



Comparative Survey Design & Implementation

# **The past, present and future of statistical weights in cross-national Surveys: Implications for survey data harmonization**

**Marcin W. Zieliński**

**Institute of Philosophy and Sociology, Polish Academy of Sciences  
The Robert B. Zajonc Institute for Social Studies, University of Warsaw**

**Przemek Powalko**

**Institute of Philosophy and Sociology, Polish Academy of Sciences**

**July 27, 2016, Chicago**

# The data

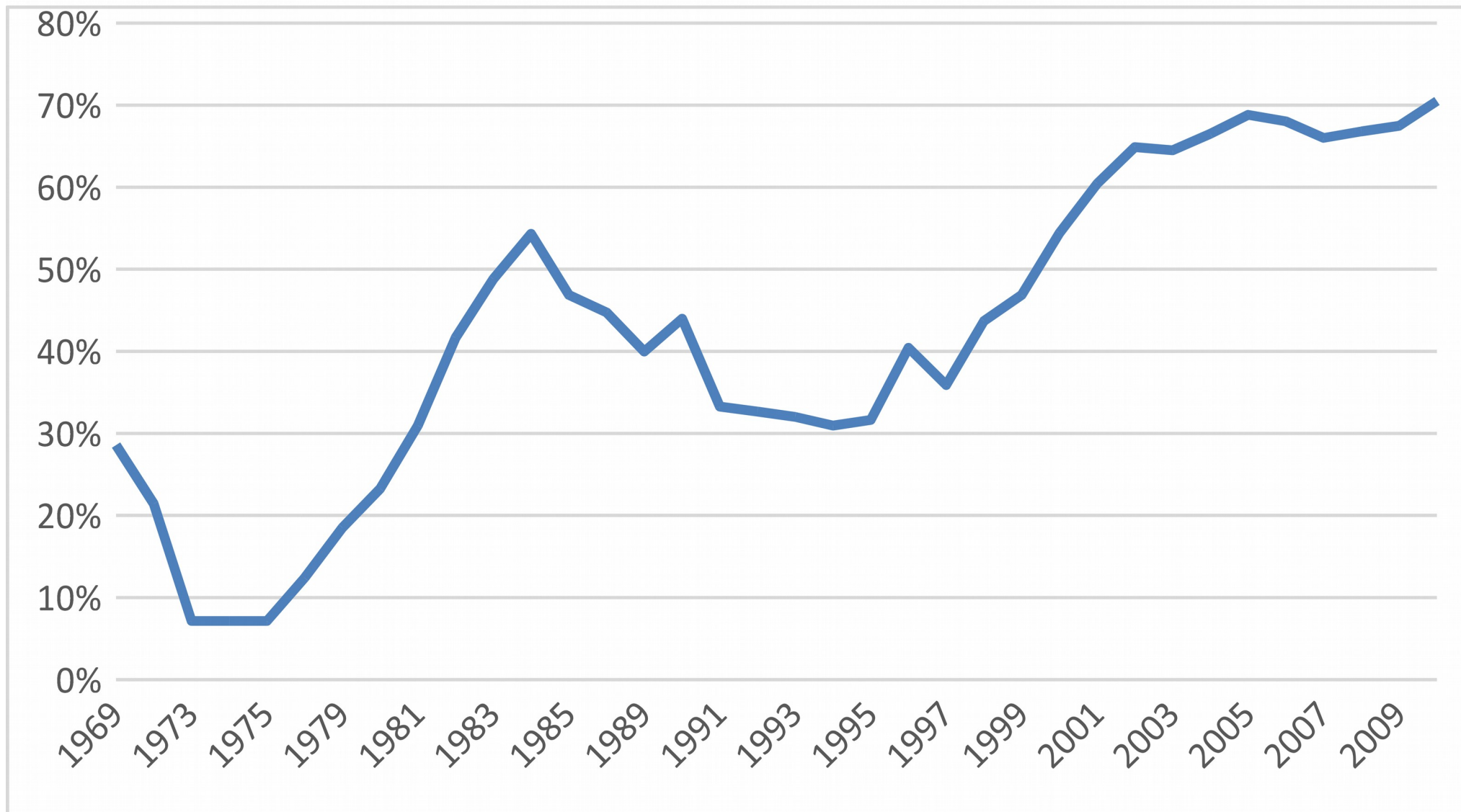
**22 international projects**

**130 countries**

**years: 1966-2013**

**1721 studies**

# Availability of weights over time (60.2% studies)



# Frequency of weighting procedures

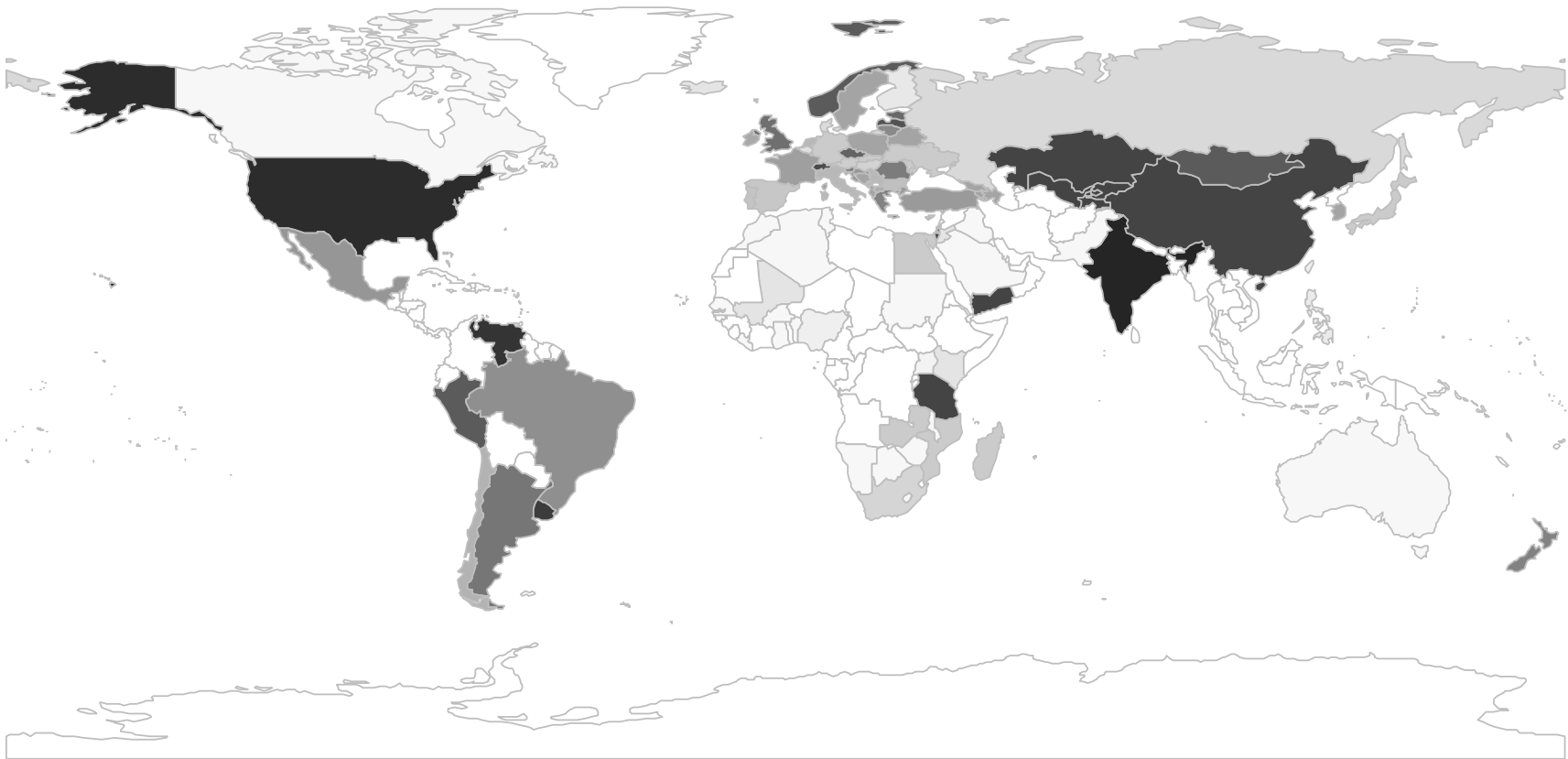
43.4 % poststratification type of weighting only

8.5 % design type of weighting only

22.9 % combined

25.2 % no information on the type of weighting

# design vs postrstr. (tendency)



# Components of wght. factors

Gender (62.4 %)

Age (61.5)

Region (39.3)

Urbanity level (24.8)

Education (18.7)

Economical factors (1.4)

Corrections for HH samples (13.8)

Corrections due to the stratified sampling (21.8)

# Quality of weights

mean(wght)

sd(wght)

MIN and MAX (wght)

# Quality of weights

## Technically “good weight”

**mean(wght) = 1**

**sd(wght) as small as possible**

**MIN(wght) > 0 and MIN(wght) < 1**

**MAX(wght) > 1 but small**



# Consequencias

**mean(wght)  $\neq$  1 : inflation or deflation  
of the net sample size (std errors, potential bias)**

**high sd(wght) : high variance  
introduced into the data**

**[MIN(wght)  $>$  1] = [mean(wght)  $>$  1]**

**[MAX(wght)  $<$  1] = [mean(wght)  $<$  1]**

**MIN(wght) = 0 : excluding cases**

**high MAX(wght) : possible bias**

# mean(weight)

70 % mean(wght) != 1

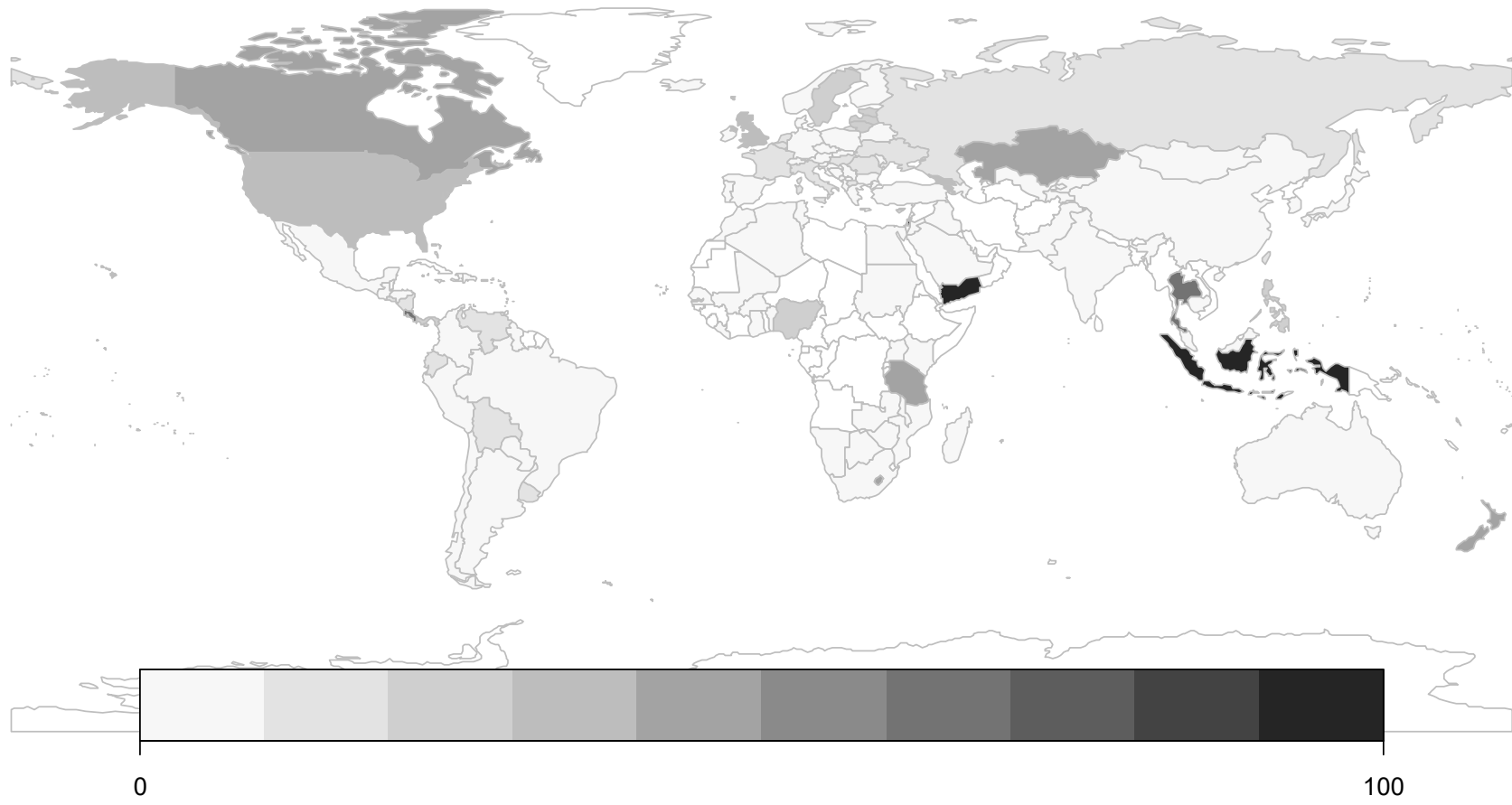
Less strict:  $0.999 \leq \text{weight} \leq 1.001$   
12.7 % bad

e.g.:

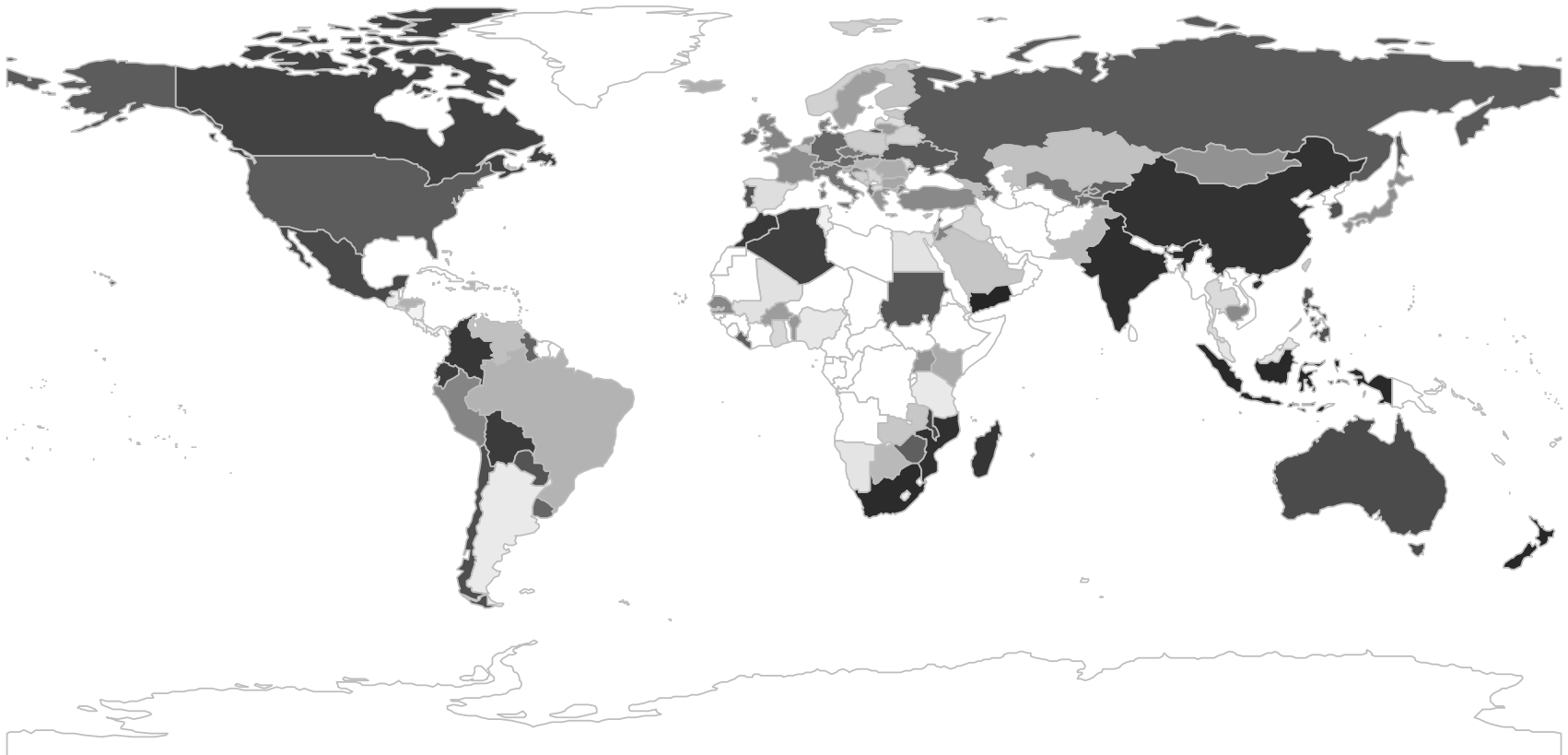
Philippines (ASB 2010) = 0.83

Philippines (ISSP 1996) = 3.29

# mean(weight)



sd(weight)



# MIN&MAX(weight)

## **Ranges of MIN(wght):**

exactly=0 in 42 surveys!

1.91 Philippines (ISSP 1991)

## **Ranges of MAX(wght):**

0.92 Lithuania (NBB 2001)

90.32 New Zealand (ISSP 2007)

# Cross-project perspective

## **No evident errors:**

Americas Barometer (AMB)

Comparative National Elections Project (CNEP)

European Quality of Life (EQLS)

European Social Survey (ESS)

World Values Survey (WVS)

# The issue of comparability

**Weights differ in terms of quality and composition and thus their effect on the data**

**Quality (errors):**

e.g. rescaling (if  $\text{mean}(\text{wght}) \neq 1$ )

1. Comparability of weighting factors
2. Comparability of data after weighting

# Comparability of weighting factors:

**=> reweighting**

**Advantages:**

- 1. elimination of errors**
- 2. standardizing impact on the data**



# Comparability of weighted data:

**=> Leave as they are but eliminate errors that can be eliminated**

## **Advantages:**

- 1. preserving local context**
- 2. keeping design component**

The decision is yours!

