

## Comparability across mode and country

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**CHAPTER 9****COMPARABILITY ACROSS MODE AND COUNTRY***WILLEM E. SARIS***9.1 Introduction**

Sofar only the mode effects for a limited set of standard Eurobarometer questions were discussed. In this chapter the discussion shall be extended in two ways. First of all, all questions of the panel study which can be analysed with the latent class model introduced in chapter 6 will be covered. Secondly variation in response probabilities across countries will be studied. This data set offers a unique opportunity to look at differences in response probabilities between modes of data collection and between different countries. This issue is relevant because it is doubtful whether responses can be compared if the response probabilities - or response functions, as they are also called (Saris, 1986) - are different. In that publication which concentrated on continuous data for individuals, the argument was made that it was highly questionable that responses can be compared if the response functions are different for different people. Here, two sources of variation will be in the centre of attention: the mode of data collection, which was discussed before, and the different meanings of questions in different languages.

The chapter starts with a discussion of the data and the model used for this purpose. Next, the research design will be treated and the method of data analysis will be illustrated. Finally, the results of the analysis and an explanation for the results which have been found will be presented.

**9.2 The model for comparison of response probabilities**

The basic model is the latent class model as used in chapter 6. In that model the distribution of the response variables for the face to face study and the telephone study can be described using the following equations:

$$\pi^f = \Pi^f \pi^x \quad (1)$$

and

$$\pi^t = \Pi^t \pi^x \quad (2)$$

where  $\pi^f$  is the vector with the marginal distribution of the responses in the face to face study  
 $\pi^t$  is the vector with the marginal distribution of the responses in the telephone study  
 $\pi^x$  is the vector with the marginal distribution of the latent variable  $x$   
 $\Pi^f$  is the response probability matrix for the face to face mode given the score on  $x$   
 $\Pi^t$  is the response probability matrix for the telephone mode given the score on  $x$ .

For more details on this model the reader should turn again to chapter 6. There, it has been indicated that from the model specified above it follows that the table denoted by  $T^{ft}$ , which gives the relationship between the responses of the the same people in a face to face and in a telephone interview, can be written as a function of the matrices with the response probabilities and the values of the latent variable. In order to do so, first a diagonal matrix  $\mathbf{X}$  was created which contains on the diagonal the proportion of people ( $\pi(k)$ ) in each of the classes of the latent variable:

$$\mathbf{X} = \begin{vmatrix} \pi_1^x & \dots & 0 \\ 0 & \dots & \pi_k^x \end{vmatrix} \quad (3)$$

Using this matrix the  $T^{ft}$  can be shown to be:

$$\mathbf{T}^{ft} = \Pi^f \cdot \mathbf{X} \cdot \Pi^t, \quad (4)$$

If the matrix with the number of people in the various latent classes is pre- and post-multiplied with the two matrices representing the response probabilities, then one obtains table  $T^{ft}$ .

This formulation is attractive because it connects the table obtained from this research with the model characteristics one is interested in but does not know i.e. the response probabilities  $\Pi^f$  and  $\Pi^t$  and the matrix with the values for the latent variable  $\mathbf{X}$ .

In chapter 6 tables presenting the relation between the responses in the face to face and in the telephone mode by the same people have been used to test the equality of the response probabilities in  $\Pi^f$  and  $\Pi^t$ . In this chapter this approach will be generalised in order to also test the equality of the response probabilities across countries. This analysis is just as important for crosscultural comparative research as the mode effect study for the comparison of results from different types of interviews. The reasons for the attention for cross cultural similarity of response probabilities is in fact also the same as it is for mode effects: it is questionable whether one can compare results of studies when the response probabilities for the questions of interest are not the same. In crosscultural research, usually an effort is made to keep the questions the same for the different groups. Nevertheless, it can happen that in one country the interpretation of a word is different than in another country, this way, the

same formulation can lead to different results. An indication of differences in linguistic interpretation can be obtained from the fact that the response probabilities are different for groups having the same score on the latent variable. In order to test for such equalities across countries the model needs to be extended to take into account the possibility of differences between countries.

This generalisation of equations (1) and (2) is rather simple and works in the following way:

$$\pi^{fi} = \Pi^{fi} \pi^{xi} \quad (5)$$

and

$$\pi^{ti} = \Pi^{ti} \pi^{xi} \quad (6)$$

where  $i$  indicates the  $i$ th country. From this follows as before:

$$\mathbf{T}^{fi} = \Pi^{fi} \cdot \mathbf{X}^i \cdot \Pi^{ti}, \quad (7)$$

This formulation suggests that for country  $i$  a table presenting the relationship between the responses in face to face and telephone interviews are determined by the distribution on the latent variable in the population ( $\mathbf{X}^i$ ) multiplied by the matrices presenting the response probabilities ( $\Pi^{fi}, \Pi^{ti}$ ).

A similar equation could be constructed for each country:

$$\begin{aligned} \mathbf{T}^{fi} &= \Pi^{fi} \cdot \mathbf{X}^i \cdot \Pi^{ti}, \\ \mathbf{T}^{fj} &= \Pi^{fj} \cdot \mathbf{X}^j \cdot \Pi^{tj}, \\ \mathbf{T}^{fk} &= \Pi^{fk} \cdot \mathbf{X}^k \cdot \Pi^{tk}, \end{aligned} \quad (8)$$

Restrictions can be introduced in this model by specifying equalities between the different matrices with response probabilities.

A first possibility is that the response probabilities are the same for telephone and face to face studies in all countries:

$$\Pi^{fi} = \Pi^{ti} = \Pi^{fj} = \Pi^{tj} = \Pi^{fk} = \Pi^{tk} \quad (9)$$

A second possibility is to assume that the response probabilities are the same across countries but different for telephone and face to face interviewing:

$$\Pi^{fi} = \Pi^{fj} = \Pi^{fk} \tag{10}$$

$$\Pi^{ti} = \Pi^{tj} = \Pi^{tk}$$

A third possibility is that the response probabilities for face to face and telephone interviewing are the same but the probabilities across countries are not the same:

$$\begin{aligned} \Pi^{fi} &= \Pi^{ti} \\ \Pi^{fj} &= \Pi^{tj} \\ \Pi^{fk} &= \Pi^{tk} \end{aligned} \tag{11}$$

The first assumption is the most attractive one because comparisons are possible across studies and countries. If (9) does not hold but (10), then comparisons across countries are possible but not across the mode of data collection without correction. If (11) holds, comparisons across modes within each country are possible but comparisons across countries are not possible without further consideration. In the following, it will be shown how the data were analysed to test these restrictions.

### 9.3 Research design

In order to test the equality of the response probabilities data have to be collected from the same people in two different ways so that turnover tables can be constructed as indicated above. The panel experiment on which the following analysis was based was described in detail in chapters 1 and 2. France, Belgium and Spain were selected for this panel study because of the difference in telephone penetration. In France approximately 350 people have completed a personal as well as a telephone interview, in Belgium approximately 250 and in Spain 320 people. Although these samples are much smaller than the original face to face samples, it has been found that for most variables the distribution of the responses of the respondents did not deviate significantly from the responses of the original samples. This result suggests that the people who dropped out the study did not hold different opinions on the issues as the people who did not drop out. To be able to do the further analysis, an important assumption needs to be made:

The people who participated both in the face to face and in the telephone interview did not differ in their response behaviour from the people who dropped out after the face to face interview

Although without proof, this assumption is not regarded as a very strong one and is most likely true. However, the data do not allow for a test of this assumption.

## 9.4 The research questions

The questions for which the analysis is done, are first of all the standard questions of the Eurobarometer which have been studied before. For details see appendix 1:

### 1. *Evaluation of membership of the EU*

#### 1.a) Membership

Generally speaking, do you think that (our country's) membership of the EU is

a good thing / a bad thing / neither good nor bad / DK/No answer

#### 1.b) Benefit

Taking everything into consideration, would you say that (our country) has on balance benefited or not from being a member of the (EU/EC)?

Benefited / not benefited / DK/No answer

### 2. *Satisfaction*

#### 2.a) Satisfaction with life

On the whole, are you very satisfied/ fairly satisfied/ not very satisfied/ not at all satisfied with the life you lead? Would you say you are

very satisfied / fairly satisfied / not very satisfied / not at all satisfied? / DK/No answer

#### 2.b) Satisfaction with democracy

On the whole, are you very satisfied/ fairly satisfied/ not very satisfied/ not at all satisfied with the way democracy works in (our country)? Would you say you are

very satisfied / fairly satisfied / not very satisfied / not at all satisfied? / DK/No answer

### 3. *Political interest*

#### 3.a) Political discussion

When you get together with friends, would you say you discuss political matters

frequently / occasionally / never? / DK/No answer

#### 3.b) Persuade others

When you hold a strong opinion, do you find yourself persuading your friends, relatives or fellow workers to share your views? Does this happen

frequently / occasionally / never? / DK/No answer

#### *4. Media involvement*

##### 4.a) Newspaper

About how often do you read the news in daily newspapers?

Every day / several times a week / once or twice a week / less often / never / DK/No answer

##### 4.b) Radio

About how often do you listen to the news on the radio?

Every day / several times a week / once or twice a week / less often / never / DK/No answer

##### 4.c) TV

About how often do you watch the news on television?

Every day / several times a week / once or twice a week / less often / never / DK No answer

There is also a number of questions which have not been asked literally in the same way in each barometer and will not be asked in each tracking study. These questions concern specific opinions and knowledge. The content of these questions can be changed, but this format will not be changed. Therefore, it makes sense to study the effect of these formats in the different modes. Questions of this type which are scrutinized here, are:

#### *Opinions*

What is your opinion on each of the following proposals? Please tell me for each proposal, whether you are for it or against it .

#### **READ OUT IN ROTATING ORDER**

a) There should be a European Monetary Union with one single currency replacing by 1999 the (national currency) and all other national currencies of the member states of the (EC/EU).

b) The (EC/EU) member states should work towards a common defence policy.

c) Any citizen of another (EC/EU) country who resides in (your country) should have a right to vote in local elections.

d) The (EC/EU) member states should work towards a common defence policy.

e) Any citizen of another (EC/EU) country who resides in (our country) should have the right to vote in local elections.

f) Any citizen of another (EC/EU) country who resides in (our country) should have the right to vote in European elections.

g) Any citizen of another (EC/EU) country who resides in (our country) should have the right to be a candidate in local elections.

h) Any citizen of another (EC/EU) country who resides in (our country) should have the right to be a candidate in European elections.

i) The (EC/EU) should be responsible only for matters that cannot be effectively handled by national, regional and local governments.

#### *Knowledge of White paper*

Have you ever heard about the “White paper” by the European Commission in Brussels about growth, competitiveness and employment in Europe?

Yes

No

DK/No answer

#### *Information on European Parliament*

Have you recently seen or heard, in the papers, on the radio or on tv, anything about the European Parliament?

Yes

No

DK/No answer

#### *Knowledge about next European Election*

Do you know the date on which the next European election will take place in (your country), or not? (If yes) On which date?

Yes and correct date

Yes, but the date mentioned is not correct

No, does not know the date

### **9.5 Data analysis**

The equality of the response probabilities can be tested by the turnover tables from the Eurobarometer panel. This is done like in chapter 6 (see there for details). The user

formulates a model by specifying specific restrictions on the response probability matrices for each country and for each mode. The program then estimates the response probabilities and provides a goodness of fit test for the whole model. The procedure will be illustrated below by an example. The following question is used for this illustration:

What is your opinion on each of the following proposals? Please tell me for each proposal, whether you are for it or against it?

**Table 9.1 The relationships between the face to face and telephone responses in EB41.Panel for the variable “vote in local elections” in three countries**

	Pro	Against	DK/ No Answer	Total
<b>France</b>				
<b>Telephone</b>				
<b>Face to face</b>				
Pro	159	5	9	173
Against	7	128	4	139
DK/No answer	16	5	1	22
Total	182	138	14	334
<b>Belgium</b>				
<b>Telephone</b>				
<b>Face to face</b>				
Pro	103	5	1	109
Against	3	80	1	84
DK/No answer	21	10	1	32
Total	127	95	3	225
<b>Spain</b>				
<b>Telephone</b>				
<b>Face to face</b>				
Pro	175	4	14	193
Against	6	63	5	74
DK/No answer	25	8	5	38
Total	206	75	24	305

The third item presented is:

Any citizen of another (EC/EU) country who resides in (our country) should have the right to vote in local elections.

Pro / Against / DK/No answer

The tables representing the relationship between the face to face and telephone responses in the panel study for this variable in the three countries are presented in table 9.1.

This table has been used as data input to test different models in the three countries. Many different models can be formulated as was indicated before.

The simplest model is the model specified by equations (8) and (9) which means:

All response probabilities are the same across countries and modes (*Model 1*)

If this model does not fit one can move into two directions: relax the assumption of the equality of the probabilities across countries, or relax the assumption of the equality of the probabilities across modes. More problems between the modes are expected as was shown in chapter 6 where for many variables mode effects were found. Therefore model 2 is specified by (8) and (10):

All response probabilities are the same across countries but one or more probabilities can be different for the different modes (*Model 2*)

If this model does not fit, model 3 is tested as specified by (8) and (11):

All response probabilities are the same for the different modes but the response probabilities do not have to be the same from country to country. (*Model 3*)

If this model also does not fit, the only possibility is model 4:

At least some response probabilities for the different modes are different while also at least some probabilities are different across countries (*Model 4*)

The advantage of testing the models in this sequence is that one can stop when a model fits the data which saves time given the number of variables. Furthermore, these models are hierarchical so that the  $\chi^2$  statistics for the different models can be subtracted from each other, and a test can be done on the improvement of the model by the additionally introduced parameters.

Model 1 is specified by the following patterns for the matrices  $\Pi^{\text{fi}}$  and  $\Pi^{\text{i}}$ :

$$\begin{array}{cc}
 \text{face to face} & \text{telephone} \\
 \text{country 1 } \Pi^{f1} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t1} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} \\
 \text{country 2 } \Pi^{f2} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t2} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} \\
 \text{country 3 } \Pi^{f3} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t3} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix}
 \end{array}$$

Where “fr” means that this parameter is free and should be equal to 1 minus the other probabilities in the column.

As can be seen; the response probabilities are the same for the different countries. Furthermore we see that also the face to face and the telephone response probabilities are assumed to be the same. Finally the elements  $\pi_{12}$  and  $\pi_{21}$  are assumed to be identical for identification reasons.

For the specific example, model 1, assuming all probabilities across modes and countries being identical, gave a  $\chi^2$  statistic of 41.12 with 13 degrees of freedom which means that a test on 5% level would lead to rejection of this model. This rejection did not come as a surprise because in all three tables cell 31 is much larger than cell 13. This suggests that the people react differently in face to face than in telephone interviewing. It is hypothesised that the people who are at least weakly in favour of this issue are saying more quickly “Don’t know” or giving no answer in a face to face interview than in a telephone interview. So  $\pi_{31}$  should be different for telephone than for face to face interviews. Since in each column of the response matrix one parameter is free to make the probabilities add up to 1, also  $\pi_{11}$  can now vary between the face to face and the telephone mode, but not across countries. In this case the model is adjusted as follows:

$$\begin{array}{cc}
 \text{country 1 } \Pi^{f1} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t1} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{t1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} \\
 \text{country 2 } \Pi^{f2} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t2} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{t1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} \\
 \text{country 3 } \Pi^{f3} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{f1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix} & \Pi^{t3} = \begin{vmatrix} \text{fr} & \pi_{12}^{f1} & \pi_{13}^{f1} \\ \pi_{12}^{f1} & \text{fr} & \pi_{23}^{f1} \\ \pi_{31}^{t1} & \pi_{32}^{f1} & \text{fr} \end{vmatrix}
 \end{array}$$

It can be seen that only one extra parameter is added. In all other countries the coefficients are assumed to be the same.

The fit of this model is acceptable because the  $\chi^2 = 19.3$  with 12 degrees of freedom. Only one extra parameter, the difference between the telephone and face to face interviews, is sufficient to obtain a good fitting model for these data. To get a fitting model, no differences between the countries needed to be allowed for.

For illustrative purposes also the analysis for model 3 is presented where differences between countries but not between face to face and telephone interviewing are allowed for. In that case, the model is formulated as follows:

$$\begin{aligned} \text{country 1 } \Pi^{f1} &= \begin{vmatrix} \text{fr} & \pi^{f1}_{12} & \pi^{f1}_{13} \\ \pi^{f1}_{12} & \text{fr} & \pi^{f1}_{23} \\ \pi^{f1}_{31} & \pi^{f1}_{32} & \text{fr} \end{vmatrix} & \Pi^{t1} &= \begin{vmatrix} \text{fr} & \pi^{f1}_{12} & \pi^{f1}_{13} \\ \pi^{f1}_{12} & \text{fr} & \pi^{f1}_{23} \\ \pi^{f1}_{31} & \pi^{f1}_{32} & \text{fr} \end{vmatrix} \\ \text{country 2 } \Pi^{f2} &= \begin{vmatrix} \text{fr} & \pi^{f2}_{12} & \pi^{f2}_{13} \\ \pi^{f2}_{12} & \text{fr} & \pi^{f2}_{23} \\ \pi^{f2}_{31} & \pi^{f2}_{32} & \text{fr} \end{vmatrix} & \Pi^{t2} &= \begin{vmatrix} \text{fr} & \pi^{f2}_{12} & \pi^{f2}_{13} \\ \pi^{f2}_{12} & \text{fr} & \pi^{f2}_{23} \\ \pi^{f2}_{31} & \pi^{f2}_{32} & \text{fr} \end{vmatrix} \\ \text{country 3 } \Pi^{f3} &= \begin{vmatrix} \text{fr} & \pi^{f3}_{12} & \pi^{f3}_{13} \\ \pi^{f3}_{12} & \text{fr} & \pi^{f3}_{23} \\ \pi^{f3}_{31} & \pi^{f3}_{32} & \text{fr} \end{vmatrix} & \Pi^{t3} &= \begin{vmatrix} \text{fr} & \pi^{f3}_{12} & \pi^{f3}_{13} \\ \pi^{f3}_{12} & \text{fr} & \pi^{f3}_{23} \\ \pi^{f3}_{31} & \pi^{f3}_{32} & \text{fr} \end{vmatrix} \end{aligned}$$

The model specification in each country is the same with the requirement that the face to face and telephone response probabilities are the same. On the other hand, these coefficients do not have to be the same from country to country. Therefore, 15 parameters have to be estimated now and not only five like in model 1 or six like in model 2. In this specific case the fit of this model with 10 parameters more is hardly better than the fit of model 1. The  $\chi^2 = 38.2$  with 3 degrees of freedom which leads to the rejection of this model. For 10 extra parameters only an improvement in  $\chi^2$  of three points was achieved. Going from model 1 to model 2 only one parameter more was introduced and the reduction in  $\chi^2$  was 22 points which is a large improvement. Therefore, in this case a difference in response probabilities across modes is necessary for a fitting model but not a difference in response probabilities across countries.

If model 2 and model 3 had not fitted the data, then the only possible solution would have been to allow for differences between the countries and the modes as suggested in model 4. This model is, however, only used if no other model fits.

## 9.6 Results

Using this procedure for the different categories of questions the results were obtained which have been summarised in table 9.2. First of all, all the *media involvement* questions have not been affected by the mode of data collection. The categories are relatively detailed and ask for

estimates of frequencies. In such a case it seems that the mode of data collection has no effect. It is also important that there are no differences in response probabilities across countries. So the response categories for these questions can be used for comparison across modes and across countries.

The second category of questions concerning *political involvement* contains one question which has the same response probabilities for the different modes and different countries, while the other question produces differences between modes and across countries. The reason for this difference is that the question on political discussion has as categories: frequently, occasionally, never and DK/No answer while the question “persuade” has as categories: often, from time to time, rarely, never, DK/No answer, that is one additional category. Comparing the meaning of the categories in the two questions one could conclude that “rarely” is the extra category and it is precisely this category which causes differences between the modes and the countries. This suggests that if the categories “rarely” and “never” are collapsed, the problems might disappear. Testing this hypothesis, it turned out that the model with equal probabilities across modes and across countries now indeed fitted to the data. This suggests that for purposes of comparison these two categories should be combined. To leave out the category “rarely” in the data collection at all is another viable option.

The third set of questions concerns *satisfaction*. Both questions have unequal response probabilities across modes and countries. Looking at the response categories, however, the problems do not come as a surprise. The response categories for both questions are: very satisfied, fairly satisfied, not very satisfied, not at all satisfied and DK/No answer. The problems are that it can be confusing for translators and respondents how to interpret especially the labels “fairly satisfied” and “not very satisfied”. In fact, logically one could argue that after the “very satisfied” category “not very satisfied” contains all other possible answers and that therefore it is not clear when to use the category of “fairly satisfied”.

In the analyses it was indeed the case that people in category 3 on the latent variable had a different probability for answering fairly satisfied and not very satisfied in the different modes. But this problem may also carry over into the translation of these categories into different languages.

Checking this hypothesis, differences in the translations in the different languages were indeed discovered. In French and Dutch the translation of the labels were as follows: “very satisfied, rather satisfied, rather dissatisfied, not at all satisfied”. If such differences exist in the translation between the countries, it cannot come as a surprise that also differences in the reactions of the respondents across countries are found. The differences across modes must also have to do with the problematic categories which are solved differently in face to face than in telephone research.

Interesting in this context are the findings for the questions on *involvement in the EU*. The question on knowledge uses the same category system as the satisfaction questions: very well informed, quite well informed, not very well informed, not at all well informed and DK/No answer. So, if the above speculation is correct, this question should have the same problems as the satisfaction question. In table 9.2 we see that this is indeed the case. This strengthens the argument given before.

**Table 9.2 The evaluation of difference between modes and countries for the EB41.Panel**

	Equality of the parameters			
	across countries		not across countries	
	across modes (model 1)	not across modes (model 2)	across modes (model 3)	not across modes (model 4)
<i>Media involvement</i>				
Radio	+			
Newspaper	+			
TV	+			
<i>Political involvement</i>				
Political discussion	+			
Persuade others	-	-	-	+
<i>Satisfaction</i>				
Life in general	-	-	-	+
Democracy in country	-	-	-	+
<i>Involvement in EU</i>				
Interest	-	-	-	+
Knowledge	-	-	-	+
<i>Opinion on EU membership</i>				
Benefit for country from EU membership	+			
Evaluation of membership for country	-	+		
<i>Opinion on EU policies</i>				
European Monetary Union	+			
EU defence	+			
Participation local elections	-	+		
Participation EU elections	-	+		
Candidacy local elections	-	+		
Candidacy EU elections	-	+		
Division of tasks between various levels of government	-	+		

The question on “interest in EU matters” had different labels: a great deal, to some extent, not much, not at all and DK/No answer, but the problem is comparable. The term “not much” is a negation of “much”. So if one is less than “much interested” in the EU, one could choose “not much”. But then the position of the category “to some extent” is again not clear. It could be seen as a part of the category “not much”, but that would lead to confusion. Given this situation the same problems as for the other questions were expected and were indeed found, as can be seen in table 9.2. Thus, again the translations in the different countries were checked, and also in this case the translation of the labels is different.

The next set of questions concerns the so called *unification* questions. It was found that for “benefit” no mode effect occurs and comparison across countries is also possible. For “membership”, on the other hand, it turned out that people had a significantly higher probability to say “good” if they were in the category “good” on the latent variable in face to face than in the telephone interviews. The difference was .92 against .80. The hypothesis that this difference existed in all three countries was not rejected. So this phenomenon seems to be a crosscultural difference between telephone and face to face interviews.

Finally seven *opinion* questions, all with the same format; Are you pro, against or do you have no opinion, were analysed. As can be seen in table 9.2, the first two questions concerning the introduction of the European Monetary Union and a common defence policy for the EU did not indicate any mode effect and differences across countries. On the other hand, all questions concerning the elections indicated a mode effect where in the telephone interview people with a score of “DK/No answer” on the latent variable have a higher probability to say “pro” than in the face to face interview. Besides that, the last opinion question concerning the division of tasks between local, national and EU government produced the same effect. It is difficult to explain these effects. It cannot be a general acquiescence bias (Schuman and Presser, 1981) because then it should occur for all questions. It is also not an effect of the topic because then one would have to find a different explanation for the last question. An explanation as a learning effect is also difficult because then one would also expect this outcome for all questions and not only for a limited number. Besides that, why would all people learn that they have to respond “yes” to this question instead of “no”, there is also no obvious reason for that. So for the time being one has to accept the so very systematic findings, and one will have to wait for further research to clarify this matter.

## 9.7 Conclusion

In this chapter the comparability of the responses across modes of data collection and across countries was studied by testing the equality of the response probabilities for the different questions across mode and countries.

Table 9.2 has shown that for 11 out of the 18 questions the responses are affected by the mode of data collection. This is a rather large number and indicates that one cannot switch between modes without having to expect differences in the results. This finding which was also corroborated in chapter 5 with a different approach, is contradicting the standard literature on mode effects (Groves and Kahn, 1979; de Leeuw and van der Zouwen, 1988; de Leeuw, 1990) but agrees with other studies which found considerable effects (Silberstein et

al., 1989; Kalfs, 1994; Scherpenzeel and Saris, 1997). The last mentioned study is the most comparable one to ours since there also panel data has been used. In panel studies the confounding factors are better controlled although one faces the additional problem of memory effect. In that study, also mode effects were found, for example, for the satisfaction variables. In a meta analysis of similar studies (Scherpenzeel, 1995) in different countries also country-specific effects have been found as reported in table 9.2.

Such country-specific differences are discovered much less frequently than mode effects. For only five questions the response probabilities across countries were different. In four questions the category labels were overlapping which led to confusion in the translations and in the responses. Therefore, it would be worthwhile to use a different categorisation in order to avoid these problems in the future:

- very satisfied,
- satisfied,
- dissatisfied,
- very dissatisfied.

It is most likely that this categorisation would lead to less problems. An unattractive feature of this scale is that since most people in Europe are satisfied, this scale is made into a two-point scale for most people.

An alternative would be :

- very satisfied,
- rather satisfied,
- little satisfied,
- not satisfied.

Both formulations will probably be comparable across modes and countries but this has to be tested. Also this classification should lead to less confusion, but more differentiation could be introduced.

So far it was shown that many differences exist between modes therefore corrections for these mode effects are necessary. In order to make this possible, response probabilities for all questions are reported in appendix 2. If the matrices are different for different countries, also a matrix is presented for each country. These matrices will be used in the last part of the book for the corrections of the distributions of the variables.