Constituency Characteristics, Committee Membership, Professional Links and the topic of Parliamentary Questions: Evidence from Portugal

Enrico Borghetto

(Nova University of Lisbon)

José Santana Pereira

(ISCTE-IUL & CIES-IUL)

&

André Freire

(ISCTE-IUL & CIES-IUL)

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Abstract

In non-preferential electoral systems, where the chances for an MP to get re-elected strongly depend on party elites, we generally assume that political parties have a strong say on the individual agendas of MPs. On the other hand, this assumption has ever hardly been tested empirically, leaving a lot of unexplained variation in the way individual legislators within the same party select the topics they devote attention to. This paper aims to contribute to current studies on political representation by examining the importance of a range of determinants of individual topic selection in Portugal. In particular, it tests the relevance of the characteristics of the electoral district where the MP was elected, his/her links with distinct social groups and his/her committee membership. The institutional characteristics of the Portuguese political system make for a suitable case study to evaluate these hypotheses, as well as a rather conservative one, since the odds of observing MPs catering to their constituency or advancing personal agendas lower in comparison with preferential electoral systems. The paper tackles this question by drawing on a dataset comprising the population of written parliamentary questions (more than 10,000) tabled by Portuguese MPs in the period from 2009 until 2015. Our findings have important implications for our understanding of political representation and the role of individual legislators as one of linkage mechanisms in European democracies.

Keywords: Parliamentary Questions; Constituency Characteristics; Issues; Portugal

Introduction

How members of parliament (MPs) interpret their role and how this affects their individual behaviour has long been a topic of investigation in legislative studies (Strøm 1997, for a review see Andeweg 2014). Even after controlling for incentives provided by the electoral system (research looked, for example, at how electoral systems shape party discipline when MPs cast their votes), a complex mix of interrelated factors affects the behaviour of individual MPs. First, their decision to focus on specific issues may stem from their party membership, especially if their re-election depends primarily on the decisions of party leaders. Their second principal may be their electoral constituency, bringing to the fore local considerations. Finally, MPs' behaviour may respond to personal characteristics, such as beliefs derived from their belonging to a specific societal group (for instance, an ethnic group).

Recently, scholars used this analytical framework to explain variation in the content of individual MPs' agendas, namely how they distribute attention across issues. Parliamentary questions are one of the most well-known arenas where MPs disclose information on their issue interests. Parliamentary questions addressed by individual MPs to the executive, either in oral or written form – are one of a series of non-legislative activities, in the sense that they are not intended to create new legislation or change existing laws (Russo 2011). Unlike legislative activities, which are quite often strictly bounded by party discipline (Martin 2011a; Russo 2011; Louwerse and Otjes 2016), MPs use parliamentary questions to pursue a varied set of goals motivated by both partisan (executive scrutiny by opposition parties, raising awareness to issues) and individual factors (serving as additional publicity for members, signalling effort and productivity, strengthening bonds with constituencies, granting information to inexperienced legislators; Franklin and Norton 1993; Lazardeux 2005; Russo 2011; Kellerman 2016; for a systematic literature review, see Martin 2011a).

The goal of this article is to assess the individual and constituency factors affecting the choice of topics by individual MPs in their parliamentary questions. Our

empirical case is Portugal[1] between 2009 and 2015. We chose to focus on five specific issues: education, employment, the environment, healthcare and law and order. These issues cover two of the three categories of issues proposed by Soroka (2002) and implemented, for instance, on Walgrave, Soroka and Nuytemans (2008) study of the mass media's political agenda-setting power: prominent and sensational issues. Economic, education and healthcare issues are, of course, of prominent nature, due to the direct impact that they have on the well-being of the population, especially in times of crisis, bailout and austerity; in turn, environmental and law and order can be framed as sensational issues, since they are not obtrusive to the majority of the political elite (i.e. not directly observed or experienced) and frequently become salient due to spectacular events (Walgrave, Soroka and Nuytemans 2008).[2]

The rationale underlying the choice of the time frame is twofold: first, we want to focus on a period in which economic issues were remarkably salient, and therefore picked the years of the acute sovereign debt crisis and bailout (2011-2014) in Portugal; second, the 2007 constitutional reform made the parliamentary questions more relevant than they were before (Seguro 2016), which means that a study of

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1 Parliamentary questions are a feature of the MPs non-legislative activities throughout Europe (Russo and Wiberg 2010). In Portugal, the democratic Constitution stipulates that MPs have the power to "make questions to the government or public administration about any of its actions and get an answer in reasonable time, except legal dispositions regarding State secrecy" (On Article 156, comma d),; our translation). However, while written questions, perguntas, have existed since 1976 (not only in the Constitution but also in the first draft of the Rules of Procedure), during the first two decades their use was rather limited. Up to 2007, this instrument was by and large discredited because the cabinet member receiving the questions could decide which of them to answer (Seguro 2016). Additionally, there was a limit to the number of questions each group could submit. Questions left unanswered were published periodically in the Official Journal of the Parliament but there was little expectation that the cabinet would eventually pick them up. The 2007 reform changed this (see Seguro 2016 and Freire, Borghetto and Santana-Pereira 2016).

2 The typology proposed by Soroka (2002) also includes governmental issues, namely unobtrusive and uncontentious issues not connected with specific high-profile events but with the government doing business as usual. Walgrave, Soroka and Nuytemans (2008) contend that good examples of these issues can be found in the defence and foreign affairs sector in a country such as Belgium (but that is not, surely, the case in the USA) or political system and government administration. We chose not to focus on this type of issue in this paper.

questioning behaviour made before that date would be biased by how discredited this tool was.

We believe that Portugal is a critical case for shedding light on this research question. First, the closed-list PR electoral system used in Portuguese legislative elections should create little incentives for MPs to cultivate personal votes (Carey and Shugart 1995; Lisi and Santana-Pereira 2014), and, therefore, to focus on constituency-salient issues instead of on national-salient issues. As in Italy during the 15th legislature (2006-2008), right after the 2005 reform introducing a closed-list PR electoral system in the country, a focus on issues that are relevant to constituencies (as a way of constituency service), would not help MPs to achieve their individual goals of being re-selected, re-elected or acquire party or legislative offices (Russo 2011). This means that Portugal constitutes a rather robust setting to test district-level determinants of MP behaviour as opposed to contexts in which it is possible to vote for individual candidates instead of party lists. Second, in spite of this institutional framework, it has been shown that there is significant variation in constituency focus (both in terms of attitudinal focus and hours spent in the constituency vis-à-vis in the Parliament) according to the level of district magnitude (Pillet, Freire and Costa 2012; Freire 2017). Thus, even within the case some variation is expected and that is yet another good reason to focus on Portugal. Third, apart from the closed list PR system, Portugal has a very centralized system of candidate selection, with a very strong role of national party elites in the process, within each party (Freire and Pequito 2011; Pequito and Freire 2011), one of the reasons why Shugart (2000) classifies the Portuguese system as «extreme electoral system». And that is also another strong justification for focusing on the Portuguese case.

While the majority of the literature on this subject has focused on electoral vulnerability and party characteristics as factors explaining the number and/or scope of parliamentary questions, we analyze the individual MPs professional background, committee membership and the characteristics of the electoral district in which they were elected. We believe that this work will constitute a contribution towards a more nuanced understanding of why individual MPs choose to focus on some issues instead of others when addressing questions to the executive.

This article is organized as follows. In the next section, we discuss the relevant literature on parliamentary questions, their role and the factors underlying the amount of questions made by individual MPs and the issues those questions address. Then, we present the hypotheses tested, the data and the methodological approach chosen. In the following section, we present a series of multilevel regression models aimed at assessing the explanatory power of our determinants of topic choice. The article ends with a discussion of the main empirical patterns observed and their implications for our knowledge of the individual determinants of MP behaviour in terms of executive scrutiny.

Factors of Parliamentary Questions' Quantity and Focus

Parliamentary questions have been at the core of the study of individual MP behaviour in consolidated democracies, although to a lesser extent than other parliamentary activities, namely those of legislative nature. In order to control for the effects of systemic variation, most studies on the factors surrounding interpersonal differences in the use of parliamentary questions are case studies, focused on contexts such as the UK (e.g. Judge 1974; Franklin and Norton 1993; Bird 2005; Saalfeld 2011; Kellerman 2014, 2016, Bevan and John 2016), Ireland (e.g. Martin 2011b), Canada (e.g. Soroka, Penner and Blidook, 2009; Blidook and Kerby 2011), France (e.g. Lazardeux 2005), Italy (e.g. Russo 2011), Norway (e.g. Rasch, 2009), Switzerland (e.g. Bailer, 2011), Belgium (e.g. Dandoy, 2011; Vliegenthart, Walgrave, and Zicha 2013), the Netherlands (e.g. Louwerse and Otjes 2016) or the EU as a whole, studying the behaviour of members of the European Parliament (e.g. Proksch and Slapin 2010; Jensen, Proksch and Slapin 2013). Comparative studies are rarer, being Vliegenthart and Walgrave (2011) and Borghetto and Russo (2017) notable exceptions. Research on parliamentary questions as dependent variables often adopt one of the following approaches: studying the factors explaining the number of questions posed by individual MPs, the topics selected by different MPs, and the focus of questions on the constituencies. In the next paragraphs, we discuss the main studies on these three sub-topics.

A considerable degree of attention has been paid to the factors influencing how many parliamentary questions are made by individual MPs. The literature shows

that electoral vulnerability is a factor of productivity, but not in all contexts. A recent study observed that the electorally vulnerable British MPs (i.e. those elected with narrower margins of victory) use questions to signal effort to their voters (Kellerman 2016), thus replicating the findings of Soroka, Penner and Blidook (2009) for Canada and Rasch (2009) for Norway. However, Louwerse and Otjes (2016) report the opposite relationship: Dutch MPs with higher list positions (and therefore a less vulnerable position in electoral terms) ask more parliamentary questions than those lower on the list. Moreover, Lazardeux (2005) does not find links between electoral vulnerability and number of questions posed by the French parliamentarians. In that context, the informational role of parliamentary questions seems to be more important. Finally, a recent study by Fernandes et al. (2017) on Portugal found that electoral vulnerability has an impact on the focus of representation (distinguishing between district and party-focused parliamentary questions) but only if analysed in interaction with the time in the electoral cycle and party size.

A second relevant factor is the governing status of the party MPs are affiliated to. In Denmark, France and Belgium, MPs from opposition parties are more likely toresort to written questions than those supporting the majority, since they see parliamentary questions as a cost-free way of exercising oversight and scrutiny of the executives (Lazardeux 2005; Dandoy 2011; Vliegenthart and Walgrave 2011; Vliegenthart, Walgrave and Zicha 2013). Studies focusing on the European Parliament also showed that MEPs from national opposition parties are more likely to ask questions (Proksch and Slapin 2010; Jensen, Proksch and Slapin 2013). Soroka, Penner and Blidook (2009) make a more nuanced analysis and verify not only this trend towards higher productivity from the opposition MPs, but within the majority/opposition dichotomy it is possible to find differences between backbenchers and those linked to the government or shadow government: backbenchers are more productive than cabinet MPs when affiliated to opposition parties, and less productive than them when supporting the ruling majority (see also Bevan and John 2016).

In addition to the governing status of the party they belong to, there are other relevant party-related factors of MP productivity in terms of questioning: party size, party productivity, party cohesiveness, and modes of candidate selection. First, MPs

from larger parties tend to have higher *per capita* scores in terms of number of questions posed (Dandoy 2011). In Canada, Soroka, Penner and Blidook (2009) observe not only this general linear trend, but also that the relationship between size and productivity tends to be positive just when the MPs party control less than 50 per cent of the opposition seats. Second, there is a positive relationship between the amount of questions posed by the MPs and those made by their party colleagues (and committee peers; Louwerse and Otjes 2016). Third, Dandoy (2011) finds that Belgian disciplined and cohesive parties are more active in questioning the government than other parties. Fourth and last, in the Netherlands MPs from parties with centralized modes of selection are more active than those who have more control over the process (Louwerse and Otjes 2016).

Lastly, three other factors have also been identified as relevant: specialization in a few portfolios tends to depress productivity (Louwerse and Otjes (2016); the political culture seems to be factor, as the different political cultures of Flanders and Wallonia also lead to differences in terms of how productive MPs are (Dandoy 2011); and party and career orientation have an impact on the amount of questions posed by the members of the parliament's Swiss Lower House: junior legislators use this tool to underline their activity and commitment to political affairs (Bailer 2011). A flourishing research agenda on parliamentary questions has been focusing not on the productivity of the MPs, but on the topics that they choose to address in their parliamentary questions.[3] Several studies deal with personal characteristics such as the MPs' gender (female MPs ask more questions about issues pertaining to women than their male colleagues; Bird 2005) and ethnicity (MPs who belong to minority groups ask more questions about immigration and diversity; Saalfeld 2011). Others focus on their performing tasks as party representatives, such as working inside parliamentary committees (questions tend to be within the jurisdiction of those committees; Proksch and Slapin 2010; Kellerman 2014) or the portfolios or shadow portfolios that they hold (Soroka, Penner and Blidook 2009).

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3 Vliegenthart and Walgrave (2011) and Vliegenthart, Walgrave, and Zicha (2013) and Vliegenthart et al. (2016) found that the topic of questions tend to be influenced by the mass media, although parties react differently based on their position in government or in the opposition.

Lastly, a growing number of studies is interested in understanding whether the issues raised by the parliamentary questions are salient for the constituency. For instance, Saalfeld (2011) observes than in the UK MPs who represent constituencies in which there is a stronger presence of visible minorities also ask more questions about diversity and immigration. In Canada, Soroka, Penner and Blidook (2009) and Blidook and Kerby (2011) studied the link between a series of constituency characteristics and preferences and the number of questions made by the MPs elected in those constituencies focusing on salient issues directly connected with those preferences and characteristics. By adopting this substantive representation focus in the study of parliamentary questions, the authors observe that such representation is commonly observed, even though it varies from issue to issue, and often (but not always) MPs facing electoral pressure, or vulnerability (narrow victory margins), are more prone to engage in this mode of constituency representation via questions (Soroka, Penner and Blidook 2009; Blidook and Kerb 2011).

This understanding of issues covered by parliamentary questions as a way of building links with the constituency or effectively generating substantive representation, is also found on studies interested in the focus of the questions, regardless of their topic. A few analyses have operationalized "constituency-focus" via a direct or indirect reference to the constituency in the question (cf. Martin 2011b) and tried to identify the factors impacting the probability to adopt such focus. The electoral system (closed-list PR vs. other ballot structures that grant voters more liberty to cast personal votes) is believed to be relevant, with constituency-focused questions being more common, for instance, in Ireland than Italy (Martin 2011b; Russo 2011). However, electoral institutions are only part of the story, since even in a context in which the electoral system rules should not create incentives for MPs to cultivate personal votes – Italy during the 15th legislature (2006-2008), one-third of the questions were constituency-focused (Russo 2011). Other factors may therefore explain the odds of an MP to adopt such a focus.

In Italy, parliamentarians with prominent leadership roles, i.e. electorally less vulnerable, are less willing to do constituency service, since, unlike the others, they do not need to do so in order to enhance their odds of being re-selected by their

parties (Russo 2011). However, that is not the case in the UK and Ireland, where the MPs' electoral vulnerability is not associated with different odds of posing constituency-focused questions (Martin 2011b; Kellerman 2016).

Second, government vs. opposition status is also believed to be a factor, but the results are not consistent: in Italy, MPs from (some) opposition parties are more likely to adopt a local focus (Russo 2011); in turn, Irish MPs supporting the government are more likely to pose questions focused on their constituencies (Martin 2011b). In the European Parliament, MEPs from national opposition parties are more likely to alert the Commission to violations of EU law in their own member states (their constituencies) than their counterparts from parties backing up the national government (Jensen, Proksch and Slapin 2013).

Among the other relevant variables underlined by these studies, we find the nature of the political party (parties not claiming to be national and whose electorate is concentrated in a specific region are more likely to adopt a constituency focus; Russo 2011), political culture (the particularism in Southern Italy leads MPs elected in that region to pose more locally focused questions; Russo 2011), the position of the electoral district in the centre-peripheral cleavage (MPs from peripheral districts are more prone to adopt a constituency focus; Martin 2011b) or the existence of strong links between the MP and the district that elected her (parachuted MPs being less focused on the constituencies than those who were born and live in the constituency; Russo 2011).

Goals and hypotheses

The goal of this article is to assess the personal and constituency-level factors explaining the choice of topics by individual MPs in their parliamentary questioning in Portugal between 2009 and 2015. In terms of factors, we aim at testing in the specific Portuguese context factors that were deemed relevant in other countries (namely factors associated with the MPs party service and the context of the constituencies they were elected in) as well as a new factor that, according to our knowledge, has not been studied: the MPs' professional links.

First, as we have seen above, both in national and supranational parliaments it is often the case that there is a consistency between the specialization of the MPs in specific topics, mirrored in their participation in specific committees, and the topics

they choose to tackle in the parliamentary questions they pose (Proksch and Slapin 2010; Kellerman, 2014). Will this result, observed in the context of the British and European parliaments, hold in the remarkably different Portuguese context, especially in times of economic crisis in which economic concerns may blur the effects of specialization? Our main expectation is conservative: we hypothesize that, indeed, MPs belonging to a specific committee will be more likely to make questions about issues addressed in that committee:

H1 – Committee membership has an impact on the share of attention to specific topics in parliamentary questions

Second, the social interactions the MPs embark on are expected to have an impact on the topic of questions they raise in the parliament. For instance, we expect that MPs involved in charities and volunteer associations should be more likely to focus on new politics issues (such as environmental issues). On the other hand, those entertaining economic and professional links with the business world should be more likely to address traditional left-right matters (such as employment matters).

H2 – MPs' professional links have an impact on the share of attention to specific topics in parliamentary questions

Lastly, although the existing research points out that the constituency characteristics are associated to a higher likelihood of raising questions on issues made salient by those characteristics, this varies from issue to issue (Soroka, Penner and Blidook, 2009; Blidook and Kerby, 2011; Saalfeld, 2011). In the Portuguese context of 2009-2015, strongly conditioned by the sovereign debt crisis and the bailout granted by the *troika*, and marked by a considerable degree of distrust in political institutions, it may be the case that MPs found the need to show themselves aware of the constituency issues via the parliamentary questions they raise. For instance, the more salient are environmental issues in the constituency that elected the MP, the higher is the likelihood of making questions about the environment. Or the unemployment rate at the MP's constituency will be positively associated with the odds of addressing employment matters in parliamentary questions.

H3 – The specific conditions of the constituency have an impact on the share of attention to specific topics in parliamentary questions

Data and methodology

The empirical analysis of this paper relies on a novel data set combining information on the topic of all written parliamentary questions ("*perguntas ao governo*") submitted by Portuguese MPs during the 11th (2009-2011) and 12th legislature (2011-2015) and on MPs' biographies and professional careers.[4]

For the most part, interviews with MPs confirm that they are not constrained by party leaders when drafting and sending a written question to the government, so it is a good indicator of their range of interests (Borghetto and Lisi, 2018). In practical terms, we attribute a question to an MP only if he or she is the first signatory (more than one party member can be asked to sign the question). There are no formal rules regarding the order of signatories and every party applies a different internal policy. Even so, interviewed MPs confirmed that, in the greatest majority of cases, the author of the content and who takes the initiative in the first place is also the first to sign (Ibid.). Additionally, it is questionable whether a co-sponsorship represents a demonstration of interest for the topic or simply a favour done to a party fellow. As a result, we consider only first signatories.

Our dependent variable is the number of questions asked by an MP on each of the five topics under exam (education, employment, environment, health and law & order) during a legislative session. In other words, our unit of analysis is the MP/session dyad. Since some MPs are substituted in the course of the legislature either temporarily (e.g. because of an extended leave) or permanently (e.g. 230 MPs sit in the Portuguese Parliament but a total of 313 MPs served in the 12th legislature) and the time spent in parliament affects the likelihood of asking a question, we filtered out those that were present less than 80 percent of the duration

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4 Data were retrieved from the official site of the parliament, parlamento.pt. Data on MPs' biographies were collected for the XI legislatures by Freire et al. (2009) and for the XII legislature by Freire et al. (2015). Gaps in these databases were filled by the authors.

of a parliamentary session and those that substituted them. The final data set includes 197 MPs for the 11th and 205 for the 12th legislature.

Our final data set contains 11503 questions spread over 6 legislative sessions (each legislature is composed of four sessions, running from September to June), 4701 in the 2-year 11th legislature and 6802 in the 4-year 12th legislature. Each MP is observed on average across 4 sessions. Even after filtering out duplicated questions (for instance, the same question may be present three times when it is addressed to three ministers or, for instance, it enquires on the state of hospital infrastructures in three different cities), parties are responsible for a different share of questions: almost two-third of the questions are submitted either by the PCP (43%) or the BE (23%), while the authorship for the remaining questions is equally shared by the PS, PSD and CDS-PP (each $\cong$10%).

The main policy content of each question was classified by two trained coders working separately using the 217 categories of the Portuguese policy agendas codebook (which can be aggregated into 21 macro topics like economy, transports, environment). Differences among coders were resolved through discussion with one of the authors. The five selected topics - crime, environment, health, education and unemployment - correspond to different combinations of policy agendas codes (see Appendix 1).[5] Figure 1 illustrates the distribution of questions across topics and parties. Table 1 summarises the distribution of our dependent variable.

Figure 1 and Table 1 HERE

In order to test the three guiding hypotheses presented above, we elaborated three main independent variables. MP BACKGROUND taps on MP-specific group-

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[5] In principle, one could distinguish between questions with a more general scope (e.g. "the combat of fires in Portugal") and locally-focused questions (e.g. "the progress of reforestation in the Alentejo region"). This sort of discrimination would allow one to detect whether there is any direct evidence of constituency service on the part of MPs. We asked coders to classify questions based on whether they have a local focus (using the method devised by Martin 2011b) and, if so, whether they concern the constituency where the MP was elected. Unfortunately, the number of MPs asking zero questions increased exponentially when applying this filtering and this led to problems of model convergence. As a result, we decided to drop this part of the analysis.

belonging attributes. To do this, it creates a link between the professional biographies of MPs and their possible interest/specialization on a specific topic. In practical terms, each of the five topics was associated with a dummy variable taking the value of 1 when the MP:

- works/worked in the education sector (teacher or researcher) -> EDUCATION
- was or is currently involved in/leading a professional interest group (business, professional orders, trade unions) -> EMPLOYMENT
- was or is currently involved in/leading an environmental civic group (cultural, social, educational) -> ENVIRONMENT
- works/worked in the health sector (doctor, pharmacist or dentist) -> HEALTH
- works/worked in law-related professions (judge, lawyer, legal study expert) -> LAW & ORDER

COMMITTEE tests whether membership of a committee pertinent to topic x significantly affects the likelihood of asking questions on the subject. It is a binary variable equalling 1 when the MP belongs to one of these committees:

- the "Committee on Education and Science" -> EDUCATION;[6]
- the "Committee on labour and social security" -> EMPLOYMENT; [7]
- the "Committee for environment, territorial issues and local power" -> ENVIRONMENT;[8]
- the "Health Committee" deals -> HEALTH;[9]
- the "Committee on constitutional affairs, rights, freedoms and guarantees" -> LAW&ORDER.[10]

DISTRICT uses local economic/social indicators to measure the relevance of the problem in the electoral district of the MP. Given the multidimensionality of each of

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[6] Comissão de Educação e Ciência

[7] Comissão de Segurança Social e Trabalho (CSST).

[8] Comissão do Ambiente, Ordenamento do Território e Poder Local (CAOTPL).

[9] Comissão de Saúde (CE)

[10] Comissão de Assuntos Constitucionais, Direitos, Liberdades e Garantias (CACDLG).

the selected issues, there exist no perfect indicators of issue relevance. Furthermore, no local surveys are available to measure the perception of the public opinion regarding each issue. After a careful examination of indicators on Portuguese municipalities available on a yearly basis and spanning the study period from 2009 to 2014, we decided to focus on the following five[11]:

- enrolled students in pre-school, primary, lower secondary and upper-secondary education as a % of resident population -> EDUCATION
- unemployed persons registered at public employment offices as a percentage of resident population -> EMPLOYMENT
- municipalities' environmental expenditure as a percentage of total expenditure -> ENVIRONMENT
- personnel employed in hospitals per 100 thousand inhabitants -> HEALTH
- crime registered per thousand inhabitants -> LAW & ORDER

Since our dependent variable is aggregated by legislative sessions and our social indicators are available by calendar year, we matched the two data sources as follows: yearly data from 2009 were used to predict behaviour during the parliamentary session starting in 2009 (running from the 15th October 2009 until the 15th September 2010); data from 2010 were applied to the 2010 parliamentary session; and so on for the remaining sessions.

We also included a battery of control variables which were found to have an impact on the likelihood to ask a parliamentary question (regardless of the topic) in previous analyses. To begin with, the variable MAGNITUDE measures the number of MPs elected by each constituency. District magnitude in Portugal presents a great variation, going from Portalegre electing 2 MPs to Lisbon electing 47.[12] Ceteris paribus, we expect MPs from smaller districts to be less likely to ask questions with a general focus and more likely to ask questions with a local focus, since they normally conduct more personal electoral campaigns (although in a case with slightly more incentives to cultivate personal votes - Ireland (Carey and Shugart

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[11] All data sets were extracted from www.pordata.pt.

[12] Since we do not expect a linear relationship between district magnitude and the likelihood to ask a question, we transformed district magnitude using the logarithmic function.

1995) - there is no relationship between district magnitude and focus on the constituency; Martin 2011b).

Electoral VULNERABILITY measures the degree of uncertainty perceived by each MP about the prospect of re-election. Because of the closed-list proportional system in use in Portugal, we follow André et al. (2015) and measure vulnerability as the ratio between the position that the candidate MP holds in the party list and the number of seats won in that district by the MP's party, always in the most recent election. In our case, it ranges from 0 (head of the party list) to 1 (last candidate to get elected in the party list). For instance, the second candidate in a party list that won 5 seats gets 0.4. The fifth candidate in the same list gets 1. According to some authors (Soroka, Penner and Blidook 2009; Russo 2011, Fernandes et al. 2017), but not others (Martin 2011b, Kellerman 2016), electoral vulnerability should positively correlate with the likelihood of asking a question: vulnerable MPs should have more incentive to use parliamentary activities to improve their list position and increase their chances of re-election.

The variable PARTY_POSITION is a dummy variable taking 1 if the MP is currently a member of the national or local decision-making body of the party. Since the selection of Portuguese MPs and list position are mostly decided by these bodies, we expect high-ranking officials sitting in it to be less dependent on parliamentary activities (such as parliamentary questioning) to build a reputation and improve their chance of re-election.

The variable SENIORITY measures the number of times an MP was elected. We expect that MPs who have served for many mandates and have already consolidated a reputation in the eyes of party leaders (and among voters) should have less incentive to direct their efforts towards parliamentary questioning. Furthermore, we checked for the age of the representative by creating a dummy variable taking 1 if the MP is above 60, namely close to the retirement age (END_CAREER). MPs at the end of their careers should be less concerned with reselection and, consequently, their reputation as hard-working MPs.[13]

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[13] We also ran a model with control for MP's GENDER (1 if female MP). Based on previous works (Bird 2005), we expected women MPs to focus on other topics than the ones we examine, so the correlation should be negative. None of the coefficient was significantly different from zero.

OPPOSITION is a dummy variable equals to 1 if the MP was member of a party in the opposition and 0 otherwise. Since getting information from or influencing the agenda of members of the executive through more informal means is generally more difficult for opposition MPs, they should rely more heavily on parliamentary questions. This expectation is in line with previous studies on the matter (Lazardeux 2005, Dandoy 2011, Vliegenthart and Walgrave 2011; Vliegenthart, Walgrave and Zicha 2013; Proksch and Slapin 2010; Jensen, Proksch and Slapin 2013), and relevant to us because higher odds of making lots of questions have an impact on the odds of making questions about the five issues under analysis.

LAST SESSION controls for the effect of the electoral cycle. Fernandes et al. (2017) showed that proximity of elections provides incentives for MPs – especially when they are uncertain about their re-election - to invest efforts in parliamentary activities, in particular in questioning the government. This is considered a strategy to show their value to the party leadership and increase their prospect of being reselected in safer list positions.

Finally, we also include a categorical variable capturing the MP's party membership (reference value is the Socialist Party, PS), in order to deal with all the party-related variables that may have an impact on the likelihood of a given MP posing a question and adopting a constituency focus. Since party preferences and party size are relatively stable over the course of the two legislatures, the resulting four dummies aim at controlling for party group effects.

Results

The choice of the statistical model was driven by two characteristics of our data. First, the count of sponsored written questions is an integer featuring high over-dispersion (i.e. the conditional variance exceeds the conditional mean) and an excess number of zeros. Second, our data are organized as an unbalanced panel with observation for the same MP spread over multiple legislative sessions. This might result in correlated outcomes for the same MP. As a result, we fitted a hierarchical negative binomial hurdle model with random intercept for each MP (for another example of analysis using this modelling strategy see Kellerman 2013).

The hurdle model splits the analysis in two parts. The first part is a binary logit model, where the dependent variable takes the value of 1 in case no question was

asked. The second part is a truncated (only positive counts are considered) negative binomial model. Intuitively, the first part looks at the factors explaining why MPs do not ask any question at all. The second part analyses the relevant explanatory factors behind the quantity of submitted questions once the hurdle is cleared, namely the threshold is overcome.[14] It uses a truncated negative binomial model because it allows the dispersion of counts to be estimated from the data. Since we do not have theoretical reasons to expect different determinants accounting for the two parts, both zero-count and positive-count processes regress on the same variables. On the other hand, we expect the direction of the coefficients in the two models to be the opposite.

Table 2 summarises all the results by presenting the sign of the coefficient and whether it is significantly different from 0 at a 0.05% confidence level.[15] The upper and lower section of the table show the results from, respectively, the positive-count (Count) and the zero-count component (Hurdle). Starting from the overall goodness of fit of the models, traditional model-comparison criteria such as AIC show (see Appendix 2) that the health-related model is the worst fitting, although this might be the consequence of the smaller number of observations (we do not have information on hospital personnel in the Madeira e Azores districts). Vice versa our model specification performs best when explaining questioning dynamics on employment-related issues.

Table 2 HERE

For ease of interpretation, Figures 2 to 4 plot the coefficients (plus 95 percent confidence intervals) of the zero and positive-count part across the five sectors for each of the three independent variables. In line with H1, committee membership is the strongest predictor of the likelihood to ask a question on a specific topic. This finding is robust across most estimated models. Holding all else equal, on average the odds of not asking a single question on work-related matters for a member of the "Committee for employment and social security" are nearly 4 (odds ratio = 0.27)

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[14] The model is fit using glmmMTB (Brooks et al. 2017).

[15] Tables 2 to 6 in appendix 2 present the results of the analysis for each of the 5 sectors.

times as low as the odds for a member of any other committee. Additionally, among those that asked at least a question, the log count of MPs from this committee is 1.25 bigger than those from other committees. The effect of committee membership can also be interpreted by plotting the average marginal effect of COMMITTEE on the number of questions (positive-count component). Figure 5 shows that the average number of questions asked by a member of the health and education committees on topics pertinent to their committee is respectively around 5 and 4, whereas for non-member this is less than 1 in both cases. These findings hint at the tendency for MPs to specialise in the area they are assigned to by party leader.

Figure 2 to 5 HERE

H2 do not find significant support. The estimated coefficients of DISTRICT are never statistically significant at a conventional 0.05 level for the count-component. The relevance of the problem in the district where the MP was elected does not appear to significantly affect the number of questions focused on that topic. What we observe is that MPs from districts with higher rates of crime and more enrolled students (as percentage of the population) tend to ask at least a question on respectively law&order and education matters.

As regards H3, we do not find any correlation between the networks of social and professional interactions entertained by an MP and his/her propensity to ask questions focused on one of the five issues considered. This may suggest a separation between the range of issues addressed as a parliamentarian and the interests in the outside world. On the other hand, the use of binary proxies to measure attributes that present so many nuances begs for caution when interpreting the results.

Beyond our main covariates, most other predictors of an MP's activity rate display only a limited effect and tend to perform better when explaining the likelihood of not asking questions. The estimated coefficients of MAGNITUDE(LOG) are all positively signed and (mostly) statistically significant for the zero-count component. This suggests that no matter the focus of the question, all else equals, MPs elected in larger districts are less likely to ask questions on one of the five topics. Similarly, the direction of VULNERABILITY is negative for the zero-count component and for three

out of five sectors it is significant: as the perceived risk of not being re-elected increases, so does the likelihood of asking at least a question.

Other career-specific covariates such as occupying a party position, being a long-serving legislator or close to retirement are also (but for a few exceptions) not statically significant. It might be taken as evidence that the patterns observed at a general level present policy-specific trajectories. As expected, being member of an opposition party increases the odds of asking at least a question regardless of the topic and, in three out of five sectors, it significantly increases the number of questions. Finally, the proximity of elections seems to be negatively correlated with both the likelihood to ask questions and with their number. We suggest that this result, which partly goes against Fernandes et al.'s (2017) findings, originates from the unexpected snap elections ending the XI legislature.

As a final note, we find that, all else being equal, membership in a small party, in particular those on the opposition like the PCP and the BE, is the strongest predictor of the number of submitted questions (as well as of the probability of asking a question). They are generally more active and, lacking a strong voice in the government, give more value to the instrument of parliamentary questions. If we just focus on the two main parties, PSD and PS, which account for almost 80 per cent of MPs and have representatives in all districts, the results are strikingly similar (table 3).

Table 3 HERE

Conclusions

What determines the topic selected by MPs for their parliamentary questions in a non-preferential electoral system? In these systems, the chances for an MP to get re-elected strongly depend on decisions by party elites. As a result, it is generally assumed that political parties have a strong say on the individual agendas of MPs. This paper aimed to contribute to current studies on political representation by examining the importance of a range of determinants of individual topic selection in Portugal. In particular, it tests the relevance of the characteristics of the electoral district where the MP was elected, his/her links with distinct social and professional groups and his/her committee membership. We argue that the institutional

characteristics of the Portuguese political system make for a suitable case study to evaluate these hypotheses. Portuguese MPs have a national mandate and their re-election chances hinge on being reselected by the party elites. This should make the odds of observing MPs catering to their constituency or advancing personal agendas lower in comparison with preferential electoral systems.

This expectation is confirmed by our analysis: in a country with strong party discipline and centralised processes of electoral (re)selection, we found little evidence that MPs perform substantive representation of their own constituency. Furthermore, also the professional background of MPs does not seem to be significantly related to the topic of parliamentary questioning. According to our analysis, the strongest predictor of topic selection is committee membership. As expected, sitting in a committee fosters MP's specialisation and decreases incentives for MPs to probe into new policy areas. Rather, it might be more conventional to ask a colleague in the relevant committee to sponsor the question and add the name as a co-signer. Since committee assignment is largely a party elite-controlled process, this preliminary analysis reveals that MPs do not seem to pursue agendas independent from the one assigned by the party.

The modelling strategy applied in this paper has the advantage of differentiating the reasons to ask at least a question and the motivations to ask many of them in a session. Overall, our model specification performs better at the first task. Even after controlling for a range of mediating factors, we find that membership in a small opposition party is the main factor accounting for the quantity of questions. On average MPs from the PCP and BE ask more questions than their counterparts in other parties. We suggest that this heavy reliance on parliamentary questions originates from their (self-reported) mission as guardians against the establishment on behalf of the citizens (until recently they had never voted the confidence of a government) and the lack of alternative access to information on government activities.

All in all, this paper represents a preliminary analysis and a lot remained to be done, for instance:

- alternative operationalisation of the district and MP background
- explore interaction effect between district characteristics and district magnitude

- develop issue-specific expectations

We look forward to your comments and suggestions.

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Table and figures

Table 1: Distribution of Dependent Variable

variable	mean	sd	q25	median	q75	max
Education	1.24	3.93	0	0	0.50	36.33
Employment	0.66	2.52	0	0	0.20	21.83
Environment	0.82	3.02	0	0	0.50	42.50
Health	1.69	7.97	0	0	1.00	102.80
Law&Order	0.59	1.75	0	0	0.33	14.50
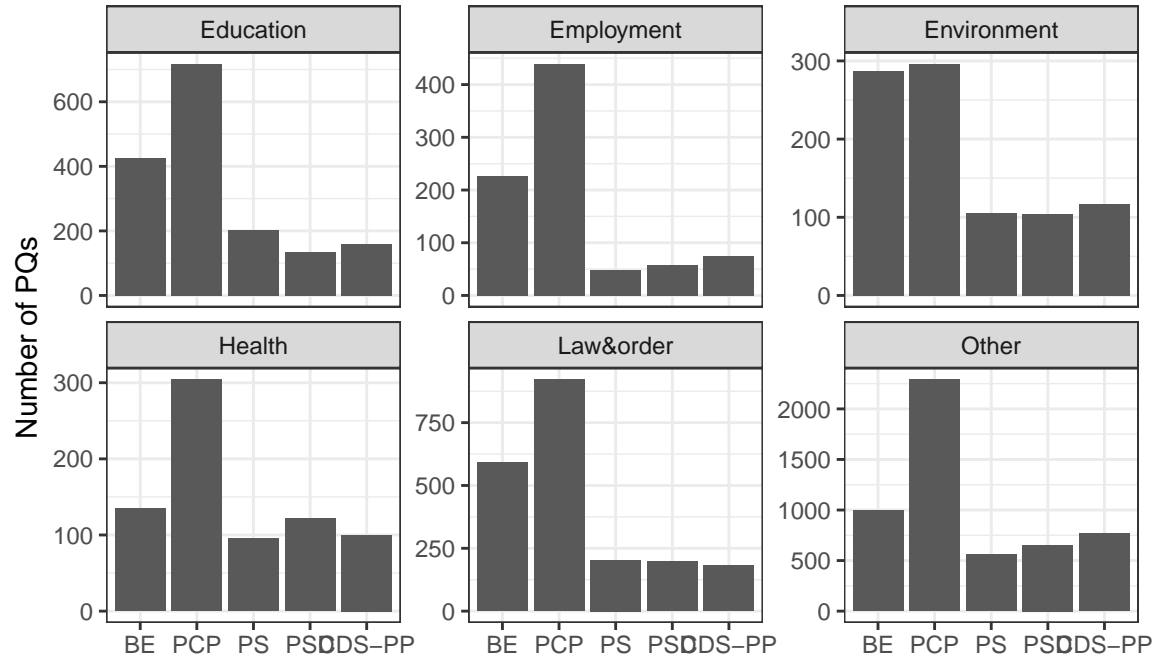
Figure 1: Number of Pq across parties and topics
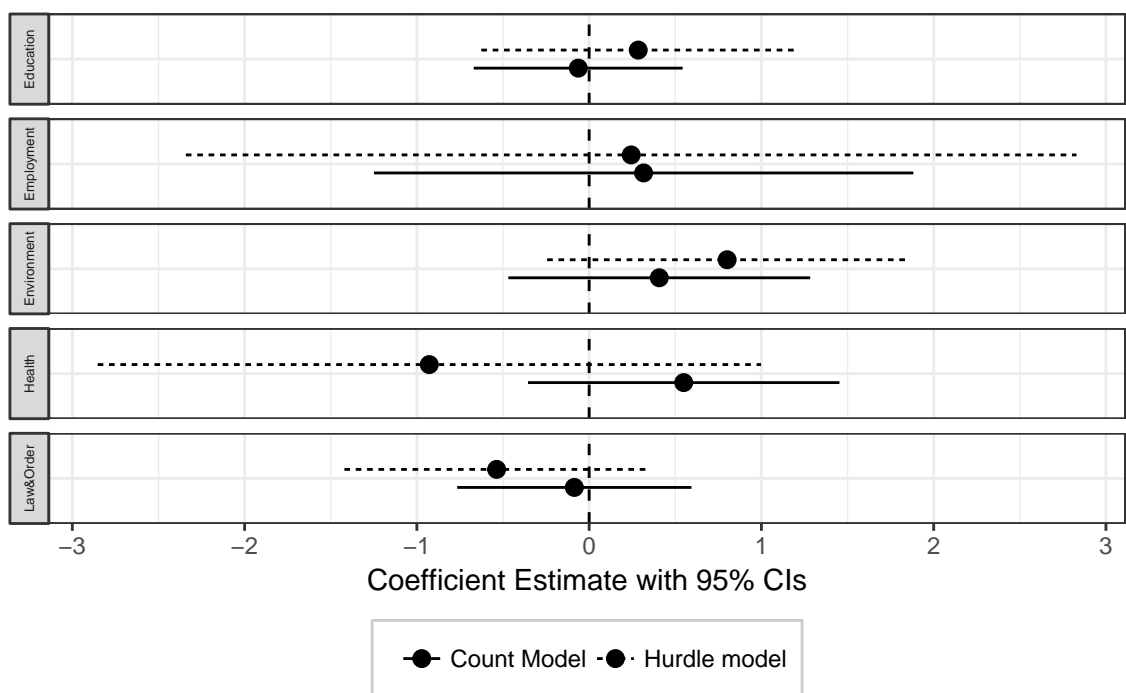
Figure 2: Estimates for MP background
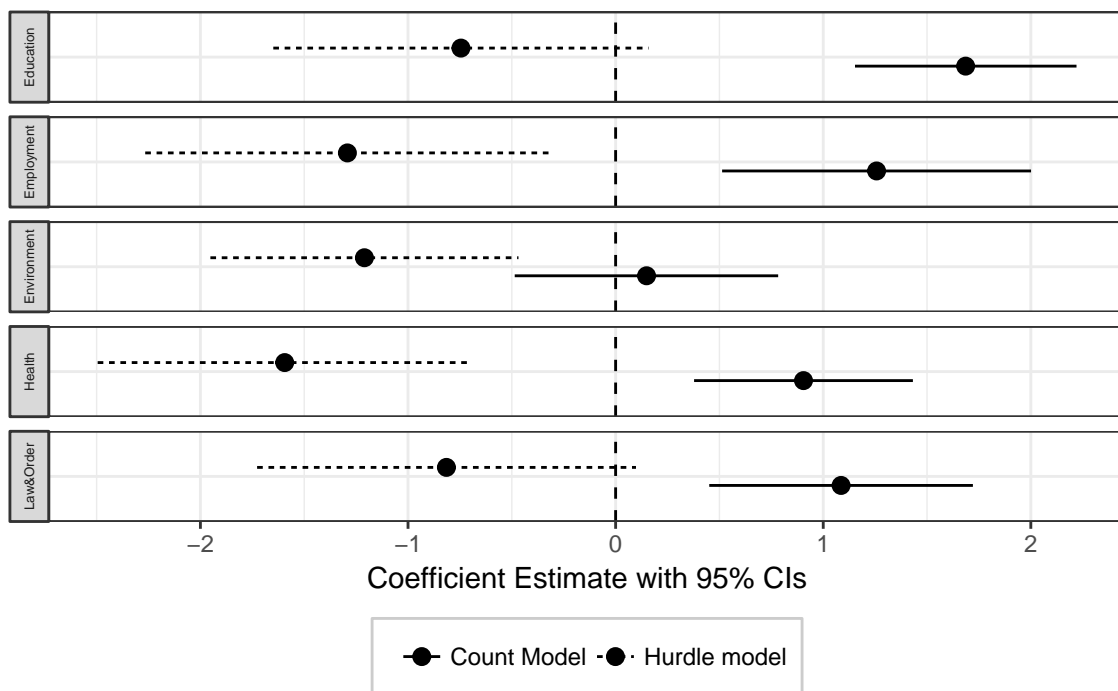
Figure 3: Estimates for Committee membership
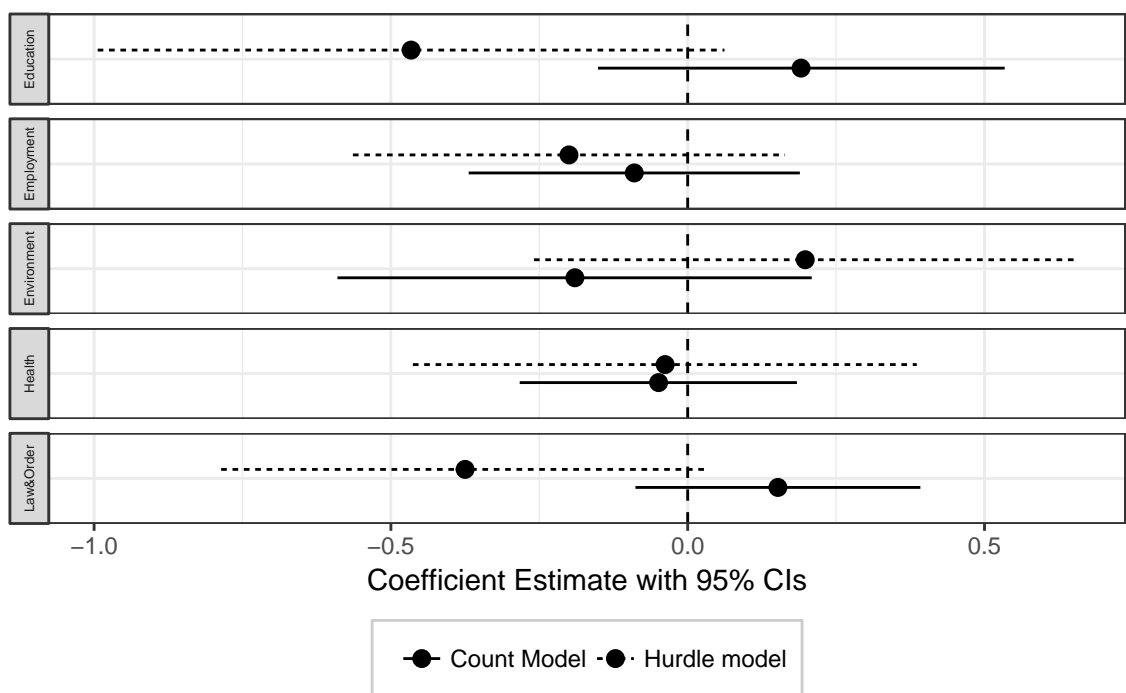
Figure 4: Estimates for District
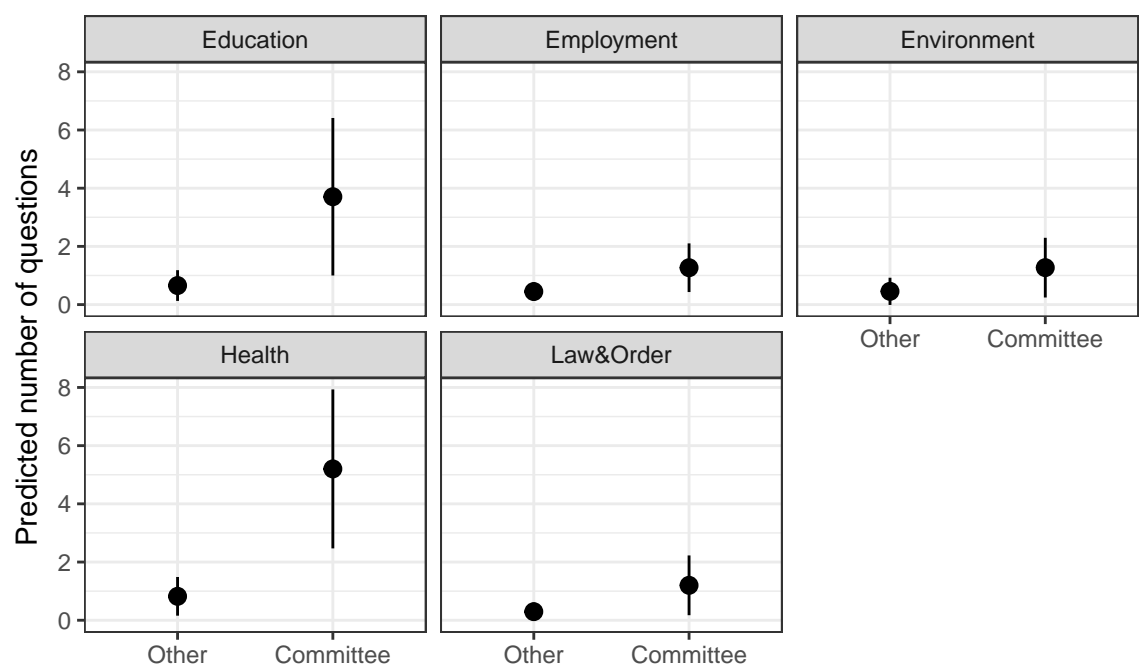
Figure 5: Marginal Effect of Committee membership on the number of submitted questions

Table 2: Result summary (all party)

Term	Education	Employment	Environment	Health	Law&Order
Count model					
MP background	-	+	+	+	-
Committee	+ *	+ *	+	+ *	+ *
District	+	-	-	-	+
Magnitude(log)	+	+	+	-	+
Vulnerability	-	+	+	-	- *
Party_position	+	- *	+	-	-
Seniority	-	+	- *	+	+ *
End_career	+ *	+	-	-	+
Opposition	+ *	+	+	+ *	+ *
Last session	- *	- *	- *	-	-
BE	+ *	+ *	+ *	+ *	+ *
CDS-PP	+	+	+	+ *	+ *
PCP	+ *	+ *	+ *	+ *	+ *
PSD	+	-	-	+	+
Hurdle model					
MP background	+	+	+	-	-
Committee	-	- *	- *	- *	- *
District	- *	-	+	-	- *
Magnitude(log)	- *	-	- *	-	- *
Vulnerability	+ *	+	+	+ *	+ *
Party_position	-	-	-	+	-
Seniority	+	+	+ *	-	+
End_career	+	+	+	+ *	+
Opposition	- *	- *	- *	- *	- *
Last session	+	+	+ *	+ *	+ *
BE	- *	- *	- *	- *	- *
CDS-PP	- *	- *	- *	- *	- *
PCP	- *	- *	- *	- *	- *
PSD	-	-	-	-	-

Note:
This table summarises the results of tables 2 to 6 in Appendix 2 by showing the sign of the coefficient and whether it is significantly different from 0 at a 0.05 confidence level

Table 3: Result summary (only PS and PSD)

Term	Education	Employment	Environment	Health	Law&Order
Count model					
MP background	+	-	+ *	+	+
Committee	+ *	+ *	+	+ *	+
District	+	-	+	+	+ *
Magnitude(log)	+	+	-	+	-
Vulnerability	-	-	-	-	- *
Party_position	+ *	-	+	-	-
Seniority	+	+	-	+	+
End_career	+	-	-	-	+
Opposition	+	+	+	+ *	+ *
Last session	-	+	-	+	-
Hurdle model					
MP background	+	-	+	-	-
Committee	-	- *	- *	- *	-
District	-	-	-	-	- *
Magnitude(log)	-	-	-	-	-
Vulnerability	+ *	+	+	+ *	+ *
Party_position	-	- *	-	+	+
Seniority	+	+	+ *	+	-
End_career	+	+	+	+ *	+
Opposition	- *	- *	- *	- *	- *
Last session	+	-	+	+	+

Note:

This table summarises the results of models in tables 7 to 11 in Appendix 2 using data on just the biggest parties by showing the sign of the coefficient and whether it is significantly different from 0 at a 0.05 confidence level

Appendix

Appendix 1 - Policy Agendas Codes

Topic	Minor topic	Title of minor topic
Crime	1200	General Crime and law
Crime	1201	Agencies Dealing With Law and Crime (includes Executive Agencies, Police and Weapons Control)
Crime	1202	White Collar Crime and Organized Crime
Crime	1203	Illegal Drug Production, Trafficking, and Control
Crime	1204	Court Administration
Crime	1205	Prisons
Crime	1206	Juvenile Crime and the Juvenile Justice System
Crime	1207	Child Abuse and Child Pornography
Crime	1208	Family Issues (includes Family Law and Domestic Abuse)
Crime	1209	Firemen, Emergency services, Catastrophes action plans.
Crime	1210	Criminal and Civil Code (Includes Specific Crimes Not Mentioned Elsewhere)
Crime	1211	Riots and Crime Prevention
Crime	1227	Police and Other General Domestic Security Responses to Terrorism (e.g. Special Police)
Crime	1230	Uprisings and insurrections
Crime	1299	Other - Crime and law
Crime	1615	Civil Defense (includes General Military and Other National Security Responses to Terrorism (e.g. Homeland Security))
Environment	700	General Environment
Environment	701	Drinking Water Safety, Water Supply, Water Polution, and Water Conservation
Environment	703	Waste Disposal
Environment	704	Hazardous Waste and Toxic Chemical Regulation, Treatment, and Disposal
Environment	705	Air pollution, Global Warming, and Noise Pollution
Environment	707	Recycling
Environment	708	Indoor Environmental Hazards
Environment	709	Species and Forest Protection (includind hunting)
Environment	710	Marine environment, oil pollution, coastal areas and coastal area protection, water courses pollution.
Environment	711	Land and Water Conservation (includes Environmental Issues Related to Agriculture)
Environment	798	Environmental Research and Development
Environment	799	Other - Environment
Environment	806	Alternative and Renewable Energy
Environment	807	Energy Conservation
Environment	1902	International Resources Exploitation and Resources Agreement
Environment	2101	National Parks, Memorials, Historic Sites, and Recreation (includes the Management and Staffing of Cultural Sites)
Environment	2103	Natural Resources (mining industry), Public Lands, and Forest Management

Environment	2104	Water Resources Development and Research
Unemployment	103	Unemployment rate
Unemployment	500	General Labor and Employment
Unemployment	502	Employment Training and Workforce Development
Unemployment	503	Employee Benefits
Unemployment	504	Employee Relations and Labor Unions
Unemployment	505	Fair Labor Standards and Labour Law
Unemployment	506	Youth Employment and Child Labor
Unemployment	599	Other - Labor and Employment
Unemployment	1309	Social Insurance
Unemployment	1330	Complementary Social Insurance Regimes
Unemployment	2004	Government Employee Benefits and Civil Service Issues
Unemployment	900	General Immigration and Refugee Issues
Education	600	General Education
Education	601	Higher Education
Education	602	Elementary and Secondary Education
Education	603	Education of Underprivileged Students
Education	604	Vocational education
Education	606	Special Education
Education	607	Educational Excellence
Education	615	Regulation of the teaching carreers; evaluation; training.
Education	698	Education Research and Development
Education	699	Other - Education
Education	2300	General Cultural Policy Issues
Health	300	General Health
Health	301	Comprehensive Health Care Reform
Health	302	Insurance Reform, Availability, and Costs
Health	321	Regulation of the Drug Industry, Medical Devices, and Clinical Labs
Health	322	Facilities Construction, Regulation, and Payments (includes Waiting Lists and Ambulance Services)
Health	323	Provider and Insurer Payments and Regulation (includes Other or Multiple Benefits)
Health	324	Medical liability, fraud and abuse
Health	325	Health Manpower and Training
Health	331	Disease Prevention, Treatment, and Health Promotion (includes Specific Diseases Not Mentioned Elsewhere)
Health	332	Infants and children
Health	333	Mental Health and Mental Retardation
Health	334	Long-Term Care, Home Health, Terminally Ill, and Rehabilitation Services
Health	335	Prescription Drug Coverage and Costs
Health	336	Specific Health Treatments
Health	341	Tobacco Abuse, Treatment, and Education
Health	342	Drug and/or Alcohol Abuse and Treatment
Health	398	Health Research and development
Health	399	Other - Health

Appendix 2 - Result tables

Table 2: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Education(all parties)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-1.547	0.768	0.044
MP background	-0.063	0.271	0.815
Committee	1.686	0.238	0.000
District	0.191	0.153	0.211
Magnitude(log)	0.662	0.461	0.151
Vulnerability	-0.009	0.180	0.959
Party_position	0.191	0.234	0.415
Seniority	-0.111	0.075	0.140
End_career	0.809	0.378	0.032
Opposition	0.628	0.257	0.015
Last session	-0.499	0.126	0.000
BE	1.662	0.373	0.000
CDS-PP	0.549	0.400	0.170
PCP	2.273	0.355	0.000
PSD	0.156	0.352	0.658
Hurdle model			
(Intercept)	2.861	1.067	0.007
MP background	0.285	0.407	0.483
Committee	-0.745	0.403	0.065
District	-0.466	0.236	0.048
Magnitude(log)	-1.306	0.636	0.040
Vulnerability	0.712	0.263	0.007
Party_position	-0.119	0.353	0.735
Seniority	0.171	0.112	0.126
End_career	1.011	0.660	0.126
Opposition	-2.181	0.293	0.000
Last session	0.253	0.220	0.248
BE	-3.476	0.762	0.000
CDS-PP	-2.701	0.615	0.000
PCP	-4.933	0.861	0.000
PSD	-0.343	0.415	0.409

Note:
Overdispersion parameter: 3.43; count model, std.dev(mps)=0.56, hurdle model, std.dev(mps)=3.55; N.observations:1159, N.levels:285; AIC=2037.56, log Likelihood=-985.78

Table 3: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Employment(all parties)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-2.070	1.078	0.055
MP background	0.316	0.698	0.651
Committee	1.257	0.332	0.000
District	-0.090	0.125	0.471
Magnitude(log)	0.382	0.640	0.551
Vulnerability	0.096	0.195	0.622
Party_position	-0.813	0.330	0.014
Seniority	0.068	0.089	0.445
End_career	0.385	0.484	0.427
Opposition	0.633	0.483	0.190
Last session	-0.251	0.128	0.049
BE	1.651	0.546	0.003
CDS-PP	0.714	0.555	0.198
PCP	2.516	0.504	0.000
PSD	-0.054	0.549	0.921
Hurdle model			
(Intercept)	5.165	1.194	0.000
MP background	0.244	1.153	0.832
Committee	-1.292	0.435	0.003
District	-0.200	0.162	0.218
Magnitude(log)	-1.062	0.706	0.133
Vulnerability	0.315	0.231	0.173
Party_position	-0.437	0.384	0.255
Seniority	0.096	0.125	0.442
End_career	0.519	0.753	0.490
Opposition	-2.042	0.352	0.000
Last session	0.249	0.262	0.342
BE	-5.184	0.852	0.000
CDS-PP	-1.933	0.638	0.002
PCP	-5.642	0.891	0.000
PSD	-0.613	0.470	0.192

Note:
Overdispersion parameter: 7.58; count model, std.dev(mps)=0.76, hurdle model, std.dev(mps)=3.26; N.observations:1159, N.levels:285; AIC=1384.61, log Likelihood=-659.3

Table 4: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Environment(all parties)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-0.329	0.893	0.712
MP background	0.407	0.391	0.297
Committee	0.149	0.283	0.600
District	-0.190	0.178	0.285
Magnitude(log)	0.186	0.560	0.740
Vulnerability	0.089	0.207	0.669
Party_position	0.303	0.273	0.268
Seniority	-0.299	0.104	0.004
End_career	-0.823	0.525	0.117
Opposition	0.384	0.260	0.140
Last session	-0.289	0.130	0.026
BE	1.442	0.473	0.002
CDS-PP	0.860	0.442	0.052
PCP	1.815	0.450	0.000
PSD	-0.424	0.416	0.308
Hurdle model			
(Intercept)	3.768	0.997	0.000
MP background	0.801	0.466	0.086
Committee	-1.210	0.331	0.000
District	0.198	0.204	0.332
Magnitude(log)	-1.525	0.586	0.009
Vulnerability	0.303	0.233	0.194
Party_position	-0.293	0.319	0.359
Seniority	0.234	0.107	0.029
End_career	0.141	0.590	0.811
Opposition	-1.897	0.282	0.000
Last session	0.448	0.220	0.042
BE	-3.082	0.670	0.000
CDS-PP	-2.463	0.547	0.000
PCP	-4.092	0.699	0.000
PSD	-0.490	0.388	0.206

Note:
Overdispersion parameter: 5.98; count model, std.dev(mps)=0.99, hurdle model, std.dev(mps)=2.48; N.observations:1159, N.levels:285; AIC=1779.68, log Likelihood=-856.84

Table 5: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Health(all parties)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-1.014	0.709	0.153
MP background	0.549	0.403	0.174
Committee	0.905	0.235	0.000
District	-0.049	0.104	0.636
Magnitude(log)	-0.175	0.426	0.682
Vulnerability	-0.044	0.160	0.783
Party_position	-0.077	0.227	0.735
Seniority	0.105	0.070	0.137
End_career	-0.514	0.352	0.145
Opposition	0.967	0.202	0.000
Last session	-0.081	0.102	0.427
BE	0.945	0.398	0.017
CDS-PP	0.998	0.347	0.004
PCP	2.273	0.347	0.000
PSD	0.044	0.287	0.878
Hurdle model			
(Intercept)	1.121	0.979	0.252
MP background	-0.928	0.859	0.280
Committee	-1.594	0.402	0.000
District	-0.038	0.190	0.839
Magnitude(log)	-0.459	0.603	0.447
Vulnerability	1.013	0.241	0.000
Party_position	0.217	0.345	0.531
Seniority	-0.064	0.111	0.562
End_career	1.438	0.614	0.019
Opposition	-1.698	0.267	0.000
Last session	0.457	0.211	0.031
BE	-2.632	0.741	0.000
CDS-PP	-2.709	0.612	0.000
PCP	-5.347	0.924	0.000
PSD	-0.679	0.407	0.095

Note:
Overdispersion parameter: 6.44; count model, std.dev(mps)=0.72, hurdle model, std.dev(mps)=3.49; N.observations:1109, N.levels:272; AIC=2238.91, log Likelihood=-1086.46

Table 6: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Law and Order(all parties)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-1.344	0.817	0.100
MP background	-0.086	0.303	0.777
Committee	1.086	0.283	0.000
District	0.152	0.107	0.157
Magnitude(log)	0.100	0.528	0.851
Vulnerability	-0.393	0.160	0.014
Party_position	-0.306	0.253	0.226
Seniority	0.172	0.081	0.032
End_career	0.489	0.466	0.294
Opposition	1.275	0.335	0.000
Last session	-0.008	0.159	0.959
BE	1.208	0.419	0.004
CDS-PP	1.093	0.415	0.008
PCP	1.698	0.353	0.000
PSD	0.290	0.403	0.472
Hurdle model			
(Intercept)	3.557	1.008	0.000
MP background	-0.537	0.395	0.174
Committee	-0.815	0.407	0.045
District	-0.375	0.184	0.041
Magnitude(log)	-1.424	0.630	0.024
Vulnerability	0.660	0.215	0.002
Party_position	-0.319	0.343	0.352
Seniority	0.038	0.110	0.731
End_career	0.380	0.625	0.543
Opposition	-1.585	0.287	0.000
Last session	0.853	0.241	0.000
BE	-2.606	0.723	0.000
CDS-PP	-1.984	0.612	0.001
PCP	-4.586	0.788	0.000
PSD	-0.463	0.420	0.270

Note:
Overdispersion parameter: 3.51; count model, std.dev(mps)=0.41, hurdle model, std.dev(mps)=3.23; N.observations:1159, N.levels:285; AIC=1588.82, log Likelihood=-761.41

Table 7: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Education(PS and PSD)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-1.453	1.290	0.260
MP background	0.009	0.489	0.986
Committee	2.261	0.517	0.000
District	0.295	0.381	0.440
Magnitude(log)	0.855	0.814	0.293
Vulnerability	-0.526	0.441	0.233
Party_position	0.849	0.418	0.042
Seniority	0.000	0.163	0.998
End_career	0.858	1.039	0.409
Opposition	0.187	0.466	0.689
Last session	-0.546	0.398	0.170
Hurdle model			
(Intercept)	2.200	1.085	0.043
MP background	0.089	0.462	0.847
Committee	-0.556	0.505	0.271
District	-0.401	0.271	0.139
Magnitude(log)	-0.783	0.721	0.278
Vulnerability	0.804	0.304	0.008
Party_position	-0.296	0.419	0.479
Seniority	0.181	0.123	0.142
End_career	1.020	0.771	0.186
Opposition	-2.357	0.335	0.000
Last session	0.119	0.259	0.647

Note:
Overdispersion parameter: 0.23; count model, std.dev(mps)=0, hurdle model, std.dev(mps)=3.42; N.observations:907, N.levels:229; AIC=1014.46, log Likelihood=-482.23

Table 8: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Employment(PS and PSD)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-20.911	20283.712	0.999
MP background	-19.165	21531.556	0.999
Committee	2.134	0.946	0.024
District	-0.593	0.436	0.173
Magnitude(log)	0.040	1.661	0.981
Vulnerability	-0.538	0.568	0.344
Party_position	-0.496	0.660	0.453
Seniority	0.134	0.273	0.622
End_career	-1.413	1.992	0.478
Opposition	0.194	0.851	0.820
Last session	0.449	0.757	0.553
Hurdle model			
(Intercept)	4.377	1.305	0.001
MP background	-0.485	1.337	0.717
Committee	-1.318	0.519	0.011
District	-0.007	0.199	0.971
Magnitude(log)	-0.395	0.857	0.645
Vulnerability	0.425	0.269	0.114
Party_position	-1.046	0.471	0.027
Seniority	0.152	0.144	0.290
End_career	0.165	0.864	0.848
Opposition	-2.029	0.421	0.000
Last session	-0.187	0.321	0.561

Note:
Overdispersion parameter: 0; count model, std.dev(mps)=0, hurdle model, std.dev(mps)=3.67; N.observations:907, N.levels:229; AIC=566.98, log Likelihood=-258.49

Table 9: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Environment(PS and PSD)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	0.877	0.872	0.314
MP background	1.048	0.339	0.002
Committee	0.197	0.261	0.449
District	0.150	0.203	0.461
Magnitude(log)	-0.297	0.569	0.602
Vulnerability	-0.431	0.229	0.060
Party_position	0.280	0.272	0.303
Seniority	-0.085	0.101	0.397
End_career	-17.674	4098.001	0.997
Opposition	0.368	0.265	0.165
Last session	-0.024	0.236	0.920
Hurdle model			
(Intercept)	2.810	1.046	0.007
MP background	0.678	0.576	0.239
Committee	-0.939	0.387	0.015
District	-0.080	0.237	0.736
Magnitude(log)	-1.277	0.691	0.064
Vulnerability	0.499	0.271	0.065
Party_position	-0.498	0.388	0.199
Seniority	0.268	0.122	0.028
End_career	0.149	0.704	0.832
Opposition	-1.774	0.318	0.000
Last session	0.363	0.270	0.178

Note:
Overdispersion parameter: 50.8; count model, std.dev(mps)=0.16, hurdle model, std.dev(mps)=2.76; N.observations:907, N.levels:229; AIC=877.47, log Likelihood=-413.74

Table 10: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Health(PS and PSD)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-1.045	0.904	0.248
MP background	0.715	0.560	0.202
Committee	0.936	0.287	0.001
District	0.037	0.149	0.801
Magnitude(log)	0.390	0.540	0.470
Vulnerability	-0.237	0.225	0.292
Party_position	-0.050	0.296	0.866
Seniority	0.060	0.096	0.530
End_career	-18.374	4442.986	0.997
Opposition	1.161	0.336	0.001
Last session	0.129	0.248	0.603
Hurdle model			
(Intercept)	0.482	0.928	0.603
MP background	-1.237	0.989	0.211
Committee	-1.548	0.423	0.000
District	-0.110	0.211	0.603
Magnitude(log)	-0.198	0.658	0.764
Vulnerability	0.977	0.265	0.000
Party_position	0.171	0.389	0.660
Seniority	0.026	0.113	0.815
End_career	1.539	0.680	0.024
Opposition	-1.737	0.297	0.000
Last session	0.318	0.242	0.188

Note:

Overdispersion parameter: 1.39; count model, std.dev(mps)=0.24, hurdle model, std.dev(mps)=3.15; N.observations:860, N.levels:217; AIC=1232.18, log Likelihood=-591.09

Table 11: Hierarchical Negative Binomial Hurdle Model Estimates for number of written parliamentary questions on the topic of Law and Order(PS and PSD)

Term	Estimate	StdError	Pvalue
Count model			
(Intercept)	-0.131	1.151	0.909
MP background	0.136	0.432	0.752
Committee	0.690	0.411	0.094
District	0.269	0.136	0.047
Magnitude(log)	-0.778	0.638	0.222
Vulnerability	-0.650	0.250	0.009
Party_position	-0.014	0.451	0.976
Seniority	0.108	0.124	0.385
End_career	1.427	0.746	0.056
Opposition	1.623	0.472	0.001
Last session	-0.314	0.336	0.351
Hurdle model			
(Intercept)	2.843	1.142	0.013
MP background	-0.846	0.495	0.087
Committee	-0.912	0.533	0.087
District	-0.493	0.236	0.037
Magnitude(log)	-0.938	0.800	0.241
Vulnerability	0.884	0.272	0.001
Party_position	0.069	0.457	0.879
Seniority	-0.011	0.134	0.936
End_career	0.657	0.794	0.408
Opposition	-1.515	0.334	0.000
Last session	0.405	0.291	0.164

Note:
Overdispersion parameter: 1.5; count model, std.dev(mps)=0, hurdle model, std.dev(mps)=4.41; N.observations:907, N.levels:229; AIC=826.43, log Likelihood=-388.21