	0	0	1	0	0	0	-1
6 5	2 1	L -1	6	2	1 1	2	4	4	2	1	2	2	3	4	1	4	3	3	4	2	3	1	4	4	1	1	2	3	1	1	0	0	0	0	0	0	-1
76	1 5	3 12	-1	2	-2 5	2	4	3	4	3	3	4	1	4	4	3	3	1	1	3	1	2	1	4	2	3	5	1	0	0	1	1	1	1	0	0	-1
8 7	1 2	2 -1	3	2	1 2	2	2	4	1	2	1	4	4	2	1	4	1	1	4	4	3	4	4	4	3	3	5	1	1	0	0	1	0	0	0	1	The pavement is in poor condition
9 8	1 -	2 15	-1	2	4 2	2	1	1	1	3	1	2	4	4	3	4	2	3	2	4	4	3	3	2	3	2	4	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
10 9	2 -	2 33	-1	2	2 2	2	1	2	2	3	3	1	1	2	4	4	2	3	1	4	1	1	3	2	3	3	3	2	1	1	0	0	1	1	1	0	-1
11 10	2 5	3 -1	8	1	3 2	2	1	2	3	4	1	1	2	1	3	4	4	3	2	3	4	1	4	2	3	3	3	2	1	1	0	1	1	0	0	1	Once I nearly got killed by a cyclist on the pavement!
12 11	2 8	3 32	-1	2	2 4	1	1	3	2	1	4	1	3	1	3	1	2	1	3	2	2	2	4	1	3	3	5	1	1	1	0	1	0	0	0	0	-1
13 12	2 6	5 20	-1	3	2 4	1	2	1	1	1	1	1	4	4	3	3	3	4	4	1	4	3	4	3	3	3	5	1	0	1	0	1	0	0	0	0	-1
14 13	2 7	7 40	-1	2	1 5	1	1	4	2	2	2	1	3	2	2	4	2	1	3	4	3	4	2	1	3	2	5	1	1	1	1	1	1	0	1	0	-1
15 14	1 6	5 17	-1	2	1 1	2	4	4	3	2	2	3	2	4	2	4	2	4	4	з	4	1	1	3	3	3	2	2	1	1	0	0	1	0	0	0	-1
16 15	2 4	4 -2	-2	2	2 1	2	-2	-2	-2	-2	-2	-2	-2	-2	-2	4	4	2	1	4	3	1	2	3	2	1	2	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
17 16	2 4	19	-1	1	2 3	1	4	2	4	4	4	1	3	3	3	2	1	4	2	2	2	1	4	3	1	1	2	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
18 17	1 5	5 28	-1	1	2 1	2	-2	-2	-2	-2	-2	-2	-2	-2	-2	1	1	3	4	3	4	3	1	4	2	3	3	2	0	1	1	0	1	0	0	0	-1
19 18	1 1	1 2	-1	2	3 2	2	1	2	3	3	4	1	3	1	2	2	2	2	1	4	2	1	1	3	1	1	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
20 19	1 5	3 8	-1	1	2 2	2	2	2	1	2	4	2	3	4	3	2	1	4	1	1	1	2	4	4	3	3	3	2	1	0	0	1	0	0	0	0	-1
21 20	2 6	5 25	-1	1	4 2	1	1	2	2	3	4	2	2	2	3	4	3	2	2	3	3	1	1	3	3	3	3	2	1	1	1	1	1	0	0	0	-1
22 21	1 5	56	-1	1	3 4	1	2	4	4	3	4	1	2	4	2	2	2	3	4	3	1	1	4	4	2	3	5	1	1	1	0	1	1	0	0	0	-1
23 22	2 4	18	-1	2	2 3	2	2	4	1	3	1	3	2	4	1	1	4	4	2	1	2	1	3	2	3	3	4	2	1	0	0	1	1	0	0	0	-1
24 23	2 4	1 8	-1	3	1 2	1	4	2	4	3	3	2	1	3	2	3	2	2	3	2	1	1	2	4	3	3	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
25 24	1 5	5 26	-1	-2	1 2	1	2	1	2	3	3	3	4	3	4	3	2	1	2	2	3	4	4	4	1	3	4	2	0	0	0	0	1	0	0	0	-1
26 25	2 1	1 -1	6	2	1 1	2	4	4	2	1	2	3	1	2	3	1	2	2	2	3	1	3	3	3	1	1	2	3	1	1	0	0	0	0	0	0	-1
27 26	1 3	3 12	-1	2	2 5	2	1	3	3	4	4	1	4	1	3	4	4	4	3	2	1	1	3	1	2	3	5	1	0	0	1	1	1	1	0	0	-1
28 27	1 2	2 -1	3	2	1 2	2	1	4	1	2	1	1	4	4	2	3	2	4	3	1	3	3	2	2	3	3	5	1	1	0	0	1	0	0	0	1	I don't like it when there are large groups of youths
29 28	1 8	3 15	-1	2	4 2	2	4	4	2	1	4	3	2	1	3	2	4	1	3	4	2	4	4	4	3	2	4	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
80 29	-2 4	4 33	-1	2	2 2	2	1	2	4	1	4	2	3	4	2	2	1	3	1	4	1	1	4	3	3	3	3	2	1	1	0	0	1	1	1	0	-1
81 30	2 3	3 -1	8	1	3 2	2	2	4	2	4	2	4	4	4	2	3	2	3	4	4	3	3	4	2	3	3	3	2	1	1	0	1	1	0	0	1	The council doesn't look after the streets.
32 31	2 8	3 32	-1	2	2 4	1	4	1	2	1	1	3	3	2	3	2	4	2	3	3	1	3	1	3	3	3	5	1	1	1	0	1	0	0	0	0	-1
33 32	2 6	5 20	-1	3	2 4	1	4	2	4	3	3	4	3	2	2	-2	-2	-2	-2	-2	-2	-2	-2	-2	3	3	5	1	0	1	0	1	0	0	0	0	-1
84 33	2 7	7 40	-1	2	1 5	1	1	4	3	4	4	1	1	1	1	3	4	1	4	4	2	4	4	1	3	2	5	1	1	1	1	1	1	0	1	0	-1
85 34	1 6	5 17	-1	2	1 1	2	2	3	4	1	1	3	4	3	2	4	1	1	4	3	4	2	1	4	3	3	2	2	1	1	0	0	1	0	0	0	-1
36 35	2 4	+ -2	-2	2	2 1	2	3	3	1	1	3	4	4	3	2	1	1	1	4	4	3	3	1	2	2	1	2	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
87 36		1 19	-1	1	2 3	1	1	2	1	1	4	2	2	1	1	2	3	2	2	3	3	2	1	2	1	1	2	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
88 37	1 5	5 28	-1	1	2 1	2	2	2	4	3	4	2	2	1	1	1	2	4	2	3	4	3	1	4	2	3	3	2	0	1	1	0	1	0	0	0	-1
39 38	1 1	1 2	-1	2	3 2	2	2	1	3	4	3	1	1	3	2	3	3	3	4	3	2	1	3	1	1	1	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
10 39	1 3	3 8	-1	1	2 2	2	1	4	3	2	2	4	2	4	1	1	4	2	1	1	2	1	2	3	3	3	3	2	1	0	0	1	0	0	0	0	-1
1 40	2 6	5 25	-1	1	4 2	1	4	1	2	1	1	4	2	1	1	1	1	1	4	4	3	3	4	3	3	3	3	2	1	1	1	1	1	0	0	0	-1
12 41	1 5	5 6	-1	1	3 4	1	1	1	1	1	2	1	3	2	1	4	3	1	3	2	1	2	4	4	2	3	5	1	1	1	0	1	1	0	0	0	-1
13 42	2 4	18	-1	2	2 3	2	4	3	3	1	1	4	3	2	1	1	4	3	3	1	4	3	2	2	3	3	4	2	1	0	0	1	1	0	0	0	-1
14 43	2 4	4 8	-1	3	1 2	1	3	3	1	4	3	4	4	3	3	1	2	1	1	3	3	3	2	4	3	3	1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
15 44	1 5	5 26	-1	-2	1 2	1	2	1	1	4	3	1	1	4	1	3	3	3	3	2	1	3	3	4	1	3	4	2	0	0	0	0	1	0	0	0	-1
16 45	2 1	1 -1	6	2	1 1	2	3	4	1	3	1	3	3	2	4	1	3	4	2	2	2	3	3	4	1	1	2	3	1	1	0	0	0	0	0	0	-1
17 46	1 5		-1	2	-2 5	2	2	3	3	3	2	4	1	1	2	2	4	1	3	3	2	1	4	2	2	3	5	1	0	0	1	1	1	1	0	0	-1
18 47		2 -1	3	2	1 2	2	1	1	3	2	4	3	3	4	4	1	2	3	2	4	4	3	1	4	3	3	5	1	1	0	0	1	0	0	0	1	The pavements are unclean
19 49				2	4 2	2	2	9	4	4	1	1	2	9	4	4	9	9	4	4	۵	3	1	2	9	2	4	-2		-2	-2	-2	-2	.2	-2	-2	-)

The 14 questions in the Survey are arranged as separate columns in the Excel database: with a separate row for each participant (denoted by the respondent ID). Each participant has a unique identifier (column headed ID in this database). For example, the column headed Q1 contains the answers to the first question "**Are you...**" with the numerical codes 1 for 'Male' and 2 for 'Female'. We used the numerical code -2 if participants did not tick either of the two boxes. This is important as you may prefer to exclude people with missing values from your statistical analysis.

Q3 in the Survey asked "How long have you lived at this address?" with separate boxes for years and months (if a participant lived at the address for less than one year). This has been arranged in the Excel database as two columns: Q3Y contains the number of years, and Q3M contains the number of months. Similarly, Q8 asks participants whether nine factors (e.g. speed of traffic, amount of traffic) "affect your ability to walk to places in your local area?" The answers for each factor (numerical codes: ranging from 1 for "Never" to 4 for "Always") are arranged as nine columns (e.g. Q8A for the speed of traffic, and Q8B for the amount of traffic). We will be analysing this data later.

In the remaining sections of this User Guide, we show examples of how to tabulate the data from the Health and Neighbourhood Mobility Survey using Pivot Tables² and how you could show the results graphically.

EXAMPLE 1: SIMPLE DESCRIPTIVE ANALYSIS

Our first example shows how you can run a simple descriptive analysis. For example, you may want to know the age distribution of the participants in your survey (e.g. the percentage of participants who were aged 85 years and over). This can be shown in a frequency table³ and as a column chart.

Frequency table

To create a frequency table using pivot tables in Excel, in the worksheet containing the raw data, click on the *Insert* tab, and select *PivotTable*.

Create PivotTable	8 23
Choose the data that you want to analyze	
Select a table or range	
Table/Range: 'Raw data'!\$A\$1:\$AN\$101	
Use an external data source	
Choose Connection	
Connection name:	
Choose where you want the PivotTable report to be pla	ced
New Worksheet	
Existing Worksheet	
Location: 'Raw data'!\$AP\$4	1
ОК	Cancel

In the Create PivotTable box, use the 'Select a table or range' option, and using the mouse on your computer highlight the whole survey data.

² PivotTables are one way to summarise, analyse, explore, and present your data. They are highly flexible and can be adjusted quickly depending on how you need to display your results (<u>https://support.office.com/en-gb/article/Create-a-PivotTable-to-analyze-worksheet-data-a9a84538-bfe9-</u> <u>40a9-a8e9-f99134456576</u>).

³ A frequency table is a table that lists items and shows the number of times they occur.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

Alternatively, you could select all the cells in the worksheet containing the survey data by clicking the Select All button in the top left corner of the worksheet (as below) and then click on the *Insert* tab, and select *PivotTable* :



We also found that minor changes to road design could make walking trips much shorter and quicker, reduce the amount pedestrians are exposed to traffic, and could improve the quality of the street environment.⁴

It is probably easier to choose to create your PivotTable report in a New Worksheet rather than in the Existing one. In the new worksheet, an option menu will appear on the right-hand side of the screen: the column names attached to the Survey questions will appear as tick boxes, and below there will be four boxes: Report Filter, Column Labels, Row Labels and Σ Values.

You need to drag the chosen column headings into the boxes to create the PivotTable. In this example, we drag the column heading Q2 into the Row Labels box. In the Σ Values box, drag the column heading ID. We do not want the 'Sum of ID number' (which is the default setting). Choose the down arrow in the Σ Values box: select Value Field Settings: change Sum of ID to **Count** of ID in the option list (as shown below).

alue Field Settings		9	23)	
Source Name: ID					
ustom Name: Count o	of ID				
Summarize Values By	Show Values As				
<u>S</u> ummarize value fi	eld by				
Choose the type of cal	culation that you wa	ant to use to sum			
		ant to use to sum	marize		
data from the selected			marize	_	
data from the selected Sum	field		marize		
data from the selected Sum Count	field		marize		
data from the selected Sum Count Average	field		imarize		
data from the selected Sum Count	field		manze		
data from the selected Sum Count Average Max	field	A .	manze		
data from the selected Sum Count Average Max Min	field	A .	manze		
data from the selected Sum Count Average Max Min	field	A .	manze		
data from the selected Sum Count Average Max Min	field		ancel		

⁴ Anciaes PR, Jones P. The effectiveness of changes in street layout and design for reducing barriers to walking. *Transportation Research Record* 2016; 2586: 39-47.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

The PivotTable Field List will then look like this:

PivotTable Field List		* ×
Choose fields to add to	report:	G •
ID		*
Q 1		
Q2 Q3Y		
Q3M		
Q4		
Q5		
Q6		E
Q7		
Q8B		
Q8C		
Q8D		
Q8E		
Q8F		
Q8H		
Q 8I		
Q9A		
Q9B		
Q9D		
Q9E		
09F		T
Drag fields between are		
Report Filter	Column L	abels
Row Labels	Σ Values	
Q2 •	Count of ID	-
Defer Layout Updat	e Up	date

The PivotTable created will then show the number of survey participants within each age-group category.⁵ To assign value labels within the PivotTable you can click on the cells of the Row Labels column in the PivotTable: e.g. replace 1 with '18-24', 2 with '25-34', and so on. You should then have a PivotTable that looks something like this (showing, for example, that 21 of the 100 participants were in the 45-54 age-group):

Row Labels	Count of ID
-2	5
18-24	10
25-34	6
35-44	16
45-54	21
55-64	15
65-74	16
75-84	5
85+	6
Grand Total	100

Showing percentages rather than frequency

If you want to show the percentage of survey participants who belonged to each age-group then you could click in the "Count of ID" column, use right-click, and select "Show Values As -> % of Grand Total" (as shown below). Other summary statistics are available.⁶

	А	В	С	D	E	F	G	Н	1 I I I I I I I I I I I I I I I I I I I	J	K	Â
1												
2												
3		Row Labels Co	ount of ID									
4		-2	Calibri v 11 v A [*] B I = A v A									
5		18-24	Copy									
6		25-34	Format Cells Number Forma <u>t</u>									
7		35-44	Befresh Sort									
8		45-54	Remoye "Count of Summarize Values									=
9		55-64	Show Values As Show Dgtails		Grand Total							
.0		65-74	Value Field Setting PivotTable Option	p	⊆olumn Total Bow Total							
.1		75-84	Show Field List		f Barent Row Total Pgrent Column Total							
.2		85+	6	% of	Parent Total erence From							
.3		Grand Total	100	% Di	(ference From ning <u>T</u> otal In							
.4					enning Total In k Smallest to Largest							
.5				Rani Inde	k Largest to Smallest x							
c .				Mon	e Options							

You can remove the missing values (coded in this example as -2) by clicking on the Row Labels down arrow in the PivotTable, and unchecking the -2 label (the percentages will then be recalculated

⁵ If you make a mistake creating a PivotTable report then click inside the PivotTable, click on the Options tab, choose "Select -> EntirePivotTable", and then press delete.

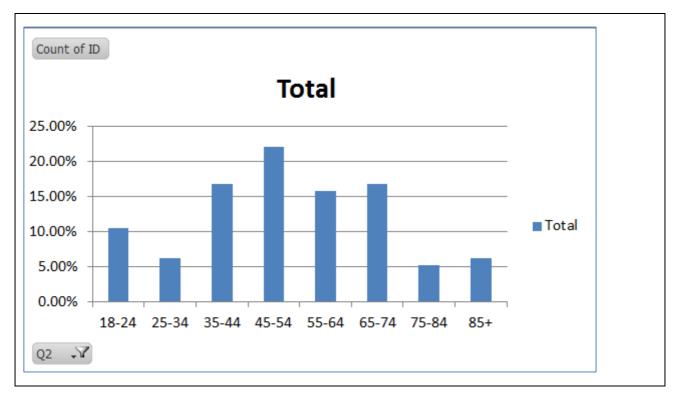
⁶ This table can be easily extended. For example, to obtain counts of the number of male and female participants in each age-group, drag the Q1 column heading into the Column Labels box.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

excluding the missing data). Similarly, you could uncheck the row labelled "(blank"), which may appear⁷.

Column chart

Once you have the appropriate values in a PivotTable then you can consider using charts to show your findings graphically. To show the age distribution of the survey participants in a column chart you can highlight the whole PivotTable, click on the Insert tab, and select a Clustered Column Chart (2-D). You should then have a Chart that looks something like this:



This chart shows that 22% of survey participants were aged 45-54: just over 5% of participants were aged 85 years and over.

The grey boxes in this Chart can be removed by clicking on one of the grey boxes, using right-click, and then choosing the "Hide All Field Buttons on Chart" option. Of course, many formatting improvements can be made to this Chart (such as getting rid of the decimal points on the vertical axis), but these are beyond the scope of this User Guide.

⁷ The (blank) label may appear if earlier you selected all the cells in the "Raw-Data" worksheet by clicking the Select All button in the top left corner of the worksheet.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

EXAMPLE 2: INDICATORS OF COMMUNITY SEVERANCE BY AGE-GROUP

In this more complicated example we show how you can calculate and graphically show the responses to a question for survey participants in different categories.

In this example, we are finding out the percentage of survey participants in each age-group who reported that their ability to walk to places in their local area was "Often" or "Always" affected by factors such as the speed or the amount of traffic. These indicators of the "barrier effect" of transport infrastructure or of motorised traffic were asked in Q8 of the Health and Neighbourhood Mobility Survey as follows:

Survey question on barriers to walkability

8)	Thinking about everywhere within a 20 mir How often, if ever, do the following factor in your local area? <i>Tick one box on each lin</i>	s affect you			
		Never	Occasionally	Often	Always
a.	Speed of traffic				
b.	Amount of traffic				
c.	Lack of crossing points (for example, for nearby roads, railways, or waterways)				
d.	Crossings do not allow adequate time to cross				
e.	Poor lighting				
f.	Poor pavements or paths				
g.	Noise pollution				
h.	Air pollution				
i.	Fear of crime				

In this example, we focus on four of the community severance indicators:

- amount of traffic (column Q8B in the Excel database);
- crossings that do not allow adequate time to cross (column Q8D);
- poor pavements or paths (column Q8F); and
- air pollution (column Q8H).

To show these results, we build on the earlier example. In the worksheet containing the raw data, click on the *Insert* tab, and select *PivotTable*. In the Create PivotTable box, use the 'Select a table or range' option, and using the mouse on your computer highlight the whole survey data. We recommend as a simple first step creating four PivotTables within the same new Excel Worksheet: i.e. a separate PivotTable for each of the four indicators of community severance. For example, to create the PivotTable for the amount of traffic (Q8B), drag the column heading for age-group (Q2) into the Row Labels box, drag the column heading Q8B into the Column Labels box, and drag ID number into the Σ Values box. As before, we do not want the 'Sum of ID number' (the default). Choose the down arrow in the Σ Values box: select Value Field Settings: change Sum of ID to Count of ID in the option list (as shown below).

PivotTable Field List		▼ ×
Choose fields to add to	report:	L -
ID Q1 Q2 Q3Y Q3M Q4 Q5 Q6 Q7 Q8A Q8E Q8F Q8G Q8F Q8A Q9A Q9A Q9B Q9C Q9E Q9E		
©09F ag fields between are ⁷ Report Filter	Q8B	n Labels
Q2	Σ Values	
Defer Layout Updat	te 🗌	Update

Adding appropriate Row and Column Labels, excluding missing values⁸, and entering a title for the PivotTable, you could have a PivotTable that looks something like this:

⁸ Click on the Row Labels down arrow in the PivotTable, and uncheck the box containing the -2 Row Label; click on the Column Labels down arrow in the PivotTable, and uncheck the box which contains the -2 Column Label.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

Q8B: Affec	ted by t	he volume of t	raffic wh	en walkin	g to places	in your local area
Count of I C	Colum 🚽					
Row La 🖵	Never	Occasionally	Often	Always	irand Tota	I
18-24	3	1	1	4	9	
25-34	1	1	1	3	6	
35-44	1	5	7	3	16	
45-54	2	6	6	6	20	
55-64	5	3	1	4	13	
65-74	4	5	6	1	16	
75-84	1		2	2	5	
85+	3		2	1	6	
Grand Tot	20	21	26	24	91	

Then click on a cell within the same Excel Worksheet where it would be convenient to create a similar PivotTable for the barrier representing crossings that do not allow adequate time to cross (column Q8D). This cell would be the **upper-left cell** of the new PivotTable. Repeating this procedure, we would then have four separate PivotTables within the same Excel Worksheet that looks something like this:

A	В	С	D	E	F	G	Н	1	J	K	L	M	N
Q8B: Affec	ted by th	ne volume of t	raffic wh	en walkin	g to places	in your loca	l area?	Q8D: Affec	ted by c	rossings with r	not enou	gh time to	cross?
Count of I	Colum 🖵	·						Count of I	umn L 🖅	1			
Row La-T	Never	Occasionally	Often	Always	irand Tota			Row La-T	Never	Occasionally	Often	Always	irand Total
18-24	3	1	1	4	9			18-24	3	2	3	1	9
25-34	1	1	1	3	6			25-34	1	4		1	6
35-44	1	5	7	3	16			35-44		5	6	5	16
45-54	2	6	6	6	20			45-54	9	3	6	2	20
55-64	5	3	1	4	13			55-64	5	2	5	1	13
65-74	4	5	6	1	16			65-74	7	2	2	5	16
75-84	1		2	2	5			75-84	1	2		2	5
85+	3		2	1	6			85+	5	1			6
Grand Tot	20	21	26	24	91			Grand Tot	31	21	22	17	91
Q8F: Affec	ted by p	oor pavements	s or path	s?				Q8H: Affec	ted by a	ir pollution?			
Count of I	Colum 🖵	r						Count of I	umn L 🖅				
Row La 🗐	Never	Occasionally	Often	Always	irand Tota			Row La-T	Never	Occasionally	Often	Always	irand Total
18-24	2	3	3	1	9			18-24	2	2	3	2	9
25-34	3	1	1	1	6			25-34		3	1	2	6
35-44	4	2	3	7	16			35-44	4	3	5	4	16
45-54	4	6	5	5	20			45-54	6	2	8	4	20
55-64	5	4	3	1	13			55-64	4	4	1	4	13
65-74	5	2	4	5	16			65-74	4	3	5	4	16
75-84	3	1	1		5			75-84	1	1	1	2	5
85+	3		3		6			85+	2	2	2		6
Grand Tol	29	19	23	20	91			Grand Tot	23	20	26	22	91

As mentioned earlier, we want to show the percentage of survey participants in each age-group who reported that their ability to walk to places in their local area was "Often" **or** "Always" affected by factors such as the speed or the amount of traffic. To achieve this, we must add the percentage of participants in the "Often" and "Always" columns.

We can achieve this in the following three steps.

First, we convert the cell counts in the four PivotTables to row percentages: by clicking in the cells of the PivotTable, use right-click, and select "Show Values As -> % of Row Total" (as shown below):

Showing percentages rather than frequency

	А	В	С	D	E	F	G	Н	1	J	K	L	М	N			
1																	
			ne volume of t		walking	to places in	your local	area?	Q8D: Affec	ted by ci	ossings with no	ot enough	n time to c	ross?			
3	Count of II C	Column	- 11 - A A 🧃	% • 5 7					Count of Iblumn La'								
4	Row Lab,	Neвz	🔳 💩 + 🛕 + 🖽 + 1	a .a 🗸 🕨	Always	Grand Tota	l		Row Lab	Never	Occasionally	Often	Always	Grand Total			
5	18-24		T 1	1	4	9			18-24	3	2	3	1	9			
6	25-34		ormat Cells	1	3	6			25-34	1	4		1	6			
7	35-44		lumber Formaţ	7	3	16			35-44		5	6	5	16			
8	45-54	1	<u>R</u> efresh iort ≯	6	6	20			45-54	9	3	6	2	20			
9	55-64		Remoye "Count of ID"	1	4	13			55-64	5	2	5	1	13			
10	65-74	4	iu <u>m</u> marize Values By →	6	1	16			65-74	7	2	2	5	16			
11	75-84	-	ihow Values As 🔹 🕨	No Calculatio		5			75-84	1	2		2	5			
12	85+	1.1.1	how Dgtails /alue Field Settings	% of <u>C</u> olumn		6			85+	5	1			6			
13	Grand Tot	2	PivotTable Options	% of <u>Row</u> Tot	al	91			Grand Tot	31	21	22	17	91			
14		📳 H	Hide Fiel <u>d</u> List	% <u>O</u> f % of <u>P</u> arent F	ow Total												
15	Q8F: Affect	ted by p	oor pavement	% of Parent C					Q8H: Affec	ted by ai	r pollution?						
16	Count of II C	Column	Ţ	% of Pargnt T Difference Fr					Count of Ib	Count of Iblumn La'							
17	Row Lab,	Never	Occasionally	% Difference		Grand Tota	I		Row Lab,	Never	Occasionally	Often	Always	Grand Total			
18	18-24	2	3	Running Tota % Running Tota		9			18-24	2	2	3	2	9			
19	25-34	3	1	Rank <u>S</u> malles	t to Largest	6			25-34		3	1	2	6			
20	35-44	4	2	Rank Largest	to Smallest	16			35-44	4	3	5	4	16			
21	45-54	4	6	More Option	5	20			45-54	6	2	8	4	20			
22	55-64	5	4	3	1	13			55-64	4	4	1	4	13			
23	65-74	5	2	4	5	16			65-74	4	3	5	4	16			
24	75-84	3	1	1		5			75-84	1	1	1	2	5			
25	85+	3		3		6			85+	2	2	2		6			
26	Grand Tot	29	19	23	20	91			Grand Tot	23	20	26	22	91			

The first PivotTable would then look something like this:

Q8B: Affected b	y the volume of	traffic when wa	lking to p	places in	your local area?
Count of ID C	olumn Labels 🛛	T			
Row Labels 🗊	Never	Occasionally	Often	Always	Grand Total
18-24	33.33%	11.11%	11.11%	44.44%	100.00%
25-34	16.67%	16.67%	16.67%	50.00%	100.00%
35-44	6.25%	31.25%	43.75%	18.75%	100.00%
45-54	10.00%	30.00%	30.00%	30.00%	100.00%
55-64	38.46%	23.08%	7.69%	30.77%	100.00%
65-74	25.00%	31.25%	37.50%	6.25%	100.00%
75-84	20.00%	0.00%	40.00%	40.00%	100.00%
85+	50.00%	0.00%	33.33%	16.67%	100.00%
Grand Total	21.98%	23.08%	28.57%	26.37%	100.00%

We can change the formatting to show the percentages to no decimal points by highlighting all the numbers in a PivotTable, right-click, select "Format Cells" and use the down arrow to show 0 decimal places (as shown below) and click OK.

ormat Cells		? ×
Number Alignment	Font Border Fill Protection	
General Number Currency Accounting	Sample 33%	
Date Time Percentage Fraction Scientific Text Special Custom	Decimal places: 0	
Percentage formate multi	bly the cell value by 100 and displays the result with a percer	at symbol
Percentage formats filulu	any the centralize by 100 and displays the result with a percer	it symbol.
	ОК	Cancel

Doing this separately for the four PivotTables, the Excel worksheet would then look something like this:

Г

4	A	В	С	D	E	F	G	H	I	J	K	L	M	N	0
1 2	Q8B: Affected	by the volume of	f traffic when wa	lking to	places in	vour local area	a?		Q8D: Affected b	oy crossings with no	t enough time t	to cross.	?		
3	Count of ID	Column Labels		, in the second s					Count of ID	Column Labels	-				
4	Row Labels	Never	Occasionally	Often	Always	Grand Total			Row Labels 🗊	Never	Occasionally	Often	Always	Grand Total	
5	18-24	33%	11%	11%	44%	100%			18-24	33%	22%	33%	11%	100%	
6	25-34	17%	17%	17%	50%	100%			25-34	17%	67%	0%	17%	100%	
7	35-44	6%	31%	44%	19%	100%			35-44	0%	31%	38%	31%	100%	
8	45-54	10%	30%	30%	30%	100%			45-54	45%	15%	30%	10%	100%	
9	55-64	38%	23%	8%	31%	100%			55-64	38%	15%	38%	8%	100%	
0	65-74	25%	31%	38%	6%	100%			65-74	44%	13%	13%	31%	100%	
11	75-84	20%	0%	40%	40%	100%			75-84	20%	40%	0%	40%	100%	
12	85+	50%	0%	33%	17%	100%			85+	83%	17%	0%	0%	100%	
3	Grand Total	22%	23%	29%	26%	100%			Grand Total	34%	23%	24%	19%	100%	
٤4															
15	Q8F: Affected	by poor pavemer	nts or paths?						Q8H: Affected b	y air pollution?					
16	Count of ID	Column Labels	JT.						Count of ID	Column Labels 🔉	r				
7	Row Labels 🔉	Never	Occasionally	Often	Always	Grand Total			Row Labels 🗊	Never	Occasionally	Often	Always	Grand Total	
18	18-24	22%	33%	33%	11%	100%			18-24	22%	22%	33%	22%	100%	
۱9	25-34	50%	17%	17%	17%	100%			25-34	0%	50%	17%	33%	100%	
20	35-44	25%	13%	19%	44%	100%			35-44	25%	19%	31%	25%	100%	
21	45-54	20%	30%	25%	25%	100%			45-54	30%	10%	40%	20%	100%	
22	55-64	38%	31%	23%	8%	100%			55-64	31%	31%	8%	31%	100%	
23	65-74	31%	13%	25%	31%	100%			65-74	25%	19%	31%	25%	100%	
24	75-84	60%	20%	20%	0%	100%			75-84	20%	20%	20%	40%	100%	
25	85+	50%	0%	50%	0%	100%			85+	33%	33%	33%	0%	100%	
			21%	25%	22%	100%			Grand Total	25%	22%	29%	24%	100%	

Secondly, we need to add the percentages in the separate "Often" <u>and</u> "Always" columns. Unfortunately, this can be quite problematic due to the embedded formulae within the PivotTable. Therefore, we recommend using **Copy - Paste values** to create a copy of each PivotTable before we do our adding up. Using this method, we want to copy the contents of a cell, but just want to paste the value and not the underlying formula that is displayed in the formula bar.⁹ To do this:

- 1. Highlight the whole PivotTable;
- 2. Use copy (Ctrl-C¹⁰);
- 3. Select on the upper-left cell of the paste area (where you want the new Table to go); and
- 4. Right-click and then check the "paste values" box.

Repeat this for the other three PivotTables.

Then format each table to show as percentages with no decimal points (by highlighting all the numbers in the table, right-click, select "**Format Cells**", choose the **Percentage** option, and use the down arrow to show 0 decimal places).

The Excel worksheet would then look something like this (where the four created PivotTables are on the left-side of the worksheet, and the four copies are on the right-side):

A	В	С	D	E	F	G	H I	J	K	L	M	N	O P	Q	R	S	Ť	U	V	W	Х
Q8B: Affected b	w the volume o	of traffic when y	alking *	o placer	in your local	area?	OSD: Affected b	w crossings with	not enough time	to cross	2		088- 46	ected by th	e volume :	of traffic	when we	king to pl	aces in v	our local :	area?
	Column Labels		anking t	o places	in your local	aicai	Count of ID	Column Labels		to cross				Column Li		or cranne	when wa	king to pi	aces my	our local i	area:
Row Labels	Never	Occasionally	Often	Δlwavs	Grand Total		Row Labels -T	Never		Often	Always	Grand Total	Row Lab		Occasion ()ften	Always	Grand Tot	al		
18-24	33%	11%	11%	44%	100%		18-24	33%	22%	33%	11%	100%	18-24	33%	11%	11%		100%			
25-34	17%	17%	17%	50%	100%		25-34	17%	67%	0%	17%	100%	25-34	17%	17%	17%		100%			
35-44	6%	31%	44%	19%	100%		35-44	0%	31%	38%	31%	100%	35-44	6%	31%	44%	19%	100%			
45-54	10%	30%	30%	30%	100%		45-54	45%	15%	30%	10%	100%	45-54	10%	30%	30%		100%			
55-64	38%	23%	8%	31%	100%		55-64	38%	15%	38%	8%	100%	55-64	38%	23%	8%		100%			
65-74	25%	31%	38%	6%	100%		65-74	44%	13%	13%	31%	100%	65-74	25%	31%	38%	6%	100%			
1 75-84	20%	0%	40%	40%	100%		75-84	20%	40%	0%	40%	100%	75-84	20%	0%	40%	40%	100%			
2 85+	50%	0%	33%	17%	100%		85+	83%	17%	0%	0%	100%	85+	50%	0%	33%	17%	100%			
Grand Total	22%	23%	29%	26%	100%		Grand Total	34%	23%	24%	19%	100%	Grand To	22%	23%	29%	26%	100%			
5 O8F: Affected b	v poor paveme	nts or paths?					O8H: Affected b	v air pollution?					Q8D: Aff	ected by cro	ossings wi	th not e	nough tim	e to cross.	?		
	Column Labels						Count of ID	Column Labels	T					Column L							
7 Row Labels -T	Never	Occasionally	Often	Always	Grand Total		Row Labels	Never	Occasionally	Often	Always	Grand Total	Row Lab		Occasion (Often	Always	Grand Tot	al		
8 18-24	22%	33%	33%	11%	100%		18-24	22%	22%	33%	22%	100%	18-24	33%	22%	33%		100%			
9 25-34	50%	17%	17%	17%	100%		25-34	0%	50%	17%	33%	100%	25-34	17%	67%	0%		100%			
0 35-44	25%	13%	19%	44%	100%		35-44	25%	19%	31%	25%	100%	35-44	0%	31%	38%		100%			
1 45-54	20%	30%	25%	25%	100%		45-54	30%	10%	40%	20%	100%	45-54	45%	15%	30%	10%	100%			
2 55-64	38%	31%	23%	8%	100%		55-64	31%	31%	8%	31%	100%	55-64	38%	15%	38%	8%	100%			
3 65-74	31%	13%	25%	31%	100%		65-74	25%	19%	3196	25%	100%	65-74	44%	13%	13%	31%	100%			
4 75-84	60%	20%	20%	0%	100%		75-84	20%	20%	20%	40%	100%	75-84	20%	40%	0%	40%	100%			
5 85+	50%	0%	50%	0%	100%		85+	33%	33%	33%	0%	100%	85+	83%	17%	0%	0%	100%			
6 Grand Total	32%	21%	25%	22%	100%		Grand Total	25%	22%	29%	24%	100%	Grand Te	34%	23%	24%	19%	100%			
7																					
в													Q8F: Affe	ected by po	or paveme	ents or p	aths?				
9													Count of	Column La	abels						
D													Row Lab	Never	Occasion 0	Often	Always	Grand Tot	al		
1													18-24	22%	33%	33%	11%	100%			
2													25-34	50%	17%	17%	17%	100%			
3													35-44	25%	13%	19%	44%	100%			
4													45-54	20%	30%	25%	25%	100%			
5													55-64	38%	31%	23%	8%	100%			
6													65-74	31%	13%	25%		100%			
7													75-84	60%	20%	20%		100%			
В													85+	50%	0%	50%	0%	100%			
9													Grand Te	32%	21%	25%	22%	100%			
D																					
1														ected by ai		1?					
2														Column La							
3													Row Lab		Occasion (Grand Tot	al		
4													18-24	22%	22%	33%		100%			
5													25-34	0%	50%	17%		100%			
5													35-44	25%	19%	31%		100%			
7													45-54	30%	10%	40%		100%			
B													55-64	31%	31%	8%		100%			
9													65-74	25%	19%	31%		100%			
D													75-84	20%	20%	20%		100%			
													85+ Grand Te	33%	33%	33%		100%			
2																					

Finally, for summary purposes, we can then create our own table in Excel which shows the percentage of survey participants that were "Often" or "Always" affected by a particular barrier. To do this, using the tables we have just copied (i.e. the tables pasted with values, not formulas), we can calculate the relevant percentages for being "Often" <u>or</u> "Always" affected by a barrier.

⁹ A useful guide to this procedure can be found here: <u>https://support.office.com/en-us/article/Paste-values-not-formulas-12687B4D-C79F-4137-B0CC-947C229C55B9</u>.

¹⁰ Press the C key when holding down the Ctrl key on your keyboard.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

For example, within the same worksheet, we can create an empty table such as this:

	Q8B	Q8D	Q8F	Q8H
18-24				
25-34				
35-44				
45-54				
55-64				
65-74				
75-84				
85+				

Within the cells of this table, we can use Excel's built-in functions to add the appropriate percentages.

For example, in the first row of the column headed Q8B, we can type in the cell

= SUM(S5,T5)

and press return.

In this example, S5 is the cell that contains the % of participants aged 18-24 who reported being "Often" affected by the volume of traffic; T5 is the cell that contains the % of participants aged 18-24 who reported being "Always" affected by the volume of traffic. We used the SUM function to add these two %s. Repeating this for each PivotTable would give us the following:

Using Excel's built in functions to combine columns

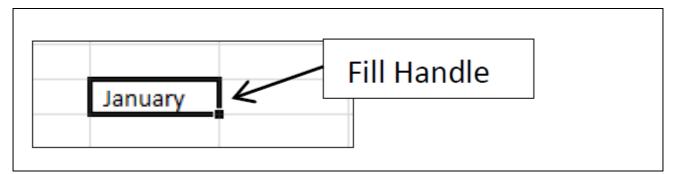
	Q8B	Q8D	Q8F	Q8H
18-24	=SUM(S5,T5)	=SUM(S18,T18)	=SUM(S31,T31)	=SUM(S44,T44)
25-34				
35-44				
45-54				
55-64				
65-74				
75-84				
85+				

Q8B Q8D Q8F Q8H 18-24 56% 44% 44% 56% 25-34 35-44 45-54 55-64 65-74 75-84 85+

For the first row of our Table the results would be as follows:

Once we have the correct formula in place for each column we can then use Excel's AUTOFILL function to fill cell content: this can save time, and minimise computing error, when you have content to enter that follows a repeatable pattern or sequence.

More specifically, we can then take advantage of the **Fill Handle** in Excel: this is the little black square in the lower right-hand corner of the selected cell (as illustrated below)¹¹:



Having used the SUM formula for the first row in a column, move the cursor over the fill handle. The cursor becomes a black crosshair (+). Click and drag the fill handle down the column. The percentage of participants in each age-group who were "Often" or "Always" affected would then be calculated automatically. Then repeat this procedure for the other three columns. The results would be as follows:

% of participants "Often" or "Always" affected by a particular barrier by age-group

¹¹ More details on using autofill in Excel to fill cell content can be found here: <u>www.siumed.edu/lib/classes/excel/Excel2013-Basics.pdf</u>

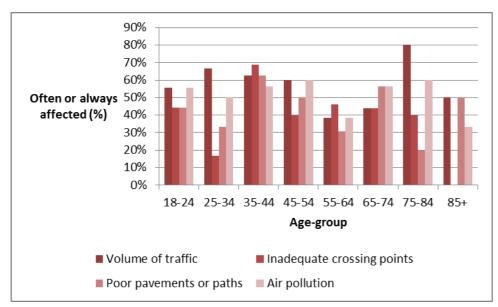
This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

STREET MOBILITY PROJECT User Guide for Analysing the Health and Mobility Survey

			1	
	Q8B	Q8D	Q8F	Q8H
18-24	56%	44%	44%	56%
25-34	67%	17%	33%	50%
35-44	63%	69%	63%	56%
45-54	60%	40%	50%	60%
55-64	38%	46%	31%	38%
65-74	44%	44%	56%	56%
75-84	80%	40%	20%	60%
85+	50%	0%	50%	33%

Column chart

Once you have the appropriate values in your own Excel Table then you can consider using a chart to graphically show your findings. To show the percentage of the survey participants who were "Often" or "Always" affected by the four chosen barriers separately by age-group you can highlight the whole Table, click on the Insert tab, and select a Clustered Column Chart (2-D). After some formatting improvements, you could then have a Chart that looks something like this:



EXAMPLE 3: INDICATORS OF COMMUNITY SEVERANCE BY MOBILITY LIMITATION

In this final example we show how you can calculate and graphically show the percentage of survey participants with and without a mobility limitation (Q7 in the Survey) who reported that barriers such as the speed or the amount of traffic were "Often" or "Always" a problem on the busiest road in the local area. These potential "barrier effects" are asked in Q9 of the Health and Neighbourhood Mobility Survey as follows:

Survey question on problems on the busiest road

9)	We are now asking you about [<u>insert name of</u> any of the following a problem <u>on this road</u>		er, are
		Occasionally	Always
a.	Speed of traffic		
b.	Amount of traffic		
c.	Lack of crossing points (for example, for nearby roads, railways, or waterways)		
d.	Crossings do not allow adequate time to cross		
e.	Poor lighting		
f.	Poor pavements or paths		
g.	Noise pollution		
h.	Air pollution		
i.	Fear of crime		

In this example, we focus on each potential "barrier effect". The results will be compared for the two groups of participants: those with and without a mobility limitation.

To show these results, we build on the earlier examples.

The first step is to create a separate PivotTable for each "barrier effect". As before, drag the relevant column heading for the barrier effect into the Column Labels box, drag the column for mobility limitations (column Q7 in the Excel database) into the Row Labels box, and drag the column heading ID into the Σ Values box. We do not want the 'Sum of ID number' (which is the default setting). Choose the down arrow in the Σ Values box: select Value Field Settings: change Sum of ID to **Count** of ID in the option list.

After adding appropriate Row and Column Labels, excluding missing values, and entering a title for each PivotTable, the same Excel Worksheet containing the nine separate PivotTables would look something like this:

A	В	С	D	E	5	G	Н		J	К	1	М
1	0	C	U			0				N		IVI
2 Q9A: Speed of traffic							Q9F: Poor pavements or paths					
3 Count of ID	olumn La 🖓	r					Count of ID	olumn La 🖓	r			
4 Row Labels	Never	Occasionally	Often	Always	Grand Total		Row Labels	Never	Occasionally	Often	Always	Grand Total
5 Has mobility limitation	7	9	14	8	38		Has mobility limitation	9	8	15	6	38
6 Does not have mobility limitation	16	16	12	15	59		Does not have mobility limitation	15	12	15	17	59
7 Grand Total	23	25	26	23	97		Grand Total	24	20	30	23	97
8												
9 Q9B: Amount of traffic							Q9G: Noise pollution					
10 Count of ID	olumn La 🖓	r					Count of ID	olumn La 🖓	r			
11 Row Labels	 Never 	Occasionally	Often	Always	Grand Total		Row Labels	 Never 	Occasionally	Often	Always	Grand Total
12 Has mobility limitation	5	15	8	10	38		Has mobility limitation	11	5	14	8	38
13 Does not have mobility limitation	16	15	9	19	59		Does not have mobility limitation	17	10	21	11	59
14 Grand Total	21	30	17	29	97		Grand Total	28	15	35	19	97
15												
16 Q9C: Lack of crossing points							Q9H: Air pollution					
17 Count of ID	olumn La 🖓	r					Count of ID	olumn La 🖓	r			
18 Row Labels	 Never 	Occasionally	Often	Always	Grand Total		Row Labels	 Never 	Occasionally	Often	Always	Grand Total
19 Has mobility limitation	9	13	11	5	38		Has mobility limitation	10	6	7	15	38
20 Does not have mobility limitation	11	14	15	19	59		Does not have mobility limitation	19	9	15	16	59
21 Grand Total	20	27	26	24	97		Grand Total	29	15	22	31	97
22												
23 Q9D: Crossings do not allow adequat							Q9I: Fear of crime					
24 Count of ID	olumn La 🖓	r					Count of ID	olumn La 🖓	r			
25 Row Labels	 Never 	Occasionally	Often	Always	Grand Total		Row Labels	 Never 	Occasionally	Often	Always	Grand Total
26 Has mobility limitation	8	11	11	8	38		Has mobility limitation	7	6	11	14	38
27 Does not have mobility limitation	14	15	15	15	59		Does not have mobility limitation	11	19	12	17	59
28 Grand Total	22	26	26	23	97		Grand Total	18	25	23	31	97
29												
30 Q9E: Poor lighting												
31 Count of ID	olumn La 🖓											
32 Row Labels	 Never 	Occasionally	Often	Always	Grand Total							
33 Has mobility limitation	7	12	10	9	38							
34 Does not have mobility limitation	16	9	18	16	59							
35 Grand Total	23	21	28	25	97							

The second step is to convert the cell counts in the nine PivotTables to row percentages. As in the earlier example, click in the cells of the PivotTable, use right-click, and select "Show Values As -> % of Row Total". Change the formatting to show percentages to no decimal points by highlighting all the numbers in a PivotTable, right-click, select "Format Cells" and use the down arrow to show 0 decimal places.

Doing this separately for the nine PivotTables, the Excel worksheet would then look something like this:

A	В	С	D	E	F	G	н	I. I.	J	К	L	М
1												
2 Q9A: Speed of traffic							Q9F: Poor pavements or paths					
3 Count of ID	Column Labels 🎜						Count of ID	Column Labels 🖵				
4 Row Labels 🔹	Never	Occasionally	Often	Always	Grand Total		Row Labels 🔹	Never	Occasionally	Often	Always	Grand Total
5 Has mobility limitation	18%	24%	37%	21%	100%		Has mobility limitation	24%	21%	39%	16%	100%
6 Does not have mobility limitation	27%	27%	20%	25%	100%		Does not have mobility limitation	25%	20%	25%	29%	100%
7 Grand Total	24%	26%	27%	24%	100%		Grand Total	25%	21%	31%	24%	100%
8 9 Q9B: Amount of traffic							Q9G: Noise pollution					
10 Count of ID	Column Labels 🖅						Count of ID	Column Labels 🖅	1			
11 Row Labels	Never	Occasionally	Offen	Abusto	Grand Total		Row Labels		Occasionally	Offen	Abusto	Grand Total
12 Has mobility limitation	13%	39%	21%	26%	100%		Has mobility limitation	29%	13%	37%	21%	100%
13 Does not have mobility limitation	27%	25%	15%	32%	100%		Does not have mobility limitation	29%	17%	36%	19%	100%
14 Grand Total	27%	31%	15%	32%	100%		Grand Total	29%	17%	36%	20%	100%
	2270	31%	18%	30%	100%		Grand Total	29%	15%	30%	20%	100%
15 16 Q9C: Lack of crossing points							Q9H: Air pollution					
	Column Labels 🖵							Column Labels 🗸	1			
17 Count of ID 18 Row Labels							Count of ID Row Labels			-		
	Never				Grand Total		non casero		Occasionally			Grand Total
19 Has mobility limitation	24%	34%	29%	13%	100%		Has mobility limitation	26%	16%	18%	39%	100%
20 Does not have mobility limitation	19%	24%	25%	32%	100%		Does not have mobility limitation	32%	15%	25%	27%	100%
21 Grand Total	21%	28%	27%	25%	100%		Grand Total	30%	15%	23%	32%	100%
12												
23 Q9D: Crossings do not allow adequa							Q9I: Fear of crime					
24 Count of ID	Column Labels 🖵						Count of ID	Column Labels 🖵				
25 Row Labels	Never				Grand Total		Row Labels		Occasionally			Grand Total
26 Has mobility limitation	21%	29%	29%	21%	100%		Has mobility limitation	18%	16%	29%	37%	100%
27 Does not have mobility limitation	24%	25%	25%	25%	100%		Does not have mobility limitation	19%	32%	20%	29%	100%
28 Grand Total	23%	27%	27%	24%	100%		Grand Total	19%	26%	24%	32%	100%
29												
30 Q9E: Poor lighting												
31 Count of ID	Column Labels 🖵											
32 Row Labels	Never	Occasionally										
33 Has mobility limitation	18%	32%	26%	24%	100%							
34 Does not have mobility limitation	27%	15%	31%	27%	100%							
35 Grand Total	24%	22%	29%	26%	100%							

We are then able to add the percentages in the separate "Often" and "Always" columns. As in the earlier example, this is easier to do by using **Copy – Paste values** to create a copy of each PivotTable before we do our adding up. For each PivotTable:

- 1. Highlight the whole PivotTable;
- 2. Use copy (Ctrl-C¹²);
- 3. Select on the upper-left cell of the paste area (where you want the new Table to go); and
- 4. Right-click and then check the "paste values" box.

Then format each table to show as percentages with no decimal points (by highlighting all the numbers in the table, right-click, select "**Format Cells**", choose the **Percentage** option, and use the down arrow to show 0 decimal places).

The Excel worksheet would then look something like this (where the original created PivotTables are on the left-side of the worksheet, and the copies are on the right-side):

	В	С	D	E	F	G	н		J	K	L	м	N	0	P	Q	R	S	Т	U
39A: Speed of traffic							Q9F: Poor pavements or pa	ths						QSA: Speed of traffic						
ount of ID	Column Labe J						Count of ID	Column Labe J							Column L	Labala				
			or.														~	A1	0.17	
🕶 Labels 🛛 🗠		lecasional					Rov Labels 🛛 👻					Grand Total				Occasio			Grand Tota	al
as mobility limitation	18%	24%	37%		100%		Has mobility limitation	24%	21%	39%	16%	100%		Has mobility limitation	18%			21%	100%	
es not have mobility limitation	27%	27%	20%	25%	100%		Does not have mobility limitation	25%	20%	25%	29%	100%		Does not have mobility limitation	27%	27%	20%	25%	100%	
and Total	24%			24%			Grand Total	25%	21%	31%		100%		Grand Total	24%					
and rotai	24%	207.	217	247.	1007.		Grand rocar	237.	217.	517.	247.	1007.		Grand Total	247.	207.	217.	24%	1007.	
9B: Amount of traffic							Q9G: Noise pollution							Q9B: Amount of traffic						
ount of ID	Column Labe J						Count of ID	Column Labe -						Count of ID	Colump I	abale.				
ov Labels		locasional	o	AL	·		Roy Labels		locasional	06				Row Labels	Never	Occasio	04	Always	Grand Tota	4
					100%										13%				100%	
as mobility limitation	13%	39%	21%	26%			Has mobility limitation	29%	13%		21%	100%		Has mobility limitation						
oes not have mobility limitation	27%	25%	15%	32%	100%		Does not have mobility limitation	29%	172	36%	19%	100%		Does not have mobility limitation	27%				100%	
rand Total	22%	31%	18%	30%	100%		Grand Total	29%	15%	36%	20%	100%		Grand Total	22%	31%	18%	30%	100%	
19C: Lack of crossing poir							Q9H: Air pollution							0001						
														Q9C: Lack of crossing points						
ount of ID	Column Labe 🗉						Count of ID	Column Labe 💵							Column L					
ov Labels 🛛 👻	Never	lecasional	Often	Alway	sirand Tota	1	Row Labels	Never	lecasional	Often	Alw aysi	Grand Total		Row Labels	Never	Occasio	Often	Always	Grand Tota	al
as mobility limitation	24%	34%	29%		100%		Has mobility limitation	26%	16%		39%	100%		Has mobility limitation	24%				100%	
es not have mobility limitation		24%		32%	100%		Boes not have mobility limitation	32%	15%	25%		100%		Does not have mobility limitation	13%				100%	
irand Total	21%	28%	21%	25%	100%		Grand Total	30%	15%	23%	32%	100%		Grand Total	21%	28%	27%	25%	100%	
9D: Crossings do not allo	w adequate time	to cross					Q91: Fear of orime							Q9D: Crossings do not allow ade	guate tim	e to cross				
ount of ID	Column Labe J						Count of ID	Column Labe J						Count of ID	Column L					
			~							~							~		0.17	
		locasional										Grand Total				Occasio			Grand Tota	ы
las mobility limitation	21%	29%		21%	100%		Has mobility limitation	18%	16%		37%	100%		Has mobility limitation	21%				100%	
loes not have mobility limitation	24%	25%	25%	25%	100%		Does not have mobility limitation	19%	32%	20%	29%	100%		Does not have mobility limitation	24%	25%	25%	25%	100%	
irand Total	23%			24%			Grand Total	19%	26%	24%		100%		Grand Total	23%					
9E: Poor lighting														QSE: Poor lighting						
Count of ID	Column Labe J													Count of ID	Columni	Labels				
Row Labels 🛛 👻	Never	lecasional	Often	Alway	Grand Tota									Row Labels	Never	Occasio	Often	Always	Grand Tota	al
las mobility limitation	18%	32%	26%		100%									Has mobility limitation	18%				100%	
																			100%	
																	244			
		15%	31%	27%	100%									Does not have mobility limitation	27%					
	27% 24%	15%	31%	27% 26%										Boes not have mobility limitation Grand Total	27%					
Does not have mobility limitation Grand Total		15%	31%											Grand Total						
		15%	31%											Grand Total Q3F: Poor pavements or paths	24%	22%				
		15%	31%											Grand Total Q9F: Poor pavements or paths Count of ID	24% Column L	22%	29%	26%	100%	
		15%	31%											Grand Total Q9F: Poor pavements or paths Count of ID	24% Column L	22%	29%	26%		si i
		15%	31%											Grand Total Q9F: Poor pavements or paths Count of ID	24% Column L	Labels Occasio	29% Often	26% Ahvays	100%	JI I
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Row Labels Has mobility limitation	24% Column I Never 24%	Labels Occasio	29% Often 39%	26% Ahvays 16%	100% Grand Tota 100%	1
		15%	31%											Grand Total QGF: Poor pavements or paths Count of ID Row Labels Has mobility limitation Does not have mobility limitation	24% Column I Never 24% 25%	Labels Occasio 21% 20%	29% Often 39% 25%	26% Ahvays 16% 29%	100% Grand Tota 100% 100%	ł
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Row Labels Has mobility limitation	24% Column I Never 24%	Labels Occasio 21% 20%	29% Often 39% 25%	26% Ahvays 16% 29%	100% Grand Tota 100% 100%	ł
		15%	31%											Grand Total QGF: Poor pavements or paths Count of ID Row Labels Has mobility limitation Does not have mobility limitation	24% Column I Never 24% 25%	Labels Occasio 21% 20%	29% Often 39% 25%	26% Ahvays 16% 29%	100% Grand Tota 100% 100%	5
		15%	31%											Grand Total Q3F: Poor pavements or paths Court of ID Row Labels Has mobility limitation Does not have mobility limitation Grand Total	24% Column I Never 24% 25%	22% Labels Occasio 21% 20% 21%	29% Often 39% 25%	26% Ahvays 16% 29%	100% Grand Tota 100% 100%	5
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Row Labels Has mobility limitation Does not have mobility limitation Grand Total QSG: Noise pollution Count of ID	24% Column I Never 24% 25% 25% Column I	Labels Occasio 21% 20% 21% 21%	29% Often 39% 25% 31%	26% Always 16% 23% 24%	100% Grand Tota 100% 100%	
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Row Labels Has mobility limitation Does not have mobility limitation Grand Total QSG: Noise pollution Count of ID Row Labels	24% Column I Never 24% 25% 25% Column I Never	Labels Occasio 21% 20% 21% 21% Labels Occasio	29% Often 39% 25% 31%	26% Always 16% 23% 24%	100% Grand Tota 100% 100% 100% Grand Tota	
		15%	31%											Grand Total GR: Total GR: Poor pavements or paths Court of D Poor Labels Has mobility limitation Grand Total QPG: Noise policition Count of D Row Labels Has mobility limitation	24% Column I Never 24% 25% 25% Column I Never 23%	Labels Occasio 21% 20% 21% 21% Labels Occasio	29% Often 39% 25% 31% Often 37%	26% Always 16% 23% 24% Always 21%	100% Grand Tota 100% 100% Grand Tota 100%	
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Riox Labels Har mobility limitation Grand Total QSG: Noise pollution Count of ID Riox Labels Har mobility limitation Does not have mobility limitation	24% Column I Never 24% 25% 25% Column I Never 25% 25%	: 22% Occasio : 21% : 20% : 21% Labels Occasio : 13% : 17%	29% Often 39% 25% 31% Often 37% 36%	26% Always 16% 23% 24% Always 21% 19%	100% Grand Tota 100% 100% 100% Grand Tota 100%	
		15%	31%											Grand Total GR: Total GR: Poor pavements or paths Court of D Poor Labels Has mobility limitation Grand Total QPG: Noise policition Count of D Row Labels Has mobility limitation	24% Column I Never 24% 25% 25% Column I Never 23%	: 22% Occasio : 21% : 20% : 21% Labels Occasio : 13% : 17%	29% Often 39% 25% 31% Often 37% 36%	26% Always 16% 23% 24% Always 21% 19%	100% Grand Tota 100% 100% 100% Grand Tota 100%	
		15%	31%											Grand Total QSF: Poor pavements or paths Count of ID Riov Labels Har mobility limitation Grand Total QSG: Noise pollution Count of ID Riov Labels Har mobility limitation Grand Total	24% Column I Never 24% 25% 25% Column I Never 25% 25%	: 22% Occasio : 21% : 20% : 21% Labels Occasio : 13% : 17%	29% Often 39% 25% 31% Often 37% 36%	26% Always 16% 23% 24% Always 21% 19%	100% Grand Tota 100% 100% 100% Grand Tota 100%	
		15%	31%											Grand Total Gif: Poop aveneents or parks Court of ID Row Labels Has mobility limitation Grand Total Grand Total	24% Never 24% 25% 25% Column I Never 23% 23% 23%	: 22% Labels Occasio : 21% : 2	29% Often 39% 25% 31% Often 37% 36%	26% Always 16% 23% 24% Always 21% 19%	100% Grand Tota 100% 100% 100% Grand Tota 100%	
		15%	31%											Grand Total Grif: Poor pavements or paths Course of D Roor Labels Instation Does not have mobility limitation Grand Total Grand Total Grand Total Course of ID Roor Labels Har mobility limitation Does not have mobility limitation Grand Total OdH: An pollution Course of ID Course of ID	24% Never 24% 25% 25% ColumnI Never 23% 23% 23% 23%	: 22% Docasio : 21% : 20% : 21% : 21	29% Often 39% 25% 31% Often 37% 36% 36%	26% Ahvays 16% 23% 24% 24% 24% 24% 24% 24% 20%	100% Grand Tota 100% 100% 100% Grand Tota 100% 100%	bl
		15%	31%											Grand Total Grif: Poor pavements or paths Course of D Row Labels Instation Desers not have mobility limitation Grand Total Grand Total Grand Total Desr not have mobility limitation Grand Total Desr not have mobility limitation Grand Total OdH: An pollution Course of ID Course of ID	24% Column I Never 24% 25% Column I Never 23% 23% 23% 23% Column I Never	Labels Occasio 21% 20% 21% 21% 21% Labels Occasio 13% 17% 15% Labels Occasio	29% 0iten 39% 25% 31% 0iten 37% 36% 36% 0iten	26% Alw ays 16% 23% 24% 24% 24% 20% 15% 20%	100% Grand Tota 100% 100% 100% Grand Tota 100%	bl
		15%	31%											Grand Total GPF: Poor pavements or parks Court of ID Row Labels Has mobility imration Deer not have mobility imration GPG: Neise pollution Court of ID GPA Labels GPA An pollution Court of ID Row Labels	24% Never 24% 25% 25% ColumnI Never 23% 23% 23% 23%	Labels Occasio 21% 20% 21% 21% 21% Labels Occasio 13% 17% 15% Labels Occasio	29% 0ften 39% 25% 31% 0ften 37% 36% 36%	26% Alw ays 16% 23% 24% 24% 24% 20% 15% 20%	100% Grand Tota 100% 100% 100% Grand Tota 100% 100%	si
		15%	31%											Grand Total Grif: Poor pavements or paths Courted ID Row Labels Harnobility instation Brandbility instation Grand Total Grand Total Grand Total Courted ID Row Labels Harnobility immation Dese not have mobility instation Grand Total Grand Total Grand Total Grand Total Grand Total Harnobility immation Harnobility immation Harnobility immation	24% Column I Never 24% 25% 25% Column I Never 23% 23% 23% 23% 23% 23% 23% 23% 23% 23%	: 22% Labels Occasio : 21% : 21% : 21% Labels Occasio : 13% : 15% Labels Occasio : 16%	29% Often 39% 25% 31% Often 36% 36% Often 18%	26% Alw ays 16% 23% 24% 24% 24% 20% 15% 20% Alw ays 33%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% Grand Tota 100%	si
		15%	31%											Grand Total QRF: Poor pavements or paths <u>Control ID</u> Control ID Desorn to the Colling Initiation Grand Total QRS: Notice politiston Grand Total QRS: Notice politiston Grand Total Desorn to have in Colling Initiation Grand Total QRS: Moje Autorn Grand Total QRS: Moje Autorn Grand Total QRS: Moje Autorn Grand Total DRS: Moje Autorn DRS: Moje Autorn DR	24% Column I Never 24% 25% 25% Column I Never 25% 23% 23% 23% Column I Never 26% 32%	: 22% Labels Occasio : 21% : 21%	29% Often 39% 25% 31% Often 37% 36% 36% 36% 0ften 18% 25%	26% Alw ays 16% 23% 24% 24% 24% 24% 20% 20% 20% Alw ays 39% 27%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 00%	bl
		15%	31%											Grand Total Grif: Poor pavements or paths Courted ID Row Labels Harnobility instation Brandbility instation Grand Total Grand Total Grand Total Courted ID Row Labels Harnobility immation Dese not have mobility instation Grand Total Grand Total Grand Total Grand Total Grand Total Harnobility immation Harnobility immation Harnobility immation	24% Column I Never 24% 25% 25% Column I Never 23% 23% 23% 23% 23% 23% 23% 23% 23% 23%	: 22% Labels Occasio : 21% : 21%	29% Often 39% 25% 31% Often 37% 36% 36% 36% 0ften 18% 25%	26% Alw ays 16% 23% 24% 24% 24% 24% 20% 20% 20% Alw ays 39% 27%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% Grand Tota 100%	bl
		15%	31%											Grand Total QRF: Poor pavements or paths <u>Control ID</u> Control ID Desorn to the Colling Initiation Grand Total QRS: Notice politiston Grand Total QRS: Notice politiston Grand Total Desorn to have in Colling Initiation Grand Total QRS: Moje Autorn Grand Total QRS: Moje Autorn Grand Total QRS: Moje Autorn Grand Total DRS: Moje Autorn DRS: Moje Autorn DR	24% Column I Never 24% 25% 25% Column I Never 25% 23% 23% 23% Column I Never 26% 32%	: 22% Labels Occasio : 21% : 21%	29% Often 39% 25% 31% Often 37% 36% 36% 36% 0ften 18% 25%	26% Alw ays 16% 23% 24% 24% 24% 24% 20% 20% 20% Alw ays 39% 27%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 00%	bl
		15%	31%											Grand Total Gif: Poor pavements or paths Court of ID Nov Labels Har mobily initiation Deer not have mobility initiation Grand Total Gifs: Noise pollution Court of ID Nov Labels Har mobility initiation Court of ID Gifs All pollution Court of ID Court of ID Gifs All pollution Deer not have mobility initiation Court of ID Court of ID Gifs and Total Gifs Fau pollution Deer not have mobility initiation Deer not have mobility initiation Deer not have mobility initiation Court of ID Gifs Fau pollution Court of ID Court of ID	24% Column I Never 24% 25% 25% Column I Never 25% 23% 23% 23% Column I Never 26% 32%	: 22% Labels Occasio : 21% : 21%	29% Often 39% 25% 31% Often 37% 36% 36% 36% 0ften 18% 25%	26% Alw ays 16% 23% 24% 24% 24% 24% 20% 20% 20% Alw ays 39% 27%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 00%	si
		15%	31%											Grand Total Gift: Poor pavements or paths Court of ID Rest Leads, Instation Does not have mobility limitation Grand Total Grand Total	24% Column I Never 24% 25% 25% 25% Column I Never 28% 23% Column I Never 28% 32% 30% Column I	: 22% Labels Occasio 21% 20% : 21% Labels Occasio : 13% : 15% Labels Cocasio : 16% : 15% Labels	29% Often 39% 25% 31% 0ften 36% 36% 0ften 18% 23%	26% Alw ays 16% 23% 24% 24% 21% 13% 20% 36% 27% 33% 27% 32%	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 100	91
		15%	31%											Grand Total Gif: Poor pavements or parks Court of ID Nov Labels Harnobility Imitation Dear not have mobility Imitation Grand Total Gifs: Novie poliution Court of ID Row Labels Harnobility Imitation Court of ID Row Labels Harnobility Imitation Grand Total Gifs: Aur poliution Court of ID Gifs and collity Imitation Grand Total Gifs: Faur polition Grand Total Gifs: Faur of one Court of ID Row Labels Nov Labels Martine Court of ID Row Labels	24% Column I Never 24% 25% 25% Column I Never 28% 23% 23% 23% 23% 23% 23% 23% 23	: 22% Labels Occasio 21% 20% 21% 20% 21% Docasio 13% 17% 17% 15% 15% Labels Occasio 16% 15% 215% 20%	29% Often 39% 25% 31% Often 37% 36% 36% 36% 0ften 18% 25% 23%	26% Alw ays 16% 23% 24% 24% 24% 20% 20% Alw ays 33% 27% 32% Alw ays	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 100	91
		15%	31%											Grand Total Grif: Poor pavements or paths Course of D Row Labels Row Labels Boosen on howe mobility limitation Grand Total Grand	24% Never 24% 25% 25% 25% 25% 23% 23% 23% 23% 23% 23% 23% 23% 23% 23	: 22% Labels Occasio : 21% : 20% : 21% Labels Occasio : 13% : 15% Labels Occasio : 15% : 15\% : 1	29% Often 39% 25% 31% Often 18% 25% 23% Often 29%	26% Alw ays 16% 23% 24% 24% 24% 25% 27% 20% Alw ays 33% 27% 32% Alw ays 37%	100% Grand Tota 100% 100% 100% 100% Grand Tota 100% 100% Grand Tota 100% 100% Grand Tota 100% 100%	91
		15%	31%											Grand Total Gif: Poor pavements or parks Court of ID Nov Labels Harnobility Imitation Dear not have mobility Imitation Grand Total Gifs: Novie poliution Court of ID Row Labels Harnobility Imitation Court of ID Row Labels Harnobility Imitation Grand Total Gifs: Aur poliution Court of ID Gifs and collity Imitation Grand Total Gifs: Faur polition Grand Total Gifs: Faur of one Court of ID Row Labels Nov Labels Martine Court of ID Row Labels	24% Column I Never 24% 25% 25% Column I Never 28% 23% 23% 23% 23% 23% 23% 23% 23	: 22% Labels Occasio 21% 20% 21% Labels Occasio 13% 17% 17% 15% Labels Occasio 16% 15% Docasio 16% 15%	23% Often 33% 25% 37% 36% 36% 0ften 18% 25% 25% 23% 0ften 23% 23%	28% Always 16% 23% 24% 24% 24% 24% 20% Always 33% 27% 32% Always 33% 27% 32% 24% 23% 21% 23% 21% 23% 23% 23% 24% 24% 24% 24% 24% 24% 24% 24	100% Grand Tota 100% 100% 100% 100% 100% 100% 100% 100	91

Finally, for summary purposes, we can then create our own table in Excel which shows the percentage of survey participants with and without a mobility limitation who were "Often" or "Always" affected by a particular problem on the busiest road in their area. To do this, using the tables we have just copied, we can calculate the relevant percentages for being "Often" or "Always" affected by a barrier.

¹² Press the C key when holding down the Ctrl key on your keyboard.

This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme

For example, within the same Excel worksheet, we can create an empty table such as this:

Percentage "often" or "always" affected									
	Q9A	Q9B	Q9C	Q9D	Q9E	Q9F	Q9G	Q9H	Q91
Has mobility limitation									
Does not have mobility limitation									

Within the cells of this table, we can use Excel's built-in functions to add the appropriate percentages. In the first row of the column Q9A, type in the cell:

= SUM(R5,S5)

and press return.

In this example, R5 is the cell that contains the % of participants with a mobility limitation who reported being "Often" affected by the speed of traffic on the busiest road in their area; S5 is the cell that contains the % of participants with a mobility limitation who reported being "Always" affected by the speed of traffic on the busiest road in their area.

As before, we then use Excel's AUTOFILL function (the **Fill Handle**) to calculate the result for the participants who did not report a mobility limitation. Having used a formula for the first row in a column (the group with a mobility limitation), move the cursor over the fill handle. The cursor becomes a black crosshair (+). Click and drag the fill handle down the column. The percentage of participants who did not report a mobility limitation that were "Often" or "Always" affected by the speed of traffic on the busiest road would then be calculated automatically.

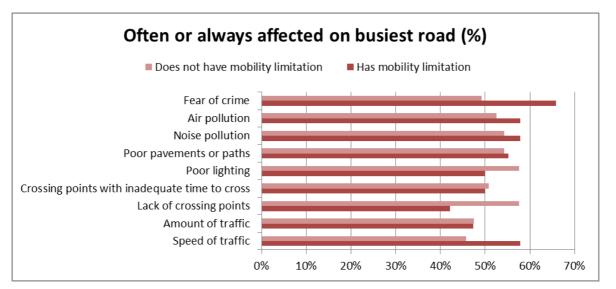
Then repeat this procedure for the other "barrier effects". The results would be as follows:

% of participants "Often" or "Always" affected by a particular barrier on the busiest road by mobility limitation

Percentage "often" or "always" affected									
	Q9A	Q9B	Q9C	Q9D	Q9E	Q9F	Q9G	Q9H	Q9I
Has mobility limitation	58%	47%	42%	50%	50%	55%	58%	58%	66%
Does not have mobility limitation	46%	47%	58%	51%	58%	54%	54%	53%	49%

Bar chart

To show the percentage of the survey participants who were "Often" or "Always" affected by the potential barriers on the busiest road separately for participants with and without a mobility limitation you can highlight the whole Table, click on the Insert tab, and select a Bar Chart. After some formatting improvements, you could then have a chart that looks something like this:



This toolkit was developed by the UCL Street Mobility & Network Accessibility project team, funded by the Research Councils UK (RCUK) Lifelong Health & Wellbeing Programme