Behind the Scenes: What is Parliamentary Performance and How Can We Measure It?

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Abstract

Although evaluations of MPs' parliamentary work have gained increasing public popularity, the academic literature on the concept and measurement of parliamentary performance is surprisingly scarce. Most studies analysing (aspects of) MPs' parliamentary performance focus on quantitative parliamentary activity indicators only, thereby neglecting the quality and effectiveness of parliamentary work, and the importance of less visible parliamentary activities. This article introduces a conceptual framework of parliamentary performance as well as a more encompassing measurement approach, and provides a first empirical test of theoretically expected underlying dimensions on 325 Belgian MPs. This study proposes an innovative method relying on the collective expertise of MPs through peer assessment while controlling for potential rater effects. I demonstrate that parliamentary performance cannot be captured by parliamentary activity indicators alone. Exploratory and confirmatory factor analyses show that apart from three factors of parliamentary activity, two more qualitative factors (content and policy-making effectiveness) can be identified. The results suggest that future evaluations of MPs' parliamentary work may need to include more qualitative elements.

Keywords: Accountability, Legislative behaviour, Parliamentary activity, Parliamentary performance, Parliamentary work, Peer evaluation

Parliamentary monitoring organisations (PMO) scrutinising closely individual members of parliament (MPs) and making their parliamentary work[2] more visible to voters have become more common over the last two decades. Summarising MPs' (parliamentary) performance in

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[2] In contrast to MPs' work in the constituency, as electoral candidate or any other function a MP might hold simultaneously.

an overall index turns out to be particularly popular among PMO due to the high visibility and considerable reduction of complexity (Mandelbaum, 2011). In line with these developments and together with an alleged personalisation of politics (e.g. McAllister, 2007) political scientists rediscovered the importance of individual MPs in party-centred contexts. This trend has recently led to a sparked scholarly interest in MPs' parliamentary activity (e.g. Bräuninger, Brunner, & Däubler, 2012; Papp & Russo, 2018). Furthermore, some scholars have also developed indexes of MPs' overall parliamentary activity to capture MPs' (general) parliamentary effort (e.g. Akirav, 2016; Chiru, 2018; Däubler, Bräuninger, & Brunner, 2016). However, the question how to assess MPs' parliamentary work in a broader way including also more qualitative aspects of their parliamentary work has received surprisingly little attention. Previous efforts either focused on quantitative assessments of the parliamentary tools employed by MPs (e.g. Navarro, Vaillant, & Wolff, 2012), the content of specific parliamentary tools such as parliamentary questions (e.g. Martin, 2011), or qualitative evaluations at the parliamentary (not individual) level (e.g. Steenbergen, Bächtiger, Spörndli, & Steiner, 2003). This article aims at advancing insights on a broader understanding of parliamentary performance taking quantitative *and* qualitative aspects of MPs' parliamentary work into account. Defining parliamentary performance as the parliamentary work of individual MPs evaluated according to theoretically derived standards this article departs from the question of how to measure parliamentary performance.

I argue that evaluations of MPs' parliamentary work should indeed go beyond quantitative assessments of parliamentary activity. In order to answer the question at hand, the article is structured as follows. In a first step, I introduce a conceptual framework of parliamentary performance. In a next step, I discuss a new measurement approach for theoretically derived aspects of parliamentary performance beyond parliamentary activity. This article proposes to measure more qualitative aspects of MPs' parliamentary performance with data from of a peer

assessment survey among MPs comprehensively controlling for rater bias. In a last step, the clustering of theoretically derived indicators of parliamentary performance is tested empirically. Theoretical expectations regarding the dimensionality of parliamentary performance are examined with factor models for data of the members of three Belgian parliaments[3] during the term 2014-2019.

This article contributes to current academic and societal debates on the evaluation of MPs' parliamentary work in a theoretical, methodological and substantial way. On a theoretical basis, this article strives for more conceptual clarity and presents a theoretical framework to guide the evaluation of MPs' parliamentary work. Furthermore, this article makes use of peer assessment as an innovative method to capture aspects of parliamentary performance for which data is usually less accessible. Finally, this article substantially contributes to the question which dimensions of parliamentary performance future evaluations of parliamentary work may need to consider. The identification of five dimensions of parliamentary performance opens new avenues for future research to test e.g. more specific hypotheses about which 'parliamentary profiles' of MPs are rewarded by voters and party selectors.

Parliamentary performance – A conceptual approach to evaluations of parliamentary work

Parliamentary performance, parliamentary activity, and normative concerns

Parliamentary performance – as defined in this article – is very closely related with often interchangeably used concepts such as parliamentary activity (e.g. Marangoni & Russo, 2018; Papp, 2019), parliamentary productivity (e.g. Akirav, 2016; Borghetto & Lisi, 2018),

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[3] The Belgian Chamber of Representatives (Federal Parliament, 150 MPs) and two regional parliaments: the Flemish Parliament (124 MPs) and the Parliament of Wallonia (75 MPs).

(parliamentary/legislative) effort (e.g. Däubler et al., 2016; François & Navarro, 2019), or parliamentary performance (Yildirim, Kocapınar, & Ecevit, 2017). These approaches typically rely on quantitative assessments of parliamentary tools such as parliamentary questions that have been employed by individual MPs during a specific period. While these studies often did not have the ambition to measure parliamentary performance in a broader way, they clearly advanced our understanding under which conditions parliamentary activity influences the decisions of the (s)electorate. Yet, this strand of research contributed little to a conceptual debate about the evaluation of MPs' parliamentary work. Moreover, these studies paid little attention to less visible aspects of MPs' parliamentary work (e.g. parliamentary party group meetings) or other evaluation criteria than quantity (e.g. quality, effectiveness) that party selectors and voters could take into account.[4] The restriction to an evaluation of MPs' parliamentary work based on the amount of used parliamentary tools (further called parliamentary activity) seems to be rather motivated by pragmatic and not conceptual reasons. However, recent studies note that qualitative aspects of MPs' parliamentary work might be even more important to voters and party selectors than quantitative ones (Borghetto & Lisi, 2018; Bouteca, Smulders, Maddens, Devos, & Wauters, 2019).

So how can the parliamentary work of MPs be evaluated in a more encompassing way? Despite its potential societal and academic relevance, research in political science remains surprisingly silent on this issue. This might also have to do with reservations against the assumed normative character of evaluations of MPs' parliamentary work. One of the difficulties for a normative approach is a lacking common understanding of how precisely the mandate of an elected representative should be exercised. The ambiguity may result for example from different

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[4] Some studies included the focus of representation derived from formal parliamentary tools as a potentially other evaluation criterion (see below).

parliamentary roles that might be adopted by individual representatives (for an overview see e.g. Blomgren & Rozenberg, 2012).

While evaluations of MPs' parliamentary work might be inherently normative to some extent, the here chosen approach tries to limit the role of subjective norms. First of all, the influence of the author's personal norms and standards has been constrained by employing a theoretically guided approach for the development of a conceptual framework and the choice of suitable indicators. Furthermore, instead of personally judging MPs' parliamentary performance, the evaluation of more qualitative aspects of MPs' parliamentary work has relied on the collective expertise of MPs. While this approach brings several advantages such as including information on less visible aspects of MPs' parliamentary work, introducing some degree of normativity might be unavoidable. The resulting measure of parliamentary performance therefore only represents the *perceived* parliamentary performance of MPs. However, normativity has been restricted to a minimum by combining different perspectives of MPs and correcting for systematic forms of rater bias (see below). Finally, it should be noted that this article does not intend to make any normative claims about the work of MPs. The here proposed measurement of parliamentary performance should *not* be interpreted as higher scores being more desirable. The here preferred approach strives to identify potential patterns of parliamentary behaviour based on theoretically derived criteria in the first place whose normative implications can be tested in subsequent studies.

A new framework based on three pillars

Apart from normative concerns associated with evaluations of parliamentary work, three theoretical distinctions potentially guiding evaluations of parliamentary work can be identified in the academic literature. I will first discuss them before proposing a new approach to measure parliamentary performance. Following this approach the parliamentary work of MPs can be

evaluated based on 1) various evaluation criteria, 2) taking publicly visible or less visible aspects of parliamentary work into account, and 3) differentiating between MPs contributions to several parliamentary tasks. This distinction contributes to more conceptual clarity and theoretical guidance for broader measurement approaches of parliamentary performance.

First and foremost, the here proposed concept of parliamentary performance goes beyond counting formal parliamentary activities by applying a wider range of evaluation criteria other than *quantity*. Several studies analysed content-related aspects of MPs' parliamentary activities e.g. with regard to their focus of representation (e.g. Martin, 2011), issue emphasis (Baumann, 2016) or issue concentration (Yildirim et al., 2017). However, only few studies focused explicitly on the quality of (aspects of) MPs' parliamentary work (e.g. Humphreys & Weinstein, 2012; Solvak, 2013).[5] These attempts show that evaluation criteria related to quality are themselves composed of different sub-criteria linking quality for example to complexity and technical sophistication (legislation), or relevance and respect for specific social norms like tolerance and avoiding clientelism (representation). Different interpretations of quality have seemingly in common that they try to take into account the assumed requirement of a higher effort per unit. Furthermore, evaluations of parliamentary work considered also the effectiveness of MPs. While most studies looked at legislative effectiveness (Francis, 1962; Miquel & Snyder Jr, 2006; Volden & Wiseman, 2014), individual MPs' effectiveness with regard to government control/oversight has so far only been captured based on a MP survey (Humphreys & Weinstein, 2012). Finally, other evaluation criteria (such as e.g. efficiency) have been applied more exceptionally (Navarro et al., 2012).

As the previous paragraph shows, various studies have applied other evaluation criteria than *quantity*. However, most of the attempts discussed above have been predominantly restricted to

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[5] Some studies also analysed quality at the parliamentary (and not MP) level (e.g. Steenbergen et al., 2003).

MPs in non-European, less party-centred contexts. Moreover, previous analyses rather remained limited to a single evaluation criterion. This article further adds to that strand of research by applying an integrated approach (simultaneously applying several evaluation criteria) to MPs acting in a party-centred environment.

Secondly, parliamentary performance is argued to go beyond traditional measures of parliamentary activity by considering also *less visible* aspects of parliamentary work. Previous measures of parliamentary activity have focused on the parliamentary tools at the disposition of MPs that are usually publicly reported by parliamentary websites and data repositories. This article argues that parliamentary performance includes also important aspects of parliamentary work that are often less visible to external observers. The importance of less visible parliamentary work results mainly from the role of political parties in the practical organisation of parliaments. In practice, political parties provide crucial areas of activity to individual MPs within parliaments. Meetings of the parliamentary party group or (thematic) working groups can for example constitute important areas of MPs' parliamentary work (De Winter, 1997; Heidar & Koole, 2003). Moreover, scholars have recently emphasised the political relevance of parliamentary work in the informal space (Norton, 2019). However, information on MPs' parliamentary behaviour beyond the use of parliamentary tools is usually far less accessible to researchers.

Finally, scholars have identified various tasks/functions that parliaments, hence its members, need to fulfil. While different specifications of parliamentary tasks have been published over time, more recent lists have in common to include at least *three central parliamentary tasks*: representation, government control/oversight, legislation (Coghill, Lewis, & Steinack, 2012; Kreppel, 2017). Since most studies of parliamentary activity do not distinguish individual MPs'

contributions to parliamentary tasks,[6] the here proposed concept of parliamentary performance goes beyond previous approaches by differentiating systematically between parliamentary tasks. Moreover, the theoretical distinction between parliamentary tasks avoids identifying MPs' tasks purely based on a normative discussion.

Building upon the distinction between quantitative and more qualitative evaluation criteria, publicly visible vs. less visible parliamentary work, and different parliamentary tasks, this article proposes a new conceptual framework for the measurement of parliamentary performance. Based on this framework parliamentary performance constitutes a three-dimensional space that can be approximated by taking more evaluation criteria into account, including visible and less publicly visible aspects of parliamentary work, or differentiating between more parliamentary tasks. While hard to operationalise in practice, I argue that the concept contributes to more clarity about which aspects of parliamentary performance are considered in a specific analysis. Previous operationalisations remained typically restricted to one evaluation criterion (quantity), publicly visible parliamentary tools, and two indicators of parliamentary tasks (control/oversight, legislation).[7] In contrast, the new conceptual approach which will be operationalized in this article is based on three evaluation criteria (quantity, quality, effectiveness), includes also less publicly visible aspects with regard to the quality and effectiveness of parliamentary work, and differentiates systematically between three parliamentary tasks (see below).

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[6] With the exception of e.g. (Akirav, 2016) and Chiru (2018) distinguishing between parliamentary tasks for their development of an overall index of parliamentary activity.

[7] Most studies of formal parliamentary activity use plenary questions and private members' bills without specifying the parliamentary tasks they might primarily serve.

Theoretical expectations about dimensions of parliamentary performance

The conceptual framework presented above indicates that parliamentary performance may be composed of a wider range of theoretically defined dimensions e.g. based on parliamentary tasks, evaluation criteria, or the public visibility of different aspects of parliamentary work. This section develops theoretical expectations with regard to the dimensionality of parliamentary performance that will be tested empirically later on in this article and can help answer the following questions: Can we summarise the parliamentary performance of individual MPs in a single overall index? Do parliamentary activity indicators suffice to capture MPs' parliamentary performance (or do we also need data on more qualitative aspects of parliamentary work)? Can we measure MPs' overall parliamentary effort based on a commonly underlying dimension of parliamentary activity indicators?

Previous studies presented efforts to develop a single overall index of parliamentary activity/effort (e.g. Akirav, 2016; Chiru, 2018; Däubler et al., 2016). PMO have also been intrigued by the idea to summarise performance data of MPs in an overall index (Mandelbaum, 2011). In contrast to these approaches, I argue that parliamentary performance cannot be reduced to a single coherent overall index.[8] Given the possibility to distinguish theoretically defined dimensions based on the conceptual framework and the lack of a common understanding of what the parliamentary mandate of MPs precisely entails (see above), I expect parliamentary performance to consist of multiple dimensions. While some MPs might e.g. perceive their mandate primarily as a 'legislator', others might consider government control as

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[8] The term "coherent overall index" is used throughout this article to refer to the fact that an index has one commonly underlying dimension that cannot only theoretically but also empirically be identified. A theoretical concept measured by several indicators that arguably cover a common aspect (such as MPs' parliamentary effort) but which do not have an empirically identifiable commonly underlying dimension is hence not considered as being measurable by a single coherent index.

more important. This leads to the first hypothesis regarding the dimensional structure of parliamentary performance:

H1: Parliamentary performance indicators cannot be summarised in a coherent overall index.

Next, I examine whether quantitative and more qualitative aspects of parliamentary performance really measure different things. Most studies analysing (aspects of) the parliamentary performance of individual MPs focus on parliamentary activity. This kind of research is facilitated by the public availability of data on MPs' use of parliamentary tools. If parliamentary activity captures all aspects of parliamentary performance, there is no need for rather time-consuming efforts to estimate more qualitative aspects of parliamentary performance. First research analysing both quantitative *and* qualitative aspects of parliamentary performance indicates that both aspects form indeed separate empirical dimensions (Bouteca et al., 2019). A distinction between parliamentary activity and more qualitative aspects of parliamentary performance might also be in line with the above outlined conceptual framework of parliamentary performance. That is mainly because the application of evaluation criteria such as quality or effectiveness is inherently more linked with less visible aspects of MPs' parliamentary work.[9] This might be even more so since measuring qualitative aspects of parliamentary performance may require specific information stemming e.g. from the expertise of MPs (see below) for whom a clear distinction between more or less publicly visible aspects of parliamentary work is less evident. I therefore expect that the here employed measure of parliamentary performance empirically clusters around indicators of parliamentary activity on the one hand, and those of quality and effectiveness on the other hand. Such distinct dimensions

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[9] Take for example legislative effectiveness: Achieving higher levels of legislative effectiveness by successfully building support for introduced private members' bills requires also efforts during parliamentary party group meetings and lobbying in the (in)formal space of parliament.

would however imply that parliamentary performance cannot be captured effectively with quantitative data on parliamentary tools alone.

H2: Dimensions of parliamentary performance that are composed of parliamentary activity indicators are only weakly correlated with dimensions capturing more qualitative aspects of parliamentary performance.

The conceptual framework does not lead to precise expectations about the dimensional structure of qualitative aspects of parliamentary performance which could potentially cluster around different evaluation criteria, parliamentary tasks, or a combination of both. However, it provides more detailed expectations with regard to quantitative aspects of parliamentary performance (parliamentary activity). In the absence of other evaluation criteria than quantity and the focus on publicly visible parliamentary tools, the framework suggests that parliamentary activity may be structured by MPs' contributions to parliamentary tasks. Contrary to previous approaches to develop overall indexes of parliamentary activity I hence expect that parliamentary activity indicators cluster around parliamentary functions.

H3: Parliamentary activity consists of empirical dimensions that are structured along central parliamentary tasks (such as representation, legislation, control/oversight).

Operationalising parliamentary performance

This section describes a new measurement approach of parliamentary performance based on the previously presented conceptual framework. First, indicators to capture parliamentary activity with regard to representation, legislation, and control/oversight are discussed. In a second step, I describe the operationalisation of more qualitative aspects of parliamentary performance (quality and effectiveness of parliamentary work) in a peer assessment survey

among MPs. Potential risks inherent to the peer assessment method that could potentially undermine the data quality are examined in a separate section (see below).

Quantitative aspects of parliamentary performance

As discussed in the previously presented conceptual framework, the operationalisation of parliamentary performance differentiates between MPs' contributions to parliamentary tasks. While parliamentary tools can most likely serve several parliamentary functions simultaneously, previous research has identified potential links between indicators of parliamentary activity and central parliamentary tasks (Bouteca et al., 2019). Following that approach I strive to select formal parliamentary activity indicators with regard to representation, control/oversight, and legislation. However, this categorisation should not be considered as deterministic and will be tested empirically later on.

Taking the floor during plenary sessions gives individual MPs a unique opportunity to publicly raise concerns of their voters. I therefore follow the example of previous studies to rely on plenary speech data to capture representation activities of individual MPs (Bäck & Debus, 2016; Taylor-Robinson, 2014). The participation in plenary debates is measured by calculating each MP's amount of plenary speech acts (*speech frequency*) as well as each MP's sum of words spoken in the plenary (*speech length*).[10] Parliamentary control/oversight activity has been assessed based on the total amount of written parliamentary questions (*written questions*) and oral parliamentary questions asked in committee (*committee questions*). These tools serve to monitor the government where individual MPs can act more freely compared to plenary questions which are limited per parliamentary party group (Wiberg, 1995). Finally, individual MPs' law-making activity has been assessed by the amount of introduced *private members'*

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[10] The indicators for plenary debate participation focus on all plenary speech acts excluding the parliamentary question hour to avoid counting plenary questions twice. Data on formal parliamentary activity indicators has been extracted from the official parliamentary documentation repositories. Plenary transcripts were processed with the quanteda package in R.

bills as well as the number of introduced *resolutions* as a less technically demanding instrument to initiate legislation (Mattson, 1995).

Due to the central role of plenary questions for the study of parliamentary activity (for an overview see e.g. Papp & Russo, 2018) I further include the amount of oral parliamentary questions asked in the plenary. While plenary questions have previously been analysed to infer individual MPs' focus of representation, it has been argued that they also serve to control the government (Wiberg, 1995). I hence use the amount of *plenary questions* as a potential indicator that might be at the intersection between representation and control/oversight. The here applied measure of parliamentary activity thus relies on each two indicators with regard to representation, control/oversight, and legislation. In addition to these six indicators the amount of plenary questions is included potentially capturing both representation and government control (see Table 1).

[Table 1 about here]

Qualitative aspects of parliamentary performance

Measuring parliamentary performance with regard to quality and effectiveness as well as less visible aspects of parliamentary work requires a more sophisticated approach than simply relying on publicly available quantitative data. This article proposes a new method that allows scholars to assess more qualitative aspects of individual MPs' parliamentary performance relying on the collective expertise of MPs. This section describes the operationalisation of evaluations of the quality and effectiveness of parliamentary work in a peer assessment survey among MPs. The peer assessment method and its potential risks are discussed in more detail in the following section.

Due to the general difficulty to find respondents willing to participate in MP surveys (Bailer, 2014), this study remains limited to six indicators to keep the survey as short as possible.[11] I hence restricted the survey to indicators of quality and effectiveness of parliamentary work with regard to representation, legislation, and control/oversight capturing also less visible aspects of parliamentary work (see above). This way I take the most pertinent evaluation criteria and parliamentary tasks into account and avoid a limitation to only parliamentary tools or less visible aspects of parliamentary work. The survey questions of these six aspects of parliamentary performance have been developed based on theoretical arguments. Their wording has been subsequently adjusted relying on informal preparatory interviews with five former Belgian MPs to ensure their suitability to potential respondents.

In order to measure the **quality** of parliamentary performance, previously used sub-criteria related to the content and complexity of parliamentary work have been applied to representation, legislation, and control/oversight. In order to measure *representation quality*, I rely on Colomer's definition of quality in the context of personal representation as 'reliability and ability to fulfil electoral promises and respond to voters' demands' (2011, p. 7). Going a bit further than Solvak who tried to assess legislative complexity (2013), *legislative quality* has been operationalised in a way to capture aspects related to both complexity and content, which refers to the capacity to develop legislative initiatives to solve current problems in society. Finally, MPs have been asked directly whether other MPs focus on relevant problems in society during their parliamentary control/oversight to assess *control quality*.

Furthermore, I measure parliamentary performance with regard to the **effectiveness** of parliamentary work, which is again split up between three parliamentary tasks. Building on Jones and Baumgartner's (2004) argument to link representation with agenda-setting individual

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[11] Due to the research goals of this study I chose for a more extensive operationalisation of the conceptual framework and a potentially higher response rate in a trade-off with only a single indicator per variable. Future studies should compare different approaches.

MPs' *representation effectiveness* is considered here to be related with influencing the agenda to prioritise issues that are relevant to their voters. In order to assess *legislative effectiveness* I depart from operationalisations in less party-centred contexts (Miquel & Snyder Jr, 2006; Volden & Wiseman, 2014). The here employed operationalisation focuses also on the success of legislative initiatives, but stresses more informal activities to build legislative support rather than only looking at the success rate of legislative initiatives that might largely depend on party factors. Finally, MPs have been asked directly to evaluate the *control/oversight effectiveness* based on the achieved relative policy impact through parliamentary control work. Table 2 shows an English translation of the corresponding survey items.

[Table 2 about here]

Peer assessment among MPs: Methodological design, response bias and rater bias

Relying on the collective expertise of MPs provides a unique source to get information on the very specialised parliamentary work of MPs (partially behind closed doors). In order to do so I build upon one of the most comprehensive attempts to ask MPs to assess their peers (Humphreys & Weinstein, 2012). This study goes beyond that attempt by employing a more theoretically guided operationalisation of parliamentary performance (see above) and by controlling more systematically for potential rater effects.[12]

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[12] More details about the employed MP peer assessment survey and methodological differences to previous approaches can be found in the online Appendix Section 1.

Since the aim of the MP survey was to benefit from respondents' particular expertise with regard to well-known colleagues, each MP was asked to answer the six questions for 12 randomly drawn MPs being active in the same standing committee or parliamentary party group. For each question respondents were asked to indicate on a five-point scale to which degree they agree/disagree with a statement about the parliamentary performance of these colleagues during the current legislative term. All in all, the MP survey provided 6576 evaluations covering 93.1% of our population of Belgian MPs.

The response rate to the peer assessment survey of 28.3% is comparable with other MP surveys in Europe (Bailer, 2014). I also tested whether the peer assessment survey might be compromised by systematic response bias using a logistic regression with the response variable indicating survey (non-)participation. The results show that the measurement approach is *not* compromised by any significant participation patterns.[13] Additionally, I also test and correct for various potential sources of rater bias (see below).

MPs participating in a peer assessment survey might apply personal standards and accordingly rate (groups of) MPs differently. Due to the strongly party-dominated context (De Winter & Dumont, 2006) the risk of bias due to interpersonal processes is particularly high. The classic peer assessment literature identifies specific indicators for this type of rater bias for members from the same group, dominant members, and based on friendship (Pond & ul-Haq, 1997; Strijbos, Ochoa, Sluijsmans, Segers, & Tillema, 2009). Translating these forms of rater bias into a parliamentary context I test for in-group bias in the form of *same party bias*, *same*

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[13] Additionally to expected lower participation rates in MP surveys for frontbenchers and MPs from larger parties (Bailer, 2014) I tested for potential effects of MPs' gender, language, party ideology, squared party ideology (extremism), and type of parliament (regional vs. federal). Results are shown in the online Appendix Section 2.

coalition bias, *same language bias* as well as *same gender bias*.[14] While friendship bias among MPs can hardly be measured, ideological proximity or – in a more conflictual context – *ideological distance* might capture similar tendencies.[15] In analogy to bias towards dominant members I test for *hierarchy bias* with backbenchers potentially assessing frontbenchers more favourable due to the hierarchical organisation of parliaments.[16] Finally, I also include dummy variables for the survey questions taking *representation effectiveness* as baseline.

In order to detect potential sources of rater bias I make use of a multilevel ordered probit model due to the ordered categorical dependent variable with several ratings from each respondent. Importantly, the model includes varying intercepts *and* varying slopes thereby avoiding to assume identical levels of rater bias estimating also rater-specific coefficients. Furthermore, this model allows to account for varying rater severities (varying intercepts) and varying rater severities over survey questions (varying slopes of question coefficients). Due to the resulting computational complexity inferences are obtained through Markov Chain Monte Carlo simulation in a Bayesian framework with the following model specification:

$$y_i = j \quad \Leftrightarrow \quad \tau_{j-1} < y_i^* \leq \tau_j, \text{ for } j = 1, \dots, J$$

$$y_i^* \sim N\big(X_i B_{m(i)}, \sigma^2\big), \text{ for } i = 1, \dots, N \qquad (1)$$

$$B_m \sim N(G_B, \Sigma_B), \text{ for } m = 1, \dots, M,$$

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[14] All these variables are dummy variables indicating whether two MPs both belong to the same parliamentary party group, a political party that is currently in government/opposition, the same linguistic group, or have the same gender.

[15] The ideological distance of MPs has been measured on the party-level based on CHES 2014 data.

[16] As frontbenchers have been counted MPs with a parliamentary leadership position – including the Speaker, parliamentary Bureau members, parliamentary party group leaders, and committee (vice-)chairs. A dummy variable has been coded as 1 if a backbencher rated a frontbencher and 0 otherwise.

with y_i for N ratings and $J = 5$ ordered categories informing a latent variable y_i^* with $J - 1$ thresholds τ_j setting $\tau_1 = 0$ and $\sigma = 1$ for model identification. $B_{m(i)}$ is a matrix of individual rater bias coefficients for M raters and K predictors. The group-level covariance Σ_B is assumed to follow a scaled inverse-Wishart distribution. I chose the prior distributions $G_k \sim N(0,1000)$ and $\tau_{2:4} \sim N(0,1000)T(0,)$ as well as $K + 1$ degrees of freedom for the scaled inverse-Wishart distribution resulting in a uniform distribution of the correlation parameters.[17]

Based on this model rater biases can correctly predict 59.7% of the ratings[18] underlining the necessity to control for rater bias. In order to account for rater bias I calculate standardised peer assessment scores by subtracting the predicted rater bias for each rating y_i^* from the raw peer assessment scores y_i (see equation 1). The final indicators of the new measurement approach were obtained by taking the mean of all standardised peer assessment scores for every MP for every survey question. This approach results in six indicators of quality and effectiveness with regard to representation, legislation, and control/oversight.[19]

Empirical Analysis

The Belgian institutional context

Despite a context of dominant political parties (De Winter & Dumont, 2006), Belgium is a rather well studied case for the parliamentary behaviour of individual MPs (e.g. Bräuninger et al., 2012; De Winter, 1997). This may also be due to the rather wide range of formal parliamentary tools at the disposal of individual MPs. Moreover, Belgium is characterised by

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[17] Sampling has been done in JAGS running three Markov chains with random initial values for 200,000 iterations each (thinned by a factor of 80) after a burn-in of 80,000 iterations. Convergence diagnostics, model characteristics and results are provided in Appendix 3. For tests of model assumptions and robustness checks see Appendix 4.

[18] Compared to a baseline of 20% based on chance.

[19] All six indicators are normally distributed (for descriptive statistics see Appendix 3.4).

very strong regions with increased powers since the sixth state reform in 2011 (Deschouwer & Reuchamps, 2013). Minor contextual differences due to the linguistic divide as well as a split party system and media landscape allow a first test of the generalisability of the results by including also regional MPs. This article therefore examines the parliamentary performance of MPs from the Belgian Federal Parliament, the Flemish Parliament and the Parliament of Wallonia. In order to analyse the parliamentary performance during the full legislative term all sitting MPs as of October 2018[20] form the 349 units of observation.[21]

Empirical dimensions of parliamentary performance

Based on the more encompassing measure of parliamentary performance presented above we can now turn to testing the hypotheses on the dimensionality of parliamentary performance. I first examine the clustering of parliamentary performance indicators in an exploratory factor analysis (EFA) before testing the findings in a confirmatory factor analysis (CFA). The factor models rely on distributional assumptions about the data and the correlation of factors. Therefore, parliamentary activity indicators have been log-transformed and standardised by activity level per parliament to obtain normally distributed data and to account for eventual context-specific differences.[22] Furthermore, I employ factor models that allow to estimate the correlation of factors in order to examine the theoretical expectations (H2).[23]

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[20] General elections took place on 26 May 2019 ending a five year term (2014-2019). One of the parties in government left the federal coalition shortly before the data collection. This did not lead to a lower perceived quality of parliamentary work for federal MPs (see Appendix 5.1).
[21] Complete data on all indicators is available for 325 MPs representing 93.1% of our population.
[22] MPs differ significantly in their amount of used parliamentary tools resulting in right-skewed distributions. Since it is not possible to take the logarithm of zero, 0.5 has been added to all parliamentary activity indicators (see e.g. Däubler et al., 2016; Marangoni & Russo, 2018). All 13 indicators of parliamentary performance approximate normal distributions without major differences across parliaments. Descriptive statistics are provided in Appendix 5.1.
[23] The analysis has been implemented with the psych package in R using maximum-likelihood estimation with "oblimin" rotation.

The results of the exploratory factor analysis can be summarised by three major findings. First of all, I examined whether parliamentary performance can be captured by a single factor (H1). An extremely low model fit indicates that one single factor is not sufficient to summarise the data implying that parliamentary performance cannot be reduced to a coherent overall index.[24] The next question is then how many factors are needed to effectively summarise parliamentary performance. Since there is no generally accepted single criterion to determine the exact number of factors, I rely on a combination of selection criteria rejecting models with an insufficient number of factors to withstand conventional assessments of model fit.[25] The results show that parliamentary performance can be best summarised by five factors.[26] Instead of developing a single index of parliamentary performance these findings suggest that parliamentary performance may be best represented by five indices capturing its different dimensions.

Secondly, the exploratory analysis suggests that parliamentary performance consists of two factors capturing more qualitative aspects of parliamentary work in addition to three factors of parliamentary activity. On the one hand, Factor 2 is mainly capturing aspects of the quality of parliamentary work with regard to representation and control. The indicators primarily loading on this factor mainly emphasise the content of parliamentary work capturing MPs' focus on relevant societal problems and loyalty towards voters. This factor is hence labelled *content of parliamentary work* potentially bringing together aspects related to MPs' trustworthiness in the eyes of voters. On the other hand, Factor 3 is rather dominated by legislative effectiveness and therefore called *policy-making effectiveness*. This factor is related to what has been labelled legislative effectiveness in other contexts, however, taking also aspects of less visible parliamentary work and policy influence through government control into account. Note that

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[24] See online Appendix Section 5.
[25] The applied model fit criteria are: Chi^2 Statistic with $p > 0.05$, TLI > 0.95, RMSEA < 0.05, SRMSR < 0.06 (Hu & Bentler, 1999).
[26] Model fit indices for a five factor solution: Chi^2 = 17.06 ($p = 0.81$); TLI = 0.97; RMSEA = 0.05; SRMSR = 0.03. Alternative specifications result in inferior model fit (see online Appendix Section 5).

both factors are only weakly correlated with the three factors capturing parliamentary activity. These findings provide some support for hypothesis (H2) suggesting that parliamentary performance cannot effectively be measured with parliamentary activity indicators only.[27]

Thirdly, parliamentary activity indicators cluster around central parliamentary tasks (*representation activity*, *control activity*, and *legislative activity*) as hypothesised based on the theoretical framework (H3). This holds also when reducing the measure of parliamentary performance to indicators of parliamentary activity.[28] Moreover, these factors are only moderately correlated with each other. Scholars hence need to be more cautious when summarising parliamentary activity data in a single index. However, parliamentary activity might form an overarching concept[29] being composed of underlying parliamentary activity dimensions.

[Table 3 about here]

The robustness of these findings has been tested with untransformed data, employing different rater/factor models, and separate analyses for parliaments as well as quantitative vs. qualitative aspects of parliamentary performance all leading to very similar results.[30] However, the generalisability of the precise clustering of parliamentary activity indicators might be more limited pointing to potentially different parliamentary functions that specific parliamentary tools can be employed for in different contexts. Contrary to the factors of parliamentary activity,

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[27] While factors of parliamentary activity and more qualitative factors are only weakly correlated, a potential underestimation of the correlation due to different data sources cannot be excluded. However, such an effect has been kept minimal by normalising and standardising the data (see above).

[28] Results for parliamentary activity indicators only can be found in the online Appendix Section 5.

[29] Overarching should not be considered as more or less important but simply as being of more general nature covering several underlying dimensions (the five more specific factors of parliamentary performance previously identified in the EFA).

[30] Results of all robustness checks can be found in online Appendix Section 6.

the more qualitative dimensions of parliamentary performance appear to be stable over the different contexts.

Finally, the findings of the exploratory factor analysis have also been examined in a confirmatory factor analysis allowing to test the hypotheses on the dimensionality of parliamentary performance more explicitly. The dimensional structure of parliamentary performance has been modelled in accordance with theoretical expectations and the findings of the exploratory analysis. Additionally to the five previously identified factors it has also been tested whether two more general aspects of parliamentary performance can be distinguished: overall parliamentary activity and more qualitative aspects of parliamentary work (see above).[31] The results of the confirmatory factor analysis with parliamentary performance data for 325 Belgian MPs (see above) provide additional support for the three hypotheses and the findings from the exploratory analysis (see Figure 1).[32] Notably, the emergence of parliamentary activity as an overarching concept covering more specific dimensions of MPs' quantitative parliamentary performance may provide a promising (though more indirect) alternative for scholars to capture MPs' overall parliamentary activity in a single coherent index.

[Figure 1 about here]

The findings of this article imply that future studies may need to pay closer attention to theoretically and empirically identified dimensions of parliamentary performance. Public

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[31] The five dimensions of parliamentary performance have been captured with the two most suitable indicators each according to the EFA. Additionally, plenary questions were allowed to load on representation activity <u>and</u> control activity as implied by theoretical expectations and the results of the EFA.

[32] The model has been fit in R with the package lavaan. The lavaan model specification, model fit statistics, and the full results can be found in Appendix 7. The robustness of the results has been further examined by employing a simpler factor model without second-order concepts and alternative rater model specifications all leading to almost identical results (see Appendix 8).

evaluations of MPs' parliamentary work could for example evaluate MPs' parliamentary work on specific dimensions of parliamentary performance. Information on multiple dimensions of parliamentary performance would allow voters to determine the respective 'parliamentary profile' of an MP.[33] Noteworthy, the above presented evaluation of MPs' parliamentary work alongside several dimensions shows that the performance of two exemplary Belgian MPs appears to be rather similar when only analysing their parliamentary activity. However, they differ fundamentally with regard to the quality and effectiveness of their parliamentary work (see Figure 2). This article therefore stresses the importance to take also less easily available data for evaluations of parliamentary work into account to avoid neglecting differences in the parliamentary performances of MPs with regard to more qualitative aspects of their work.

[Figure 2 about here]

Conclusion

Scholarly attention on the conceptualisation of parliamentary performance has not kept step with the increasing popularity of public parliamentary monitoring initiatives. Moreover, previous studies have frequently been restricted to quantitative assessments of MPs' use of parliamentary tools such as oral or written parliamentary questions. The approach I propose here includes also more qualitative aspects of parliamentary work and distinguishes between parliamentary functions (rather than employing one single indicator). The new measure makes use of an innovative method to capture aspects beyond parliamentary activity relying on peer

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[33] The overall performance then depends on voters individually weighing these dimensions.

assessment and a statistical approach to control for rater bias. Factor models analysing the dimensional structure of parliamentary performance show that the indicators of the new measure of parliamentary performance cluster into five dimensions. The results for the case of Belgian MPs indicate that parliamentary performance can neither be reduced to a coherent overall index nor to indicators of parliamentary activity alone. Additionally to indicators of parliamentary activity clustering largely around parliamentary tasks, more qualitative aspects of parliamentary performance consist of MPs' policy-making effectiveness as well as a more content-oriented factor.

These findings suggest that future evaluations of MPs' parliamentary work should possibly take also more qualitative aspects related to MPs' policy-making effectiveness and the content of parliamentary work into account. Given time- and labour-constraints, it might not always be feasible to gather this kind of information. Nevertheless, even when working only with (more accessible) data on parliamentary activity, researchers should be aware of the potential existence of multiple dimensions. MP evaluations focusing on different dimensions may provide particularly interesting information to voters but have too often been neglected. This lack of attention is particularly deplorable because more elucidated voters could directly and indirectly contribute to increasing the quality of democratic institutions. While voters could make better informed choices during elections, political parties might feel incentivised to do the same anticipating voters' content. Parliamentary monitoring organisations and independent media can play a key role in order to provide easily accessible information about MPs' parliamentary performance to voters. Based on the findings of this article they could invest more into capturing multiple dimensions of parliamentary performance. This would allow voters to be better informed about respective 'parliamentary profiles' of MPs. A more nuanced debate about parliamentary performance underlining the diversity of parliamentary work could also counter unjustified general resentments against 'lazy, self-serving politicians'.

The newly identified dimensions of parliamentary performance may stimulate further research analysing the (relative) importance of different dimensions of parliamentary performance to voters and party selectors. Testing empirically the suitability of potentially inherent normative assumptions allows to link parliamentary performance more directly to normative debates. Moreover, the multidimensionality of parliamentary performance opens new avenues for theoretical and empirical contributions explaining MPs' choices of adopting certain 'parliamentary profiles' e.g. due to parliamentary roles. Future research could also examine the role of rater bias in contexts where peer assessment has become more established and compare measures of parliamentary performance with evaluations of MPs' extra-parliamentary work. Finally, other potential dimensions of parliamentary performance may have remained undiscovered for the here analysed case due to restrictions imposed by the chosen measurement approach. The findings of this article should therefore also be tested in other institutional contexts as well as based on other operationalisations capturing MPs' parliamentary work *behind the scenes*.

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Tables

Table 1: Operationalisation of parliamentary performance with regard to formal parliamentary activity indicators.

Aspect of Parliamentary Performance	Indicator
Representation Activity	Speech Frequency Speech Length Plenary Questions
Control Activity	Plenary Questions Committee Questions Written Questions
Legislative Activity	Private Members' Bills Resolutions

Table 2: MP peer assessment survey

Aspect of Parliamentary Performance	Peer Assessment Survey Statement (disagree/agree, five-point scale)
Representation Quality	He/she is very loyal towards his/her voters (e.g. he/she keeps his/her electoral promises).
Legislative Quality	He/she is very competent to develop legislative initiatives to solve current problems in society.
Control Quality	Controlling the government with his/her parliamentary work he/she focuses on relevant problems in society (instead of insignificant questions).
Representation Effectiveness	In comparison with other MPs he/she is very successful in representing the interests of his/her voters attracting attention to topics that are important to them.
Legislative Effectiveness	He/she is very successful in building support among other MPs for his/her legislative initiatives.
Control Effectiveness	In comparison with other MPs he/she has more policy impact with his/her parliamentary control work (parliamentary questions, committee work, budgetary control).

Statements presented to MPs (disagree/agree, five-point scale) with regard to the parliamentary work of colleagues during the current legislative term.

Table 3: Exploratory factor analysis with 13 indicators of parliamentary performance for 325 Belgian MPs.

	Factor 1 (Repr. Activity)	Factor 2 (Content of Parl. Work)	Factor 3 (Policy-Making Effectiv.)	Factor 4 (Control Activity)	Factor 5 (Legisl. Activity)	Unique-ness
Speech Frequency	**0.96**	0.01	-0.02	-0.1	0.13	0.031
Speech Length	**0.94**	-0.03	0.03	0.06	-0.05	0.104
Plenary Questions	**0.64**	0.07	-0.02	**0.33**	0	0.273
Written Questions	-0.1	-0.03	0.03	**0.71**	0.14	0.443
Committee Questions	0.2	0.03	0.01	**0.64**	0.05	0.379
Private Member Bills	0.16	0	0.05	0.08	**0.44**	0.643
Resolutions	0.03	0.03	0.02	0.06	**0.74**	0.353
Represen. Effectiveness	0.22	**0.56**	0.07	0.07	-0.04	0.556
Legisl. Effectiveness	-0.01	-0.01	**1**	0	0.01	0.005
Control Effectiveness	0.1	**0.42**	**0.34**	0	-0.04	0.594
Representation Quality	-0.05	**0.72**	-0.09	-0.02	0.05	0.511
Legislation Quality	0.02	**0.49**	0.2	-0.03	0.01	0.653
Control Quality	-0.07	**0.79**	-0.02	-0.01	0.01	0.396
Proportion Variance	0.2	0.15	0.1	0.1	0.08	
Factor 1	1	0.18	0.14	0.47	0.51	
Factor 2	0.18	1	0.32	0.09	0.25	
Factor 3	0.14	0.32	1	0.16	0.11	
Factor 4	0.47	0.09	0.16	1	0.51	
Factor 5	0.51	0.25	0.11	0.51	1	

Factor models with oblique rotation, correlations of latent factors in the lower part of the table.
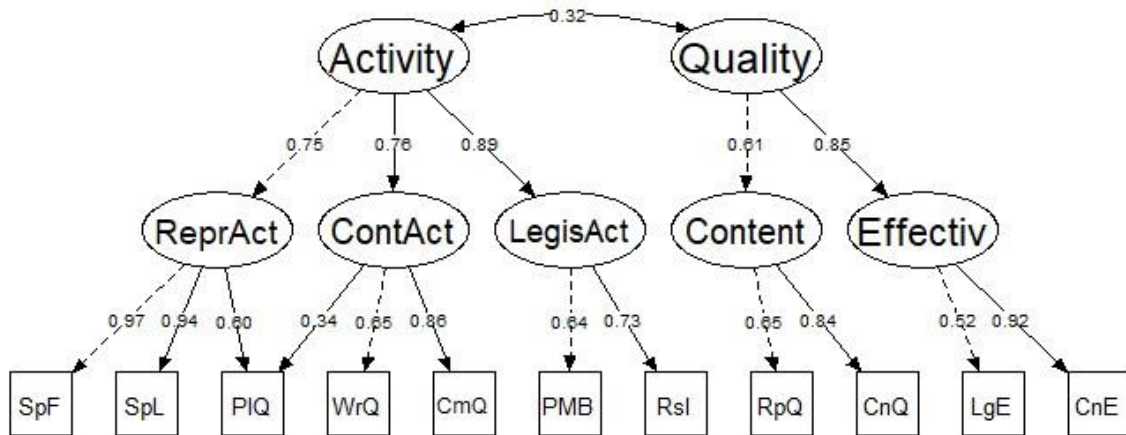
Figures

Figure 1: CFA of the dimensional structure of parliamentary performance. Elliptical shapes represent latent variables, squared shapes observed indicators. Two-sided arrows show correlations, one-sided arrows manifestations based on linear regression. Standardised parameter estimates reported for ease of interpretation (unstandardised estimates in Supplementary Appendix). Dotted lines indicate factor loadings fixed at 1 on original scale for model identification. The following abbreviations have been used: Activity (parliamentary activity); Quality (quality of parliamentary performance); ReprAct (representation activity); ContAct (control activity); LegisAct (legislative activity); Content (content of parliamentary work); Effectiv (policy-making effectiveness); SpF (plenary speech frequency); SpL (plenary speech length); PlQ (plenary questions); WrQ (written questions); CmQ (committee questions); PMB (private members' bills); Rsl (resolutions); RpQ (representation quality); CnQ (control quality); LgE (legislative effectiveness); CnE (control effectiveness).
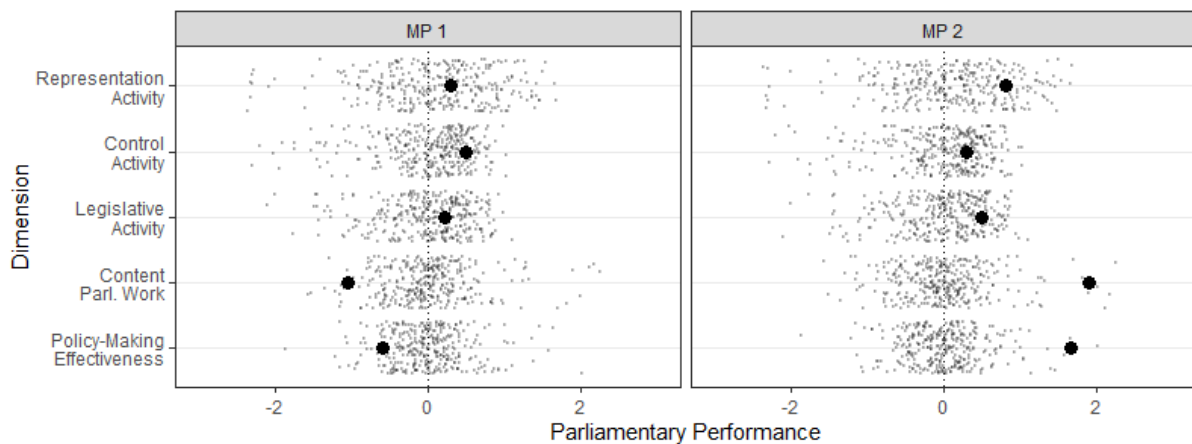

Figure 2: Parliamentary performance of two exemplary MPs on five dimensions. Large points, scores of MP; Small points, scores of other Belgian MPs for comparison. Parliamentary performance scores are predicted values from CFA for 325 Belgian MPs.