

# LORE methodological note

## 2014:9

### Demographic and geographic differences in recruitment rates to a probability based web panel

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#### ABSTRACT

This methodological note analyzes the probability to sign up to the Citizen Panel based depending on a set of demographic and geographic characteristics of individuals. The results show that some demographics factors are clearly related to non-response. For example, people who are married, older, born in Sweden, live in an urban area, live close to the University of Gothenburg (to which the web panel belongs), and do not have children living at home are more likely to sign up to the panel than other people.

#### Background and data

In October 2013 a major recruitment to the probability based part of the Citizen Panel at the University of Gothenburg was launched. 23,500 individuals aged 18 to 70 years were randomly selected from the Swedish national population register and an invitation postcard was sent to these individuals living all over Sweden. Two weeks after the initial postcard was received respondents who had not yet signed up to the panel received a reminder postcard. The complete sample from the national population register includes information about individuals' age and sex along with marital status, number and age of children, and birth country of all respondents.

This note aims to increase our understanding about the characteristics that make an individual more or less likely to sign up to the Citizen Panel. The general hypothesis is that the probability to sign up to the Citizen Panel is not randomly distributed in the overall sample, but that the probability of non-response is larger in certain demographic groups.

#### Results

To analyze to what extent demographic and geographic characteristics have an impact on recruitment to the web panel we estimate a series of logistic regression models. Due to their categorical nature, most characteristics are recoded into a set of dummy variables. First, each explanatory factor is examined separately (model 1). Next, we estimate the effects of all explanatory factors under control for all other (model 2).

**Table 2: The effect of demographic factors on the likelihood of panel registration (logistics regression, odds ratios)**

Explanatory factors	Model 1 Univariate model		Model 2 Full model	
		p-value		p-value
18-30 years	-	-	-	-
31-40 years	1.42***	(0.00)	1.60***	(0.00)
41-50 years	1.48***	(0.00)	1.63***	(0.00)
51-60 years	2.38***	(0.00)	2.21***	(0.00)
61+ years	3.23***	(0.00)	2.78***	(0.00)
Female	-	-	-	-
Male	0.95	(0.21)	0.95	(0.25)
Married	-	-	-	-
Not married	0.59***	(0.00)	0.76***	(0.00)
Divorced	0.83**	(0.01)	0.76***	(0.00)
Widowed	0.91	(0.56)	0.66**	(0.01)
0 children < 20	-	-	-	-
1 child < 20	0.74***	(0.00)	0.82**	(0.01)
2 children < 20	0.63***	(0.00)	0.67***	(0.00)
3 children < 20	0.65***	(0.00)	0.70**	(0.00)
4+ children < 20	0.40***	(0.00)	0.48**	(0.01)
Born in Sweden	-	-	-	-
Born in Europe	0.67***	(0.00)	0.70**	(0.00)
Born outside Europe	0.55***	(0.00)	0.53***	(0.00)
0-200 km from Gothenburg	-	-	-	-
201-400 km from Gothenburg	0.89**	(0.02)	0.91	(0.10)
401-600 km from Gothenburg	0.91	(0.07)	0.89**	(0.04)
601+ km from Gothenburg	0.83**	(0.02)	0.83*	(0.05)
Large city	-	-	-	-
City	0.92	(0.12)	0.86**	(0.01)
Countryside	0.83***	(0.00)	0.71***	(0.00)
Rural countryside	0.81	(0.12)	0.73**	(0.04)
N			23,298	
Pseudo R2			0.0368	

*Comment:* \*\*\*, \*\*, \* Variable significant at 99%, 95% and 90% respectively. The first category of each factor serves as reference category. The models are estimated based on the net sample, i.e. the original sample minus returned postcards and dropped invalid addresses. Urbanization is coded according to the Swedish Board of Agriculture's definition, where large cities are highly urbanized municipalities which are located in the Stockholm, Gothenburg, and Malmö regions. City municipalities with at least 30 000 inhabitants and/or where the main town has at least 25 000 inhabitants. Countryside municipalities have at least 5 inhabitants per km<sup>2</sup> and are smaller than city municipalities. Rural countryside has less than 5 inhabitants per km<sup>2</sup> (Swedish Board of Agriculture, 2013).

The results show that the odds to sign up to the Citizen Panel and to answer the recruitment survey are around three times higher for a person older than 60 years than for a person who is 18-30 years. There is no major difference in recruitment rates between respondents aged 31-40 and 41-50, but then there is a major increase in the odds when the respondents reach 50+ and the recruitment rate increases from around 9 percent to more than 14 percent (see appendix 2 for recruitment rates in all categories). Women seem to have a somewhat higher recruitment rate, which however is not statistically significant. The overall recruitment rate was 11.1 percent.

Lack of internet access has been argued to affect participation in web panels negative. Overall internet coverage is however relatively high in Sweden and in 2013, 95 percent of all Swedish inhabitants had access to the internet, with the lowest prevalence among older women aged 75 to 85 years old (Statistics Sweden 2013). That older people are more likely to sign up to the Citizen Panel than younger suggests that there is something else than internet coverage that triggers or hinders people to join the Citizen Panel.

Interestingly, marital status has an impact on the likelihood to join the panel, also when controlling for other factors such as age. Married people, here used as the reference category, are most likely to join the panel whereas people who are not married or are divorced have about the same probability to register. To estimate the effect of the number of children in the household, the regression models also include the number of children younger than 20 years of age. The results show a negative correlation between the number of children and the probability to sign up to the panel. Country of birth also has an impact on the probability to sign up to the panel where people born in Europe are less likely to join the panel than people born in Sweden. Respondents born outside Europe are even less likely to answer the recruitment survey.

There are obviously more factors than demographics that matter whether a person decides to sign up to the panel or not. One such other factor is the level of urbanization where people living on the country side turn out to be less likely to sign up to the panel. A positive relationship with the level of urbanization is also found in Model 2 when controlling for other factors such as distance from Gothenburg. People in more highly urbanized areas are more likely to sign up. Similarly is the probability to join the panel lower the further away from Gothenburg the respondents live. This can probably be explained by the fact that the University of Gothenburg is responsible for the panel and had its logo on the postcards. Living closer to the University Gothenburg thus seems to lead to a greater feeling of solidarity to the panel and a greater perceived obligation to sign up.

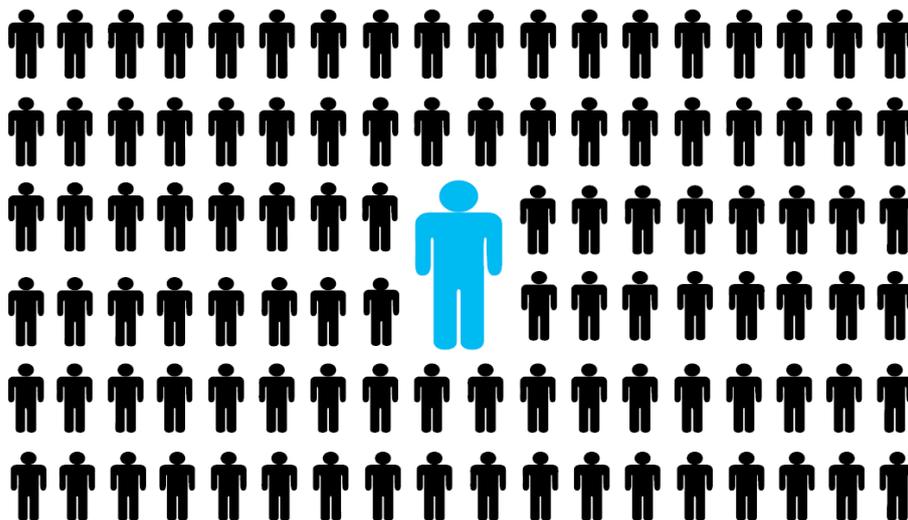
## **Concluding remarks**

When modeling the respondent characteristics in the entire invited sample that was provided by the national population register it becomes clear that there are several demographic and geographic factors that influence the probability to join the Citizen Panel and that some of these predictors have a strong effect. Along with the hypothesis there seems to be non-random factors inherent in the potential respondents that strongly influence the recruitment rates. There is thus a demographic non-response bias in this recruitment with a lower frequency of young people, fewer unmarried or divorced, and relatively few people with many children. People born in another country than Sweden are also underrepresented as well as people living in less urbanized areas far away from Gothenburg. Of all these factors, age seems to be the most influential demographic characteristics.

# Appendix 1

("What do YOU think? – Your opinion is needed for democracy and opinion research")

## VAD TYCKER DU?



din åsikt behövs till forskning om demokrati och opinion



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### Du har blivit utvald att delta i Medborgarpanelen!

Du har blivit slumpmässigt utvald att delta i Göteborgs universitets Medborgarpanel och därmed bidra till förståelsen för människors åsikter om samhällsutvecklingen och aktuella frågor och problem.

Att delta i Medborgarpanelen innebär att du två till fyra gånger per år får en webbenkät skickad till din e-postadress med frågor om samhälle, politik, vad du tycker är viktiga problem idag mm. Varje undersökning tar ca 10 minuter att besvara. Undersökningen genomförs av forskare vid Göteborgs universitet och är en oberoende undersökning fri från ekonomiska och politiska intressen.

Dina åsikter är lika viktiga oavsett vem du är eller hur intresserad du är av samhällsfrågor. Det är därför viktigt att just du som har blivit utvald deltar för att våra undersökningar ska bli så representativa och av så god kvalitet som möjligt. Vi hoppas därför att just du vill ställa upp.

Anmäl dig genom att skriva in följande länk i adressraden på din webbläsare:

[www.medborgarpanelen.gu.se/vykort](http://www.medborgarpanelen.gu.se/vykort)

Använd ditt användarnamn och lösenord för att logga in.

**Användarnamn:**

**Lösenord:**

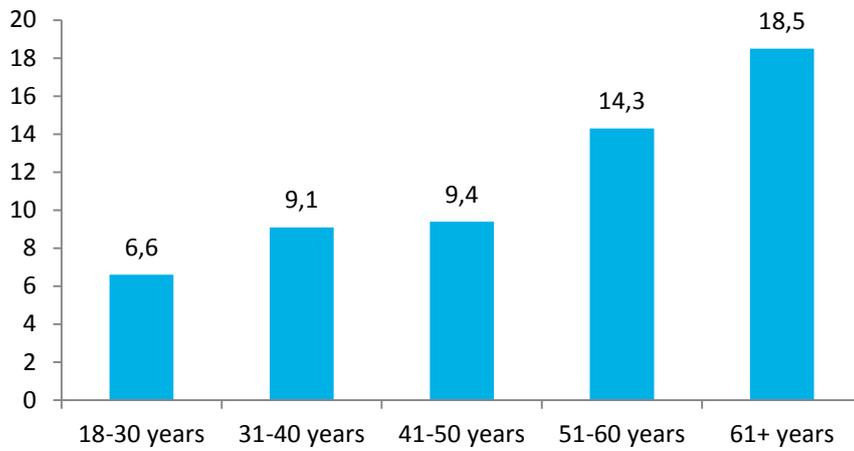
Med vänliga hälsningar  
Johan Martinsson, Fil. Dr.  
johan.martinsson@lore.gu.se  
031-786 68 77

Din åsikt behövs till forskning om demokrati och opinion

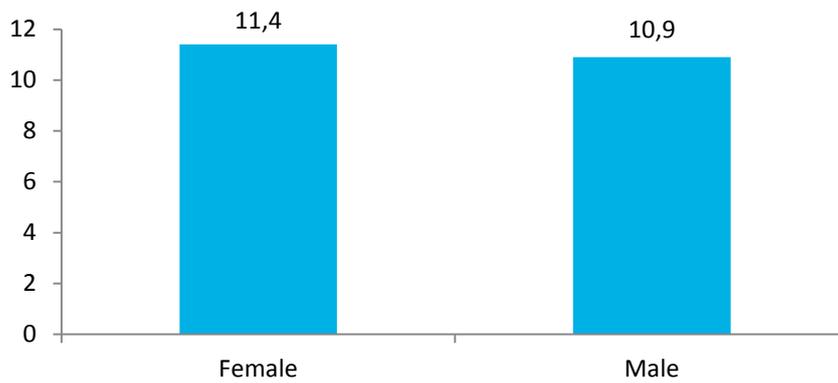
Returadress:  
Statsvetenskapliga Institutionen  
Göteborgs universitet  
Box 711, 405 30 Göteborg

## Appendix 2

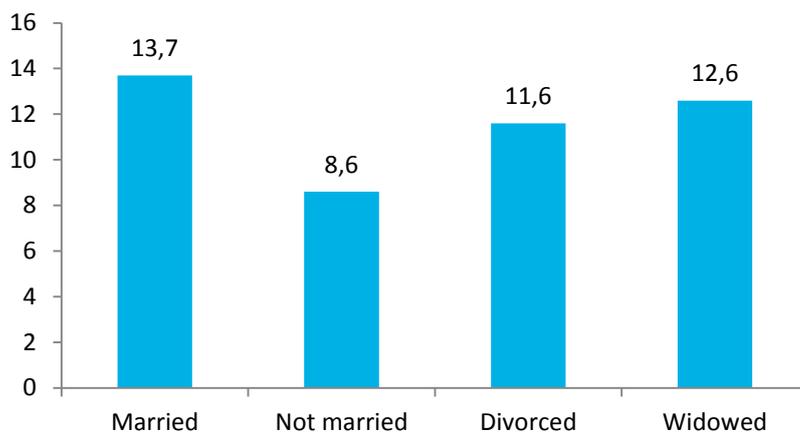
### Recruitment rates based on age



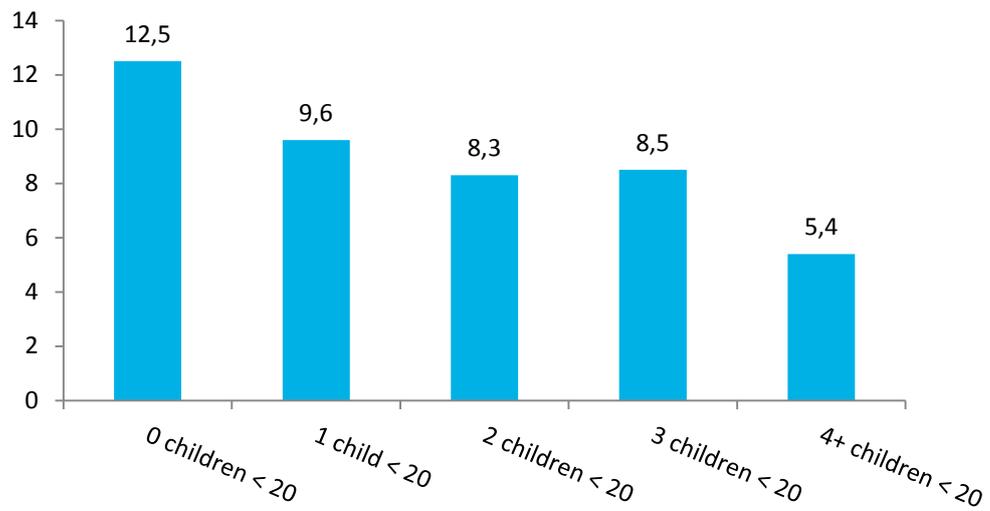
### Recruitment rates based on gender



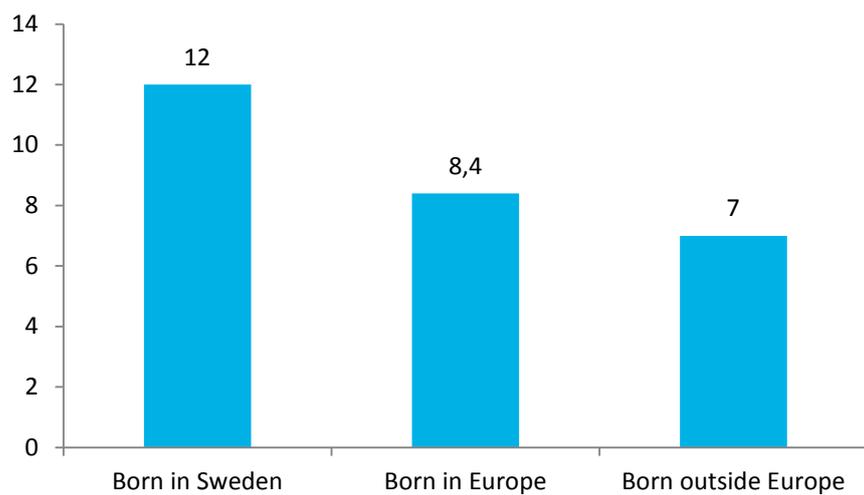
### Recruitment rates based on marital status



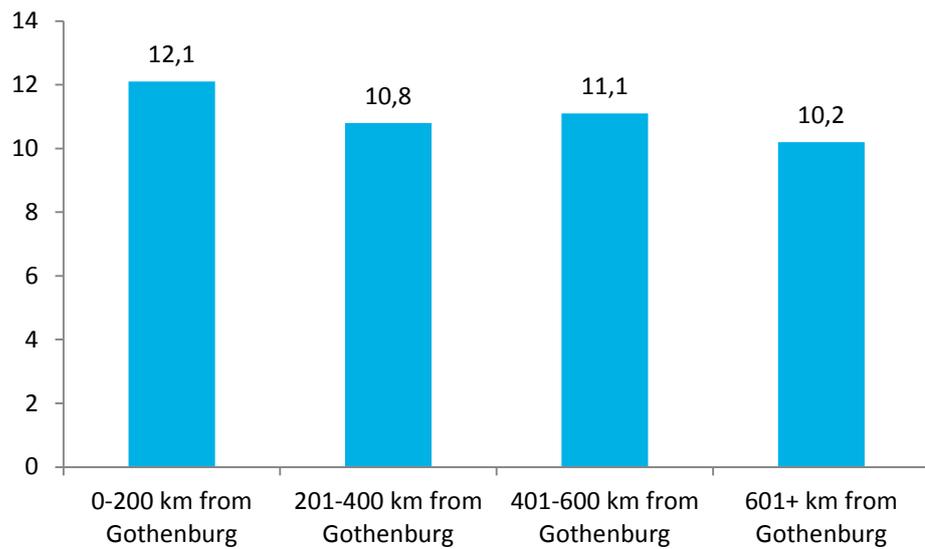
## Recruitment rates based on number of children younger than 20 years



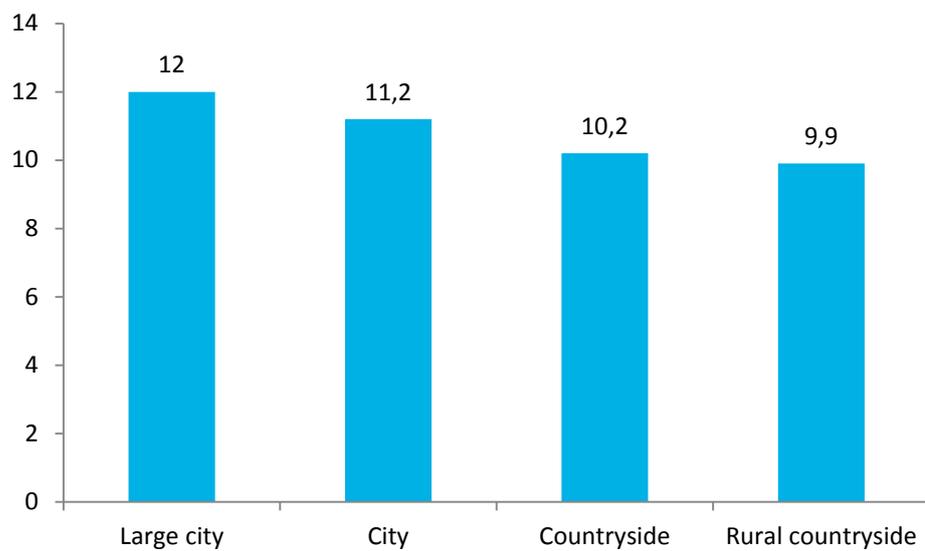
## Recruitment rates based on origin



## Recruitment rates based on distance from Gothenburg



## Recruitment rates based on level of urbanization



The Laboratory of Opinion Research (LORE) is an academic web survey center located at the Department of Political Science at the University of Gothenburg. LORE was established in 2010 as part of an initiative to strengthen multidisciplinary research on opinion and democracy. The objective of the Laboratory of Opinion Research is to facilitate for social scientists to conduct web survey experiments, collect panel data, and to contribute to methodological development. For more information, please contact us at:

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