Using Mixed-Methods Evaluation Methods Taking Into Account Gender/Class Realities: Using QCA and NVIVO

Wendy Olsen

Funded by **British Academy: Innovation in Global Labour Research Using Deep Linkage and Mixed Methods**

Applications to:

- Theorising Bangladesh Indebtedness
  - Mediated by involvement in an NGO
  - All NGOs are different; and
- Indian Women's Work
  - Mediated by involvement in either the self-help groups, an MFI, Or an NGO, or the Employment Guarantee Scheme

Steps for a Mixed-Methods Evaluation Approach

- Step 1: a complex theory of the ontic realities, ie the types of things
- Step 2: fieldwork
- Step 3: analysing early, & linking results
- Step 4: keyness, discourses
- Step 5: perhaps QCA analysis
- Step 6: transparency: database
- Step 7: draw conclusions

Key Sampling Themes

- **Representativeness** at some level
- Idea of the **replication of entities** across a geographic space
- **Generalisation** to known sub-populations and concrete spaces

Step 1: a complex theory of the ontic realities, ie the types of things

- The ontic reality is treated by statisticians as Structured
  - Outcome = result of structures, events.

Logic is

- Y = results arise from S, I, E, C, random error

I = institutions, local entities

C = context

A non-statistical approach.

Discussion of Key Sampling Themes

ADVICE

- You may **triangulate** a national dataset onto your local data
  - **Match questions on demographics**, take a random sample not non-random!
  - Randomness at some, not all levels is, overall, non-random
  - But generalisation can be made at the level-to-which randomness was applied, e.g. by geographic transect walks.
    - E.g. a village. Or all the Slums of Dhaka if the Slums were stage 1 and
    - The choice of households was stage 2
    - And the choice of individuals (KISH) was stage 3
    - So be very professional about selection of cases.
    - Multi-stage quota sampling vs. Multi-stage RANDOM sampling: The difference is in the degree of REPLACEMENT of non-response cases.

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Never sample on the outcome variable.

For example on income levels, if you want to explain the change in income over time.

NVIVO Keyness Analysis of Discourses in Large Dataset (With Example of Matrix Results from South India)

Wendy Olsen 2016

Gender Norms Project

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Next Steps:

- Step 2: fieldwork
- Step 3: analysing early, & linking results
- Step 4: keyness

How to conduct a Keyness Analysis for a Social Science Research Project.

1. Pool all the transcripts
2. Find out the keyness of words
3. Code up the concordances
4. Group the words into discourses
5. Interpret selected discourses only
6. Treat each one of those very carefully: **the** dominant discourse **must be discerned, then the** marginalised, deviant and innovative (intertextual**) ones.**
7. Trace key arguments through these. (Mixed Methods)

How the Keyness Analysis is Done

1. **Keyness of words**
2. **Discourses too**
3. **Interpretations:**
   dominant discourse;
   Marginalised & intertextual ones.
4. **Trace key arguments through these. (Mixed Methods)**

Key References:

- ***Touri, M., and N. Koteyko*** (2014) "Using Corpus Linguistic Software", ***International Journal of Social Research Methodology***
- ***Fairclough, Norman*** various, books on ***Discourse and Power.***

Part One: The Keyness of Words (Touri and Koteyko 2014)

- **Keyness is the relative prevalence of words in one corpus of material over another.**
- **Specifically, count S words in corpus, vs. N words in the British National Corpus of English Language.**
- **Use the formula provided here.**

Formula for Keyness

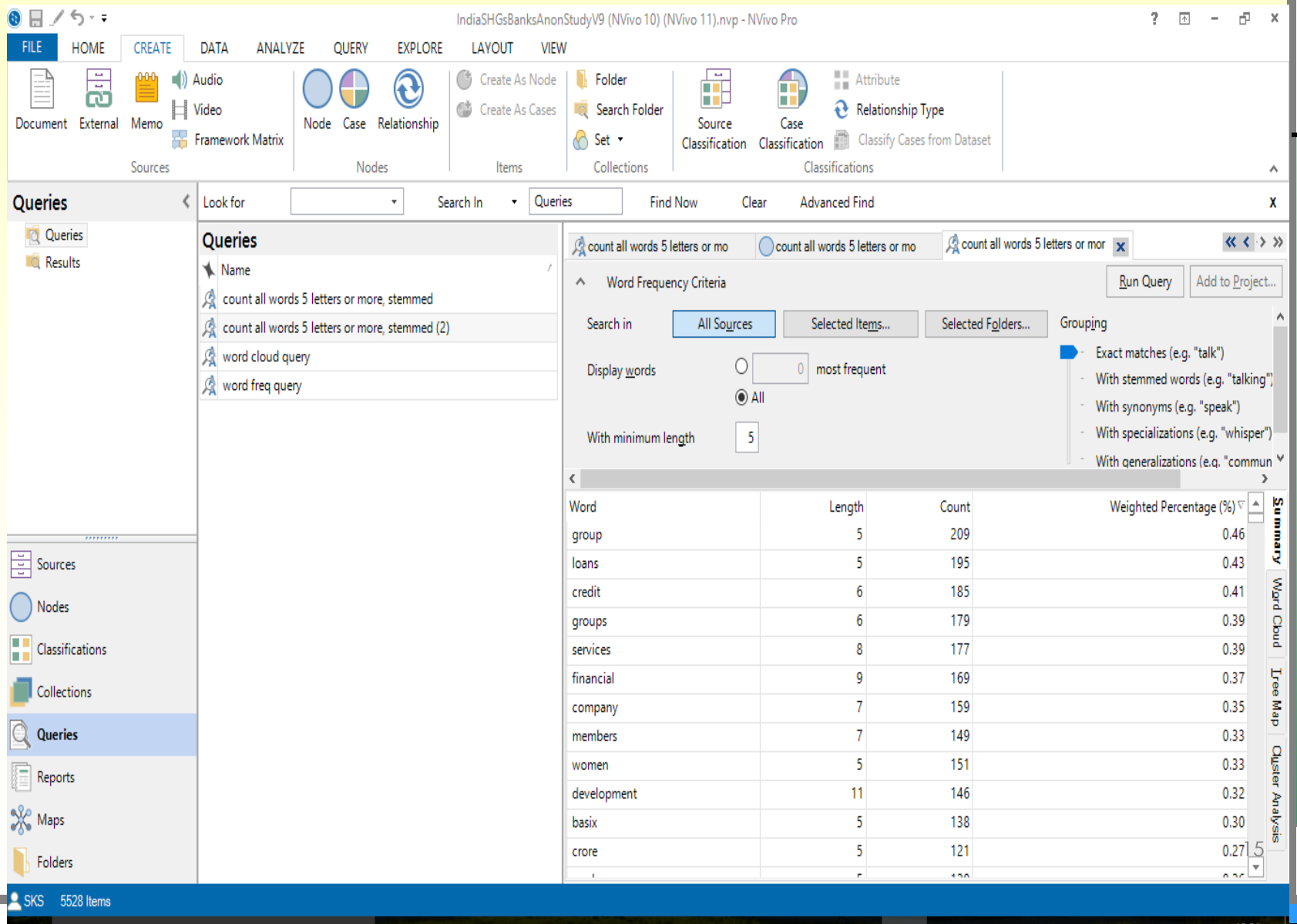
- $Keyness = odds\ ratio$
  - **The odds of a word appearing in the fieldwork based corpus vs. the odds of it appearing in the national corpus**

- $K = \frac{\frac{s_i}{S - s_i}}{\frac{n_i}{N - n_i}}$ For each word I

Counting words using NVIVO then Matching words using STATA or SPSS

Report output as a word list, RANKED.

Word Count Query in NVIVO

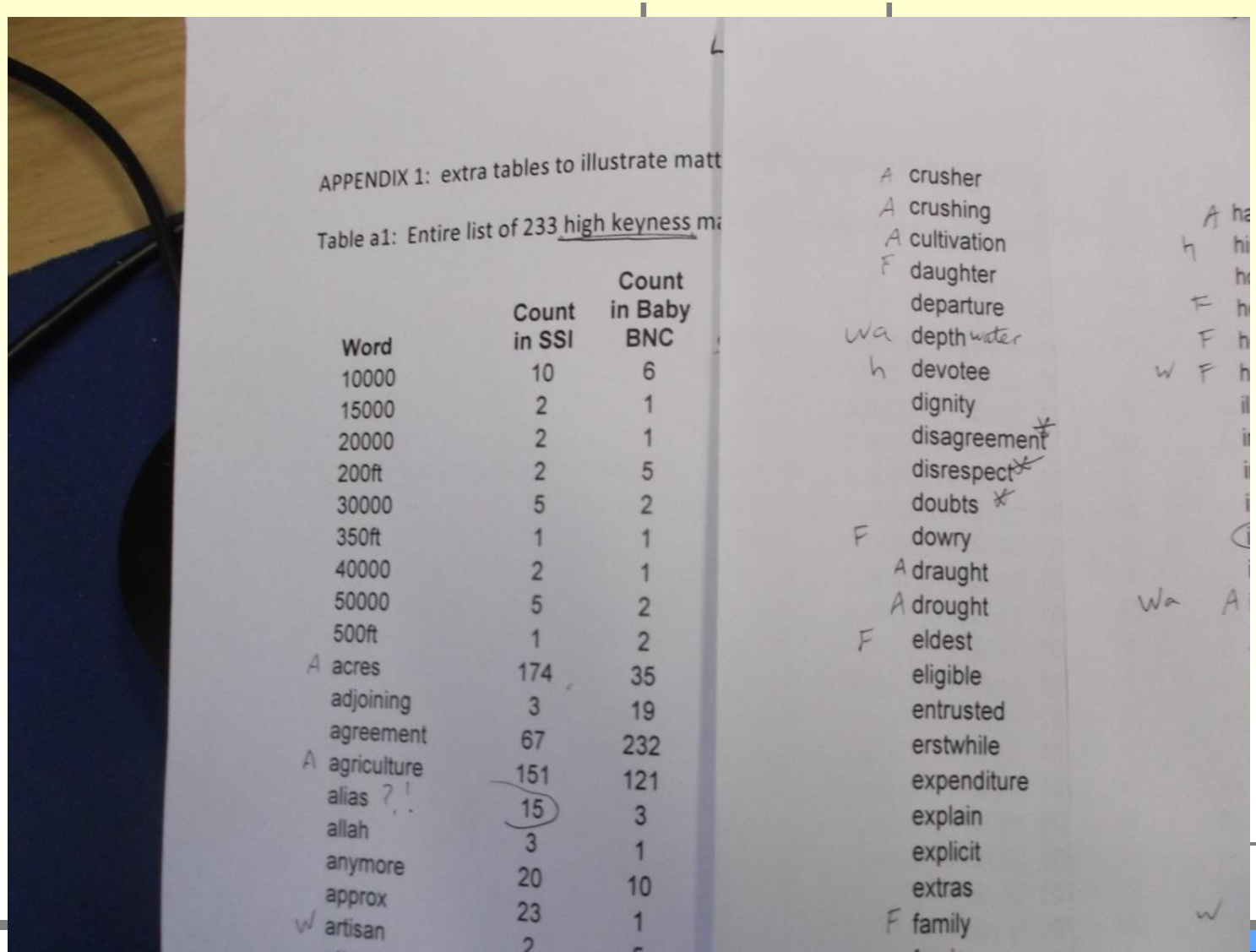


Excel Spreadsheet – Highest Keyness

Delemmatised		(mention)	of mentions			Ratio
Word	Length	Count	Percent	BNC Prevalence	BNC % of BNC	Odds
brickfields	11	2	0%	2	0%	4738.06
laws'	5	2	0%	3	0%	3158.71
purdah'	7	1	0%	2	0%	2369.03
coops	5	2	0%	11	0%	861.47
passbook	8	1	0%	6	0%	789.68
betel	5	3	0%	23	0%	618.01
mindset	7	1	0%	11	0%	430.73
parishad	8	2	0%	25	0%	379.04
stipends	8	2	0%	38	0%	249.37
negatively	10	2	0%	52	0%	182.23
sons'	5	1	0%	28	0%	169.22
educate	7	12	1%	365	0%	155.77
workloads	9	1	0%	43	0%	110.19
rears	5	1	0%	45	0%	105.29
chores	6	6	1%	275	0%	103.38
robbers	7	5	0%	244	0%	97.09
tailoring	9	3	0%	147	0%	96.70
dhaka	5	1	0%	55	0%	86.15

Illustration of Keyness by Odds Ratio.

We created a spreadsheet to



APPENDIX 1: extra tables to illustrate matt

Table a1: Entire list of 233 high keyness ma

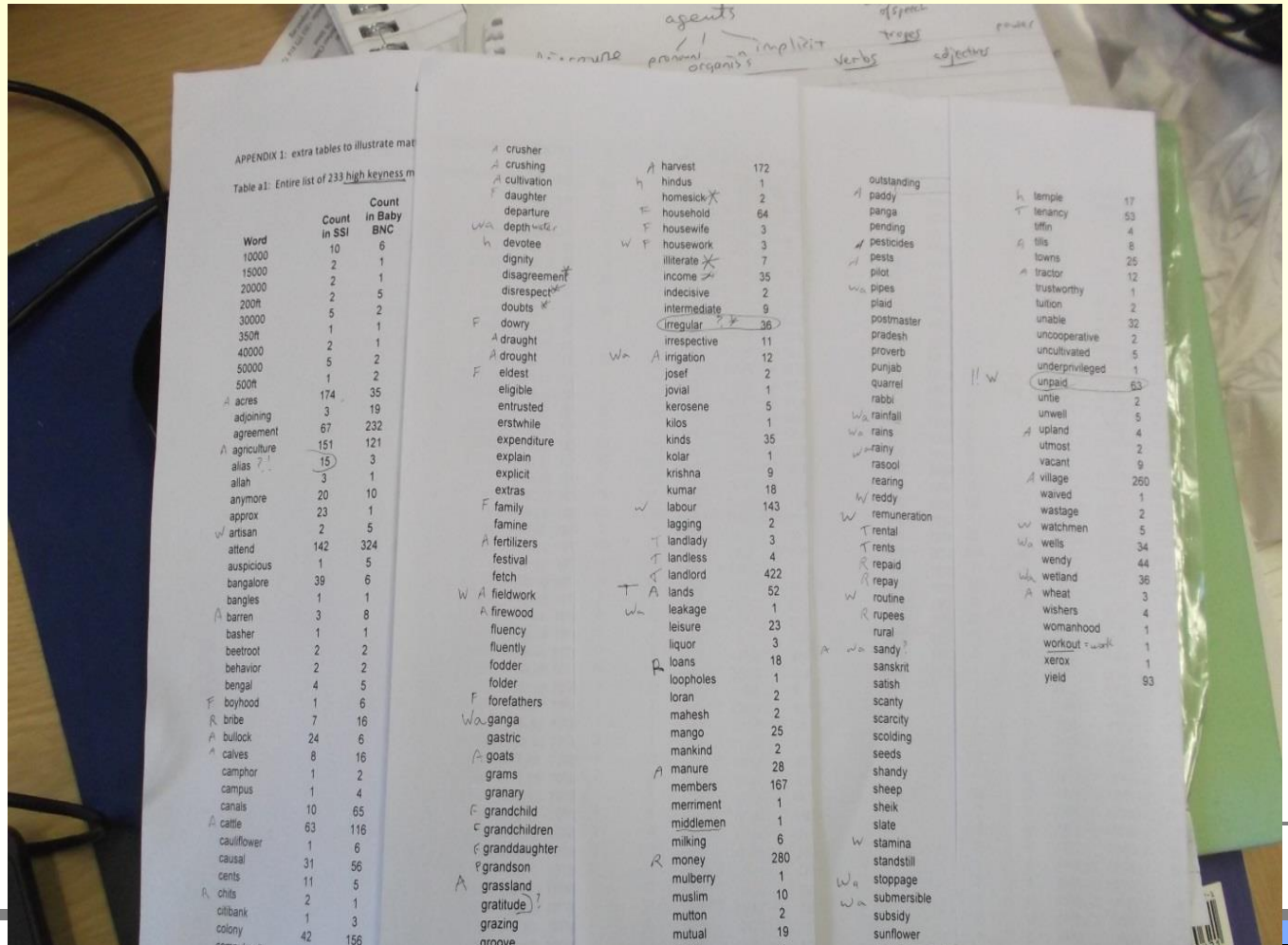
Word	Count in SSI	Count in Baby BNC
10000	10	6
15000	2	1
20000	2	1
200ft	2	5
30000	5	2
350ft	1	1
40000	2	1
50000	5	2
500ft	1	2
acres	174	35
adjoining	3	19
agreement	67	232
agriculture	151	121
alias	15	3
allah	3	1
anymore	20	10
approx	23	1
artisan	2	

crusher
crushing
cultivation
daughter
departure
depth water
devotee
dignity
disagreement
disrespect
doubts
dowry
draught
drought
eldest
eligible
entrusted
erstwhile
expenditure
explain
explicit
extras
family

In this example from South India, 39 interviews with couples.

- 39 Interviews
- 47,000 Words
- We reduced these to 233 key words. **Extremely concise summary.**
- Then as an expert I examined these to group them into discourse topics.
- Next I study these discourse topics to identify discursive patterns.

Interim Product Conforms to Miles & Huberman's Advised "one-page summary"



Here's an example (a small South Indian project)

APPENDIX 1: extra tables to illustrate matters from South Indian Mixed Methods Tenancy Project

Table a1: Entire list of 233 high keyness matched words from the SSIs (Alphabetical)

Word	Count in SSI	Count in Baby BNC	oddsbnc	oddsssi	oddsratio	Size of Baby BNC	Size of SSI Data
10000	10	6	0.0002	0.0037	24.22	39701	2741
15000	2	1	0.0000	0.0007	28.99	39701	2741
20000	2	1	0.0000	0.0007	28.99	39701	2741
200ft	2	5	0.0001	0.0007	5.80	39701	2741
30000	5	2	0.0001	0.0018	36.27	39701	2741
350ft	1	1	0.0000	0.0004	14.49	39701	2741
40000	2	1	0.0000	0.0007	28.99	39701	2741
50000	5	2	0.0001	0.0018	36.27	39701	2741
500ft	1	2	0.0001	0.0004	7.24	39701	2741
acres	174	35	0.0009	0.0678	76.82	39701	2741
adjoining	3	19	0.0005	0.0011	2.29	39701	2741
agreement	67	232	0.0059	0.0251	4.26	39701	2741
agriculture	151	121	0.0031	0.0583	19.07	39701	2741
alias	15	3	0.0001	0.0055	72.81	39701	2741
allah	3	1	0.0000	0.0011	43.50	39701	2741
anymore	20	10	0.0003	0.0074	29.17	39701	2741
approx	23	1	0.0000	0.0085	335.95	39701	2741

- Annotate and summarise the Key Terms.
- Group them into dominant discourses.
- This is also like thematic analysis, initially.
  - **Discourses are sets of rules which are coherent but which are held to only via normed practices, and which can be broken, at a certain price.**
- Example of patriarchal talk about marriage as an exchange of assets.
- Next: **Locate the marginalised discourses**

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Discourses we found (South India; North India)

- Dominant ones:
  - Agriculture as production
  - Family as duty, obligations (disciplining)
  - Moneylending **as a solution**
- Marginal ones:
  - Agriculture as a burden the older generation carry, disliked
  - Family as conflict
  - Moneylending and debt **as a problem**

SCALE of the DATABASE: A Small Research Project in Bangladesh

1 interview	673 raw words of 5+ letters	**396 "words" i.e. word-roots, in one interview, if you stem the words**	**By hand**
11 interviews	1666 words	1249 after stemming	By NVIVO
32 interviews	2798 words	**2066** word-roots, after stemming	By NVIVO

Using the Words with Highest Keyness

- We set a cutoff level for keyness (the odds ratio) e.g. 4, or 9.
- Collect the concordances using NVIVO
- You now have extensive quotations to compare and contrast.
- **Link the survey data to this database.**

REMINDER: My Keyness Method

1. Pool all the transcripts using NVIVO.
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3. Group the words into discourses
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5. ***Treat each one of those very carefully***
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COMPARATIVE NVIVO

Results for two discourses (family talk and money talk) [india 1 and bangla 1 combined] Mentioned within 30 words of each other, in combination.

	A : Tightness node	B : money	C : problems	D : spend	E : works
1 : Family	20	18	11	9	22
2 : children	12	10	6	5	11
3 : daughter	15	6	3	0	13
4 : husband	10	6	8	1	11
5 : mother	11	6	1	4	11

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Qualitative Comparative Analysis

Logic is

- Y = results arise from S, I, E, C, random error

I = institutions, local entities

C = context

A non-statistical approach.

Is event E necessary, or sufficient for Y?

Aims and Means of QCA

Aims

- To focus on one outcome.
- How does the effect of X or T or E on that outcome change depending upon the contexts?
- Circumstances matter
- Measure to what extent it was the case.

Means

- Insert a survey matrix into fsQCA freeware
- **Produce tests of necessity of EACH condition for Y**
- **Then test for sufficient PATHWAYS.**
- **Test the results using a measure, or an F Test**
- **See my GITHUB freeware.**

Details of the QCA F-Tests

1 We first define our terms and conceptual framework (S, I, E, X, Y, C)

2 Empirical measure of Csuff (consistency for sufficiency of X for Y)

3 Empirical measure of Goodness-of-fit (F-tests) for each pathway to Y

See https://github.com/WendyOlsen/fsgof

Amending the QCA for treatments, impacts of interventions

- In logic add ‘T’ as a new event
- Allow it to work as a ‘necessary’ cause (test) of higher levels of Y
- Allow it to be considered as a sufficient pathway for higher levels of Y
- Allow it to be considered as part of sufficient combination pathways for higher levels of Y

Practical Example

Applications to:

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  - All NGOs are different; and
- **Indian Women's Work**
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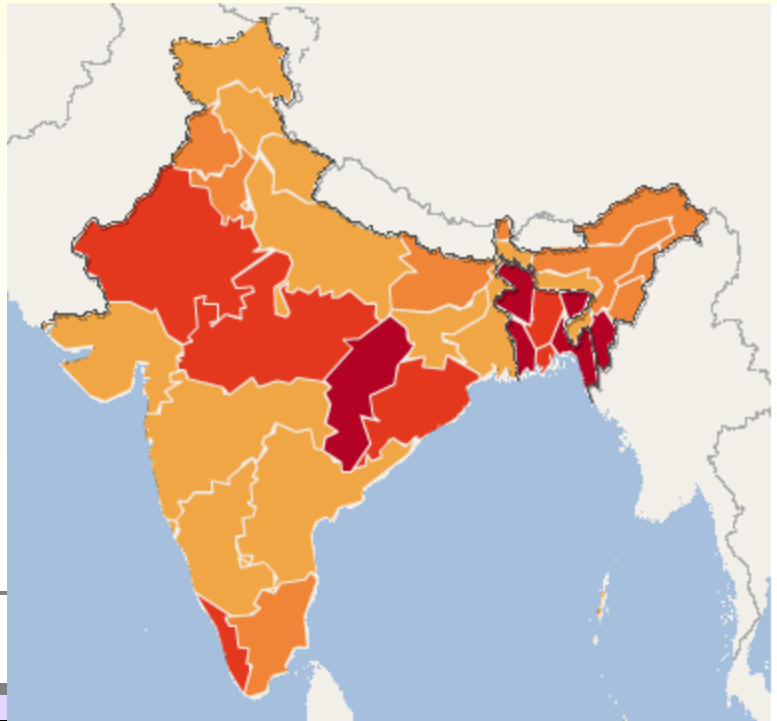
Sample of Raw Debt Data – Bangladesh



Results from QCA Part for India

Reminder: **Mixed Mode Data**

- **Step 1: ontic exploration, list the types of things, name the key processes,**
  - **SAMPLING: Get samples which have CONTRASTS on BOTH X and Y**
  - **AND ON T, the treatment event (low/high!) or (Yes/No)**
  - **And on contextual factors (see leaflet)**
  - **Make sure the qualitative cases are chosen from among the pre- and post-intervention sample cases.**
- Step 2: fieldwork
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Discussion

Critiques and Responses

- RCT critique
- Unobserved heterogeneity critique
- Responses: **Complex differentiation of how causal mechanisms work**

Critique 2

- Endogeneity critique
  - **(it says that the key factors in your model can't be distinguished from the irrelevant ones you have included because you've included too many factors)**
- **Responses:**
  - **Complex interactions → do not ignore possible pathway reversal phenomena!**
  - **That's why statistics is weaker.**
  - **Furthermore, be parsimonious in setting up the QCA explanatory model.**

Conclusions

- Ontic complexity
- Teamwork
- Combining the keyness stage with a selective interpretation stage; and
- Add A QCA or Fuzzy Set QCA Stage.
- Models and results are debated in an ongoing, open-ended way.
- We try to make the interpretation match, complement or contradict the original **Research Question.**
- **Be rigorous and transparent.**

Acknowledgements-
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- John has programmed in Python to break up the British National Corpus into parts and put them into NVIVO. Counting the word frequencies in Baby BNC in NVIVO, he then compared these with the word frequencies in each qualitative data set.
- See GITHUB for the programme, searching on either John McLoughlin or Wendy Olsen.

See Also:

- See also a calibration example at: https://www.facebook.com/groups/mixednetwork/
- Integrated Mixed Methods Network
- And many examples of QCA and Fuzzy Set Analysis of Cases at www.compasss.org (*sic*)
- And JISCMAIL QUAL-COMPARE (190 members) email list. Free to join.

Key References

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