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Federal Department of Home Affairs FDHA  
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# Validation of data from the Swiss Labour Force Survey (SLFS)

Daniel Lörch, May 2012  
7th Workshop on LFS Methodology





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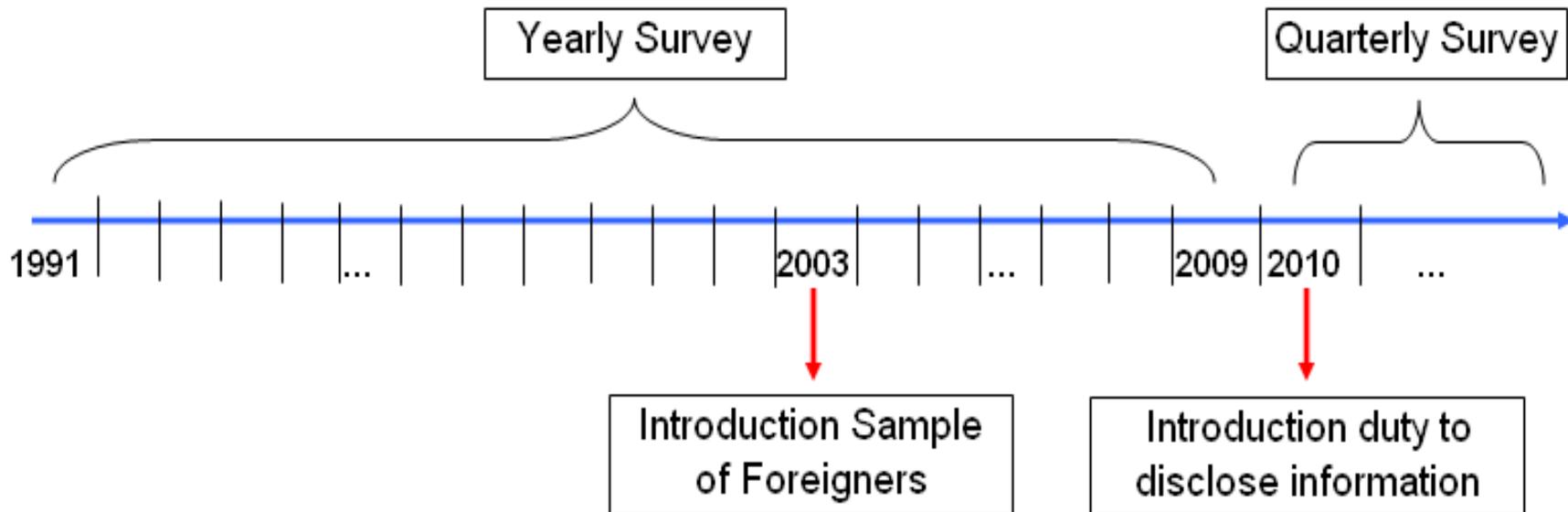
# 1. SLFS

## 1.1 Chronology





## SURVEY CHRONOLOGY



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# 1. SLFS

## 1.2 Overview of the methodology

- ➔ Personal survey
- ➔ Rotating panel with 4 waves
- ➔ 4 surveys in 15 months based on the 2-(2)-2 pattern



## 2-(2)-2 Rotationplan of SLFS

IV 2010	I 2011	II 2011	III 2011	IV 2011	I 2012
V1 1041-1049	V1 1102-1110	V1 1115-1123	V1 1128-1136	V1 1141-1149	V1 1202-1210
V2 1028-1036	V2 1041-1049	V2 1102-1110	V2 1115-1123	V2 1128-1136	V2 1141-1149
V3 941-949	V3 1002-1010	V3 1015-1023	V3 1028-1036	V3 1041-1049	V3 1102-1110
V4 928-936	V4 941-949	V4 1002-1010	V4 1015-1023	V4 1028-1036	V4 1041-1049





# 1. SLFS

## 1.2 Overview of the methodology

- Sample summary (status: Q2 2012)
  - Approximately 80% from the telephone directory (CH & FOR)
  - Approximately 20% from the Register of Foreigners (FOR)
  
- Two-stage sampling process for units from the telephone directory (1. household 2. target person)
  
- One-stage sampling process for units from the register of foreigners (1. target person)
  
- Survey methodology: CATI



# 1. SLFS

## 1.3 Production process

- ➔ Requirement for up-to-date information implies tight production margins
- ➔ Requires constant data processing (not only after the survey's completion)
- ➔ Comparison: Former yearly vs. current quarterly survey



## 2. Validation phases

### 2.1 Before the survey

➡ Changes to the questionnaire are validated using

- Interview simulations

and

- Test interviews



## 2. Validation phases

### 2.2 During the survey

#### ➡ Validation of the structure

One week after the start of the survey, simple frequency tables are used to validate the "most important" filters (especially the nodes).



Questionnr	Wave	Actual Quarter		Last Year Quarter		Difference
		abs	%	abs	%	%
Question 721.01	W1	960	100	1904	100	0
	W2	0	0	0	0	0
	W3	931	100	1431	100	0
	W4	0	0	0	0	0
Question 721.10	W1	425	44.3	859	45.1	-0.8
	W2	0	0	0	0	0
	W3	383	41.1	603	42.1	-1
	W4	0	0	0	0	0



## 2. Validation phases

### 2.2 During the survey

#### ➔ Online validation of combinations of variables

for example

lower limit < **working hours per week (workload)** < upper limit

If the limits are exceeded, the person completing the interview is given a visual warning.



## 2. Validation phases

### 2.2 During the survey

#### ➔ Online validation of variable values

##### Example

- Gender in (1,2)
- Birth date = valid 6-digit date format

Irregular formats are not accepted.



## 2. Validation phases

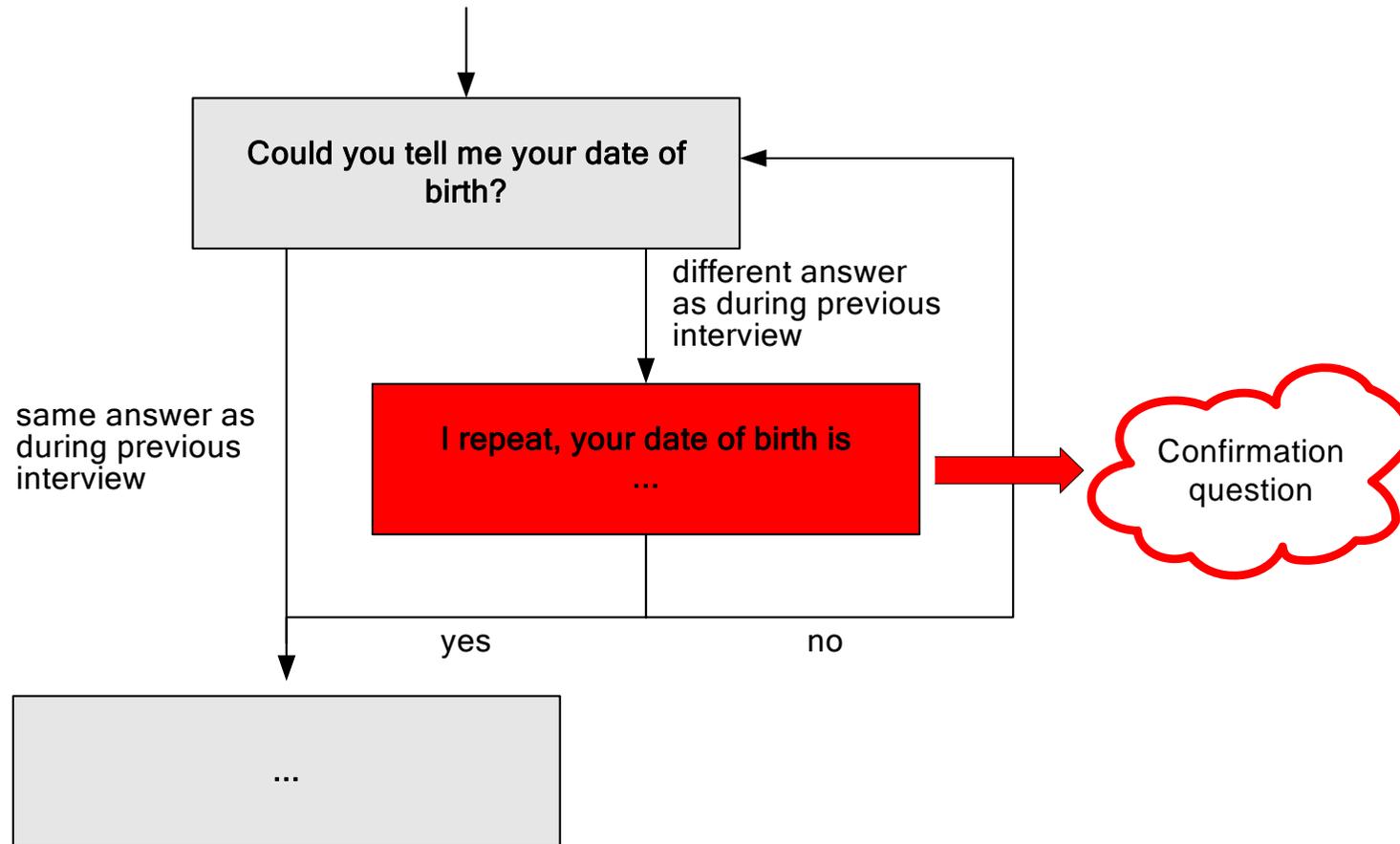
### 2.2 During the survey

#### ➡ Online validation of variations over time

Inconsistencies with the previous survey result in a confirmation question being asked in which the current response is repeated and, if necessary, corrected.



## Onlinevalidation of date of birth





## 2. Validation phases

### 2.3 After the survey

#### ➔ How sensible is validation if

- only 20% of the sample have register references?
- there are resource problems?
- there is a risk of bias?
- there is only a marginal impact on the principal analysis of the weighted data



## 2. Validation phases

### 2.3 After the survey

#### ➔ Consequences of these questions

- i. Validation of variables with register references
- ii. Validation of variables which are relevant to the weighting model
- iii. Validation of variables with obvious outliers
- iv. Validation process should be automated as far as possible
- v. As few variables as possible and as many as necessary should be validated



## 2. Validation phases

### 2.3 After the survey

#### ➔ Consequences of these questions

(i), (ii) and (v) imply – restricted to the target person – the validation of the socio-demographic variables gender, birth date, marital status, nationality and residence status.

(iii) implies the validation of the income from employment variable.



## 2. Validation phases

### 2.3 After the survey

#### ➔ Consequence

(iv) and (v) eventually result in a validation process based on SAS with the least possible manual input.



## 2. Validation phases

### 2.3 After the survey

#### ➡ Validation of socio-demographic variables

The validation is based on documented rules



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Variable	Plaus-ID	Pseudocode	Korrekturart	Bemerkung	Gültigkeit
is02d	ag0	if format-inkonsistenz then	manuell		
	ag1	if (bb03x-bb03a) gt 2 and (bb03a-bb03(i)) le 2 and is01=bb04(i)	manuell	Verifizierung Zielperson(ZP)	
	ag2	if st0is02d ne st1is02d and st1is02d = st2is02d and put(st1is02d,z6.) not in ('990000', '980000', '') then st0is02d=st1is02d;	automatisch	Wellen 3 & 4	
	ag3	if st0is02d ne st1is02d and st1is02d = st2is02d and put(st1is02d,z6.) in ('990000', '980000', '')	manuell	Wellen 3 & 4	
	ag4	if st0is02d ne st1is02d and st1is02d ne st2is02d and st0is02d ne st2is02d	manuell	Wellen 3 & 4	
	ag5_old	if (abs(st1bb03x-st1bb03a) le 1) and (abs(st0bb03x-st1bb03x) le 1) and put(st1is02d,z6.) not in ('990000', '980000') then st0is02d=st1is02d.	automatisch	Welle 2	bis und mit 2011Q3
			if (abs(st1hh03x-st1hh03a) le 1) and		





## 2. Validation phases

### 2.3 After the survey

#### ➡ Validation of socio-demographic variables

##### Corrections

- either made automatically via SAS
- or manually using Excel (SAS-Excel interchange)



## 2. Validation phases

### 2.3 After the survey

#### ➡ Validation of socio-demographic variables

##### Scope of corrections Q4 2011

- The sample size featured 35,000 observations
- 1,600 corrections in total were made
- In 30% (approx. 500) of cases the corrections were carried out manually, and in 70% of cases automatically



## 2. Validation phases

### 2.3 After the survey

#### ➔ Validation of socio-demographic variables

##### Flags

All corrections are marked so that they can be identified as such at any time.



## 2. Validation phases

### 2.3 After the survey

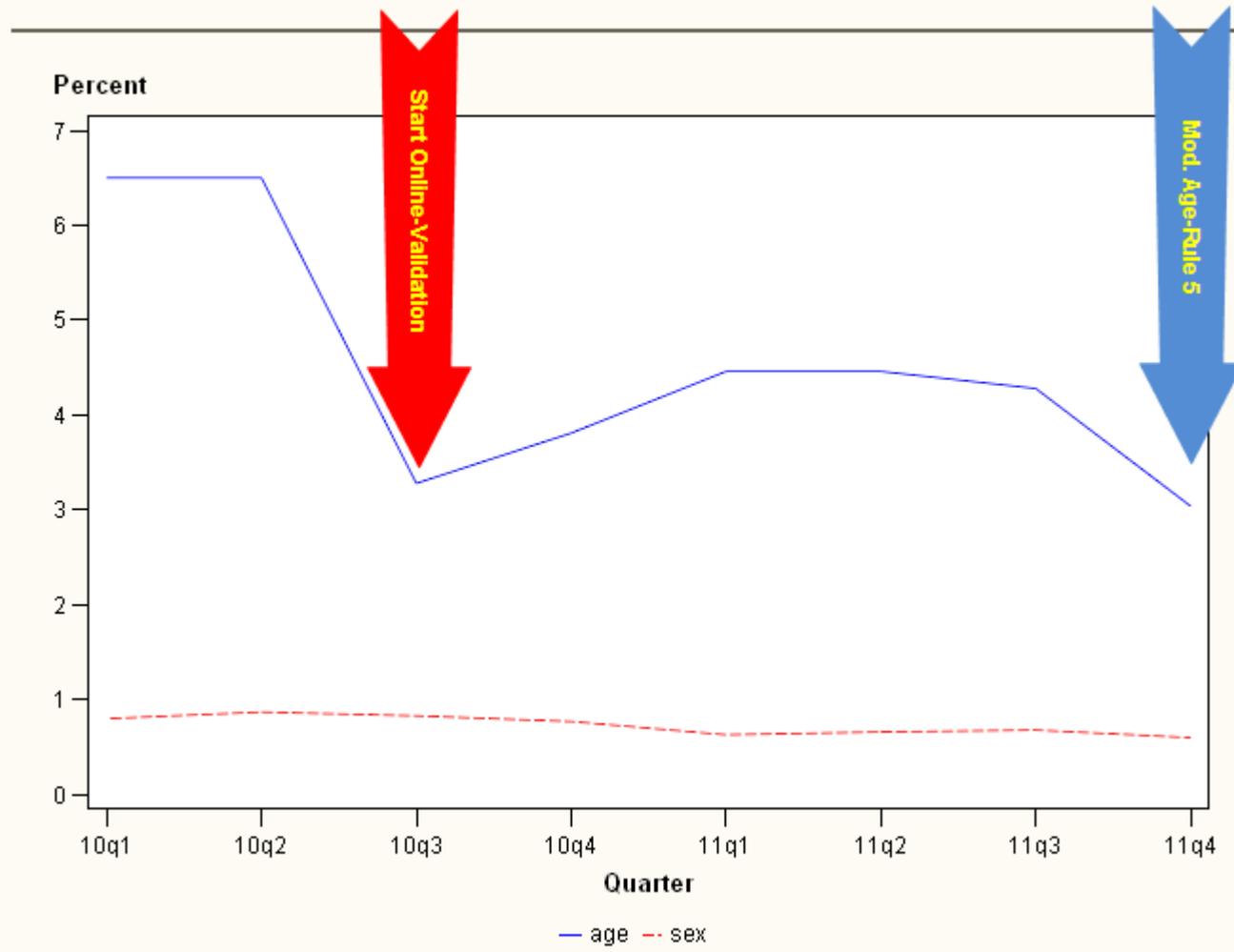
#### ➡ Validation of socio-demographic variables

Scope of corrections to the variables birth date and gender



### Correction-Rate for the variables Birthday and Sex (Period 2010Q1-2011Q4)

SV





## 2. Validation phases

### 2.3 After the survey

#### ➡ Validation of income from employment

Please refer to the handout for details.



## 2. Validation phases

### 2.3 After the survey

#### ➡ Validation of other variables

Please refer to the handout for details.



## 3. Future developments

From 2013 onwards there will be a complete register-based framework for sampling. This change will considerably influence the methods currently used in the validation process.





## 4. Summary

- The premises we currently use for validating socio-demographic variables are not favourable. Only around 20% of the sampling framework is based on a register.
- The principle applied to validating the SLFS is: as few variables as possible and as many as necessary.
- Online validation reduces the input required for post-validation considerably.
- From 2013 onwards there will be a complete register-based framework for sampling.



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# Thank you very much for your attention!

