

AUDIENCE MEASUREMENT: DEVELOPMENTS AROUND THE WORLD

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Abstract

The Print and Digital Research Forum is publishing an online ‘Summary of Current Audience Research’ for delegates to the San Francisco Symposium. The Summary covers:

- 100 general population readership surveys in 79 different countries
- 75 specialist audience surveys, e.g. businessmen, children, specific issue readership etc

We are also working on a new section on digital audience measurement services, though this will take some time to expand.

This paper focuses on the general population readership surveys, and major trends and developments in the past two years. The Appendix lists developments by country. General trends discussed in this paper include:

- The number of surveys using mixed methods to obtain their interviews has continued to increase.
- There are now three readership surveys conducted entirely or largely online and several more surveys including an element of online interviewing.
- A number of surveys are now measuring a very large number of publisher websites and other digital platforms, and this is leading to some interesting developments in methodology.
- The growing number of surveys carrying out fusions/calibrations with other media and marketing data (particularly website audience estimates) is included for the first time in the Summary.

The paper concludes with a brief summary of measurement techniques in use around the world.

Thanks and acknowledgements

This report is based on the long-standing ‘Summary of Current Readership Research’, which was first published at New Orleans in 1981 by Erhard Meier. Erhard then updated and developed the Summary for each successive Symposium – a huge task, as I have now found out. Many thanks go to Erhard for all the past Summaries, and for his advice and support in collating this present report.

I would like to thank all the contributors around the world who have made this report possible.

I’d also like to Jenny Davis, Jennie Beck and Andrew Green for their advice regarding contacts and new surveys.

Finally, thanks are due to Jamie Gough at Yarrington for his work setting up the new online database, which should make it much easier to access and update the information contained within the Summary.

The Summary

There are a number of changes to the Summary itself, which has been renamed as the ‘Summary of Current Audience Research’. For the first time we are introducing a section on digital audience measurement services, though this will take some time to fully develop and we welcome further contributions.

From this symposium onwards, the Summary will be published online, in a password protected area of the Print and Digital Research Forum website. All delegates to this symposium will be given a password, along with those who contributed information to the Summary.

Readership surveys included

This year we are reporting on 100 general population readership surveys in 79 countries. These surveys aim to provide the currency for the buying and selling of advertising space in print media their respective countries. Alongside these ‘national readership surveys’ there is also a section covering specialist audience surveys, which includes 75 summaries.

For 19 of the 79 countries more than one readership survey is included. Usually this is because the two surveys are commercial competitors, but in a few countries there are separate currencies for newspapers and magazines, for example Canada and Japan.

There are a number of surveys which have been launched in the last two years or which are new to the Summary. These are:

- **Bosnia, Macedonia and Serbia** – The MEDIApuls surveys for these countries are included in the Summary for the first time.
- **Bulgaria** – The TGI survey is included, asking about newspapers and weekly/fortnightly magazines in a personal interview, and monthly magazines in a longer self-completion interview.
- **France** - The new ‘One Survey’ replaces the two previous separate surveys for newspapers and magazines respectively, and is conducted largely online. More of this later.
- **Honduras** – Another member of the Estudio Multimedios family of surveys is included.
- **Hungary** – The industry contract is included.
- **Luxembourg** – The Etude Plurimedia is included, a multi-media audience survey conducted by telephone.
- **USA** – The American Magazine Survey has been launched by Affinity, the first survey to be included which uses a 100% online methodology and sample. Again, more of this later.

Trends in methodology

The pace of evolution in methodology has increased over the past two years. There have been two key developments of note this year:

- The trend toward mixed methods noted in previous years has continued, with 18 surveys now using a mixed methodology (compared to 12 two years ago).
- The creation of the American Magazine Survey means there is now a readership survey which is both sampled and conducted completely online, and the new One Survey in France is conducted largely online. There are more surveys including an element of online interviewing than there were in 2009, and others, such as the Swiss MACH BASIC survey, have plans to do so in the near future.

Despite these developments, which are discussed in more detail below, the most usual methodology is still a personal interview administered by pen and paper. This is the methodology used by half the surveys included, though there are five fewer surveys conducted in this way than there were two years ago.

The methodologies used for the 100 national readership surveys can be summarised as follows:

Online	1
Personal - pen and paper	50
Personal - CASI, CAPI, DS-CAPI, Mobile ‘phone	10
Self-completion	9
Telephone	12
Mixed Methodology	18

As noted above, the American Magazine Survey from Affinity is the first readership survey to be completely conducted online. This new survey is based on 60,000+ online interviews, recruited in part from an online panel and in part from the Knowledge Networks RDD-recruited panel. (N.B. The NOM survey in the Netherlands is conducted completely by CAWI, though in some cases an interviewer will be present while the interview is completed, and 42% of the sample is a random probability sample, the remainder being taken from an online panel.)

As always, the distinction between method of interview and source of sample is an important one.

The new One Survey in France is largely conducted online. Recruitment is primarily by telephone (90% of the sample) then 80% of the interviews are conducted by CAWI, with the remaining 20% conducted by CAPI with respondents who do not have Internet access.

Overall, the number of surveys using a mixed methodology, whether or not that includes online, has increased from 12 to 18 in the last two years. The 18 surveys are as follows:

Austria	Media Analysis (MA)	Personal (CASI/CAPI)
Bulgaria	Target Group Index	Personal (newspapers and weekly magazines) and Self-completion (monthly magazines)
Czech Republic	Market & Media & Lifestyle (TGI)	Personal (CAPI and PAPI)
France	One Survey	Online (80%) or Personal (DS-CAPI)
Germany	Media-Analyse ma Pressemedien	Personal (40% CASI)
Hong Kong	Nielsen Media Index	Personal and Online
India	Indian Readership Survey (IRS)	Personal (CAPI in 10 cities)
Netherlands	NOM Print Monitor	CAWI – completed online or with an interviewer present
Norway	Norsk Medieindeks Riksundersøkelsen	Personal and Self-completion
Norway	Forbruker & Media (Consumer & Media)	Telephone (newspapers) and Self-completion with a small proportion of Online (magazines)
Portugal	Bareme-Imprensa	Telephone (94%) and Online (6%)
Spain	Estudio General de Medios (EGM)	Personal (CAPI) + Telephone
Taiwan	Nielsen Media Index	Personal (CAPI) and Online (c.25%)
Thailand	Nielsen Media Index	Personal and Online
Ukraine	National Readership Survey	Telephone and Personal
United Kingdom	National Readership Survey (NRS)	Personal (DS-CAPI) and some Self-completion
United Kingdom	JICREG	Personal or Telephone
United Kingdom	Target Group Index (TGI)	Self-completion and Online (c.25%)

The additions to the list above since 2009 are those above in Bulgaria, Czech Republic, France, Taiwan, Thailand and JICREG in the United Kingdom. The latter now accepts regional newspaper readership surveys collected by telephone into its national database, alongside surveys conducted by personal interview.

Eight of these mixed methodology surveys include an element of online interviewing. In some cases this may be small, for instance the 6% of online interviews taken in Portugal or the ‘minor’ proportion of the Norwegian F&M postal sample that is now collected online. In others CAWI is the primary methodology, as in France and the Netherlands.

A number of surveys have introduced an element of online interviewing in the last two years, including the Nielsen Media Index in Taiwan and Thailand, and this trend seems set to continue.

Most notably, the Swiss MACH Basic survey has decided to introduce a new mixed methodology in April 2012 which will include online interviews (after recruitment by CATI).

The China National Resident Survey is preparing to conduct 20% of interviews online from 2012 and a number of surveys are discussing online as an option, such as Brazil’s Estudos Marplan EGM.

Turning to the surveys which use a personal interview conducted by electronic means, such as CAPI or CASI, there are a number of developments to note:

- **Belgium-** The CIM survey has changed from one electronic methodology to another. Previously it was conducted by DS-CAPI. It now uses CASI, with 70% of respondents filling in the questionnaire themselves, and the remaining 30% having the interviewer do it for them.
- **Germany -** The MEDIA-ANALYSE ma Pressmedien, which currently collects 40% of its interviews by CASI, intends to become fully CASI for the next survey.
- **Peru –** The Estudio Nacional de Lectoría is now using mobile phones to deliver the questionnaire.
- **Romania-** In a major development, the SNA FOCUS NRS in Romania has switched from paper to CAPI.

Overall, however, the number of surveys using a single electronic personal methodology has not increased. One reason is that in both Chile and Ecuador the Estudio Nacional de Lectoría no longer lists the interviews as being conducted by CAPI.

Measuring websites and other digital platforms

Of the 100 Readership surveys included in the Summary, 36 told us that they were measuring websites, digital editions or other electronic platforms. The numbers of platforms measured are very various.

At one end of the scale, in the USA GfK MRI and the new American Magazine Study from Affinity both measure extensive lists of digital platforms for all the magazine publisher brands measured in print, and.

- **GfK MRI** measures around 655 different platforms including: magazine websites; magazine apps showing digital magazines; other magazine apps: content on a personalised magazine such as Flipboard or Zite; magazine social networking sites: and text versions.
- **The American Magazine Study** includes the websites, social networks, mobile apps and digital editions of the 174 magazines measured.

This has led to some new techniques in measurement which are discussed later in this section.

Other surveys including very substantial numbers of websites and digital platforms include the China National Resident Survey (843), French One Survey (413) and the Forbruker & Media survey in Norway (c 200), Orvesto in Sweden (c.200) and the KMT/NRS in Finland which collects data for around 178 websites in a separate CAWI questionnaire.

The majority of surveys including questions on visits to websites cover more modest numbers – in the range of 20-30 websites – and some include just a handful.

Recall methodologies have their limitations when it comes to measuring websites and digital platforms, particularly forms of reading that are infrequent or one-off. It is not difficult to remember a particular newspaper website accessed every day, or a subscription to a favourite magazine on a tablet, for instance, but an occasional or one-off use of digital platforms may not always be recalled or even recognised (particularly if access is indirect). As with print, the implications of under-statement (and in some cases, perhaps over-statement) of contact will vary for different publisher brands, different types of content and different platforms.

With this in mind, in some cases the data collected is primarily intended to be a means of linking with website audience ‘currency’ data, by fusion or calibration, rather than to be a measure in its own right. An example of this is the Orvesto survey in Sweden (which does not publish the website estimates in their own right, but uses them for calibration purposes when merging readership data with website audience data collected passively from around 12,000 panellists).

Both the NOM Print Monitor in the Netherlands and British National Readership survey include a small selection of websites to inform fusion with website audience ‘currency’ data. In Italy, Audipress has added new questions in order to detect duplications between print readers and website visitors of the same publication. Even then, great care is needed in interpreting print/website duplication data obtained by recall given the issues outlined above.

Across the surveys measuring websites, the most usual form of question is a recency question, though this can vary as to whether it is a single recency period (which may be anything from ‘yesterday’ to ‘past 30 days’) or several periods. In some cases there are also screening and frequency questions, though clearly questionnaire length is an issue, particularly if a large number of websites/digital platforms are included.

It is one thing measuring 20 or 30 publisher websites, but quite another to accommodate a very long list of digital platforms, particularly if the objective is to provide a comprehensive measure of publisher brand reach and include multiple platforms per brand. It is worth looking at how the surveys in the USA respectively handle this challenge. Attempting to include each platform separately from the outset would make the media list unfeasibly long, so publisher brands are ‘screened-in’ in their entirety:

- **GfK MRI** screen-in respondents if they have read either printed copies or accessed information electronically in the past 6 months. The preamble sets up an inclusive concept of readership: “Magazines can be read or looked into in

different ways. This card shows examples of some of them. They can be printed on paper or they can be published electronically, such as those read on a computer or on the Internet or with an e-reader such as the Amazon Kindle. You may also be able to read or look into a magazine on a tablet, such as the Apple iPad, a cell phone or other mobile device or you may look at the magazine's website.” Recency and frequency of reading in print is then asked separately, followed by recency of electronic access. For issues obtained electronically, it is then established what device was used to read electronically, the electronic version read and time spent reading electronically.

- The **American Magazine Survey** instructs respondents to include both printed and electronic versions at the screening-in stage, and after the recency questions respondents are asked to clarify whether they read ‘Any copy printed on paper’ and/or ‘Any electronic version (including the magazine’s website).

This leads to a new definition of what constitutes reading for the purposes of audience measurement surveys. For instance the definition of reading employed by the American Magazine Study is: ‘Read or looked into any magazine content (on paper or electronically accessed) anywhere’.

This methodology is also in direct contrast to the surveys which very specifically and explicitly exclude electronic reading so as to preserve the print currency (even though questions about specific publisher websites may be asked later in the interview). A number of papers have been presented at previous Symposia reporting on tests to find the best ways to get respondents to exclude electronic reading and these sorts of instructions have been added to a number of surveys in the past two years, including the SNA Focus in Romania, for instance.

So we have a new divergence in methodology developing which it will be interesting to track, particularly in respect of any implications for the estimates derived specifically for print issues.

Fusion, calibration and integration with other currencies

Another trend observed in recent years is a growing use of fusion and calibration techniques to integrate readership data with other media currency data and marketing data. Twenty surveys have listed a variety of fusions and calibrations – this may not be comprehensive, and we welcome any additions to the database. At least ten of these include fusion/calibration with website audience data, and other development work in this area is in progress such as British NRS’s experiments fusing NRS and UKOM/Nielsen data.

Methods of readership measurement

Details of the techniques used to measure readership can be found in the Summary, both survey by survey and in an overall spread sheet.

The specifics of exactly how titles are included and prompted, how questions are asked, and the options the informant has to respond, all have a considerable bearing on the estimates produced. I will not discuss these implications in detail here, but merely give an overview of the some of the main findings as to the techniques in use. A great deal of further information is available in the archive of past symposium papers and the wiki on the PDRF website, as well as in the Summary itself . The PDRF website can be accessed at <http://www.printanddigitalresearchforum.com/>.

Readership model

As noted by Erhard in previous summaries, the prevailing technique in use is the Recent Reading model. Two surveys use Specific Issue Reading (Netherlands and Japan).

Our correspondent for the Forbruker & Media survey in Norway has however told us that the introduction of a Specific Issue Readership measure for some magazines is under consideration.

In the USA the Issue Specific Study is carried out separately from the main currency by GfK MRI.

No surveys use Through the Book (TTB), other than the Australian Ray Morgan survey which employs TTB for business titles, while other publications are measured by the Recent Reading model.

Title prompts

The breakdown as to how publications are prompted is as follows

Grouped title mastheads	12
Single title mastheads	62
Recent covers of magazines (for Specific Issue)	2
No mastheads (typescript or telephone)	22
Spontaneous day after recall	2

The spontaneous day after recall methodology is used by the MEDIApuls telephone surveys in Macedonia and Serbia.

Of the 74 surveys using mastheads, 32 explicitly state that they use coloured mastheads rather than black and white.

The screen-in question

All but 17 surveys have a separate screen-in filter question, though 6 of these use a frequency question as a filter, and one uses a recency question as a filter. Of the remaining 83 surveys, the specified screen-in periods are various, as follows:

Past/last 12 months	26
Past year	6
Past 6 months	7
Different periods used by publication frequency, ranging from past 7 days to past 12 months	43
'In the last months'	1

The recency question

The majority of surveys disclose to the respondent the options for the crucial recency question, but for 19 surveys the options are hidden.

The order of presenting publications is fixed (by publication frequency) for 49 surveys. Most surveys rotate the order of presenting titles within publication group.

The frequency question

There are a great variety of ways in which this question is asked, as shown below. While this gives an overview of the style of question, the number of scale positions also differs considerably from survey to survey, ranging from 3-12 points.

Numeric	71
Verbal	5
Verbal with some numeric explanation	14
Mixed numeric/verbal	5
Frequency not used/ or specific issue	5

Source of copy and readership engagement questions

Most surveys (78) include at least some quality of reading/engagement questions. Source of copy is asked by 71 surveys, with time spent reading the next most popular question.

An appendix detailing developments in audience research by country can be found overleaf.

Appendix: Developments by country

Many of these developments have been referred to in the paper, but for ease of reference here is a complete list by country of what our correspondents told us.

Australia – In September 2010 Ipsos MediaCT was appointed by The Readership Works to develop and implement a new readership measurement metric for newspapers and magazines in the Australian market. Pilot tests have been carried out and we await further developments.

Belgium – The **CIM Survey Press and Plurimedia** has changed from one electronic methodology to another. Previously it was conducted by DS-CAPI. It now uses CASI, with 70% of respondents filling in the questionnaire themselves, and the remaining 30% have the interviewer do it for them. The socio-demographic questions are always completed by the interviewer.

Bosnia – The **MEDIApuls** telephone survey is a new entrant to the Summary. Developments include improvements of the MEDIApuls online analysis tool and a completely new online analysis system for the linked BRANDpuls and MEDIApuls data.

Brazil – The **Estudos Marplan EGM** continues to discuss the possibility of an online sample.

Bulgaria – The **Target Group Index** is a new entrant to the Summary. It is run by Market Test JSC Bulgaria, who are the TGI licensee. It has a split methodology, questions about newspapers and weekly/fortnightly magazines are covered in a personal interview, and monthly magazines in a longer self-completion interview.

Canada - The **NADbank** newspaper survey has carried out a number of tests covering the current questionnaire (which is administered by telephone) and the flow and recent reading questions. There have also been tests with regard to sample recruitment. Website readership curves have been released so as to inform the release of a cross platform planning tool.

Canada - For the **Print Measurement Bureau (PMB)** magazine survey the main development has been the fusion of PMB data with comScore Internet audience ratings. A paper will be presented at this Symposium discussing the fusion.

Chile – The **Estudio General de Medios (EGM Ipsos)** recently introduced the measurement of digital editions, along with some other additional media, such as promotional catalogues.

China – The **China National Resident Survey** is run by CTR Market Research Co. Ltd, who in 2010 officially established a strategic partnership with Kantar Media and joined the global TGI network. Subsequently the Survey has added TGI global lifestyle statements and research models. In addition the CNRS has made a number of changes to its sample structure, by increasing the proportion of affluent communities sampled from 8% to 15%. Finally, an online pilot test has been conducted and it is proposed that 20% of CNRS interview will be collected online from 2012.

Czech Republic – The **Market and Media Lifestyle Survey (TGI)** is now using CAPI.

Finland – The **Kansallinen Mediatutkimus (KMT)** is planning to test fusions with other media currencies. The self-completion element of the interview (after the main readership data has been collected by telephone) is now carried out largely by CAWI.

France - After extensive qualitative and quantitative testing, **The One Survey** has replaced the two previous separate surveys for newspapers and magazines. Recruitment is primarily by telephone (90% of the sample) then 80% of the interviews are conducted by CAWI, with the remaining 20% conducted by CAPI with respondents who do not have Internet access. As well as readership of print titles the survey covers an extensive list of websites, digital editions and apps (some 418 in all).

Germany – The **MEDIA-ANALYSE ma Pressmedien** is currently based on a mixed methodology, with 60% of the questionnaires completed by pen and paper and 40% by CASI. The next survey will become 100% CASI. Furthermore, there are plans to recruit respondents from the readership survey for participation in a further task, which will involve capturing their readership of newspapers and magazines by bar code scanning over a two-week period. Gabriele Ritter presented a paper at the symposium in Valencia describing some of the tests of bar code scanning.

Honduras – The **Estudio Multimedia**, with 5,000 personal interviews per year, is included in the Summary for the first time this year.

Hong Kong – The **Nielsen Media Index** has switched from probability sampling to quota sampling, for a mixed methodology of face-to-face and online interviews. It has expanded questions on the Internet and mobile ‘phones.

Hungary- There is a new **NRS** industry contract, carried out by Millward Brown/TNS Hoffman. The survey is a personal in-home CAPI interview followed by a TGI self-completion questionnaire.

India – Recent reports from research magazine (12 September 2011) suggest that the merger of the **National Readership Survey (NRS)** and **Indian Readership Survey (IRS)**, which has been mooted for some time, is now imminent. The Indian Readership Survey, which is run by the Media Research Users’ Council, has continued publication in the meantime and an updated entry is included in the Summary. The **Target Group Index**, run by IMRB, is also reported with a number of changes to the questionnaire which is administered in person over 6-7 hours and 3-4 consecutive visits.

Iraq – The methodology of the **National Readership Survey (NRS)** run by IPSOS has changed from face-to-face to telephone. The name of the survey, and indeed that of all the IPSOS surveys in the Middle East, has changed to National Readership Survey from National Media Analysis.

Italy – **Audipress** has made a number of changes. Estimates are reported every four months, rather than every six months, to provide more recent data. There are variable analysis bases for newspapers and magazines (a larger sample collected over a longer period for the latter). An Internet section has been added to the questionnaire in order to detect duplications between print readers and website visitors of the same publication.

Luxembourg – The **Etude Plurimédia** conducted by TNS Ilres on behalf of a number of publishers and agencies is included in the Summary. It is a 3,000 sample telephone survey covering all the media in Luxembourg.

Macedonia – The **MEDIApuls** survey is included for the first time. This is described as a ‘day after recall’ CATI survey which requires respondents to spontaneously remember titles they read yesterday.

Netherlands – The **NOM Print Monitor** has run tests ascribing consumer and readership data, and published combined data in December 2010.

New Zealand – The **Nielsen Media Research National Readership Survey** ran a CASI pilot in 2010 (the current methodology is an in-home face-to-face interview).

Norway – **Forbruker & Media (Consumer & Media)** has introduced a number of changes. The sample was increased from 30,000 to 45,000 in 2010. The methodology, which is CATI for newspapers and postal for magazines, now includes a minor part of the postal TGI sample being collected online and online collection has been tested. The introduction of a Specific Issue Readership measure for some magazines is under consideration.

Peru – **Estudio Nacional De Lectoria**. In an interesting development, mobile ‘phones are now used to deliver the interviews face-to-face and GPS is used to control the fieldwork.

Romania – The **SNA FOCUS JIC** survey has undergone a major change in methodology, switching from paper to CAPI. The ‘widest reading’ and 12 month filter question have been combined. The publication groups are now rotated for the filter questionnaire and reading on the Internet is now explicitly excluded.

Russia – The **National Readership Survey** has made major changes to its CATI system and now includes mobile telephone numbers in the sample.

Serbia – The **MEDIApuls** survey is included for the first time. Like the MEDIApuls survey in Macedonia this is a ‘day after recall’ CATI survey which requires respondents to spontaneously remember titles they read yesterday.

Switzerland – Major changes are planned for the **MACH BASIC** Survey from 2012. The readership interview is currently a CATI interview. From April next year recruitment will still be by CATI, but the main interview will either be by CATI (with mastheads and other visual prompts having been sent in the post) or online. At the same time questions on digital readership,

including via mobile ‘phones, will be introduced. The change in methodology has been the subject of a large comparative test in 2011, and the results produced were “recognised by the industry and media as plausible and valid”.

Syria – The methodology of the **National Readership Survey (NRS)** run by IPSOS has changed from face-to-face to telephone.

Taiwan – Nielsen Media Index. Around 25% of the interviews are now taken online.

Thailand – Nielsen Media Index. Around 17% of the interviews are now taken online.

United Kingdom – The **National Readership Survey** is currently in the final stages of testing a fusion with UKOM/Nielsen website audience estimates. It is also carrying out development work with a view to transferring the NRS readership data from binary to probability format.

United Kingdom – JICREG (Joint Industry Committee for Regional Media Research) is a database of readership surveys and modelled data for regional newspapers. In the past these readership surveys have all be based on personal interviews, but JICREG now accepts readership surveys based on telephone interviews subject to JICREG guidelines.

United States of America – American Magazine Study (AMS). This is a new survey based on 60,000+ online interviews, recruited in part from an online panel and in part from the Knowledge Networks RDD-recruited panel. It measures 174 magazines, in addition to the websites, social networks, mobile apps and digital editions of the all the magazines concerned. Black and white logos are presented in groups on screen in a four by three grid, and respondents are screened-in if they have read either printed copies or accessed information electronically in the past 6 months. Recency and frequency of reading in print is then asked separately to recency of electronic access. This is followed by a variety of engagement questions for both print and electronic platforms. The AMS is also carrying out tests to assess potential title confusion.

United States of America – GfK MRI has expanded measurement of digital platforms to cover magazine websites, magazine apps showing digital magazines, other magazine apps, content on a personalised magazine such as Flipboard or Zite, magazine social networking sites and text versions. Relevant platforms are included for all the magazines in the logo deck. At the screening in stage respondents are instructed to include both printed and electronic versions, and after the recency questions respondents are asked to clarify whether they read ‘Any copy printed on paper’ and/or ‘Any electronic version (including the magazine’s website)’. For issues obtained electronically, it is then established what device was used to read electronically, the electronic version read and time spent reading electronically. A range of engagement questions are also included for print issues. GfK MRI have also launched ‘Granularity’, a Web-based portal that uses data from the Audience Accumulation Study, Issue Specific Readership Study and Market by Market study to provide more detailed inputs for magazines in market mix models than have hitherto been available.