

Using Market Research Surveys

May 7, 2008



1. Agenda

This section is intended to focus on ...

1. Data Collection
2. Data Analysis
3. Data Presentation

... in introducing the role of surveys and how to analyse their results.



1. Agenda (revised)

To do so, we need to cover ...

1. **Problem Definition**
2. **Data Collection**
3. **Data Analysis**
4. **Data Presentation**
5. **Consequent Action**

... since these are all related.

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2. Problem Definition

Covered in previous sessions – Why do we collect data? What should be collected?

- **Understanding** – eg. leading to strategy development
- **Definition** – eg. to objectively allocate resources
- **Performance Measurement** – maybe with a time dimension?
- **Consultation / Idea Collection** – eg. Community or Staff input
- etc.

Which can have different requirements regarding ...

- **Precision**
- **Confidentiality**
- **Justifiable Investment**

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3. Data Collection - Qualitative

For exploring, not defining. Often a preparatory stage ...

Group Discussions	For:	Roaming, Flexible Deeper, Wider
	Against:	Small, contaminated samples Seldom replicable Expensive in cost & time
Depth Interviews	For:	More Flexibility & Focus Less cross-contamination
	Against:	Real depths more expensive
Etc		eg. via the internet, part of product/service check

Can generate great ideasbut not justify them

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4. Data Collection – Quantitative

To measure a parameter in a defined population, ideally with some confidence.

We need to consider 4 things for any survey ...

Population Defn:	Not just a description, access
Sample Size:	Crucial for accuracy (remember sub-samples)
Sampling Procedure:	Equally crucial for accuracy (randomness)
Questions & Context:	Can inhibit or bias answers

... which together with Cost will usually dictate the survey method.

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4.1 Population & Sample Size

We mostly survey large populations (10k ++)
... so sample size is usually the key - not the sampling fraction

Typical levels of confidence ...

Sample Size (randomly selected across say Melb)	95% CL's (assuming true pop value is 50%)	Likely Range (95% of random samples likely to be within)
10	± 33%	17% to 83%
100	± 10%	40% to 60%
400	± 5%	45% to 55%
1,000	± 3%	47% to 53%
10,000	± 1%	49% to 51%

Assuming want to estimate a binomial dist, $p=0.5$, no ipc

Usually, cost is proportional to sample size whilst accuracy is proportional to the square root of sample size - we hit diminishing returns early. But look at sub-sample requirements.

If we know the population composition, eg. via ABS figures, we can improve accuracy via ...

- Oversampling segments of particular interest
- Stratifying & Weighting to Known Totals

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4.2a Sampling Procedure & Questions

Random sampling doesn't mean haphazard, it requires that each member of the target population has a known chance of selection.

This should set warning bells ringing re: Self-Selected Samples
Non-Response Biases

We also need to minimise biases arising from the questions themselves, eg. via ..

- Privacy
- Confusion
- Fatigue
- Posturing

In the real world, there will always be factors which expand the margins of error that should be applied - but fortunately we seldom need perfect data to make decisions.

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4.2b Sampling Procedure & Questions *(cont'd)*

Distinguish between the information required and the way it is sought, ie.

- Keep it Simple - no jargon; assume they're only half listening. Be brief.
- No Leading Questions - eg. use 'Will or Won't', 'if any'
- Be Sensitive to Sequence - eg. ask Unprompted ques first, use Rotations
- Try to be Interesting - minimise repetition, use prompts & autos where possible.

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4.3 Quantitative Data Collection Methods

In order of appearance ...

Face-to-Face:	For:	Greater sincerity of communication Enables Visual Prompts (& Sensory)
	Against:	Usually highly clustered sample Less Supervision Expensive in cost & time
Telephone:	For:	More Widely Spread sample Central Coordination & Control Some Quicker Results
	Against:	No Visual cross-checks Some fall-off in Response rates
Internet:	For:	Very Quick Results Possible Visual references available Now covers c. ¾ of Households (<i>& some Staff/B2B/Assocs well defined</i>) Relatively Cheap
	Against:	Panels essentially self-selecting (for General Pop).

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5.1 Analysis of Results

Usually the best and simplest way is a summary table or chart, maybe backed up by crosstabs; but more detailed multivariate approaches abound, eg ...

Factor Analysis:	Distilling down a string of attributes into their underlying components
Cluster Analysis:	Grouping respondents by common attributes (segments)
Choice Modelling:	Correlating preferences with ratings on related attributes (conjoint analysis)
Database Modelling:	Extrapolation to population behaviour

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5.2 Some Examples of Analyses & their Presentation – Crosstabs

Trends in Public Library Usage

	Total	2004	2005	2006	2007
Resident Population 16+ yrs (ooo's)	5,691	1,351	1,536	1,407	1,397
<i>Sample</i>	<i>10,126</i>	<i>2,311</i>	<i>2,700</i>	<i>2,400</i>	<i>2,715</i>
I've used a Public Library in the last 12 months	2,957 52%	742 55% +++	759 49% ---	737 52%	718 51%
I've used a Public Library some time but not last 12 months	2,147 38%	461 34% ---	609 40% ++	541 38%	536 38%
I've never used a Public Library	588 10%	148 11%	167 11%	129 9% --	143 10%

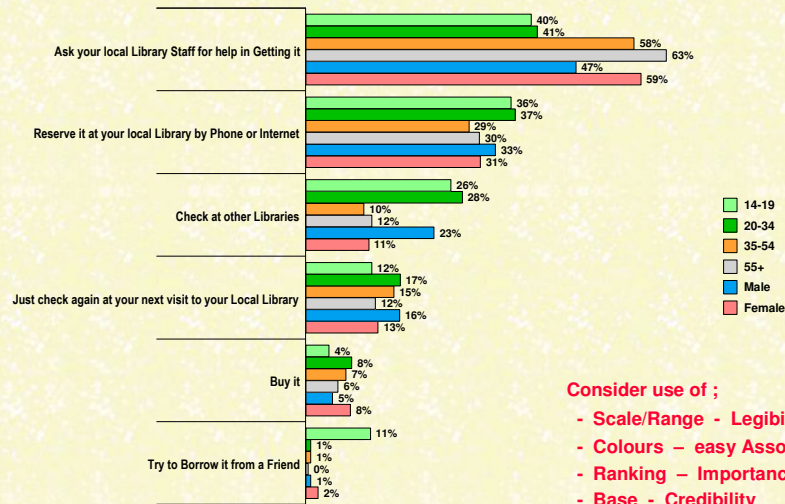
Tables should ideally show the sample base & highlight the major differences simply ... whilst focusing on the population result ...

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5.3 Some Examples of Analyses & their Presentation – Charts

Chart 12: q.27 If an item were not available when you wanted it, which would you most likely do...

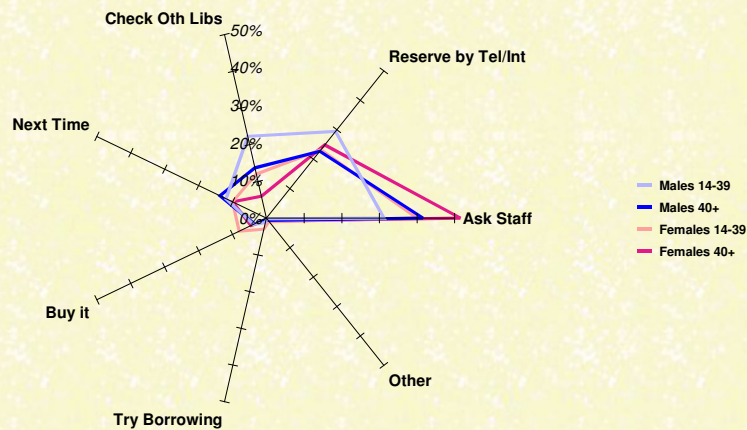


Base: Total Region Library Users in the Last 12 months (1,400 in 2007)



5.4 Some Examples of Analyses & their Presentation – Other Ways

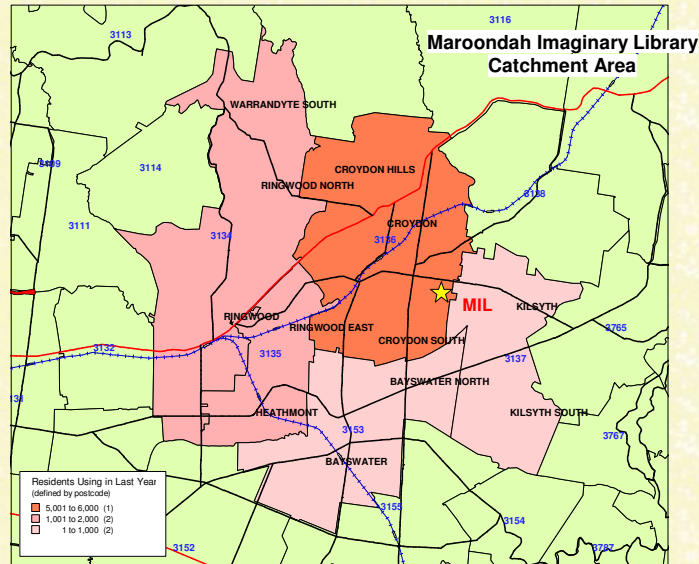
Chart 12: q.27 If an item were not available when you wanted it, which would you most likely do...



Base: Library Users in the previous 12 months (1,400 in 2007)



5.5 Some Examples of Analyses & their Presentation – Maps



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6. Some Final Thoughts on Data Presentation

Report Structure:	Summary & Conclusions (1-4p), Commentary (Body of the report, incl charts), Detailed Tables (maybe separate)
Interactive Data:	Summary & Conclusions Commentary (maybe PowerPoint cf. Word) Link to Data for direct interrogation
Good Practice:	Sample/Base Definition & Size easily found for each chart Indications in the commentary where differences significant Backgrounder on Method (incl. Questionnaire) for later ref. and was It 'Useful' or just 'Interesting'

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End