Does Access Mean Success? Connection to Policymakers and Lobbying Influence in the European Union*

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Abstract

This article studies the effect of access to policymakers on lobbying influence, in the context of European Union regulations. I compile novel textual data from a public consultation platform and identify policy changes between the draft and adopted versions of 900 regulations. I measure lobbying success of comments using two complementary approaches: a plagiarism-detection algorithm and a large language model. I measure access to policymakers using the list of direct meetings held between Commission members and organizations. I find that comments submitted by organizations with access are significantly more likely to lead to regulatory changes than similar comments on the same regulation from organizations without access. The effect is driven by comments from organizations with more meetings or with access to top-level officials. I exploit the timing of meetings and the turnover of policymakers across mandates to distinguish between four potential channels: information transmission, insider knowledge acquired, political connections built, and signal for higher intrinsic quality. I find that connections play a crucial role for access to translate into increased influence. Lastly, using within-organization variation in active connections before and after the mandate change, I show that retaining connections enhances an organization's influence.

Keywords: Political economy, Lobbying, Advocacy, Interest groups, European Union

JEL codes: D72, P48

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1 Introduction

While policymakers need information from stakeholders to design relevant policies, it remains unclear to what extent lobbying actually shapes policy outcomes. Beyond the transmission of relevant information, influence may also be obtained through political connections. This raises concerns about whether the interests represented in the policymaking process are broad and balanced, or disproportionately reflect those of well-connected actors. Although lobbying registries have become increasingly common in democracies, determining whether lobbying efforts translate into actual policy changes remains a significant challenge. Influence is inherently difficult to observe, making empirical measures a persistent obstacle.

This paper provides evidence that organizations with direct access to policymakers benefit from a greater influence in shaping policies, through the political connections they build. I analyze policy changes between draft and final regulations adopted by the European Commission, the online comments submitted on the drafts, and the meetings held between organizations and members of the Commission. The choice of Commission regulations as the focal point for this study is strategic for several reasons. First, the Commission has to publish the draft of each of these regulations, and open it to public comment for four weeks. The drafts are complete and internally validated, such that they could be adopted with no modification. It facilitates a detailed observation of the evolution of the text and makes the comparison with the adopted text a reliable measure of policy changes. This distinguishing feature of systematic draft publication sets Commission regulations apart from other policymaking processes involving comments, such as those in the United States rule-making.

Second, the commenting platforms offer an observable measure of lobbying activities and its content. The combination of the observed policy change with the content of the comments enables me to identify instances of lobbying success, where policy changes align with the requests made in the comments. The third advantage of studying Commission regulations is the availability of data on meetings held between members of the European Commission and organizations. Lastly, the European Union regulates key areas for its 450 million inhabitants across 27 countries, ranging from determining CO2 emissions allowed per type of vehicle to dictating permissible chemicals and their quantities, as well as establishing energy efficiency requirements for household appliances. EU regulations are also of major importance beyond the EU borders as they influence global standards and policies through the "Brussels effect" (Bradford, 2020).

To estimate the effect of access on lobbying influence, I compile a novel dataset on 904 Commission regulations. For each of them, I gather the draft regulation along with its annexes, the received comments together with their respective attachments and information

on respondents, and the adopted regulation and its annexes. The extensive dataset encompasses a total of 129,153 comments. To identify substantive policy changes, I isolate the legally binding parts of texts and analyze modifications between the draft and the adopted version. I then identify instances of lobbying success by comparing these policy changes with the received comments using two complementary methods. First, I rely on a plagiarism-detection measure, where I compare word sequences in comments with policy changes. It is a transparent and reproducible way to assess influence, but offers little flexibility.

Second, I build a lobbying success measure with a large language (GPT-4 from OpenAI). It offers a more flexible way of assessing the success of comments, while being less transparent. I combine these data with a measure of access to policymakers for each comment. I use the list of meetings conducted between European Commission members or Directors-General and organizations, spanning the years 2014 to 2023 and including details on 36,101 meetings. For a given comment, the access variable indicates whether the organization submitting it had a meeting with the Commission at any point in time before the adoption of the commented regulation.[1] Because a meeting sets the access variable to one for all future comments from this organization, there is limited within-organization variation in access. I thus create a balanced sample of comments to account for the potential differences between comments by organizations with and without access to the Commission.

I establish three main sets of results. First, I show that comments submitted by organizations with direct access to policymakers are significantly more likely to be successful than similar comments submitted on the same regulation by organizations without such access. This result is robust to using the plagiarism-detection algorithm or the large language model measure. I also show that the effect found is driven by comments from organizations with more numerous meetings or with meetings with top-level politicians or bureaucrats.

Second, I study the underlying mechanisms of this increased influence due to access. I distinguish four potential channels: information transmission, insider knowledge acquired, political connections built, and signal of higher intrinsic quality of the organization. Leveraging the timing of meetings and the turnover of policymakers between two Commission mandates, I define four types of access. Each type of access provides a different combination of the four channels that can translate into increased influence. I find that past access to members of the previous Commission who stayed in the Commission after the change of mandate increases success chances. The other types of access, such as contemporaneous access or future access, do not display substantial positive effects. In particular, the effect of past access with members who stayed is significantly larger than the effect for past access

[1] See Binderkrantz et al. (2017) for a discussion on existing measures of interest group access.

to members who left. It indicates that political connections built play a crucial role in the increased influence due to access, outweighing the influence of the other channels.

Third, I exploit the within-organization variation in active political connections created by the change of mandate to estimate the effect of keeping or loosing a political connection on an organization's influence. I find an organization keeping at least one active political connection from the last mandate becomes more influential than it was. It indicates that these meetings keep bringing benefits to the organization, either through the political connections kept, or through the insider knowledge accumulated. On the other hand, organizations loosing all their connections with the change of mandate do not experience the same increased influence, or even experience a decrease in their chances of lobbying success. While these organizations should keep the benefits from the insider knowledge accumulated, this result can only be attributed to the loss of their political connections. It confirms that active political connections represent the primary channel through which organizations with direct access to policymakers have more influence in shaping the European Commission regulations.

This paper first contributes to the literature on the influence of lobbying on policies (Baumgartner et al., 2009; Klüver, 2012; Mahoney, 2007). The literature mostly uses lobbying expenditures as a measure of lobbying activities, and to a smaller extent, the textual content of lobbying activities. Anger et al. (2015, 2016); Burghaus et al. (2019) find that lobbying expenditures affect the energy prices a sector faces and the allocation of free allowances under the EU Emission Trading Scheme the different sectors obtain. Meng and Rode (2019) use stock market prices' reaction to the probability of a bill to be passed to estimate the expected effect of the bill on different firms and infer the direction of their lobbying. Bertrand et al. (2021) study comments in the US rule-making process and show that comments of corporations giving money to nonprofits commenting on the same text are closer to the adopted regulation. The US setting does not offer systematic access to a drafted regulation before comments, but only to a notice of information, which prevents them from controlling for the proximity to the initial position of the policy-maker.[2] To my knowledge, this paper is the first to systematically measure policy changes. This considerably enriches the analysis, as measuring policy changes is key to identify lobbying influence.

Second, I contribute to the literature on political connections. Fisman (2001) finds that connected firms suffer more than less-connected firms from negative shocks on politicians. Bertrand et al. (2018) also show the substantial cost of political connections for firms, as they maintain unprofitable activities to avoid job destruction in election years for instance. Brown and Huang (2020) show that firms meetings with US federal government officials receive more

[2]See Bombardini and Trebbi (2020) for a more complete review of empirical studies on lobbying.

government contracts and regulatory relief, and that they experience significantly lower stock returns once they are expected to loose their political access following the announcement of elections result. Studying Nazi Germany, Ferguson and Voth (2008) also show that firms connected to the Nazi movement experienced unusually high returns. Bertrand et al. (2014) show that lobbyists connected to politicians benefit from a more consistent monetary premium than the one measured for expertise. I contribute to this literature by showing that organizations benefit from their political connections on the regulatory dimension as well: connected organizations have the opportunity to influence the final form of regulations more than non-connected organizations.

Third, this paper closely relates to the literature on the determinants of lobbying success in EU consultations (Klüver, 2013). Bunea (2013) shows business groups have a higher degree of lobbying success relative to other stakeholders in five environmental consultations. Studying nine environmental consultations, Hermansson (2016) highlights the importance of expertise and finds business organizations are more likely to be successful even in the absence of expertise on a specific policy issue. In contrast, Dür et al. (2015) finds that citizen groups are more likely to be successful. Lee et al. (2024) analyze the role of lobbying in Canadian front-of-pack labelling regulations. Binderkrantz et al. (2021, 2023) discuss the different kinds of EU consultations. In this paper, I study the Commission online commenting procedure on 904 draft regulations and I show that organizations with direct access to policymakers are the most influential in this open online consultation.

The remainder of the paper is organized as follows. Section 2 details the context of this study and describes the data I use to measure policy changes, lobbying influence, and direct access to policymakers. The effect of access on influence is studied in Section 3 and the underlying mechanisms are presented in Section 4. Section 5 discusses the welfare implications of the results and Section 6 concludes.

2 Context and Data

2.1 EU Policy Making

Policies adopted by the European Union (EU) affect 450 million citizens across 27 countries. It also has farther-reaching consequences through trade policies. Regulations adopted by the EU define standards that are used by multinational companies as global standards, given the size of the EU market and the strictness of its regulations. This phenomenon is called the Brussels effect (Bradford, 2020).

The European Union policymaking process provides a unique context in which one can observe the position of the policymaker at two points in time, as well as the content of lobbying happening in between, and the meetings of policymakers with organizations.

The draft publication and comment process I study was introduced in 2015, as a part of the European Commission's strategy to restore citizens' and businesses' confidence in its "ability to deliver" (European Commission, 2015). It applies to the acts adopted by the Commission without going through the vote of the European Parliament or of the Council of the EU. The Commission is the executive body of the EU, it is proposed and appointed by the European Council, and validated by the Parliament. It is not directly accountable to voters (Besley and Coate, 2003) and has been argued to lack democratic legitimacy. The Commission seeks to increase transparency, legitimacy, and accountability of its work by inviting inputs from civil society and "by the active engagement of civil society" (European Commission, 2017). This process of draft publication and comments became mandatory in November 2021 (European Commission, 2021b). It applies to delegated acts,[3] implementing acts,[4] and legislative acts under the regulatory procedure with scrutiny (RPS).[5] Acts can be decisions, directives, or regulations. In this paper, I focus on regulations as they are legal acts of general application, and are binding automatically and uniformly to all EU countries. It makes the European Commission a relevant target for lobbying on these issues.

The draft publication and comments process works as follows. Drafts are made publicly accessible online. The draft publication can only be done once per act and is irreversible. It thus has to go through interservice consultation first and be approved by the hierarchy (European Commission, 2021a). Given the level of validation and the public and official nature of these drafts, they act as counterfactuals of the text that would have been adopted without the commenting process. Drafts are then open to comments for four weeks. Any individual or entity can write a comment, in any of the 24 official EU languages. Comments are limited to 4,000 characters and can include one attachment. The comments are assessed and the final text is adopted after potential modifications.

2.2 Data

Drafts, Comments, and Adopted Texts. I collect delegated regulations, implementing regulations and regulations under the regulatory procedure with scrutiny of the European Commission. For 904 regulations subject to the draft publication and comments process,

[3]Delegated acts are acts that add or amend aspects of existing laws.

[4]Implementing acts set out rules to make sure Member States implement EU legislation in the same way, such as measurement standards.

[5]RPS existed between 2006 and 2009 for adopting EU secondary legislation. It is aimed to be phased out but is still used today as hundreds of basic legislative acts still provide for this procedure.

I gather the official draft, the comments received, and the adopted text for each initiative. In total, there are 129,153 comments. Comments can be submitted in any of the 24 official EU languages. I translate all comments and related attachments into English. I also gather information on which Directorate-General is in charge of each initiative, the exact date of each comment, and information on organizations writing the comments.

Information on entities includes the user type and country of origin, as well as the organization name and size when relevant.[6] The type is selected by the user among "academic/research institution", "anonymous", "business association", "company/business organisation", "consumer organisation", "environmental organisation", "EU citizen", "non-EU citizen", "non-governmental organisation", "public authority", "trade union", and "other". I group the EU citizen and the non-EU citizen categories into a "citizen" category and I create an EU indicator variable based on the declared country of origin.

Meetings with Commission members. I collect the universe of meetings held between interest representatives and members of the European Commission or Directors-General. I gather 39,098 meetings for the 2014-2023 period, with information on attendees and the exact date of the meeting. Several organizations sometimes have meetings together. Considering meetings at the organization level, I obtain 45,047 observations. I use Transparency Register IDs and name matching to match organizations having meetings and organizations writing comments. The matching procedure of comments and meeting data is described in Appendix C.

From the meeting data, I define the access variable $Access_{ir}$ for organization i submitting a comment on regulation r. I set $Access_{ir}$ to one if entity i meets with the Commission at least once before the adoption of regulation r. I include all meetings happening prior to the comment or the draft publication, but I exclude meetings held after the adoption of r.

Descriptive statistics. My sample consists of 129,153 comments on regulation drafts of the European Commission during the 2015-2023 period. The majority of comments are written by citizens (119,593 comments), followed by the business sector (2,835 from companies and 2,580 by business associations), anonymous entities (1,241), and NGOs (1,141). The full distribution is presented in Table 1. Citizens do not have access to direct meetings with policy-makers, while organizations do. Overall, 2.06% of comments are written by an entity with access to policy-makers. This share increases to 32.3% when removing citizens and

[6] I do not use the size variable as it is based on the number of employees and is ill-suited to measure the size of business associations, consumer organizations, or NGOs. The number of employees leads to classifying major actors such as BusinessEurope, the Bureau Européen des Unions de Consommateurs (BEUC), or WWF European Policy Programme as "Small (10 to 49 employees)".

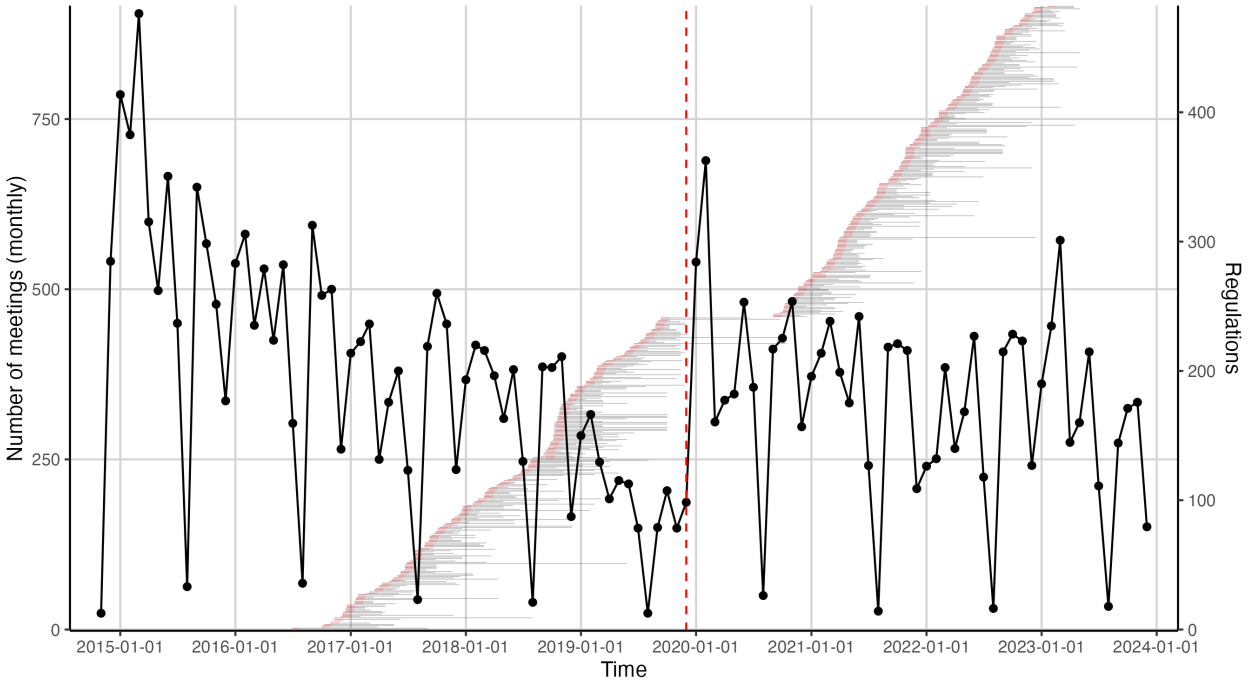
anonymous entities from the sample, as I cannot assess access for them.

Business associations writing comments have proportionally more access to policy-makers compared to other actors writing comments. 46.40% of comments written by business associations are written by a business association having access to policy-makers at least once before or contemporaneously to this comment. Business associations are also historically closer to the European Commission. The Commission sought legitimacy through connection with industries and supported the creation of several business associations in the 1960s. Aiming at gaining further legitimacy and responding to industry-bias critiques, the Commission started to connect with NGOs in the 1980s (Laurens, 2015). While the Commission sought and created connections with business associations, it started to meet NGOs under public pressure. It seems to translate today into relatively more access for business associations than for NGOs.

Figure 1 displays the distribution of the meetings held between organizations and policy-makers, as well as the monthly distribution of regulations studied. Meetings show a cyclical pattern, with less activity in August and December every year. In addition to these cycles, a downward trend is observed throughout the Juncker Commission mandate. Data cover the entire Juncker Commission (Nov 2014 - Nov 2019) and part of the Von der Leyen Commission (Dec 2019 - Aug 2023). The von der Leyen Commission also displays a spike of meetings in the first months of its mandate. On the contrary, more regulations are adopted towards the end of a mandate, and less at the beginning of a mandate as it takes time. This is coherent with interest groups wanting to meet more with a newly formed Commission to establish a connection, and with the Commission needing time at the beginning of a mandate to elaborate new regulations, and wrapping up ongoing initiatives at the end of a mandate.

I define lobbying success as the inclusion of a comment into the policy changes happening between the draft and the adoption of a regulation. The main measure I use is based on text reuse. In this case, y_{ir} is a 0/1 categorical variable constructed as follows. Consider first the set of word sequences of a regulatory text r that have been modified between the draft and the adopted text. Consider then the set of word sequences of a comment from entity i on regulation r. If there is any overlap between the set of *modified* word sequences from the regulatory text r and the set of word sequences from i's comment on r, I set the variable y_{ir} equal to 1. This measure presents the advantage of being transparent and easy to understand, although it offers little flexibility. Alternatively, I use a measure based on the large language model (LLM) provided by OpenAI: GPT-4. The LLM measure is more flexible but less transparent. Using a large language model enables me to get a more refined measure of success. A rapidly growing literature uses GPT in social sciences to deal with text data and overcome the limitations of less nuanced natural language processing tools (Djourelova

Figure 1: Monthly distribution of meetings with policy-makers and regulations studied



Notes. The vertical red dashed line represents the change of Commission. The Juncker Commission mandate lasts from November 2014 to November 2019. The first Von der Leyen Commission starts in December 2019. Black dots and line represent the number of meetings held per month (left-axis). Each red and gray horizontal line represents a regulation studied, they start at the draft publication date and finish at the date of adoption. The red part represents the 4-week commenting period. The right axis refers to the number of cumulated regulations.

et al., 2023; Gilardi et al., 2023; Törnberg, 2023). Appendix B.1 details the construction of these two measures.

Table 1 presents the share of successful comments based on these two measures. I find more successful comments when using the plagiarism-detection algorithm: 29% of the comments are identified as successful when excluding citizens and anonymous from the sample, while only 13% comments are successful when measuring with the LLM-based measure. Shared verbatim between a comment and the modified text is more frequent than success assessed by GPT-4. Comparing the three main actors (companies, business associations, and NGOs), comments by companies are on average less successful than comments by business associations or NGOs. The measure provided by GPT-4 also presents smaller variations between business associations and NGOs' success rates.

I read a random sample of successful comments as assessed by GPT-4 to understand the meaning of these changes. Due to the nature of regulations, comments are highly technical. I observe that a large number of successful comments are successful in adding exemptions

Table 1: Distribution of Success and Access per Actor Type

Type	N	Access (%)	Success (%)	
			Plagiarism	LLM
Academic/research Institution	251	7.97	26.29	5.98
Anonymous	1,241	-	15.07	-
Business association	2,580	46.40	35.35	15.04
Citizen	119,593	0	0.06	-
Company/business org.	2,835	27.20	27.90	12.24
Consumer organization	78	35.90	12.82	8.97
Environmental organization	160	25.62	23.75	20.63
NGO	1,141	36.99	24.36	13.50
Other	709	18.19	20.59	8.32
Public authority	452	2.43	33.85	15.49
Trade union	113	38.05	14.16	14.16
Total	129,153	2.06	2.06	-
w/o citizen and anonymous	8,319	32.30	28.97	13.09

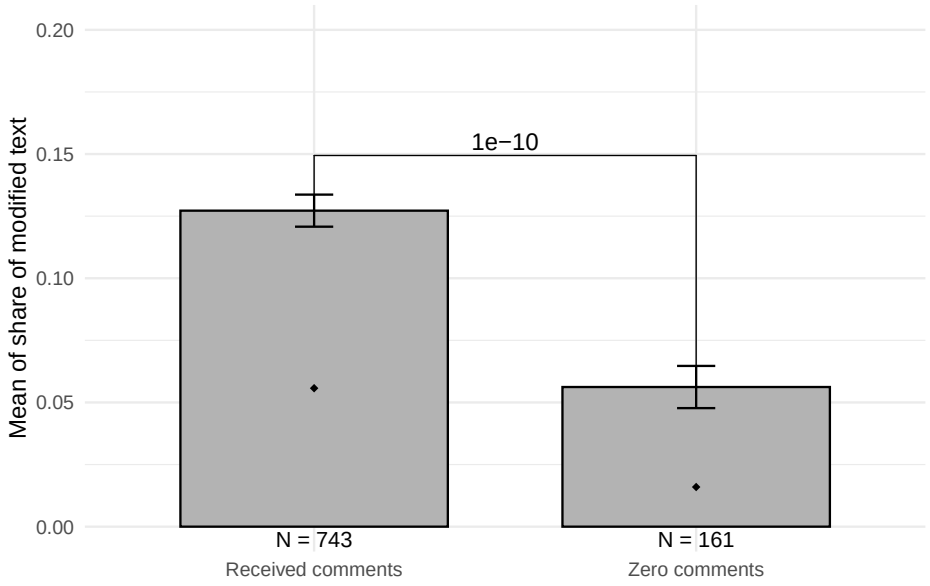
Notes. This table displays the number of comments written per type of actor, their access rate, and success rate. Access equals one when the entity writing the comment met with the European Commission at least once before the adoption of the corresponding regulation. Success is based on the plagiarism-detection measure in Column (4) and on GPT-4 in Column (5).

related to their specific sector, especially from companies. Other comments are successful in changing the implementation date of a regulation, adding up to 10 years before having to align with an environmental regulation for instance.

On average, a regulation contains 13% of new or modified text after comments. 62 regulations are not modified at all between the draft and the adoption. Among these modifications, I map an average of 10.72% to specific comments with the text reuse method. Appendix Table 12 displays the number of initiatives per Directorate-General, together with the average share of modified text, the average number of comments received, and the share of modifications that can be mapped to at least one specific comment.

Additionally, I gather 161 regulations and their associated drafts, on which no comment was submitted. Their share of modified text between the draft and the adoption is significantly smaller compared to regulations receiving comments. Figure 2 shows the mean difference between both groups of regulations. Comments are associated, on average, to more modifications between the draft and the adoption.

Figure 2: Mean Differences - Share of modified text



Notes. Means and standard errors of the share of modified text in a regulation compared to its draft. The left bar represents the mean for regulations receiving comments. The right bar corresponds to regulations that did not receive any comment. The diamonds represent the median share of modified text for each group of regulations. The line between the two bars display the p-value of the statistical difference between the two means.

3 Lobbying Success and Access to Policy-Makers

This section investigates the relationship between an organization's access to policymakers and the influence of its comment. I begin by presenting baseline estimates of the relationship between access and lobbying success. These naive regressions may suffer from omitted variable bias, as organizations with access could differ in their underlying characteristics or commenting style, which may also impact the likelihood of influence. Since access, as defined in Section 2.2, is relatively stable within organizations and exhibits limited within-unit variation, I analyze the determinants of access and build a balanced sample of comments by organizations with and without access using a propensity score matching strategy to improve comparability and mitigate the endogeneity of access.[7] I then estimate the effect of access to the European Commission on lobbying success within the matched sample. To further understand this relationship, I distinguish access to different Commission hierarchical levels, and different levels of intensity of access, as measured by the number of meetings.

[7]In Section 4.2, I leverage a change of mandate and the associated turnover in policymakers to study the effect of losing a political connection, within organizations.

3.1 Naive Estimations

I relate the lobbying success of a comment written by entity i on regulation r to the access measure described in Section 2.2. The variable $Access_{ir}$ equals 1 if i had direct meetings with policy-makers before the adoption of r. I estimate the following linear probability model.

$$y_{ir} = \alpha + \beta\, Access_{ir} + \eta\, \mathrm{X}_{ir} + \sum_t \gamma_t\, type_i^t + \delta_r + \varepsilon_{ir} \tag{1}$$

y_{ir} is an indicator variable for the success of i's comment on regulation r. X_{ir} is a set of four control variables that may affect the likelihood of a comment's success. It includes two measures of the comment quality: the comment length computed as the log of the number of words, and the comment complexity computed as the average length of words.[8] It also includes a variable indicating whether the comment has been written in one of the main EU languages. As comments can be written in any of the 24 official EU languages and the Commission staff is left in charge of translating it, one can assume that the original language of the comment being English, French, or German might increase its probability of being accounted for. One could also consider that the European Commission prioritizes suggestions made by EU entities, I thus include an EU origin indicator variable.[9] $type_i^t$ represents the type of i among academic/research institution, business association, company/business organisation, consumer organisation, environmental organisation, non-governmental organisation, other, public authority, and trade union. "Company/business organisation" is set as the baseline type as it is the type writing the most comments (see Table 1). Lastly, δ_r indicates regulation fixed effects, which control for regulation-specific changes in practices or ways of drafting the regulation and including comments.

Tables 2 and 3 present the results of this model using, respectively, the plagiarism-detection and large language model measures of success. In both tables, each column sequentially adds controls to the specification. Column (1) includes no controls and relates access to lobbying success directly. Column (2) adds observable comment-level characteristics, and a variable indicating whether the commenting organization is from the EU. Column (3) further controls for the type of organization. Column (4) restricts the sample by excluding citizen and anonymous submissions, which cannot be matched to meetings. Finally, Column (5) includes regulation fixed effects to account for unobserved heterogeneity across draft texts.

In the full sample without any controls (Columns (1)), I find large raw associations between access and lobbying success: access is associated with a 39 and 15 percentage points

[8] Appendix B.2 describes the construction of these two comment quality measures in detail.
[9] The UK is considered within the EU for comments written until January 31st, 2020.

Table 2: Baseline results - Plagiarism-detection

Dependent variable:	Lobbying success (Y = 1)				
Mean (s.d.)	.0206 (.142)			.290 (.454)	.291 (.454)
	(1)	(2)	(3)	(4)	(5)
Access before adoption	.390***	.304***	.115***	.0596***	.0505***
	(.00255)	(.00253)	(.00283)	(.0102)	(.0102)
Comment length		.0773***	.0747***	.155***	.132***
		(.000718)	(.000674)	(.00390)	(.00410)
Comment complexity		.0140***	-.00624***	-.0420***	-.0529***
		(.000800)	(.000756)	(.00750)	(.00780)
Main EU languages		.0149***	.00552***	.0679***	.0530**
		(.000762)	(.000709)	(.0163)	(.0169)
EU origin		-.0644***	.000353	.0266	.0163
		(.00173)	(.00183)	(.0144)	(.0145)
Type					
Academic/research			.00776	.000890	.0118
Institution			(.00758)	(.0266)	(.0256)
Anonymous			-.0311***		
			(.00429)		
Business association			.0246***	.00775	.0117
			(.00318)	(.0112)	(.0110)
Citizen			-.223***		
			(.00235)		
Consumer organisation			-.160***	-.155***	-.202***
			(.0132)	(.0463)	(.0448)
Environmental org.			-.0374***	-.0358	-.0800*
			(.00933)	(.0328)	(.0317)
NGO			-.0653***	-.0768***	-.0556***
			(.00404)	(.0142)	(.0146)
Other			-.0348***	.00487	.00680
			(.00484)	(.0174)	(.0171)
Public authority			.0853***	.0753***	.0434*
			(.00586)	(.0206)	(.0208)
Trade union			-.131***	-.102**	-.0869*
			(.0110)	(.0387)	(.0375)
Regulation FE	No	No	No	No	Yes
Observations	129,153	129,153	129,153	8,319	8,227
Adj. R^2	.153	.241	.348	.211	.340

Notes. Estimations results from a linear probability model. The dependent variable equals 1 if i lobbied successfully on r, as measured with plagiarism-detection. The baseline type is "Company/business organization". *p<.05; **p<.01; ***p<.001.

Table 3: Baseline results - Large language model

Dependent variable:	Lobbying success (Y = 1)				
Mean (s.d.)	.00843 (.0914)			.131 (.337)	.131 (.337)
	(1)	(2)	(3)	(4)	(5)
Access before adoption	.149***	.133***	.0255***	.0163	.0141
	(.00173)	(.00181)	(.00210)	(.00850)	(.00854)
Comment length		.00955***	.00604***	.0129***	.0173***
		(.000513)	(.000500)	(.00324)	(.00342)
Comment complexity		.0104***	.00105	.00862	-.00193
		(.000572)	(.000561)	(.00625)	(.00651)
Main EU languages		.00580***	.00102	.0239	.00451
		(.000544)	(.000526)	(.0136)	(.0141)
EU origin		-.00769***	.00483***	.0267*	.00643
		(.00124)	(.00136)	(.0120)	(.0121)
Type					
Academic/research			-.0576***	-.0582**	-.0379
Institution			(.00563)	(.0222)	(.0213)
Anonymous			-.106***		
			(.00318)		
Business association			.0202***	.0169	.0140
			(.00236)	(.00937)	(.00914)
Citizen			-.113***		
			(.00174)		
Consumer organisation			-.0352***	-.0357	-.0439
			(.00979)	(.0385)	(.0374)
Environmental org.			.0839***	.0823**	.0576*
			(.00693)	(.0273)	(.0264)
NGO			.00817**	.00623	.00806
			(.00300)	(.0119)	(.0122)
Other			-.0348***	-.0294*	-.000362
			(.00359)	(.0145)	(.0143)
Public authority			.0384***	.0357*	.0472**
			(.00435)	(.0172)	(.0173)
Trade union			.0177*	.0199	.0451
			(.00818)	(.0322)	(.0313)
Regulation FE	No	No	No	No	Yes
Observations	129,153	129,153	129,153	8,319	8,227
Adj. R^2	.0545	.0617	.131	.0101	.167

Notes. Estimations results from a linear probability model. The dependent variable equals 1 if i lobbied successfully on r, with the large language model measure. The baseline type of entity is "Company/business organization". *p<.05; **p<.01; ***p<.001.

increase in success, respectively, under the plagiarism-detection and LLM-based measures. These magnitudes are substantial, given baseline success rates of 2.06% and 0.84%, respectively. Adding comment quality, language, and organization origin (Columns (2)), I find that longer comments and those using longer words have higher success rates. Comments written in English, French, or German are also more likely to succeed. Interestingly, organizations based in the EU appear to be less successful than their non-EU counterparts. The lower success rate of EU-based organizations may be partly driven by a high volume of unsuccessful comments submitted by EU citizens.

When controlling for the type of organization (Columns (3)), the estimated coefficient for access decreases substantially to 11.5 and 2.55 percentage points, respectively, indicating that the type of an organization plays a key role in explaining its success. In Columns (4) and (5), I restrict the sample by excluding comments from citizens and anonymous actors, as these cannot be matched to meetings. Finally, when adding regulation fixed effects (Column (5)), the estimated coefficient for access remains positive and statistically significant: 5.05 and 1.41 percentage points, relative to mean success rates of 29.1% and 13.1%, respectively. The latter estimate is significant at the 10% level, with a p-value of 0.098.

While the baseline regressions control for observable characteristics, concerns about endogeneity remain. Organizations with access may systematically differ from those without in ways that are not fully captured by the control variables. Since access before adoption is relatively stable within organizations, within-organization comparisons are not feasible in this setting. An instrumental variable strategy is also not available, as there is no credible source of exogenous variation in access. To improve comparability and mitigate endogeneity concerns, I implement a propensity score matching (PSM) strategy. While PSM relies on the same observed covariates as the regression models,[10] it allows for the construction of a more balanced sample by explicitly matching comments by organizations with and without access that are similar in observable dimensions. This enables a cleaner comparison between similar comments submitted by similar types of organizations, hence improving the estimation of the effect of access.

3.2 Access to Policymakers

Having direct access to policy-makers is likely related to the political implication of an entity, which in turn may relate to the entity's comment likelihood of success. The simple regression of access on success may thus be upward biased. There may be a selection into having access to policy-makers based on observable characteristics of a comment. I report

[10]Due to the data structure, matching organization names with external databases such as Orbis results in a sample with less than 1,000 observations, reducing the power for the analysis.

results from a balancing test in Panel A of Table 5. It shows that entities having access to policy-makers at least once before the adoption of the regulation they write on tend to (1) write comments that are on average longer, (2) write more complex comments, (3) be more likely to write their comment in one of the main EU languages (English, French or German), and (4) to be more likely to be from the European Union. To alleviate the concerns about the comparability of comments written by entities having access to policy-makers and comments written by entities without access to policy-makers, I use propensity score matching (PSM) to create samples of more comparable comments.

I estimate a logit model at the comment level, with a dummy for the commenting entity having access to policy-makers before the adoption of regulation r. $Access_{ir}$ equals one if entity i writing a comment on regulation r has access to the policy-makers at least once before the adoption of r. The model writes

$$\mathbb{P}(Access_{ir}) = \alpha + \eta \, \mathrm{X}_{ir} + \sum_{t} \gamma_t \, type_i^t + \delta_r + \varepsilon_{ir} \tag{2}$$

where $type_i^t$ represents the type of entity i among academic/research institution, business association, company/business organisation, consumer organisation, environmental organisation, non-governmental organisation, other, public authority, and trade union. The type "company/business organisation" is set as the baseline as it is the type of entity writing the most comments (see Table 1). X_{ir} is a set of four control variables. It includes two measures of the comment quality: the comment length, computed as the log of the number of words; and the comment complexity, computed as the average length of words.[11] It also includes a dummy variable indicating comments written in one of the main EU languages: English, French, or German, and a dummy equals to one when the entity is from the EU.[12] Lastly, δ_r indicates regulation fixed effects. Standard errors are clustered by entity.

Table 4 displays the results from the estimation of the logit model in Equation 2. It shows that longer comments, comments written in English, French, or German, and comments written by an EU organization are more likely to be written by an organization having access to policy-makers. Additionally, comments written by business associations are more likely to be written while having access to policy-makers, compared to comments written by companies.

The logit model estimated from Equation 2 correctly classifies 75.53% of the observations. I use the results from this regression to compute the predicted probabilities of having access to policy-makers for each observation, also called propensity scores (Rosenbaum and Rubin,

[11] Appendix B.2 describes the construction of these two measures of comment quality in detail.
[12] The UK is considered within the EU for comments written until January 31st, 2020.

Table 4: Access results

Dependent variable:	Access before adoption
Comment length	.380***
	(.0364)
Comment complexity	.363
	(.208)
Main EU languages	1.174***
	(.284)
EU origin	.930***
	(.155)
Type	
Academic/research Institution	-1.686***
	(.348)
Business association	.566***
	(.109)
Consumer organization	.220
	(.654)
Environmental organization	-.165
	(.530)
Non-governmental organization (NGO)	.315*
	(.154)
Other	-.0791
	(.177)
Public authority	-3.343***
	(.557)
Trade union	.642*
	(.324)
Regulation FE	Yes
Observations	7,970
Pseudo R^2	.246

Notes. Results from the first stage logit estimation. Standard errors clustered by entity. The baseline type is "Company/business organisation". Observations at the comment level: *Access before adoption* equals one when the organization writing a comment on regulation r has access to policy-makers before the adoption of r. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

1983). I use a nearest neighbor matching strategy with a 0.0613 caliper radius without replacement and including ties, which for each comment by an entity having access to policy-makers finds the closest comparable comment by an entity not having access to policy-makers within the 0.0613 radius in terms of propensity score.[13]

I report the results from a balancing test performed on the matched sample in Panel B in Table 5. The sample obtained with propensity score matching is balanced over the covariates observed: no statistical difference is left between comments written by entities having or not having access to policy-makers. This matched sample is composed of 3,802 observations, out of the initial 8,319.

3.3 Access and Success

I re-estimate the linear probability model in Equation 1 on the matched sample, clustering standard errors at the organization level. Results are reported in Table 6. Column (1) reports results for the outcome measure based on plagiarism detection, and Column (2) reports results for the LLM-based measure.

I find a significant and positive association between direct access to policy-makers and the likelihood of lobbying success, for both measures of influence. The probability of success of a comment, as measured with the plagiarism-detection method, is 4.22 percentage points higher when the organization writing has access to policymakers at any point before the adoption of the associated regulation, compared to a similar comment on the same regulation but by an organization without such access. This 4.22 percentage points increase is to be compared to the average rate of success, which is 36.4% when using the plagiarism-detection measure. It can also be interpreted as a 9% of a standard deviation increase in success.

The large language model measure of lobbying success displays similar results. I find that a comment written by an organization with access to policymakers has a success probability higher by 2.30 percentage points, relative to a similar comment written on the same regulation but by an organization that never had a meeting with policymakers in the past and until the adoption of this regulation. The average chance of success, as defined by the large language model measure, is 14.5%, and this 2.30 percentage points increase corresponds to a 7% of a standard deviation increase.

Overall, I obtain similar results across outcome measures, both qualitatively and quantitatively: a comment written by an entity having access to policy-makers has a probability

[13] I calculate the caliper as a quarter of one standard deviation of the propensity score, which is estimated to remove about 90 percent of the bias due to the measured confounders (Rosenbaum and Rubin, 1985). Eliminating more bias would involve the risk of facing the PSM paradox and creating higher imbalances (King and Nielsen, 2019). Computations are done using PSMATCH2 by Leuven and Sianesi (2018).

Table 5: Balancing tests

	No access	Access	Difference
Panel A. Whole sample			
Observations	5,632 (67.70%)	2,687 (32.30%)	
Comment length	5.461 (1.264)	6.179 (1.159)	.718***(.0289)
Comment complexity	7.138 (.644)	7.290 (.580)	.152*** (.0146)
Main EU languages	.874 (.332)	.977 (.151)	.103*** (.00672)
EU origin	.867 (.340)	.940 (.237)	.0731*** (.00728)
Type			
Academic/research Institution	.041 (.198)	.007 (.086)	−.0336*** (.00499)
Business association	.244 (.430)	.448 (.497)	.204*** (.0106)
Company/business organisation	.365 (.481)	.290 (.454)	−.0746*** (.0111)
Consumer organisation	.009 (.094)	.010 (.102)	.00154 (.00226)
Environmental organisation	.021 (.144)	.015 (.123)	−.00587 (.00322)
Non-governmental organisation	.127 (.333)	.159 (.365)	.0316*** (.00806)
Other	.102 (.303)	.049 (.217)	−.0528*** (.00652)
Public authority	.078 (.269)	.004 (.064)	−.0742*** (.00525)
Trade union	.012 (.111)	.016 (.126)	.00357 (.00271)
Panel B. Balanced sample: Propensity score matching			
Observations	1,888 (49.66%)	1,914 (50.34%)	
Comment length	6.063 (1.133)	6.039 (1.085)	−.0236 (.0360)
Comment complexity	7.266 (.404)	7.277 (.577)	.0114 (.0162)
Main EU languages	.972 (.164)	.972 (.164)	−.000148 (.00532)
EU origin	.921 (.270)	.927 (.260)	.00630 (.00858)
Type			
Academic/research Institution	.007 (.086)	.010 (.099)	.00251 (.00301)
Business association	.400 (.490)	.383 (.486)	−.0169 (.0158)
Company/business organisation	.312 (.463)	.328 (.469)	.0156 (.0151)
Consumer organisation	.011 (.105)	.009 (.094)	−.00224 (.00323)
Environmental organisation	.021 (.142)	.020 (.141)	−.000281 (.00460)
Non-governmental organisation	.170 (.376)	.171 (.376)	.000825 (.0122)
Other	.060 (.237)	.059 (.235)	−.00134 (.00766)
Public authority	.006 (.076)	.005 (.072)	−.000602 (.00240)
Trade union	.013 (.112)	.015 (.122)	.00244 (.00380)

Notes. Comparison of whole and balanced samples for comments written from entities without or with direct access to policy-makers: number of observations, mean of observed comment characteristics, and their standard deviation in parenthesis. Comment length is measured as the log of the number of words in a comment. Comment complexity is measured as the average length of words in a comment, after removing stop words. Main EU languages equals one when a comment is written in English, French, or German. The third column reports the statistical difference in means, with standard error in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

of influencing the final version of the regulation that is 2.30 to 4.22 percentage points larger than a similar comment by an organization not having such access to policy-makers. The estimated coefficients for access from the two models are not statistically different from each other at any confidence level (p-value of 0.236).

Table 6: Results - Matched Sample

Dependent variable:	Lobbying success (Y = 1)	
	Plagiarism-detection	LLM
Mean (s.d.)	.364 (.481)	.145 (.353)
	(1)	(2)
Access before adoption	.0422**	.0230*
	(.0143)	(.0106)
Types	Yes	Yes
Controls	Yes	Yes
Regulation FE	Yes	Yes
Observations	3,775	3,775
Adj. R^2	.309	.153

Notes. Estimations results from a linear probability model on a balanced sample, created with propensity score matching. The dependent variable equals 1 if entity i lobbied successfully on r. In Column (1), success is measured through plagiarism-detection. In Column (2), success is measured with a large language model (LLM). The independent variable $Access_{ir}$ equals 1 if i had direct meetings with policy-makers before the adoption of r. The baseline type of entity is "Company/business organization". Standard errors clustered by entity are in parenthesis. *p<.05; **p<.01; ***p<.001.

Access to different hierarchical levels. I find that access to policy-makers leads to a higher likelihood of lobbying success, pooling access to all hierarchical levels together. I here decompose this access in access to four different hierarchical levels: the Presidency, the Directors-General, the Commissioners, and the Cabinet Members. Commissioners are politicians nominated by Member States and validated by the European Parliament. Among them, I isolate the President, the Vice-Presidents, and the High Representative to classify them as "the Presidency". The Directors-General are the highest-level bureaucrats in charge of specific policy areas. They report to Commissioners. Note that these four variables of access are correlated with each other, with coefficients of correlation ranging from 0.4847 for Commissioners and the Presidency to 0.6923 for Commissioners and Cabinet Members.

I re-estimate Equation 1 for each of these hierarchical levels and report the results in Columns (1) to (4) of Table 7. I also estimate a model with all hierarchical levels and report these results in Column (5) of Table 7.

The results show that access to cabinet members is less valuable for lobbying success than access to the Presidency or to a Director-General (DG). The coefficient for access to cabinet members reported in Column (5) is significantly lower than the coefficients for Presidency or

Table 7: Results by hierarchical level

Dependent variable:	Lobbying success (Y = 1)				
	(1)	(2)	(3)	(4)	(5)
Access to					
Presidency	.0498***				.0340
	(.0146)				(.0176)
Directors-General		.0419***			.0303
		(.0124)			(.0174)
Commissioners			.0329**		.00840
			(.0118)		(.0189)
Cabinet Members				.0213*	-.0152
				(.0107)	(.0167)
Types	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Regulation FE	Y	Y	Y	Y	Y
Observations	3,775	3,775	3,775	3,775	3,775
Adj. R^2	.155	.155	.154	.153	.155

Notes. Estimations done with a linear probability model on a balanced sample (PSM). The dependent variable is a measure of lobbying success based on a large language model. Standard errors clustered at the organization level in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

DG access, with a p-value of 0.045 and 0.081 respectively. Access to the Presidency of the Commission or to a DG drives the results observed before.

Access to the highest levels of the Commission's politicians or bureaucrats hierarchy brings larger benefits in terms of lobbying success probability than access to lower levels, this type of access drives the effect found earlier.

Access intensity. The indicator variable of access to policy-makers pools together comments written by entities with a single meeting, and up to 311 meetings with the Commission before the adoption of regulation they comment on.[14] Comments by entities with more nu-

[14]The number of meetings associated with a comment is the number of meetings the entity writing this comment had between the beginning of the meeting records and the adoption of the associated regulation. By construction of the variable, recent comments can be associated with more numerous past meetings of the entity writing this comment. The 14 comments with 200 meetings or more before the adoption of the associated regulation have all been written since 2020. They come from major companies, business associations, consumer organizations, and NGOs: Google (2 comments), BusinessEurope, Bureau Européen

merous meetings may be more likely to be successful than comments by entities with few meetings. I here consider access intensity, measured by the number of meetings an entity has before the adoption of the regulation it comments on.

To capture the nuanced effects of the intensity of access, I estimate a linear probability model with quartiles of the number of meetings:

$$y_{ir} = \alpha + \sum_{q \in \{1,2,3,4\}} \beta_q \, Qq_{ir} + \sum_t \gamma_t \, type_i^t + \eta \, \mathrm{X}_{ir} + \delta_r + \varepsilon_{ir} \tag{3}$$

where $Q1$, $Q2$, $Q3$, and $Q4$ represent quartiles of the number of meetings associated with a comment, *i.e.* the number of meetings the entity writing the comment has with policy-makers before the adoption of the relevant regulation. Quartiles are calculated excluding zeros. The rest of the notations are the same as defined for Equation 1. Standard errors are clustered at the organization level.

Coefficients β_1, β_2, β_3 and β_4 indicate the additional probability of success a comment in the respective quartiles faces, relative to a comment written by an entity without access to policy-makers. The results from these estimations, using the LLM success measure on the matched sample, are presented in Table 8.

I find that the effect of access to policy-makers on lobbying success is driven by comments written by entities having more meetings with policy-makers, especially for comments in the third and fourth quartiles, which experience a significantly larger effect than comments in the first quartile (coefficients are statistically different, with a p-value of respectively 0.051 and 0.056 for the LLM measure). Compared to comments written by entities not having access to policy-makers, comments written by entities having more intense access to policy-makers are the most likely to be successful and influence regulatory text changes, while having little access (1 to 3 meetings) does not have an effect.

Direct access to policymakers substantially increases the chances of an entity to be able to influence the final version of a regulation. This effect is heterogeneous across different types of access: it is stronger for access to higher levels of the Commission hierarchy (the Presidency and Directors-General) and for comments by organizations with more numerous meetings with policymakers. In the next Section, I study the channels through which direct access leads to this increased influence.

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des Unions de Consommateurs (5 comments), Transport and Environment (3), Airbus (2), and WWF.

Table 8: Results by quartiles of the number of meetings

Dependent variable:	Lobbying success (Y = 1)	
	Plagiarism-detection	LLM
Mean (s.d.)	.364 (.481)	.145 (.353)
	(1)	(2)
Access: number of meetings		
Quartile 1 [1, 3]	.00798	.000521
	(.0213)	(.0151)
Quartile 2 [4, 8]	.0404	.0144
	(.0244)	(.0193)
Quartile 3 [9, 26]	.0463	.0394*
	(.0237)	(.0175)
Quartile 4 [27, 311]	.0797**	.0401*
	(.0254)	(.0179)
Type	Y	Y
Controls	Y	Y
Regulation FE	Y	Y
Observations	3,775	3,775
Adj. R^2	.310	.153

Notes. Linear probability model. Balanced sample created using propensity score matching. Quartiles of the number of meetings computed on the balanced sample. The baseline is comments written by an entity having zero meetings with policy-makers. Standard errors clustered by organization in parenthesis. *p<.01; **p<.05; ***p<.001.

4 Mechanisms

In this section, I analyze and disentangle the different channels susceptible to explain the increased influence experienced by organizations with direct access to policymakers. In particular, one open question in the political economy literature on informational lobbying is distinguishing the information and connection channels (Bombardini and Trebbi, 2020). I begin by estimating the effect of the four channels I identify, combining the timing of meetings with a change of mandate and its associated turnover of policymakers. I then exploit the within-organization change in political connections created by this change of mandate to estimate the effect of loosing versus keeping connections.

4.1 Timing of access and policymakers turnover

In my analysis, I identify four channels through which direct access to policymakers can lead to increased influence. First, organizations might transmit information and persuade policymakers during their meetings: organizations bring credible information convincing the policymakers of the relevance of their requests, and their comments are thus taken into account by policymakers. Second, organizations might build political connections with the policymakers they meet with, and then be favored, irrespective of the value of the information they bring. Third, organizations may build institutional knowledge or bureaucratic capital (Laurens, 2015) through their meetings and gain insider knowledge, which can be instrumental in lobbying successfully. Lastly, organizations meeting with policymakers may be of "better" quality: they are more credible, have a good reputation, and produce good and relevant information, which also makes their comments more likely to be taken into account.

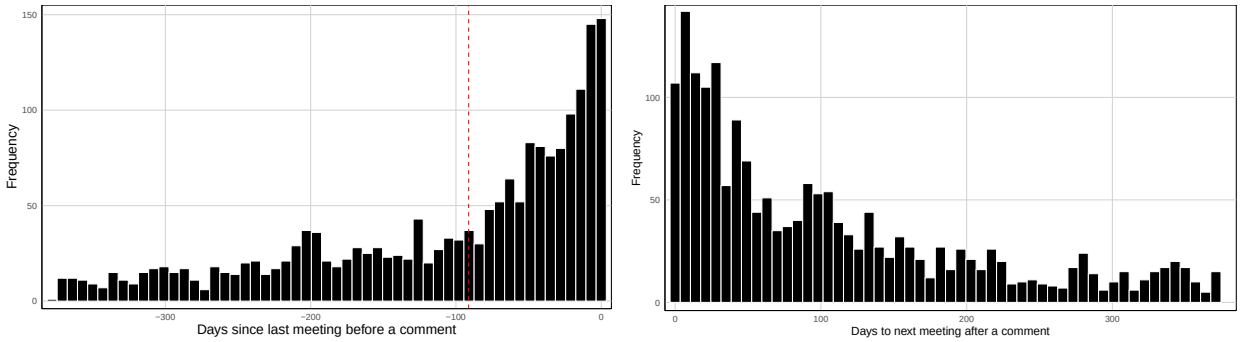
These four channels display different characteristics. First, the persuasion channel is time-sensitive. Relevant information needs to be transmitted at the time the regulation is discussed. Second, the political connection channel is person-specific, it is associated with the members of the Commission an organization meets with. Third, the institutional knowledge channel is institution-specific. It does not depend on a specific topic, period, or person, but rather on the insider knowledge accumulated by the organization before writing a comment. Lastly, I assume the intrinsic quality of the organization to be time-invariant: meetings can signal the higher quality of an organization, whenever they take place.

I leverage the time dimension of meetings with the Commission and the turnover of policymakers associated with a Commission change to disentangle these different channels, based on their distinct characteristics. The Commission change I study took place in December 2019, between the Juncker mandate and the first Von der Leyen mandate. Note that out of the 411 Commission members and Directors-General reporting meetings under the Juncker Commission, 118 stayed in the von der Leyen and kept reporting their meetings. The remaining 71.29% did not report any meetings under the von der Leyen Commission.

I define four different types of access. First, I define contemporaneous access, considering meetings with policymakers that are contemporaneous to the elaboration of a regulation on which an organization comments. I define the window for contemporaneous meetings to be between the draft publication and the adoption of the regulation, or in the three-month preceding the publication of the draft. Figure 3 presents the distribution of the time between an organization's comment and its last and next meeting with the European Commission, for organizations that both write comments and have access to policymakers. It shows that organizations tend to meet with policymakers close to the day they write a comment, starting

approximately three months before.[15] Meetings during this period are likely related to the regulation the organization comments on, even if they can also be about other topics. Organizations might use such meetings to bring relevant information and convince policymakers to take their comment into account when modifying the draft regulation. Additionally, such meetings may as well be a way of building political connections or institutional knowledge, or be a signal of the organization's intrinsic quality. I assume all channels to be potentially at play in these meetings (see Column (1) of Table 9 for a recapitulation of the timing of access and channels potentially at play).

Figure 3: Time between a comment and its closest meetings



(a) Before a comment (b) After a comment

Notes. The red dashed line represents three months before the comment.

Second, I define past access from meetings with the Commission that are more than three months before the draft publication of a regulation an organization comments on. To be included in this definition, meetings have to be held either with members of the current Commission or with members from the previous Commission who stayed with the change of Commission. Such access may contribute to building political connections and institutional knowledge, or be a signal of the organization's quality. However, I assume that organizations do not transmit information on or request potential draft modifications at this stage, as the draft would be published in more than three months, or by the following Commission. Although these meetings may be related to the topic of the regulation, it could influence the draft itself, but I assume that these meetings are too old for policy changes happening after the draft publication (see Column (2) of Table 9).

Third, I define access to members of the previous Commission who did not stay in the new Commission. I assume that meetings with the previous Commission contribute to building institutional knowledge for the organizations, and can be a signal of their intrinsic quality. On

[15] This corresponds to about four months before a comment, as more than 90% of the comments are written more than 21 days after the draft publication.

the other hand, I assume that these meetings during the previous mandate cannot transmit information about the regulation an organization comments on under the next Commission, and that political connections acquired through these meetings are not active anymore and cannot be mobilized to increase the organization's influence when commenting on a regulation by the next Commission, as political connections are specific to the members of the Commission an organization meets with (see Column (3) of Table 9).

Lastly, I define post-adoption access, considering meetings happening after the regulation commented on is adopted. These meetings cannot be used to persuade policymakers to modify the draft regulation, as they happen after the regulation is adopted. Political connections or institutional knowledge built with these meetings cannot be mobilized by the organization at the time of comment either, as they happen in the future. However, post-adoption access can signal the intrinsic quality of the organization (see Column (4) of Table 9).

Table 9: Timing of access & potential benefits

Access:	Contemp.	Prior meetings or Past Com. (stayed)	Past Com. (left)	Post adoption
	(1)	(2)	(3)	(4)
Information transmission	Yes	No	No	No
Political connection	Yes	Yes	No	No
Institutional knowledge	Yes	Yes	Yes	No
Intrinsic quality	Yes	Yes	Yes	Yes

I estimate a model with these four types of access on the sample to comments written during the von der Leyen Commission, to be able to measure access to the previous Commission based on meetings with the Juncker Commission. Using the notation defined for Equation 1, the model writes

$$y_{ir} = \alpha + \beta_I \, ContempA_{ir} + \beta_P \, PriorA_{ir} + \beta_S \, PastCom_{ir}^{stayed} + \beta_L \, PastCom_{ir}^{left} + \beta_F \, PostAdoption_{ir} + \sum_t \gamma_t \, type_i^t + \eta \mathrm{X}_{ir} + \delta_r + \varepsilon_{ir} \quad (4)$$

where $ContempA_{ir}$ is the indicator variable for i having access to policy-makers contemporaneously to its comment on regulation r. $PriorA_{ir}$ is the indicator variable for i having access to policy-makers of the current Commission more than three months before the draft publication of regulation r. $PastComS_{ir}$ is the indicator variable for i having meetings with members of the past Commission who stayed. $PastComL_{ir}$ is the indicator variable for i hav-

ing access to policy-makers from the past Commission who left. $PostAdoption_{ir}$ equals one when organization i has access to policy-makers after the adoption of regulation r. Standard errors are clustered at the organization level.

β_I represents the effect of the combination of all four channels. β_P and β_S represent the combined effect of political connection, institutional knowledge, and intrinsic quality. β_L is the combined effect of institutional knowledge and intrinsic quality, while β_F solely estimates the latter. It follows that the effect of institutional knowledge can be retrieved by computing the difference between β_F and β_L. The same backward logic applies to the other channels.

I report the results from this estimation in Table 10. Column (1) presents the results with the plagiarism-detection success measure as the independent variable, and Column (2) displays results for the large language model measure.

I find that access to the previous Commission with members who stayed is the strongest predictor of lobbying success of a comment, for both measures, and controlling for all types of access. It suggests that the main channel at play for the increased influence associated with access to policymakers is the active political connections built through these meetings. It is important to note that the access variables are not exclusive to each other and are positively correlated in the sample studied. The lowest correlation between these access variables is a 55.92% correlation between the variables for contemporaneous access and for access to the previous Commission with members who left. The two variables of access to the previous Commission, with members who left or members who stayed, are the most correlated. They display a 75.97% correlation. Yet, their estimated coefficients display a statistical difference of .056, with a p-value of .089 for the LLM measure.

This difference is lower for the plagiarism-detection measure. It indicates that institutional knowledge also plays a role in the success of comments, as measured by the ability to provide ready-to-use text to the policymakers. Even in this case, it appears that the political connections channel plays a major role.

These results also suggest that the role played by information transmission is negligible. For the estimations done with the LLM success measure, the coefficient associated with contemporaneous access is significantly lower than the one associated with access to the previous Commission with members who stayed (difference of -.0799, with a p-value of .017), despite a correlation of 59.9% of the two variables.

Together, these results indicate that the increased influence associated with direct access to policymakers is mainly explained by political connections, rather than information transmission or other channels. A comment from an organization with access to policymakers is more likely to be accounted for compared to a similar comment on the same regulation but

Table 10: Mechanisms results

Dependent variable:	Lobbying success (Y = 1)	
	Plagiarism-detection	LLM
Mean (s.d.)	.383 (.486)	.126 (.331)
	(1)	(2)
Access		
contemporaneously	.00849	-.0301
	(.0286)	(.0208)
more than 3 months before	-.00228	.00993
draft (same Commission)	(.0277)	(.0203)
to past Commission - stayed	.0452	.0498*
	(.0340)	(.0218)
to past Commission - left	.0161	-.00665
	(.0309)	(.0198)
post adoption	-.00470	.00759
	(.0294)	(.0195)
Types	Y	Y
Controls	Y	Y
Regulation FE	Y	Y
Observations	2,500	2,500
Adj. R^2	.286	.133

Notes. Results from linear probability model estimations. Sample restricted to comments written during the von der Leyen Commission. Matched sample created using propensity score matching. Standard errors clustered by entity are in parentheses. *p<.05; **p<.01; ***p<.001.

by an organization without access, thanks to the political connections the organization built. These results are derived from a balanced sample of comments, but concerns of unobservable differences between these can remain. I now turn to an analysis of the effect of political connections within organizations to address these concerns.

4.2 Keeping versus loosing connections

The change of Commission mandate results in some organizations loosing their political connections, and others keeping theirs. It makes studying within-organization change in

political connections feasible.

I distinguish two types of organizations with access to the previous Commission. On the one hand, I set $PastAccess_i^{stayed} = 1$ for organizations with at least one meeting during the Juncker Commission with a member who stayed in the von der Leyen Commission. On the other hand, I set $PastAccess_i^{left} = 1$ for organizations which only had meetings during the Juncker Commission with members who left. It follows that these two variables are exclusive from each other.

I estimate the effects of keeping versus loosing connections with the following linear probability model with two-way fixed effects:

$$y_{ir} = \beta_S \, VdL_r \times PastAccess_i^{stayed} + \beta_L \, VdL_r \times PastAccess_i^{left} + \eta \, X_{ir} + \delta_i + \delta_r + \varepsilon_{ir} \quad (5)$$

where VdL_r indicates whether regulation r is a Von der Leyen Commission or a Juncker Commission regulation, δ_i represents organization fixed effects and δ_r regulation fixed effects. X_{ir} represents controls on the quality (length and complexity) of the comment, and the language used. Standard errors are clustered at the organization level.

Coefficient β_S represent the effect of keeping at least one connection through a change of Commission mandate for a given organization, and coefficient β_L the effect of loosing all its connections. Results are reported in Table 11. Column (1) displays the results using the plagiarism-detection success measure, and column (2) the LLM-based measure. Note that out of 1,219 organizations included in this estimation, only 6% of them (74 organizations) fall into the loosing all connections variable, and 19% (229 organizations) into the keeping at least one connection variable.

I find that an organization keeping its connection(s) under the von der Leyen mandate becomes relatively more likely to succeed, compared to its previous comments under the Juncker Commission. However, an organization losing all its connection does not experience such a success increase in the von der Leyen Commission compared to its previous comments under the Juncker Commission. Looking at the results from the plagiarism-detection measure in Column (1), the point estimate indicates a negative effect for an organization losing its connection, and the two coefficients are significantly different from each other (p-value of .069).

Looking at within-organization variations change of connections following the mandate change, I find that past meetings bring future benefits in influence for the organization when the Commission members met are still part of the Commission. This increased influence could potentially be explained by the insider knowledge acquired and the political connections built, both of which would reveal to become more valuable with time than at the time they are

Table 11: Mechanisms results - within-organization

Dependent variable:	Lobbying success (Y = 1)	
	Plagiarism-Detection	LLM
Mean (s.d.)	.360 (.480)	.154 (.361)
	(1)	(2)
Von der Leyen mandate	.0633	.0801*
x past meetings & stayed	(.0469)	(.0398)
Von der Leyen mandate	-.0637	.00837
x past meetings & left	(.0765)	(.0732)
Comment Controls	Yes	Yes
Organization FE	Yes	Yes
Regulation FE	Yes	Yes
Observations	4,182	4,182
Organizations	1,219	1,219

Notes. Results from linear probability model estimations. Standard errors clustered by entity are in parentheses. *p<.05; **p<.01; ***p<.001.

acquired. While the insider knowledge acquired remains in the organization if the Commission members met left the Commission, the political connections built become inactive and are expected not to bring future benefits when the members met leave the Commission. The negative effect observed using the plagiarism-detection measure, and the null effect with the LLM-based measure, suggest that institutional knowledge alone does not yield to future increased influence. Taken together, the results confirm that political connections play a crucial role for direct access to translate into increased influence.

5 Discussion

The findings of this paper raise important concerns about the welfare implications of influence in the policymaking process. First, while public consultation platforms are designed to broaden participation and promote accountability, the influence documented here is concentrated among a relatively small subset of organizations with sustained political connections. This undermines the goal of a level playing field and raises questions about the inclusiveness and legitimacy of the policymaking process desired by the European Union, where consultation platforms are explicitly designed to democratize the policymaking process.

Second, while access to policymakers may enhance the transmission of relevant information, my results suggest that political connections play a key role in shaping regulatory outcomes. Not all influence is welfare-reducing, however, the resulting policies may systematically favor well-connected actors, potentially at the expense of broader social welfare.

A formal welfare analysis is beyond the scope of this paper, but descriptive evidence on the nature of successful lobbying offers interesting case-studies. In many cases identified in the data, successful comments by connected organizations led to exemptions tailored to a specific sector, delays in implementation dates, or adjustments in compliance thresholds. While such changes may reduce costs for targeted industries, they can also undermine the uniformity or ambition of regulatory goals, and may impose hidden costs on consumers, competitors, or the environment. Quantifying the health or environmental costs of postponing by several years the implementation of bans on substances classified as carcinogenic would be an important avenue for future research.

In sum, the findings suggest that political access can generate influence that is not neutral or purely informational, but shaped by the structure of political connections. Institutional safeguards against regulatory capture, such as greater transparency, enhanced scrutiny of privileged access, and improved representation of underrepresented groups, may be needed to ensure a more level playing field in consultations and that public consultation processes contribute to welfare-enhancing policymaking.

6 Conclusion

In this paper, I study the impact of access to policymakers through direct meetings on lobbying success. I am able to capture lobbying influence by compiling a unique dataset from an online commenting platform of the European Commission. In particular, I am able to identify policy changes between draft and adopted regulations, which is crucial to assess the influence of comments. Additionally, I am able to observe direct meetings between organizations and Commission members to measure access to policymakers.

My findings demonstrate that comments by organizations with access to policymakers are significantly more likely to be accounted for, compared to similar comments on the same regulations by organizations without such access. I further show that this result is driven by comments from organizations with more meetings or with meetings with the highest-level of the hierarchy. This result can come from information-transmission, institutional knowledge acquired, political connections built, or the intrinsic quality of these organizations. I leverage the timing of meetings and the turnover of policymakers across two mandates to isolate the effect of these four mechanisms. I find that active political connections from the previous

mandate is the primary mechanism through which a comment is more likely to be successful. Lastly, I study the within-organization effect of loosing or keeping connections through the mandate change. It confirms that active political connections from the previous mandate brings additional influence to a given organization.

This paper has important policy implications about the functioning of public consultation platforms intended to enhance the accountability of the policymaking process. Although these platforms aim to open the policymaking process to a wider range of actors, I show that influence through submitted comments is concentrated among organizations with direct access to policymakers. In particular, active political connections significantly increase an organization's influence. This highlights the need to promote a more level playing field in regulatory consultations to ensure their credibility.

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Appendices

A Appendix: Additional Tables

Table 12: Modifications and Comments per Directorate-General

Directorate-General	N	Del.	New	Comments	Found
Competition	1	.38	.48	29.00	.42
Energy	27	.28	.34	2,586.07	.14
Justice and Consumers	2	.16	.16	30.00	.22
Mobility and Transport	44	.13	.18	17.16	.13
Health and Food Safety	132	.13	.15	55.21	.08
Climate Action	24	.13	.20	12.62	.10
Neighbourhood and Enlargement Negotiations	1	.11	.15	4.00	.05
Environment	21	.11	.12	54.52	.10
FISMA	25	.10	.12	1,882.88	.23
GROW	54	.09	.15	14.56	.13
Secretariat-General	1	.09	.12	6.00	.00
Connect	3	.09	.11	59.00	.31
Regional and Urban Policy	1	.07	.05	1.00	.00
Economic and Financial Affairs	2	.06	.04	6.50	.02
Migration and Home Affairs	2	.04	.09	5.00	.07
Agriculture and Rural Development	64	.03	.04	22.45	.08
Maritime Affairs and Fisheries	7	.03	.03	3.86	.16
Taxation and Customs Union	11	.02	.03	8.64	.03
Eurostat	21	.01	.02	2.43	.00
Total	**443**	**.11**	**.14**	**291.38**	**.11**

Notes. This table displays the number of initiatives studied per Directorate-General, the average share of deleted or modified text from the draft (*Del.*), the average share of new text in the adopted regulation (*New*), the average number of comments per initiative, and the average share of modified text mapped to at least one specific comment with the text reuse method. DG FISMA stands for Financial Stability, Financial Services and Capital Markets Union. DG GROW is the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. DG Connect is the Directorate-General for Communications Networks, Content and Technology.

B Appendix: Text analysis methods

B.1 Measures of lobbying success

B.1.1 Text reuse approach

In this section, I start by describing the text pre-processing and the construction of the measure of lobbying success I use. I then present examples of lobbying success.

I am interested in policy changes only, the first step is thus to pre-process drafts and adopted regulations to consider only the regulatory text itself. I remove the explanatory memorandum of delegated regulations as it is not legally binding. I remove headers, footers, signatures, dates, locations, as well as footnotes, which are citations of other legal acts. I also remove all procedural texts, such as "This Regulation shall be binding in its entirety and directly applicable in all Member States". I do consider the annex, which stipulates key definitions, exemptions, thresholds, or criteria for the application of regulations.

For comments, I consider together the comment and its potential enclosure, after having translated them to English.

The pre-processing of all text –comments, drafts, and regulations– ends by transforming it to lowercase, removing punctuation, symbols, and stop-words, stemming and tokenizing it to n-grams.

To keep only the changing parts of the regulation, I isolate n-grams that are deleted, added, or modified between the draft and the adoption. I label a comment as being successful if its n-grams overlap with these changes. I consider 5-grams as it enables some context without being too long (Casas et al., 2020; Djourelova, 2023).

Using this procedure, 2,666 cases of lobbying success are found. Appendix Figure 4 displays two of them: one from a business association that states clearly what they want by directly suggesting edits to the draft and one from a citizen whose comment is not in English and does not include direct edit suggestions. The first example is a comment by the European Agricultural Machinery Industry Association (CEMA) on the draft regulation on ecodesign requirements for lighting products. The enclosed document of this comment shows clearly, in bold, what changes they want to see in the regulation (Figure 4c). The regulation changes exactly in this direction (Figures 4a and 4b). The second example is a comment written in Spanish by a citizen. Figure 4f shows part of this comment on the draft regulation setting out scientific criteria for the determination of endocrine-disrupting properties. After translation of the comment, the algorithm finds that the regulation on criteria to identify endocrine disruptors changes and now accounts for this comment. These policy changes are visible in Figures 4d and 4e. In both cases, lobbying is successful as the comment is taken

into account in the changes of policy observed between the draft stage and the adoption stage of a regulation.

B.1.2 LLM-based measure

I also create a more flexible measure of lobbying success using GPT-4, a large language model (LLM) provided by OpenAI.

In practice, I start by removing procedural text as explained above. I then isolate each article or annex to compare them individually between the draft and the adopted regulation. I discard articles or annexes that remain identical. For articles or annexes that are modified, I ask GPT to enumerate the policy-relevant modifications with the following prompt:

> *You are a policy-maker. You will be provided with an article of a draft regulation first, followed by its final version. Your goal is to identify and extract only policy-relevant changes between the draft and the final version. Ignore purely stylistic or wording changes that do not impact the regulatory obligations, scope, or intent. If the draft is an empty string, it means that the article is new. Explain the additions. If the final version is an empty string, it means that the article has been deleted. Explain what has been discarded from the regulation.*
>
> *For each policy-relevant change, provide a 1-sentence explanation, clearly explaining the impact of the change on the regulation's implementation or stakeholders.*

For each comment, GPT has to enumerate the requested changes. The prompt is:

> *You are a policy-maker. You will be provided with a comment on a draft regulation. Your goal is to extract requests from comments, as well as a 1-sentence summary for these requests.*

I then combine the modifications of each article or annex of a regulation to compare them with comments written on this regulation. Finally, for each comment, I ask GPT whether the requested changes have been incorporated in the modifications observed.

> *You are a policy-maker tasked with evaluating stakeholder influence on regulatory changes. You will first be provided with article-by-article policy changes between the draft and final versions of a regulation. Next, you will receive requests made by a stakeholder, indicating how they wanted the draft to evolve. Your goal is to identify whether the stakeholder's requests successfully led to changes in the final regulation. Respond with 'Yes' or 'No', followed by a brief explanation. Indicate whether the stakeholder's requests have been 'entirely successful', 'partially successful', or 'not successful'.*

I consider a comment to be successful as soon as one of its requests is accounted for in the regulation modifications.

B.2 Measures of comment length and complexity

To capture the different levels of complexity of comments sent to policy-makers, I use the metrics of the number of words, as well as the average length of words.[16] I preprocess comments by removing numbers, symbols, URLs, stopwords, and single-character words to consider actual words only. The length of a word is the number of characters it contains. 70 comments of the sample do not contain any word after pre-processing the data, I set their average word length to zero.

C Appendix: Matching comments and meetings data

Meeting data is provided by Eurostat, with the Transparency Register identification number of each organization attending a meeting. On the other hand, comments identifying information are filled out by the organizations themselves. It follows that they do not always provide their Transparency Register identification number when they have one, or that there are mistakes in the way it is entered.

I start by cleaning the Transparency Register identification numbers of the comment database by removing special characters and letters. For observations that do not correspond to the usual format (8 to 13 numbers, hyphen, 2 numbers), I proceed to manual correction of typographical errors. I discard other identifying numbers such as ZVRs for Austrian organizations or SIREN for French organizations that have been entered by mistake instead of the Transparency Register identification number (TR ID).

I then identify the different names and IDs one organization can have (*e.g.* name, acronym, and name with a typographical error). The TR ID of an entity can also change throughout the period when an organization leaves the Transparency Register and registers back later on.

These steps enable me to match the comments and meetings data, based on TR IDs and organization's names.

[16] See for instance Morelli et al. (2023).

ANNEX III
Exemptions

This Regulation shall not apply to light sources and separate control gears specifically tested and approved to operate:

(a) in potentially explosive atmospheres, as defined in Directive 2014/34/EU of the European Parliament and of the Council [3] ;

(b) for emergency use, as set out in Directive 2014/35/EU of the European Parliament and of the Council [4] ;

(c) in radiological and nuclear medicine installations, as defined in Article 3 of Directive 2009/71/EURATOM [5] ;

(d) in or on military or civil defence establishments, equipment, ground vehicles, marine equipment or aircraft, as set out in Member States' regulations or in documents issued by the European Defence Agency;

(e) in or on motor vehicles, their trailers and systems, interchangeable towed equipment, components and separate technical units as set out in Regulation (EC) No 661/2009 of the European Parliament and of the Council [6] , Regulation (EU) No 167/2013 of the European Parliament and of the Council [7] and Regulation (EU) No 168/2013 of the European Parliament and of the Council [8] ;

(f) in or on non-road mobile machinery as set out in Regulation (EU) 2016/1628 of the European Parliament and of the Council [9] ;

(g) in or on civil aviation aircrafts, as set out in Commission Regulation (EU) No 748/2012 [10] ;

(h) in railway vehicle lighting, as set out in Directive 2008/57/EC of the European Parliament and of the Council [11] ;

(i) in marine equipment, as set out in Directive 2014/90/EU of the European Parliament and of the Council [12] ;

(j) in medical devices, as set out in Council Directive 93/42/EEC [13] and in vitro medical devices as set out in Directive 98/79/EC of the European Parliament and of the Council [14] .

(a) Draft regulation on lighting products

ANNEX III
Exemptions

This Regulation shall not apply to light sources and separate control gears specifically tested and approved to operate:

(a) in potentially explosive atmospheres, as defined in Directive 2014/34/EU [3] ;

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(e) in or on motor vehicles, their trailers and systems, interchangeable towed equipment, components and separate technical units as set out in Regulation (EC) No 661/2009 [6] , Regulation (EU) No 167/2013 [7] and Regulation (EU) No 168/2013 [8] ;

(f) in or on non-road mobile machinery as set out in Regulation (EU) 2016/1628 [9] and in or on their trailers;

(g) in or on interchangeable equipment as set out in Directive 2006/42/EC [10] intended to be towed or to be mounted and fully raised from the ground or that cannot articulate around a vertical axis when the vehicle to which it is attached is in use on a road by vehicles as set out in Regulation (EU) No 167/2013 [11] ;

(h) in or on civil aviation aircraft, as set out in Commission Regulation (EU) No 748/2012 [12] ;

(i) in railway vehicle lighting, as set out in Directive 2008/57/EC [13] ;

(j) in marine equipment, as set out in Directive 2014/90/EU [14] ;

(k) in medical devices, as set out in Council Directive 93/42/EEC [15] or Regulation (EU) 2017/745 [16] and in vitro medical devices as set out in Directive 98/79/EC [17] .

(b) Adopted regulation on lighting products

To define this type of equipment CEMA suggests to add the following exemption as part of Annex III of the regulation:

Annex III Exemptions

...

(f) In or on non-road mobile machinery as set out in Regulation (EU) 2016/1628 of the European Parliament ***and their trailers***

(..) In or on interchangeable equipment as set out in Directive 2006/42/EC intended to be towed or to be mounted and fully raised from the ground or that cannot articulate around a vertical axis when the vehicle to which it is attached is in use on a road by vehicles as set out in Regulation (EU) No 167/2013

...

(c) Comment of the CEMA - p.2

Section A - Endocrine disrupting properties with respect to humans

1. An active substance shall be identified as having endocrine disrupting properties with respect to humans if it is a substance that meets all of the following criteria:

(1) it is known to cause an adverse effect relevant for human health, which is a change in the morphology, physiology, growth, development, reproduction, or, life span of an organism, system, or (sub)population that results in an impairment of functional capacity, an impairment of the capacity to compensate for additional stress, or an increase in susceptibility to other influences;

(d) Draft regulation on endocrine disruptors

Section A - Endocrine disrupting properties with respect to humans

(1) A substance shall be considered as having endocrine disrupting properties that may cause adverse effect in humans if, based on points (a) to (d) of point (2), it is a substance that meets all of the following criteria, unless there is evidence demonstrating that the adverse effects identified are not relevant to humans:

(a) it shows an adverse effect in an intact organism or its progeny, which is a change in the morphology, physiology, growth, development, reproduction or life span of an organism, system or (sub)population that results in an impairment of functional capacity, an impairment of the capacity to compensate for additional stress or an increase in susceptibility to other influences;

(e) Adopted regulation on endocrine disruptors

1) La Comisión propone identificar sólo los EDCs que provoquen efectos adversos "conocidos" en humanos y vida silvestre. La expresión "conocido" significa tener pruebas. El hecho de pedir esas pruebas debilita la legislación actual que exige regular aquellas sustancias que "puedan" causar daño (como para los cancerígenos se utiliza "que puedan causar cáncer"). Ese umbral de prueba tan elevado se opone a la opinión de los expertos sobre la probabilidad de un efecto y es inaceptable, ya que puede generar daños en humanos y medio ambiente antes de que se actúe, en contra del Principio de Precaución consagrado en los tratados de la UE. También choca con el actual enfoque de identificación y clasificación de sustancias cancerígenas y tóxicas para la reproducción, en base al nivel de evidencia. Las sustancias deben identificarse como EDCs cuando se conoce o presume que tienen efectos adversos. Sólo este enfoque es consistente y coherente con la ley de biocidas que dice que no se debe permitir en el mercado biocidas si "se considera que tienen propiedades de disrupción endocrina que puedan causar efectos adversos en humanos". La Comisión debe actuar con el conocimiento científico existente y la mejor opción para la salud es un enfoque con 3 categorías de acuerdo al nivel de evidencia

(f) Comment of a Spanish citizen

Figure 4: Examples of successful comments