Switching during commercial breaks
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Citation for published version (APA):
van Meurs, A. (1999). Switching during commercial breaks

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4 Data

4.1 People meter data

In designing the research on switching during commercial breaks, the decision was made to base the study on people meter data. In the Netherlands, people meter data are collected in the Continu KijkOnderzoek (CKO), the continuous television audience research commissioned by NOS, STER and IP, and carried out by Intomart. The data are taken from a Dutch television panel consisting of a national sample of 1,000 households, holding approximately 2,400 persons of 6 years of age and older.

The people meter unobtrusively registers viewing behaviour, including switching, automatically on a per second basis. Using people meter data avoids the distortion of the results caused by lapses in respondents’ memory or by the effects of socially desirable responses (see section 2.2.2).

The technique used to register viewing behaviour makes it possible to distinguish between several different kinds of switching, including:

- turning the television the set on or off;
- interim logging in or logging off by a viewer;
- changing channels;
- switching between Teletext and regular programming.

In this study, all switches that are included in the calculation of audience ratings are treated as channel changes. Switching channels and turning the television set off, for example, are considered the same for the purposes of this research.

The use of people meter data imposed certain limitations the research. As noted in section 2.6, the avoidance of commercials by not paying attention (“mental zapping”) or switching off the volume (“muting”) has not been included in this research. In the CKO, the calculations of the viewing data are based on individual, minute by minute ratings, in which each viewer per minute is assigned to a channel. The analysis of viewing behaviour on a per minute basis is dictated in part by

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36 A detailed description of the design and methodology of the CKO is available elsewhere (Intomart, 1998b; Litthart & Van Meurs, 1997; Van Meurs, 1998a).

37 A change to Teletext is considered switching when it results in a change in the reported ratings of a commercial break. Turning on Teletext in full display mode is considered switching since this viewing behaviour is not included in the ratings for the broadcast in progress. At the time this study was carried out, turning on Teletext in overlay mode does not affect the ratings for the broadcast in progress and is thus not treated as switching.
the fact that the starting and ending times for programmes and commercial breaks
are given in whole minutes. Because of this, an analysis of viewing behaviour on a
per second level is not feasible. This limits the cases of viewing behaviour available
for analyses.

4.2 Unit of analysis

Several levels of analysis were considered for this research, including:

• respondents only;
• commercial breaks;
• minutes;
• commercial spots;
• a combination of the respondent level with other levels.

Analyses of viewing behaviour on the respondent level are comparable to the
traditional questionnaire research, in which the variable to be explained (in this
case switching) is analysed on the basis of respondent background characteristics
only. Analyses on the respondent level can provide a good indication of differ­
ences between individuals related to background characteristics, including socio­
demographic variables, attitudes and behavioural variables. In this approach, it is
assumed that the effect to be explained differs per person, and it is assumed that
viewers watch television or switch channels in patterns consistent with those of
others who share the same demographic profile. Their behaviour is assumed to be
independent of non-personal factors, such as the moment of viewing or the sur­
rounding programming. However, the exclusion of non-personal factors from an
analysis at the respondent level places too great a limitation on the explanatory
power of the analysis, and is unlikely to result in a useful satisfactory explanatory
model for viewing or switching behaviour.

Programmes and/or commercial breaks are more useful units of analysis of
viewing behaviour. In this case, viewing behaviour is registered per programme
and is related to the characteristics of these programmes. Because of the large
number of programmes registered in the CKO (from January through April 1995
32,870 programmes, including 12,400 commercial breaks, were registered) this
level of analysis offers a much larger number of observations than an analysis at
the respondent level.

Two distinct but closely related units of analysis, the commercial spot and the
commercial minute, offer yet more detailed levels of analysis. The advertising mi­
ute is the minute within which a commercial is broadcast. A total of 32,506 ad­
vertising minutes and 70,702 spots were registered in the CKO in the period from
January to April 1995. However, because of technical limitations at the time this
study was carried out, it was not possible to calculate switching on a per second

Because of the size of the Dutch television panel, the number of respondents in such an analysis is
limited to about 2,400 persons.
basis. As a result, it was not possible to analyse switching behaviour for each individual spot.

The most complete level of analysis would have been one in which personal characteristics can be directly combined with programming, so that each viewer per commercial break, minute or spot counts as a separate observation. For the selected research period (January through April 1995), with around 2,400 respondents, this would have resulted in approximately 30 million, 78 million or 170 million observations for commercial breaks, minutes or spots, respectively. The construction of the data set and the subsequent analysis of switching behaviour would not have been feasible with such quantities of observations.

The commercial break was chosen as the unit of analysis for this study of switching. It was not possible to directly include data from other levels of analysis, such as commercial spot and audience characteristics, in the same data set. In order to include characteristics of the audience or the commercials that could influence switching behaviour, such as the age of the viewers or the length of spots, these characteristics had to be assigned to the unit of analysis, the commercial break. For instance, this involved calculating the average length of the spots for each break. Similarly, audience characteristics that could be related to switching behaviour were included in the data set by defining them as the proportion of a break’s total audience that shares that characteristic.

For a number of explanatory variables, a distinction is made between the beginning, middle and end of each commercial break (see appendix 5, section 5.3), allowing for a more precise level of measurement. For these variables, analysis at the block level (n = 12,278) is comparable to analysis at the level of the number of advertising minutes (n = 32,506).

4.3 Commercial breaks

The data set for the research project included all commercial breaks broadcast from January to April 1995 on the five main channels in the Netherlands. This provided a wide range of commercial breaks. Because lead-in/lead-out effects were an important element in the design of the research, all breaks not preceded or followed by a programme (within ten minutes of the start or end of break) were excluded from the analysis. After this selection, 12,278 of the 12,400 commercial breaks remained in the data set.

Many commercial breaks have a relatively low audience rating. With a panel size of 2,400, the registration of switching behaviour around many breaks was based on a very small number of observations. As a result, the reliability of the results for each break could be very low (see also section 4.6.2). Initially, the decision was made to exclude commercial breaks with few viewers in order to avoid peak effects in the results due to small samples. However, it soon became apparent that such a criterion would exclude too many breaks. This was especially true for
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breaks broadcast on RTL5 and those broadcast during the day or late at night. Using a criterion of a less than 2% audience rating (less than 50 viewers in the television panel) would have excluded half of all the advertising; even a selection based on a 1% audience rating would have eliminated more than a quarter of all commercial breaks. In order to have a sample that was representative for all breaks, the decision was made not to exclude breaks because of their low audience rating or, alternatively, because they were broadcast during the day or late at night.

As a result of this decision, a number of breaks in the analysis had unexpected scores for variables or combinations of variables. This would have been the case, for example, for a very long and unattractive break whose one or two viewers decided by chance not to switch away. Because of the large number of observations, extreme examples of this kind had very little effect on the outcomes registered. By not excluding breaks with very few viewers the study remained representative for all commercial breaks broadcast during the period of study. However, this did introduce some distortion into the data, resulting in some reduction in the amount of variation accounted for in the analysis.

4.4 Respondents

In the CKO, respondents are selected on a household basis to form a panel that is representative for characteristics such as region, province and degree of urbanisation, household size, the educational level of the principle breadwinner, social class, viewing time for housewife, cable, number and types of television sets, possession of a satellite antenna, and membership of a broadcasting organisation. The representativeness of the CKO panel regarding these characteristics is controlled every two months. If the panel appears skewed with respect to one or more of these characteristics, new households are selected whose composition will correct the skewing.

In principle, a household can take part in the research for a maximum of four years. During this period, a household is included in the CKO as long as all members of the household continue to co-operate with the research. When one or more members of a household are no longer willing to take part in the research, a replacement household is recruited.

In addition to the voluntary withdrawal of households, Intomart can remove households from the panel. In order to guarantee the quality of the data collected, daily controls are carried out on the reporting behaviour of the panel members. If problems appear, contact is made with the panel members concerned in order to discuss their participation. If repeated discussions do not produce improvement, then the entire household involved is removed from the panel. In actual fact, this does not occur very often; experience has shown that in such cases the panel household withdraws beforehand on its own initiative.
Whenever a household withdraws or is withdrawn from the television panel, a new household is recruited to replace it. A household of similar composition may be sought, or one with a different composition may be needed, depending on the composition of the total audience panel.

4.5 Validity

One of the main reasons for choosing to base the analysis of switching behaviour on data from the people meter is the high degree of validity of this data. This is due, in part, to the electronic registration of viewing behaviour. The high degree of validity of the electronic registration, as well as other methodological aspects of the CKO, was recently confirmed in an independent audit. In the CKO, viewing behaviour is electronically registered on a per second basis. One of the few areas of debate about the validity of the electronic measurement concerns the use of a 15 second persistence threshold. This means that channel changes lasting less than 15 seconds are ignored in this registration. For example, when a viewer switches from RTL5 to NL1 at 20:09:10 (time notation in hours, minutes, seconds), then to NL2 at 20:09:15 and then switches to RTL4 at 20:09:20 and continues to watch for longer than 15 seconds, the meter registers a change from RTL5 to RTL4 at 20:09:20; the ten seconds of viewing of NL1 and NL2 are assigned to RTL5.

The persistence threshold is designed to prevent the meter’s memory from filling up during a measurement day as a result of a large number of channel switches. A similar cut-off point is used in many other countries in which the people meter system is used.

Because of the persistence threshold, the exact total of the number of switches per viewer cannot be determined, because some rapid switches will not be registered. However, for the purposes of this study, it is not the exact number of switches that needs to be determined, but the gain and loss of advertising audience ratings and the relationship of the gain and loss to characteristics of the break. Experimental research on switching behaviour in the United Kingdom has indicated that a threshold of 15 seconds has no effect on the analysis of switching. While more switches were registered in measurements made without this limit, similar levels of gain and loss of advertising audience ratings due to switching were found in measurements with and without the 15 second threshold (ITV Network Centre, 1993). A Dutch validation study found that the 15 second rule had no effect on the relationship between audience ratings for commercial breaks and those for programmes (Van Meurs, 1998b).

This audit was commissioned by the media commission of the BVA Associatie van Nederlandse Adverteerders, the association of Dutch advertisers, and carried out by a team of independent experts (Den Boon & Wedel, 1997).
4.6 Reliability

4.6.1 Discipline of the panel members

One of the most important factors influencing the reliability and validity of the measurement is the discipline that panel members exercise in logging in and off. The only thing panel members have to do to register their viewing behaviour is push a button on the meter’s remote control each time they start or stop watching television. If panel members are negligent in doing this, the reliability of the results of the people meter research is placed in jeopardy. In order to prevent this, quality controls are carried out to identify irregularities in logging in and off. When irregularities are found, the data from the household or households involved are excluded from the daily calculations of results. If the irregularities continue, the households are removed from the panel and replaced by new households with similar or different demographic profiles, as required to maintain the panel’s representativeness (see section 4.4).

Coincidental checks are regularly carried out in order to determine whether the results measured in the CKO are a reflection of the actual viewing situation. In these studies, panel members are contacted by telephone and asked about the viewing situation in the household at that moment. This information is later checked against the information registered by the people meter for the same moment. A total of four coincidental checks were carried out during the trial period for the people meter system (January through June 1987), and subsequent coincidental checks were carried out in 1989, 1991, 1992, 1995 and 1996. In each instance, a high degree of agreement was found between the information reported during the telephone interview and the data recorded by the people meter. At the level of the individual viewer, the level of agreement in all of these studies was between 96% and 98% (Den Boon & Wedel, 1997, Ligthart & Van Meurs, 1997). When sorted by different analysis groups, the results did not produce any great variation from the average for the total sample. The percentages of agreement for various programme categories, including advertising, also varied little from the total. These results indicate a high level of discipline among panel members when it comes to logging in and logging off.

The coincidental checks demonstrated that a high level of reliability could be expected of the audience data. With respect to switching, the reliability is even higher. The majority of switches involve changing channels. Unlike switching off of the television set, which requires viewers to log off, channel changes are registered electronically. The viewer is not required to take any action involving the people meter.

Den Boon and Wedel (1997, see footnote 39) recommended extending these coincidental check with additional checks on the use of the meter’s remote control buttons during commercial breaks.
4.6.2 Panel size

In addition to the reliability of the electronic registration of behaviour, the quality of measurement for each of the 12,278 breaks observed in this study was affected by the size of the sample, the people meter panel. During the research, the CKO panel held approximately 2,400 people six years of age and older. This panel size was adequate to obtain reliable results concerning the general patterns of viewing behaviour. However, it was too small to allow reliable statements about the audience rating and switching behaviour for individual commercial breaks when very few viewers were involved (Den Boon, 1994). This problem is particularly relevant for the commercial breaks in this study, because, for around half of the breaks, the analysis of switching is based on less than 50 viewers (audience rating lower than 2%) and, for around a quarter, less than 25 viewers (audience rating lower than 1%). Given an average rating of 3.2%, the levels of switching in the 12,278 breaks observed were measured in samples containing an average of 76 viewers.

However, the effect of the sample size on the quality of the measurement of switching for each individual break should not be confused with the overall reliability of the research. The analysis of switching behaviour is not based on one day’s viewing behaviour, as in a one-time sampling, but on panel results over a period of four months involving a great many different breaks. The reliability of the current study is positively affected by the period of time and the number of breaks observed within the people meter panel. The resulting reliability is affected by a number of factors, including the consistent composition of the panel and the correlation between the viewing behaviour of each observed break (Den Boon, 1994; Den Boon & Wedel, 1997; Twyman & Wilcox, 1996).

Because of the complexity of determining levels of reliability it is difficult to make an exact statement about the margins of reliability in this research. However, because of the large number of observed breaks in the study, it can be assumed that the reliability of the observed level of switching (the average levels of both measures of switching and the levels of significance of the parameters of both explanatory models) in this study is adequate.

41 In the CKO the turnover rate is approximately 25% a year (Intomart, 1998b).

42 In addition to the issues of panel size and the period of observation, this complexity is increased by the fact that the validity of the CKO data is also affected by weighting, clustering and stratification. The reliability is negatively influenced by the weighting applied and by the fact that the CKO panel is not a sample of individuals, but is clustered on the household level. On the other hand, the reliability of the CKO is higher than in normal random sample research because the panel is not selected randomly, but is made up of a group of households carefully selected on the basis of several stratification variables (Den Boon & Wedel, 1997; Intomart, 1998b).
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The switch during commercial breaks is a common practice in television viewing. However, it can lead to issues such as loss of quality and higher costs. The switch is often done by people who cannot afford the commercial breaks or who do not have access to a recording service. The switch is also done by people who want to avoid watching commercials. The switch has been shown to have a negative effect on the overall viewing experience.