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## **Setting-Up a New Travel Survey Concept Without Causing a Trend Breach**

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## 1. Introduction

A new name and a new organization: the Dutch travel survey formerly known as OVG and conducted by CBS<sup>1</sup> is now called MON and conducted by RWS AVV Transport Research Centre<sup>2</sup>. The survey gives a portrayal of the daily mobility of the Dutch Population.

The results of MON 2004 were published on April the 1<sup>st</sup> 2005 and at the moment MON is running in its second year. More than 100 households receive the questionnaire each day in order to achieve at least 50,000 respondents this year just like in 2004.

This paper describes the transition from OVG to MON based on three main preconditions that were formulated. The next chapter describes the history of mobility survey in the Netherlands. Chapters 3, 4 and 5 explain the way in which the main preconditions were met. Some conclusions are in chapter 6. An epilogue with some information on MON 2005 closes this paper.

## 2. OVG, the predecessor of MON

Every year from 1978 till 2003 CBS investigated the mobility of the Dutch population. This survey is known as the Onderzoek Verplaatsingsgedrag (OVG). OVG was the data source for the description of the mobility of the Dutch population. It started as a face-to-face survey for which 25,000 people had to fill in the trips they made over two days. This design was changed in 1985. It then became a telephonic and written survey for which persons were to fill in their trips of one day in a diary.

In the early nineties of the last century the need for mobility figures on a regional level was growing at RWS AVV. This resulted in a request for an increase of the sample size of OVG. From 1995 onward an extension of the survey was realised, financed by RWS AVV. This increased the goal for the number of respondents with 123,000, to a total of 148,000 respondents (Bakkes and Van Evert, 2003).

In 1998 CBS and RWS AVV decided to change the design of the OVG. The response rate in the years before had dropped considerably and the representativeness and reliability of the figures on a regional level came at risk. The renewal of the survey design was realized by applying the Neu Kontiv Design (NKD)<sup>3</sup>. Through the introduction of this design the response rate increased from 34.7% in 1998 till 71.2 % in 1999 (see figure 1).

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<sup>1</sup> CBS (Centraal Bureau voor de Statistiek) is the Dutch statistical office.

<sup>2</sup> RWS AVV (Rijkswaterstaat Adviesdienst Verkeer en Vervoer) is one of the specialist services of the Rijkswaterstaat organization. Rijkswaterstaat is the implementation body of the Ministry of Transport, Public Works and Water Management in the Netherlands.

<sup>3</sup> NKD (Neu Kontiv® Design) is a survey design that was developed by Socialdata, a German Institute for Transport and Infrastructure Research (Brög, 2000).

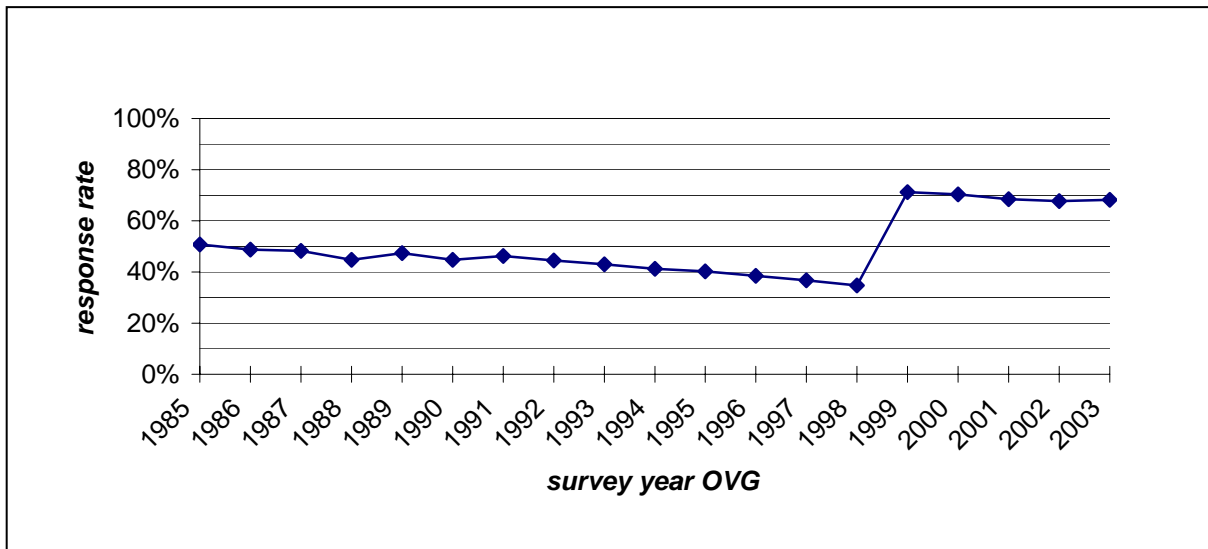


Figure 1: Response rate of OVG.

The introduction of the new design caused a trend breach with the years before. For certain important indicators it could be noticed that they were strongly deviant and not in line with earlier years. Therefore CBS corrected the trend breach for the most important indicators in 2002 making comparable the figures of OVG with both designs. This made analyses through time and examinations on trends possible again.

From 2001 onward increasing costs of OVG and a constant budget at RWS AVV led to a substantial decrease in the number of respondents (see figure 2). The effect was that one important goal of the extension of the OVG, namely generating reliable figures on a regional level for serving the local authorities came at risk.

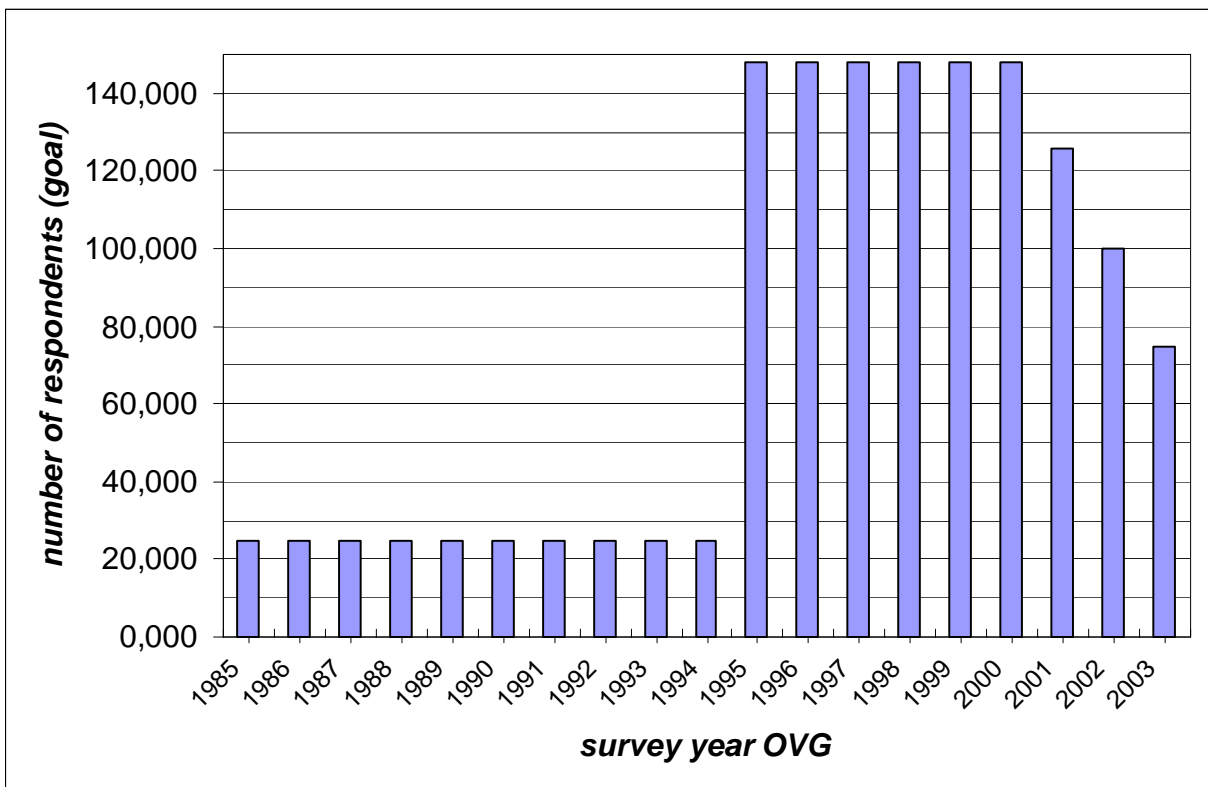


Figure 2: Number of respondents (goal) of OVG.

This and the fact that OVG had little flexibility led to the decision of RWS AVV in consultation with CBS to start a mobility survey on its own. It meant that 2003 would be the last year of OVG and that in 2004 the new survey called Mobiliteitsonderzoek Nederland (MON) would run. The budget that RWS AVV used before in financing the extension of OVG was used from 2004 onward to execute MON. For setting-up the new survey RWS AVV formulated three main preconditions. In the first place the data of OVG and MON had to be comparable. In the second place MON had to be flexible in a way that current topics and different survey questions could be dealt with. The last precondition was that MON should be receptive for modernization and improvement to maintain and improve quality, efficiency and to connect to desires of users.

### 3. Comparability MON with OVG

Comparability of the results of OVG and MON was the most important precondition that RWS AVV formulated for setting-up MON. The series of mobility data that was built up for years and years with OVG should not be interrupted, but MON had to extend this series. To put it briefly: no trend breach was allowed. Since executing the same survey by another organization could already mean a discontinuity this was almost an impossible assignment.

The point of departure was to execute MON in the same way as OVG. This meant the use of the same source data, quality criteria, rules, instructions, calculations, etc. To be able to realize this the cooperation of CBS was needed. Therefore the setting up of MON was supported by CBS. They made available various documentation and figures as well as expertise they had build up through the years on (mobility) surveys in general and OVG in particular. Also an employee of CBS is a member of the MON project team of RWS AVV.

In case the direct use of an OVG method of working was impossible to use for MON an alternative would be needed. To be able to work out and implement the best alternative possible an extensive project organization was set up in which experts and users were represented (see figure 3).

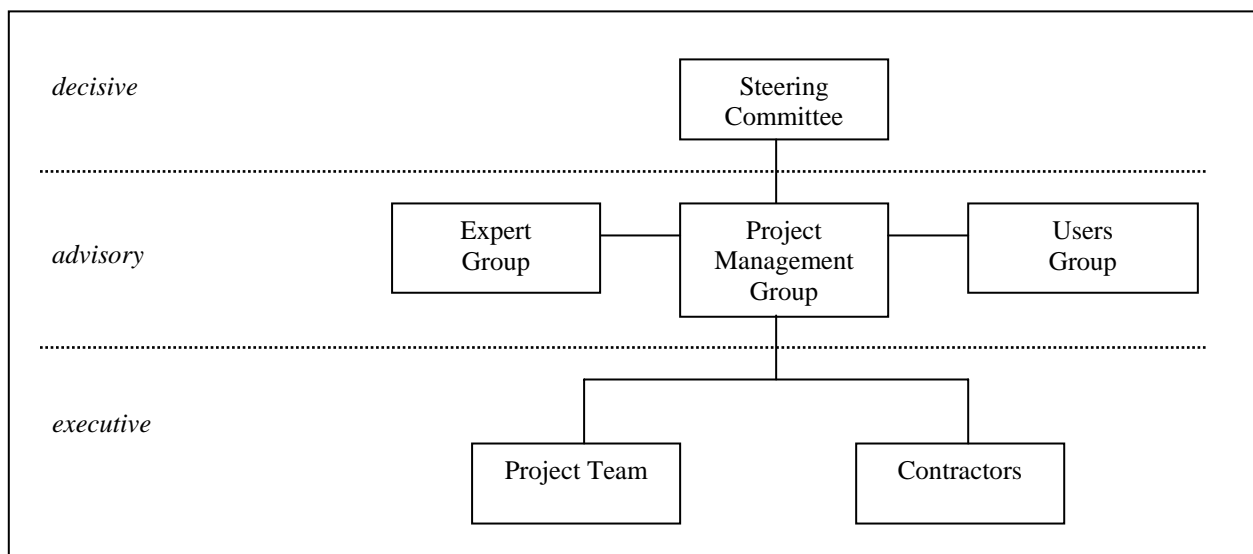


Figure 3: Project organization of MON.

In the project organization the Expert Group serves as a counseling body for the project manager and his team. This group consists of professionals on mobility survey and surveys in general. Their advice is mainly focused on methods and instruments. A selection of users of OVG and MON are members of the Users Group. They advise the Project Team particularly on the usability of the results. Besides the Expert Group and Users Group the project organization consists of a Steering Committee. Some managers of RWS AVV take seat in this committee. They can have influence in particularly on the organizational and procedural aspects of the project. Other groups in the project organization are the Project Management Group, which consists of the main members of the Project Team, and Contractors who execute certain parts of the survey on assignment of RWS AVV.

To be able to check whether the results of MON would differ from OVG the best option possible was to execute both surveys parallel over a certain period. This would mean that differences could be corrected in the best possible way. Eventually this option was not chosen due to the fact that it involved too many financial and organizational problems. The method used to check if a discontinuity was developing was to continuously monitor different quality indicators and compare them with the indicators of OVG. In the process of sample drawing for instance the distribution of addresses with and without phone number and the geographic distribution is monitored. An important indicator in the fieldwork process is the response rate. It is monitored every week. For a global overview there is a monthly report containing all important indicators of the processes fieldwork and data-entry. In this case the monitoring is not only done for quality reasons but also to check the progress of the activities.

Besides that a comparison of in between results of OVG and MON was made (see table 1). For this comparison the first half-year of MON, 2004, and the entire years 1999 till 2003 of OVG were used. This comparison showed that the figures were in line and that there were no differences that indicated a trend breach. Although the comparison was done with contemporary and uncorrected in between results of 2004 and corrected end results of the earlier years, it confirmed the feeling that MON was on the right track.

Purpose (% trips)	MON 2004 h1		OVG 2003	OVG 2002	OVG 2001	OVG 2000	OVG 1999
commuting	17		16	17	17	16	16
business appointment	3		3	3	3	3	4
services/personal care	5		5	5	4	5	5
shopping	21		21	21	21	21	21
education/study program	10		9	9	9	9	9
visit/overnight stay	14		16	16	15	15	15
leisure/sports	16		11	12	12	12	13
touring/hiking	7		7	7	7	7	7
other	7		11	10	11	11	12

Table 1: Some in between results MON 2004 (published October 2004).

#### 4. Flexibility with MON

The second precondition that RWS AVV formulated was that MON had to be flexible, as to be able to react on desires from inside and outside the organization. These desires could involve surveying specific and current subjects or extending the standard survey in certain regions.

This meant that for MON two apparently contradictory constraints were formulated. The outcome of the process had to stay the same as much as possible, but MON had to be flexible as well. The first constraint was the most important one, but the second one was strongly desired. In the end it turned out that it was possible to set up MON in a way that both constraints could be fulfilled.

As said the involvement of CBS, an extensive project organization, monitoring and comparing quality and progress indicators were important instruments to prevent a trend breach. For the desired flexibility the survey design that was already used with OVG offered the right possibilities. One of the characteristics of the Neu Kontiv Design is that a survey is build up like a satellite structure. In this structure (see figure 4) the central position consists of a basic survey and the satellites are supplementary surveys. The satellites together with the method mixture of the NKD make the survey flexible. The method mixture includes combinations of different survey types, instruments and investigatory techniques to get a complete portrayal of mobility behaviour. This allows for instance that the basic survey is done with a self-administered written questionnaire and that one of its supplementary surveys is done as a telephonic interview. With OVG the NKD was also applied, but it did not fully use the flexibility (the satellite structure) of the design. This structure turned out to be very useful for MON.

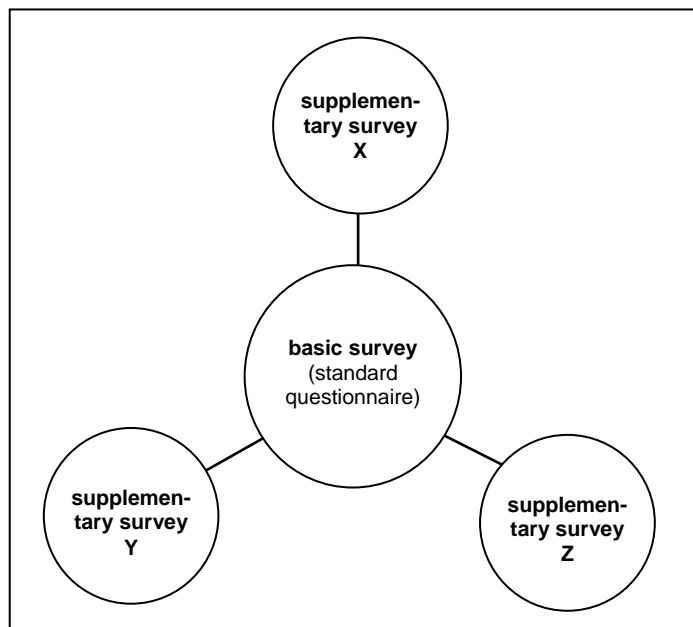


Figure 4: Satellite structure of the NKD.

To extend the possibilities of the survey it was also modeled as structure of blocks (see figure 5). In this structure there is a Basic Survey that equals OVG. It comprehends a standard questionnaire that is set out nationwide. In addition a regional Extension of the standard questionnaire can be done. Often it turns out that it is desirable to focus on a certain topic or on a special target group. For that purpose a Follow-up can be executed after the respondent

took part in the Basic Survey. The combination of both is also possible, namely executing a specific survey regionally. This is then called a Regional Follow-up. With this facility for Extensions and Follow-ups the demand for a flexible MON was met.

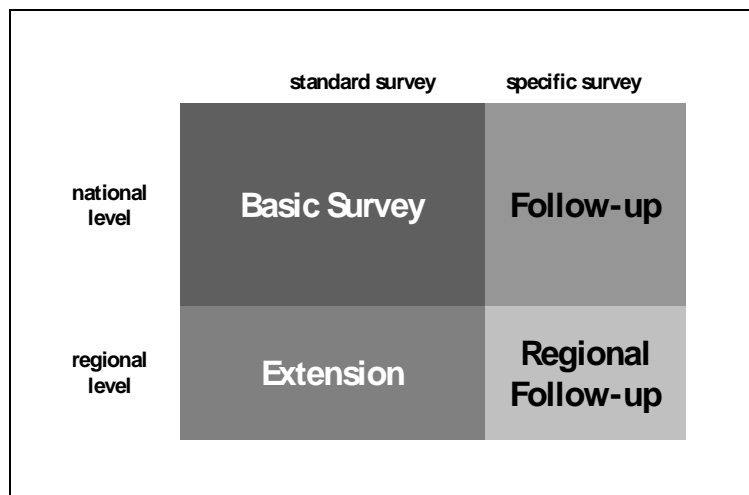


Figure 5: Block structure of MON.

Bringing the satellite structure of the NKD and the structure of blocks together reveals the complete picture of the way MON is set up (see figure 6). The centre is formed by the Basic Survey and Extensions which both consist of the standard questionnaire. The satellites are the (Regional) Follow-ups. These are supplementary surveys<sup>4</sup> that comprehend specific questions and can be done telephonic, written or face-to-face.

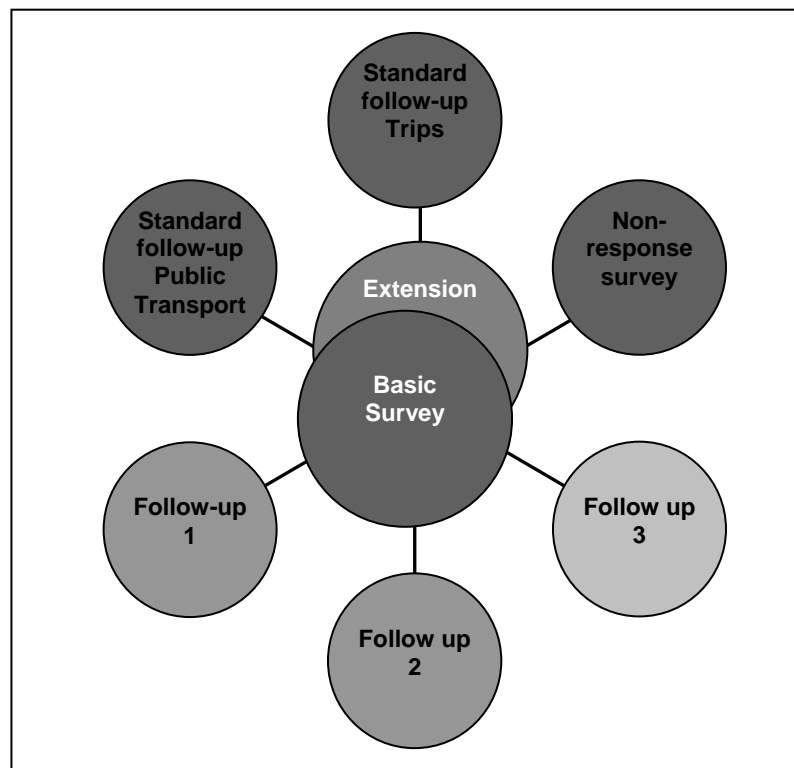


Figure 6: Satellite structure plus block structure.

<sup>4</sup> MON has also three supplementary surveys that are always executed together with the standard questionnaire. One is on public transport, another is on trips with non-public transport and there is a standard non-response survey.

The decision was made that other organizations should benefit from the facility for Extensions and Follow-ups as well. The survey became then demand dominated instead of supply dominated. Others could be customers of MON and order for an Extension or Follow-up. In order to guarantee that Extensions and Follow-ups would not influence the results of the Basis Survey, every order on Extensions and Follow-ups has to be agreed upon by the Steering Committee. The Steering Committee checks if the Extensions and Follow-ups have:

- value for the Transport policy;
- surplus value for the Basic Survey and vice versa;
- no affect on the quality of the Basic Survey;
- no affect on the quality of other Extensions and Follow-ups.

The structure of the survey in principle prevents that the quality of the Basic Survey is affected. For Extensions this is the case, because they are aimed at other people. Follow-ups do not harm the quality because they are executed after the work for the Basic Survey is finished. In 2004 in total three Follow-ups and one Extension were executed. These were:

- Follow-up on mobility behaviour of handicapped people
- Follow-up on traffic accidents
- Follow-up on subjective accessibility of urban areas
- Extension for the New Regional Model (NRM<sup>5</sup>)

The Extension for the NRM was needed to ensure that the NRM was able to predict figures with a certain quality. Therefore the required number of respondents per province needed to be 4,000. That meant that in eight (of the twelve) provinces extra respondents were required. In total 10,500 extra respondents were needed for this Extension in 2004. This brought the goal for the total number of respondents for the standard questionnaire of MON 2004 on 60,500.

A condition that RWS AVV attached to the Extensions and Follow-ups is that the collected data are a benefit for all and not only for the customer. This means that the results of Extensions and Follow-ups are delivered together with the Basic Survey to everyone who wants the results of the survey.

## **5. Modernization and Improvement with MON**

The third precondition was that modernization and improvement of the survey should be possible. On the one hand to keep up with available instruments and on the other hand to take better advantage of the need of users. Therefore more attention is given to communication to ensure that people involved with the survey are well informed, interested and concerned. A regularly distributed newsletter, a site on the Internet with information on MON ([www.mobiliteitsonderzoeknederland.nl](http://www.mobiliteitsonderzoeknederland.nl)) and an email address ([mon@avv.rws.minvenw.nl](mailto:mon@avv.rws.minvenw.nl)) are a couple of instruments used for this reason. Another important resource for communication is the Users Group. In this group, users of the survey from the government, semi government, non-profit organizations and companies are represented. The Users Group is not only a counseling body, but the members have also the opportunity to exchange

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<sup>5</sup> A toolbox developed and administrated by RWS AVV with which regional departments of Rijkswaterstaat can set up a strategic forecast model for passenger transport in their district.

knowledge and experience with MON and to express their desires in relation to MON. The way in which was given attention to communication has provided good contacts with users and other persons concerned.

Together with the transition from OVG to MON a couple of modernizations and improvements were implemented immediately. These were meant to improve the quality and usability of the survey. The changes were of course checked on having no unwanted effect on the quality and results of the survey. To get an idea of the most important adjustments some are mentioned in the frame below.

**A selection of changes in MON 2004 compared to OVG 2003**

Better use of the design by:

- the facility for Extensions and Follow-ups;
- a standard Follow-up on trip legs;
- a standard Follow-up on non-response.

Improvement of the quality by:

- asking respondents their phone number when we did not have it;
- strict rules for telephonic interviewing;

Better usefulness by:

- more complete recording of border crossing trips;
- asking for train stations used when a trip by train was made;
- earlier delivery of data;
- more attractive way of presenting results.

An innovation procedure was set up for modernizations and improvements to come. All ideas, desires and improvements suggested by users, project members and others that pass the criteria are put on a so-called longlist. At least twice a year, or earlier if necessary, the project team describes all appropriate and likely ideas in a shortlist. This list contains the advantages and disadvantages of realizing the idea and estimation on the necessary financial and personal costs. Based on costs and benefits the Steering Committee decides which innovations are to be realized. Before implementing an innovation it can be decided that apart from the ongoing Basic Survey a pilot is executed to check for unwanted effects. For instance by sending out extra questionnaires to which one or more extra questions are added. In this way effects on the response can be checked.

## 6. Conclusions

The in between results of MON 2004 indicated that the results were in line with OVG. This also turned out to be true for the end results of MON 2004 (see table 2), by that the most important precondition seems to be fulfilled.

MON as a flexible survey is successful. This is showed by the fact that several Extensions and Follow-ups were done in 2004. The possibility for others to order Extensions together with a good overall response rate (72.5%) has led to a total number of 66,482 respondents for the standard questionnaire.

So far MON has already undergone some quality improvements and changes based on desires of users. At the moment the innovation procedure that has to ensure a more controlled implementation of modernization and improvement has not been fully gone through. After this is done for a first time it can hopefully be concluded that it makes modernization and improvement of MON more structured and efficient.

At this moment it is too early for definite conclusions, because they can only be made when MON 2004 has been used for a while. Nevertheless current insights can only be addressed positively. In the future it will become clear if MON is a good and useful survey and has a survey concept that can be used for years and years to come.

Mode of transport (distance traveled per person per day (km))	MON 2004		OVG 2003	OVG 2002	OVG 2001	OVG 2000	OVG 1999
car driver	19.2		18.7	18.7	18.4	18.4	18.5
car passenger	7.7		7.3	7.2	7.1	7.5	7.7
train	3.1		2.9	3.1	3.2	3.2	3.1
bus/tram/underground	1.3		1.3	1.4	1.5	1.5	1.6
moped	0.2		0.2	0.2	0.2	0.2	0.2
bicycle	2.6		2.6	2.4	2.5	2.5	2.5
walking	0.6		0.6	0.6	0.6	0.6	0.6
other	1.3		1.0	0.9	0.9	0.9	0.9
total	36.0		34.6	34.5	34.5	34.8	35.2

Table 2: Some end results MON 2004 (published April 1<sup>st</sup> 2005).

## 7. Epilogue

The challenge with the transition from OVG to MON existed in the fact that it was adopting an existing survey without simply copying it. The method of working for which communication, participation and transparency were prominent qualities, led too much dynamic and enthusiasm within the project team and with other people concerned inside and outside RWS AVV. It resulted in a similar, but renewed survey with a clear added value.

Now the challenge is to keep improving the survey and it's concept. At this moment MON is running for the second year. In this chapter some information is given about the continuation of the survey, MON 2005, and the challenges that are on our way.

### *Basic Survey MON 2005*

The goal for the number of respondents in 2005 is the same as last year, namely 50,000. Now that MON 2005 is running for a couple of months, we are on schedule to reach this number.

As with MON 2004, there are also a number of small changes introduced in MON 2005. For instance there is a better recording of the three different types of scooters that are used in the Netherlands. We developed a site on the Internet with information especially for respondents and the process sample drawing was made more efficient.

During MON 2005 we started a first run of the innovation procedure. In the text frame below a couple of subjects are mentioned that are in that procedure at the moment. This selection is made from the shortlist that was presented to the Steering Committee in February 2005.

**Selection of subjects in the shortlist**

- present MON data geographically
- examine the possibility of the additional use of panels
- extend the survey on border-crossing trips

*Extensions and Follow-ups MON 2005*

So far we received orders for one Extension and one Follow-up. The Extension is the same as last year and concerns the Extension for NRM. This means we can again expect another 10,500 extra respondents for the standard questionnaire. The Follow-up is new and focuses on the use of taxis.

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