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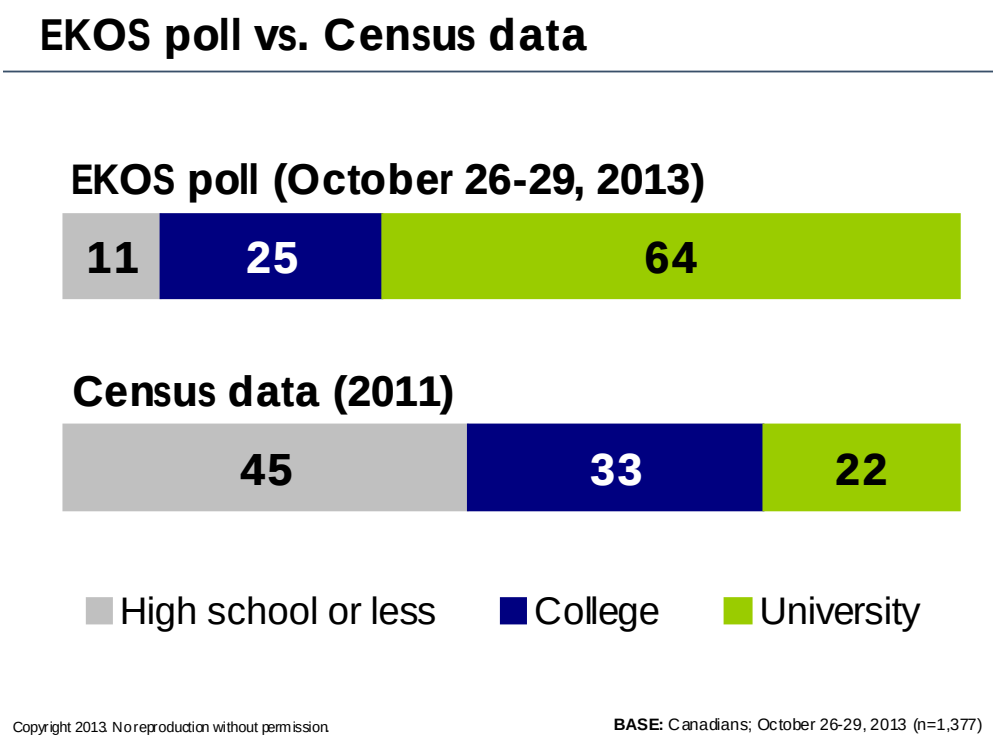
# AN ANALYSIS OF THE EFFECTS OF WEIGHTING BY EDUCATION

[Ottawa – October 31, 2013] Over the last few days, a handful of pundits have meticulously reviewed the results to our latest poll[1] and have raised concerns over the apparent over-representation of university graduates in our sample. Typically, survey results are weighted by age, gender, and region, and now some have suggested that we should also be weighting for education. We would like to take this opportunity to respond to some of these concerns.

In total, 1,377 Canadian adults responded to our survey. After the results were weighted for age, region, and gender, we were left with the following educational breakdown:

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**BASE:** Canadians; October 26-29, 2013 (n=1,377)

At first glance, these figures compare quite unfavourably to Census data. Those with a university education are over-represented by a factor of three, while high school educated adults are under-represented by a factor of four. The story behind these numbers, however, is far more complex.

The first issue to look at is measurement error. Measurement error occurs when a respondent's answers are inaccurate. This is particularly relevant when it comes to measuring education. There is a certain social stigma attached to low educational attainment and respondents have a tendency to over-report the highest level of education they have achieved. For example, some

[1] Our poll on the Senate Expenses Scandal can be found here: http://goo.gl/BtB3X0

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respondents who have attended community college will simply categorize their education has "university" while others will count their life experiences as "college".

Next, there is also a certain level of coverage error (coverage error occurs when certain segments of the population have no chance of responding to the survey). In all survey samples, there is a certain portion of the population that is simply unreachable (for example, those who do not speak either Charter language, those who are currently institutionalized, those who do not have telephone access, etc.). These groups all have significantly lower incidences of university education.

For both these reasons (as well as others), it is unfair to compare the educational composition of a survey sample to Census data. Indeed, we would expect that even in the case of perfect sampling, there would still be two-to-one over-representation of university graduates (as well as a corresponding under-representation of those limited to a high school education or less).

Nevertheless, measurement errors and coverage errors do not seem to account for the discrepancy between the Census data and our survey results. Indeed, the proportion of self-described university educated adults appears overrepresented by a factor of three (rather than our "acceptable limit" of two). Unfortunately, we have no way of disentangling the effects of sampling error from those of the measurement and coverage errors we described above. For the sake of discussion, we have re-weighted our data so that the university educated make up 45 per cent of the sample, college educated make up 30 per cent, and high school educated make up 25 per cent.

Not surprisingly, the results have changed somewhat. The case for the current government is a little less negative, but the claims we made are still accurate: confidence in direction of the government is near an all-time low, Mr. Harper's approval rating is quite low and, by a wide margin, Canadians believe Mike Duffy's version of events over those of Stephen Harper. Indeed, while it is possible that the over-representation of university educated slightly biased the results, there is nothing that would qualitatively alter any of our conclusions.

In the case of vote intention, where a single point of variation can mean the difference between victory and defeat, the changes are not inconsequential. Nevertheless, attempting to restore educational attainment to the Census composition could end up causing more problems that it solves, as doing so will begin to over-represent those who will not show up at a polling booth (those without post-secondary education are consistently less likely to vote on Election Day). In any case, we are two years away from an election and with the attention of most Canadians focused elsewhere, we are only interested in creating an "overall picture".

In short, weighting by gender, age, and region can usually correct survey results to a manageable level. But sometimes, when response rates appear correlated to another demographic variable, it might be defensible to apply additional weighting. In retrospect, yes – a weighting adjustment for education would have been appropriate in this instance. However, there

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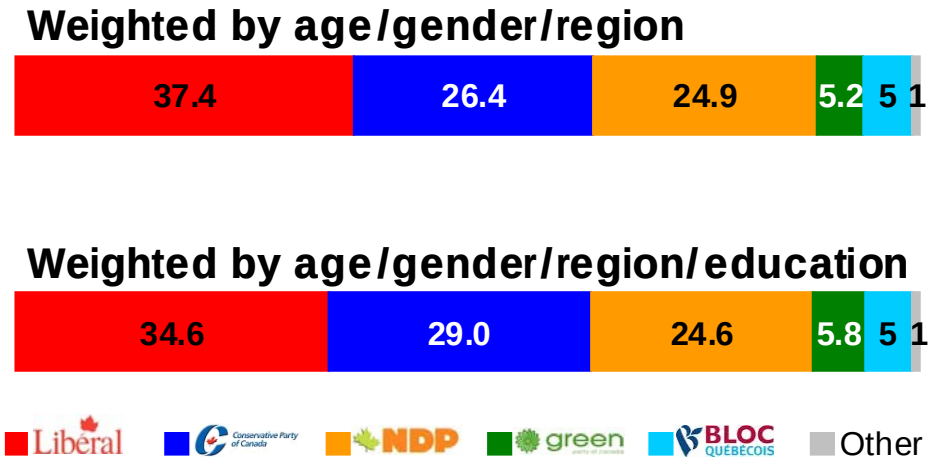
is a myriad of other factors that might have similar effects – household size, labour force status, etc. – and we could go through this exercise infinitely.

Finally, it should be noted that we contacted some respondents by phone in order to ensure full coverage of the Canadian population (those who do not have Internet access are less likely to have pursued university studies). This procedure is not undertaken by non-probability, online-only panels, which now make up the majority of political polling conducted in Canada.

## Impact of weighting by education (i)

***Q.*** *If a federal election were held tomorrow, which party would you vote for?*




*Note: The data on federal vote intention are based on decided and leaning voters only.*

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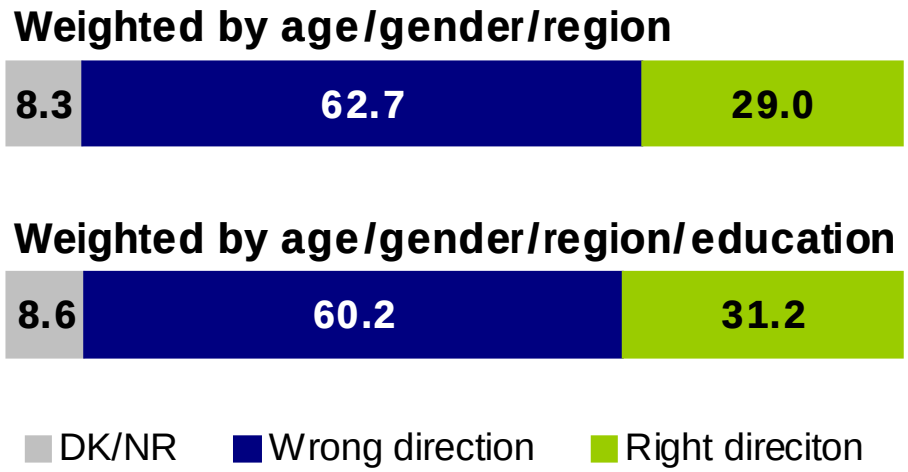
## Impact of weighting by education (ii)

*Q. All things considered, would you say the Government of Canada is moving in the right direction or the wrong direction?*

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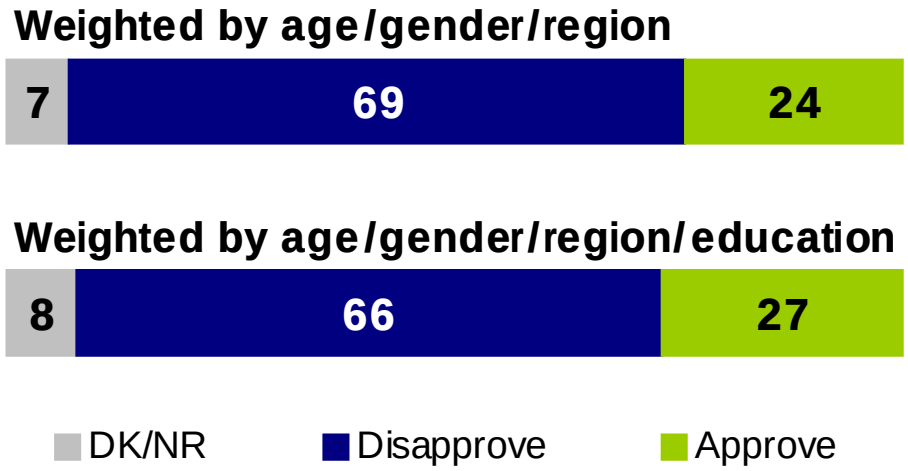
**BASE:** Canadians (half-sample); October 26-29, 2013 (n=717)

## Impact of weighting by education (iii)

*Q. Do you approve or disapprove of the way Stephen Harper, Prime Minister and leader of the Conservative Party of Canada is handling his job?*

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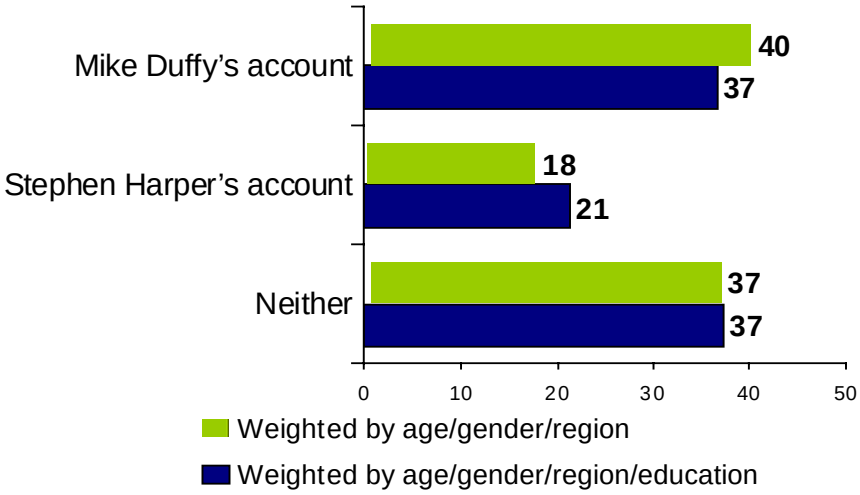
# Impact of weighting by education (iv)

***Q.*** *In February, Nigel Wright, the Prime Minister's Chief of Staff, wrote a personal cheque to one of the Senators - Mike Duffy - to cover his invalid expense claims. Mr. Duffy says that he was coerced by Stephen Harper into accepting the cheque. Mr. Harper says he was unaware of any cheque and that Mr. Wright acted alone. Whose account do you mostly believe?*

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