

Data preparation and processing - addition b4p 2013 II

Media adjustment best for planning

The p value determination for calculating media use probabilities as well as the adjustment to the ma 2013 Pressemedien II, ma 2013 Intermedia and ma 2013 Online 5 as well as ma 2013 Radio II Update values were carried out by:

- ISBA GmbH for posters
- Ebert + Grüntjes GbR for TV and radio

The following individual methods were applied to supplement the b4p 2013 II:

Posters

best for planning provides coverage data for inter-media planning purposes, not only for print media, but also for posters.

When it comes to inter-media evaluation ma Intermedia sets the currently valid standard in Germany. best for planning therefore aims at aligning coverage conditions to ma Intermedia standards as far as possible, both with regard to socio-demographic characteristics of individual media, as well as among the individual media themselves. A simulation method is used for this.

Basis of the simulation and merging procedure: Interviewees displaying a certain number of similar variables raised in both samples, so-called "common characteristics", are also highly similar regarding their other characteristics. This applies particularly to the characteristics that were not surveyed in the (receiving) sample to be adjusted. Since that is the case, similar persons can be determined both in the donor and in the receiving sample based on the "common characteristics". Then their characteristics can be transferred, thus simulating the characteristics that were not directly queried in the receiving sample.

Such a simulation was accomplished with ma Intermedia as donor sample and best for planning as receiving sample. The quality of simulation was verified based on statistical testing methods and can be rated as successful.

Setting of tasks and objective

best for planning sets out to provide inter-media planning data on the use of posters. ma Intermedia supplies the required data on coverage, structures and overlaps of the values to be represented for this.

It must be noted that also parts of the foreign resident population are included in ma Intermedia. The

population of ma Intermedia includes Germans and EU citizens, from 14 years of age respectively. This group is also integrated in best for planning and used as the simulation basis in the best for planning survey. In addition to that ma Plakat represents the group of the German-speaking non-EU citizens so that poster efficiency measurements can also be simulated for these groups.

Characteristics data sets in the merging process

The characteristics of the donor to be transferred, also referred to as merging characteristics, consist of the probabilities of use, contact sums and variances as documented in the code plan.

The p values existing in the donor are simulated in the recipient on the basis of the common characteristics that apply both to the donor and the recipient.

The following "common characteristics" are available:

- Socio-demographic characteristics
- Characteristics on print media use,
- Characteristics on TV and radio use (day time and station)
- Characteristics on the mobility of the interviewee.

This information is generated in the context of the best for planning survey. The occurring distributions there are reproduced in the donor by grouping significant contact sums or, if available, directly used as common characteristic.

Merging process: Philosophy and feasibility

All merging methods are based on the idea that manifestations of common characteristics determine the merging characteristics at such extent that a simulation of the merging characteristics is possible in the first place. If this is the case, good simulation of the merging characteristics can be reached by assigning the merging characteristics of an interviewee in the donor to an interviewee in the recipient survey using a suitable characteristic configuration concerning the common characteristics.

Objective here should be that the merging reproduces the relations between "common characteristics" and merging characteristics on the one hand and the coverage of the p values in the donor in the recipient on the other.



Implementation of the merging process

In the first step donors and recipients are divided into partial samples, also referred to as clusters. In the merging process the clusters, defined based on sex, governmental district and age groups, work as obligatory clusters, i.e. are allocated only in line with donor/recipient pairs of the same cluster.

In the second step an equivalent donor is assigned to each recipient within the cluster. Every donor is only used as frequently as absolutely necessary for the allocation, in order to transport the variance of the donor data as comprehensively as possible to the recipient. The determination of the margin is based on a combination of two concepts. The first margin component is calculated based on the similarity of the "common characteristics" between the currently regarded donors/recipient pairs, the second margin component points out, how well the observation supplemented by the merging characteristics matches the transformed table of the mix of "common characteristics" and merging characteristics from donor to recipient.

Verifying the success of the merging process

It must then be verified whether the coverage and structures in the recipient correspond to those in the donor. For this purpose all manifestations of the "common characteristics" are regarded as target groups. The coverage for donors and recipients are then compared in these target groups.

Each of these tests is designed as t-test verifying coverage equality, personal weighting is taken into account in the test statistics (see also ag.ma - research reports, volume 19 (2003), chapter 10).

Each of these tests supplies a level, on which the measured difference in coverage becomes significant. In the event of merely random fluctuations between two samples, it can be calculated how many of these tests will exceed a given limit. If the number of significant tests falls short of this limit, this results to samples representing the same population. A merging process that leads to such highly similar samples can be classified as successful. This is the case here.

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TV and radio media

The TV and radio data were transmitted using the usage data gathered in the context of the b4p survey from ma 2013 Intermedia, and ma 2013 Radio II Update. The population for TV in the ma are Germans and EU citizens from 14 years of age, for radio use the German-speaking population from 14 years age.

ma 2013 Intermedia supplied target values for Germans and EU citizens for both categories, for non-EU citizens radio data was provided by the ma 2013 Radio II Update. Donor study for the TV data transfer was the ma 2013 Intermedia, the ma 2013 Radio II Update was used for radio data.

To ensure proper transfer, particularly developed methods were used that have also been applied to the ma Intermedia since 2000. Final result is the required generation of pairs from donor and recipient study with a subsequent transfer of all media category data from donor to recipient (full merging).

The individual stages of the methods are summarized in the following chapters, including the appropriate objectives:

- Separate transfer of all individual media to be transferred by means of parallel segmentation. We call the results of these transfers anchor variables, allowing to consider the different structures of the respective users in the optimisation stage. After the optimisation they are replaced by the media data of the selected partner.
- Calculation of similarities between every case of the recipient study and all cases of the donor study. Then a donor selection per recipient as similar as possible is performed, this selection is called potential. In this general, topologic approach all common variables are included to also take all representable target groups into account.
- Formation of target values from the donor studies. That includes all variables to be transferred in total and a selection of common structural variables. This is to ensure that the same value basis is used in the recipient file as applied in the donor studies as far as possible.
- A starting solution is then determined based on recipient potentials. Here - and in the following optimisation stage - all generic variables are transferred from the same donor (full merging). Connections between the individual media to be transferred on individual case level are retained in order to avoid producing artificial values when combining random target groups.

- Depending on the starting solution, different donors of a potential are then iteratively selected per recipient in the optimisation stage. This new allocation is selected when improving the allocation regarding the target values.
- Multiple allocations of donors are possible, but are limited by a threshold value in line with the effective number of cases from the cumulated weighting per donor case. The variability of the donor study is hence not unnecessarily limited during transfer.

Compared with the transfer process used during the production of ma 2013 Intermedia b4p additionally contains radio and TV time frequencies, i.e. 14 day WHK for individual stations. These findings are thus single-source results and should be retained in the transfer process to the greatest extent possible. In our method this was ensured via anchor variables and the consequently determined potential per recipient. All ma station variables for TV and radio were transferred in this process, for the radio sector also the stations that were not gathered in the b4p survey, as well as all combinations.

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