Innovating Quantitative Practice

The Diamond 9 Model

Sarra Jenkins, MA Careers Guidance and Development

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The Challenge

"I haven't done maths since GCSE..."

The Reality:

- Quantitative research can feel intimidating
- Tools like SPSS feel like black boxes

Why Quants?

- Confirmatory
- Pattern identification

But meaningful insights don't require complex mathematical understanding

What this workshop is (and isn't)

This IS:

- An approachable introduction to quantitative methods
- A case study of adapting a qualitative tool
- Practical lessons and reflections
- Inspiration for practitioner-led research

This ISN'T:

- A statistics masterclass
- Heavy on mathematical theory
- An SPSS training course
- **Scary!**

The Diamond 9: A Familiar Friend

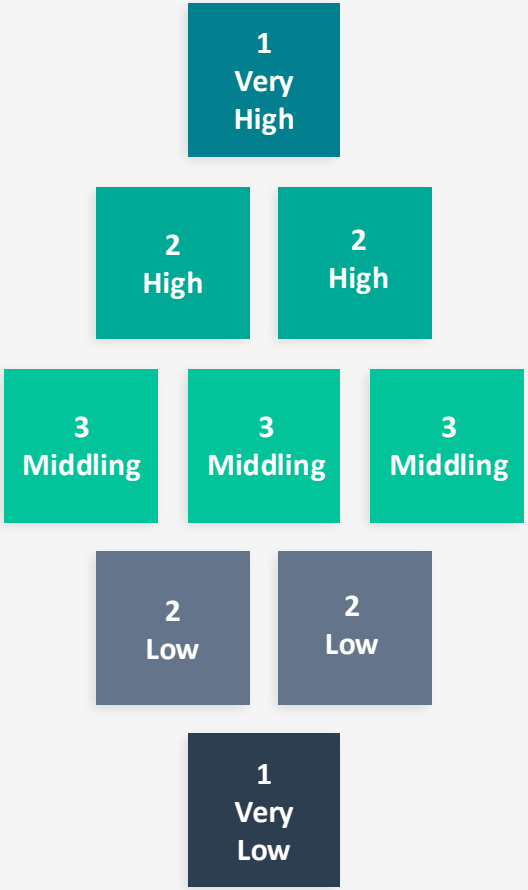
Traditional Use:

- Educational tool for reflection and discussion
- Prioritise 9 items across 5 levels (1-2-3-2-1 structure)
- Used in classrooms, workshops, focus groups
- Qualitative insights through discussion

The Innovation:

What if we could use this as a QUANTITATIVE research tool?

The Diamond 9 Structure



Why This Works:

- Forces prioritisation
- Allows nuance (ties within levels)
- Reduces frustration of absolute ranking
  - Reducing ‘untruthful’ responses (Denscombe)
- Encourages genuine reflection (Clark et al)

From Qualitative to Quantitative

The Key Shift:

Instead of discussing rankings...we **collect** them as data

1. Design survey with Diamond 9 question format
2. Collect responses online (Microsoft Forms)
3. Code responses numerically (Very High = 5, Very Low = 1)
4. Analyze in SPSS (or Excel)

My Research Context

Research Question:

Are values that students hold in HE decision-making transmitted from parents within a shared habitus?

What I Needed to Know:

- Which values do students prioritise when choosing courses and universities?
- Which values do parents prioritise?
- Do they align? (Overall, and within parent-child pairs)
- Do patterns differ by demographics (SES, parental education, gender, ethnicity)?

The Survey Design

Sample:

- 3 schools (East Midlands)
- Years 12-13 students + parents
- 107 students, 54 parents
- 13 parent-child pairs

Two Diamond 9 Questions:

- Course choice values (9 factors)
- University choice values (9 factors)

Plus, demographics:

TUNDRA quintile, parental education, gender, ethnicity, household income

Challenge: No survey software had a built-in Diamond 9 tool!

The workaround: multiple choice

The Problem:

Microsoft Forms allowed multiple choice, but participants had to self-monitor their selections - 1 very high, 2 high, 3 middling, 2 low, 1 very low

The Consequence:

Some participants made errors. These responses had to be excluded from analysis. Data cleaning became crucial!

Lesson: Pilot thoroughly! Test the survey with colleagues first. And then do what you can with what you have

Data preparation: Excel is your friend

Steps:

1. Download responses from Microsoft Forms to Excel
2. Clean data: check Diamond 9 responses using conditional formatting and manual checking
3. Code responses numerically (Very High = 5, High = 4, Middling = 3, Low = 2, Very Low = 1)
4. Calculate averages to create overall Diamond 9 models

Lesson learnt: You can do a LOT in Excel before needing (or even getting near) SPSS!

Introducing SPSS (don’t panic!)

What is SPSS?

Statistical Package for the Social Sciences - software for quantitative analysis

Why Use It?

- Handles complex analyses
- Point-and-click interface (mostly!)
- Industry standard in social sciences
- Most universities have access

The Secret

You don't need to know *how* it works!

Understand *what* you're asking

Understand what you *can* ask it

Interpret the output correctly

The Key!

Pallant, J. (2020) SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using IBM SPSS. 7th edition. McGraw-Hill.

Think of it like a calculator: you don't need to understand the circuits to use it!

What I did in SPSS

1. Crosstabulation (Demographics × Values)

Compare value priorities across demographic groups

e.g. Do parents with degrees value different things than those without?

2. Correlation (Parent-Child Pairs)

Used Spearman's rho & Kendall's tau to measure how closely parent and child rankings aligned within households

3. Descriptive Statistics

Frequencies, percentages, means - the building blocks for understanding your data

Playing with SPSS: Exploration Matters

My Approach:

- I didn't know exactly what I'd find

I *explored* - running different crosstabs, looking for patterns

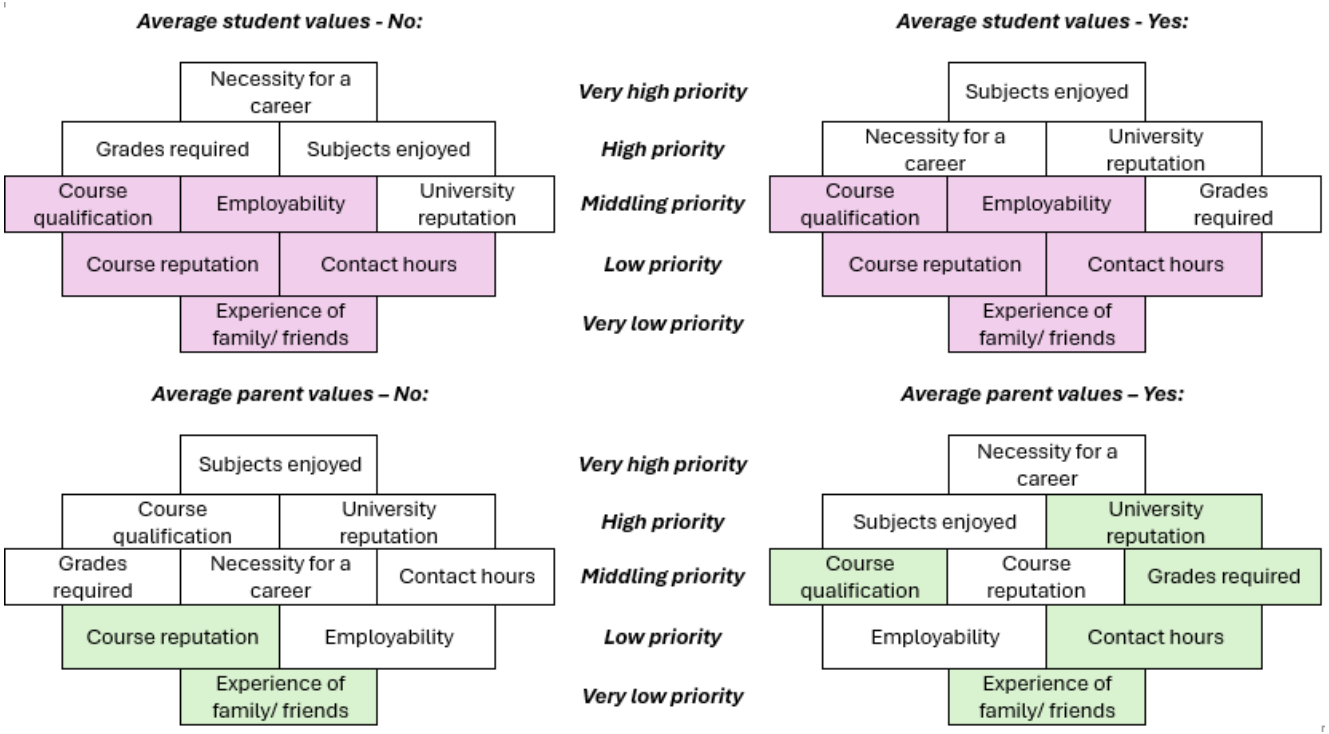
- Some analyses went nowhere (that's okay!)
- Others revealed fascinating patterns I hadn't expected
- Ask questions about the data that you're not sure if you can answer

Key Insight:

Quantitative research isn't just about confirming hypotheses - it's about discovery. Play around - see what emerges!

Displaying the data

You don't have to use all of your data



The Diamond 9 comparison broken down by HE and non-HE experienced families

Displaying the data

You don't have to use all of your data

COURSE CHOICE: TOP DIAMOND 9 VALUES							
		STUDENTS			PARENTS		
	Do parents have a degree?	Very High/High	Middling	Low/Very Low	Very High/High	Middling	Low/Very Low
Diamond 9 Value: Grades required	Yes (SN=50) (PN=22)	46.0%	32.0%	22.0%	31.8%	40.9%	27.3%
	No (SN=24) (PN=6)	70.8%	16.7%	12.5%	33.3%	50.0%	16.7%
Diamond 9 Value: Necessity for a career	Yes (SN=50) (PN=22)	44.0%	38.0%	18.0%	72.7%	9.1%	18.2%
	No (SN=24) (PN=6)	70.8%	20.8%	8.3%	33.3%	16.7%	50.0%
Diamond 9 Value: Subjects enjoyed	Yes (SN=50) (PN=22)	52.0%	32.0%	16.0%	50.0%	31.8%	18.2%
	No (SN=24) (PN=6)	58.3%	25.0%	16.7%	66.7%	33.3%	0.0%
Diamond 9 Value: University reputation	Yes (SN=50) (PN=22)	48.0%	30.0%	22.0%	50.0%	36.4%	13.6%
	No (SN=24) (PN=6)	33.3%	37.5%	29.2%	66.7%	33.3%	0.0%

The background data – combining top two ranks and bottom two ranks for analysis

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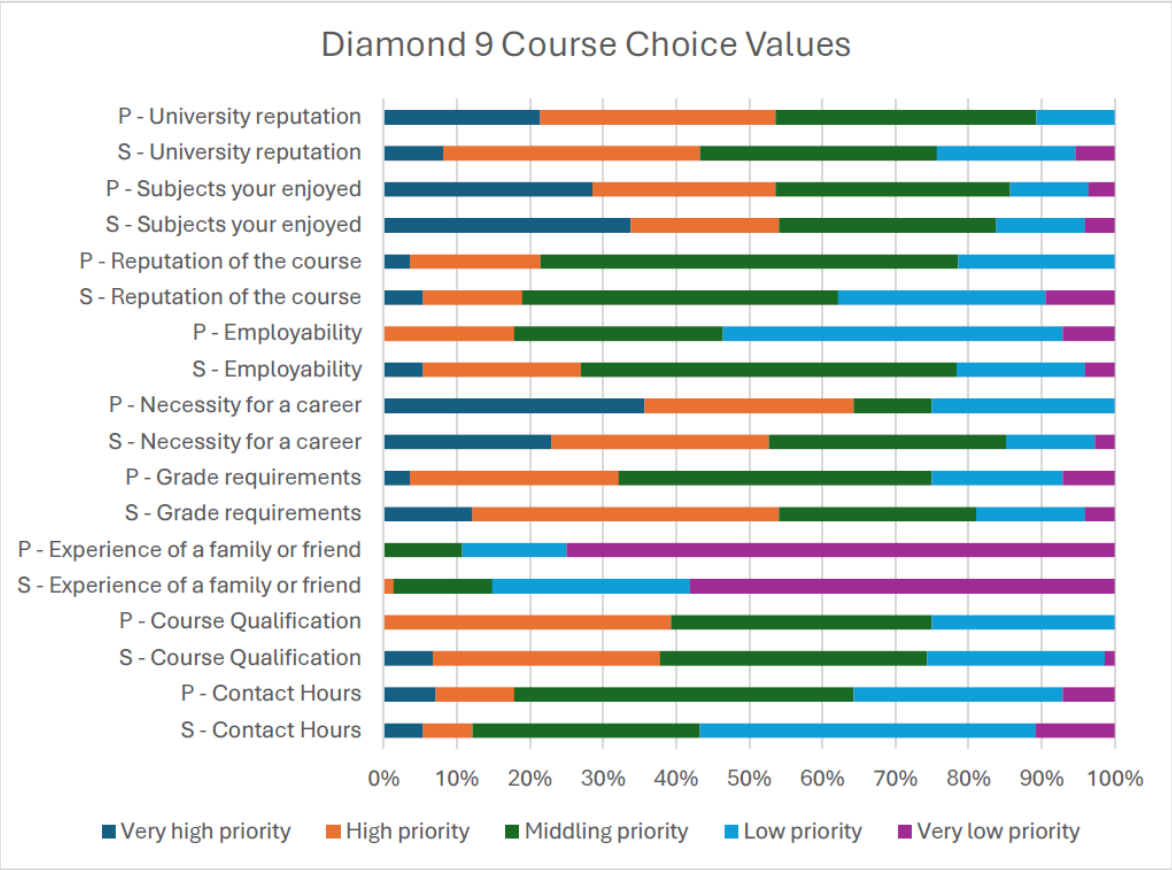

Overall data to look for pattern spotting

Displaying the data

You don't have to use all of your data

Table 15. Correlation of parent-child values in course and university choice

	Pair	Data Accurate	Spearman's rho	Spearman's rho sig.	Kendall's tau	Kendall's tau sig.	Exact Agreement Count (EAC)	Mean Absolute Difference (MAD)	Top 3 agreement	Bottom 3 agreement
COURSE CHOICE	1		0.556	0.112	0.484	0.096	5	0.66	67%	67%
	2		0.636	0.066	0.516	0.076	2	0.77	67%	67%
	4		0.434	0.243	0.387	0.183	6	0.66	67%	67%
	5	No - S	0.234	0.544	0.136	0.648	2	1.11	33%	67%
	6	No - SP	0.214	0.581	0.207	0.49	6	0.78	33%	33%
	7	No - P	0.235	0.542	0.18	0.551	2	1	67%	33%
	8		0.241	0.532	0.226	0.438	0	1.33	33%	33%
	9		0.561	0.116	0.484	0.096	4	0.66	67%	33%

The paired data of parent and child within the same household

What I Learned: Findings Snapshot

Demographics matter: HE-experienced parents and higher-income families showed much higher agreement with their children (EAC 6-9/9)

Gender patterns: Male and female students (and their parents) systematically prioritise different values - not individual preference, but structural reproduction

Value transmission is 'messy': Demographic patterns show clear replication, but individual pairs show variation - habitus is evident but not deterministic

Lessons Learned

1

Pilot everything

Test your survey with colleagues. Fix issues before launch.

2

Data cleaning is crucial

Expect errors. Build in time for cleaning and checking.

3

Explore your data

Don't just test hypotheses - see what patterns emerge!

More Lessons Learned

4

Small samples limit findings

Be honest about limitations. Trends matter even without statistical significance.

5

Ask for help!

YouTube, forums, supervisors - you're not alone. Everyone struggles at first.

6

Iteration is normal

First analysis rarely tells the whole story. Keep refining!

Practical Applications for Your Research

The Diamond 9 could be adapted for:

- Career choice values and influences
- Employer priorities in recruitment
- Skills development priorities
- Barriers to career progression
- Service user priorities in guidance provision

Anything where you want to understand hierarchies of values/priorities

Why This Matters

Quantitative methods are accessible

You don't need a maths degree - just curiosity and willingness to learn

Practitioners can be researchers

You understand your field - research it! Don't leave it only to academics.

Innovation comes from trying new things

Adapting familiar tools in new ways can yield fresh insights

Getting Started: Your Next Steps

1. Start small: Try the Diamond 9 with a familiar question
2. Download SPSS trial or use Excel
3. Watch beginner YouTube tutorials (e.g. Data for Development), and grab the SPSS Survival Manual
4. Experiment! Play with data, make mistakes, learn

Analysis data using SPSS

Thank You

Questions & Discussion

Sarra Jenkins | MA Careers Guidance and Development
University of Derby

I am never forget the day I am given first original paper to write. It was on analytic and algebraic topology of locally Euclidean metrization of infinitely differentiable Riemannian manifold….This I know from nothing!