

What Microsoft excel can do for transdisciplinary research? Instilling meaning in qualitative data

Dr. Angel Lai
Department of Social Work

Dr. Lachlan Barber
Department of Geography

Center for Social Science Advancement and Research



Department of Geography 地理系



Workshop outline

1. Group discussion
2. Qualitative research overview
3. Computer assisted qualitative data analysis
4. Qualitative analysis with Excel
5. Example: Com-Health
6. Hands on exercise and sharing
7. Wrap-up

Group discussion

In groups of 4 to 6... introduce yourselves and your experience with qualitative research



Qualitative research overview (I)

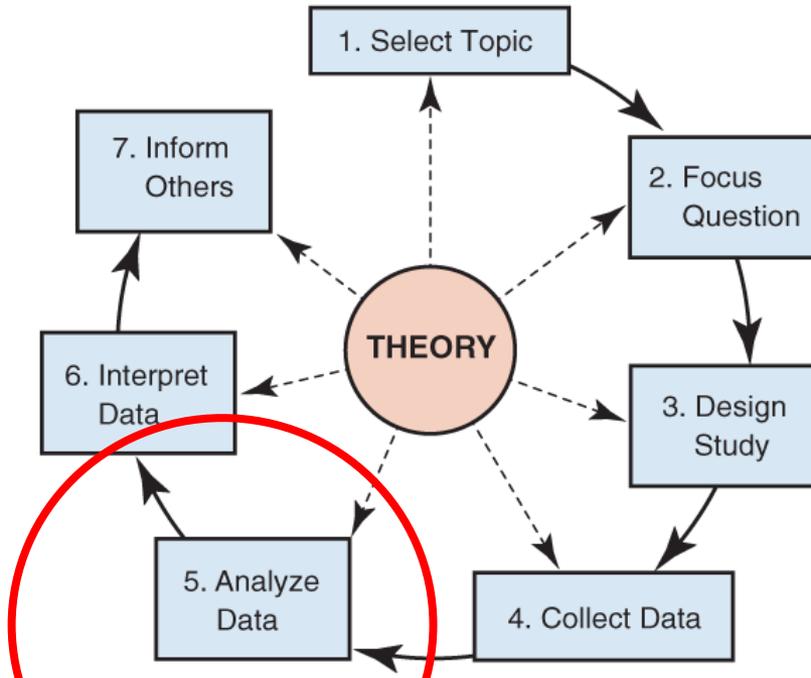


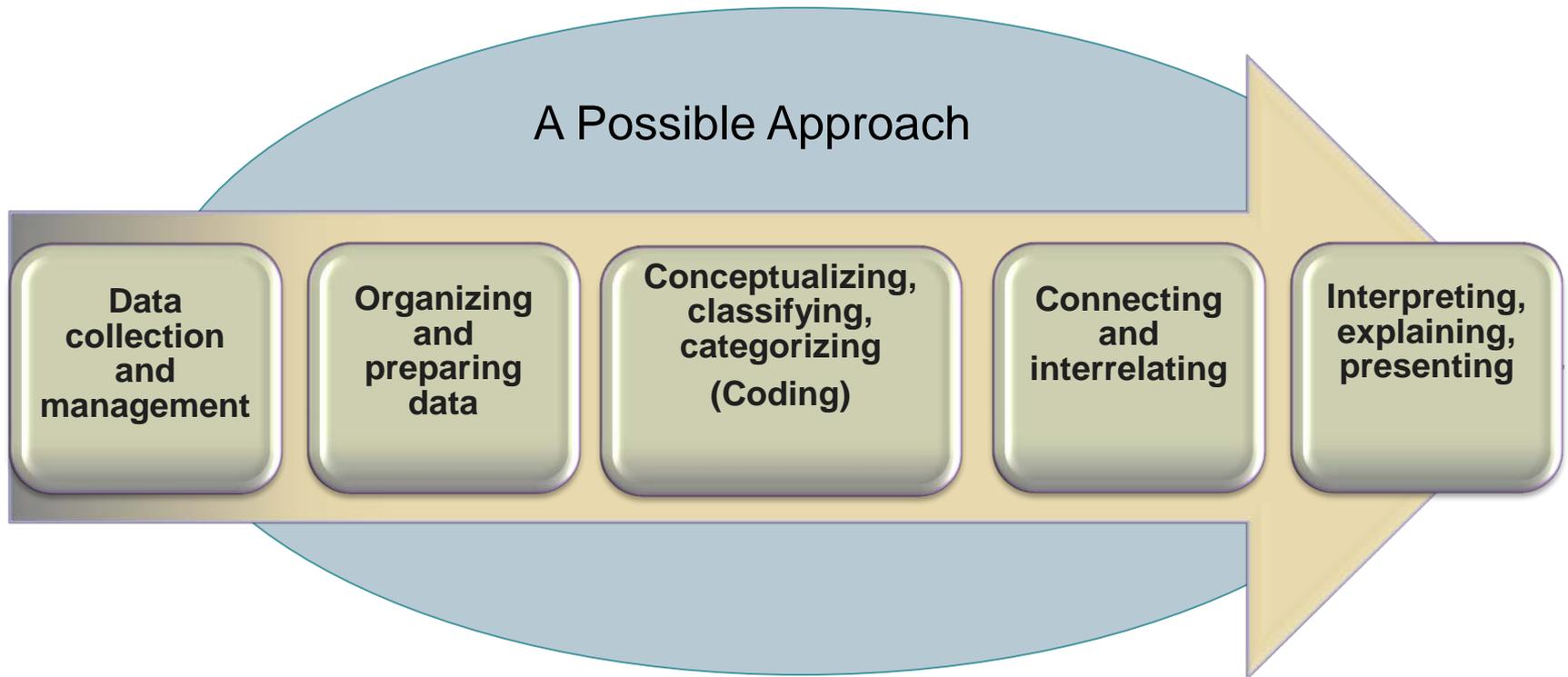
Figure 1.1 Steps in the Research Process

Copyright © 2012 Pearson Canada Inc.

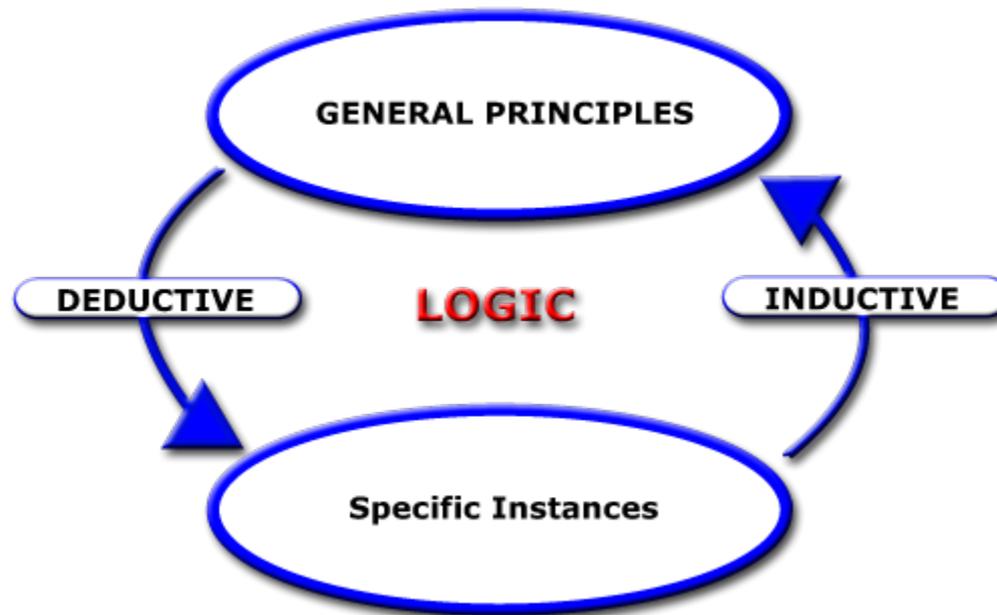
Theory is the research approach (philosophy) as well as the concepts that accompany it

The literature review starts at the beginning and helps focus the question and design the study

Qualitative research overview (II)



Inductive vs. deductive reasoning



Content analysis

- Content of different kinds of qualitative data can be analyzed
- Manifest content analysis:
“assessment of the surface or visible content of text. Visible content may include specific words, phrases or the physical space dedicated to a theme (for example the amount of space given to a topic in a newspaper).”
- Latent content analysis:
“assessment of implicit themes within a text. Latent content may include ideologies, beliefs, or stereotypes.”

(Dunn, in Hay 2000)



BL: Mrs. Lam, on a personal note the other day, and this is a story which story which has been working its way through the Hong Kong media for media for some time now, my wife who works for you is a long-time civil long-time civil servant within SHK she said, you know I don't know if I can know if I can do this. If our CE says she only sleeps three, four, maybe five maybe five hours a day and that's the standard thing we're going to be held going to be held to I don't think I can survive this job. Can you say say something to soothe her?

Carrie Lam: First is, I never impose my own standards on my colleagues. Secondly, I stress work-life balance. Whether I could do it well is another thing. But I always preach and stress a work-life balance especially for my colleagues with young families. But these days are better. I was referencing a very intense period when I was preparing my first policy address and you know because we have advanced a policy address by almost three months. So everything has to be done in a very intense manner. But I'm picking up my sleep. Thank you very much for your concern.

BL: You look like somebody who sleeps more than three hours a day. Carrie thank you very much for your time it's our pleasure.

One option for content analysis – Coding

Suggested steps (Dunn, 2000)	Specific operations (computer or manual)
Develop coding system	Prepare a list of emergent themes by drawing on literature
Prepare material for analysis	Print material for hand coding or create an appropriate file format for software coding
Ascribe codes to text	Annotate by hand or allocating codes using software functions
Retrieve similarly coded text	Extract and compile similarly coded content or retrieve using software
Review data by themes	Assess content from individual codes across different sources and consider relationships between codes

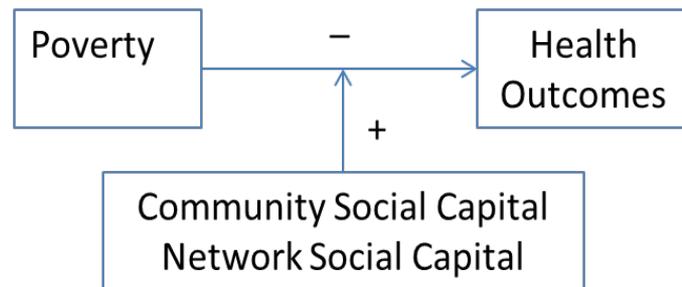
Finding meaning in qualitative data

- Codes/themes are analyzed for **patterns**, e.g.
 - similarity and differences across respondent types (comparison),
 - frequency,
 - meaning,
 - sequence,
 - associations with other codes,
 - causation, etc.

Com-Health: *Project on Youth Health and HK Communities*



Aim : Understand how community and network social capital affect youths health



Participants : Cross sectional multilevel information on youth with different SES (n=1400; 17-23)

Methods: Sequential mixed methods study (Qualitative stage n=45 → establish conceptual framework → Quantitative data collection)

Social Capital

Community: Health, social and recreational facilities, norms
Community trust, cohesiveness, participation, social agency

Network: Family relationships; peers network; cross generational network

Health outcomes

Physical, Psychosocial, Behavioral & Mobility (Cross-generational, Edu Attainment)

Com-Health

What are the different levels of social capital experienced by local and EM youths in their neighborhoods?



Suggested steps (Specific operations)	Com-Health Examples
Prepare a list of emergent themes by drawing on literature (Develop Coding System)	Literature review and theories to identify potential codes Identify ethnicity as filters for comparison
Print material for hand coding or create an appropriate file format for software coding (Prepare materials for analysis)	Transcription Building data frame in Excel for organizing data
Annotate by hand or allocating codes using software functions (Ascribe codes to text)	Coding using software (<u>CAQDAS ie., Excel</u>)
Extract and compile similarly coded content or retrieve using software (Retrieve similarly coded text)	Organize similar codes (Word)
Assess content from individual codes across different sources and consider relationships between codes (Review data by themes)	Finding meanings and relationships in the codes (<i>YOUR BRAIN</i>)

CAQDAS



- Computer-Assisted Qualitative Data Analysis Software
- CAQDAS allow us to manage, extract, compare, explore and reassemble
- Useful for working with multiple sources, in addition to organizing data within a single source
- Options:
 - Software programmes (NVivo, MaxQDA, AtlasTi), web-based programmes (e.g. Dedoose), software suites (Microsoft Office)
- We think of these as tools for analysis, but they still all rely on the analytical skill of the researcher
- Considerations: functionality, cost, access, ease of use

Why Excel?

- 😊 Part of the Office package
- 😊 Easily transferrable
- 😊 Compatibility
- 😊 Allow you to understand the organization process

- 😞 Tedious
- 😞 Takes time to build the framework

Excel for qualitative analysis

<http://storage.lib.hkbu.edu.hk/P1.xlsx>

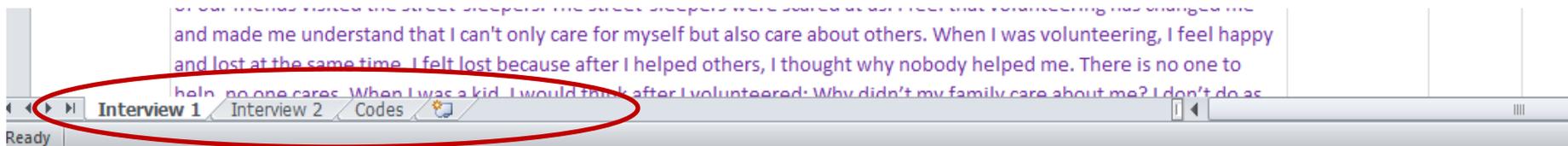
<http://storage.lib.hkbu.edu.hk/P2.xlsx>

<http://storage.lib.hkbu.edu.hk/TE2.docx>

Excel for qualitative analysis (I)

Step 1: Transfer Transcript to Excel Sheet

- One transcript per sheet (Bottom)
- Open a new sheet name it “Codes” (Bottom)



- Bold Questions (1)
- Add variable rows (Top row), assign a variable name to each column (2)
- Add column to the left (Interviewer/Respondent), Indicate (3)
- Add column to right (Codes & Code No.) (4)

	A	B	C	D	E
	Interviewer/ Respondent	Questions/Quotes	Codes	Codes No.	
1	I	How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？	← 1	←	
2	R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.			
3	I	What kind of activities do you do in your neighbourhood? 你在這個社區會做什麼？			
4		到女青做義工，探訪露宿者、探訪老人院。我們除了去麥當勞之外，有時會去女青玩。有些外展社工和我們很熟，有一個社工很疼我，他叫Ivan，我小時候吸毒、欠債，雖然他明知不能借錢給我，但也幫了我，他跟我說只能借一次，自從那次之後我就戒了毒癮。我吸毒吸了一年，欠了一千五百元外債。 Volunteer at YWCA, activities include visiting street sleepers and nursing homes. Apart from going to McDonald's for gathering, we sometimes go to YWCA. Some		← 4	

Excel for qualitative analysis (II)

Step 2: Start Coding in Excel

- Add column to the left, sequences, assign each row a number *This allows you to sort the interview and keep track of the original sequences at later stage (1)
- Start assigning codes (Content analysis) *If there's more than one codes per quote, feel free to add as much row as possible
- Try coding ! * Each group use 2 separate computers, 1st computer (Code Interview 1); 2nd computer (Code Interview 2)

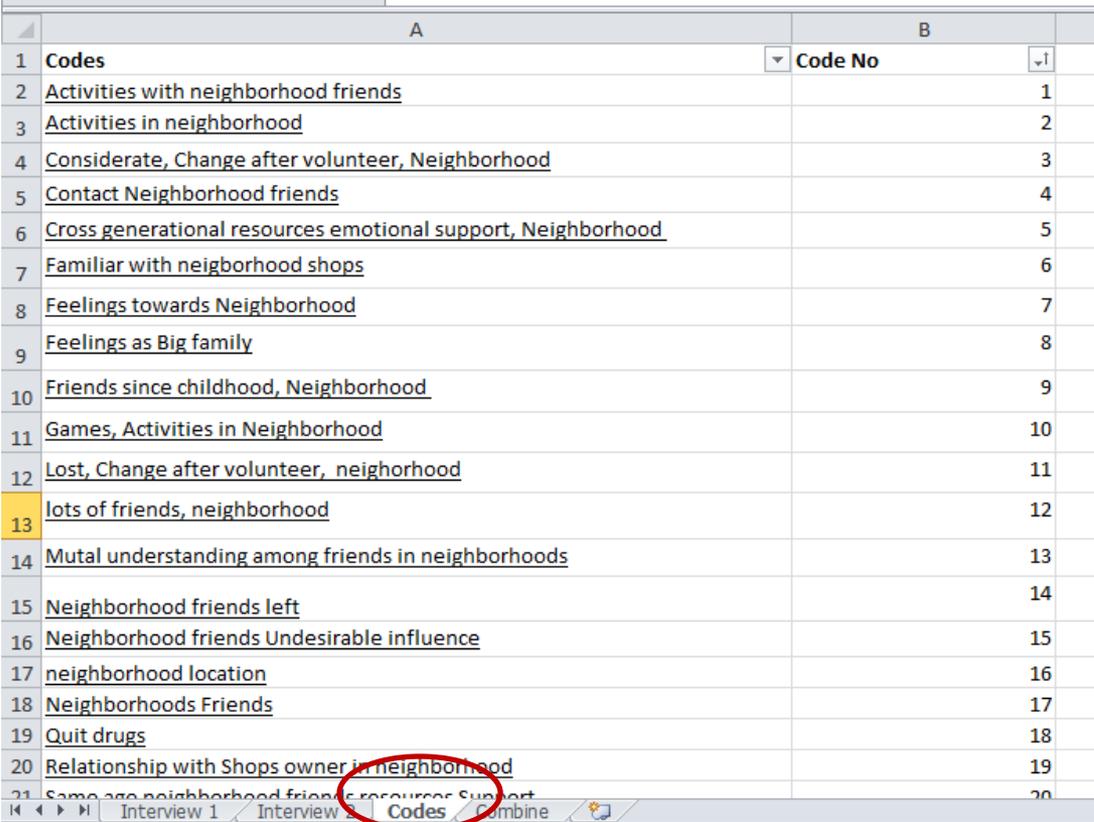
1

Sequenc	Interview	Questions/Quotes	Codes
7	1 I	How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？	neighborhood location
7	2 R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	lots of friends, neighborhood
7	3 R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	neighborhood location

Excel for qualitative analysis (III)

Step 3: Creates a code sheet

- After coding your first transcript create a code sheet
- Copy and paste your codes into this new code sheet
- Assign code # to each code
- Underline the code for later use
- Go back to your interview and assign them with code numbers
- Each group creates two code sheets based on your interviews



The screenshot shows an Excel spreadsheet with two columns: 'Codes' and 'Code No'. The 'Codes' column contains 21 entries, each underlined. The 'Code No' column contains numbers from 1 to 20. Row 13 is highlighted in yellow. The spreadsheet is titled 'Codes' and is part of a workbook with other sheets like 'Interview 1' and 'Interview 2'.

	A	B
1	<u>Codes</u>	<u>Code No</u>
2	<u>Activities with neighborhood friends</u>	1
3	<u>Activities in neighborhood</u>	2
4	<u>Considerate, Change after volunteer, Neighborhood</u>	3
5	<u>Contact Neighborhood friends</u>	4
6	<u>Cross generational resources emotional support, Neighborhood</u>	5
7	<u>Familiar with neighborhood shops</u>	6
8	<u>Feelings towards Neighborhood</u>	7
9	<u>Feelings as Big family</u>	8
10	<u>Friends since childhood, Neighborhood</u>	9
11	<u>Games, Activities in Neighborhood</u>	10
12	<u>Lost, Change after volunteer, neighborhood</u>	11
13	<u>lots of friends, neighborhood</u>	12
14	<u>Mutal understanding among friends in neighborhoods</u>	13
15	<u>Neighborhood friends left</u>	14
16	<u>Neighborhood friends Undesirable influence</u>	15
17	<u>neighborhood location</u>	16
18	<u>Neighborhoods Friends</u>	17
19	<u>Quit drugs</u>	18
20	<u>Relationship with Shops owner in neighborhood</u>	19
21	<u>Same age neighborhood friends resources Support</u>	20

Excel for qualitative analysis (IV)

Step 4: Define your Respondent

- ID , gender & age MUST be defined
- Others characteristics depend on your research questions

A	B	C	D	E	F	G	H	I
ID	HH Income	Origins	Gender	Age	Sequer	Intervi	Questions/Quotes	Codes
01	Above Threshold	L	M	17	1	I	How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？	neighborh location
01	Above Threshold	L	M	17	2	R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	lots of frie neighborh neighborh location
01	Above Threshold	L	M	17	3	R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	neighborh location
01	Above Threshold	L	M	17	4	I	What kind of activities do you do in your neighbourhood? 你在這個社區會做什麼？	Activities i neighborh
01	Above Threshold	L	M	17	5	R	到女青做義工，探訪露宿者、探訪老人院。我們除了去麥當勞之外，有時會去女青玩。有些外展社工和我們很熟，有一個社工很疼我，他叫Ivan，我小時候吸毒、欠債，雖然他明知不能借錢給我，但也幫了我，他跟我說只能借一次，自從那次之後我就戒了毒癮。我吸毒吸了一年，欠了一千五百元外債。 Volunteer at YWCA, activities include visiting street sleepers and nursing homes. Apart from going to McDonald's for gathering, we sometimes go to YWCA. Some outreaching social workers are very close with us. A social worker cares for me a lot. His name is Ivan. I used to take drugs and was in debt when I was younger. Although he knew he couldn't lend money, he still lend them to me and he told me that I could only borrow once from him. Since that time, I have quit drug. I took drugs for a year and I was in debt for 1,500HKD.	Volunteer, neighborh
							到女青做義工，探訪露宿者、探訪老人院。我們除了去麥當勞之外，有時會去女青玩。有些外展社工和我們很熟，有一個社工很疼我，他叫Ivan，我小時候吸毒、欠債，雖然他明知不能借錢給我，但也幫了我，他跟我說只能借一次，自從那次之後我就戒了毒癮。我吸毒吸了一年，欠了一千五百元外債。 Volunteer at YWCA, activities include visiting street sleepers and nursing homes. Apart from going to McDonald's for gathering, we sometimes go to YWCA. Some outreaching social workers are very close with us. A social worker cares for me a lot. His name is Ivan. I used to take drugs and was in debt when I was younger. Although he knew he couldn't lend money, he still lend them to me and he told me that I could only borrow once from him. Since that time, I have quit drug. I took drugs for a year	Cross generation resources emotional support N

Excel for qualitative analysis (V)

Step 5: Combine all Interviews/Transcripts in one sheet

- Open a new sheet, name it “Combine”
- Paste your coded Interview, i.e., interview 1 & 2 into a new sheet
- Go back to your groups and combine the 2 coded interviews into one file , fix the sequence column by revising the numbers

ID	HH Income	Origins	Gender	Age	Sequenc	Interview	Questions/Quotes	Codes	Codes
ID01	Above Threshold	L	M	17	1	I	How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？	neighborhood location	16
ID01	Above Threshold	L	M	17	2	R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	lots of friends, neighborhood	12
ID01	Above Threshold	L	M	17	3	R	調景嶺是我現時的生活社區。我在調景嶺有很多朋友，亦有很多損友。 Tiu Keng Leng is my current living community. I have many friends in Tiu Keng Leng, and I have many bad friends.	neighborhood location	16
ID01	Above Threshold	L	M	17	4	I	What kind of activities do you do in your neighbourhood? 你在這個社區會做什麼？	Activities in neighborhood	2
							到女青做義工，探訪露宿者、探訪老人院。我們除了去麥當勞之外，有時會去女青玩。有些外展社工和我們很熟，有一個社工很疼我，他叫Ivan，我小時候吸毒、欠債，雖然他明知不能借錢給我，但也幫了我，他跟我說只能借一次，自從那次之後我就戒了毒癮。我吸毒吸了一年，欠了一千五百元外債。 Volunteer at YWCA, activities include visiting street sleepers and nursing homes. Apart from going to McDonald's for gathering, we sometimes go to YWCA. Some outreach social workers are very close with us. A social worker cares for me a lot	Volunteer,	

Excel for qualitative analysis (VI)

Step 6: Creates QUOTES by linking information

Back then, yes. Because back then we have lots of carnivals, they were not from our community but basically there are from some schools, the famous ones was a fair at the Matilda hospital. They usually have fairs so my parents always bring me there. Everybody at the peak also go there as well. So that's one of the factors that I felt I belonged to the community.

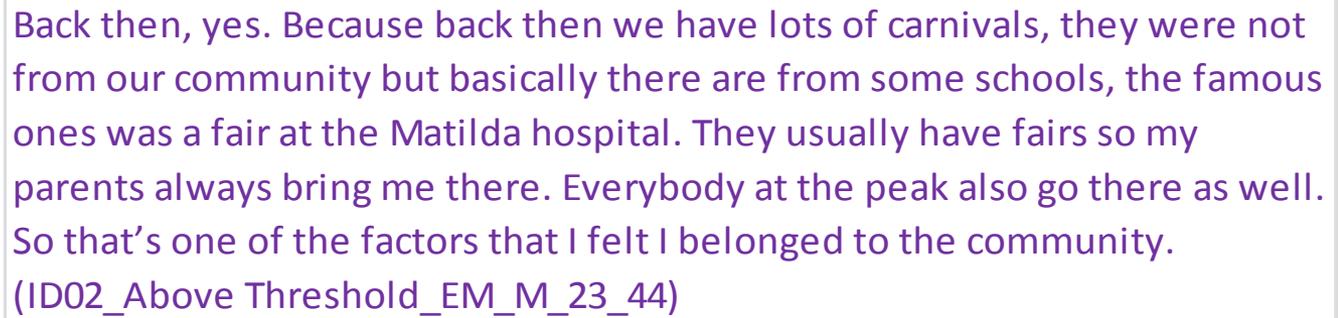
(ID02_Above Threshold_EM_M_23_44)

(Column A) ID

(B)

Respondent Characteristics

Sequence no. (F)



The diagram shows a red-bordered box containing a quote and its ID. Below the box, three red arrows point from the quote area to the labels '(Column A) ID', '(B) Respondent Characteristics', and 'Sequence no. (F)'. The arrow to '(B) Respondent Characteristics' is a single arrow, while the arrows to '(Column A) ID' and 'Sequence no. (F)' are part of a larger arrow structure that also points to the quote area.

Excel : Concatenate Function

On a sheet of paper, write down how you want your quotes to be identified and also identify which column they belong to

CONCATENATE =CONCATENATE(H2,"(",A2,"_",B2,"_",C2,"_",D2,"_",E2,"_",F2,")")

ID	HH Income	Origins	Gender	Age	Sequer	Intervi	Questions/Quotes	Codes	Codes	Quotes
ID01	Above Thresh						How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？		neighborhood	

Function Arguments

CONCATENATE

Text1	H2	=	"How do you define your neighbourh..."
Text2	"("	=	"("
Text3	A2	=	"ID01"
Text4	"_"	=	"_"
Text5	B2	=	"Above Threshold"

Joins several text strings into one text string.

Text1: text1,text2,... are 1 to 255 text strings to be joined into a single text string and can be text strings, numbers, or single-cell references.

Formula result = How do you define your neighbourhood? Where? 你怎樣定義你現時的生活社區？在何處？ (ID0...

[Help on this function](#)

OK Cancel

16 ",D2,"_",E2,"_",F2,")")
調景嶺是我現時的生活社區。友。 Tiu Keng Leng is my current Tiu Keng Leng, and I have many
12 Threshold_L_M_17_2)
調景嶺是我現時的生活社區。友。 Tiu Keng Leng is my current Tiu Keng Leng, and I have many
16 Threshold_L_M_17_3)
What kind of activities do you do in this community? 你在這個社區會做什麼？ (ID01_17_2)
2 到女青做義工，探訪露宿者，有時會去女青玩。有些外層，他叫Ivan，我小時候吸毒，也幫了我，他跟我說只能借一吸毒吸了一年，欠了一千五百 include visiting street sleepers a McDonald's for gathering, we so social workers are very close wit name is Ivan. Used to take drug

Excel for qualitative analysis (VII)

! Use Practice 2 !

Step 7: Codes sheet → Combine sheet

- In the **Combine Sheet**, add a column to the right, copy and paste the *Code no.* column onto this column.
- Copy and Paste all *codes and codes no.* in **Codes sheet** to the *Quotes* column in the **Combine sheet**.
- Add a column to the right and name it *Sort*, for the underlined rows, name it "0", for the rest, name it "1".

I	J	K	M	N
Feelings neighborhood, scenic	29	Quiet, Scenic, Laid-back, Boring (because once you were up at the peak, you are stuck to just like walking around the peak. If you want to go down, basically it takes 30 minutes to go down to Wan Chai)(ID02_Above Threshold_EM_M_23_61)	29	1
Feelings neighborhood, laid back	27	Quiet, Scenic, Laid-back, Boring (because once you were up at the peak, you are stuck to just like walking around the peak. If you want to go down, basically it takes 30 minutes to go down to Wan Chai)(ID02_Above Threshold_EM_M_23_62)	27	1
Boring, neighborhood	24	Quiet, Scenic, Laid-back, Boring (because once you were up at the peak, you are stuck to just like walking around the peak. If you want to go down, basically it takes 30 minutes to go down to Wan Chai)(ID02_Above Threshold_EM_M_23_63)	24	1
		Activities with neighborhood friends	1	0
		Activities in neighborhood	2	0
		Considerate, Change after volunteer, Neighborhood	3	0
		Contact Neighborhood friends	4	0
		Cross generational resources emotional support, Neighborhood	5	0
		Familiar with neighborhood shops	6	0
		Feelings towards Neighborhood	7	0
		Feelings as Big family	8	0
		Friends since childhood, Neighborhood	9	0
		Games, Activities in Neighborhood	10	0
		Lost, Change after volunteer, neighborhood	11	0
		lots of friends, neighborhood	12	0

Excel For qualitative analysis (VIII)

Step 8: Transfer Excel data to Word

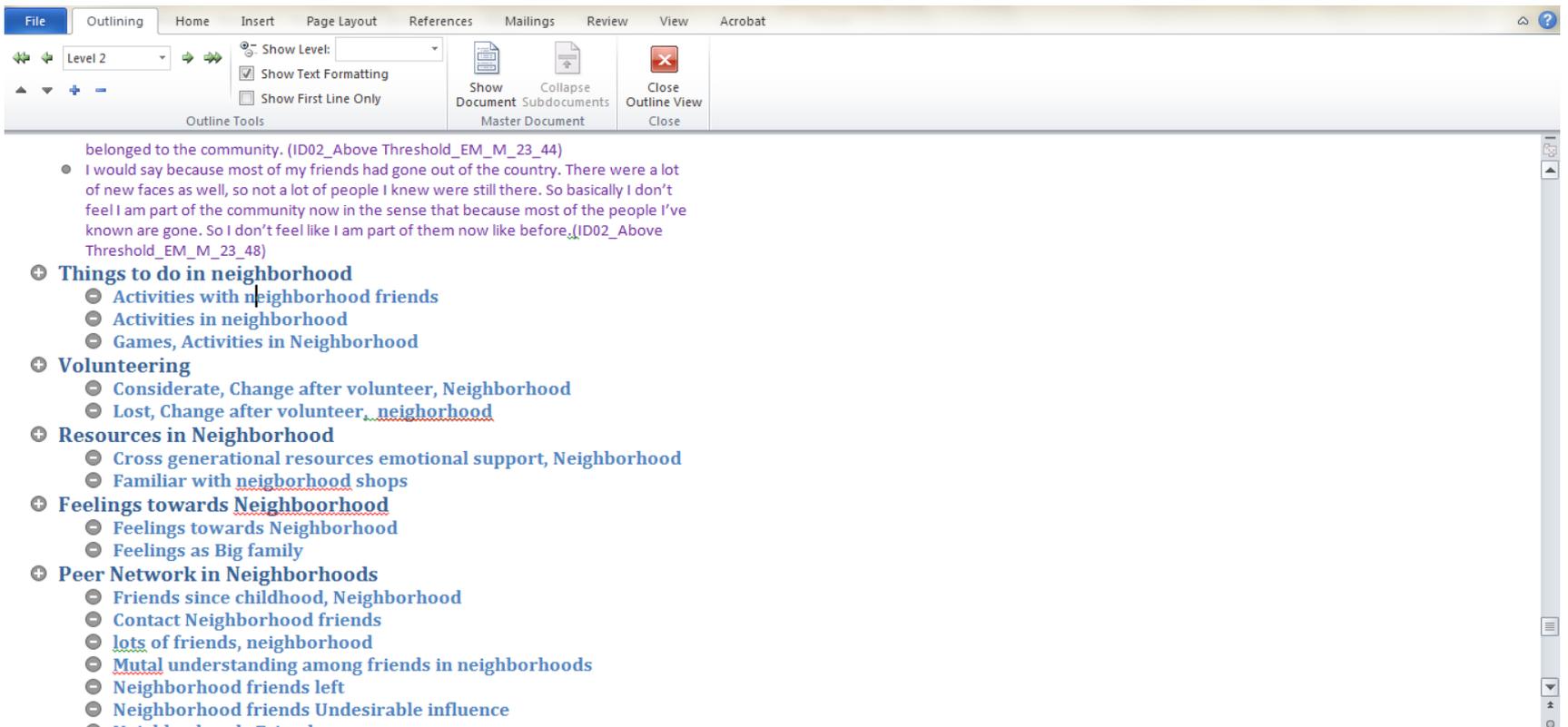
- Sort the data: Code no. → Sort → ID → ... → Sequences
- In the **combine sheet**, Copy the *Quotes* column (Including the underlined ones)

In Word....

- Paste it in an empty word document * Make sure the formatting is retained
- Highlight the table, click “+” on top left, select layout (Toolbar), choose convert to text
- Paragraph marks : Auto (Add Space to each paragraph)
- Highlight all underlined text , “Select” option (Toolbar), “Select text with similar formatting”, change all occurrences to **Heading 2**

Excel For qualitative analysis (IX)

- View with “Outline” function (Toolbar)
- Organize Codes and add overarching headings
- The original Excel file can help you match your codes with your quotes
- The original Excel file allows you to compare different groups with the sorting function under a certain category (e.g., Peer Support Network)



The screenshot shows the Microsoft Word interface in Outline View. The ribbon includes File, Outlining, Home, Insert, Page Layout, References, Mailings, Review, View, and Acrobat. The Outlining tab is active, showing the 'Level 2' dropdown, 'Show Level' dropdown, and checkboxes for 'Show Text Formatting' and 'Show First Line Only'. The 'Outline Tools' section includes 'Show Document', 'Collapse Subdocuments', 'Close Document', and 'Close Outline View'. The main content area displays a hierarchical list of codes and headings:

- belonged to the community. (ID02_Above Threshold_EM_M_23_44)
- I would say because most of my friends had gone out of the country. There were a lot of new faces as well, so not a lot of people I knew were still there. So basically I don't feel I am part of the community now in the sense that because most of the people I've known are gone. So I don't feel like I am part of them now like before. (ID02_Above Threshold_EM_M_23_48)
- + **Things to do in neighborhood**
 - Activities with neighborhood friends
 - Activities in neighborhood
 - Games, Activities in Neighborhood
- + **Volunteering**
 - Considerate, Change after volunteer, Neighborhood
 - Lost, Change after volunteer, neighborhood
- + **Resources in Neighborhood**
 - Cross generational resources emotional support, Neighborhood
 - Familiar with neighborhood shops
- + **Feelings towards Neighborhood**
 - Feelings towards Neighborhood
 - Feelings as Big family
- + **Peer Network in Neighborhoods**
 - Friends since childhood, Neighborhood
 - Contact Neighborhood friends
 - lots of friends, neighborhood
 - Mutual understanding among friends in neighborhoods
 - Neighborhood friends left
 - Neighborhood friends Undesirable influence

References

- Hay, I. (2000). Qualitative research methods in human geography.
- Ose, S. O. (2016). Using Excel and Word to structure qualitative data. *Journal of Applied Social Science*, 10(2), 147-162.

Thank you!
Any Questions?