

***Performance of Weighted and Non-weighted Estimators
in a Cell-phone based Electoral Poll:
An Academic Study of the 2012 Presidential Elections in Mexico.***

*Olivia Carrillo-Gamboa
Rosa Isela Hernández-Zamora
Jesús Cantú-Escalante*

***Tecnológico de Monterrey
Monterrey, MEXICO***

Washington, D.C.

November 5th. 2013

Study undertaken in the project :

*Observatorio de Medios y Opinión Pública
(Media and Public Opinion Observatory)*

Funds by:

Tecnológico de Monterrey and
*Fondo de Observación Electoral 2012 del Programa de las
Naciones Unidas para el Desarrollo, PNUD.*
***(Fund for the 2012 elections observation. United Nations
Development Programme, UNDP)***



EGAP.
Gobierno y Política Pública
TECNOLÓGICO DE MONTERREY



*Al servicio
de las personas
y las naciones*

Study Goal

Estimate the electoral results of the 2012 presidential election in Mexico to take place on July 1st...

- Four registered candidates: JVM; EPN; AMLO; GQT.



NATIONAL Pre-election phone survey based on a sample of random cell phone numbers.

APPLIED from June 25th to June 28th 2012

- *3304 Interviews*
- *2436 planning to vote for registered candidates.*

Surveys in Mexico

- Electoral polls and surveys directed to open adult population in Mexico have been used widely **for more than two decades.**
 - Most methodologies are based on household sampling procedures and *face-to-face interviews*.
 - **Problem:** Nowadays, household communities with restricted or no public access are too common for “*middle*” to “*high*” socioeconomic levels.
 - **COVERAGE of target population should be a concern.**

Telephone Interviews

- **Landline phone sample:**

- Coverage of target population by landline sampling frames is becoming shorter in time:



- Households in Mexico with landline phone:

- **53% in 2007**
(INEGI , 2007);
- **44% in 2011**
(INEGI , 2011).

Landline population coverage:

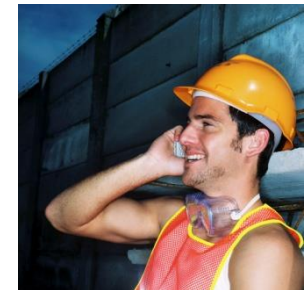
- **19% in 2007**
(COFETEL,2013);
- **17% in 2011**
(COFETEL,2013).

Telephone Interviews



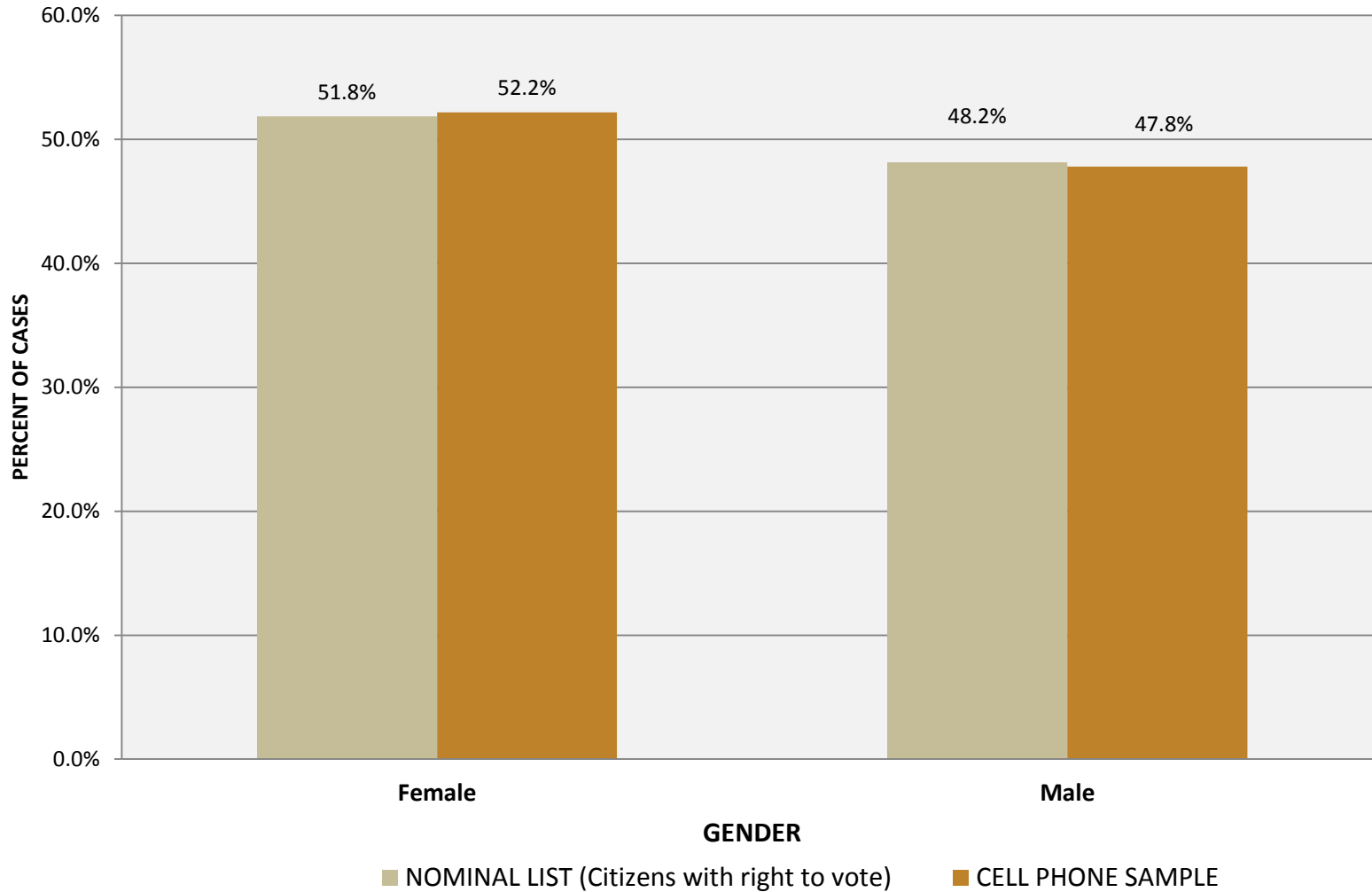
- **Cell phone sample:**

- ✓ **Increasing coverage in time (COFETEL, 2013):**
 - ✓ 64 subscriptions per 100 habitants (December 2007);
 - ✓ 87 subscriptions per 100 habitants (June 2012).
- ✓ **Reaches citizens from *all-profiles* and *everywhere***
- ✓ **Good practical results in previous local studies**



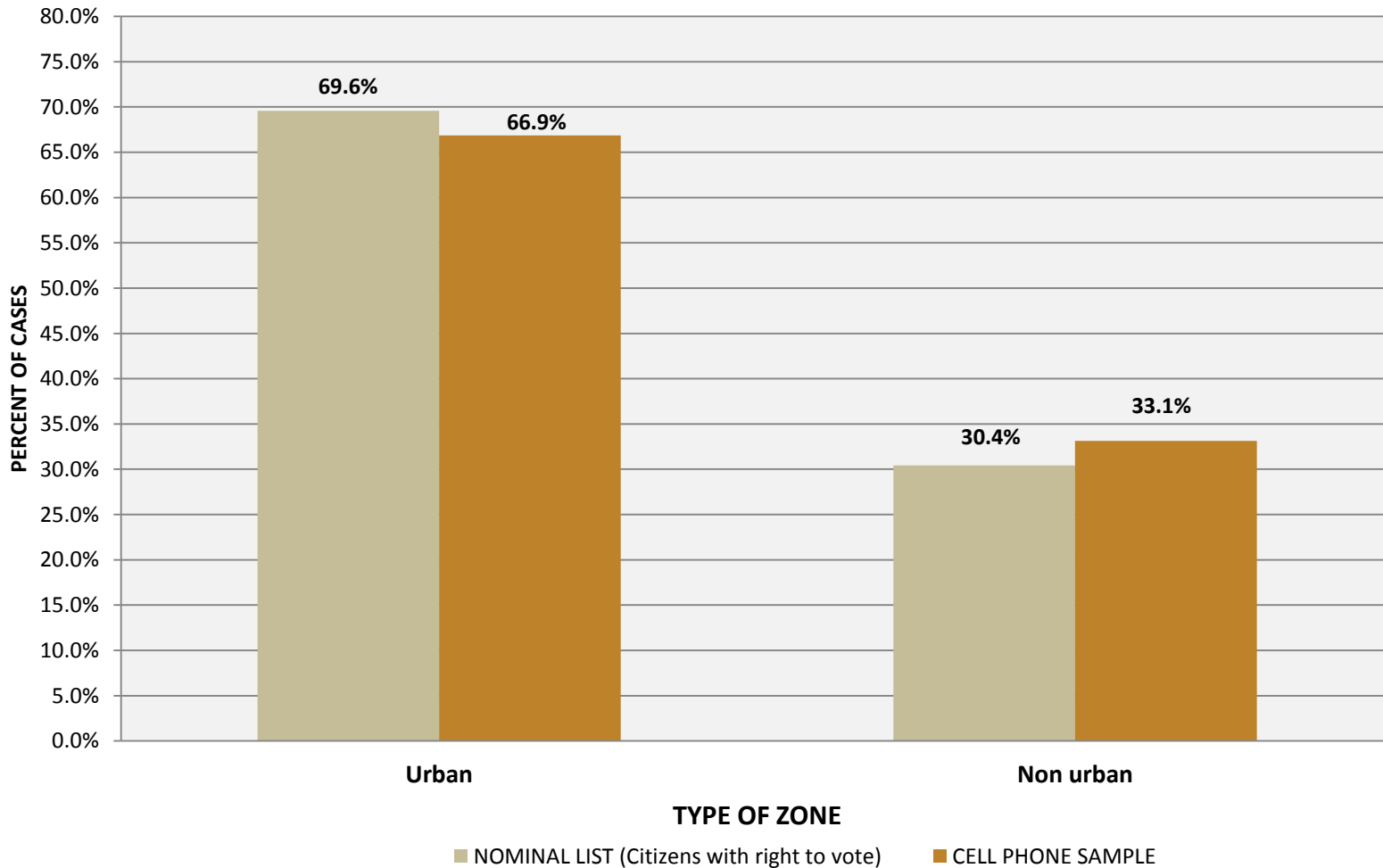
Sample Description

Mobile Phone Sample vs Target Population
GENDER



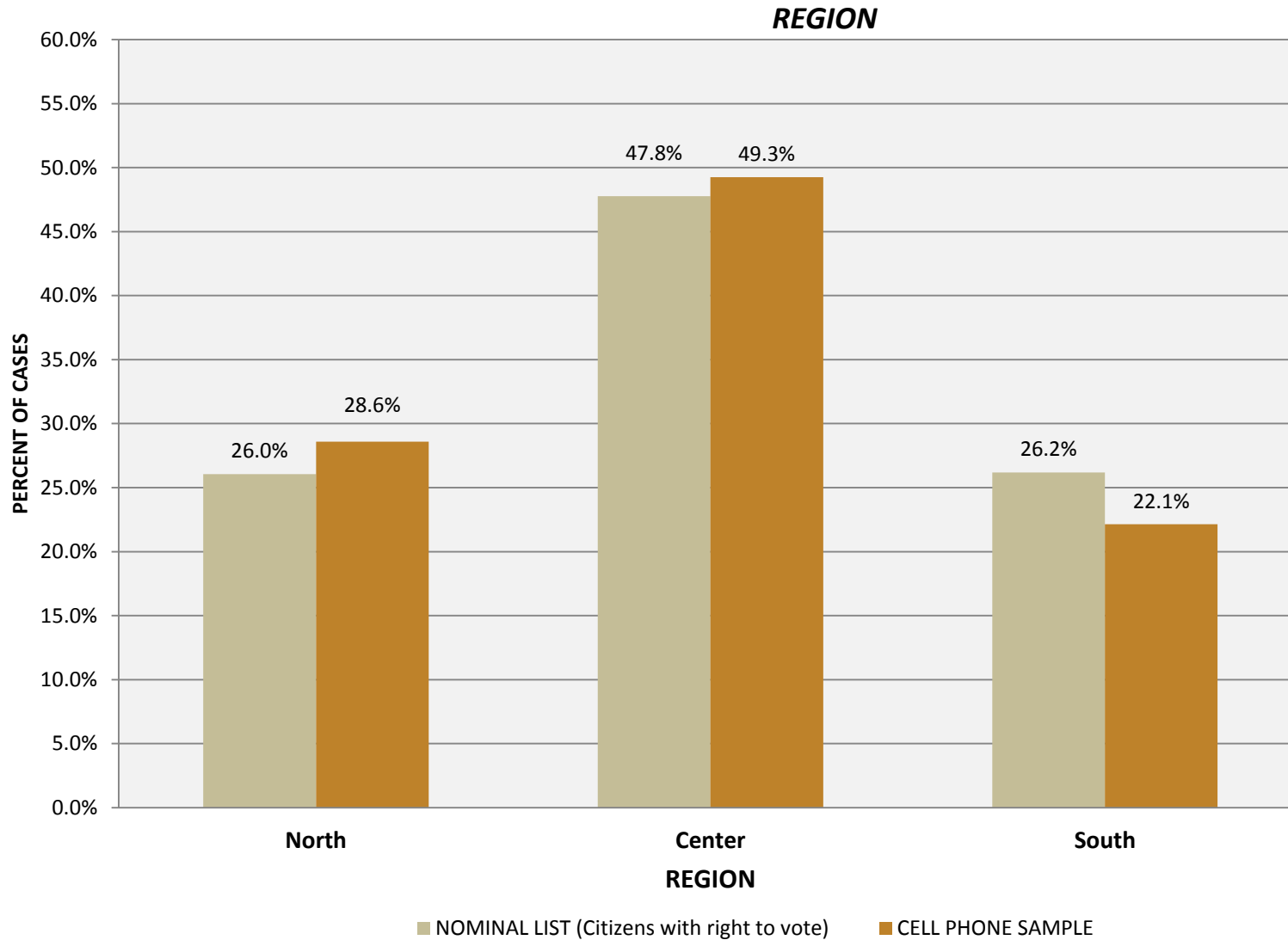
Sample Description

Mobile Phone Sample vs Target Population
TYPE OF ZONE



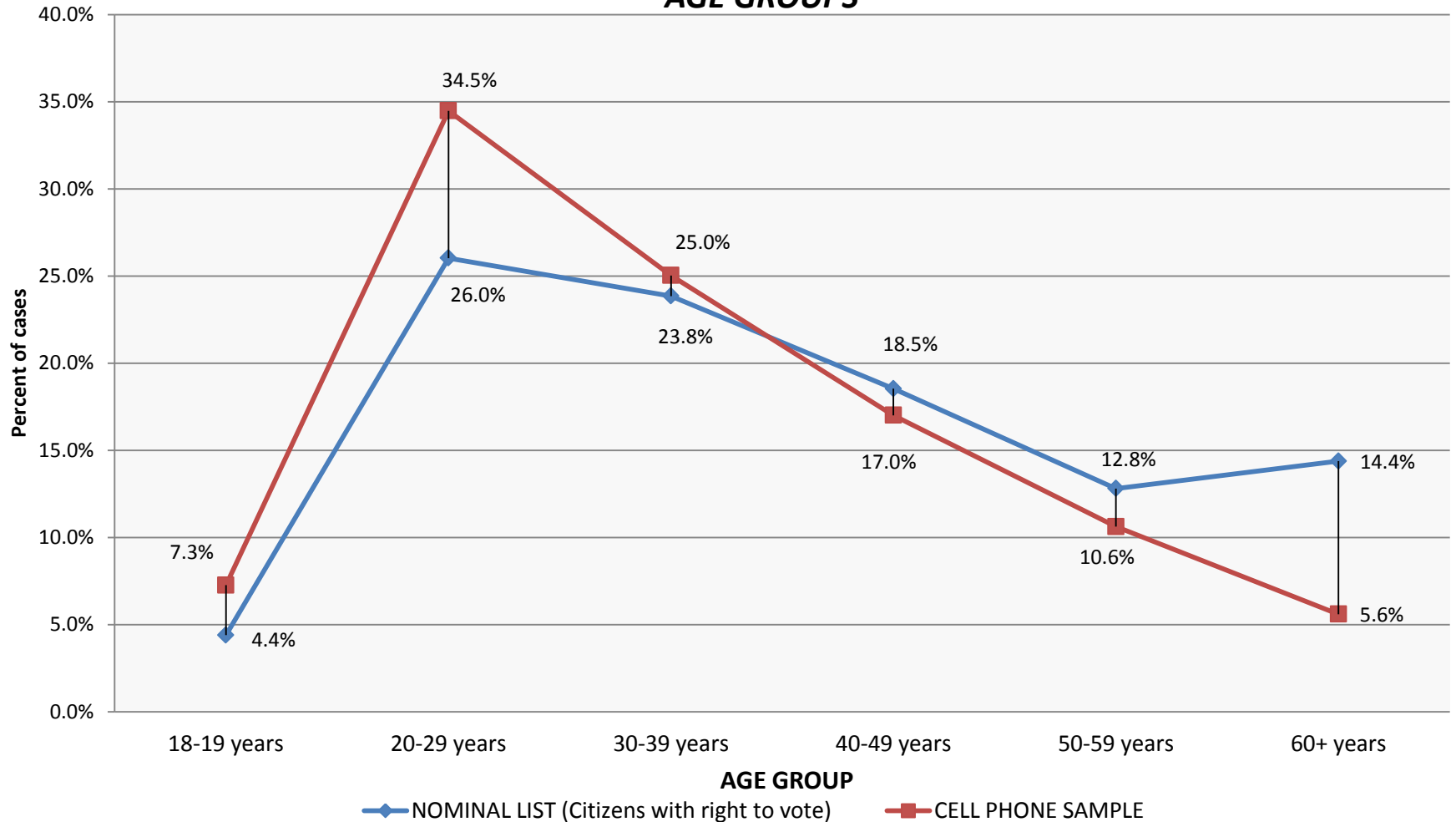
Sample Description

Mobile Phone Sample vs Target Population



Sample Description

**Mobile Phone Sample vs Target Population
AGE GROUPS**

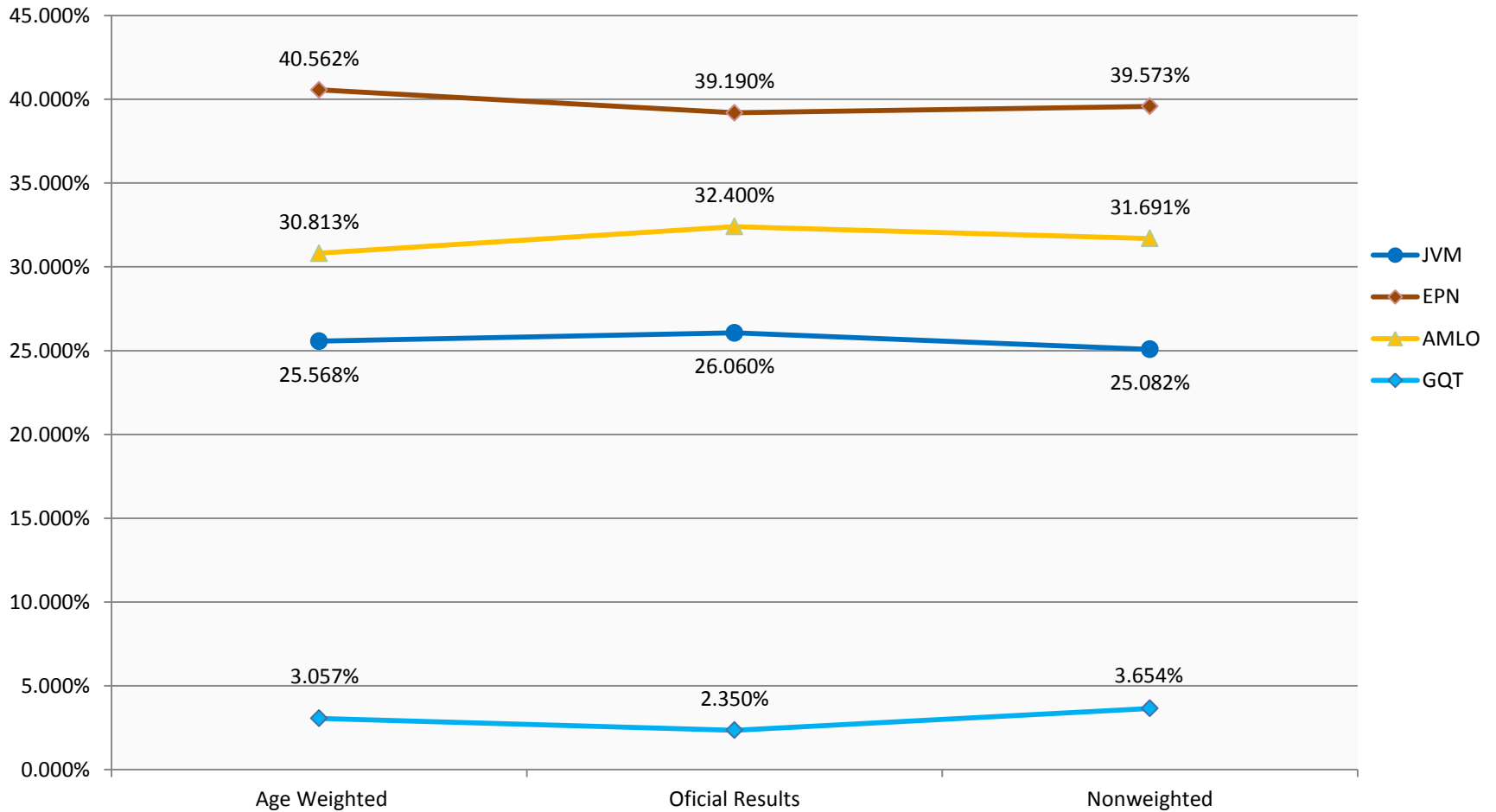


Voting Preferences

Age Group	JVM	EPN	AMLO	GQT	Someone else	Undecided	Null vote	No response	Total
18-19 years	35	68	65	16	1	30	4	21	240
20-29 years	199	317	299	41	4	183	17	79	1139
30-39 years	169	242	197	18	1	124	6	70	827
40-49 years	126	168	107	10	1	73	6	71	562
50-59 years	48	112	70	4	1	58	4	54	351
60+ years	34	57	34	0	2	25	1	32	185
Total	611	964	772	89	10	493	38	327	3304
	18.5%	29.2%	23.4%	2.7%	0.3%	14.9%	1.2%	9.9%	100.0%

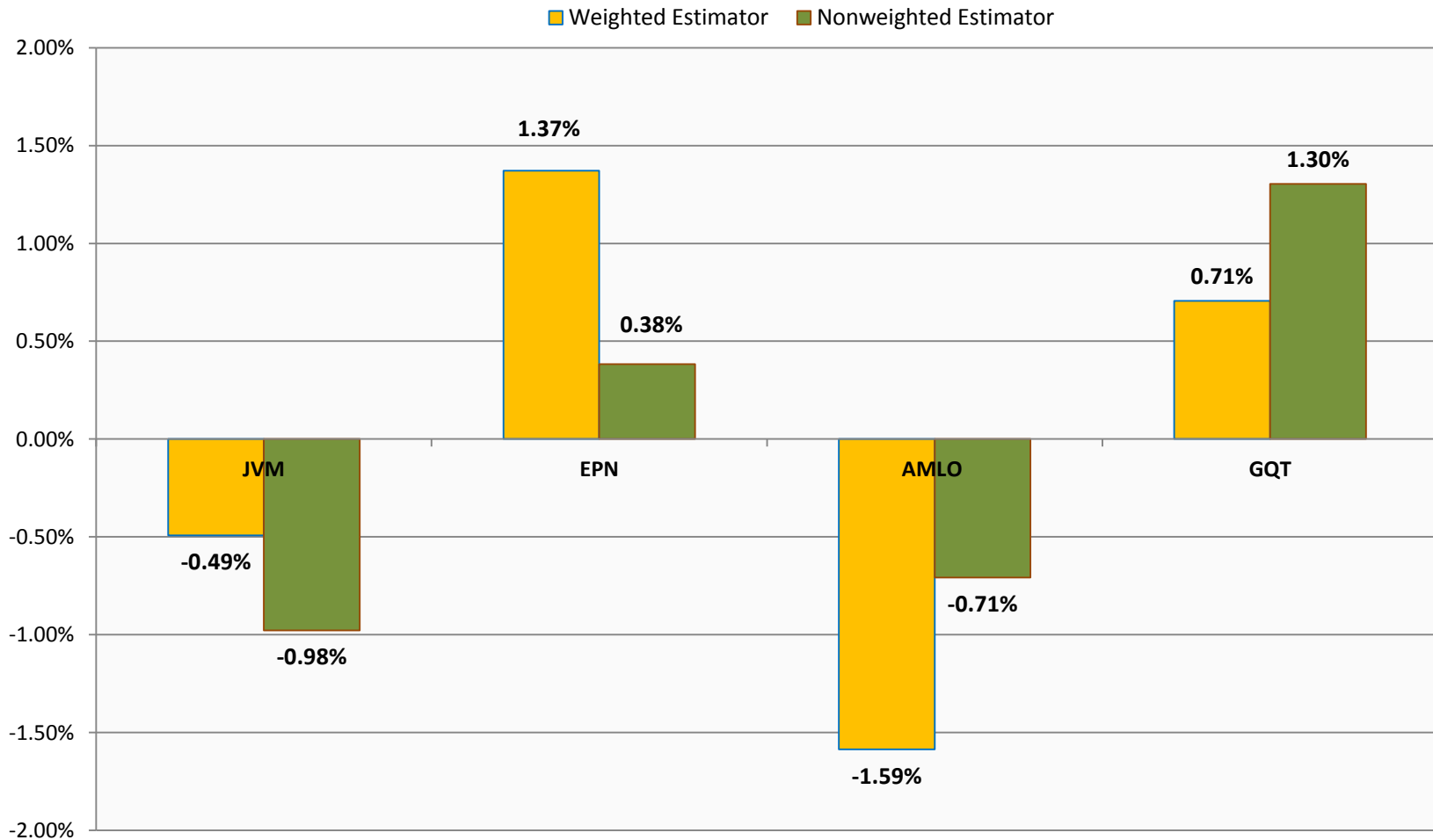
Estimates and Official Results (“Effective” votes)

**WEIGHTED AND NON WEIGHTED ESTIMATES
vs
OFFICIAL RESULTS**



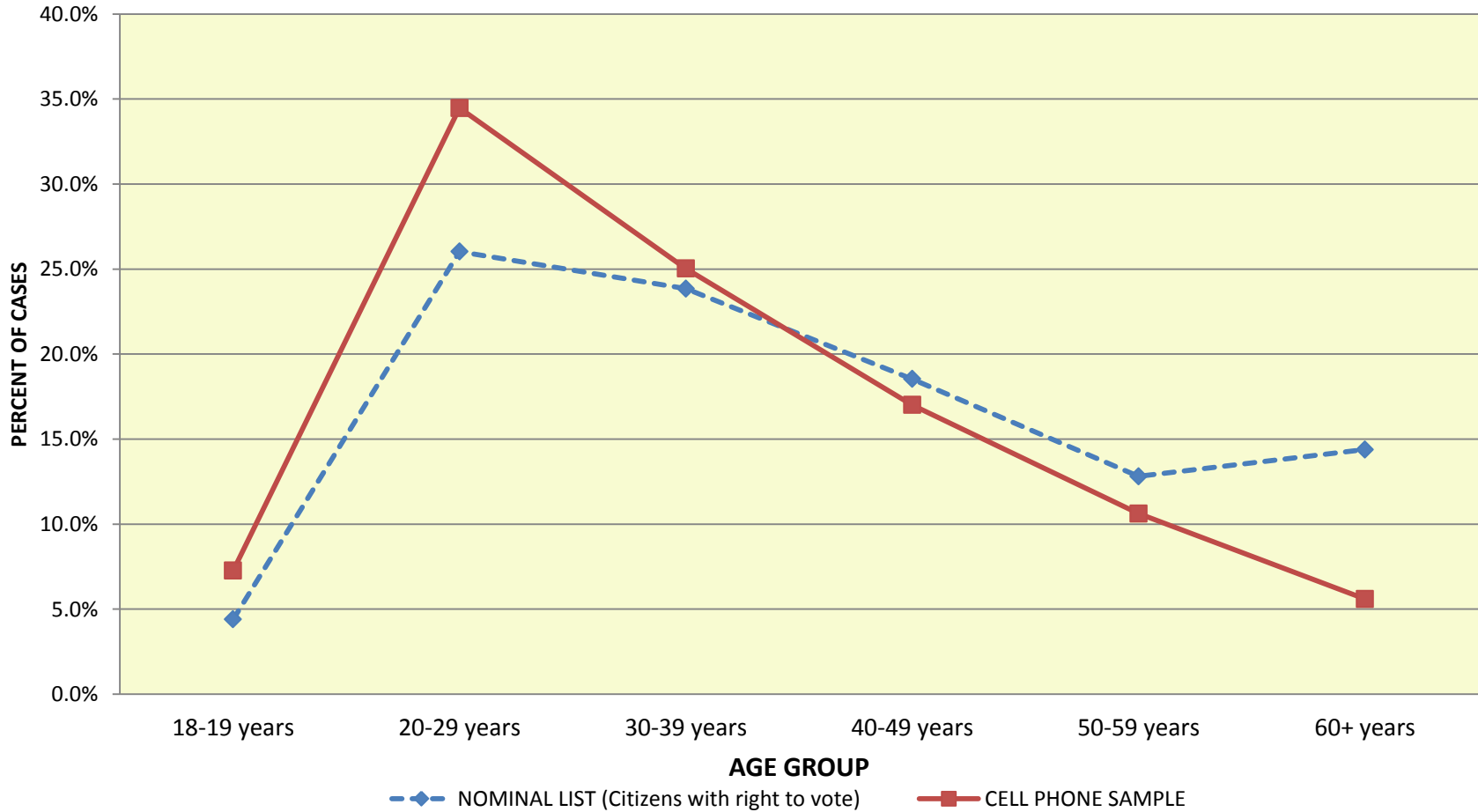
Closeness to Official Results: Unweighted estimator performs better

COMPARISON OF ESTIMATES vs OFFICIAL RESULTS (Estimate minus Official Result)



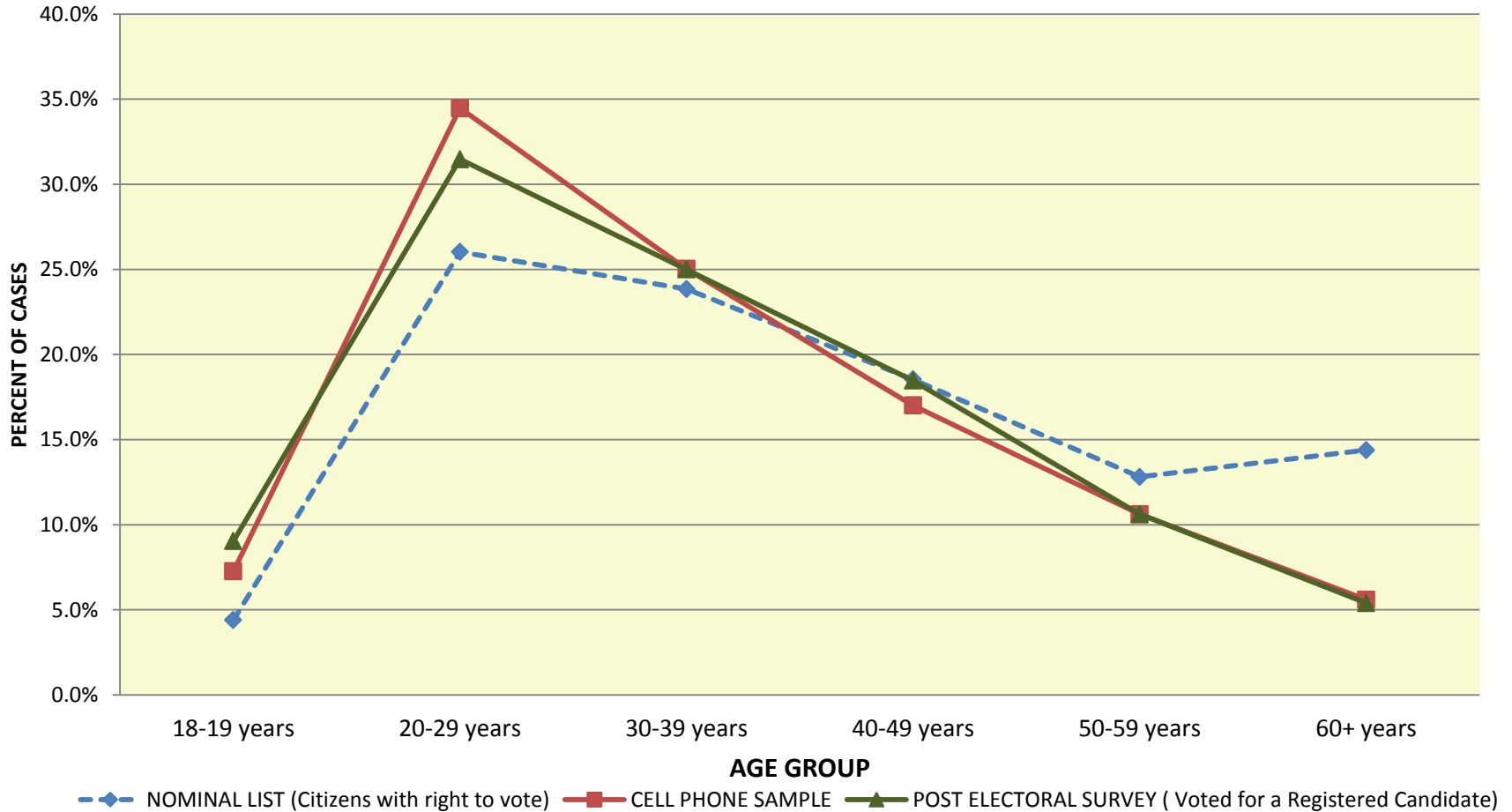
The Nominal List is **NOT** the Target Population

Mobile Phone Sample vs Nominal List Population
AGE GROUPS



“Real” Target Population seems *YOUNGER*
(voters from post-electoral survey, n=3171)

**Mobile Phone Sample vs “REAL” Target Population
AGE GROUPS**



Young votes

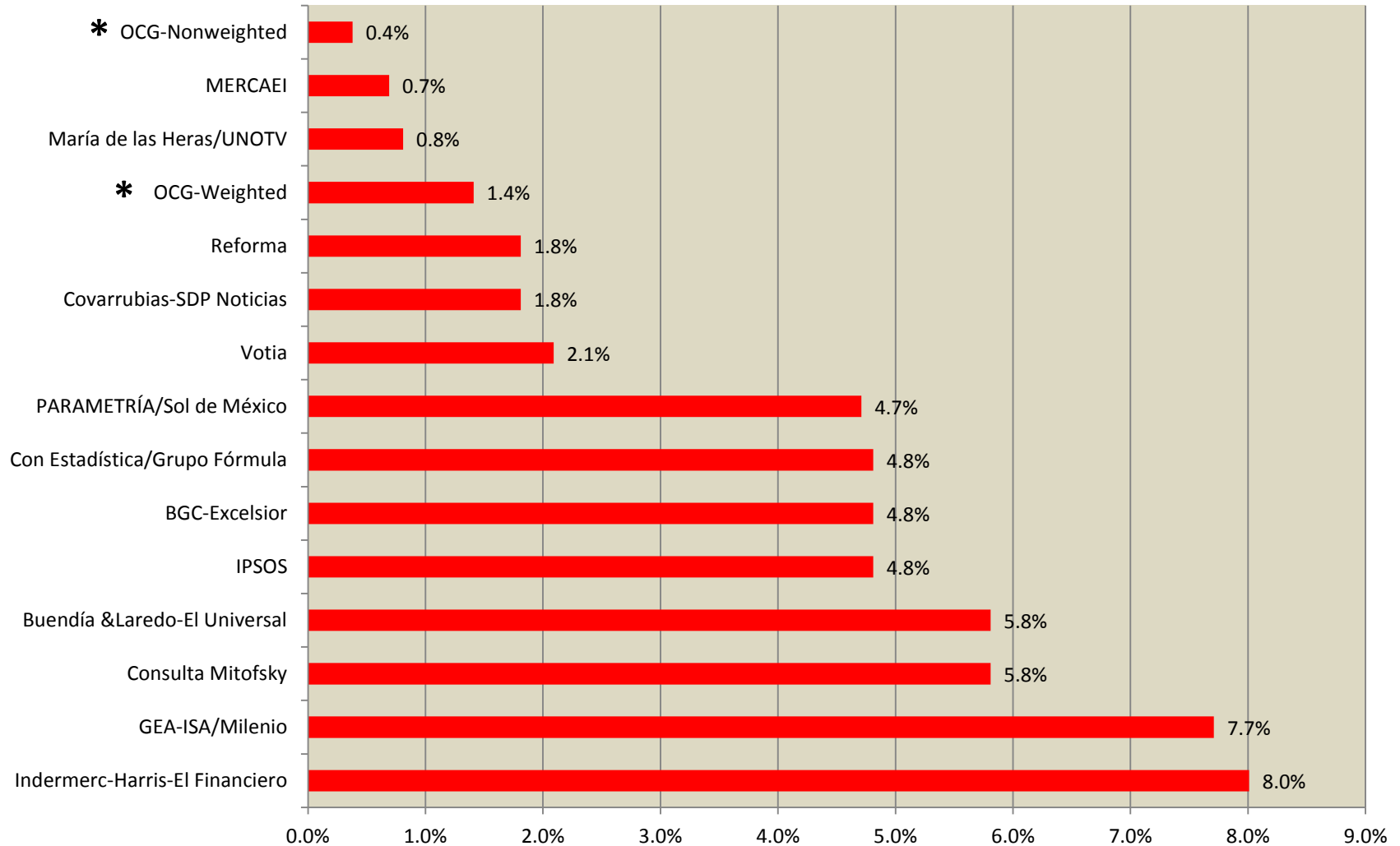
- Younger voters seem to have had a stronger participation than in previous federal (intermediate) elections (IFE, 2011).

Some possible explanations of younger voters

- *Events at universities all over the country.*
- Young voters *activism*:
 - *#Yosoy132* movement.
 - Role of internet and social networks (university students AND not students as well).

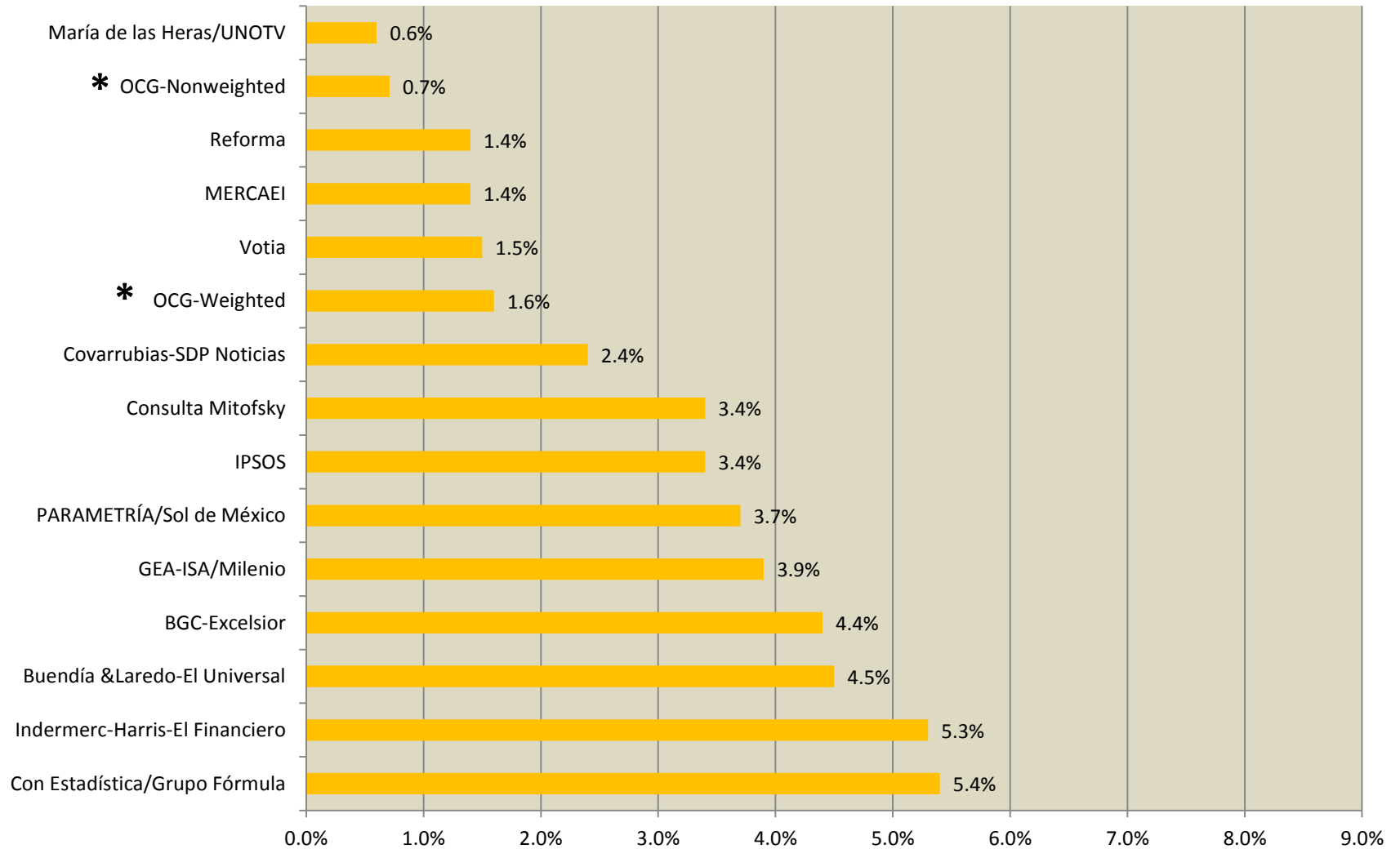
How the mobile point estimates compare to published surveys

DIFF EPN



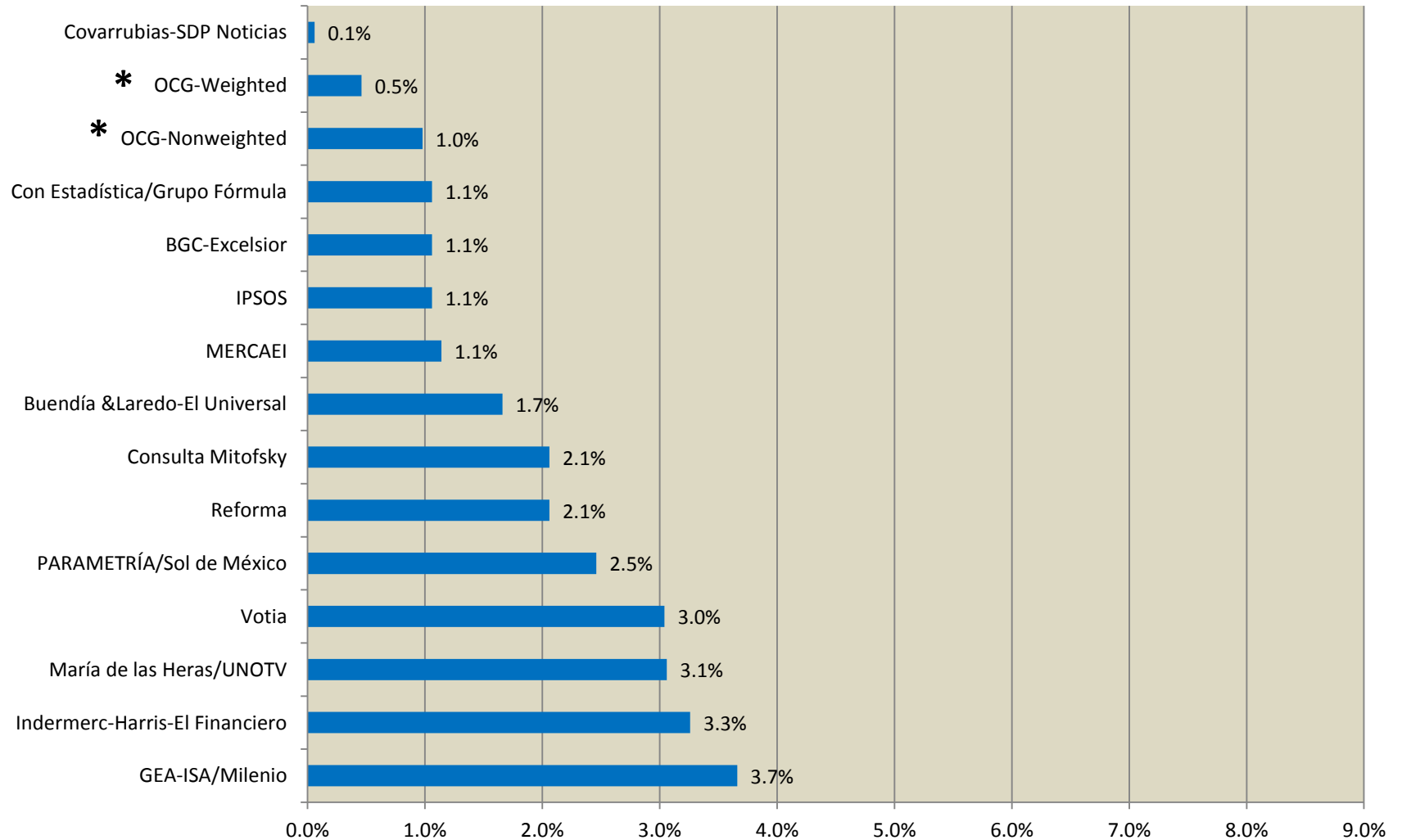
How the mobile point estimates compare to published surveys

DIFF AMLO



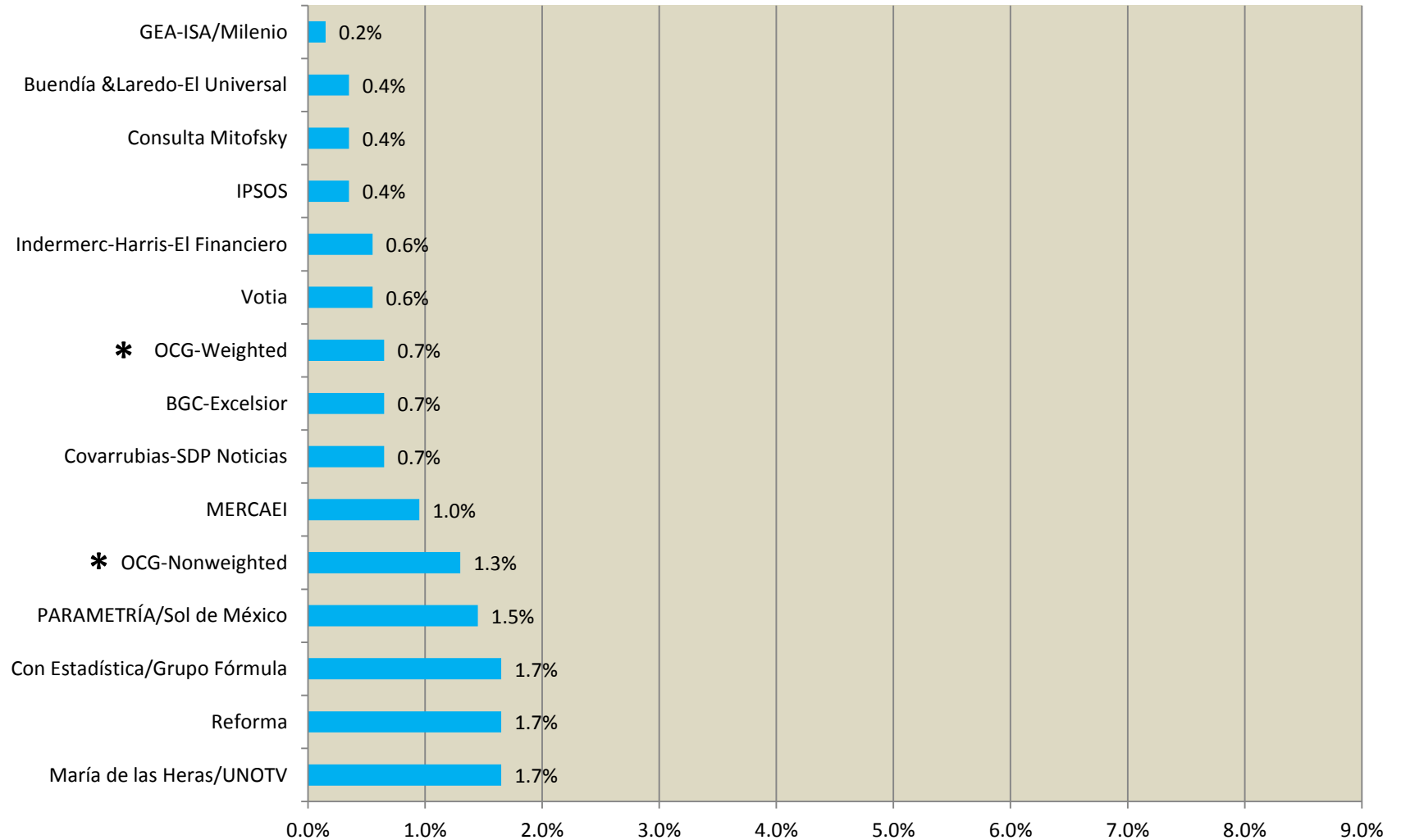
How the mobile point estimates compare to published surveys

DIFF JVM



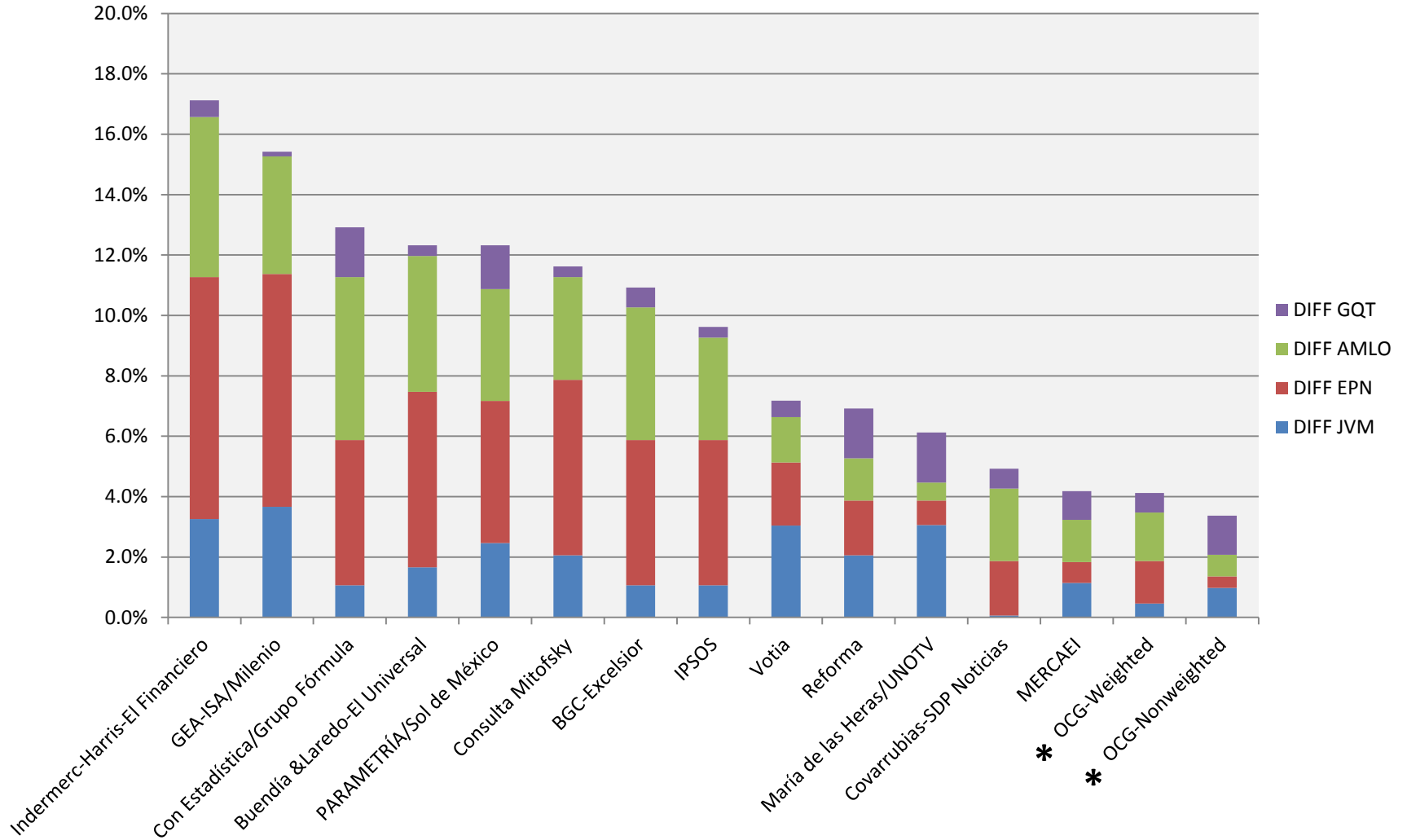
How the mobile point estimates compare to published surveys

DIFF GQT



How the mobile point estimates compare to published surveys

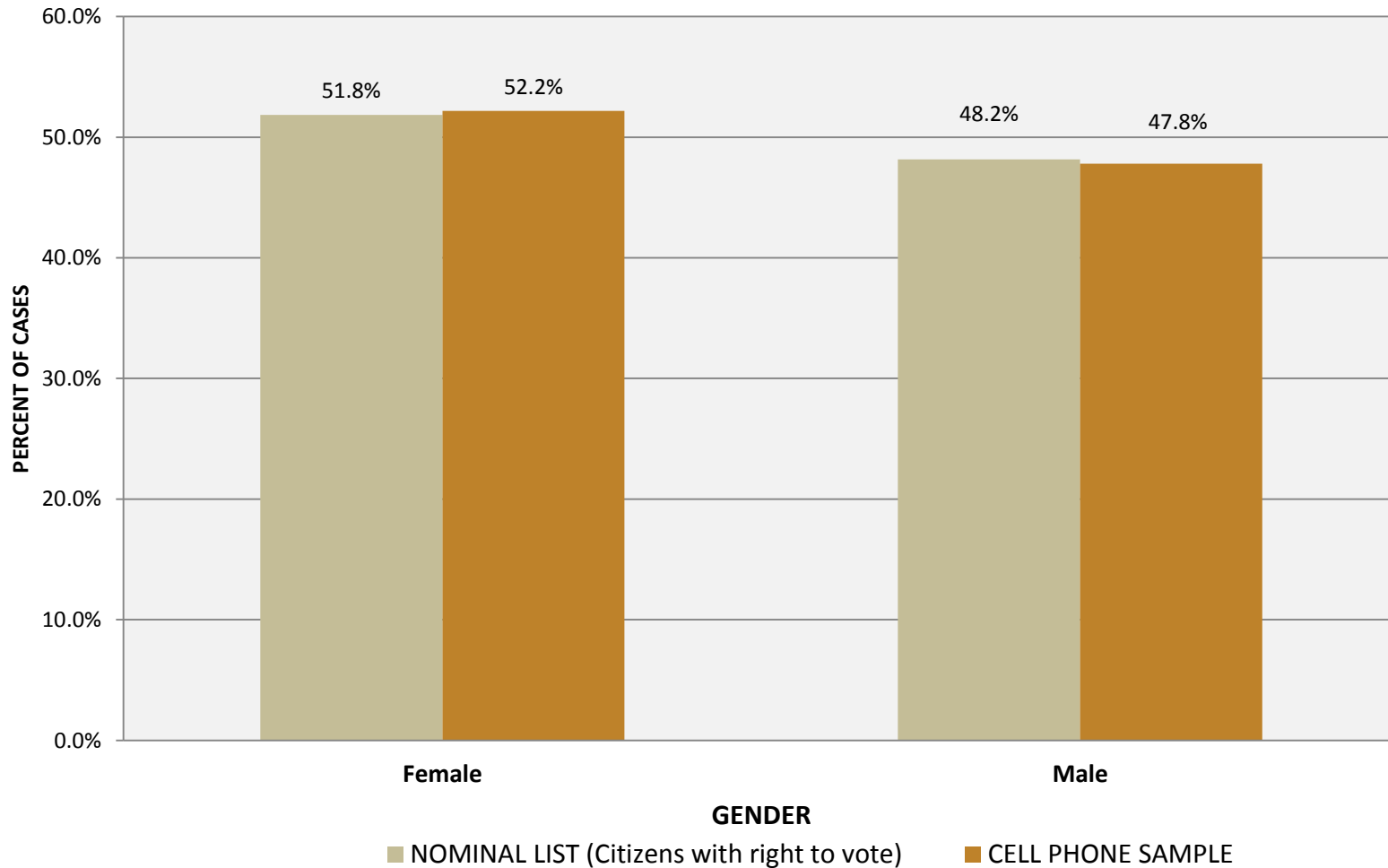
TOTAL DIFFERENCES



*Estimating the “worst” case ($p=0.5$) can be seen as of the GENDER proportion estimation. **Observed difference: ± 0.4 percent points***

Mobile Phone Sample vs Target Population

GENDER



Conclusions

- Under the conditions applied in the electoral polls reported, cell phone sampling methodology does work for interviewing the open adult population in Mexico.
- Other than **age group**, population characteristics are very well reproduced by the samples.
- *Age group-weighted* and *non-weighted* estimators based on the mobile phone samples had an excellent performance with respect to other results published.

Conclusions

- The *non-weighted* estimator performed better, being closer to the official results.
- Weighting **may not be necessary** if the real target population is “*younger*” than the census population as in the 2012 presidential pre-electoral survey case.

Further Research

- *Validate age group distribution of voting citizens.*
 - *Upcoming study from **IFE** on voters profile (IFE, 2012)*
 - *Analyze published data from exit polls*

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**TECNOLÓGICO
DE MONTERREY.**

Olivia Carrillo-Gamboa: ocarrillo@itesm.mx

Rosa Isela Hernández-Zamora: isela.hz@itesm.mx

Jesús Cantú-Escalante: jce@itesm.mx