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Does the Background of the Regulator Matter? The Role of Expertise and Diversity on the Perceived Competence of Regulatory Bodies

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ABSTRACT

This paper examines expertise and professional diversity within new (agencies and central banks) and traditional (ministries) regulatory bodies (RBs) and assesses their effect on the perceived competence of RBs. In particular, we address the following research questions: To what extent do members of RBs have expertise and display diversity in terms of their professional trajectories? How do expertise and professional diversity affect the perceived competence of RBs? By using two empirical sources of data, this article provides core information on the educational and professional profiles of RBs staff. In addition, the paper provides evidence that both professional diversity and expertise among RBs do not have a significant effect on their perceived competence by regime actors. However, the study also suggests that regime actors that are more closely aligned to the professional trajectory of RB members (i.e., other regulators and members of the executive branch) tend to have a more positive perception of the competence of RBs. Conversely, societal actors tend to be more critical toward RBs, suggesting that a lack of a shared language creates a greater distance from the regulators.

1 | Introduction

“New” types of regulatory bodies, namely agencies and central banks, have been designed as knowledge-based organizations that can enhance the credibility of policies due to their political independence and technical capacities (Majone 1994). Neutrality and impartiality combined with expertise are key legitimizing tools that contribute to the reputation and empowerment of these new types of RBs (Busuioc and Rimkutė 2020; Carpenter 2010; Littoz-Monnet 2020; Rimkutė 2022; for a discussion see Papadopoulos 2013, 171–191). While it could be argued that, unlike other segments of the administration—regulatory agencies and central banks do not necessarily need to fulfill the criteria of diversity, the importance of internal pluralism

as a democratic quality should not be underestimated. As Koop and Jordana argue (Koop and Jordana 2023), the compatibility of regulatory agencies with standards both of performance and of democratic governance has been questioned. The objective of our study is to investigate both expertise and professional diversity¹ within new and traditional regulatory bodies (RBs), and to assess their effect on their perceived competence.

Raising the issue of diversity within segments of the bureaucracy is highly relevant, as the bureaucracy is the next link in the delegation chain after legislative and executive politicians. Although scholars have approached this issue regarding traditional public organizations (i.e., ministries), there has been a notable lack of attention given to independent agencies and central banks. This

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can be explained by the fact that perhaps, at first glance, diversity should not matter in bodies that rely on their expertise to make decisions. However, along with expertise, diversity is not irrelevant for RBs. It can be considered as part of the RBs' democratic quality (Maman 2022). Moreover, we may expect pluralist and balanced representation to be associated with fairness in the regulatory process, while bias or a lack of diversity may be conducive to regulatory capture by narrow interests (Carpenter and Moss 2014; Chalmers et al. 2022). Therefore, this article addresses the following research questions: To what extent do members of RBs have expertise and display diversity in terms of their professional trajectories? And what effect do expertise and professional diversity have on the perceived competence of RBs?

To address our research questions, we examine new types of RBs, namely regulatory agencies and central banks, and traditional regulatory bodies, namely the ministerial bureaucracy. By analyzing these three types of organizations, we seek to establish the extent to which there are convergences or differences among them, and how expertise and professional diversity play out in such organizational contexts. By addressing these research questions, we first aim to gain insight into the presence of different types of expertise and diversity in the composition of RBs, focusing on the professional trajectory of their staff. The selected profiles include high-ranking staff and members of both management boards and advisory/stakeholder bodies.

In our study, professional diversity in RBs refers to the regulators reflecting, to some extent, the profiles of various types of actors involved in and above all affected by regulation. Additionally, for the purposes of our research, expertise is defined as a property or a capital rather than as the production of knowledge (Christensen 2021): it is, albeit partly, embodied in the educational levels of the RBs' staff, and their previous professional experience in the societal and private sectors related to the policy field of the RB. Hence, we first examine the profile of these organizations by highlighting the presence of various types of expertise and the extent to which the professional trajectories of RB members represent diverse sectors. Secondly, we analyze the effect of different types of expertise and professional diversity on the perceived competence of RBs.

In this study, we test two hypotheses: one based on the expertise model and the other on the diversity model. The expertise hypothesis—which could be described as the orthodox one—explores the effect of different types of expertise on the perceived competence of RBs. The rival—and more heterodox—pluralist hypothesis posits an effect of professional diversity on perceived competence. According to this rival hypothesis, stakeholders may perceive that an RB acts competently by incorporating a plurality of perspectives. This implies that stakeholders see the RB as considering their interests and those of other relevant parties involved in the regulatory processes (Groeneveld and Meier 2022), potentially strengthening the epistemic foundations of their regulations.

We address the research questions using two empirical sources of data developed in the framework of the H2020 TiGRE project. First, we use an original biographical dataset that contains core biographical and professional characteristics of individuals (such as staff or advisory board members) involved in RBs

operating in EU bodies and in six countries (Belgium, Denmark, Germany, Israel, Spain, and Switzerland) across three policy sectors: data protection, finance, and food safety. Second, we use a survey targeted at regime actors (i.e., other regulators, members of the executive branch, parliamentarians, societal and private organizations, and regulatees) in the three sectors across the six countries examined, which provides valuable insights into their perceptions of RBs. The inclusion of these diverse policy sectors and countries enables us to assess whether our expectations hold in a broader range of contexts.

Our study shows that, in general, members of RBs have high levels of educational attainment. Importantly, one of our findings challenges the notion that high educational levels are exclusive to expert-based bodies like agencies and central banks. Rather, they are also present in traditional public organizations, such as ministries. Our descriptive analysis also shows that advisory and stakeholder bodies are more inclined to employ individuals with diverse professional experiences, aligning with their role of broadening the range of perspectives. More importantly, the paper provides evidence that neither professional diversity nor educational attainment among RB staff significantly affect the way regime actors perceive their competence. Nevertheless, we find significant results when distinguishing between how different types of actors assess the competence of regulatory bodies (RBs). For instance, regime actors whose professional backgrounds align more closely with those of RB members—such as other regulators and members of the executive branch—tend to have a more positive perception of the RBs' competence. Conversely, regime actors from societal organizations (e.g., consumer associations) tend to hold more negative perceptions in this regard. This may indicate a greater distance from the regulators which can lead to the sidelining of these actors' views compared to other actors who are professionally closer to regulators. Ultimately, our study does not provide support for the hypotheses posited by either the expertise model or the professional diversity model. Rather, our findings suggest that the degree of (professional) distance between the members of the regulated sectors and those of the RBs may affect the perceived competence of RBs.

These findings have important implications for theories of regulation and agencification. First, we provide a detailed analysis of the composition of both traditional and newer types of regulatory bodies (RBs), with a focus on their diversity—a feature often overlooked when discussing institutions primarily viewed as technocratic. By doing this, we contribute to the debate regarding the democratization of expert advice (Callon, Lascoumes, and Barthe 2009; Jasanoff 2011; Krick 2018; Maasen and Weingart 2005; Vibert 2007), the democratic qualities of autonomous and expert bodies (Maman 2022; Pérez-Durán and Bravo-Laguna 2019), and the variables expected to affect the perceived performance and legitimacy of regulatory regimes (Busuioac and Rimkutė 2020; Rimkutė 2022; Verhoest et al. 2024). This analysis is important since previous studies have demonstrated that the professional backgrounds of central bank directors influence their policy preferences (Adolph 2013); the same has been suggested for the decision-making processes related to welfare policies within ministries (Alexiadou 2015). By analyzing the diversity in the professional profiles of RB members, we can

investigate in further research whether these profiles have an effect on policy decisions. Second, our study contributes to recent scholarship examining both the *de jure* and the *de facto* involvement of stakeholders in regulatory agencies (Busuioac and Jevnaker 2022; Chalmers 2015; Pérez Durán 2019; Redert 2020). We dwell on the extent to which expertise matters (as would be expected) for perceptions of competence, but also whether professional diversity matters too. This last property appears necessary given that the work of expert bodies is not purely technical: it is not value-free and such bodies wield political power by allocating resources, rights and obligations (Heazle and Kane 2016; Eriksen 2022).

2 | Theoretical Approach

2.1 | Expertise and Professional Diversity in Regulatory Bodies

2.1.1 | Beyond Expertise: Why Is Professional Diversity Important in RBs?

As already mentioned, new regulatory bodies (i.e., regulatory agencies and central banks) draw their credibility from their independence from the executive branch and the political sphere, and from the expertise of their management and staff (Jordana et al. 2011; Koop and Jordana 2023). In fact, the independence of regulatory agencies and central banks acts as a safeguard for their depoliticization and must be coupled with a high degree of expertise (Majone 1997). These bodies are expected to address the credible commitment problem because they are staffed with qualified experts that are assumed to operate based on efficiency rather than on political considerations (Boswell 2008; Radaelli 1999; Scharpf 1999). For the purposes of our research, we understand expertise as an individual's possession of knowledge and/or skills within a specific area or field (Jasanoff 2005; Krick 2018). This can be achieved, most notably, through a higher educational qualification and/or through professional experience in a specific domain (Christensen 2015).

Although the expertise of regulatory bodies has been a topic of theoretical discussion, a limited focus has been placed on its empirical implications. In this study, we examine the level of expertise of new RBs (agencies and central banks) and, in order to examine their particularities, we compare it with the case of traditional bureaucratic bodies (ministries). By examining these types of RBs, we follow the rationale of studying elites in all public regulators with a rule-making mandate in each one of the studied policy sectors, similar to Kappler et al. (2024).

Additionally, we introduce a crucial dimension that has even sometimes been considered to be an opposing (non-meritocratic) attribute: diversity. The analysis of diversity is important because even though RBs are expert bodies, such bodies are not necessarily insulated from society. Research emphasizes the importance of the democratization of expertise (Callon, Lascoumes, and Barthe 2009; Jasanoff 2011; Krick 2018; Maasen and Weingart 2005), and more recently, also underlines the democratic credentials especially of new types of RBs (Maman 2022; Pérez-Durán and Bravo-Laguna 2019). Diversity, or the recognition of pluralism, is a core democratic value, alongside the

participation of affected parties in rule-making, transparency and fairness in the regulatory process, and the accountability of regulators through public explanations. Hence, taking a closer look at diversity—as we do in this paper—seems increasingly pertinent not only for elected bodies, but also in the study of public organizations that are part of the bureaucratic apparatus. Moreover, the analysis of diversity is relevant not only as a democratic quality, but also because insufficient diversity may be conducive to regulatory capture of RBs that should be independent and impartial (Carpenter and Moss 2014; Chalmers et al. 2022).

2.1.2 | Conceptualizing Professional Diversity in RBs

When analyzing the effect of diversity two theoretical approaches are crucial: representative bureaucracy and diversity management. Although these approaches developed quite separately (Groeneveld and Van de Walle 2010), they both provide core insights for the study of diversity in the profiles of managers (Ding and Riccucci 2023; Groeneveld and Meier 2022; Meier 2019). Research on representative bureaucracy examines the implications of the sociodemographic, professional, and cultural characteristics of public officials—including gender (e.g., Anestaki et al. 2019), ethnicity and race (e.g., Riccucci, Van Ryzin, and Lavena 2014), or professional background (e.g., Badache 2020; Gravier 2013; Murdoch, Gravier, and Gänzle 2022), among other aspects—for their interactions with the groups that are the targets of policy decisions. It assumes, in particular, that adequate representation of disadvantaged groups in the civil service promotes equity in service provision and also results in appropriate policy or even symbolic outcomes, such as the perception of improved performance and fairness (e.g., Riccucci, Van Ryzin, and Lavena 2014). For its part, research on diversity management is not primarily concerned with the representation of external groups in organizations, but with internal heterogeneity in organizations as such, and its effects—both positive and negative—on organizational performance. Therefore, in a recent study, Groeneveld and Meier (2022, 249) argue that diversity management and representative bureaucracy theories “overlap in their advocacy for more diversity in organizations but are distinct in their objectives.” To integrate and connect the arguments of both literatures, Groeneveld and Meier (2022, 249) develop the concept of “status distance,” which allows to examine “how and why sociodemographic characteristics of bureaucrats matter” in their interaction with co-workers (the diversity management approach), and with citizens, target groups or service-users (the representative bureaucracy approach).

We therefore believe that it makes less sense to study diversity from a unique angle of the characteristics considered by either the representative bureaucracy approach or the diversity management approach. Instead, based on Groeneveld and Meier (2022), we prefer to study diversity in RBs from the angle of professional diversity, specifically in terms of the distance between the professional experience of regulators and the various stakeholders who participate and/or are affected by regulation. In our study, this then refers to how the professional trajectories of agency staff align with or diverge from those of the diverse stakeholders involved in the three policy sectors. We particularly consider professional profiles in terms of whether individuals have previous professional experience in the public sector,

in the private sector (related to the policy field under consideration), in the societal sector (consumer organizations), in trade unions, and in academia.

In short, RBs essentially operate in a relatively narrow and specialized sphere, composed of other public organizations and of the actors (mainly firms and associations) that are affected by their regulations. Yet, they can obtain diversified expertise by including individuals with a variety of professional profiles. Therefore, our paper investigates whether and how this diversity in professional profiles affects the perceived competence of RBs.

2.2 | Hypotheses on the Effects of Expertise and Professional Diversity on the Perceived Competence of RBs

In this section, we discuss our theoretical expectations regarding how expertise and professional diversity may affect the perceived competence of RBs by regime actors involved in or affected by the regulatory process. Competence is understood as these actors' expectations that an RB has the ability to successfully fulfill its tasks (Grimmelikhuijsen and Knies 2017), which is in turn a core component of the efficacy dimension of organizational reputation (Capelos et al. 2016). We specifically focus on the perceptions of actors that are more closely involved in, or at least impacted by, regulation. As mentioned, we distinguish between the heterodox hypothesis—the diversity hypothesis—which relies on the inclusion of individuals with different professional backgrounds that reflect the heterogeneity of the stakeholders who participate and/or are affected by regulation, and the orthodox hypothesis—the expertise hypothesis—which prioritizes the effect of educational achievements and of practical experience in particular relevant sectors (the societal and the private sector under consideration).

2.2.1 | The Effect of Professional Diversity in RBs on Their Perceived Competence

Our main expectation is that professional diversity is an important, yet usually unacknowledged, factor in determining perceived competence. Previous studies on diversity have been focused on traditional bureaucratic organizations, but in this study, we extend our analysis to regulatory agencies and central banks. The pluralist model in decision-making relies on the virtues of achieving comprehensive diversity in the policy process by incorporating individuals with different profiles and professional backgrounds. Based on Groeneveld and Meier (2022), our main argument is that the diversity in the professional trajectories of RBs members will influence the perceptions held by stakeholders regarding the performance of such bodies. We expect that regime actors might perceive an RB as competent because they see that, by being professionally diverse, it is more likely to consider their interests and preferences, as well as those of other stakeholders, in rulemaking. In other words, when RBs are diverse (i.e., they employ staff that have different professional backgrounds) they are expected to be close to a variety of stakeholders and to enhance thereby their “political literacy” (Eriksen 2020): their ability to speak in a persuasive manner to a wide range of stakeholders and to listen to their concerns.

A second core argument in favor of professional diversity is that organizational performance depends on the capacity of regulators to build networks that facilitate the participation of various stakeholders involved in the regulatory process (Borras, Koutalakis, and Wendler 2007). However, it is true that some RBs, such as agencies, can be more inclusive of and receptive to some stakeholders and less to other ones (Pérez Durán 2019). Bias in favor of specific groups can compromise the legitimacy of regulatory processes and the perceived competence of RBs (Busuioc and Rimkutė 2020). Hence, if RBs fail to include members with diverse professional backgrounds, regime actors may trust these bodies less and may perceive them as less competent. This bias might lead to social categorization and communication barriers among actors with different kinds of professional profiles (Groeneveld and Meier 2022). In other words, although a high degree of homogeneity within an organization may well improve intra-organizational cohesion, it may also be a barrier to the inclusion of relevant and heterogeneous viewpoints held by external stakeholders (Groeneveld and Meier 2022). Therefore, we argue that, for RBs to be perceived as competent, the composition of their staff must be balanced and represent diverse interests:

Hypothesis 1. *Professional diversity in the profiles of regulatory bodies has a positive effect on their perceived competence by regime actors.*

2.2.2 | Expertise of RBs on Perceived Competence

We also consider the more usual expectation that, apart from favoring impartiality (as experts are supposed to stand above personal or sectoral interests), expertise is above all conducive to perceived competence. In short, if organizations are staffed with experts, this can positively influence their reputation, as they may be perceived to possess enhanced analytical capacities. We call this hypothesis “orthodox,” as it is mainly inspired by the solid theoretical work of Giandomenico Majone, followed by the rich historical account of Daniel Carpenter, who identified four major components of the reputation of RBs—performative, technical, moral, procedural—with the first two being closely connected to expertise. Further, Christensen (2024) suggested the existence of “expertise bargains” reflecting the demand for expertise by politicians and the supply of expertise by bureaucrats. However, the argument on the force of expertise is usually taken for granted by scholars, so we innovate in this paper by not treating it as an assumption, but as a hypothesis that can be disconfirmed. To the best of our knowledge, such systematic testing is surprisingly missing, despite the crucial role attributed to expertise in the common sense of regulation thinking. Given that educational attainment is widely regarded as a meritocratic element for civil servants (Jasanoff 2011), we anticipate that higher levels of educational attainment among RB members will positively influence stakeholders' perceptions.

Hypothesis 2. *Educational expertise held by members of regulatory bodies has a positive effect on how regime actors perceive regulatory bodies' competence.*

Additionally, the literature highlights various forms of expert knowledge that rely on practical expertise in specific sectors,

such as the private and societal sector (e.g., Krick 2018). Some scholars suggest that the influence of expert advice on policy outcomes is related to the presence of individuals with expertise in various sectors within organizations (Christensen and Hesstvedt 2023). Other studies suggest that, for regulatory purposes, practical experience in both the private and societal sectors is relevant considering their complementary logics (e.g., Arras and Beyers 2020; Chalmers 2015; Redert and Bursens 2024). Taking the three policy fields examined in this paper as our reference, we find practical examples where expertise in the private and the societal sectors is potentially positive. For instance, in the case of food safety, expertise in the private sector provides practical knowledge concerning monitoring, testing, and implementing protocols to ensure the safety of food products. Concurrently, expertise in the societal sector, namely in consumer associations, contributes to policies that prioritize consumer health and safety (Bosman et al. 2016). As for data protection, expertise in the private sector provides individuals with experience in risk management, legal compliance, and/or technological proficiency. Simultaneously, expertise in the societal sector is equally crucial due to its emphasis on ethical considerations and the protection of individual rights (Van Dijk, Gellert, and Rommetveit 2016). Within the finance sector, expertise in the private sector is relevant for acquiring knowledge of market dynamics, financial regulations and practices, while expertise in the societal sector promotes knowledge of practices such as the implementation of social impact measurements (Redert 2020; Redert and Bursens 2024). We expect expertise in the private and societal sectors to have a positive effect on the perception of stakeholders from those sectors. Therefore, we present the following hypotheses (Table 1):

Hypothesis 3. *Expertise in the private sector, as manifested in the professional profiles of regulatory bodies, has a positive effect on their perceived competence by regime actors from that sector.*

Hypothesis 4. *Expertise in the societal sector, as manifested in the professional profiles of regulatory bodies, has a positive effect on their perceived competence by regime actors from that sector.*

3 | Data and Operationalization

3.1 | Data

We use empirical data from two different sources. First, we use an original dataset containing socio-demographic and professional characteristics of individuals working in RBs, particularly in high-ranking positions (i.e., directors of RBs and general managers), management boards, and advisory/stakeholder bodies. We follow an elite approach where we consider “the small number of decision makers who occupy the top positions in social and political structures” (Hafner-Burton, Hughes, and Victor 2013, 369). Focusing on individuals in these positions is justified because they form the decision-making core within the structures of RBs (Fernández-i-Marín, Jordana, and Bianculli 2016; Pérez-Durán and Bravo-Laguna 2019) and/or because these bodies engage in regulatory debates of general concern (Ossege 2016). Moreover, executive staff and members

TABLE 1 | Summary of hypotheses and definitions.

Hypotheses (effect on perceived competence)	Definitions
H1: Professional diversity	The degree to which individuals involved in a particular RB display a variety of professional profiles
H2: Educational expertise	The degree of individuals' possession of knowledge through higher levels of educational attainment
H3: Expertise in the private sector	Previous professional experience of RB members in the private sector
H4: Expertise in the societal sector	Previous professional experience of RB members in the societal sector

of boards and stakeholder bodies are in a sense the “tip of the iceberg” of the organization that is visible to outsiders, so we can expect that the latter's perceptions of competence are more strongly driven by the expertise of these particular segments of the organization.²

Previous studies by Fernández-i-Marín, Jordana & Bianculli (2016, 230) on management boards emphasize that these organizational structures are those “responsible for making decisions and for interpreting how existing laws should be applied and implemented” and are expected to have knowledge and expertise on the regulated sector. The analysis of members of advisory/stakeholder groups is also important as they are “durable structures of engagement” that participate in a variety of activities and outcomes, such as annual reports and drafting rules (Busuioac and Jevnaker 2022, 158). Our study is also in line with recent studies that examine advisory committees as “permanent bodies” (Redert and Bursens 2024, 1), or as “durable organizational structures for regularized contact between agency and those societal actors given by the agency” (Jevnaker 2024, 1). Thus, whether formally or voluntarily established, all these organizational structures play a central role in the activities of RBs, either because they can exert “soft enforcement” (Jevnaker 2024, 4) or “advise the agency directly on upcoming regulation” (Redert and Bursens 2024, 2). Although all these organizational structures are key to the decision-making processes of RBs, they also have their unique roles, thus introducing variation in the types of profiles these bodies may attract.

Our biographical dataset contains information on 910 professional profiles of individuals serving in the RBs operating in the EU and in six countries (Belgium, Denmark, Germany, Israel, Spain, and Switzerland) across three policy sectors: food safety, data protection, and finance. The codebook used and the RBs examined in each country and sector

are detailed in Annex 1 in the [Supporting Information](#). This dataset comprises a set of variables, including gender, highest educational attainment level (non-graduate studies, bachelor's, master's/postgraduate studies, or PhD), area/field of formal education, and professional experience in various sectors, such as the central or regional government, the private sector, and civil society organizations, among others. To collect this information, we used publicly available data, including the organizations' own websites (see Annex 1 in the [Supporting Information](#)). It is worth mentioning that, since we coded information provided in the professionals' resumes, some variables have missing values. For example, for 20% of the individuals in our dataset, we could not find any information on their education. Although this is considerable, the cases are spread over the various countries (see Annex 1 in the [Supporting Information](#)), but especially regard individuals from the German *Länder* and Israel. Also, for 5% of the individuals in our dataset, we could not find any information on their professional backgrounds. It proved particularly difficult to find professional information on Danish officials (see also Annex 1 in the [Supporting Information](#)). Logically, we treat those cases as missing data.

The second data source used is a survey targeted to regime actors in the three sectors across the examined countries ($n = 1079$). Specifically, the survey participants worked at the following types of organizations: legislative bodies, regulatory agencies, regulatory intermediaries (such as certification and accreditation bodies), ministries/executive bodies, regulated organizations (regulatees), interest organizations, and ombudsman/arbitration commissions or bodies. This survey targeted employees working in the top three hierarchical levels, excluding human resources. The fielding period began in early December 2020, and the survey closed at the end of March 2021. We asked the respondents to indicate to what extent they found their specific sector and the regulators therein (finance, food safety, data protection) to perform well. To ensure that respondents did not get questions about their own organization or actor type, we included a filtering question in the survey. As a result, respondents working for a regime actor never received questions about their own organization. The number of observations by country and sector can be found in Annex 2 in the [Supporting Information](#).

To combine the two quantitative datasets, we linked all organization-level biographical data (including aggregated measures for expertise and degree of professional diversity, see operationalization below) to the responses in the individual-level survey data. Doing so, we connected individuals' perceptions of competence to specific RBs and their aggregated expertise and degree of professional diversity.

3.2 | Operationalization

3.2.1 | Dependent Variable

To measure our dependent variable, respondents were asked to indicate their perceived competence of the RBs through the following question: "On a scale from 0 never to 10 always, to what degree you think [organization name] performs its main tasks in a very competent way."

3.2.2 | Independent Variables

We use two main independent variables based on the biographical dataset: expertise and professional diversity. To operationalize expertise, we use three proxies: the mean of the educational expertise score per RB, and the relative professional experiences in the private and societal sectors. To present an aggregate score of educational expertise by RB, we calculated the mean of the educational level of the various individuals involved. Each level of education received a score (Non-graduate = 0, Vocational = 1, Bachelor = 2, Master = 3, PhD = 4) and these scores were summed per RB. To account for the varying size of the RBs, we divided these scores by the number of coded profiles.

We also coded the presence of two types of expertise: previous experience in the corresponding private sector and in the corresponding societal sector. To do this, we calculated the proportion of individuals having experience in the corresponding private sector and in the societal sector in each RB. We created dichotomous variables and assigned a value of 1 to individuals whose resumes indicated professional experience in each sector (in the related private sector and in the societal sector) during the period 2012–2022, and 0 otherwise (the codebook is provided in Annex 1 in the [Supporting Information](#)). We defined expertise in the related private sector as professional expertise acquired in industries/firms and consultancies closely related to the sector under study. Conversely, we assigned 0 if the private sector is not related to the policy field. Experience in the societal sector refers to professional expertise acquired in NGOs, consumer associations, and other civil society entities engaged in the policy field under study.

The second independent variable is professional diversity. To measure this, we examine whether members of RBs display a variety of professional profiles, including experience in five sectors with various kinds of connections to regulatory processes. These sectors include the public sector, the private sector (pertinent to the policy field under consideration), the societal sector (specifically, consumer organizations and NGOs), trade unions, and academia. We rely on the biographical dataset and use the normalized Shannon's H entropy index. Our index calculates the degree of professional diversity in a population: every individual is associated with a unique item (type of professional experience, respectively, in private sector, public sector, academia, trade unions, or consumer organizations), while directly accounting for the number of items in a specific public organization. The index ranges from 0 to 1, and it increases as the spread across all items evens out (Boydston et al. 2014). In other words, when the normalized entropy is 1, this means that all sectors are equally represented, suggesting a uniform and thereby balanced distribution. On the other hand, when the normalized entropy is close to 0, it implies that one sector dominates the dataset, indicating poor professional diversity (Table 2).

3.2.3 | Controls

We also included eight control variables, all taken from our regime actors' survey (see Annex 3 in the [Supporting Information](#) for a detailed description): the policy sector,

TABLE 2 | Summary of variables and their operationalization.

Variables	Measurement	Data source
Dependent variable		
Competence	Survey question: “On a scale from 0 never to 10 always, to what degree do you think [organization name] performs its main tasks in a very competent way?”	Survey targeted to regime actors in the three policy sectors
Independent variables		
Professional diversity	Normalized entropy index (Shannon’s H) per RB	Biographical dataset
Educational expertise	The mean of the educational expertise score per RB	Biographical dataset
Expertise in the private sector	The proportion of individuals having experience in the corresponding private sector in each RB	Biographical dataset
Expertise in the societal sector	The proportion of individuals having experience in the corresponding societal sector in each RB	Biographical dataset

namely, food safety, finance, and data protection, with data protection as the reference category; the leadership position of the respondent in their respective organization; and the level of interactions of the respondent with the RB in question. We also control with a measure of general trust (i.e., the generalized trust that respondents have in other people), and the age and education level of the respondents. Since our survey includes responses from different categories of regime actors, we also include the type of respondent, which consists of seven categories: (1) individuals working in regulatory bodies, (2) regulatory intermediaries, (3) members of legislative bodies and sector-specific ombudsman or arbitration bodies, (4) members of executive bodies/ministries, (5) regulatees (firms), (6) market-oriented stakeholders (members of business associations), and (7) societal-oriented stakeholders (consumer associations and trade unions). Finally, since the survey was conducted in six countries/regions, we control for this variable too. Given the higher number of respondents from Belgium, it serves as the baseline category. The description, operationalization of the control variables, and the descriptive data for this second stage of the analysis are presented in Annex 3 in the [Supporting Information](#).

4 | Describing Expertise and Diversity

4.1 | Expertise

We start by describing expertise in the professional trajectories of RBs members. As mentioned above, we focus on three different types of expertise: (1) the educational level of RB members; (2) Professional experience in the private sector related to the field of the RB; and (3) Professional experience in the societal sector, including NGOs. Figure 1a,b shows the percentage of individuals with different educational attainments across the RBs examined and their positions within such bodies, respectively. Figure 1a shows that ministries have a higher percentage of highly educated specialists (those holding a PhD) compared to regulatory agencies and central banks. Figure 1b illustrates that the proportion of individuals with a PhD is higher in advisory/stakeholder bodies within RBs.

For their part, Figures A1–A3 in Annex 3 in the [Supporting Information](#) show that the field of education is highly related to the policy field of the organization.

The educational levels are then aggregated on the organizational level by taking the mean of the scores (Non-graduate = 0, Vocational = 1, Bachelor = 2, Master = 3, PhD = 4). Figures 2 and 3 show the distribution of the aggregate score of educational expertise per type of organization and per organizational level.

Specifically, we find that on average agencies (2.43) have relatively less educational expertise than ministries (2.70) and central banks (2.80). Thus, individuals working in central banks and in ministries have a higher level of education. This highlights that also traditional public organizations employ highly educated people, challenging the notion of agencies as expert-based bodies par excellence. Previous studies have demonstrated that agencies are expert bodies (e.g., Fernández-i-Marín, Jordana, and Bianculli 2016), yet these studies have not compared them with the characteristics of individuals employed in traditional civil service structures. Hence, our results allow for a more comprehensive and differentiated picture of the attributes of personnel within these entities.

We also analyzed the educational expertise of various organs *within* organizations, such as the top-level directorates, the management boards, and stakeholder groups (see Figure 3). Although we do see some variation in the range of educational expertise among these organizational structures, on average the members of these organs are highly educated and their qualifications are within similar ranges. Yet, when considering the mean of educational expertise, management boards, and stakeholder groups have relatively more highly educated profiles than top-level directorates.

Besides education, we also examined to what extent RBs have expertise on the sector they operate in. Specifically, we coded to what extent individuals working in these bodies have previous professional experience in the private or societal sector. As Table 3 shows, the organizations examined are more likely to have individuals with professional experience in the private

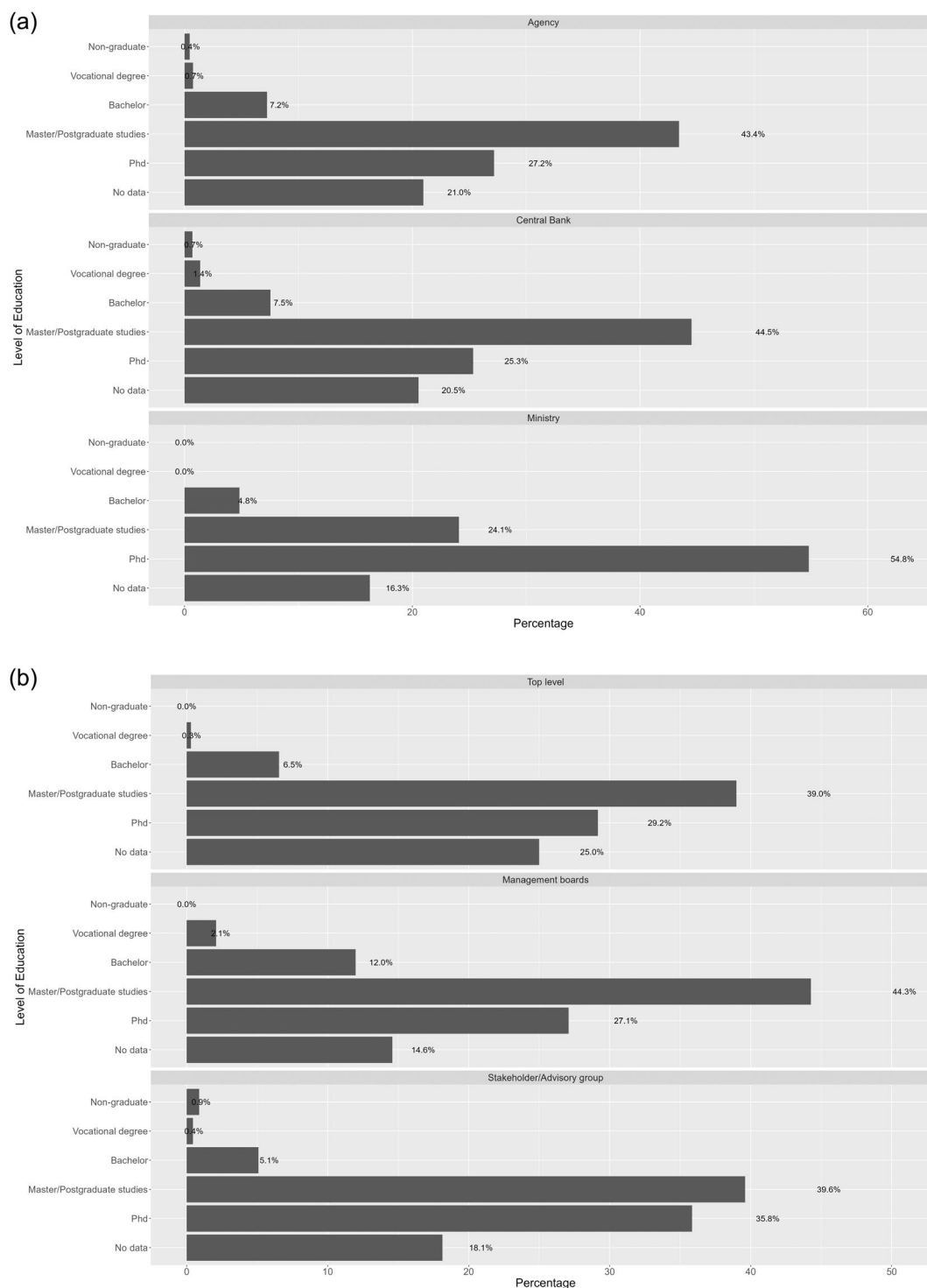


FIGURE 1 | (a) Level of education by RBs and position. (b) Level of education by position within RBs and ministries.

sector rather than in the societal sector. Also, interestingly, agencies tend to have fewer individuals with private sector experience than other regulatory bodies such as ministries and central banks. A potential explanation could be that agencies, more so than ministries and central banks, are vigilant in their relations with the sectors they regulate to prevent potential accusations of regulatory capture. Additionally, individuals with experience in the private sector are well distributed across all organizational levels. Only stakeholder/advisory groups have a significant share of individuals with experience in the societal

sector as compared to top-level directorates and management boards in which these individuals are virtually absent. This is not surprising, since the function of such groups is to bring societal expertise into the organizations.

4.2 | Professional Diversity

To describe professional diversity, we use our measure of entropy as described in the operationalization, which is based

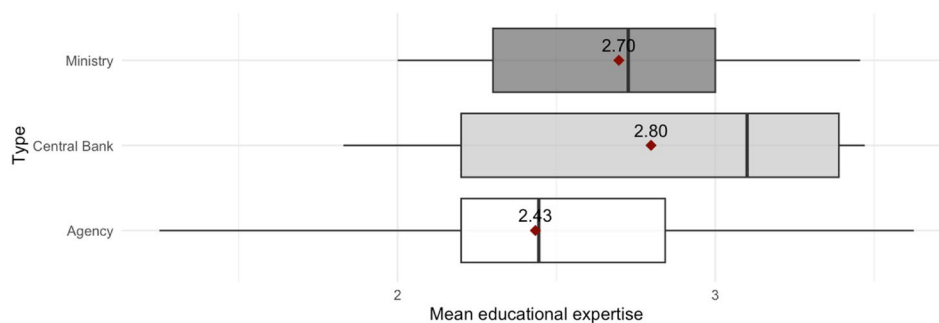


FIGURE 2 | Mean educational expertise per type of RB.

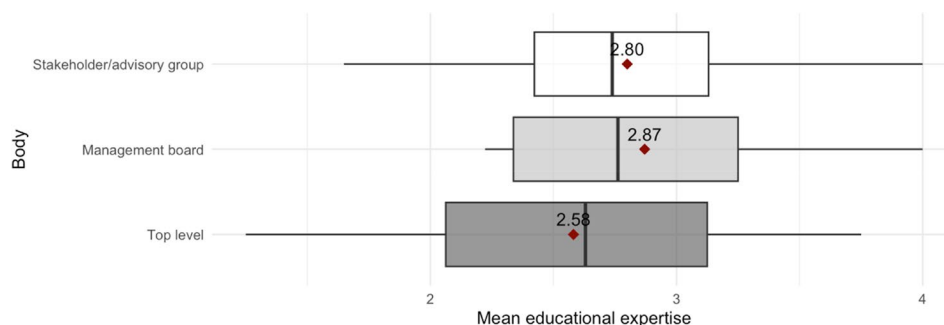


FIGURE 3 | Mean educational expertise per organizational level of RB.

TABLE 3 | Percentage of professional background by type of organization and organizational levels.

	Agency	Central bank	Ministry
Professional experience in the private sector	37.7	50	68.6
Professional experience in the societal sector	25.5	14.7	32
	Top level	Management boards	Stakeholder groups
Professional experience in the private sector	44.9	38.6	44.8
Professional experience in the societal sector	7.5	8	41.8

on the total number of professional experience (i.e., the aggregation of experience in the private sector, public sector, academia, consumer organizations, and trade unions) present in an organization.

Looking at the diversity of organizations, we see that both ministries and central banks are highly diverse (mean scores of 0.920 and 0.922, respectively), meaning that their members have professional experience in various sectors (see Figure 4).

Nevertheless, as Table 3 shows, we know that these experiences are more closely related to the private than to the societal sector. For regulatory agencies, we see less variation in how diverse their members are in terms of professional experiences. On average, the agencies studied have a diversity score of 0.73, indicating that they are somewhat less professionally diverse, despite attempts to include a variety of viewpoints through the setup of advisory bodies.

When examining the organizational levels *within* RBs (top-level directorates, management boards, and stakeholder groups) we see more variation between levels (Figure 5). We particularly find that stakeholder groups tend to be, as expected, more professionally diverse (0.80) on average. Again, it is not surprising that stakeholder bodies are more likely to include individuals with diverse professional experiences as they are expected to fulfill a representative function.

5 | Examining the Effect of Professional Diversity and Expertise on Perceived Competence

Next, we examine the data of the survey directed at regime actors in the three sectors across the six countries examined. For reasons of data availability, this second stage does not include data from European Union regulators. Our primary focus is on the perceptions of regime actors regarding the competence of the RBs examined as the main dependent variable. As for the explanatory variables, we use the two main independent variables—expertise and professional diversity—as they are described in the operationalization, and the control variables.

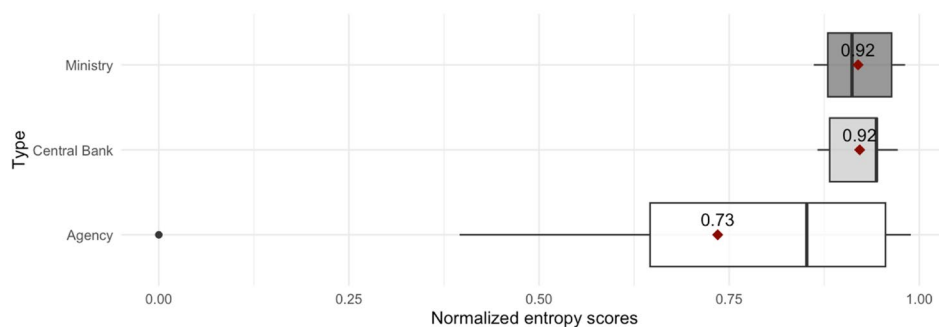


FIGURE 4 | Diversity (entropy) per type of RB.

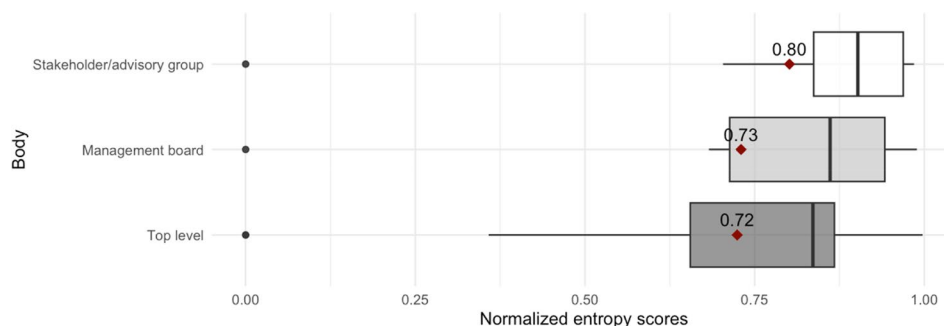


FIGURE 5 | Diversity (entropy) per organizational level of RB.

5.1 | Analyses and Results

Since the perceived competence variable is continuous, we use linear regression analyses. The results are shown in Table 4. In Model 1, we examine the effect of the level of professional diversity, as measured by the entropy score, on perceived competence. Model 2 tests the effect of expertise in terms of educational attainment level. Model 3 includes the level of expertise in the private sector, and Model 4 the level of expertise in the societal sector. VIF values of our models range from 2.17 to 2.25, indicating that there is no collinearity among the independent and control variables examined.

Contrary to our expectations in H1 and H2, our results suggest that neither professional diversity nor educational expertise of RBs affect perceptions of their competence. Similarly, our results do not support H3 and H4 either, according to which we expected a positive effect of other measurements of expertise, specifically, experience in the private sector related to the policy field and in the societal sector. As part of our robustness check analysis, we examined not only the level of education but also the extent to which the field of education clings to the policy sector of the RB. However, as shown in Annex 3 in the [Supporting Information](#), the results are consistent with the analysis presented in Table 4. This suggests that the level of education itself is a suitable approach since, as illustrated in Figures 1–3 of Annex 3 in the [Supporting Information](#), the staff members of RBs appear to have educational backgrounds that align with the field or sector in which they work.

Although our theoretical expectations were focused on these dimensions, other (control) covariates provide further core insights into the determinants of perceived competence:

specifically, the type of regime actor and leadership position within the organization, among others. For instance, shifting the focus onto those who evaluate the competence of the RBs examined, our results show that, compared to members of legislative bodies, members of executive bodies and of regulatory agencies (both external to the RBs examined) assign higher levels of competence to RBs. In contrast, members of consumer associations and trade unions perceive that RBs have lower levels of competence. This result indicates that knowledge about the functioning of regulatory bodies enhances trust in them, but also that societal actors may think regulators do not sufficiently consider their concerns, thus generating more skepticism.

These findings can be further disaggregated and nuanced. We find that individuals who hold high leadership positions within their respective organizations, compared to those who do not hold such positions, think RBs are less competent. In this case, it is likely that the in-depth knowledge of top executives (e.g., agency directors or firm chief managers) regarding the practical operation of the policy field covered by the RBs makes them more critical of the way the regulator performs its tasks, compared to those who do not hold a leadership position. At the same time, individuals that have a higher level of interactions with the RB in question, measured as those having interactions at least once a month, are more likely to perceive the RB as more competent compared to those that have a low level of interactions. This suggests that regular contact with RBs reinforces individuals' knowledge about the procedures carried out, positively affecting their confidence in the regulatory body's competence. This might indicate that those, even if they do not necessarily hold top positions, involved in specific policy areas/tasks requiring more frequent

TABLE 4 | Linear regression analysis on perceived competence of RBs.

	M1. entropy	M2. Ex. educational	M3. Ex. private	M4. Ex. societal
Intercept	4.841 (0.529)***	5.053 (0.473)***	5.023 (0.450)***	4.700 (0.537)***
Entropy	0.109 (0.326)			
Expertise: education levels		−0.074 (0.098)		
Expertise: in the private sector			−0.879 (0.547)	
Expertise: in the societal sector				0.539 (0.680)
Type of respondent (ref. cat., legislative bodies)				
Consumer associations/trade unions	−0.799 (0.288)***	−0.824 (0.289)***	−0.821 (0.288)***	−0.785 (0.289)***
Regulatory agencies	0.805 (0.252)***	0.817 (0.250)***	0.783 (0.251)***	0.832 (0.251)***
Regulatory intermediaries	−0.172 (0.276)	−0.165 (0.277)	−0.187 (0.276)	−0.172 (0.276)
Executive bodies	0.586 (0.242)**	0.598 (0.243)**	0.582 (0.242)**	0.587 (0.242)**
Regulatees	0.301 (0.237)	0.311 (0.237)	0.291 (0.236)	0.311 (0.237)
Market oriented organizations	−0.025 (0.229)	−0.034 (0.229)	−0.047 (0.229)	−0.028 (0.229)
Policy sector (ref. cat., data protection)				
Finance	−0.286 (0.163)*	−0.193 (0.193)	−0.055 (0.210)	−0.322 (0.171)*
Food security	−0.676 (0.142)***	−0.600 (0.159)***	−0.573 (0.147)***	−0.698 (0.143)***
Country/region (ref. cat., Belgium)				
Catalonia	−0.361 (0.229)	−0.314 (0.231)	−0.158 (0.256)	−0.149 (0.340)
Denmark	0.101 (0.321)	0.038 (0.222)	0.145 (0.234)	0.220 (0.332)
Germany	−0.764 (0.199)***	−0.743 (0.201)***	−0.662 (0.208)***	−0.549 (0.347)
Israel	−0.790 (0.254)***	−0.788 (0.251)***	−0.457 (0.330)	−0.612 (0.347)*
Spain	0.233 (0.299)	0.294 (0.306)	0.561 (0.358)	0.442 (0.390)
Switzerland	0.431 (0.177)**	0.467 (0.185)**	0.361 (0.176)**	0.647 (0.337)*
Leadership position (ref. cat., no leadership)				
Medium level of leadership	−0.160 (0.143)	−0.166 (0.143)	−0.160 (0.142)	−0.162 (0.143)
Higher level of leadership	−0.343 (0.159)**	−0.347 (0.159)**	−0.340 (0.158)**	−0.346 (0.159)**
Education level of respondent (ref. category, vocational)				
BA level	0.529 (0.215)**	0.524 (0.215)**	0.525 (0.215)**	0.540 (0.216)**
MA level	0.192 (0.198)	0.186 (0.198)	0.200 (0.198)	0.203 (0.198)
PhD level	−0.210 (0.219)	−0.210 (0.219)	−0.199 (0.219)	−0.197 (0.219)
Level of interaction (Ref. category: “I have never heard about this institution/no interaction”)				
Medium level of interaction	0.126 (0.130)	0.128 (0.129)	0.110 (0.129)	0.125 (0.129)
High level of interaction	0.388 (0.159)**	0.386 (0.158)**	0.374 (0.158)**	0.384 (0.158)**
Age	0.138 (0.053)***	0.136 (0.053)**	0.137 (0.053)***	0.138 (0.053)***
General trust	0.249 (0.040)***	0.248 (0.040)***	0.246 (0.040)***	0.249 (0.040)***
Num. obs.	1379	1379	1379	1379
R ²	0.145	0.145	0.146	0.145
R ² adj.	0.130	0.130	0.131	0.130

(Continues)

TABLE 4 | (Continued)

	M1. entropy	M2. Ex. educational	M3. Ex. private	M4. Ex. societal
AIC	5853.3	5852.8	5850.8	5852.7
BIC	5989.2	5988.8	5986.7	5988.7
Log. lik.	-2900.632	-2900.404	-2899.375	-2900.369
RMSE	1.98	1.98	1.98	1.98

* $p < 0.1$.** $p < 0.05$.*** $p < 0.01$.

interaction with the regulatory body, are more likely to provide a targeted assessment focused on specific aspects that are of relevance to their tasks, rather than evaluating the regulatory body's overall performance. Thus, it is more likely that more frequent interaction leads to an evaluation focused on that specific interaction with the regulatory body, rather than on its overall performance.

As for the educational level of our survey respondents, individuals with bachelor's degrees assign higher levels of competence compared to those with lower educational attainment, but the result is not significant for individuals with a master's degree or a PhD. Our results also show unsurprisingly that individuals with higher levels of generalized trust are also more likely to trust the competence of RBs. Finally, we also find some variation in the perceived competence of RBs across countries. Compared to respondents from Belgium (the reference category), respondents from Germany and Israel have significantly lower levels of perceived competence, while Swiss respondents have higher levels. It is hard to interpret such variation.

6 | Limitations

To study the relationship between competence, expertise, and diversity, this research used two novel datasets as empirical evidence. The first one covered the professional experience of members of RBs in the six countries examined and in the European Union, in the policy areas of data protection, finance, and food safety. The second dataset collected perceptions from stakeholders in the same countries regarding the performance of RBs. One limitation of this study lies in using data derived from the resumes of RB members that are publicly available on the Internet. Since resumes can be presented in various formats and may contain diverse information, we do not have a complete database for all the variables studied. Despite this caveat, our data collection strategy is well aligned with other studies employing similar analytical methods (e.g., Fernández-i-Marín, Jordana, and Bianculli 2016; Pérez Durán 2019). In our data we identified experience in different professional domains over the last 10 years; future studies could refine the analysis by employing a different methodology, such as surveys, to gather detailed information about the professional trajectories of RB members directly from the individuals themselves. The second limitation is that the second part of the analysis does not include questions about European Union agencies. This decision was made for the sake of methodological consistency because the questions posed to the EU respondents differed from those included in

the surveys conducted in the individual countries (Bach et al. 2021). While the second part of our analysis focuses solely on the six countries examined, we believe that the inclusion of EU agencies in the first part enhances our overall understanding of the topic, providing a broader empirical basis on expertise and diversity across different jurisdictional levels.

7 | Conclusions

To conclude, the first step of our analysis focused on the levels of expertise and diversity in terms of education and professional experience in RBs. In addition, we were interested in studying the effect that expertise and professional diversity may have on the competence of RBs as perceived by regime actors. Regarding the first objective, we found that individuals working in central banks and ministries exhibit higher levels of educational attainment. Especially ministries appear to have a high level of expertise, as a high proportion of members of ministries have PhDs. These findings suggest that traditional bureaucratic structures, such as ministries, can effectively integrate highly educated specialists. The rise of expertise is not a unique characteristic of new regulatory bodies, but it may be a trend in all public organizations. Therefore, the first major insight is that the distinctiveness of regulatory agencies as expert-based organizations has probably been overstated. We suspect this is due to the lack of a systematic survey of their personnel, not to mention the absence of a comparison with the characteristics of individuals employed in the traditional bureaucracies. Relatedly, while the expert-based reputation and legitimacy of regulatory agencies is certainly warranted, other segments of the bureaucracy also merit comparable recognition, at least based on the qualifications of their staff.

When considering professional experience in the private and in the societal sector, our findings reveal that the majority of the members of the examined RBs tend to have more professional experience in the private sector rather than in the societal sector. Instead, individuals with experience in the societal sector are more present in ministries and within the advisory bodies of agencies, such as stakeholder groups. On the one hand, these findings expand Pérez-Durán and Bravo-Laguna's (2019) work, which demonstrated that regulatory agencies are able to involve highly educated specialists with broader societal experience: expertise does not mean that agencies are insulated from society and, as we have also seen, it is not incompatible with diversity. Therefore, we believe that with the rising importance of autonomous bodies in rule-making, the study of representation in the

civil service needs to open up the black box of administrative bodies that are located outside the traditional bureaucracy.

In this article, we have also presented a different approach to regulation studies: scrutinizing the professional diversity of individuals working in RBs. This approach has been considered in studies of representative bureaucracy, but there is no reason to ignore it in the study of new (autonomous) regulatory bodies. We have investigated the extent to which top-level directorates, members of management boards, and stakeholder/advisory groups have experience not only in the public sector, but also in the private, corporatist (i.e., trade unions) and broader societal sectors. Using our entropy index, we found that both ministries and central banks demonstrate a relatively high degree of professional diversity, which indicates that their members possess professional experience in various types of organizations, mostly associated with the private and societal sectors. Agencies, by contrast, tend to be somewhat less diverse compared to ministries and central banks. This does not mean that their efforts in terms of stakeholder inclusion can be equated with sheer window-dressing. While the top-level directorates are generally less professionally diverse, stakeholder groups tend to be, on average, more diverse. Our findings thus highlight the importance of advisory bodies, specifically stakeholder groups, as crucial platforms for representation (e.g., Arras and Beyers 2020; Busuic and Jevnaker 2022; Redert and Bursens 2024).

Our second objective was to test whether professional expertise and the representation of different societal segments have an effect on regime actors' perceptions of the competence of RBs. In line with previous studies showing that the capacities of bureaucratic organizations are an important basis for their reputation (Busuic and Rimkutė 2020; Carpenter 2010), we expected that expertise and professional diversity would be important to explain perceptions of competence in RBs. However, our analysis does not support these expectations. The results are quite surprising as we may have expected the particular profiles of RBs to be correlated with how competent these bodies are perceived to be.

Although our results do not support our four theoretical expectations, the main findings suggest that individuals with a shorter professional distance from RB members—specifically, members of executive bodies and other regulatory agencies—are more likely to perceive regulators as competent. This inclination may be attributed to their close proximity, similar profiles (homophily), and frequent interactions with RB personnel (Groeneveld and Meier 2022). Conversely, public interest organizations, especially consumer organizations that are well-represented within this category, tend to be more critical toward RBs' competence. Drawing from lessons in the study of representative bureaucracy, this can be attributed to the perception that the views of these organizations are not taken sufficiently seriously, leading them to be more critical regarding the competence of regulators. Indeed, a potential explanation for these negative perceptions can be a greater distance between these organizations and regulators, whose top-level staff tends to mirror societal diversity only partially. This might affect the perceived level of competence, as the latter may be associated with political “literacy,” that is, the ability of regulators to speak in a persuasive manner to stakeholders and to listen to their concerns (Eriksen 2020).

Although our theoretical expectations were not supported by the findings, the null results presented in this paper can offer valuable insights for future research. Firstly, we could test the argument that perceptions of closeness or distance between the regulators and stakeholders influence perceptions of the regulators' performance. Our study did not do this directly, as the theoretical focus was on examining the roles of expertise and diversity. Hence, instead of measuring diversity, we could seek to measure the distance between stakeholders and regulators as perceived by regime actors. Such an empirical approach is necessary as our findings suggest that greater professional proximity between regulators and stakeholders enhances perceptions of RBs' competence. Additionally, a closer examination of competence as an outcome of a relational process formed through specific types of interactions between trustors and trustees could provide further insights. Finally, there is potential for adopting a more comprehensive perspective on the competence of RBs, considering not just perceptions but also evaluating the outcomes of their work, such as their actual performance and effectiveness.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

¹We use the term “professional diversity” interchangeably with “diversity in terms of professional trajectories” throughout the paper.

²We thank a reviewer for pointing out this.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.