

*Tobias Weise*

Institut für Interkulturelle und Internationale Studien, Universität Bremen

<http://globalnorms.uni-bremen.de>

[tobias.weise@iniis.uni-bremen.de](mailto:tobias.weise@iniis.uni-bremen.de)

## **Transparency and Participation of Non-State Actors in Inter-Governmental Organizations. The Case of the International Atomic Energy Agency**

Paper prepared for the conference on *The Legitimation and Delegitimation of Global Governance Organizations*, September 2013, Bremen

Work in Progress

### **Abstract**

*Inter-governmental organizations are increasingly opening their policy-making processes up to non-state actors and the general public. The opening of IGOs can be witnessed on at least two dimensions. First, their internal processes are becoming more transparent. Second, IGOs provide possibilities of formal and informal participation to non-state actors like NGOs, experts and business groups. How can this trend be explained? I discuss two main strands of explanatory literature. The first assumes that IGOs are opening up because this means getting information and other resources at comparatively low costs. The second holds that there has been a transformation in the global normative framework that prescribes modes of appropriate global governance. IGOs are opening, because participation and transparency have become important benchmarks for the legitimacy of global rule-making and its institutions. In this paper, I will first develop an analytical framework that combines both approaches. Second, I apply this framework to the analysis of the opening of the International Atomic Energy Agency using Qualitative Comparative Analysis.*

## **1 Introduction**

In the last decades, we have witnessed an expansion of globalized political rule making<sup>1</sup>. In the emergence and expansion of global governance, inter-governmental organizations (IGOs) have played an important role. They were amongst the first institutionalized arrangements between states to battle complex political problems. Further, after their creation, they have become important actors of global governance themselves (cf. e.g. Barnett and Finnemore, 2004; Hawkins et al., 2006; Hurd, 2011; Martin and Simmons, 1998; Rosenau and Czempiel, 1992). While IGOs produce a growing output of formal and informal regulation for a variety of actors, one can also witness changes in their internal processes of policy-making. First in the

---

<sup>1</sup>This article was written as a part of the research project *Changing Norms of Global Governance* (<http://globalnorms.uni-bremen.de>) at the Institute for Intercultural and International Studies, University of Bremen. I thank the German Research Foundation for funding and the Global Norms team for their support.

1970s, but especially since the 1990s, IGOs are no longer exclusive places of state diplomacy (Charnovitz, 1997; Willetts, 2011). Instead, non-state actors like NGOs, scientists and lobbyists are participating at formal and informal IGO meetings (cf. e.g. Steffek, 2012; Tallberg et al., 2013). Furthermore, even when IGOs do not interact with non-state actors directly, there is a trend towards more IGO transparency (cf. e.g. Grigorescu, 2003). These developments towards more non-state participation and transparency in IGO governance, which I will refer to as *organizational opening* in this paper, is welcomed by some as a moment of emerging global democracy. Others are more skeptical, criticizing the growth of opaque and unaccountable governance arrangements.

These empirical findings ask for explanations. Why do state representatives and IGO administrations, the main gatekeepers of change in IGOs, want open organizations? This question has been partially answered by previous research. For example, Kal Raustiala (1997) shows how states can benefit from non-state participation because they provide valuable resources during important phases of IGO policy making. By opening, states gain political resources and become more active global regulators. However, in a recent study, Tobias Böhmelt (2013) argues that a need for non-state expertise alone cannot explain the high participation in the case of environmental governance. From a more structural perspective, Kim Reimann (2006) sees larger structural and normative changes in the global governance system that explain rising non-state participation. On the one hand, it is growing opportunities for funding and special programs that have created incentives for the creation and participation of non-state actors. On the other hand, she describes the emergence of a new norm prescribing non-state actor participation. This norm describes non-state actors as crucial partners in the field and as enforcers of good, democratic governance. In a rich way, the edited volume by Jönsson and Tallberg (2010) presents a selection of empirical analyzes on how NGOs and other actors participate in different IGOs. Also, the forthcoming book by Tallberg et al. (2013) presents a very detailed large-scale study of the opening of a number of IGOs. Finally, concerning transparency, Alex Grigorescu (2007) shows how states, IGO administrations and NGOs influence IGOs to commit to more transparent processes. He also suggests that there appears to be a causal relation between shared democratic norms of IGO member states and the likelihood of the IGO to adopt more transparent processes.

In this paper, I propose an analytical framework that is a combination of two basic explanations of why IGOs are opened: *resource based* explanations and *norm based* explanations. I discuss both in more detail below. Furthermore, I conceptualize organizational opening as a multi-dimensional phenomenon. I do so by focusing on opening in an IGO's *talk*, *decision* and *action*. I apply the framework to study

the opening of the International Atomic Energy Agency (IAEA) using *qualitative comparative analysis* (QCA) as methodology. I present some first descriptive and explanatory data in the final section of this paper.

My main findings are the following: *First*, the IAEA shows an interesting pattern of organizational opening. In its early years, it was quite open for participation, allowing non-state participation at its General Conference and also talking a lot about the benefits of its consultative arrangements. Yet, during the 1970s and 1980s, little participation was actually happening. Only in the last two decades, has non-state participation reached its earlier numbers and has risen slightly. When looking at transparency, I discovered a similar pattern. While actions on the transparency dimension were high in the Agency's early years, there has also been a phase of lower transparency in the 1970s and early 1980s. Yet, in the last two decades, there is an increasing creation of transparency rules and talk about transparency. *Second*, when looking at possible explanations for the openness of the IAEA, I found the following relationships:

- The presence of a norm of open governance appears to be a necessary condition for increasing participation.
- With some reservations, high inequality between member states is sufficient for increased participation.
- A high share of democratic member states is a necessary condition for high transparency and opening decisions.
- High media attention is a sufficient condition for increased transparency and opening decisions.

## 2 Explaining the Opening of IGOs

### 2.1 Conceptualizing organizational opening

When IGOs increasingly cooperate with non-state actors and become more transparent, *organizational opening* has occurred. I understand organizational opening as a special type of institutional change. An organization has opened when its institutional output has changed, so that the organization is more transparent and/or more inclusive than before. Also, it has opened if in its discourse, the organization addresses issues of transparency and participation. Opening is visible on the following three dimensions of IGO output:

- *talk*, which is what IGOs say to their environment,

- *decisions*, which is written rules that the IGO has decided to follow, and
- *action*, which is what the IGO does in its daily operations.

The *talk, decision, action* distinction has prominently been discussed by Nils Brunsson (2002) and other students of organization theory (cf. for an overview e.g. Scott, 2003). For Brunsson, the various processes, structures and normative frameworks inside an organization and between the organization and its environment need to be disentangled. When organizations produce products and services – e.g. rules, regulations, development aid, inspections –, they struggle with various demands from their environment. They can respond to those demands on any of their three output dimensions (talk, decision, action). My output-centered conceptualization of IGO opening follows the tradition of sociological institutionalism. Here, organizations are considered as social facts that are not only created to overcome cooperation problems or information gaps. Rather, “organizations may be created and supported for reasons of legitimacy and normative fit rather than efficient output; they may be created not for what they do but for what they are – for what they represent symbolically and the values they embody” (Barnett and Finnemore, 1999, p. 703). These material and ideational effects of IGOs become visible by focusing on how organizations influence their environment with their output and *vice versa*. But how exactly can talk, decision and actions be understood?

*Talk* is what IGOs say about the world and about themselves. Through talk, organizations frame their own output and self-image as well as the output and self-image of others. Therefore, talk of IGOs can be expected to constitute and reflect normative values and meanings that are relevant in global governance. For example, speeches of Secretary Generals, public relations brochures and annual reports are outputs on the talk dimension. These texts explain the self-image and world view of the organization. Talk is transparent by definition and cannot be opened for participation as only the IGO can speak for itself. Nevertheless, I argue that organizations can refer to opening in their talk. They talk about opening, which can have effects on their decisions or actions and on the IGO’s perception in its environment. It therefore deserves analysis.

*Decisions* of IGOs are conserved as rules. A decision, needs to be perceived as binding by the organization and not as a merely symbolic statements. Decisions can be used as an instrument to interact with the organization’s environment. For example, they create opportunities of participation for non-state actors. Examples for decisions are policies of non-state participation that represent a consensus between various actors inside IGOs, e.g. General Conference Resolutions that pass rules for NGO consultative status.

Finally, an IGO's *actions* are those activities that create its products. The variety of IGO products comprises international law, regulations and standards, but also fact-finding, humanitarian and military missions. Actions are thus activities that an organization performs to reach material goals. For example, in order to create new regulation, an organization needs to host consultations, fund expert commissions and negotiate with different representatives. Like decisions, actions are reflecting and constituting power structures in world politics and have direct effects on individuals. Consequently, IGOs are often criticized or praised for their actions, e.g. for unscientific deliberations or effective inspections.

Next to the talk, decision, action differentiation, I introduce two properties of organizational opening that can operate on all three dimensions. Compared to other IGOs, by more *open* organizations I mean IGOs with

- more participation of non-state actors (i.e. inclusive organizations), and/or
- more transparently organized processes of governance (i.e. transparent organizations).

*Participation* is a concept often discussed in debates of global democracy. A number of scholars consider participation to be a central principle of good global rule-making (cf. e.g. Zürn, 2000). Here, the central idea is that people should have the possibility to participate in the decision making process that lead to decisions that have an effect on them (cf. e.g. Held, 1995, p. 103). For IGOs, calls for more participation can be found on two levels. First, IGOs may be criticized because they lack appropriate state representation, a critique often voiced with regard to the UN Security Council. Second, concerns of participation may also be voiced with regard to the inclusion of non-state actors in the decision making process. Non-state actors participation receives growing attention since the 1990s. The second issue is of central interest to my analysis. Yet, one needs to pay attention and consider the critical impacts that participation can have. To a number of observers, participative arrangements may be a form of “tyranny”, especially when non-state actors from the global north dominate and under-represented voices are not made heard (see e.g. Cooke and Kothari, 2001).

*Transparency* is also a much discussed concept. Transparency often is a precondition for the participation of non-state actors. It has become an important criterion for the evaluation of systems of political decision making since the beginning of the 20<sup>th</sup> century, when it was usually applied to national bureaucracies. Later, with the extension of governance activities to the global realm, transparency was also expected from processes in IGOs like the IMF and the World Bank System (cf. Hale, 2008, 73f). First, IGOs can be transparent towards their member states, e.g. by issuing classified

reports or answering to questions of state representatives in a closed environment. Second, IGOs can be transparent towards groups of non-state actors. Finally, IGOs can be transparent toward the general public, i.e. providing information directly to the public without state or non-state intermediaries (Grigorescu, 2007, p. 626). This is the most important form of transparency for my analysis because it describes the widest opening of an IGO on that dimension.

To summarize my conceptualization of organizational opening, an IGO would be said to have undergone organizational opening if:

- in its talk, it refers more often to participation and/or transparency. For example, participation or transparency are acknowledged as important principles of the organization in its annual report.
- its decisions, in the form of rules, have changed so that they now grant more access; or if it has decided to disclose more information. For example, the IGO has amended its rules for the general conference so that non-state actors are now allowed to participate. Further, the organization may have decided to now also disclose transcripts of the governing body meetings.
- its actions have changed so that it now more often allows participation or is more transparent. For example, a body of the IGO has begun to host meetings with non-state actors and has provided transcripts of these meetings to a mailing list.

## 2.2 Explanations of organizational opening

As discussed above, there is a growing body of literature that seeks to explain organizational opening. I subsume these explanations under two basic explanatory logics. I will label these as *resource-based* and *norm-based* explanations. Both provide different rationales why IGOs could decide to increase non-state participation and transparency. The former one sees the need for resources and IGO functionality as a driving force. The latter assumes that changes in the normative framework of global governance prescribe participative and transparent modes of rule-making as the appropriate model of legitimate global governance.

### 2.2.1 Resource-based explanations

In more detail, *resource-based* explanations are based on institutionalist theories of international relations. They propose three mechanisms that may lead to an

increase in non-state participation (see Tallberg, 2010, 47ff). *First*, as IGOs act in complex policy areas and need to effectively develop tools of governance, they need to gather information. The more complex situations become, the more costly it will be to gather information. Allowing non-state actors that either already possess required information, or are capable of generating information at low costs, may thus be a rational option. Furthermore, an equal distribution of information reduces information asymmetries between states, which renders joint decision making more effective. *Second*, states have an interest in seeing the policies they pass in IGOs implemented in the field. Because IGOs and states often lack funds and know-how on how to best achieve effective operation (see e.g. Barnett and Finnemore, 1999, p. 706), they may choose to increase participation. Here, opening allows the inclusion of external actors that may have the capabilities required for implementation in the field. For example, outsourcing tasks like humanitarian aid to specialized NGOs saves resources because the IGO need not develop its own operational knowledge. *Thirdly*, another reason why states organize IGOs is to effectively bind themselves and other states to agreed commitments (cf. Tallberg, 2002). In complex issue areas, it is hard to assess if everyone fulfills its commitments. Here, including non-state actors that engage in monitoring state commitments can be an effective tool. Some non-state actors have special know-how on how to assess state commitments via their local or global networks.

The same mechanisms are applied to explain increasing transparency. In the case of information asymmetries, especially small member states have an interest in reducing those. Pushing for more transparency thus provides the same information to all member states. Under the implementation mechanism, it is especially the IGO administrations that have an interest in being transparent about the implementation of their activities in the field. Good implementation results improve the IGO's reputation, weak implementation results can be used by the administration to call for more financial resources. Finally, being transparent about success in the monitoring of state commitments raises the IGO's reputation as a monitoring agent – a core function that states create IGOs for.

Under a resource logic, there are two particular conditioning factors that raise the chances for organizational opening. First, decisions for or against opening depend on the *demand for expertise* that is necessary to govern an issue area. Here, it is especially organizations that need to govern highly technical issues and want to set appropriate rules for highly technical processes, that will have a high demand for external expertise. A higher demand for expertise may also be important for the level of transparency. To profit from external expertise, the organization will have to disclose some information to those that are supposed to provide the expertise.

Second, IGOs with a high *demand for operational resources* will more likely open their organization. It is especially organizations with larger operations in the field that require resources for monitoring and implementing their rules and decisions. Thus, one would expect to see more participation in organizations if they rely heavily on expertise and external resources for governance or if their activities become more dependent on expertise and resources over time. Additionally, transparency may raise in IGOs with a higher demand for operational resources to signal this demand effectively to their environment. To sum up, I formulate the following hypotheses:

- H1 Organizations with low budgets allow more participation and transparency (low budgets raise demands for operational resources and expertise and for monitoring).
- H2 Organizations with a very unequal membership allow more participation and transparency (participation and transparency reduce information asymmetries between member states and increase monitoring).
- H3 Organizations that deal in complex issues areas allow more participation and transparency (complex issue areas raise demands for expertise and monitoring, and increase information asymmetries).

## 2.2.2 Norm-based explanations

*Norm-based* explanations are fueled by constructivist notions of international relations. In contrast to resource-based explanations, norm based explanations assume that actors follow a logic of appropriateness. The basic assumption of this literature is that the normative reference frames of appropriate and good global rule-making have changed over the past decades. Rules shall no longer be made by states alone. Rather, for global rules to be accepted as legitimate, they need to be made in processes that resemble the democratic processes of states. Thus, the decision-making process should meet criteria like transparency, accountability, inclusiveness, representation and participation (see e.g. Charnovitz, 2003; Dingwerth, Lehmann, et al., 2011; Dingwerth and Weise, 2012). Thus, we see more non-state participation and transparency in IGOs because of two mechanisms. *First*, individual decision makers in IGOs may be convinced that participative and transparent forms of governance are the best way to govern. This is likely for diplomats from democratic states who have been socialized with democratic values and experience popular demands to apply those state-level values to intergovernmental decision-making in IGOs. *Second*, decision-makers may further know that they are held accountable for their actions in IGOs and that widely accepted norms are the standards for this evaluation. The



rising number of transnational protest directed against IGOs indicates that there seems to be a general mismatch between the norms of good governance and the practice of governance in IGOs (see e.g. Della Porta and Tarrow, 2004). The legitimacy of IGOs appears to be questioned and challenged more often (see e.g. Nullmeier et al., 2010). To react to such challenges and maintain institutional legitimacy (see Suchman, 1995), diplomats may strategically increase non-state participation and transparency, thus avoiding criticism and securing support.

Following the norm based logic, there are also two important conditioning factors to consider. First, the *depth of governance activities* is important. Here, the argument is that the more rules an organization passes and the stronger these rules influence the lives of individuals, the more they require a good legitimacy record. For example, an organization that harmonizes standards of industrial products may be less evaluated on the basis of its legitimacy by a broader audience than an organization where working standards for industrial workers are negotiated. Second, one can expect more opening the more *democratic member states* an organization has. Here, the idea is that when IGOs act in democratic societies and are controlled by democratic principles, the IGO's environment will more likely raise demands of open governance. This assumption is plausible when one assumes that democratically governed audiences have more chances to raise these concerns and address them directly to their governments. To contrast, in an IGO composed of mainly autocratic national systems, the audience in the immediate environment would not have the opportunity to voice its concerns, because opinions are most likely oppressed. Consequently, there are four additional hypotheses that need consideration:

- H4 Organizations that have high media attention allow more participation and transparency (media attention challenges the legitimacy).
- H5 Organizations with a high share of democratic members allow allow more participation and transparency (socialization of diplomats and pressure from democratic societies).
- H6 Organizations with large governance depth allow more participation and transparency (deep governance increases legitimacy challenges).
- H7 The general presence of a norm of open governance increases participation and transparency (the norm acts as a possible reference frame for good global governance).

### 3 Methods and Data

The following paragraphs describe my current, work in progress, analytical framework. Table 1 lists the variables I collect and the data that I use to analyze the IAEA case. As discussed above, I cover the dependent variable, i.e. organizational opening, on three dimensions. First, I analyze the talk dimension by reading the IAEA Annual Reports with the goal of identifying relevant statements about participation and transparency as principles that are of importance to the IGO. For the decision dimension, I look at decisions made by the IAEA General Conference that concern the participation of non-state actors (e.g accreditation rules) and at references in the Annual Report to changes in rules that affect general transparency (e.g. information disclosure policies, media strategies). To identify participation on the action dimension, I collect data on the number of non-state actors that are participating at the IAEA General Conference. Finally, I look for changes in the transparency of IGO action by collecting the budget share that is attributed to public information.

Table 1: Variables and Data

Name	Description	Data
<i>Dependent variable</i>		
TALK-Part-AR	reference to norm of participation in the Annual Report	IAEA Annual Report, 1957-2011
TALK-Trans-AR	reference to norm of transparency in the Annual Report	IAEA Annual Report, 1957-2011
DEC-Part	decisions that increase participation	General Conference resolutions and Governing Board decisions
DEC-Trans	decisions that increase transparency	references to rules changes in the Annual Report
ACT-P-GC-NGO-pres	number of NGOs present at annual General Conference	General Conference List of Delegates
ACT-T-PubInfBudget	Budget available for public information as share of total budget	annual budget reports
<i>Resource-based explanations</i>		
RB-BudgSize	Amount of Annual IAEA Budget in 2005 USD	annual budgets, US DoC BEA GDP deflator, ECB currency conversion rates
RB-IneqMembers	inequality of the IGO members	coefficient of variation of members' real GDP in 2005 USD, Penn World Tables 8.0
RB-Complexity	complexity of the policy field that the organization covers	number of IAEA TECDOCs published per year
<i>Norm-based explanations</i>		
NB-PressSalience	presence of organization in the global press	Lexis Nexis: "major world news" corpus
NB-DemMem	proportion of democratic members of the whole organization	COW-IGO for membership data, Polity IV
NB-GovDepth	authority of the IGO	increases in the authority of the IAEA
NB-OpGovNorm	presence of the norm of open governance in the general public discourse	google books n-grams

Turning to the explanatory variables, I collect a number of variables for both norm- and resource-based explanations. To measure the resource need of the IGO, I collect its budget data and convert the historical data in 2005 USD for compar-

ison. The assumption behind these measures is that budget crises will cause an increased need of the organization for external resources. Further, I collect data on changes in the equality of member states by looking at the coefficient of variation (i.e.  $\frac{\text{standard deviation} * 100}{\text{mean}}$ ) of the membership's historical GDP data. The higher the coefficient, the higher the inequality of the member states. To measure issue complexity, I collect the number of IAEA TECDOCs, the collection of IAEA publications on technical and scientific issues. Here, the assumption is that TECDOCs reflect at least the scientific issues that the Agency deals with. Thus, I think they can be a relatively good proxy for the complexity of issues that the Agency is engaged with in each year.

The norm-based explanations are covered with a number of variables, too. First, an analysis of media salience of the IAEA is conducted with global media data. Next, I test if the amount of democratic member states influences opening by collecting data on the share of democracies that are members of the organization. Next, I provide a qualitative measure of the IAEA's governance depth. Finally, I account for the general presence of an open governance norm in the public discourse by analyzing the google books corpus for the frequency of core concepts of this norm (cf. on the same use of this data Sommerer and Tallberg, 2011). An overview of the data-set is contained in Table 3 in the Appendix (page 23).

Methodologically, I use qualitative comparative analysis to analyze the influence of the explanatory conditions on the opening of the IAEA. I basically follow the instructions for QCA proposed by Schneider and Wagemann (2012). I will discuss individual steps of the analysis in the chapters below. Yet, I cannot go into details of the methodology and its application, here.<sup>2</sup>

## 4 The Opening of the IAEA

The International Atomic Energy Agency (IAEA) was founded in 1957 as an independent international organization. Its goal is to further the peaceful applications of nuclear technologies. The IAEA is a universal membership organization integrated in the United Nations system. To fulfill its mandate and be true to its "Atoms for Peace" slogan, the IAEA activities rest on three pillars: *(i)* safety, *(ii)* science and technology and *(iii)* safeguards and verification. Under the first pillar, the IAEA develops safety standards for atomic energy production and other nuclear applications. Under the second pillar, the Agency finances research and technology transfer projects. Finally, under the third pillar, the Agency inspects sites with atomic materials in its

---

<sup>2</sup>For a detailed discussion of the steps in my QCA analysis (calibration, handling missing values, plotting the results, etc.) please see the online appendix for this paper at <http://tinyurl.com/lqrwvkb>.

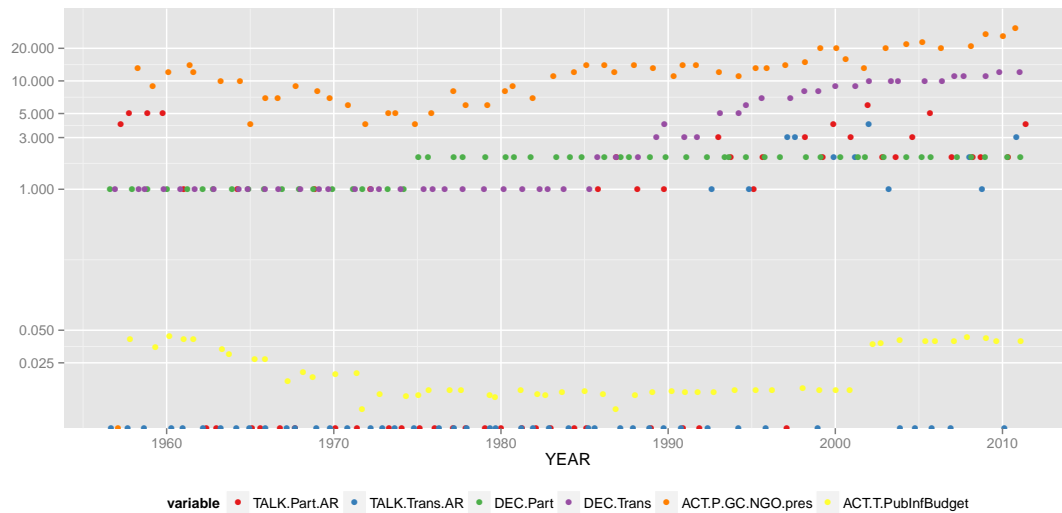
member states to verify that all materials are used for peaceful purposes and are not diverted to military applications. Usually, Agency inspections are based on the Non-Proliferation Treaty, on UNSC resolutions or on specific agreements.

During its long history, the Agency has seen some interesting changes in its activities, mandate and public perception. During its early years, the Agency was a specialized international organization that made valuable contributions to nuclear research and the development of safety standards. Yet, during this time, it was hardly ever in the eyes of a wider public. This changed during the 1990s. While the Agency was becoming more active in areas of world-scale political conflict (Iraq, Iran, DPRK), public attention rose, too. Media attention peaked during the Agency inspections in Iraq before the war in 2003 until the award of the Nobel Peace Prize to the Agency and its Director General M. ElBaradei in 2005. The growing focus on the Agency's third pillar has brought up old conflicts among the Agency's member states. From the point of view of many members, the Agency fails to strike a balance between its security functions and its promotional activities (technical assistance, technology transfer, capacity building). The growing politicization of the IAEA is a closely related development that is critically reflected by both member-states and the Secretariat. Thus, the IAEA is an interesting case to study IGO opening. It is an expertise-centered organization that one would expect to be rather open. At the same time, with its growing involvement in security politics, one would expect to see low openness. As I will discuss below, the IAEA indeed shows some fascinating patterns of participation and transparency.

#### 4.1 Patterns of IAEA opening

Did the IAEA become more open since its founding year 1957? Figure 1 (also see Table 3) shows a graphical representation of the data for the opening variables. The following trends can be highlighted. When looking at the *talk* dimensions, transparency talk starts in the mid 1990s and is a strong feature of the IAEA Annual Report in the early 2000s. Here, it is often acknowledged that the Agency needs to make sure that its processes are transparent for states, the public and special interest groups, like the development community. Talk about participation was already quite strong in the early years. There was a larger discussion about the benefits of working closely together with non-state actors and granting them a consultative status. This kind of talk disappears for many years and only re-emerges as a common theme in the late 1990s and 2000s. Thus, talk about opening is particularly strong in the most recent decade.

Figure 1: Opening of the IAEA



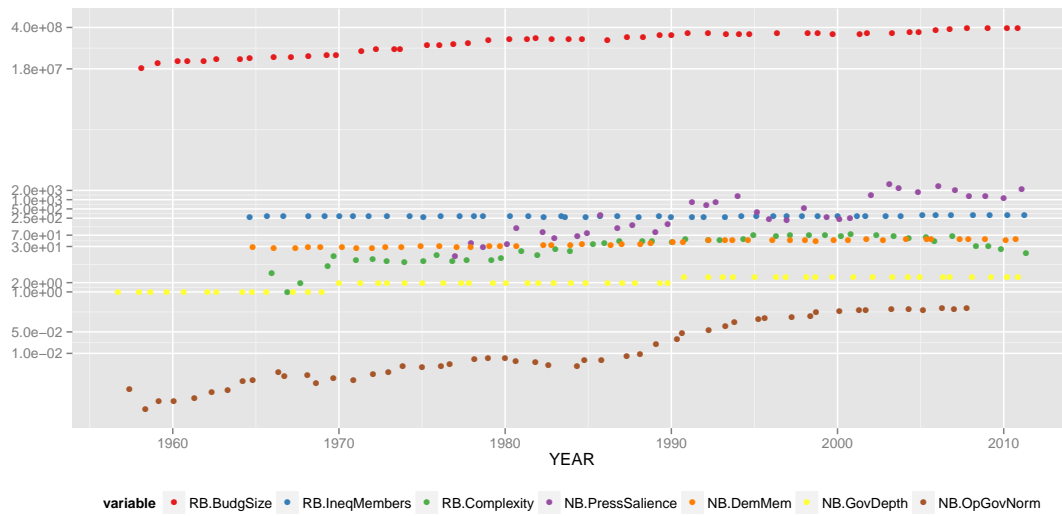
On the *decision* dimension, we see a mixed picture. When looking at participation, there has only been one change in rules for non-state participation. The creation of a consultative status was already discussed during the preparatory commission that was to draft the text of the Agency Statute (see e.g. IAEA/PC/W.26) and a consensus was found that the Agency needed to develop rules for NGO consultation. Consequently, the first General Conference asked the IAEA Board of Governors (GOV) to develop such rules (GC(I)/RES/12). The GOV developed these rules over the year and the GC passed them the following year (GC(II)/RES/20). The rules, now published and referred to as INFCIRC/14 have not been changed since. However, the practice of granting the consultative status to NGOs has been used by both the Western and Eastern blocs for ideological and political battles. Thus, de-facto, there has been no decision on consultative status since 1959 (cf. also Szasz, 1970, pp. 313-314). To nevertheless be able to profit from NGO presence at the GC, the GOV asked the General Conference in 1975 (GC(XIX)/546) to approve a resolution that allows the invitation of relevant NGOs at the GOV's discretion. This resolution is passed without formal vote or discussions in the GC Committees (GC(XIX)/RES/332). Thus, since 1975, NGOs that do not enjoy consultative status may also be represented at the GC on invitation. When looking at the number of NGO participation however, the two-digit numbers of NGOs at the GC that can be seen in the early 1960s are not reached again before the mid 1980s. Since then, the number of NGOs at the GC is rising steadily.

When looking at decisions that increase transparency, they are closely related to the increased media attention the IAEA receives. In the Annual Reports, the Agency often introduces new rules that govern the disclosure of information and the interactions with the media and the general public as a reaction to risen public attention. In particular, the following rule changes constitute important increases in transparency:

1. 1957-1985: base-line policy: mainly distribution of information through member states and a few NGOs , reactive outreach to media
2. 1986: issuing IAEA Newsbriefs, a special publication for the media including highlights in nuclear science and applications
3. 1989: IAEA Highlights publication, marketed as a popularized version of the Annual Report
4. 1990: new PR policy: e.g. with media seminars and media summits during the General Conference
5. 1993: Launch of IAEA website, this makes IAEA a first mover in the UN system
6. 1995: distribution of electronic official documents through website to public
7. 1996: partial de-classification of GOV documents
8. 1998: new PR strategy: outreach to non-traditional actors
9. 2000: new Technical Cooperation policy: increase transparency
10. 2002: new PR strategy: pro-active and distribution of Agency publications for free in electronic form
11. 2007: New PR strategy: increase outreach to development community
12. 2010: Using social media

Thus, the Agency became more transparent over the years, especially since the middle of the 1980s. When looking on the transparency action dimension, we see a development parallel to participation. The Agency's public information budget was quite high in the Agency's early years and only reached the same height in 2002. Here, it is especially the large increases for the maintenance of the Agency's website and electronic document provision that fuel the increase. In summary, the Agency has not only become more participative in recent years, it has also become more transparent. In sum, the Agency has become more open since the mid 1980s and has since then steadily increased its transparency and participation talk, decisions and actions.

Figure 2: IAEA Opening: Explanatory variables



## 4.2 First look: explaining the opening of the IAEA

Before I discuss the results of the QCA analyses, I shortly discuss the explanatory variables and their developments over time (see Figure 2). There are some notable developments. First, the Agency’s budget, although corrected for inflation and devaluation of the USD, grows constantly. There are some interesting fluctuations in the budget, nevertheless. For example in 1986, the budget has decreased. Further, from the mid 1990s until the mid 2000s, the budget does not increase, it rather stagnates and even decreases in some years. As the resource based literature suggests, the budget crisis of the late 1990s could cause opening. Also, the inequality of the member states increases over the years. While in the 1960s, the coefficient of variation was at 280 percent, i.e. that the standard deviation of the member state’s GDP is 280 times higher than the mean GDP of all states, it rose to 320 in 2011. Further, the complexity of the issue area is particularly high in the mid 1990s and seems to be lower in the early and most recent decade.

Looking at the norm-based explanatory variables, first, there is an unsteady trend towards increased press salience. Since the 1980s, the IAEA is increasingly discussed in the global media. There is large variance in the data, reflecting special events like Chernobyl (1986), Iraq inspections (1991), the escalation of inspections in the DPRK (1994), and the discovery of the A.Q. Khan network (2004). The IAEA thus needs to face growing review from the public. Norm- based explanations would

thus expect more opening. Similarly, there is a large increase of the open governance norm. As there seems to be a larger discourse on principles of good global governance, one would expect growing openness as a response to societal demands and personal convictions of the decision-makers in IGOs. Further, the democratic membership variable also has a raising trend, despite some fluctuations in the 1990s and 2000s. As the variable represents the share of democratic members in the IAEA, the fluctuations can most of the time be explained by the new membership of rather un-democratic states than by a trend towards de-democratization of the existing members. Thus, one would also expect to see growing openness with a higher democratic membership share. Finally, the governance depth of the Agency has risen, too. A first focal point is the entry into force of the NPT in 1970. Due to the obligatory inspections of non-nuclear weapon states that the treaty prescribes, IAEA inspections have gained importance. Earlier inspections were based on special agreements, e.g. to monitor a nuclear weapon free zone or as part of an export treaty of nuclear technology. In addition, the obligatory inspections put programmatic and financial pressure on the IAEA that again increased conflicts in the membership on balancing security and promotional activities. A further important step that increased the IAEA's authority was the organization of inspections in Iraq, mandated by the UN Security Council (UNSC RES 687) in 1991. Since that point in time, the IAEA took over additional inspection tasks in areas of world politics conflicts. The Agency and its inspection reports, which it may address to the UNSC directly, thus became an important and politicized actor in security politics.

But are these variables influential and can they explain the increased opening of the IAEA? To answer this question, I ran several qualitative comparative analyses. Table 2 summarizes the results of those analyses that produced valuable results. I found especially strong results for the analysis of changes in transparency. Here, a high share of democratic members appears to be a necessary condition for increasing transparency. Further, a strong media salience seems to be a sufficient condition for increased transparency. The same strong relations explain an increase in opening decisions. Further, I found weaker evidence for the explanation of participation. Here, the presence of the norm of open governance seems to be a necessity for increased participation. High inequality or low complexity may be sufficient conditions for increased participation. I will discuss those results in more detail, below.

The first step in each QCA analysis is to calibrate the data, i.e. to translate the numbers of the raw data into set memberships. In fuzzy-set QCA that I apply, each case may have a set membership score between 0 and 1. 1 means that a case is a full member of the set, a value of 0.75 means that the case is not a full member of the set. Membership scores below 0.5 mark a case as non-member. The calibration



Table 2: Summary of QCA Analyses

Outcome	Type	Combination	Consistency	Coverage	Cases
Participation	Necessity	OPENGOVERNANCENORM	0.871	0.735	
	Sufficiency	INEQUALITY + complexity * OPENGOVERNANCENORM	0.683	0.889	1998, 2000:2011
Transparency	Necessity	DEMEMBERS	0.892	0.829	
	Sufficiency	MEDIA + (COMPLEXITY)	0.955	0.822	1886, 1991:2011
		MEDIA + (OPENGOVERNANCENORM)	0.970	0.759	1886, 1991:2011
Decision	Necessity	DEMEMBERS	1	0.818	
	Sufficiency	MEDIA + (COMPLEXITY)	0.941	0.920	1986, 1991:2011
		MEDIA + (OPENGOVERNANCENORM)	0.970	0.862	1986, 1991:2011

of the data is a qualitative process as the cut-off points and thresholds for the set membership are determined by the researcher. Please see Table 4 (Appendix, p. 24) for the calibrated data-set and the online appendix (<http://tinyurl.com/lqrwvkb>) for the discussion of the calibration steps.

As my analysis consists of a number of outcome variables, I chose to combine some of them for the analysis. In a first step, I created the variable *Participation* by combining the participation talk, decision and action variables with the fuzzy operator AND. The created variable thus represents high participation talk *and* high participation decisions *and* high participation actions. In the next step, I created a truth table, i.e. a table that lists all combinations of explanatory conditions and the outcome that I found in the data. When looking at the truth table (see Table 5, Appendix, p. 25), one can notice that there are four combinations of the explanatory variables that lead to increased combinations. Further, there are nine combinations that do not cause increased participation. In a next step, I look for the existence of necessary conditions, i.e. a condition that is present in all instance of increased participation. After additional tests, the open governance norm variable can be identified as a possible necessary condition. The condition is highly consistent. 87 percent of all cases that have high scores in the participation set also have high scores in the open governance set ( $\frac{\text{cases with high OG Norm} + \text{cases with high Participation}}{\text{cases with high Participation}}$ ). Further, there are no truly contradictory cases, i.e. those that have an outcome score above 0.5 and an open governance norm score below 0.5. Also, the coverage and thus the relevance of the solution is relatively high: 73.5 percent of all cases with high open governance scores also score high in participation ( $\frac{\text{cases with high OGNorm} + \text{cases with high Participation}}{\text{cases with high OGNorm}}$ ).

In the next step of the QCA, I looked for possible sufficient conditions. Methodologically, this is done by also using those rows of the truth table that are not filled with real cases and assuming that those combinations also would not cause increased participation. This assumption is plausible because I looked at the whole history of the IAEA. However, the analysis only reveals a weak combination of variables as a sufficient condition. The identified sufficient condition set states that Participation occurs when there is high inequality or low complexity (in the combination with the open governance norm, which is a necessary condition). Yet, the consistency values

are low. Only 68 percent of the cases that are a member of the solution set also show high participation values ( $\frac{\text{cases with high membership in solution} + \text{cases with high Participation}}{\text{cases with high membership in solution}}$ ). However, there are no truly contradictory cases, i.e. those that have a membership score in the solution above 0.5 but below 0.5 in the outcome. Further, the coverage of the solution is high: 89 percent of the cases with high participation can be explained by the solution set ( $\frac{\text{cases with high membership in solution} + \text{cases with high Participation}}{\text{cases with high Participation}}$ ). Thus there is some evidence that high inequality and low complexity are important in relation to the participation of non-state actors in the case of the IAEA.

I proceeded similarly for the analysis of increased transparency and increased decisions. The transparency variable, however, I constructed by combining transparency talk, decision, and action with the fuzzy set operator OR. Thus, the membership scores of the variable represent high values on the talk, or decision, or action dimensions (see Table 6, Appendix, p. 26). For the analysis of the opening decisions, I combined transparency decisions and participation decisions by logical AND (see Table 7, Appendix, p. 27). Both analyses yield parallel results, also due to the similar membership scores of both variables since 1986. In both cases, the presence of a high share of democratic member-states is a necessary condition with high consistency and relevance values. However, the necessity relation only holds for the cases since the 1970s. When looking at possible sufficient conditions, it is especially the presence of high media salience that explains increased transparency and opening decisions. The analysis also shows that high complexity and the presence of the open governance norm are possible sufficient conditions. Yet, compared to strong media presence, they hardly cover any additional cases and can thus be regarded as less potent parts of the solution sets.

To sum up, I found the following evidence with relation to the hypotheses I discussed above:

- H1 I could not find hints that low budgets lead to increased opening. However, the Agency's budget was steadily growing, so the hypothesis may simply not apply in this case.
- H2 I found some weaker evidence that high inequality between member states can indeed explain raising participation in the case of the IAEA.
- H3 I found evidence for the hypothesis that high complexity leads to more transparency and to more opening decisions.
- H4 In the case of the IAEA, high media attention leads to more openness, especially on the transparency dimension.

- H5 A high share of democratic member states is a necessary condition for increasing transparency and opening decisions.
- H6 I have not found hints that governance depth is important for the openness of the IAEA. However, in the IAEA case, the variable is close to constant.
- H7 The presence of the open governance norm seems to be important for rising participation and transparency.

## 5 Open questions, shortcomings, next steps

In this paper, I tried to discuss norm- and resource-based explanations of IGO opening. I developed an integrated analytical framework and tested its explanatory power on the case of the IAEA. The results showed an interesting picture of opening of the IAEA. The IAEA's openness decreased until the late 1970s, rose again until the 1990s and continued to raise in the 2000s. Further, I ran QCA analyses to assess the explanatory power of both explanations. I found hints that a number of hypotheses derived from both strands of the literature are indeed relevant for understanding IAEA opening.

However, there are still a number of open issues that I need to address in the next phases of this research endeavor. *First*, the QCA analyses for the talk and action dimensions have not yielded any conclusive results (again, see the online appendix). Thus, there are either problems with the data, its calibration or there are still explanatory variables that I am missing. *Second*, the analysis is still not satisfactory because it does not provide an explanation for the early years of the IAEA which are characterized by already high openness on some dimensions. I had to exclude those years because of missing data. I will thus need to find additional data sources to test the hypotheses in the Agency's early years. *Thirdly*, the presented results do not instantly reveal causal stories. It is not yet clear how exactly, for example, the rising media attention influenced the Agency's transparency decision making. Case studies of either interesting points in time or identified influential conditions are still needed. *Finally*, the study shows signs of limited empirical diversity. To truly assess the hypotheses, I will need to add other international organizations to the analysis. I plan to analyze additional IGOs from the security sector (e.g. OPCW, CTBTO) in the next months.

## References

- Barnett, Michael N and Martha Finnemore (1999). "The Politics, Power, and Pathologies of International Organizations." In: *International Organization* 53.4, pp. 699–732.
- (2004). *Rules for the world: International organizations in global politics*. Ithaca, NY: Cornell University Press.
- Böhmelt, Tobias (2013). "A closer look at the information provision rationale: Civil society participation in states delegations at the UNFCCC." In: *The Review of International Organizations* 8, pp. 55–80.
- Brunsson, Nils (2002). *The organization of hypocrisy. Talk, decisions, and action in organizations*. Malmö: Liber.
- Charnovitz, Steve (1997). "Two centuries of participation: NGOs and international governance." In: *Michigan Journal of International Law* 18, pp. 183–286.
- (2003). "The emergence of democratic participation in global governance (Paris, 1919)." In: *Indiana journal of global legal studies* 10, pp. 45–77.
- Cooke, Bill and Uma Kothari, eds. (2001). *Participation: The new tyranny?* London: Zed Books.
- Della Porta, Donatella and Sidney G Tarrow (2004). *Transnational protest and global activism*. Lanham: Rowman and Littlefield.
- Dingwerth, Klaus, Ina Lehmann, et al. (2011). "Towards a Democratic Yardstick? Evaluations of International Institutions in Academic Textbooks, 1970-2010." In: *Jean Monet Working Paper Series* 14/11.
- Dingwerth, Klaus and Tobias Weise (2012). "Legitimitätspolitik jenseits des Staats: Der Beitrag nichtstaatlicher Akteure zum Wandel grenzüberschreitender Governance-Normen." In: *Leviathan Sonderband* 27.
- Grigorescu, Alexandru (2003). "International Organizations and Government Transparency: Linking the International and Domestic Realms." In: *International Studies Quarterly* 47.4, pp. 643–667.
- (2007). "Transparency of Intergovernmental Organizations: The Roles of Member States, International Bureaucracies and Nongovernmental Organizations." In: *International Studies Quarterly* 51.3, pp. 625–648.
- Hale, Thomas N (2008). "Transparency, Accountability, and Global Governance." In: *Global Governance* 14.1, pp. 73–94.
- Hawkins, Darren G et al. (2006). "Delegation under anarchy: states, international organizations, and principal-agent theory." In: *Delegation and Agency in International Organizations*. Ed. by Darren G Hawkins et al. New York: Oxford University Press, pp. 3–38.

- Held, David (1995). "Democracy and the New International Order." In: *Cosmopolitan Democracy: An Agenda for a New World Order*. Ed. by Danielle Archibugi and David Held. Oxford: Polity Press. Chap. 4, pp. 96–120.
- Hurd, Ian (2011). *International Organizations: Politics, Law, Practice*. Cambridge: Cambridge University Press.
- Jönsson, Christer and Jonas Tallberg, eds. (2010). *Transnational Actors in Global Governance. Patterns, Explanations and Implications*. Basingstoke: Palgrave Macmillan.
- Liese, Andrea (2010). "Explaining Varying Degrees of Openness in the Food and Agriculture Organization of the United Nations (FAO)." In: *Transnational Actors in Global Governance: Patterns, Explanations and Implications*. Ed. by Christer Jönsson and Jonas Tallberg. Basingstoke: Palgrave Macmillan, pp. 88–109.
- Martin, Lisa L and Beth A Simmons (1998). "Theories and Empirical Studies of International Institutions." In: *International Organization* 52.4, pp. 729–757.
- Nullmeier, Frank et al., eds. (2010). *Prekäre Legitimitäten: Rechtfertigung von Herrschaft in der postnationalen Konstellation*. Frankfurt am Main: Campus.
- Raustiala, Kal (1997). "States, NGOs, and International Environmental Institutions." In: *International Studies Quarterly* 41.4, pp. 719–740.
- Reimann, Kim D (2006). "A View from the Top: International Politics, Norms and the Worldwide Growth of NGOs." In: *International Studies Quarterly* 50.1, pp. 45–68.
- Rosenau, James N and Ernst O Czempiel (1992). *Governance without Government: Order and Change in World Politics*. Cambridge: Cambridge University Press.
- Schneider, Carsten Q and Claudius Wagemann (2012). *Set-theoretic methods for the social sciences. A guide to qualitative comparative analysis*. Cambridge: Cambridge University Press.
- Scott, Richard W (2003). *Organizations: Rational, Natural, and Open Systems*. 5th ed. Upper Saddle River, NJ: Prentice Hall.
- Sommerer, Thomas and Jonas Tallberg (2011). *Explaining Formal Access of Transnational Actors to International Organizations*. Konferenzpapier, ECPR General Conference, Reykjavik, August 2011.
- Steffek, Jens (Nov. 2012). "Explaining cooperation between IGOs and NGOs – push factors, pull factors, and the policy cycle." In: *Review of International Studies* FirstView, pp. 1–21.
- Suchman, Mark C. (1995). "Managing legitimacy: Strategic and institutional approaches." In: *The Academy of Management Review* 20.3, pp. 571–610.
- Szasz, Paul (1970). *The Law and Practices of the International Atomic Energy Agency*. Legal Series No. 7. Vienna: IAEA.
- Tallberg, Jonas (2002). "Delegation to supranational institutions: why, how, and with what consequences?" In: *West European Politics* 25.1, pp. 23–46.

- Tallberg, Jonas (2010). "Transnational Access to International Institutions: Three Approaches." In: *Transnational Actors in Global Governance: Patterns, Explanations and Implications*. Ed. by Christer Jönsson and Jonas Tallberg. Basingstoke: Palgrave Macmillan, pp. 45–66.
- Tallberg, Jonas et al. (2013). *The opening up of international organizations. Transnational access in global governance*. Cambridge: Cambridge University Press.
- Willetts, Peter (2011). *Non-Governmental Organizations in World Politics*. New York: Routledge.
- Zürn, Michael (2000). "Democratic Governance Beyond the Nation State: The EU and Other International Institutions." In: *European Journal of International Relations* 6.2, pp. 183–221.

Table 3: Raw Data

	TAL.K.Part	TAL.K.Tran	EC.Part	DEC.Trans	ACT.P	CC.NGO	ACT.T.Pub	RB.Budg	RB.Ineq	RB.Complexi	NB.Press	NB.Dem	NB.Gov	NB.Op
	.AR	.AR	.AR	.pres	InfBudget	Members	Size	Members	Complexity	Salience	Mem	Depth	GovNorm	
IAEA1957	4	0	1	1	0		18429902.42					1	0.00	
IAEA1958	5	0	1	1	13		28466357.94					1	0.00	
IAEA1959	5	0	1	1	9		31393724.48					1	0.00	
IAEA1960	5	0	1	1	12		32771903.72					1	0.00	
IAEA1961	1	0	1	1	14		32817903.44					1	0.00	
IAEA1962	0	0	1	1	12		38055598.78					1	0.00	
IAEA1963	0	0	1	1	10		38020989.73					1	0.00	
IAEA1964	1	0	1	1	10		39817415.73	280.42			29.21	1	0.00	
IAEA1965	0	0	1	1	4		42649497.61	287.42	4		27.47	1	0.00	
IAEA1966	0	0	1	1	7		44913168.98	290.36	1		26.60	1	0.00	
IAEA1967	0	0	1	1	7		4755716.94	287.87	1		28.72	1	0.00	
IAEA1968	0	0	1	1	9		48665599.72	287.99	2		27.84	1	0.00	
IAEA1969	1	0	1	1	8		50332812.89	289.04	7		28.57	2	0.00	
IAEA1970	0	0	1	1	7		66639273.69	286.55	15		26.53	2	0.00	
IAEA1971	0	0	1	1	6		76062572.68	287.52	11		27.27	2	0.00	
IAEA1972	1	0	1	1	4		7722490.76	288.38	12		29.00	2	0.00	
IAEA1973	0	0	1	1	5		80394265.23	283.27	10		28.71	2	0.00	
IAEA1974	0	0	1	1	5		105611622.20	280.28	9		30.00	2	0.00	
IAEA1975	0	0	2	1	4		107615642.30	282.77	16		30.39	2	0.00	
IAEA1976	0	0	2	1	5		118190720.70	283.80	10	15	29.13	2	0.00	
IAEA1977	0	0	2	1	8		123739834.70	286.80	10	38	29.13	2	0.01	
IAEA1978	0	0	2	1	6		151746655.10	285.47	11	29	31.07	2	0.01	
IAEA1979	0	0	2	1	8		161172605.70	281.52	13	37	31.07	2	0.01	
IAEA1980	0	0	2	1	8		163791850.00	283.32	21	122	31.07	2	0.01	
IAEA1981	0	0	2	1	9		178490416.30	279.51	16	86	32.04	2	0.01	
IAEA1982	0	0	2	1	7		167239644.80	282.79	25	56	33.98	2	0.00	
IAEA1983	0	0	2	1	11		162316732.70	279.62	22	63	32.69	2	0.00	
IAEA1984	0	0	2	1	12		167057181.80	280.71	36	79	34.62	2	0.00	
IAEA1985	1	0	2	2	14		15077095.10	281.95	40	311	34.34	2	0.01	
IAEA1986	1	0	2	2	14		198025270.40	280.95	45	120	36.19	2	0.01	
IAEA1987	2	0	2	2	12		197829848.20	280.60	44	146	37.14	2	0.01	
IAEA1988	1	0	2	2	14		219130386.60	270.86	42	157	41.51	2	0.02	
IAEA1989	0	0	2	3	13		219130386.60	270.86	42	157	41.51	2	0.03	
IAEA1990	1	0	2	4	11		256770554.90	267.52	54	821	42.59	3	0.04	
IAEA1991	0	0	2	4	14		263732734.50	271.83	48	653	47.27	3	0.06	
IAEA1992	0	0	2	4	14		237607612.70	278.20	47	839	47.41	3	0.08	
IAEA1993	3	1	2	5	12		243955466.60	284.24	52	1261	47.93	3	0.11	
IAEA1994	2	1	2	5	11		251840550.90	284.86	70	388	46.72	3	0.13	
IAEA1995	1	1	2	6	13		257446578.20	286.45	63	226	47.97	3	0.14	
IAEA1996	2	0	2	7	13		291.41	291.41	72	224	47.62	3	0.15	
IAEA1997	0	3	2	7	14		252937464.90	297.75	69	515	46.88	3	0.17	
IAEA1998	3	3	2	8	15		252514912.10	301.52	70	261	46.51	3	0.22	
IAEA1999	2	0	2	8	20		249899124.20	300.97	66	232	48.06	3	0.24	
IAEA2000	4	2	2	9	20		248099242.80	299.36	77	242	48.06	3	0.26	
IAEA2001	3	2	2	16	16		288913618.80	299.90	68	1457	51.15	3	0.26	
IAEA2002	6	4	2	10	13		260303819.00	302.03	67	3193	50.00	3	0.27	
IAEA2003	2	1	2	10	20		274520075.20	301.89	55	2350	51.85	3	0.27	
IAEA2004	2	0	2	10	22		278523000.00	302.68	59	1708	52.21	3	0.26	
IAEA2005	3	0	2	10	23		329374393.40	307.52	44	2668	52.86	3	0.29	
IAEA2006	5	0	2	10	20		362421885.20	306.24	63	2108	52.14	3	0.28	
IAEA2007	2	0	2	11	21		391234509.40	306.76	30	1272	52.11	3	0.29	
IAEA2008	2	0	2	11	21		374128502.00	316.33	30	1312	50.34	3	0.29	
IAEA2009	2	1	2	11	27		376814767.70	317.43	24	1156	49.66	3	0.29	
IAEA2010	2	0	2	12	26		393439209.00	320.99	18	2153	50.68	3	0.29	
IAEA2011	4	3	2	12	31							3		

Table 4: QCA Data

	Participation	Transparency	Decision	Budget	Inequality	Complexity	Media	DemMembers	GovDepth	OC Norm
IAEA1957	0		0						0	0
IAEA1958	0.66	1	0	1					0	0
IAEA1959	0.66	0.75	0	1					0	0
IAEA1960	0.66	1	0	1					0	0
IAEA1961	0.25	1	0	1					0	0
IAEA1962	0	1	0	1					0	0
IAEA1963	0	0.75	0	1					0	0
IAEA1964	0.25	0.75	0	1	0.25	0	0	0	0	0
IAEA1965	0	0.75	0	1	0.25	0	0	0	0	0
IAEA1966	0	0.75	0	1	0.25	0	0	0	0	0
IAEA1967	0	0.25	0	1	0.25	0	0	0	0	0
IAEA1968	0	0.25	0	1	0.25	0	0	0	0	0
IAEA1969	0.25	0.25	0	1	0.25	0	0	0	0	0
IAEA1970	0	0.25	0	1	0.25	0	0	0	0.75	0
IAEA1971	0	0.25	0	1	0.25	0	0	0	0.75	0
IAEA1972	0.25	0	0	1	0.25	0	0	0	0.75	0
IAEA1973	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1974	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1975	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1976	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1977	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1978	0	0	0	1	0.25	0	0	0	0.75	0
IAEA1979	0	0	0	0.75	0.25	0	0	0	0.75	0
IAEA1980	0	0	0	0.75	0.25	0	0	0	0.75	0
IAEA1981	0	0	0	0.75	0.25	0	0	0	0.75	0
IAEA1982	0	0	0	0.75	0.25	0	0	0.75	0.75	0
IAEA1983	0	0	0	0.75	0.25	0	0	0.75	0.75	0
IAEA1984	0	0	0	0.75	0.25	0	0	0.75	0.75	0
IAEA1985	0	0	0	0.75	0.25	0.25	0	0.75	0.75	0
IAEA1986	0.25	0.65	0.65	0.75	0.25	0.25	0.75	0.75	0.75	0
IAEA1987	0.66	0.65	0.65	0.75	0.25	0.25	0	0.75	0.75	0
IAEA1988	0.25	0.65	0.65	0.75	0.25	0.25	0	0.75	0.75	0
IAEA1989	0	0.65	0.65	0.25	0.25	0.25	0	0.75	0.75	0
IAEA1990	0.25	0.65	0.65	0.25	0	0.25	0	0.75	0.75	0
IAEA1991	0	0.65	0.65	0.25	0	0.75	0.75	0.75	1	0
IAEA1992	0	0.65	0.65	0.25	0	0.25	0.75	1	1	0
IAEA1993	0.66	0.85	0.85	0.25	0.25	0.25	0.75	1	1	0.75
IAEA1994	0.66	0.85	0.85	0.25	0.25	0.75	1	1	1	0.75
IAEA1995	0.25	0.85	0.85	0.25	0.25	1	0.75	1	1	0.75
IAEA1996	0.66	0.85	0.85	0.25	0.25	0.75	0	1	1	0.75
IAEA1997	0	1	0.85	0.25	0.25	1	0	1	1	0.75
IAEA1998	0.66	1	0.85	0.25	0.75	1	0.75	1	1	1
IAEA1999	0.75	0.85	0.85	0.25	0.75	1	0	1	1	1
IAEA2000	0.83	1	1	0.25	0.75	1	0	1	1	1
IAEA2001	0.66	1	1	0.25	0.75	1	0	1	1	1
IAEA2002	0.66	1	1	0.25	0.75	1	1	1	1	1
IAEA2003	0.75	1	1	0.25	0.75	1	1	1	1	1
IAEA2004	0.75	1	1	0.25	0.75	0.75	1	1	1	1
IAEA2005	0.75	1	1	0.25	0.75	0.75	1	1	1	1
IAEA2006	0.83	1	1	0	0.75	0.25	1	1	1	1
IAEA2007	0.75	1	1	0	0.75	0.75	1	1	1	1
IAEA2008	0.75	1	1	0	0.75	0.25	1	1	1	1
IAEA2009	0.75	1	1	0	1	0.25	1	1	1	1
IAEA2010	0.75	1	1	0	1	0.25	1	1	1	1
IAEA2011	1	1	1	0	1	0	1	1	1	1



Table 5: Truth Table: Participation

BT	IY	CY	MA	DS	GH	OM	OUT	n	incl	PRI	cases
64	0	1	1	1	1	1	1	6.00	0.97	0.937931034482759	IAEA1998,IAEA2002:IAEA2005,IAEA2007
16	0	0	1	1	1	1	1	1	0.96	0.816326530612245	IAEA1993
48	0	1	0	1	1	1	1	5.00	0.954545454545455	0.924924924924925	IAEA2006,IAEA2008:IAEA2011
56	0	1	0	1	1	1	1	3.00	0.902857142857143	0.804597701149425	IAEA1999:IAEA2001
32	0	1	1	1	1	1	0	2.00	0.842666666666667	0.404040404040404	IAEA1994,IAEA1995
24	0	0	1	1	1	1	0	2.00	0.72	0.322580645161291	IAEA1996,IAEA1997
31	0	0	1	1	1	0	0	1	0.555555555555556	0	IAEA1991
15	0	0	1	1	1	0	0	1	0.428571428571429	0	IAEA1992
79	1	0	0	1	1	0	0	1	0.428571428571429	0	IAEA1986
7	0	0	0	1	1	0	0	2.00	0.352941176470588	0	IAEA1989,IAEA1990
71	1	0	0	1	1	0	0	6.00	0.3056	0.0686695278969958	IAEA1982:IAEA1985,IAEA1987,IAEA1988
65	1	0	0	0	0	0	0	5.00	0.166666666666667	0	IAEA1965:IAEA1969
67	1	0	0	0	1	0	0	12.00	0.108695652173913	0	IAEA1970:IAEA1981

Table 6: Truth Table: Transparency

BT	IY	CY	MA	DS	GH	OM	OUT	n	incl	PRI	cases
16	0	0	1	1	1	1	1	1	1	1	IAEAI993
24	0	1	0	1	1	1	1	2.00	1	1	IAEAI996,IAEAI997
32	0	1	1	1	1	1	1	2.00	1	1	IAEAI994,IAEAI995
48	0	1	0	1	1	1	1	5.00	1	1	IAEA2006,IAEA2008:IAEA2011
56	0	1	1	1	1	1	1	3.00	1	1	IAEAI999,IAEA2000,IAEA2001
64	0	1	1	1	1	1	1	6.00	1	1	IAEAI998,IAEA2002:IAEA2005,IAEA2007
31	0	0	1	1	1	0	1	1	0.9555555555555555	0.894786842105263	IAEAI991
15	0	0	1	1	1	1	1	1	0.942857142857143	0.8333333333333333	IAEAI992
79	1	0	1	1	1	0	1	1	0.942857142857143	0.8333333333333333	IAEAI986
7	0	0	0	1	1	0	0	2.00	0.717647058823529	0.4	IAEAI989,IAEAI990
71	1	0	0	1	1	0	0	6.00	0.488	0.2	IAEAI982:IAEAI985,IAEAI987,IAEAI988
65	1	0	0	0	0	0	0	5.00	0.4444444444444444	0.1666666666666667	IAEAI965:IAEAI969
67	1	0	0	0	1	0	0	12.00	0.173913043478261	0	IAEAI970:IAEAI981

Table 7: Truth Table: Decision

BT	IY	CY	MA	DS	GH	OM	OUT	n	incl	PRJ	cases
16	0	0	1	1	1	1	1	1	1	1	IAEA1993
24	0	1	0	1	1	1	1	2.00	1	1	IAEA1996,IAEA1997
32	0	1	1	1	1	1	1	2.00	1	1	IAEA1994,IAEA1995
48	0	1	0	1	1	1	1	5.00	1	1	IAEA2006,IAEA2008:IAEA2011
56	0	1	1	1	1	1	1	3.00	1	1	IAEA1999:IAEA2001
64	0	1	1	1	1	1	1	6.00	1	1	IAEA1998,IAEA2002:IAEA2005,IAEA2007
31	0	1	1	1	1	0	1	1	0.9555555555555555	0.875	IAEA1991
15	0	0	1	1	1	0	1	1	0.942857142857143	0.8333333333333333	IAEA1992
79	1	0	1	1	1	0	1	1	0.942857142857143	0.8333333333333333	IAEA1986
7	0	0	0	1	1	0	0	2.00	0.717647058823529	0.4	IAEA1989,IAEA1990
71	1	0	0	1	1	0	0	6.00	0.488	0.2	IAEA1982:IAEA1985,IAEA1987,IAEA1988
65	1	0	0	0	0	0	0	5.00	0.138888888888889	0	IAEA1965:IAEA1969
67	1	0	0	0	1	0	0	12.00	0.130434782608696	0	IAEA1970:IAEA1981