

## **6.6 Mathematics – were my early schooldays wasted?**

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Holborn Research Services is the longest established post survey analysis bureau in the UK. Under one or other of its many names the company has been in existence since 1965.

It is not my intention to talk to you in highly technical or high mathematical terms. It is my belief that this is often done only to confuse and not to inform. Thus I will base all of my arguments on the most basic arithmetical calculations.

The first schedule evaluation programs used by HRS in 1965 utilised the Metheringham formula. It was generally agreed that the original formula programs have many discrepancies in the results. Most UK bureaux, HRS included, abandoned the formula method approach and developed simulation model methods. Contrary to what the promoters of today's formula based programs say, the very same discrepancies still occur. I will illustrate this with a few examples.

In 1978 an organisation called the Media Research Group carried out a set of comparison schedule analyses tests with the bureaux offering post survey analysis services within the UK. These tests showed that the bureaux offering simulation evaluation programs gave very closely comparable results. However, the three formula method programs tested gave sometimes widely differing results to those obtained from the simulation programs. Moreover, the three formula programs also gave widely different results when compared with each other. It is my belief that the simulation programs give more accurate estimates of cumulative coverage and also more realistic frequency distribution peaks and troughs. It has been said by the promoters of formula based programs that simulation models produce underestimates of cumulative coverage. This argument is generally based on the fact that simulation programs will never allow the cumulative coverage of a schedule to exceed the theoretical maximum coverage, ie if 20% of people say that they never read or look at any of the schedule of publications then the theoretical maximum coverage of the set of publications is 80%. It is the formulae based program promoters' belief that firstly at least some of the people who claim to be non/never readers of a publication, in real life, have in fact read that publication at some time in the past year.

Secondly, they maintain that some people who, indeed, were non-readers at the time that they were surveyed, in fact either are now or will become readers. Of course, I accept both these arguments. However, I would stress that in the first case I would doubt the importance

to the advertiser of those readers who cannot even remember reading the publication and in the second instance I would point out that although a publication has acquired some new readers it has also more than likely lost some of its old ones.

Moreover, I do not believe that it is the right of the post survey analysis bureaux to pull out of their little black boxes guesstimates of the number of additional people who actually read any publication, let alone the number of people who read one or more of the publications in the given schedule. At the time of the MRG comparison tests, the formula method programs allowed the coverage of a schedule to exceed the theoretical maximum coverage by anything up to 15%. I am sorry to have to say that this still can be the case. Perhaps new and forgetful readers may add 1% or 2% to coverage but I really do doubt an increase of 15%.

For the purpose of the New Orleans conference, IMS asked all of the UK bureaux to analyse 27 schedules of their own choosing. A few days after HRS returned the results of these analyses, they wrote to say that the wrong schedules had been sent and asked if we would analyse 27 different schedules. I could guess why they may have changed their mind about the schedules, but as I said earlier, I am not in the guessing game. I must be honest and say that I could not really see the relevance of the schedules that were provided; they certainly did not appear to bear any relevance to schedules that would be bought by any self respecting advertiser or its agency. In addition to providing them with the details that they requested, I decided to carry out a little further analysis of these schedules with both IMS and Telmar as well as on our own program. Rather than just look at all adults, I looked at breakdowns of the two sexes. My findings showed that in the case of all 27 schedules, if you simply added up the coverages obtained from looking at the men and women markets separately, in no instance, on the IMS and Telmar systems, did these agree with the result obtained from looking at all adults. Moreover, in many instances, on both systems the coverages at the 10 or 11+ level were greater in actual number terms for just one of the sexes than they were for all adults.

Following these findings, I decided to seek the cooperation of two media houses and I asked them to provide me with details of a schedule where there had been a discrepancy in the results obtained in the past when the same schedule had been analysed by the different evaluation methods. I will now show you the results of my findings when I analysed these schedules

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with the same three bureaux on the latest six months NRS data. Let me emphasise that these are actual examples of schedules that would be bought and not schedules that I designed myself.

I will be only too pleased to supply documentary evidence in the form of copies of the actual computer runs to anyone who would like to verify the results of my findings.

I conclude with just one question. Which mathematics is right?: IMS Modal; Telmar Metheringham; or the arithmetic that my school teachers taught me between the ages of five and ten?

Please do not disillusion me and smash my happy childhood memories by telling me that my early schooldays were wasted.

### Target market – all women (breakdowns – 6 × social grade, 6 × age)

**Schedule 1:** One insertion each in *Honey*, *Cosmopolitan*, '19', *Look Now*, *Over 21*.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All women	22,432	1+	2689	11.99	2690	11.99	2868	12.8
		5+	33.6	0.15	97	0.43	70	0.3
		19+	—	—	—	—	—	—
A–E women	22,432	1+	2702	12.05	2705	12.06	2868	12.8
		5+	31.9	0.14	98	0.44	71	0.3
		19+	—	—	—	—	—	—
15–24 to 65+ women	22,432	1+	2724	12.14	2734	12.19	2868	12.8
		5+	40.9	0.18	87	0.39	71	0.3
		19+	of which 15–24 38.6	—	—	73	—	63

**Net of publications 2868**

Source: NRS April–September 1980

### Target market – all women (breakdowns – 6 × social grade, 6 × age)

**Schedule 2:** As Schedule 1 but six insertions each.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All women	22,432	1+	5897	26.29	4166	18.57	4460	19.9
		5+	2106.4	9.39	2179	9.71	2310	10.3
		19+	130.1	0.58	316	1.41	202	0.9
A–E women	22,432	1+	5682	25.33	4399	19.61	4460	19.9
		5+	2134.1	9.51	2203	9.82	2312	10.3
		19+	135.4	0.60	307	1.37	203	0.9
15–24 to 65+ women	22,432	1+	5390	24.03	4459	19.88	4460	19.9
		5+	2183.9	9.74	2217	9.88	2309	10.3
		19+	152.7 of which 15–24 137.9	0.68	293	1.31	202	0.9
					231	5.57	156	

Source: NRS April–September 1980

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### Target market – all women (breakdowns – 6 × social grade, 6 × age)

**Schedule 3:** One insertion each in *Honey*, *Cosmopolitan*, '19', *Look Now*, *Over 21*, *Womans World*, *Company*, *Love Affair*, *Loving*, *True Magazine*, *Hers*, *True Story*, *True Romances*, *Jackie*.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All women	22,432	1+	5415	24.14	5572	24.84	5983	26.7
		5+	574.2	2.56	617	2.75	522	2.3
		19+	—	—	—	—	—	—
A-E women	22,432	1+	5579	24.87	5793	25.82	5984	26.7
		5+	559.7	2.50	579	2.58	522	2.3
		19+	—	—	—	—	—	—
15–24 to 65+ women	22,432	1+	5610	25.01	5691	25.37	5984	26.7
		5+	553.0	2.47	574	2.56	522	2.3
		19+	of which 15–24 416.5		405		360	

**Net of publications 5,984**

Source: NRS April–September 1980

### Target market – all women (breakdowns – 6 × social grade, 6 × age)

**Schedule 4:** As Schedule 3 but six insertions each.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All women	22,432	1+	12214	54.45	9628	42.92	8604	38.4
		5+	5251.3	23.41	5079	22.64	5499	24.5
		19+	816.5	3.64	982	4.38	957	4.3
A-E women	22,432	1+	11774	52.49	9367	41.76	8604	38.4
		5+	5253.6	23.42	5153	22.97	5500	24.5
		19+	860.1	3.83	988	4.40	958	4.3
15–24 to 65+ women	22,432	1+	10462	46.64	8859	39.49	8604	38.4
		5+	5226.6	23.30	5152	22.97	5498	24.5
		19+	944.3 of which 15–24 677.2	4.21	1013	4.52	957	4.3
				662		660		

Source: NRS April–September 1980.

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## Target market – all adults (breakdowns – men, women)

**Schedule 1:** Two insertions each in *Daily Mirror, Sun, Daily Express, Daily Mail*; one insertion each in *Sunday Mirror, Sunday People, Sunday Express, News of the World*.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All adults	43,001	1+	34794	80.91	34690	80.67	33819	78.7
		10+	73.1	0.17	180	0.42	221	0.5
Men	20,568	1+	17039	82.84	17002	82.66	16811	81.7
		10+	76.1	0.37	169	0.82	162	0.8
Women	22,432	1+	17684	78.33	17589	78.41	17009	75.8
		10+	11.2	0.05	24	0.11	59	0.3
Men and women	43,001	1+	34723	80.75	34591	80.44	33820	78.7
		10+	87.3	0.20	193	0.45	221	0.8

Source: NRS April–September 1980.

## Target market – all adults (breakdowns – men, women)

**Schedule 2:** As Schedule 1, but two insertions in *Sunday Express*.

	Market and universe		Telmar		IMS		HRS	
	Size ('000s)	Coverage	'000s	%	'000s	%	'000s	%
All adults	43,001	1+	34734	80.77	34626	80.52	34069	79.2
		10+	159.1	0.37	341	0.79	319	0.7
Men	20,568	1+	17007	82.69	16967	82.49	16924	82.3
		10+	141.9	0.69	295	1.43	233	1.1
Women	22,432	1+	17653	78.70	17559	78.27	17146	76.4
		10+	31.4	0.14	49	0.22	87	0.4
Men and women	43,001	1+	34660	80.60	34526	80.29	34070	79.2
		10+	173.3	0.40	344	0.80	320	0.7

Source: NRS April–September 1980.