

Conform and Oppose through Numbers: Quantifying Hybrid Organizations at the International Cooperative Alliance

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ABSTRACT Collectives of hybrid organizations have emerged with the aim of promoting the plural goals and values embodied by their member organizations. Doing so, however, often requires simultaneous conformity and opposition to dominant institutional norms, such as those underlying mainstream market activity. We examine how hybrid collectives navigate this ‘conform-and-oppose’ tension as they seek to promote their members’ hybrid form through quantification – i.e., the use of numbers to label, count, and describe members. Analyzing the case of the International Cooperative Alliance, we identify four interrelated dimensions (valorization, validity, reactivity, and retroaction) through which a hybrid collective can harness quantification to manage differing commitments to market and social goals and values within and beyond the collective – a process we name formative quantification. Core to this process are two filtering mechanisms – validity searching and values queuing – through which a hybrid collective integrates stakeholder perceptions of truth (validity) and value (valorization) to navigate hybrid tensions. Our work extends theory on hybrid tension management to the inter-organizational level, while shifting the view of organizational quantification from a tool of conformity-enhancing evaluation towards a collective search for numbers that both conform to and oppose taken-for-granted norms.

Keywords: quantification, hybrid organization, cooperative, tension management, hybrid collective, inter-organizational collaboration

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INTRODUCTION

Hybrid organizations must manage the tensions arising from holding and pursuing distinct goals and values (Jay, 2013; Pache and Santos, 2013). In this study, we focus on hybrids that integrate social goals and values within their market activity (e.g., Battilana and Lee, 2014), thereby experimenting with models and practices that help respond to ‘grand challenges’ facing society (Gümüşay et al., 2022). Cooperatives, for example, sell products and services on the market while integrating distinctive social values, such as collective member ownership, democratic governance, and concern for the community (Dufays et al., 2020; Muñoz et al., 2020). To understand how tensions between market and social values are managed at the organizational level, prior research has highlighted, for example, mechanisms of governance (Ebrahim et al., 2014; Pache et al., 2023) and staff socialization (Battilana and Dorado, 2010; Cornelissen et al., 2021). However, how hybrid tensions are configured and navigated at the collective, inter-organizational level is less well understood, despite calls for research on how organizations can collectively integrate plural goals to address grand challenges (George et al., 2024; Gümüşay et al., 2022).

An emerging literature stream examines ‘hybrid collectives’ – that is, the formal or informal entities through which hybrid organizations collaborate to advance their shared organizational form (e.g., Audebrand and Barros, 2018; Michel, 2020). One important role of hybrid collectives is to promote their members and advocate for their hybrid goals and values, which often requires challenging the established institutional landscape and creating space for the hybrid form (Huybrechts and Haugh, 2018; Kraatz and Block, 2008; York et al., 2016). In doing so, collectives of hybrids integrating market and social values face a broader tension around conformity and opposition to market norms, in which they seek to position the hybrid form both ‘within and against’ the market (Dubuisson-Quellier et al., 2011; Mars and Lounsbury, 2009). On the one hand, conformity to mainstream market norms can help hybrid collectives build legitimacy and support to advance their members’ interests and shared goals (Huybrechts and Haugh, 2018; Young, 2021). On the other hand, opposition to mainstream market norms may be necessary to sustain the distinctiveness of the hybrid form (Audebrand and Barros, 2018; Michel, 2020) as an institution in its own right (Kraatz and Block, 2008). York et al. (2016), for example, examine how hybrids in the field of wind energy sought to promote hybrid goals and values in a way that both integrated and challenged conventional market performance measures. We call this phenomenon the ‘conform-and-oppose tension’.

Managing the conform-and-oppose tension is a challenge for hybrid collectives, which lack the formal governance mechanisms and hierarchical authority available at the organizational level (Ahrne and Brunsson, 2008; Berkowitz and Bor, 2024). Instead, hybrid collectives tend to rely on democratic or consensus-based decision-making (e.g., Soetens and Huybrechts, 2023) through an apex structure that coordinates collective projects to support and promote members (Laviolette et al., 2022). However, engaging members through collective projects while navigating the conform-and-oppose tension can be challenging when such projects rely on tools that have been imbued with mainstream market norms. Such norms celebrating, for example, market growth, financial

performance, and private value appropriation may threaten to reinforce a conformity orientation (Islam, 2022; Michaud, 2014) whereby hybrids lose sight of their distinctive values (e.g., Pache et al., 2023). For example, while promoting economies of scale to compete with dominant industry players, a hybrid collective of US food cooperatives ended up encouraging its members to adopt operational practices aligned with mainstream industry norms at the expense of maintaining cooperative values (Young, 2021). In other words, we suggest that the tools hybrid collectives use to promote their members may exacerbate the challenge they face of aligning with market norms while sustaining distinctive values.

In this research, we focus on how hybrid collectives manage the conform-and-oppose tension when deploying quantification – i.e., the use of numbers to label, count, and describe members (Berman and Hirschman, 2018). The broad explosion of numbers and their persuasive power in the 21st century has increased the demand for and usefulness of producing numbers (Diaz-Bone and Didier, 2016; Mennicken and Espeland, 2019). Hybrid collectives have increasingly developed and presented numerical evidence (Teasdale et al., 2013) to fulfil their mandate of promoting the hybrid form (Huybrechts and Haugh, 2018; York et al., 2016). Conforming to demands for numbers, however, may involve de-emphasizing distinctive characteristics through ‘commensuration’ (Espeland and Stevens, 1998, 2008) and through favouring the most readily available metrics often aligned with market norms (Michaud, 2014). As a result, engaging in quantification may drive hybrids towards market conformity (e.g., Ormiston, 2023), affecting how they navigate the conform-and-oppose tension more broadly. The stakes are high: for example, Teasdale et al. (2013) argue that quantifying social enterprises in the UK led collectives to align with the market-oriented growth narrative promoted by the government, thereby undermining the credibility of the quantification project. With this puzzle in mind, we ask: *How do hybrid collectives navigate the conform-and-oppose tension through quantification?*

We address this research question through a longitudinal case study of how the International Cooperative Alliance (ICA), the collective apex of more than one million cooperatives around the world, enacted a multi-decade quantification project to promote cooperatives worldwide. Through analysis of interview and archival data, we unpack how, along three episodes, the ICA moved from initial quantification work that amplified conformity to mainstream business norms to an approach that simultaneously opposed and conformed to these norms. We find that the way numbers were vested with value claims (i.e., ‘valorization’) and truth claims (i.e., ‘validity’) made the conform-and-oppose tension salient to members and external stakeholders, influencing their behaviours and reactions with regard to the project (i.e., ‘reactivity’). The ICA filtered these reactions, including among its own staff and quantification partners, to adapt its positioning with regard to conform and oppose (i.e., ‘retroaction’), which in turn triggered adaptations in its quantification work. By analysing these findings through concepts from the hybridity and quantification literatures, we develop a model of *formative quantification* based on two key filtering mechanisms (‘validity searching’ and ‘values queuing’) that reshape how hybrid, and more broadly inter-organizational, collectives navigate the conform-and-oppose tension.

Our findings and model contribute to the literatures on hybrid organizations and quantification. First, our findings extend the understanding of hybrid tension

management from the organizational to the collective, inter-organizational level (Gillett et al., 2019). We find that, though they lack the formal mechanisms deployed in individual hybrid organizations (e.g., Smith and Besharov, 2019), hybrid collectives can deploy collective tools, such as quantification, to make the tension salient to members and broader stakeholders in a way that increases their ability to reach collective, albeit temporary, settlements (Reinecke et al., 2017). Through highlighting the role of validity searching and values queuing as tension-filtering mechanisms deployed at the collective level, we extend previous work that has tended to focus either on how hybrid collectives build legitimacy, and therefore conformity, with institutional expectations (Huybrechts and Haugh, 2018; Young, 2021) or on how they build a distinctive identity in opposition to mainstream market norms (Audebrand and Barros, 2018; Soetens and Huybrechts, 2023).

Second, our findings reorient the quantification literature from a focus on third-party evaluation (Mennicken and Espeland, 2019), highlighting conformity, rejection, or co-optation by the quantified (Elsbach and Kramer, 1996; Pollock et al., 2018), to a formative process whereby hybrid organizations can leverage the growing power of numbers while preventing the tendency of quantification to push organizations towards conformity. In this way, we add to prior work on how *quantifiers* are reshaped through quantification (Desrosières, 2014) and highlight the challenges and opportunities of a collective approach to developing metrics and building a numerical story that elevates rather than obscures distinctive organizational characteristics. Centred on promoting distinctive business practices without fundamentally rejecting mainstream market norms, our model of formative quantification helps illuminate the stakes of organizations' collective adoption of tools to address the 'grand challenges' facing humanity today (George et al., 2024).

CONCEPTUAL GROUNDING

Hybrid Collectives and the Conform-and-Oppose Tension

Hybrid organizations integrate multiple goals and values within their *raison d'être* (Battilana and Lee, 2014; Pache and Santos, 2013). A rich literature focuses on how hybrid organizations such as cooperatives (Muñoz et al., 2020; Nelson et al., 2016) and more broadly social enterprises (Cornelissen et al., 2021; Smith and Besharov, 2019) integrate social values within their market activity. This can be achieved by, for example, organizing interactions among members holding diverging values to facilitate collaboration (Ashforth and Reingen, 2014), implementing 'guard rails' to avoid prioritizing certain goals over others (Smith and Besharov, 2019), or 'rekeying' to reframe member understanding of both social and market values (Cornelissen et al., 2021).

While this literature focuses on how hybrid tensions are managed at the organizational level (Jay, 2013; Pache and Santos, 2013), our study shifts the focus to how these tensions are configured and navigated at the collective, inter-organizational level. Doing so is critical to understanding how hybrids can collectively advance their shared goals and values (Bergman, 2017) to promote their organizational form in the

institutional environment (Huybrechts and Haugh, 2018; Kraatz and Block, 2008). A salient collective-level tension appears throughout this literature, extending beyond organizational-level tensions and capturing what we here coin as the ‘conform-and-oppose tension’. On the one hand, garnering support for hybrids involves conforming to taken-for-granted institutional norms, such as when hybrid collectives align with market standards in an industry to be recognized as legitimate market players (Huybrechts and Haugh, 2018; Young, 2021). On the other hand, gaining recognition for hybrids as distinctive organizational forms also requires opposing established institutional norms, such as when hybrid collectives advocate to change the rules of mainstream markets to accommodate their distinct values (Audebrand and Barros, 2018; Michel, 2020).

Articulating both conformity and opposition is a delicate challenge for hybrid collectives. Too much focus on opposition may undermine institutional support beyond a small niche of enthusiasts (Michel, 2020; Soetens and Huybrechts, 2023), whereas too much focus on conformity may jeopardize the adhesion of members and partners motivated by the distinctive values of the hybrid form (Dubuisson-Quellier et al., 2011; Young, 2021). Despite the centrality of this tension to collaboration among hybrid organizations, how hybrid collectives manage this tension while navigating diverging views from both within and outside the collective is an intriguing puzzle that has received little attention in the organizational literature.

Prior work shows that, in general, hybrid collectives rely on an apex entity to link, support, and promote their members. This can be a formal, meta-organizational structure (e.g., Ahrne and Brunsson, 2008) or a more informal network (e.g., Michel, 2020). In either configuration, the apex of a hybrid collective generally shares features such as a flat structure, limited size compared with member organizations, flexible governance, and lack of hierarchical relationship with members that have influence over decisions made in the apex (Laviolette et al., 2022; Spillman, 2012). Through this apex, the hybrid collective works on behalf of, and in hand with, its constituent members to promote codification of the hybrid form (Huybrechts and Haugh, 2018), build members’ capacities to compete with mainstream counterparts (Audebrand and Barros, 2018; Young, 2021), and influence the broader institutional landscape (Michel, 2020; York et al., 2016).

Lacking the formal governance mechanisms available at the organizational level, hybrid collectives tend to rely instead on collective efforts based on consensus decision-making to promote their distinct form. In the place of formal rules and sanctions, such collective efforts leverage tools such as standard setting, practice sharing, and persuasion to address the demands for conformity and opposition (Berkowitz et al., 2020; Laviolette et al., 2022). In this context, the tools used in hybrid collective efforts must be deployed in a way that helps address rather than exacerbate the conform-and-oppose tension.

However, doing so is challenging when using tools that conflict with the distinctive goals and values of hybrid organizations – as is the case of quantification tools that have been imbued with mainstream market values focused on financial performance (Islam, 2022; Michaud, 2014). For example, Ormiston (2023) shows how some social enterprises in the UK resisted investor demands to use formalized impact assessment tools because they perceived these tools as market-oriented and, therefore, incompatible with their distinctive social values. While hybrid collectives face increasing demand for

measures of their efficacy and impact (Bouchard and Rousselière, 2015), there is growing evidence that responding to this demand may destabilize their engagement with the conform-and-oppose tension (Ormiston, 2023; Teasdale et al., 2013). To understand how producing numerical evidence reshapes how hybrid collectives navigate this tension, we turn to the literature on organizational quantification.

Organizational Quantification

The rise of computing and interconnectivity in the 21st century has escalated the production and analysis of numbers not only to describe the world more fully but also to influence it (Berman and Hirschman, 2018). Organizations of all types now produce numbers to attract resources, influence their environment, understand themselves, measure progress towards goals, conform to laws and standards, and build organizational legitimacy (Diaz-Bone and Didier, 2016; Mennicken and Espeland, 2019). Some organizations adopt quantification explicitly to shape the behaviour of other organizations, such as by increasing the transparency of previously little- or un-measured and, therefore, obscured practices, events, or outcomes, in other words, to increase accountability (Barman, 2016; Merry, 2016; Power, 2004).

Quantification tends to push organizations towards conformity through a process known as ‘commensuration’: because metrics cannot measure and compare organizations on all the ways they are different from one another, any differences deemed too difficult to measure are likely to be de-emphasized or erased (Mennicken and Espeland, 2019; Orlikowski and Scott, 2014). Indeed, this ‘dimension-reducing’ effect is a key reason for using numbers: quantification eases comparisons between imperfectly similar organizations (Espeland and Stevens, 1998). This can lead to the criticism of quantification being inherently reductionist and ill-suited to measure complex social phenomena (e.g., Islam, 2022), and to some extent, this criticism can propel the development of new measures as quantifiers seek to reduce contestation around the numbers they produce (Power, 2004). Alongside commensuration, quantification may simply push organizations towards conformity because of the greater availability of standardized measures, the cost of producing new measures, and the additional challenge of justifying a focus on new characteristics (Barman, 2016).

For hybrids combining market and social goals and values, therefore, quantification risks the de-emphasis or even erasure of activities and characteristics related to distinctive social goals, as business metrics are more readily accessible and considered more reliable than more complex social metrics (Barman, 2016). For example, the ‘social return on investment’ indicator was developed to provide a single quantitative indicator to interpret a variety of social achievements across sectors, and this unitary indicator necessarily sacrificed the specific characteristics of different hybrid organizations (e.g., Nicholls, 2010). Using numbers may also accelerate financial thinking simply because of the predominance of money as a standardized, global tool to describe and compare economic performance (Desrosières, 2001; Porter, 1996).

Nevertheless, some recent studies evidence how quantification may serve the oppositional goals of hybrid organizations or at least accommodate the pursuit of these goals alongside market performance goals (Bouchard and Rousselière, 2015). For example, Michaud (2014) shows how a large Canadian cooperative used both ‘financial’ and ‘democratic’ numbers to orient governance in a way that accommodated corporate-based control while enabling

collaboration aligned with cooperative values. This body of work, however, focuses on how numbers are apprehended through formal, organizational-level mechanisms, providing limited insights into the implications of quantification for hybrid collectives.

Four central concepts from the literature on quantification by and of organizations structure our understanding of how a hybrid collective engages in quantification: valorization, validity, reactivity, and retroaction (Desrosières, 2001; Espeland and Stevens, 2008; Mennicken and Espeland, 2019). *Valorization* reflects stakeholder perceptions of how numerical indicators intentionally or unintentionally communicate a claim about the value of certain units and characteristics being measured. We use valorization, rather than valuation or evaluation, to highlight the esteem or importance attached to a phenomenon by incorporating it into a set of numerical indicators (Vatin, 2013). Including graduate salaries, for example, in a measure of university quality would likely be perceived as a valorization of salary as more important than other characteristics excluded in the ranking. Valorization also reflects how numbers are presented, ordered, visualized, and contextualized. Rankings often imply ‘winners’ as valorized exemplars (Fourcade, 2016), even when this is unintended by the quantifier (Hacking, 2000; Rottenburg et al., 2015).

Validity is based on the standards by which stakeholders judge the extent to which numerical indicators are deemed true and accurate (i.e., representing what they claim to represent) (Espeland and Stevens, 2008). Instead of broad objective agreement, stakeholders often vary in their standards for understanding and judging the truth of numerical indicators (Desrosières, 2001). Perceptions of validity tend to be based on general beliefs about the legitimacy and primacy of the scientific method, as well as objectivity and rationality, as the appropriate judgmental criteria for understanding the world (Fourcade, 2016). For example, established business indicators to measure market performance are likely deemed to be more valid than novel indicators, because their common use makes them appear to be more objective (i.e., created with greater distance from the quantifier’s subjective goals).

Reactivity describes how organizations react to being quantified in intended or unintended ways. Most examples of reactivity in the literature imply an evaluative or even coercive bent: typically, a third-party quantifier counts, measures, and ranks the quantified to provide information to applicants, investors, consumers, or funders (e.g., Merry et al., 2015; Orlikowski and Scott, 2014). Stakeholder perceptions of greater validity and greater acceptance of valorization may accelerate reactivity in quantified organizations (Mennicken and Espeland, 2019). The degree and form of reactivity depend on factors such as relative status, extent of cohesion among the quantified, or values alignment between the quantifier and the quantified (Doshi et al., 2019; Elsbach and Kramer, 1996).

Finally, *retroaction* describes how quantification also can reshape the quantifier (Desrosières, 2014). This can happen both through internal reflection, as the availability and use of certain metrics shape the quantifier’s understanding of its opportunities and challenges (Desrosières, 2002), and as a result of processing reactivity. Retroaction may be reflected in, for example, prioritizing different sets of quantification standards over time, sometimes in different ways when communicating with external versus internal stakeholders. Retroaction may occur when the quantified co-opt or lobby quantifiers or invent and standardize ranking systems by linking to other quantifiers (Arnold and Loconto, 2021; Pollock et al., 2018). Overall, retroaction captures how the legitimacy,

relationships, and behaviour of the quantifier may change as it juggles the effects of producing and communicating data.

With these concepts in mind, our study integrates insights from the hybridity and quantification literatures to understand how hybrid collectives navigate the conform-and-oppose tension in their efforts to promote their members while maintaining their distinctive values. We identify a key challenge: when these collective efforts rely on tools that are imbued with mainstream market norms – for example, because of convention, commensuration, and easier access to financial data in the case of quantification – they threaten to push the hybrid collective too much towards conformity, potentially failing to sustain the distinctiveness of the hybrid form. We expect that this pressure to conform relates to key issues of *valorization* (the perception of broader meaning) and *validity* (the perception of truth) affecting both *reactivity* (how organizations change as a result of being quantified) and *retroaction* (how the quantifier changes as a result of quantifying). To explore how hybrid collectives navigate the conform-and-oppose tension through quantification, we turn to the case of the ICA.

RESEARCH CONTEXT AND METHODS

We use a longitudinal single-case research design (Eisenhardt and Graebner, 2007; Yin, 2003) to study the quantification work undertaken by the ICA. Because of the ICA's enduring and evolving efforts in quantifying the cooperative movement, it offers a revelatory context to explore our research question.

Research Setting

Since 1895, the ICA has been the apex representing cooperatives internationally. Cooperatives are distinct from, and can be seen as integrating elements from, both shareholder-based for-profit businesses and non-profit community-based organizations (Muñoz et al., 2020; Nelson et al., 2016). Key principles of cooperatives have been defined since the advent of the modern cooperative movement in 1944, as well as since their 1995 revision: voluntary and open membership; democratic member control; members' economic participation; autonomy and independence; education, training, and information; cooperation, rather than competition, among cooperatives; and concern for community (Birchall, 1997). As of 2023, the ICA was headquartered in Brussels and included more than 310 member organizations from 107 countries, mostly federations of cooperatives and some individual cooperatives. The membership at that time was structured around four regions (Europe, Africa, the Americas, and Asia-Pacific) and eight global sectors (agriculture, banking, retail, fisheries, health, housing, insurance, and industry and services).

From its founding in 1895 to the end of the 20th century, the ICA devoted most of its energy to internal issues, assisting its membership and promoting collaboration among members (Lavie, 2023). To that point, cooperatives were only marginally considered, if at all, by key global economic decision-makers such as the World Bank, the UN's varied economic related agencies, and the G20. Within these ranks, while some individual cooperatives were incidentally recognized, scant attention was paid to the collective size and contribution of

all cooperatives as a distinctive organizational form, particularly in terms of their economic scale. This neglect bred frustration among members of the cooperative movement and its historical partners, including the International Labour Organization (ILO), a UN-affiliated agency that had long acknowledged the contribution of cooperatives. In 2002, the ILO drafted a resolution to promote cooperatives as genuine market players and correct stakeholder perceptions that ‘underemphasized the business orientation of cooperative enterprises’ (ILO, 2015, p. 16).

In 2004, responding to the call to take cooperatives more seriously as critical economic players and to develop numerical evidence to support this goal, the ICA designed a pilot quantification project, the ‘Global 300’. The Global 300 was imagined as an annual ranking of the world’s largest cooperatives meant to communicate the scale of the global cooperative movement. In 2012, designated by the UN as the ‘International Year of Cooperatives’, the Global 300 was replaced by the World Cooperative Monitor (WCM), developed in collaboration with the European Institute for Cooperative and Social Enterprise (EURICSE). Our analysis ends in 2021, at which point the ICA had developed a portfolio of quantification initiatives, including the WCM and a broader international project, to build worldwide statistics on cooperatives in collaboration with the ILO and the UN. The deployment and evolution of quantification at the ICA from 2004 to 2021 forms the core of our analysis.

Data Collection and Analysis

To triangulate our data, we collected information from different sources (Ragin, 1994; Salkind, 2010) (see Table I). First, we gathered 74 documents totalling nearly 1400 pages comprising the main official documents linked to cooperative statistics (see Appendix S1). These documents cover the period from 2000 to 2020 and include ICA annual reports (2000–20) and other strategic documents; editions of the Global 300 and the WCM (2005–20); reports and meeting minutes by partner organizations, including the ILO, the UN, the Committee for the Promotion and Advancement of Cooperatives (COPAC), and the International Conference of Labour Statisticians (ICLS); websites of these organizations; and reports by internal and external observers. Annual publications such as those from the ICA, Global 300, and WCM enabled us to trace the evolution of quantification practices and motivations over time.

Second, between 2016 and 2021, we conducted 46 interviews with informants occupying different roles in the ICA’s quantification project (see Appendix S2). We initially interviewed eight primary informants actively involved in the quantification project as it unfolded (in 2017, 2019, and 2021). These informants included two ICA directors-general, the ICA communications manager who instigated the Global 300, the chair of the ICA research committee, and the two researchers in charge of the WCM at EURICSE. We also interviewed two informants twice as they held different roles: first as employees at the member federation CICOPA (the International Organization of Industrial and Service Cooperatives) and then in their roles as the ICA’s statistics coordinator and communications manager. We then extended the interviews to eight ICA staff and board members and finally to 18 informants at partner organizations working with the ICA on quantification. These latter interviewees were representatives of regional and sector-based federations, the WCM scientific committee, member cooperatives, and partner institutions such as the ILO, the UN, and COPAC.

Table I. Overview of data collection

<i>Type</i>	<i>Descriptor</i>	<i>Details</i>
Documents		
International Cooperative Alliance (ICA)	ICA-AR	Annual Report 2000–22 (23)
	GLOB	Global 300 2006–11 (6)
	WCM	World Cooperative Monitor 2012–22 (6)
	ICAPR	Press releases (2)
	ICAREP	Reports (4)
Committee for the Promotion and Advancement of Cooperatives (COPAC)	COPAC	Reports and meeting minutes (4)
International Labour Organization (ILO)	ILO	Reports and recommendation (8)
International Conference of Labour Statisticians (ICLS)	ICLS	Resolution and guidelines (4)
International Organization of Industrial and Service Cooperatives (CICOPA)	CICOPA	Reports and analyses (4)
Personal contributions	PERS	Analyses and articles by informants and experts of the cooperative movement (7)
Websites		
Web pages on cooperative quantification	ICAWEB	ICA website
	ILOWEB	ILO website, pages on cooperative statistics
	CCWEB	COPAC website
Events		
Webinars on cooperative quantification	EVENT	Webinars on WCM results and cooperative statistics
Interviews		
ICA	1–4; 16–25	Staff, board members, and research committee
Members (sector-based and regional networks)	5–6; 8; 26	Staff in charge of statistics
EURICSE	9–10; 27–31	Staff in charge of WCM; director
WCM Steering Committee	11; 32–35	Chair and members
ILO	7; 38–39	Experts on cooperatives
COPAC	12–13; 36	Staff and board member
Technical Working Group on Statistics of Cooperatives	14–15; 37	Chair and member
Cooperatives participating in International Cooperative Entrepreneurship Think Tank (ICETT)	42–45	Staff members
Other international partners	40–41; 46	Experts on cooperatives at UN, FAO, and academia

Most interviewees had a long-standing involvement with the cooperative movement and were able to comment, beyond their own involvement with quantification, on the ICA's history and the evolution of its quantification efforts. Their knowledge transfer, combined with the document analysis, allowed us to describe the evolution of quantification over time. Interview durations ranged between 40 and 120 min and were conducted in a semi-structured way in person or via videoconferencing, usually with two co-authors. All interviews were recorded and transcribed in full. In addition, we documented the insights gained by attending four international seminars and two online events related to the WCM.

As a first step of data analysis, each author individually read the documents and interview transcripts to understand the context, rationale, and evolution of quantification by the ICA. We began by focusing on key changes in the quantification project, and we aligned these changes with the ICA's environment, relationships, and organizational structure. We then compared and combined our analyses to attain a detailed narrative on the development of quantification on the movement by the ICA, in which we delineated three primary episodes that redefined the project, as illustrated in Figure 1.

Following this work, we identified key evolutions across the three episodes by comparing, for example, the criteria by which organizations were defined as cooperatives, the targeted sample of cooperatives to be quantified, the quantification metrics used and developed, the internal and externally communicated goals and motivations of the quantification project, responses from and involvement of key stakeholders in the project, how broader tensions in the hybrid collective inflected stakeholder feedback to the ICA, and the effects of such reactions on the ICA itself.

Iterating between our data and theoretical constructs in an abductive way (Sætre and Van de Ven, 2021), we mapped the key evolutions in the quantification work against the four conceptual categories highlighted in the quantification literature: valorization, validity, reactivity, and retroaction. As each of these categories connects the quantifier's work

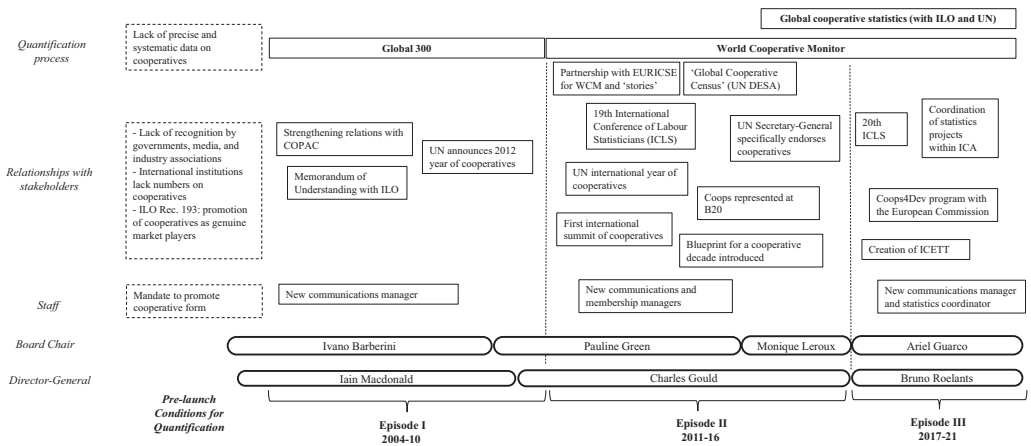


Figure 1. The evolution of quantification at the ICA

with stakeholder perceptions, we combined the perspectives of the ICA, its members, and external stakeholders on the evolution of quantification to empirically apprehend the four categories. While reactivity focused on stakeholder responses and retroaction examined how these responses were processed by the ICA, valorization and validity integrated both perspectives. For example, validity captured how the ICA staff hoped to produce numbers that were deemed valid by members and external partners, taking into account previous perceptions. By doing so, we observed that, in each episode, the ICA adapted its valorization and validity claims through internal reflection and stakeholder feedback, and that such claims informed how the ICA navigated the conform-and-oppose tension. The intensity of these interactions surprised us, given the focus in the quantification literature on conformity, resistance, or co-optation of the quantified. How the ICA managed the discrepancies between its quantification intentions and the consolidated stakeholders' feedback appeared as a major driver explaining how quantification gradually engaged the ICA in an approach that both conformed to and opposed mainstream market norms.

To validate our emerging findings and develop a more fine-grained understanding of the case, we presented our episode delineation of the case to the ICA statistics coordinator and two EURICSE researchers during our final stage of data modelling.

FINDINGS

We structure our findings temporally along the three key episodes identified in the ICA's quantification work (2004–21). For each episode, we analyse the evolution of the quantification work through the concepts of valorization and validity (i.e., intended and perceived claims to meaning and truth) and examine reactivity and retroaction effects regarding the ICA's conform-and-oppose tension positioning. Table II summarizes our key findings across the three episodes of quantification at the ICA.

Episode I: 2004–11 – Conform to Market Values

Valorization. The primary motivation for ICA quantification in episode I was to make the cooperative form more visible as a legitimate market player, thereby endorsing market-based valorization. This aim responded to the ILO's diagnosis that 'it was [...] important for cooperatives to "stand on their own two feet" and function as autonomous enterprises in a competitive market' (ILO2). The ICA staff believed that emphasizing the economic weight of cooperatives, even at the risk of giving this characteristic too much attention, would help procure support for the cooperative movement in general.

The project aims to make visible what is often invisible. [...] Although cooperatives are often market leaders with well-established brands, nationally or regionally, ordinary people are often unaware that these companies are cooperatives. [...] This [project] will allow cooperatives to be integrated into governmental economic models, and thus be taken more seriously. (PERS2)

Table II. Overview of findings

<i>Episodes of the quantification project</i>	<i>Valorization</i>	<i>Validity</i>	<i>Reactivity</i>	<i>Retroaction (leading to new episode)</i>
EPISODE I: 2004–10 Conform to market values Type of quantification: list of 300 largest cooperatives Indicator: turnover Cooperative definition: legal form or (partial) cooperative ownership	Market weight and performance emphasized over cooperative values	Focus on easily accessible figures; influenced by market-oriented valorization	Of members <ul style="list-style-type: none">• Indifference of listed cooperatives and ICA members generally• Protest from some non-listed members Of external stakeholders <ul style="list-style-type: none">• Indifference of market-oriented stakeholders• Scepticism of international institution partners over valorization and validity	<ul style="list-style-type: none">• Realization of low reactivity as indication of inadequate quantification work• Limits of conformity lead to willingness to endorse oppositional cooperative dimension
EPISODE II: 2011–16 Market focus refined, cooperative values advanced Type of quantification: List of 300 largest coops; emerging focus on additional subsets Indicators: turnover, capital structure Cooperative definition: combination of legal form and ownership structure	Valorization of multiple forms of performance across regions and sectors; economic resilience emphasized and cooperative values advanced	More refined and diverse measures of the economic contributions of cooperatives; lists claimed to better represent the population; outsourcing to increase quality and reduce perceptions of bias	Of members <ul style="list-style-type: none">• Increase in interest as well as contestation• Calls to link effort to other international statistical projects Of external stakeholders <ul style="list-style-type: none">• Increased acknowledgment of quantification project• Invitation to participate in global economic forums	<ul style="list-style-type: none">• Collaboration with EURICSE• ICA joins other international efforts to quantify cooperatives

(Continues)

Table II. (Continued)

<i>Episodes of the quantification project</i>	<i>Valorization</i>	<i>Validity</i>	<i>Reactivity</i>	<i>Retroaction (leading to new episode)</i>
EPISODE III: 2017–21 Engagement with both market and cooperative values Type of Quantification: Structured attempt to create statistics on entire cooperative population; list of 300 largest cooperatives and focused subset lists emphasizing cooperative principles Indicators: Both economic (turnover, capital structure, employment) and cooperative-specific (ex. member participation) Cooperative definition: combination of legal form, ownership structure, and network membership	Valorization of multiple forms of market and cooperative values; emphasis on distinctive approach to global societal challenges (Sustainable Development Goals [SDGs])	Claims of methodological rigour backed by coalition of dedicated staff, researchers, international institutions, and external statisticians	Of members <ul style="list-style-type: none">• Increased engagement of members with project• Increased identification of global movement• Development of national cooperative monitors Of external stakeholders <ul style="list-style-type: none">• Intense collaboration with ICA as apex entity coordinating global cooperative statistics	ICA reinforced as coordinator of global cooperative statistics; conformity and opposition explicitly addressed

Lacking the resources to collect comprehensive data on the global cooperative movement, the ICA communications manager nevertheless wanted to produce numbers with high market significance. He therefore convinced the director-general that the initial quantification project would focus on a single indicator, turnover, and a small set of organizations (the 300 largest worldwide):

We started discussing [...] who should we include in the figures, and that got me started on, well, what about the big ones? Let's go with the big ones [...] because of the strategic point about the need to engage with the top end, if you like, of the movement. (interview 4, ICA)

Use of a ‘Top X’ ranking, similar to the Fortune 500, reflected the ICA’s willingness to conform with market values and to appeal to global economic platforms and industry associations from which the ICA staff hoped to garner attention. Emphasizing the largest and

most economically successful cooperatives was meant to impress key external stakeholders, but also to encourage the cooperative movement to acknowledge its market success:

[As] a serious economic player on the world stage, [...] just do not let anyone tell you anymore that our movement is anything but hugely successful. (ICAREP1)

This market-based valorization led the ICA to include many companies on the list that operated far from the cooperative ideal type, as expressed in the cooperative principles. For example, the Global 300 included mutuals, groups that had a single cooperative member, and for-profit companies with a cooperative shareholder. The ranking was thus led essentially by the largest and highest-revenue companies, on top of which sat for many years the stock market-listed French company *Crédit Agricole*, a bank with historical roots as a cooperative but little engagement with cooperative principles and the broader movement.

Validity. Focusing on the turnover of the 300 largest cooperatives simplified the data collection process: 'It's more useful for us frankly to get the data from the larger cooperatives. A lot of them have reporting requirements already' (interview 1, ICA). As most of them had publicly available accounts, the main complexity was to aggregate numbers for cooperative groups made up of different subsidiaries. In this way, while the validity of numbers themselves was rather straightforward, the interpretation of these numbers would soon be debated among members and international partner institutions. For example, consistent with the ambition of market valorization, the ICA communication manager tried to give meaning to the combined turnover of the largest 300 cooperatives by comparing it with country gross domestic products. While the validity of such comparisons would be contested, it was used to build a narrative of cooperatives as an important economic force:

Together, these 300 cooperatives are worth 1.6 trillion US dollars, equivalent to the 9th largest economy in the world. (ICA-AR 09)

Reactivity. The willingness to produce figures with high market significance and the application of a loose definition of cooperatives led to discussions among members and ICA staff about the valorization and validity of this initial quantification approach. Questions soon emerged about the purpose of the list ('Is this a hit list of coops for private capital to take over?' [PERS3]) and the criteria for qualifying organizations as cooperatives:

There was part-time staff trying to find the information, and there were people pushing back saying, 'You shouldn't have included [...] this cooperative last year. We happen to know that they did [this] as a business practice and that's not acceptable' [...] so then that coop would fall off the list. (interview 15, ICA)

A member cooperative representative noted retrospectively: 'I found the methodology and content of [the statistics] very problematic' (interview 45, member cooperative). Nevertheless, many ICA members were unengaged, as they viewed the list as rather irrelevant to their organizations, if not biased: 'In the early years, we saw many

publications with statistics relying a lot on estimations [...] sometimes I would say “optimistic” estimations’ (interview 44, member cooperative). International institutions such as the ILO that had encouraged the ICA to engage in conformity-oriented quantification began questioning the Global 300: ‘While statistics on cooperatives are being collected around the world, reliable, coherent and comparable statistics on cooperatives are still missing’ (ILO3). Whereas the ILO staff had initially encouraged the ICA’s efforts, due to the lack of perceived validity, they began mobilizing their statistical teams to develop their own project to quantify cooperatives, thereby challenging the role of the ICA as a quantifier.

Furthermore, feedback was scant from industry associations and other market actors from which the ICA had hoped to attract attention: ‘The significance of cooperatives is rarely reported on and remains invisible to the mainstream [...] community. If you read the main business press, cooperatives appear to have no significant role in a globalized and competitive economy’ (ICA-AR09). Finally, quantified cooperatives appearing on the Global 300 list, most of which were not ICA members, did not react to the list or their listing, lacking either awareness of or interest in the project. For many of them, being identified as a cooperative or being involved in the cooperative movement was not on their radar, despite ICA efforts to implicate them: ‘We called [the cooperatives on the list] but often we don’t know who to talk to. It’s not clear on their websites. They don’t even know they are coops, and some of them don’t care about this top 300 list’ (interview 3, ICA).

Retroaction. The lack of reactivity implied by market-oriented valorization and validity in the eyes of both members and international institutions jeopardized the ICA’s ambition to ‘become the world champion and the main source of information on the activity of cooperatives’ (PERS3). The ICA staff realized that the initial quantification efforts reflected a market conformity orientation at the expense of acknowledging the movement’s distinctive features. However, there was general consensus within the ICA that the quantification project should be enriched rather than replaced:

Internally there was a bit of a pushback because we know that a lot of our members are sensitive to the community-based ethic of the movement [...] and fear that somebody might misunderstand that we’re all about ‘the largest’ in terms of revenue. So there was some ambivalence on the project. We thought that it needed to be nurtured along, however, with some other messages added. (interview 2, ICA)

Such realization, combined with the departure of the ICA communications manager and director-general in 2011, propelled a shift in the ICA’s positioning in terms of the conform-and-oppose tension as reflected in its approach to quantification.

Episode II: 2012–16 – Market Focus Refined, Cooperative Values Advanced

The second episode of the ICA’s quantification project featured the replacement of the Global 300 with the World Cooperative Monitor (WCM). Under the leadership of a new director-general, and as the UN declared 2012 the ‘International Year of Cooperatives’, the ICA reshaped its quantification efforts to refine its existing

focus on market relevance while emphasizing the distinctive values and practices of cooperatives.

Valorization. As the second episode continued to be driven by market valorization, turnover remained the principal indicator. The data now available for several years demonstrating continuous growth (from US\$1.2 trillion in 2009 to US\$2.2 trillion in 2014) enabled the ICA staff to fuel a narrative around collective market significance. Whereas in episode I the ICA had hoped to gain traction from industry associations and global economic circles, in the context of the 2012 International Year of Cooperatives the main external stakeholders became international institutions and policy-makers such as the UN, the ILO, and the OECD. These institutions had already shown some interest in cooperatives, as the role of the ILO demonstrates. Nevertheless, the ICA hoped to use its quantification work to attract even more attention and support:

The impetus for this new version, the WCM [...], was to show the impact that the cooperative model can have to get the attention of policymakers. As long as they think that you are only community based and that this is a cute and quaint model, but can't really solve major problems, it is very hard to get them to put a lot of energy into making sure you have the right legal and policy environment. (interview 5, ICA)

However, taking into account the lessons of the first episode, the ICA staff wanted to complement the market narrative with claims of cooperative distinctiveness and reliability. Citing the impact of the financial crisis on the world economy and the responsibility of the for-profit business model for much of the damage, the WCM and other ICA reports integrated a position that cooperatives represented a more reasonable and necessary alternative to the risk-oriented behaviour of the for-profit business model:

Through the World Cooperative Monitor, the Alliance delivers again this year the empirical evidence that [...] cooperatives stabilize and strengthen the economic fabric, because they are more risk-averse and less driven by the need to make profits than are investor enterprises. (WCM14)

In practice, the ICA asked EURICSE to work towards expanded quantitative measures of the WCM to add cooperative value-focused items, such as the number of people employed and level of member ownership in the capital structure. The ICA also actualized expansion of the WCM by complementing the top-300 list with additional features, including new 'top' lists. For example, the largest cooperatives in developing countries or those in specific sectors were developed, thereby recognizing members and groups that could not, and would never, make the overall top-300 turnover performance range.

Validity. To counter the criticism regarding quantification validity in the first episode, the ICA transferred the technical aspects of data collection and analysis to the academic research centre EURICSE, hoping that the credibility of the quantification work would be enhanced in stakeholder perceptions:

There was a real tension over those questions [...] when it was being managed internally. And as a result of that, the list didn't have a lot of integrity. [...] So, we said, if this is going to work, we need to have more discipline around this. And that's when we went to EURICSE and said, 'We're looking for a scientific research partner who will gather the data, come up with some clear criteria [and then] just apply them'. [...] We said, 'We want all of that outside of the Alliance. Put it in the scientific committee and you all decide'. And once we did that all these issues just kind of disappeared. (interview 2, ICA)

Despite this outsourcing, 'technical' decisions, nevertheless, had implications in terms of negotiating the conform-and-oppose tension, though they were somewhat beyond the ICA's sight. EURICSE researchers found that they were being asked to subsume validity in terms of the measurement of cooperative values (e.g., excluding 'false cooperatives' not complying 'sufficiently' with the cooperative principles) with the continued ambition to demonstrate market value. This proved challenging. Working early in the transition, a EURICSE staff member commented:

It's definitely frustrating. [...] We do what we can with the data, but sometimes we look at the top 300 and say, 'But is this really a cooperative, are they really operating as such, is there democratic governance here?' but we can only get to a certain point with what we have, and it leaves us questioning the data a lot. (interview 9, EURICSE)

Reactivity. In the aftermath of the 2008 financial crisis, international institutions turned to alternative organizational models such as cooperatives given evidence that these organizations had been less disruptive for workers and communities in difficult economic times (Lavie, 2023). In addition to declaring 2012 the 'International Year of Cooperatives', the UN began to invite the ICA to its 'B20' meetings, which made regular business recommendations to G20 political leaders. The ILO, meanwhile, remained committed to demonstrating specific features of cooperative practice, such as better working conditions, thereby legitimizing a sensitivity to cooperative values. In this context, the more oppositional voices to the 'big and growing' narrative, such as the CICOPA member network, lobbied to reconnect the WCM and the ICA with the efforts of the ILO and the UN to jointly produce worldwide statistics on cooperatives.

Among member networks and cooperatives, despite the increasing attempts to tune down market conformity and advance cooperative values, the persistent emphasis on market size and success caused frustration. The quantification work continued to be perceived by more oppositional members as a market-oriented narrative, operating at the expense of the distinctive nature of cooperatives:

ICA should be at the forefront of defending cooperative assets, the cooperative identity, and its own principles, rather than diluting and confusing the issues beyond recognition. Just because a business [...] was accepted as a cooperative in the past does not make it a cooperative now. (PERS7)

Retroaction. In terms of retroaction, the ICA continued to invest in its quantification project while participating in the broader cooperative quantification effort piloted by the ILO. The ICA staff complemented its market-oriented quantification measures with nascent efforts to emphasize the diverse movement beyond the largest cooperatives and to value the distinctive cooperative values. The end of episode II marked an acute awareness in the ICA that further refining its quantification work would help reclaim its role as the global apex of the cooperative movement, thereby resisting the divisions that the conform-and-oppose tension had created:

In the cooperative movement, there's been a culture of silos rather than collaboration. So, this is a big challenge that prevents us from [...] taking advantage of our very diverse networks. We are a huge movement, all our voices are needed, and the ICA as the apex should put all the different views together and find a way to coordinate all this richness. (interview 31, WCM steering committee)

In summary, by the end of episode II, more active dialogue was transpiring among the ICA, its members, and key external stakeholders. Despite the continued contestation on how quantification was being actualized, this dialogue effectively resulted in more engagement, consideration, and feedback. The discussions led the ICA staff to explore avenues to endorse the responsibility for quantifying the global cooperative movement, a willingness that would materialize in episode III.

Episode III: 2017–21 – Consolidated Focus on both Market and Cooperative Values

In the third episode, the quantification efforts became more diversified and further engaged the ICA in both conform and oppose positioning. In 2017, the ICA's General Assembly elected the director of CICOPA, one of the more oppositional sectoral federations, as the new director-general. Under his leadership, the ICA also hired a new communications manager and statistics coordinator, whose role was to supervise the WCM and reinforce the ICA's leadership within the multi-stakeholder statistics project initiated by the ILO.

Valorization. While still maintaining an allegiance to measures of market conformity, the ICA increasingly incorporated elements of an oppositional agenda. This was embodied by the valorization of cooperatives' 'distinctive impact'. For example, the ICA aligned with the vocabulary and targets of the UN's Sustainable Development Goals (SDGs), though it did so in a way that emphasized cooperatives' distinctive contribution:

Before, the goal was to [...] know the number of cooperatives and measure their turnover; now it is more about measuring their impact. We must produce indicators about employment, economic performance, achieving SDGs, but we need to do it in a way that reflects the specificities of cooperatives. (interview 17, ICA)

The collaboration with statisticians at the ILO and EURICSE provided increasing opportunities to quantify the cooperative features that were now explicitly valorized despite their more difficult measurement, such as member participation and social impact. The new ICA staff insisted that quantification should reflect the characteristics of all cooperatives, to rebalance the message conveyed by previous quantification efforts that ‘big is better’:

The idea of the World Cooperative Monitor is now not just to prove that large cooperatives exist, but to provide some data to show that cooperatives act differently from other large enterprises. [...] If you focus too much on ‘okay, coops are businesses’, then you go too far in the other direction, you get away from why coops are different. Okay, yes, they are businesses, but let’s remember what their core principles are, and how we make a difference in the world. (interview 22, ICA)

Validity. Attention to validity concerns was also further engaged in the third episode through the work of the new statistics coordinator and the collaboration with international institutions. From these efforts, ‘Guidelines for Statistics on Cooperatives’ were formulated and adopted by the 20th International Conference of Labour Statisticians in 2018. These guidelines constituted a compromise through which the ICA could align its quantification work with international standards while also asking international statisticians to explicitly consider the distinctive identity of cooperatives:

Before these guidelines, if you talked with the statisticians, they would say [that] one should include every enterprise that is legally established as a cooperative, by definition [...]. And then if you talked with the ICA staff, they wanted to measure the cooperative identity of an organization. So this was very challenging [...]. Now the guidelines help us count cooperatives in a way that makes sense for international statisticians but also enables us to assess how cooperatives act according to the seven cooperative principles. (interview 28, EURICSE)

Reactivity. The work to valorize both conform and oppose values and the increased efforts around validity allowed the ICA to build a wider arena of inclusion. The ICA staff also learned how to sequence conformity and opposition narratives: for example, several informants suggested that market size could be an ‘entry ticket’ to gain attention from policy-makers and then follow up with a narrative emphasizing distinctive values:

The first question which always comes to the table when talking to decision makers is, ‘What do your members represent in terms of numbers of enterprises, turnover, and so on?’ [...] With the data we have now we can precisely respond to these questions but also, when we have their attention, show them what the cooperative movement means in terms of values. (interview 20, ICA)

Increased reactivity also occurred among the ICA’s membership. Several regional and sectoral federations began producing their own ‘monitor’ to spotlight cooperatives locally or by sector. Cooperatives increasingly participated in the ICA’s data

collection process, and the statistics coordinator insisted to large cooperatives that providing information on their governance features was a requirement for being considered in the WCM. Leaders of large cooperatives began gathering for exchanges under the International Cooperative Entrepreneurship Think Tank, created by the ICA. The think tank stimulated a sense of belonging with the goal to 'show how cooperatives can leverage their identities to strengthen their entrepreneurial performance' (ICAWEB). Overall, members responded positively to the increasing emphasis on cooperative values.

Retroaction. Retroaction effects derived from increased positive reactivity and also from internal ICA retroaction. Efforts to identify and respond to the conform-and-oppose tension contributed to the ICA's enhanced role as the apex organization of cooperatives worldwide and the global coordinator of quantification efforts. Participant feedback from earlier sceptics confirmed this change:

We appreciate everything the ICA does to give more visibility to the cooperative movement. [...] So this new monitor now helps build the recognition of cooperatives as a distinct and impactful model [...] and I think this benefits everyone in the movement. (interview 20, CICOPA)

In summary, at the end of our research period, the ICA's quantification work had evolved from a simple Excel spreadsheet accounting for the turnover of outsize cooperatives to a portfolio of tailored and collaborative quantification projects on a global scale. During the three episodes, the ICA refined the valorization and validity claims underlying its quantification efforts, integrating the reactivity of members and external partners. Critiques and inputs from members and partners helped the ICA position itself relative to the conform-and-oppose tension, leading to important changes in how it quantified the cooperative movement. By doing so, the ICA learned to navigate the tension in a way that aligned with market performance norms while promoting the distinctive values of the cooperative form.

DISCUSSION

Facing growing demand for numerical evidence of reach and impact, hybrid collectives increasingly engage in quantification to promote their members. Yet, doing so risks exacerbating the pressure towards conformity at the expense of hybrids' distinctive goals and values, thereby compromising hybrid collectives' engagement with the conform-and-oppose tension. The ICA's quantification efforts made the tension between conform and oppose more visible and more widely felt, leading to increasingly strong reactivity and retroaction dynamics. Overall, such changes enabled the ICA to redefine its positioning to promote cooperatives as a hybrid organizational form, both similar to and distinct from mainstream market norms (Michaud, 2014). Building on our findings and the literature on hybridity and quantification, we theorize a process model of *formative quantification*, which we present next.

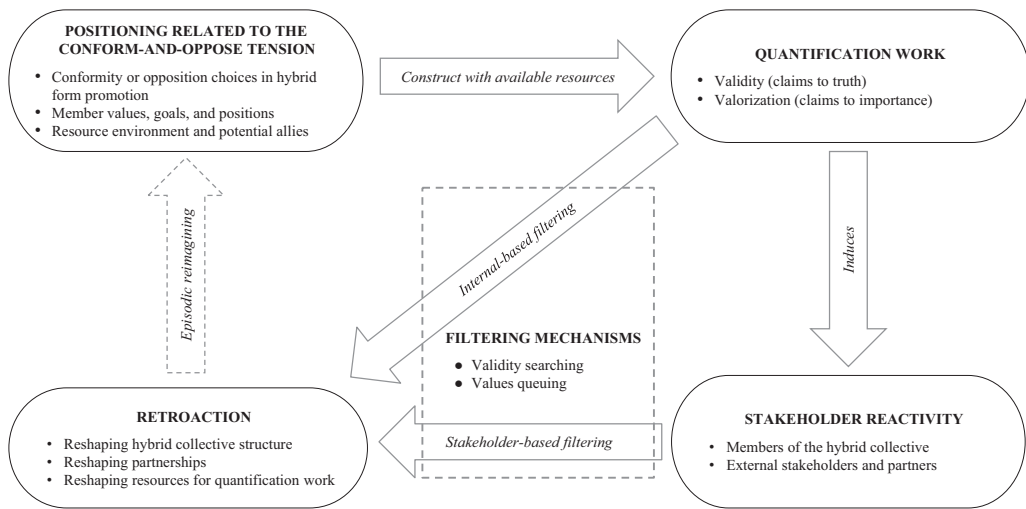


Figure 2. Process model of formative quantification

Process Model

Our process model of formative quantification emphasizes cycles of feedback and reflection among the hybrid collective, its quantified members, and its external stakeholders (Figure 2). The model identifies four elements of formative quantification, including: *conform-and-oppose positioning*, *quantification work*, *reactivity*, and *retroaction*. At the core, we highlight two filtering mechanisms – *validity searching* and *values queuing* – through which the hybrid collective, as quantifier, develops its quantification work and reconsiders how that work positions the hybrid form relative to mainstream market norms. These filtering mechanisms, driven by both internal reflection and stakeholder reactions, may push the hybrid collective to a tipping point where it reimagines the quantification process in a way that repositions its engagement with the conform-and-oppose tension.

First, the hybrid collective defines its *conform-and-oppose positioning* in relation to prior and current collective promotion projects. Hybrid collective staff make choices about how to promote the hybrid form based on their perceptions of members' attitudes towards conformity and opposition to mainstream market norms (Michel, 2020; Young, 2021). These attitudes to conformity and opposition develop over time within individual hybrids (Cornelissen et al., 2021; Smith and Besharov, 2019), creating an evolving, often contested, array of member attitudes to which the hybrid collective must respond. Lacking authority over their members, the legitimacy of hybrid collectives often rests on their claim to represent their members. Hybrid collective staff also make these possibly implicit choices based on perceptions of the resources to support the hybrid form that are or could become available from external allies (Huybrechts and Haugh, 2018). For example, the ICA intensified its quantification efforts in part to develop evidence that cooperative supporters could use to justify marking 2012 the 'International Year of Cooperatives'.

Second, our process model highlights how the hybrid collective, as quantifier, engages with *quantification work* through two key dimensions: validity and valorization. *Validity*, relating to how the quantification work makes and supports claims about what is true, is judged both by the quantifier and by key stakeholders. These perceptions of validity are often influenced by what data are or could be available (Hacking, 2000). Therefore, quantification work often initially draws on available templates, including specific metrics, that are oriented towards mainstream market norms (Berman and Hirschman, 2018). During episode I, for example, the ICA sought to draw on the legitimacy of the Fortune 500 methodology and to incorporate publicly available data covering large companies to produce a 'valid minimum estimate' of the total economic impact of cooperatives.

Valorization, on the other hand, reflects how the quantification work intentionally or unintentionally supports claims of value of certain characteristics of the quantified organizations (Fourcade, 2016; Rottenburg et al., 2015). The stakes of valorization are high since value claims amplify or challenge prevalent attitudes among members and other stakeholders regarding conform-and-oppose positioning. For example, when the ICA incorporated a developing country list, organized by national gross domestic product, it explicitly aimed to highlight how cooperatives contribute to national economies outside the Global North, i.e., its global impact, thereby moving away from valorizing turnover as the main feature of impact. In this way, our process model relates the 'risk of ranking' discussed in prior literature (i.e., the potential to implicitly celebrate the measures leading to a higher rank and the organizations that score high on those measures) (Fourcade, 2016; Rottenburg et al., 2015), to the broader risk of alienating members of the hybrid collective. In our model, direct relationships with members and other stakeholders help the hybrid collective gauge how members with more of a conforming or opposing stance will respond to a focus on certain measures.

Third, the *reactivity* element encapsulates how members and other stakeholders respond (or not) to the quantifier's positioning, based on perceptions of the valorization and validity of the quantification work, including in relation to their own attitudes about how and why to promote the hybrid form. The episodic nature of our model allows reactivity to wax and wane over time, to take different forms, and to emerge from different voices. While we here incorporate the traditional disciplinary reactivity of 'chasing indicators' (e.g., Elsbach and Kramer, 1996; Espeland and Sauder, 2007), we also include the potential for stakeholders to demand changes in the quantification efforts (e.g., Pollock et al., 2018). Such member participation is central in formative quantification, in which the quantifier has a sustained, representative relationship with the quantified. For example, in the ICA case, more opposition-focused members increasingly challenged the Global 300 as appealing to market performance concerns and pleaded to better acknowledge the distinctiveness of cooperative values. Using the concept of *reactivity*, as opposed to simply reaction, highlights how processing the quantification work can also shape the individual organizations' support for the hybrid collective.

Fourth, our model develops Desrosières's (2014) concept of *retroaction* to show how engaging in quantification can reshape the hybrid collective's structure, partnerships, and resources. As indicated by the two arrows leading to retroaction, this process can result either from the processing of stakeholder reactivity or from the hybrid collective reflecting on how its quantification work relates to its broader positioning regarding

the conform-and-oppose tension. For example, as a result of both its prior quantification experience and the feedback triggered among stakeholders, the ICA built stronger partnerships with international institution partners, allied with a data collection and gathering organization, and raised additional resources to create a new position within the apex focused on the quantification process, all of which reinforced the ICA's role as the predominant global voice of cooperatives. How did these changes come about?

Moving past the prior focus on retroaction as the clarification of challenges and opportunities (Desrosières, 2014), our study highlights two conform-and-oppose filtering mechanisms that determine whether and how feedback is, potentially, integrated into new quantification episodes: validity searching and values queuing. *Validity searching* involves determining available options based on stakeholders' validity standards. To the extent that results are rejected as invalid, they will contribute little to promoting the hybrid form. In *values queuing*, the quantifier assesses the quantification project through the lens of contrasting conform and oppose values, through both feedback and self-reflection. At the end of episode I, for example, the ICA's perceived valorization of the largest cooperatives as representative of the population was sharply criticized by some members who viewed it as undermining the oppositional values of cooperatives, though less by external stakeholders who valued having numerical evidence of impact. This initiated the values-queuing mechanism that led to a reimagining of the measures, scope, and presentation of the quantification project in episodes II and III.

Finally, reflecting the interactive nature of this process, reactivity may lead to episodic reimagining of the conform-and-oppose positioning, and especially the role of quantification in that positioning. When reactivity and retroaction generate an impetus for readjusting the conform-and-oppose positioning in such a way that the status quo is no longer acceptable, this is likely to translate into a broader reconsideration of validity and/or valorization choices. In this new episode, quantification work is adapted accordingly, producing a new cycle of reactivity and retroaction.

Contributions

Our findings and model contribute to the literatures on hybrid organizations and organizational quantification. First, our research theorizes how hybrid tensions are navigated at the collective, inter-organizational level (Bergman, 2017; Gillett et al., 2019), extending prior work that has focused on organizational-level tension management (e.g., Battilana and Dorado, 2010; Jay, 2013). Our findings document the complexity facing hybrid collectives in terms of navigating the broader tension between conforming to taken-for-granted market norms and opposing these norms (Michel, 2020). In particular, we show that conform-and-oppose is not necessarily a tension *between* external stakeholders driving conformity and members claiming distinctiveness, as described in prior work (Huybrechts and Haugh, 2018), but rather a tension between oppositional and conformity demands emerging *from within* each group, including members who face their own organization-level tensions and oscillation cycles (Smith and Besharov, 2019). Such complexity may put more pressure on the hybrid collective compared with organization-level tension management in which

internal and external stakeholders are clearly associated with one side of the tension (e.g., Pache and Santos, 2013).

Yet, our findings suggest that the positioning of hybrid collectives in between their members and broader stakeholders may also represent an opportunity to develop a participative approach to hybrid tension management (Michaud, 2014). Collective efforts such as quantification may be leveraged as inter-organizational negotiation spaces where claims, in our case based on numbers, can be debated and refined in relation to their capacity to both conform and oppose (Bouchard and Rousselière, 2015; Michaud, 2014). We emphasize validity searching and values queuing as alternative tension management mechanisms that hybrid collectives, which lack hierarchical control and formal mechanisms available at the organizational level, can use to filter internal reflection and stakeholder feedback. While values queuing echoes prior work on the prioritization of values by hybrids (e.g., Battilana and Lee, 2014), validity searching is a less explored mechanism that emphasizes the format and credibility standards through which the collective's positioning is deemed valid.

Our findings suggest that validity searching and values queuing act as informal versions of the formal 'guard rails' identified at the organizational level (Smith and Besharov, 2019). Rather than 'integrating' values in a relatively stable way (Cornelissen et al., 2021), these mechanisms regulate how the hybrid collective juggles even divisive values in an episodic manner as it engages with members and external stakeholders. In summary, through validity searching and values queuing, we refine understanding of how hybrid collectives make the conform-and-oppose tension salient to members and provide an opportunity to successively reach common, albeit temporary, settlements (Reinecke et al., 2017). Such a perspective nuances previous work on hybrid collectives that focuses either on their role in cultivating a distinctive identity in opposition to mainstream market norms (Audebrand and Barros, 2018; Michel, 2020) or on their actions to build conformity with institutional expectations (Huybrechts and Haugh, 2018; Young, 2021).

Second, our findings and model reorient theory on how quantification reshapes organizations from evaluation (Power, 2004) to *formation* – a collective process to understand, engage, and promote a collection of distinctive organizations. While prior research highlights the conformity-enhancing and potentially coercive effects of numbers (Elsbach and Kramer, 1996; Sauder and Espeland, 2009), formative quantification creates space for a broader variety of characteristics that resist mainstream market norms. The mechanisms of validity searching and values queuing show how the key truth-meaning duality raised in quantification literature (Islam, 2022; Vollmer, 2007) inheres in the practices undertaken by hybrid collectives as they quantify their members.

Formative quantification therefore implies proximity between the quantifier and the quantified, as exemplified in the case of hybrid collectives, so that key issues on how to define and measure the hybrid form can be collectively negotiated. This moves beyond the types of third-party, evaluative efforts to create *reactivity* in the quantified by increasing the transparency of the quantified phenomenon, as illustrated, for example, in the case of human rights abuses (Doshi et al., 2019; Merry, 2016). We build on prior work on *retroaction* – how the quantifier is reshaped by quantifying – that focuses on how the available metrics reshape the quantifier organization's conception of its own opportunities and problems (Desrosières, 2014), to theorize a process that allows the quantifier to develop its own metrics

collectively, intentionally, and inclusively in line with the broader opportunities and problems of the community of organizations. In this way, we build on recent studies that emphasize the agency of quantified organizations to introduce alternative meanings to quantification by third-party evaluators (Pollock et al., 2018), while clarifying the quantifier role as interpreter and processor of meaning and truth claims among members and partners (Berman and Hirschman, 2018; Espeland and Stevens, 2008; Vollmer, 2007).

While we focus here on hybrid collectives, we suggest that formative quantification is a broader process that generalizes to broader contexts. As businesses increasingly collaborate through collectives to integrate social and environmental concerns and tackle grand challenges (Berkowitz et al., 2020; Gümüşay et al., 2022), hybridity has become a more widespread phenomenon that can be framed as a matter of degree rather than as a property shared only by a specific organizational form (Shepherd et al., 2019). Our model therefore also offers insights into the implications of quantification for such a ‘hybridization’ process in organizations more broadly (i.e., how to navigate conform-and-oppose positioning through numbers). Recently, quantification techniques to assess societal impact commitments have flourished, in attempts, for example, to measure firms’ social impact (Wry and Haugh, 2018) or environmental performance (Kaplan, 2024). These quantification efforts, however, have been criticized for merely mimicking mainstream quantification tools and, therefore, for being driven by conformity concerns (e.g., Phillips and Johnson, 2021). Our formative quantification model challenges the association between quantification and market conformity, offering alternative pathways through which collectives of organizations wanting to address grand challenges (e.g., Berkowitz et al., 2020) can appropriate quantification in a way that advances distinctive values and validity standards (Dubuisson-Quellier et al., 2011; Michaud, 2014). Overall, our findings suggest that deploying quantification of social or environmental commitments as a multi-stakeholder collaborative project is likely to reinforce the legitimacy and effectiveness of numbers in helping organizations collectively address grand challenges (George et al., 2024; Gümüşay et al., 2022).

Limitations and Future Research Avenues

Our study faces three main limitations, each of which offers opportunities for further research. First, our study mainly theorizes *formative quantification* from the perspective of the hybrid collective and its members. Future work could examine and contrast the perspectives of different non-member stakeholders, such as industry associations, governments, social movements, or the media, to understand how demands for conformity and acknowledgment of distinctiveness are formed and channelled. Different stakeholder configurations could shape the channels of reactivity and the collective negotiation of *formative quantification*, opening opportunities for comparative studies embedded in different contexts (Diaz-Bone and Didier, 2016). For example, attempts of formative quantification might not fare as well as they did at the ICA, leading to a drain of organizational attention and resources and a lack of cohesion across members and stakeholders, negatively affecting their support.

Second, our work focuses on organizations that embed hybrid goals and values within their *raison d’être*. In line with the ‘hybrid organizing’ perspective, which views hybridity as a continuous variable rather than a discrete property of given organizations (Shepherd et al., 2019), future work could examine formative quantification practices

among businesses that develop and quantify targeted distinctive practices related to grand challenges – for example, workers' participation schemes, social impact assessment, or advanced carbon neutrality policies (Kaplan, 2024; Wry and Haugh, 2018). Beyond the organizational level, future research could also explore whether and how quantification takes an oppositional stance when deployed in collectives such as industry associations, which can vary significantly in their attitude towards embracing grand challenges (Berkowitz and Bor, 2024).

Third, our research focuses on cooperatives as hybrid organizations that embed the conform-and-oppose tension around market values within their core identity (Nelson et al., 2016; Soetens and Huybrechts, 2023). Cooperatives, in particular, have a long history of dealing with – and bending to – pressures towards conformity (e.g., Dufays et al., 2020), although the cooperative form was initially founded as an alternative to core capitalist practices (Lavie, 2023). Future research could examine how other types of hybrid organizations, such as social enterprises, B Corps (for-profit corporations certified for their social impact), or fair trade organizations, engage in quantification and how, if at all, their work has reshaped the way they respond to mainstream market norms.

Although we have specified implications beyond the context of this study, we nevertheless also encourage greater research on how cooperatives, specifically, address grand challenges (Lavie, 2023). Cooperatives comprise more than two million organizations and hundreds of millions of individual members worldwide. Yet research on cooperatives is relatively sparse in management literature (Nelson et al., 2016). As cooperatives seek to 'promote the fullest possible participation in the economic and social development of all people' (United Nations, 2021), research on cooperatives, especially at the inter-organizational level, can advance the goal of repurposing management research and practice to address grand social challenges (Wickert et al., 2021). We encourage researchers to continue exploring how cooperatives and other hybrids combining market and social goals are working, stumbling, and succeeding at collectively developing solutions to contemporary grand challenges.

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