

# Decided or undecided: An investigation of individual's (in)decision to Catalan independence

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## Abstract

This article investigates whether individual responses on Catalan independence are congruent with what would be expected according to his or her profile. Previous research has pointed out that responses to this question are affected by different biases, especially by the social desirability bias and the spiral of silence bias. Therefore, individuals choose an answer that would not have been the chosen answer in other social or political circumstances. This lack of congruence between observed individual responses and predicted responses are analysed by predicting each respondent answer through multiple imputation. This 'blind' imputation allows for controlling individuals' uncertainty and for comparing observed and predicted results. Findings show that lack of congruence especially affects those that choose "No", "Abstention" or are undecided but there are not systematic evidences that hiding preferences bias the "Yes" results. Conclusions of this paper are important in order to understand and analyse how indecision operates in surveys.

## 1 Introducció

Due to recent events in Catalan politics, literature on support for catalan secession has experienced a recent revival (Serrano, 2013). In general, these works are dedicated to investigate why catalans decided to start supporting secession at the end of 2008 or which would be the reasons of their vote in a hypothetical referendum. Although some works are more sophisticated and are based on survey experiments (Muñoz, 2012), the majority of academic articles employ surveys that include different instruments in order to tackle individual's secessionist claims or territorial preferences. Despite calls for secession came to the fore a few years ago, a close look at the literature reveals that there is already accumulated evidence about why some Catalans want to secede from Spain or why they want to retain the current political status.

The political relevance behind the "Yes" or "No" answer has pushed scholars to investigate why some profiles are more likely to choose one of these answers.

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However, previous works have normally put aside those citizens that do not know what they would do if a referendum took place or did not answer the question during the interview. These answers are generally excluded from the analysis or even grouped together with the “I will abstain” category. Previous literature has tended to conceptualise individuals that do not answer or do not know relevant questions as “undecided”, either because they do not have a strong opinion about the issue or because they do not have enough political knowledge to correctly answer the question. This is why the “do not know” or the “not answer” category in the referendum question is often treated as missing.

This article takes another perspective and tries to capture what those citizens that chose the “dk/na” category in survey would do if a referendum took place. This group, the “undecided”, represents a small category, so it has been assumed that its exclusion does not affect the final results. For instance, in the latest Opinion Poll published by the *Centre d’Estudis d’Opinió*<sup>1</sup> 3.8% of interviewed individuals answered “I don’t know” and 1.3% did not answer the question<sup>2</sup>.

Even though the percentage of citizens that choose these options in this particular question is rather small, we take another perspective and we argue that indecision is not restricted to individuals that opt for the “dk/na” category. More concretely, this article considers that all individuals (those who answered and those who did not answer) have a latent probability of indecision which is sometimes expressed in the survey as such, whereas in other occasions it is not directly expressed because individuals end up choosing a different answer than the “dk/na”. This is clearly illustrated with the “I will abstain” category. When facing the question about what he or she would do in an eventual referendum, there can be some degree of uncertainty of what the final action would be. Instead of choosing a “Yes” or a “No” option, some individuals finally choose the “I will abstain category”, although they are certain that they would vote for one of the options. In the aforementioned survey, 15.3% of individuals mentioned that they would abstain if a referendum to decide the independence of Catalonia was held. This figure has been considered by journalists or electoral pundits as too high and as a way for some individuals to avoid revealing their true preferences. In other words, although individuals choose an option in the survey, there is a certain degree of uncertainty that this answer best represent his or her view. Uncertainty is sometimes expressed by choosing a concrete answer and others by choosing the option “dk/na”. Finally, this effect may not be homogeneous across individuals: some citizens may have higher incentives to avoid answering the question than others or even to choose an answer that is not his or her preferred one.

Support for Catalan secession provides a good example to investigate individual’s underlying uncertainty and how this is translated in questionnaires. Firstly, attitudes towards secession are “expressive” and refer to a political reality that has not taken place yet. The possibility to organise a referendum on Catalonia’s political status has been on the political agenda for the last two years, but the referendum has not been called yet and there are serious

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<sup>1</sup>*Centre d’Estudis d’Opinió* (CEO) is a public opinion surveys institute that carries out a regular barometer every three months.

<sup>2</sup>The question was the following: “If tomorrow a referendum to decide the independence of Catalonia was held, what would you vote?” The options were: “I would vote in favour of independence”, “I would vote against independence”, “I would abstain”.

doubts that it will ever take place. The answer about a hypothetical vote in a referendum that has not even been called has therefore a certain degree of uncertainty, which may change according to the political debate. Secondly, there are different theoretical reasons that have been invoked to argue that people answer randomly or even lie when answering the question about the referendum. Furthermore, the theoretical expectation is that the contradiction between individual's answer and what would have been his or her expected answer in different circumstances affects some people at a higher degree. That is, according to theory certain profiles tend to avoid his or her true answer more than others. Thirdly, the Catalan case has caused a vivid debate among citizens and politicians. This has encouraged the production of a lot of surveys that include a hypothetical vote in a referendum for catalan secession, which allows researchers to have both a large N and to study the temporal dimension.

To study the congruence between individual's factual answer and what would have been his or her answer according to his or her characteristics we develop an imputation model. This model is built by employing different indicators that have been shown to be relevant in order to explain support for secession. The model shows that congruence is high for those that answered "Yes" in the referendum question and, to a lower extent, for those than answered "No". Conversely, expected and observe outcome differ substantially for the "Abstention" and "Undecided" category.

## 2 Theoretical background

The theoretical section is divided into two parts: Firstly, we discuss how indecision is translated into surveys and which are the factors that increase congruence between individuals' attitudes and feelings and his or her response in surveys. Secondly, we explain the Catalan case and we stress how some categories could be underrepresented due to the interaction between individual characteristics and social factors.

### 2.1 Indecision and congruence in surveys

Unwillingness to answer items in a survey that are perceived as highly sensitive has been a question of major concern on behavioural research (Deming, 1944; Biemer et al., 2011). In Political Science, item nonresponse<sup>3</sup> or how to get sincere answers have preoccupied methodologists and researchers alike. Nonresponse occurs when an interviewed individual does not answer all of the questions included in the survey. This bias represents a problem as long as nonresponse is not random: some individuals are more likely to not answer some questions than others, which results in biased estimates and an overrepresentation of those that answer the question. The typical example is the income question, included in several surveys. When income data is collected through surveys, they have been associated with a large amount of missing

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<sup>3</sup>We consider 'nonresponse' to occur when an individual does not want to answer a particular question included in the survey. This is normally referred as to item nonresponse. There is also another type of nonresponse, which occurs when a sampled unit does not respond the request to be surveyed. The later is a different potential error in surveys, along with coverage, measurement error or sampling errors (Groves et al., 2002). Throughout the article when we use nonresponse we refer to the first type, that is, item nonresponse.

data. The reason is that some individuals are not willing to reveal his or her personal income due to the lack of confidentiality and trust towards the survey or the interviewer. The result is that the typical item nonresponse rate to income questions is between 20-40% (Yan, Curtin and Jans, 2010). Item nonresponse is therefore more likely to occur under certain circumstances, such as for questions involving some psychological threat. Questions about sexual behaviour, drinking of alcoholic beverages, and violations of law are more likely to elicit item nonresponses in most surveys. All in all, the refusal to answer a particular question (the “dk/na” category) may be the expression of two things: lack of knowledge about the topic or unwillingness to answer the question.

Beyond item nonresponse, individuals may decide to answer the question but without revealing his or her true preference or with a certain degree of uncertainty. For instance, individuals can reject to choose a socially undesirable answer and instead select an uncommitted or neutral option. This has been observed in several fields, for instance when investigating extreme right-wing voting or attitudes: in the recall vote question extreme right-wing voters are more likely to say that they abstained or that they did not remember which party they voted for (Hooghe and Reeskens, 2007). Similar evidences have also been found on the left-right self-positioning. In some countries, some individuals with right-wing attitudes, instead of placing themselves on the right of the left-right scale, tend to choose the centre as an uncommitted and neutral position (Knutson, 1998). Therefore, even if individuals choose a concrete answer among the options offered to them, there may be a degree of uncertainty, that is, the chosen option may not be congruent with what the individual thinks or believes. In other words, individuals have an underlying probability of uncertainty towards some issues which equals zero when the chosen answer is congruent with what they think. However, even when the option in the survey is deemed as correct, individuals may still be uncertain. For instance, in the vote intention question some individuals choose a party because, at that moment, they feel they would vote for that particular party, although they are not entirely convinced that this will be his or her option. This is why sometimes, in political behaviour, researchers prefer to use the Probability To Vote question as an alternative of the intention to vote question.

Uncertainty can be expressed by choosing a different answer than the “dk/na” option but one that contains a high degree of ambiguity. For instance, by choosing the “I will abstain” category individuals may hide their real preference without providing a committed answer. As a consequence, interviewed individuals may choose another category in the questionnaire which is not his or her most preferred option<sup>4</sup>, but they choose it because some factors drive their option. This also happens, for instance, when some individuals choose the centrist category but they are rightist, a category that they try to avoid because in some contexts it is socially sensitive (Weber, 2013). In both cases, the final option has a very high degree of uncertainty, since the individual that chooses the option would have chosen another category if the interview had taken place in another circumstances.

Apart from respondent’s individual traits, such as low level of attitude

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<sup>4</sup>Literature has identified factors that increase measurement error, such as survey administration, question difficulty, interviewer effects or responden attributes. It is no the goal of this paper to investigate these factors but to consider the role they play when investigating catalans support for secession.

strength, self-efficacy or political knowledge (Bartels, 1996; Gordon and Segura, 1997), the failure to choose the “real” answer is due to two groups of factors: Firstly, survey design and survey administration can generate several errors for multiple reasons, such as a badly written question, the mode of administration (face-to-face versus phone surveys) or a lack of skills by the interviewer to generate a confident environment (Leggett et al., 2003; Podsakoff, 2003; Bowling, 2005; Groves, 2005; Chang and Krosnick, 2010).

Secondly, other sources of errors come from factors related to the interaction between individuals and their social contexts. These factors are normally mentioned to explain the occurrence of misestimating in polls in contexts where political issues are salient. According to Coakley (2008), existing theoretical explanations about individuals’ willingness to express their opinions include two concepts: social conformity and social ambivalence. Social conformity refers to the way individuals choose to express themselves. They might elect to do so (1) in neutral form based on their desire to appear polite (also understood as “self-censorship” or “interviewer effect”) (Bradburn et al., 1979), (2) in positive form based on their pursuit of approval (understood as the “social desirability bias,” suggesting that voters experiencing certain kinds of social pressure tend to give false answers in polls) (Nederhof, 1985; Fisher, 1993), or (3) in negative form based on their fear of isolation (also known as the “spiral-of-silence” effect) (Noelle-Neumann, 1993; Neuwirth, Frederick and Mayo, 2007).

Social ambivalence refers to the level of cross-pressure individuals observe or perceive within their daily lives. Cross-pressure occurs when people experience networks that have different opinions or attitudes. It can also occur when individuals have contradictory feelings or opinions towards an issue with different dimensions. Its effects are well-known in political science. For instance, it has been shown that people whose networks involve greater political disagreement are less likely to participate in politics (Mutz, 2002). Behind the cross-pressure mechanism two social psychological processes are suggested to account for this effect. First, those embedded in cross-cutting social and political networks are more likely to hold ambivalent political opinions, which in turn discourages political participation. Second, social accountability pressures in cross-cutting networks can also discourage political involvement.

In conclusion, few works have tried to analyse who is behind the “dk/na” category or whether individuals grouped on it behave differently (Poe, 1988; Calle, 2010). At the same time, individuals have a certain degree of uncertainty when choosing

nonresponse can, but need not, include nonresponse bias in survey estimates (Curtin, Presser and Singer, 2005; Groves, 2006). On the other hand,

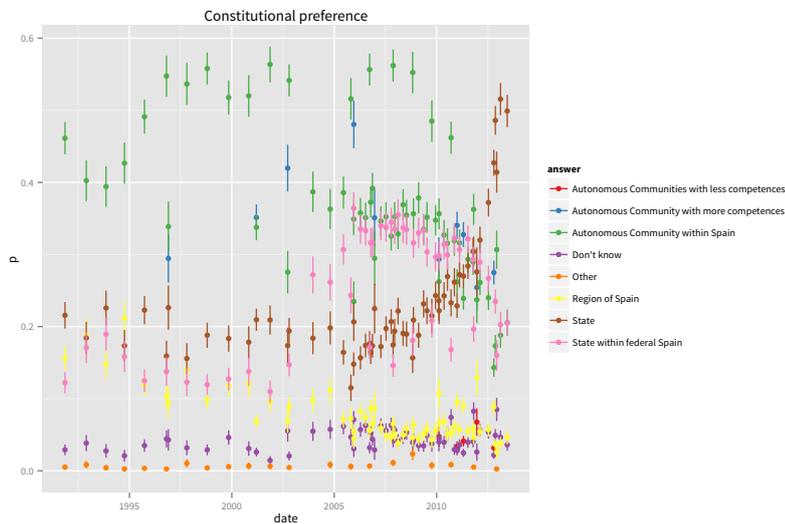
## 2.2 Support for secession. True preferences?

Over the past few years, support for secession in Catalonia has skyrocketed. Most Catalans has traditionally favored greater autonomy over outright secession and support for independence from Spain has been relatively low for generations. As late as 2010, a poll conducted by CEO found that only 25.2% of the population favored independence. That number had more than doubled in its latest survey (July 2013) which found a historic high of 55.6% wanting out of Spain.

Available survey evidence consistently points to an increase in the support

for secession among Catalan population in the last years. Two approaches have been traditionally employed to tackle individuals’ secessionist orientations in surveys: territorial preferences and vote in a referendum. In the first approach people ask whether they would like Catalonia to be a region of a centralized Spain, an autonomous community of Spain (i.e. the status quo), a state within a federal Spain or the independence for Catalonia. This question has been normally used to measure Catalans’ support to independence, although there are serious doubts that this indicator is measuring preferences for secession (Muñoz and Tormos, 2012; Serrano, 2013). This figure shows how the preference for a “State” has notably increased since 2008-2010<sup>5</sup> until reaching about 47% of Catalans that want an independent State. 22.8% want to stay in the status quo situation and 21.2% would like to live in a state within a federal Spain.

Figure 1: Evolution of Preferred Constitutional arrangement in Catalonia (1996-2013)

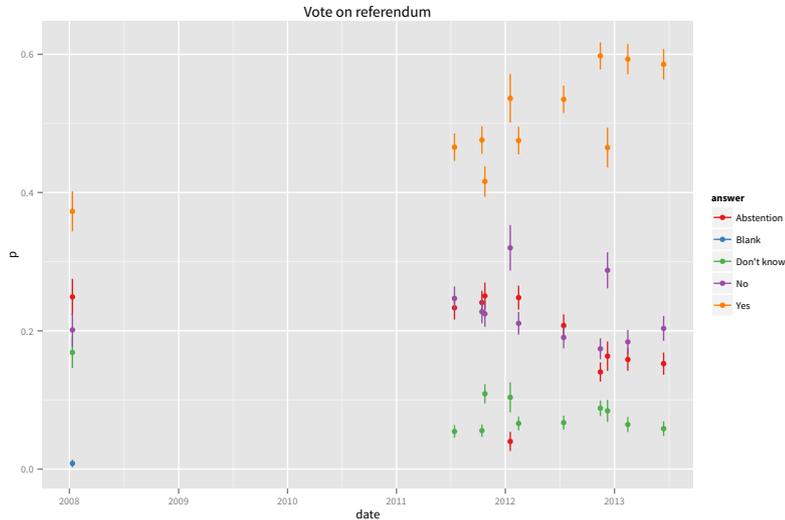


The second approach directly asks people what they would vote if a referendum was held. The question has been rarely included in surveys and only until July 2011 CEO decided to add it regularly. Figure shows the evolution of the results of this question. As it can be seen, the “yes” vote has been always higher than any other option. The latest survey, published in July 2013, showed that 55.6% of Catalans would vote in favour of secession, 23.4% would vote against, 15.3% would abstain and over 5% did not know or not answered the question.

Although previous works have shown the latter is a better question than the preferred constitutional arrangement (Yale and Durand, 2011), there have been an important academic and social debate around why both figures show different results. Whereas in the preferred constitutional arrangement question support for secession is below 50%, in the voting behaviour question it is approximately ten percentual points higher. Beyond methodological issues (different wordings, different sample sizes, houses...), these differences have been partly

<sup>5</sup>This figure takes into account all the surveys with a significant sample size for Catalonia that include the question about territorial preferences. The wording and the different questions have slightly changed over time.

Figure 2: Evolution of Voting Behaviour in a hypothetical referendum of independence (2008-2013)



attributed to the incapacity of surveys to tackle individuals' true preferences towards secession. In other words, beyond measurement error produced by survey administration and individual's lack of political sophistication to answer the question, two sources of errors have been identified and considered when analysing the quality of the data produced by these questions. Both ideas sustain their claims based on the low support that the "No" vote would receive, according to surveys, if a referendum was held. Surveys indicate that the "No" would be around 30%. The idea, they argue, is that a great amount of Catalan citizens do not express their real preferences and choose instead the "Abstention" or the "dk/na" category".

Firstly, it is argued by some researchers that catalans choose the most socially desirable option. This would create a social desirability bias, that is, a tendency of respondents to answer questions in a manner that will be viewed favorably by others. This idea is normally sustained by appealing to the existence of an spiral of silence. According to this theory, Catalan elites have driven Catalan citizens preferences (or even identity) to preserve their political and economic interests and, by doing so, they have alienated citizens whose mental framework is Spain (Martínez-Herrera, 2002; Garcia, 2010; Martínez-Herrera, 2010). Thus, the political discourse of the major Catalan parties, mostly focused on identity issues, would have generated alienation among these strata of the population. Therefore, in line with this theory, individuals would be "forced" to hide their true preferences (i.e. maintain the Spanish unity) or to answer ambiguously (for instance, choosing the option "Abstention"). This effect would be heterogeneous, as those citizens that feel more Spanish than the average would be more likely to hide their real preferences than the rest<sup>6</sup>.

<sup>6</sup>This hypothesis has not only been analysed by the Academia, but it is a common argument employed by some political parties in Catalonia, such as the *Partit Popular* (PP) or *Ciutadans* (C's)

The second idea is that some individuals are cross-pressured and, as a result, tend not to reveal his or her true opinion. Cross-pressure would occur when individuals live in an environment where opinions towards Catalan secession are at the opposite extreme of his or her own opinion. An example would be a catalan-speaking citizen that supports secession but lives in a neighbourhood where the majority of the population is against it. In this case, this individual would not be confident enough to express their real preference. At the same time, cross-pressure means that some people are under conflicting influences, they have “a combination of characteristics which, in a given context, would tend to lead the individual to vote on both sides of a contest” (Berelson, 1986). This process has been observed in different fields, for instance, in individual’s ideology. There are individuals that hold rightist views on some issues and leftist on others. When locating themselves on the left-right scale, they feel cross-pressured by these contradicting issues and therefore they are more likely to choose the central point, seen as a neutral and uncommitted option. Preferences for secession can also experience a similar process. For instance, an individual that is in favour of secession but considers that Catalan politicians are corrupt may end up choosing “Abstention” in the referendum question, although his/her decision would be “Yes” if the referendum is ever held. Similarly, a citizen that feels and speaks Spanish in his/her every-day life but favours secession may choose the “dk/na” or “Abstain” category in the referendum question if, at that time, the debate is too radical around the identity issue.

Overall, support for secession among the Catalan population has been sometimes depicted as an example of item nonresponse and of hidden preferences. Some researchers argue that a great amount of catalan citizens in surveys are not congruent: they choose a category that would not have been chosen if they had not been “forced” by the social circumstances. Since surveys indicate that independence is majoritarian and recent events have brought many pro-secessionist supporters into the streets, it is consequentially logical for these researchers that lack of congruence especially affects those that want to answer “No” in the referendum question.

### 3 Research Design

Is support for secession congruent with individuals’ characteristics? Is uncertainty distributed equally among Catalan citizens? To answer these questions we need to develop a model that predict the outcome of a referendum for secession for each individual. Thus, the most basic element of the process is the prediction of what would actually do an individual for those surveys that we have the micro-data. In all the cases we have the observed answer (“yes”, “No”, “Abstain”, “dk/na”) but, as explained above, we consider that all the answer have a degree of uncertainty. Therefore, this analysis differs from previous imputation techniques as we are not trying to predict what the individuals that do not answer the question (“dk/na”) would do, but rather what is the predicted outcome of all individuals in the survey. In other words, regardless of their answer in the referendum question, we assume that there is a certain degree of uncertainty that this answer might be incongruent.

Our empirical analysis is based on all the surveys carried out by CEO that include a referendum question (seven in total). The reason to use all of them is

that we can control for temporal differences, as well as it increases the number of cases, especially of those that chose the ‘dk/na’ category. Statistical analysis is based on imputation techniques (Huisman, 2000; King et al., 2001). This methodology allows for imputing values to individuals on the basis of the information provided by other individuals who share a similar profile. In order to predict the behavior of individuals in a hypothetical referendum we employ a multinomial logit model. Again, the purpose is not to explain what is associated with the different outcomes, but to predict the missing values (in our case, to predict all the answers in the survey). Following previous literature (Argelaguet, 2006; Muñoz and Tormos, 2012; Sorens, 2012; Serrano, 2013), the model includes covariates that are associated with the expected vote in a referendum. Variables included in the imputation model are divided into sociodemographical, political and behavioural.

Sociodemographical variables include age, whether the individual was born in or out of Spain, education, sex, size of town, income, language (identification language, language used with friends, language used at home, and language usually spoken), parental origins, self-identified social class and work status. Political variables are the following: constitutional preference (‘region’, ‘autonomous community’, ‘state within a federal state’ and ‘independence’), importance of regional or national elections, individuals’ left-right self-placement, subjective national identity and whether the individual voted for a Non-State Wide Catalan Party. Finally, the behavioural model includes several variables that tap individuals’ perceptions towards different political issues. This includes whether individual watches catalan tv channels, perception of the current situation of the economy and of politics, and perspectives of future economy and politics.

By using these variables, we are able to capture the association between the former questions and the expected vote in a referendum. Inference is done via Markov Chain Monte Carlo Methods using weakly informative priors on the effects of the covariates in the outcomes. Once captured, the model itself is able to generate, in a pre-specified number of simulations, responses for each of the (missing) individuals.

The model can be formally described as the answer  $y$  of an individual  $i$  to the vote in a referendum (category  $c$ ) is distributed multinomial (MNL) based on a general distribution of the outcomes in that survey  $\gamma_s$  and the overall effect of the covariates ( $\theta_c$ ).

$$\begin{aligned}
 y_i &\sim \mathcal{MNL}(n, \alpha_{i,c}) \\
 \log(\alpha_{i,c}/\alpha_{i,1}) &= \gamma_{c,s} + X\theta_c \\
 \gamma_{c,s} &\sim \mathcal{N}(\gamma_\mu, \gamma_\sigma) \\
 \gamma_\mu &\sim \mathcal{U}(-2, 2) \\
 \gamma_\sigma &\sim \mathcal{G}(1, 1) \\
 \theta_c &\sim \mathcal{MN}(0, 0.1)
 \end{aligned} \tag{1}$$

Once the individuals have been assigned in each simulation to one of the three categories of the outcome, a percentage of abstention, “Yes” and “No” can be computed for each iteration. Finally, averaging over all iterations provides a measure of the distribution of abstention, “Yes” and “No” with a certain degree of uncertainty.

## 4 Results

Once the ‘blind’ imputation is carried out, we obtain a prediction for each individual. That is, each individual is assigned one of the possible outcomes (‘Abstention’, ‘Yes’, ‘No’ or ‘Undecided’) on the basis of the different variables discussed above. Following our theoretical expectations, expected outcome should be congruent with observed outcome. In other words, what the model predicts should go in line with what the individual answered in the survey.

Table ?? and ?? compare really observed values (the answer the individual gave when he/she was interviewed) and most likely expected values from the model. It is important to point out that we excluded the “Undecided” category on the expected outcome in order to see how indecision is distributed across the other categories. The first thing to be highlighted is that “Yes” respondents show a higher degree of congruence than any other category. Hence, 91% of individuals that answered “Yes” in the survey have the same expected outcome, according to our model. Similarly, 73% of those who answered “No” in the survey would vote “No”.

	Abstention	No	Yes
Abstention	1210	1145	942
No	606	2494	299
Yes	480	298	7952
Undecided	375	238	461

Table 1: Comparison between really observed values in the survey and most likely expected values from the model. Absolute values.

		Esperat		
		Abstention	No	Yes
Observat	Abstention	0.37	0.35	0.29
	No	0.18	0.73	0.09
	Yes	0.05	0.03	0.91
	Undecided	0.35	0.22	0.43

Table 2: Comparison between really observed values in the survey and most likely expected values from the model. Row percent.

As previously expected, congruence is very high for those that answered “Yes” in the survey. According to our model, those that are more likely to vote ‘Yes’ mention it in the survey. Curiously enough, the different ideas that defend that the “No” vote in the surveys is underrepresented because individuals are not willing to express their real preference is not entirely revealed by the analysis. If the “spiral of silence” or the social desirability theory were true, we would expect that an important amount of “Yes” votes would be “No” or “Abstain”. Thus, because individuals would feel not comfortable enough to answer their first preference (remain in Spain), they would end up choosing the most socially desirable answer, which, according to the literature mentioned above, is secession. Our results show that this does not seem to be the case.

This is again illustrated with the “Abstention” category. As we detailed in the theoretical part, this option can be a refuge for those citizens that do not

want to answer their true preference. This process is assumed to happen for those individuals that have the “No” answer as their true preference. This is partially true (or partially false) in light of our analysis. 37% of individuals that answered that they “would abstain” if a referendum was hold would actually do so. The rest, according to our model, would vote “No” (35%) or “Yes” (29%). A similar process is observed for those that are undecided. According to the model, 35% of undecided individuals would abstain, 22% would vote “No” and 43% would vote “Yes”.

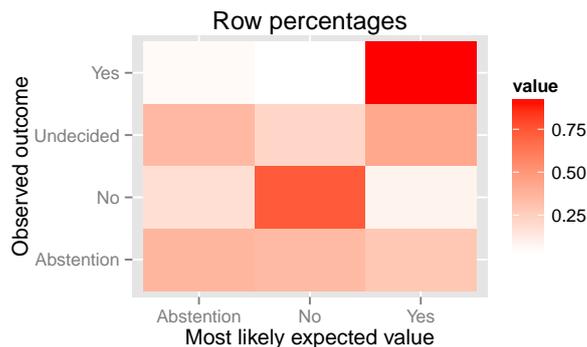


Figure 3: Observed values in the survey and predicted, percentage of congruence.

Figure 4 compares observed answers in the survey and expected answers according to our empirical model, divided by the different surveys employed in the model and the four possible outcomes. Just “eyeballing” the “Yes” column it can be seen that congruence between observed and expected value has increased over time (blue colour). The same has occurred with the “No” category. This indicates that for these two categories uncertainty is decreasing over time and the observed answers in the survey are increasingly aligned with expected answers.

## 5 Conclusions

Surveys suffer many types of biases. Beyond biases related to procedural aspects (sampling, coverage, interviewer effects...), some errors are caused because individuals do not know their preferences or they hide them for different reasons. These reasons are generally the product of the interaction between individual’s attitudes or beliefs and their social context. This interaction causes some individuals to give a different answer than what would be expected. In other words, some answers are incongruent and therefore the given answer has a high degree of uncertainty. In this article we have explained that preferences for/against secession might be affected by factors that cause incongruence, such as the social desirability bias or the “spiral of silence” bias”. Moreover, we have argued that some answers (“Abstention” or “dk/na”) could be a way to hide individual’s real preferences because they represent an uncommitted or ambiguous option.

In order to investigate individual’s expected answer according to his or her characteristics we have developed an imputation model. This model includes

several sociodemographic, political or behavioural variables and impute the most likely answer to all individuals in the survey. Observed and expected answers are then compared in order to check whether they are congruent.

Findings show that the “Yes” category shows a high degree of congruency. Thus, those that answer the “Yes” category in the survey do what would have been expected according to his/her profile. The “No” category also shows a high degree of congruent results, although a significant part would be more likely to abstain. Finally, those that choose the “Abstention” and the “dk/na” category would be, according to our model, likely to behave differently. More concretely, a third of the “observed” abstainers would be likely to vote “No” and almost half of the “observed” undecided would be likely to vote “Yes”.

In conclusion, this article sheds light on the idea of congruence between observed answers in a survey and expected answers. This has been an issue that has occupied the Catalan political debate in the last two years. Some researchers have insisted that this question cannot be trusted because of the lack of congruence between individual’s profile and his or her answer and because of the existence of a social desirability bias or an spiral of silence. We show that there are little evidences that these processes are at play. Errors might indeed be produced, among others, by measurement error, interviewer’s effect or other procedural aspects, factors that have little to do with all the other processes investigated here.

## Appendix

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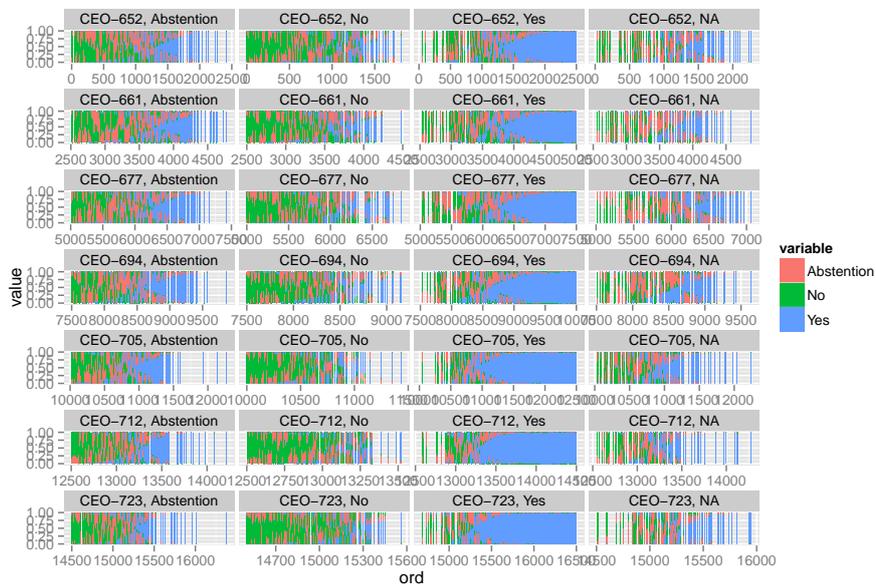


Figure 4: Comparison between observed and expected answer by surveys and possible outcome

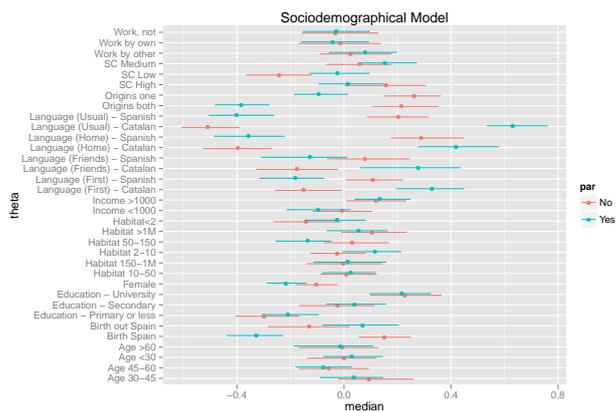


Figure 5: Model prediction: sociodemographical covariates

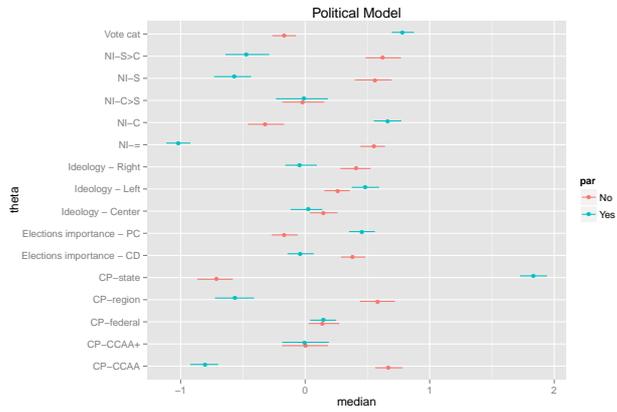


Figure 6: Model prediction: political covariates

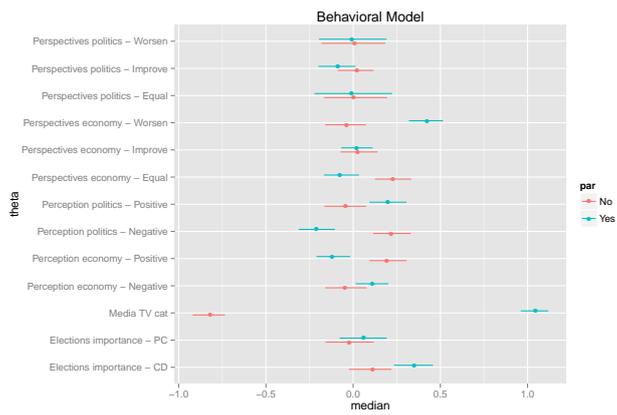


Figure 7: Model prediction: behavioural covariates