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Social Innovation and Higher Education in the BRICS (2): a multiscalar governance approach with evidence from DESIS Labs

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BRICS Policy Center Centro de Estudos e Pesquisas - BRICS

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INNOVATION SYSTEMS AND DEVELOPMENT GOVERNANCE

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Summary

Executive Summary

This is the second working paper resulting from the first phase of the research project on "Social Innovation and Higher Education in the BRICS" conducted by the Research Group on Innovation Systems and Development Governance at the BRICS Policy Center. It aims to provide evidence on the ways in which social innovation labs in HEIs in the BRICS countries may operate within a complex, multiscalar governance mode, which a number of local-, national-, and international or transnational-level stakeholders participate in.

In the first section, we present the main theoretical and conceptual formulations that inform our analysis. Then, we focus on the participation of BRICS HEIs in the BRICS Network University and in a few transnational networks currently dealing with social innovation. In the third section, we focus on a particular social innovation network, the DESIS Network, and take six DESIS Labs based in BRICS HEIs as case studies. We investigate the ways in which these labs were created and how they have conducted or engaged in social innovation initiatives since then. We pay particular attention to the ways in which a range of stakeholders acting on different levels (i.e. local, national and inter/transnational) have been involved in those processes, to analyze how these interactions may reveal a broader, multiscalar governance framework underlying those labs' practices.

We conclude that, despite variations between our case studies, in general, the empirical data analyzed in this study indeed evidences that a multiscalar governance mode has played out in these social innovation labs' processes and practices. Multiple local-, national-, and inter/transnational stakeholders operate in such governance mode, with prevalence of international and transnational actors based at or originally from the Global North, especially Europe. The involvement of local, national and international state actors further suggests that these labs tend to operate within a multiscalar metagovernance framework.

Drawing on our main findings, we provide a set of recommendations to academics, experts and policymakers in the BRICS countries. Given that social innovation-oriented collaborations among HEIs in the BRICS countries have been rather sparse and fragmented in nature, our recommendations mainly focus on the creation of more institutionalized mechanisms—as well as on the further exploration of existing platforms—with the purpose of facilitating connections and partnerships aimed at promoting social/inclusive innovation initiatives. We contend that drawing attention to these issues might help them critically (re)examine higher education governance in an increasingly globalized world, and implement more suitable strategies for promoting truly inclusive and sustainable development processes.

Key-words

Acknowledgements

Social Innovation and Higher Education in the BRICS (2): a multiscalar governance approach with evidence from DESIS Labs

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1. Introduction

In a previous working paper (Cruz, Rebourseau and Luisi 2018), we provided an overview on the BRICS higher education systems and identified how the idea of social innovation/entrepreneurship[4] has emerged in those contexts. We particularly highlighted the participation of international actors in these processes as to provide background information on the ways in which social innovation initiatives in HEIs in the BRICS countries seem to rest on a complex, multiscalar governance framework, which a number of local-, national-, and international or transnational-level[5] stakeholders participate in. As a continuation of this project, this second working paper aims to provide empirical evidence that may confirm our hypothesis. We do so by analyzing the developments of a few social innovation labs based on HEIs in the BRICS. We specify our case studies at the end of this introduction. First, let us introduce how social innovation labs have proliferated around the world.

Social innovation labs are among the new types of socially-oriented initiatives currently on the rise in the world. The Rockefeller Foundation's Social Innovation Labs, UNICEF Innovation Labs, BRAC Social Innovation Lab, and InSTEDD are but a few examples of projects designed by important international organizations with the aim of supporting the creation of social innovation labs within many different types of organizations, including HEIs. According to estimates released in 2014 by The Bridgespan Group, the sector, although still early in its development, has been growing rapidly. From 2009 to 2014, there has been a 70% increase in the total number of social innovation labs identified by the Group.[6]

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(4) Here, we use the terms "social innovation" and "social entrepreneurship" interchangeably. For a brief discussion on these concepts, see Brudenius (2017). For an overview, see also Cruz, Rebourseau and Luisi (2018).
(5) The definitions of local-, national-, and inter/transnational-level actors adopted in this paper follow the criteria presented in item 4.3 (see Comparative Analysis (1)).
(6) Available at: https://www.rockefellerfoundation.org/blog/how-social-innovation-labs-contribute/. Accessed on 10 Dec. 2017

Social innovation labs have been created either in an isolated manner or in connection with regional and transnational networks. Recently, a 4-year (2014-2017) research project, entitled *T*ransformative Social Innovation Theory (TRANSIT) and funded by the European Commission, gathered researchers from nine universities in Europe plus two universities in Latin America[7] to develop an empirically-based theory on social innovation—one 'that is useful to both research and practice' (Haxeltine et al 2017: 1). They analyzed 20 transnational networks[8] dealing with social innovation/entrepreneurship. These included networks formed by social entrepreneurs, cooperatives, HEIs, grassroots communities, labs, NGOs, among others.

With respect to HEIs in particular, the European Commission has been a major promoter of what it calls "a new model for University–Socioeconomic engagement." The Commission intends this to 'result in a new paradigm for knowledge transfer within universities, supporting the concept of social innovation as key to social development and cohesion at both a regional and international level.'[9] Focused on promoting this vision in the Global South, the European Union has funded two major projects: the Latin American Social Innovation Network (LASIN), which involves a consortium of thirteen partners, including eleven universities, in Chile, Colombia, Brazil and Panama; and the Southeast Asian Social Innovation Network (SEASIN), which comprises a consortium of fifteen partners, including eleven universities, in Thailand, Myanmar, Cambodia and Malaysia. Both LASIN and SEASIN are coordinated by the Glasgow Caledonian University (Scotland, UK) and were implemented in partnership with the Social Innovation Exchange (SIX), one of the main international networks focused on social innovation today (originally from the UK).

A prominent social innovation network particularly focused on the role of HEIs in fostering sustainable development is the Design for Social Innovation towards Sustainability (DESIS). Officially founded in 2009, DESIS is an 'international network of design labs, based in design schools and design-oriented universities, actively involved in promoting and supporting sustainable change.'[10] It operates at the local, regional and global levels, connecting and coordinating projects developed by 'professors, researchers and students who orient their design and research activities towards social innovation'. To date, the network comprises 49 DESIS Labs. Although the majority of them are in the Global North (especially in Europe), almost half are located across nine countries in the Global South. More relevant for the purposes of this paper, all the BRICS countries have at least one DESIS Lab hosted by HEIs. China and Brazil stand out with five labs each, followed by South Africa with two labs, India with one, and Russia with a recently-founded DESIS Lab.

In the face of the growing relevance of social innovation labs in triggering socially-oriented practices and cross-border interactions among HEIs and between HEIs and other types of actors engaged in the global political economy of social innovation, we see the DESIS Labs as promising cases for examining whether or not these units operate within a complex, multiscalar type of governance, and (if so) the extent to which different local, national and international/transnational actors tend to partake in their social innovation-oriented activities.

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(7) Coordinated by the Dutch Research Institute For Transitions (DRIFT/Erasmus University Rotterdam), TRANSIT partners comprised 12 research centers hosted by the following universities: Erasmus University Rotterdam (Netherlands), Maastricht University (Netherlands), University of East Anglia (UK), Université Libre de Bruxelles (Belgium), Aalborg University (Denmark), University of Sussex (UK), University of A Coruña (Spain), University of Natural Resources and Life Sciences (Austria), St. István University (Hungary), National University of Quilmes (Argentina), and Federal University of Rio de Janeiro (Brazil). See http://www.transitsocialinnovation.eu/transit-partners. Accessed on 12 January 2018.

(8) The TRANSIT project studied the following networks: Ashoka; Basic Income Earth Network (BIEN); Credit Unions; DESIS; European Network of Living Labs (ENOLL); Fab Labs; Global Ecovillage Network; Hackerspaces; INFORSE; International Co-operative Association; Living Knowledge Network; Participatory Budgeting; RIPESS; Seed Exchange Network; Shareable– Sharing Cities; Slow Food; The Impact-Hub; Time Banks; Transition Towns; and La Via Campesina. See: http://www.transitsocialinnovation.eu/about-transit. Accessed on 19 January 2018.

(9) See http://lasin-eu.org/en/what-lasin and http://www.seasin-eu.org/about-seasin/. Accessed on 17 Jan 2018.

(10) Available at: http://www.desis-network.org/content/about-us. Accessed 10 Dec. 2017

In the first section, we present the main theoretical and conceptual formulations that inform our analysis. More particularly, we specify how the concepts of "governance" and "multiscalar governance" are understood in this paper. Then, we focus on the participation of BRICS HEIs in international and transnational networks. We provide information on the BRICS Network University (BRICS NU) and on a few transnational networks currently dealing with social innovation, namely, the European Network of Living Labs (ENoLL); the Fab Lab Network; and the Learning Network on Sustainability (LeNS). In the third section, we focus on a particular social innovation network (i.e. the DESIS Network) and take six DESIS Labs as case studies, namely, **(i)** UFRJ/COPPE DESIS Group, (Rio de Janeiro, Brazil); **(ii)** DESIS SPbU (Saint Petersburg, Russia); **(iii)** NID DESIS Lab (Paldi, India); **(iv)** TSU DESIS Lab (Beijing, China); **(v)** HKDI DESIS Lab (Hong Kong, China); and **(vi)** DSD DESIS Lab (Johannesburg, South Africa).[11]

Our aim is to analyze the ways in which these labs were created and how they have conducted or engaged in social innovation initiatives since then. We pay particular attention to the ways in which a range of stakeholders acting on different levels (i.e. local, national and inter/transnational) have been involved in those processes, to analyze how these interactions may reveal a broader, multiscalar governance mode underlying those labs' practices. In other words, our aim is to provide a preliminary investigation of the extent to which these practices reveal processes by which the "global" is constantly constructed inside the "local," hence (re)producing multiscalar sociospaces. More specifically, we seek to identify what types of actors tend to play a bigger part in these processes, as well as the levels at which they operate, with the hope that drawing attention to these issues might help academics, experts and policy-makers in the Global South to critically (re) examine higher education governance in an increasingly globalized world.

2. Theoretical Framework

Concerns with the question of scale and sociospatial relations have marked the evolution of globalization studies over the past decades. As critical theorists have sought to overcome the traditional approach of conceiving a dichotomy of "the global" and "the local," new multiscalar approaches have been developed as to address how the global gets 'structured inside the national, producing [...] a partial, and often highly specialized, denationalizing of what historically was constructed as national' (Sassen 2008: 69; See also Sassen 2006 and 2010), or to account for territories, places, scales, and networks as 'mutually constitutive and relationally intertwined dimensions of sociospatial relations' (Jessop, Brenner and Jones 2008: 389). As those theorists claim, such approaches seem suitable for investigating 'several realms of inquiry into sociospatial processes under contemporary capitalism' (Ibid: 389). Drawing on these theoretical formulations, we contend that higher education is undoubtedly one of these realms. To be sure, multiscalar approaches have informed the works of distinguished scholars focused on higher education changes in the face of globalization processes (e.g. Olds and Robertson 2010; Robertson et al. 2012; Goastellec and Picard 2014).

Interestingly, the evolution of the scholarly debate on globalization paralleled the development of concepts and approaches to "governance"—a notion that has attracted growing attention not

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(11) The coordinators and operational managers of all existing DESIS labs in the BRICS countries were invited via email to participate in this research, either by interviewing via Skype or WeChat and/or by responding to a questionnaire. The coordinators and/or operational managers of each of the six DESIS labs mentioned above freely agreed to participate, and provided us with much of the information presented in this paper. Additional information was extracted from the Labs' websites, the DESIS Network website, as well as other relevant online sources.

only in academia, but also among governments and international organizations. As the editors of the *Handbook on Theories of Governance* point out, 'Today, governance is one of the most frequently used social science concepts in the world […] A vast array of researchers, research centers, journals and conferences are devoted to the study of governance, and many new theories of governance have been promulgated over the last two decades' (Ansell and Torfing 2016: 1).

In the midst of so many theories and perspectives, it is necessary to specify what we understand by "governance" in this paper. We adopt Bob Jessop's "umbrella definition," according to which governance 'refers to diverse mechanisms and strategies of coordination that are adopted by autonomous actors, organizations and functional systems in the face of complex reciprocal interdependence among their actors, activities and operations' (Jessop 2016: 74). A more narrow definition—most often adopted by scholars focused on networks and civil society—refers to heterarchy, which Jessop considers to be one out of four main kinds of governance. Heterarchy is a notion that he contrasts to anarchy, hierarchy, and solidarity. In this specific sense, governance as heterarchy 'involves reflexive self-organization based on continuing dialogue and resource-sharing among independent actors and oriented to developing mutually beneficial joint projects and managing the contradictions and dilemmas inevitably involved in such situations' (Ibid: 74). The problem with this conceptualization—which normally rests on the claim that an alleged "shift from government to governance" signals a "retreat of the state"—is that it generally implies 'a narrow view of the state as a juridico-political apparatus that governs through imperative coordination,' while ignoring 'other modalities of state power' (i.e. that the state may employ other techniques of rule that do not necessarily rest on the traditional features identified in classic state theory[12]) (Ibid: 72, 83).

For that reason, we describe our approach in this paper as *governance-centric-oriented*, that is, a perspective that, besides considering governance as heterarchy, is also attentive to how states might be 'enrolled in governance practices in various social fields [in our case, the higher education and the social innovation fields], not as the prime mover or as primus inter pares, but as one actor-cum-stakeholder among others with distinctive resources to contribute to governance arrangements and projects that are initiated beyond the state' (Ibid: 83). Our approach hence situates this study in the literature on multiscalar governance, and pays particular attention to the concept of *metagovernance*, understood as 'the governance of governance' (Ibid: 80; see also Jessop 2010; Torfing 2016).

3. Social Innovation Networks and Higher Education in the BRICS

The great social, cultural, political, and economic heterogeneity among the BRICS is frequently cited as the main problem of addressing these countries as a coalition or cooperative arrangement. Nevertheless, the group has shown its strength over the last years, especially in the political realm. In addition to being acknowledged as major emergent national economies and as a representative group among Global South countries, the foundation of the New Development Bank (NDB) is

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(12) According to Jessop (2016: 72-73), three core elements of the state are identified in the classical approach of European constitutional, legal and state theory: '(1) a politically organized coercive, administrative and symbolic apparatus endowed with general and specific powers; (2) a clearly demarcated core territory under the more or less uncontested and continuous control of the state apparatus; and (3) a stable population on which the state's political authority and decisions are binding.'

undoubtedly the most concrete evidence of the BRICS's endurance as a political-economic grouping. With an initial investment of $50 billion, plus another $100 billion for the Contingent Reservations Arrangement, the NBD strategic fields include cooperation projects in the fields of higher education and science, technology and innovation (STI), among others.[13] So far, the creation of the BRICS Network University (BRICS NU) is the most institutionalized initiative aimed at fostering cooperation among the BRICS in these fields.

3.1 The BRICS Network University

Established in November 2015, the Memorandum of Understanding on Establishment of the BRICS Network University points to a future of greater coordination and cooperation among the BRICS in the higher education realm—an area commonly considered strategic for achieving sustainable development and inclusive economic growth (BRICS 2015). Since 2016, a number of intergovernmental meetings[14] have been coordinated with the purpose of aligning the BRICS NU with the goals and strategic areas stipulated in previous agreements established by the BRICS group, i.e. the 2015 Memorandum of Understanding on Cooperation in Science, Technology and Innovation[15], and the BRICS STI Work Plan (2015-2018)[16]. Pursuant to the publication of these documents, six international thematic groups (ITG) were created to account for the BRICS NU's knowledge field priorities, namely: energy; computer science and information security; BRICS studies; ecology and climate change; water resources and pollution treatment; and economics (BRICS 2015; Article 6).

As Table 1 shows (see below), the BRICS NU currently comprises a network of 56 HEIs located in the BRICS countries. It was created with the aims of: **(i)** '*Providing opportunity of high quality life-long learning* through different forms of education, such as traditional academic programmes, short-term progremmes, modular courses, etc.; **(ii)** *Facilitating sustainable development* of the BRICS countries through the creation and dissemination of knowledge and skills via joint research and educational activities in natural and social sciences, humanities, engineering and other areas in the spirit of pluralism and diversity; and **(iii)** *Providing training for the professionals of high qualification* to satisfy the needs of BRICS countries in specific areas by expanding students' access to contemporary methods, forms and education technologies within the frames of the implementation of the BRICS NU educational programmes' (Ibid; Article 3). In order to achieve these goals, the BRICS NU focuses on three main types of activities: **(i)** offering Masters and Ph.D. programmes, and short-term training and modular courses; **(ii)** developing and implementing joint research projects and innovative activities within the frames of educational programmes; and **(iii)** organizing the academic mobility of students, the university faculty and staff of the BRICS NU participants (Ibid; Article 4).

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(13) Available at: https://www.ndb.int. Accessed on 10 Dec. 2017.
(14) The most important documents created in these meetings are available at: https://nu-brics.ru/pages/documents/. Accessed on 29 January 2018.
(15) Available at: https://www.brics2017.org/English/Headlines/201708/P020170825391206316687.pdf. Accessed on 29 January 2018.
(16) Available at: https://www.ranepa.ru/images/media/brics/china2016/BRICS%20STI%20Work%20Plan%20 2015-2018%20%20revised%20Action%20Plan%202017-2018.pdf. Accessed on 29 January 2018.

Table 1 - BRICS NU participating HEIs

BRAZIL	RUSSIA	INDIA	CHINA	SOUTH AFRICA
Federal University of Minas Gerais (UFMG)	National University Higher School of Economics (HSE)	BHU Varanasi	Beijing Normal University	Central University of Technology
Federal University of Rio de Janeiro (UFRJ)	ITMO University	IIT Bombay	Fudan University	Durban University of Technology
Federal University of Rio Grande do Sul (UFRGS)	MGIMO University	IIT Kanpur	Hohai University	North West University
Federal University of Santa Catarina (UFSC)	Moscow Institute on Physics and Technology (MIPT)	IIT Kharagpur	Huazhong University of Science and Technology	Rhodes University
Federal University of Viçosa (UFV)	National University of Science and Technology (MISIS)	Indira Gandi Institute of Development Research	Hunan University	Stellenbosch University
Fluminense Federal University (UFF)	Moscow Power Engineering Institute (MPEI)	Jamia Millia Islamia University, New Dehli	Jilin University	Tshwane University of Technology
National Institute of Research of Amazonia (INPA)	Moscow State University (MSU)	NIT Durgapur	North China University of Water Resources and Electric Power	University of Cape Town
Pontifical Catholic University of Rio de Janeiro (PUC-RIO)	Peoples' Friendship University of Russia (RPFU)	NIT Warangal	Northeast Forestry University	University of Johannesburg
University of Campinas (UNICAMP)	Saint Petersburg State University (SPBU)	Tata Institute of Social Sciences	Sichuan University	University of Limpopo
	Tomsk Polytechnic University (TPU)	TERI University, New Delhi	Southwest University	University of Pretoria
	Tomsk State University (TSU)	University of Delhi	Zhejiang Univerisity	University of Venda
	Ural Federal University (UrFU)	VNIT Nagpur		University of Witwatersrand

Source: BRICS NU official website (https://nu-brics.ru)

Creating joint initiatives aimed at boosting STI has been a major goal for the BRICS countries over the past years. The BRICS NU represents a significant effort in this direction. However, as we have argued elsewhere (Cruz, Rebourseau and Luisi 2018), while fostering innovation in the traditional sense has been strongly emphasized in a range of documents and meetings, an explicit plan for promoting *social innovation* has yet to be strategically addressed in the BRICS group's cooperation agenda.

The same is true when it comes to much of the academic literature on the role of higher education in socioeconomic development processes. Most studies imply a rather narrow view of the university's third mission. As a result, the dynamics involving higher education and innovation processes for promoting socioeconomic development are generally informed by the mainstream view of the "entrepreneurial university," which overemphasizes the idea of enhancing HEIs' performance levels as measured by traditional, quantifiable indicators (e.g. investments in R&D activities, linkages between HEIs and the business sector, number of patents and scientific articles published in indexed journals, citation impact, number of international collaborations, among others). Much

emphasis is thus put on creating the institutional framework to allow those outputs to be generated and properly measured. It follows that higher education reform tends to include the establishment of technology transfer offices, technological parks, and entrepreneurial ventures, such as start-ups, within HEIs' landscapes.

We contend that a broader view of both innovation and the university's third mission should (re) orient development strategies towards a more inclusive and sustainable approach. In a previous working paper (see Cruz, Rebourseau and Luisi, 2018), we specified how the university's third mission can be understood as to foster inclusive development in the Global South. We understand the role of HEIs in inclusive development processes in line with the works of scholars, such as Arocena and Sutz (2017), Brudenius (2017), Renault, de Mello and Araújo (2017) and Kruss (2017), among others. In this perspective, "inclusive innovation" is seen as 'the driving force behind inclusive development, a structural change process that empowers excluded groups by placing them at the center of a process of change that involves the institutionalization of mechanisms for redistribution of income and social empowerment' (Renault, de Mello and Araújo 2017: 4). More broadly, "inclusive development" refers not to economic growth and economic development alone. Instead,

> "Inclusive development" encompasses outcomes and benefits that are both *by and for* "marginalised groups," specifically those communities, households and individuals excluded from circles of social and economic power. This highlights the significance of *agency* as the characteristic that qualifies a process of inclusive development, in contrast with top-down attempts at development that do not involve local communities or do not include them as active agents in the process (Kruss 2017: 224-225).

Articulating the concept of social innovation or inclusive innovation (which seem more suitable for Global South contexts) thus seems a promising starting point to (re)thinking HEIs' role in inclusive development. In the BRICS countries, the BRICS NU BRICS seems a particularly suitable platform through which inclusive innovation-oriented cooperation projects could be designed, established and advanced.

3.2 BRICS HEIs Participation in Transnational Networks

While the BRICS group has yet to commit itself to a more social/inclusive innovation-oriented approach to sustainable socioeconomic development, particular groups, organizations and institutions within the BRICS are increasingly engaging in inter/transnational networks dealing with social innovation. As we mentioned above, the TRANSIT Project has recently studied 20 transnational social innovation networks, including Ashoka, Impact-Hub, DESIS, ENoLL, Fab Lab Network, among others.

To illustrate, Table 2 below provides examples of the engagement of BRICS HEIs participating in four transnational networks of this kind, namely DESIS, ENoLL, Fab Lab and LeNS. HEIs listed in Table 2 either host at least one lab within their respective campuses or have been named as a partner in at least one lab's official website. Below we provide brief descriptions of ENoLL, Fab Lab and LeNS. We provide detailed information on DESIS in the beginning of the following section.

ENoLL[17] was established in 2006 under the auspices of the Finnish European Presidency (Finland) and is currently headquartered in Brussels (Belgium). It comprises an international network of Living Labs (LLs)—i.e. 'user-centred, open innovation ecosystems based on systematic user co-creation approach, integrating research and innovation processes in real life communities and settings'—focused on fields such as health, smart cities, creativity, and education. According to the network's official website, 'LLs are both practice-driven organisations that facilitate and foster open, collaborative innovation, as well as real-life environments or arenas where both open innovation and user innovation processes can be studied and subject to experiments and where new solutions are developed.' ENoLL's main strategic partners include the World Bank Group, The Food and Agricultural Organization of United Nations (FAO), the Ubiquitous Network Industry and Technology Development Forum (UNITED), among others.

The Fab Lab Network[18] originally emerged from the Massachusetts Institute of Technology's (MIT) Center for Bits & Atoms Fab Lab Program (United States). The network is described as 'an open, creative community of fabricators, artists, scientists, engineers, educators, students, amateurs, professionals, of all ages located in more than 78 countries in approximately 1,000 Fab Labs.' Each Fab Lab works as 'a platform for learning and innovation' with the common goal of 'democratizing access to the tools for technical invention.' Taken together, the Fab Lab community is 'simultaneously a manufacturing network, a distributed technical education campus, and a distributed research laboratory working to digitize fabrication, inventing the next generation of manufacturing and personal fabrication.' The initiative is co-funded by the European Union under the Creative Europe programme.

The LeNS Network[19] started from a four-year project (2007-2010) involving seven design schools in Europe and Asia. This project was coordinated by the Politecnico di Milano (Italy) and funded by the Asia Link Programme, EuropAid, and the European Commission. Since then, the network has significantly expanded, and now encompasses more than 60 universities across five continents. In 2015, LeNS started a new project, called LeNSin—the International Learning Network of Networks on Sustainability (2015-2018).[20] LeNSin focuses on 36 HEIs in Europe, Asia, Africa, and Latin America 'adopting and promoting a learning-by-sharing knowledge generation and dissemination, with an open and copyleft ethos.' Supported by the European Commission (Erasmus+), it aims 'at the promotion of a new generation of designers (and design educators) capable to effectively contribute to the transition towards a sustainable society for all.' Part of this project involves the establishment of LeNS Labs in HEIs in Brazil, China, India, South Africa, and Mexico. Supported by the European Commission, these labs work as 'equipped spaces accessible to students, teachers, researchers as well as local interested stakeholders to use a set of tools, resources and facilities to support Design for Sustainability (DfS) research, education and practice.' They endeavor to disseminate, share and develop a knowledge base and know-how on DfS; promoting research activities, teaching and internationalization (i.e. being connected to other LeNS Labs worldwide, as well as with local and global HEIs, in order to favor knowledge cross-fertilization); and strengthening linkages with local productive sectors (by acting as a hub).

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(17) Available at: http://www.openlivinglabs.eu/. Accessed on 29 Jan. 2018
(18) Available at: http://www.fabfoundation.org. Accessed on 29 Jan. 2018
(19) Available at: http://www.lens.polimi.it/. Accessed on 29 Jan. 2018.
(20) Available at: http://www.lens-international.org/. Accessed on 29 Jan. 2018.

Table 2 - BRICS higher education and research institutions engaged in social innovation labs, selected networks

	BRAZIL	RUSSIA	INDIA	CHINA	SOUTH AFRICA
DESIS	Federal University of Paraná (UFPR) Federal University of Rio de Janeiro (UFRJ) Federal University of Santa Catarina (UFSC) Minas Gerais State University (UEMG) University of Vale do Rio dos Sinos (Unisinos)	Saint Petersburg State University (SPbU)	National Institute of Design (NID, Ahmedabad)	Hong Kong Design Institute (HKDI) Hunan University Jiangnan University Tongji University Tsinghua University	Cape Peninsula University of Technology (CPUT) University of Johannesburg (UJ)
Fab Lab	Amazon University (UNAMA) Federal Institute of Pará (IFPA) Federal Institute of Rio Grande do Sul (IFRS) Federal University of Mato Grosso (UFMT) Federal University of Pará (UFPA) Federal University of Piauí (UFPI) Federal University of Rio Grande do Sul (UFRGS) Federal University of Santa Catarina (UFSC) Federal University of Western Para (UFOPA) Insper Jaguariuna University Center (Unifaj) La Salle University (Unilassale–Canoas) Mato Grosso do Sul State University (UEMS) Maua Institute of Technology (IMT) Newton Paiva University Center SESI Technical School–Birigui SESI Technical School–Jundiaí SESI Technical School–Limeira SESI Technical School–Ribeirão Preto SESI Technical School–São José do Rio Preto SESI Technical School–São Paulo SESI Technical School–Suzano SESI Technical School–Taubaté Sorocaba Engineering School (FACENS) University Center Eniac (Eniac) University of São Paulo (USP) University of Southern Santa Catarina (Unisul) University of Vale do Rio dos Sinos (Unisinos)	ITMO University National Research University Higher School of Economics (HSE) National Research University Moscow Power Engineering Institute (MPEI) Peter the Great St. Petersburg Polytechnic University (SPbPU) Southern Federal University (SfedU) South-West State University (SWSU) Ural State University of Railway Transport (USURT)	Adi Shankara Institute of Engineering and Technology (ASIET) Ajay Kumar Garg Engineering College (AKGEC) CEPT University College of Engineering Chengannur (CEC) College of Engineering—Pune College of Engineering–Trivandrum (CET) Federal Institute of Science And Technology (FISAT) Govenment College of Engineering—Kannur (GCEK) Government Engineering College–Thrissur (GEC) Heera College of Engineering and Technology (HCET) Indian Institute of Education—Pune (IIE) Indian Institute of Technology—Kanpur (IITK) Indian School of Design & Innovation (ISDI Parsons Mumbai) Jyothi Engineering College (JECC) K. J. Somaiya College of Engineering (KJSCE) Kerala Technological University Lal Bahadur Shastri College of Engineering M.E.S College of Engineering Mar Athanasius College of Engineering (MACE) Model Engineering College (MEC) Netaji Subhas Institute of Technology (NSIT) PSG College of Technology Rajagiri School of Engineering & Technology (RSET) RIT Government Engineering College Saintgits College of Engineering SCMS School of Engineering and Technology (SSET) SCT College of Engineering Sree Narayana Gurukulam College of Engineering (SNGCE) Thangal Kunju Musaliar College of Engineering (TKMCE) Viswajyothi College of Engineering and Technology (VJCET)	Huazhong University of Science and Technology (HUST) Nantong University Northwest University Northwestern Polytechnical University Shenzhen Institute of Information Technology (SZIIT) Suzhou Ulink College Tongji University Xidian University Xinhua College	Bright Youth Council Central University of Technology (CUT) National Institute of Higher Education (NIHE) North West University University of Limpopo

	BRAZIL	RUSSIA	INDIA	CHINA	SOUTH AFRICA
LeNSin	Federal University of Alagoas (UFAL) Federal University of Paraná (UFPR) Federal University of Pernambuco (UFPE) Federal University of São Carlos (UFSCar) Federal University of Uberlândia (UFU) Feevale University (FEEVALE) Fluminense Federal University (UFF) FUMEC University (FUMEC) Londrina State University (UEL) Minas Gerais State University (UEMG) Pará State University (UEPA) Ritter dos Reis University Center (UniRitter) University of São Paulo (USP) University of the Region of Joinville (Univille) University of Vale do Rio dos Sinos (Unisinos)		C.A.R.E. School of Architecture Goa College of Architecture Indian Institute of Information Technology Design and Manufacturing Jabalpur (IIITDMJ) Indian Institute of Technology Gandhinagar Indian Institute of Technology Guwahati Srishti School of Art Design and Technology Vastu Shilpa Foundation	Beijing Information Science and Technology University Guangzhou Academy of Fine Arts Hunan University Jiangnan University The Hong Kong Polytechnic University The University of Science and Technology Beijing Tongji University Tsinghua University Wuhan University of Technology	Cape Peninsula University of Technology (CPUT) Stellenbosch University Tshwane University of Technology (TUT) University of Johannesburg (UJ)
ENoLL(*)	Amazonas Center of Technological Education (CETAM) Center for Technological Analysis, Research and Innovation Foundation (FUCAPI) Federal Institute of Amazonas (IFAM) Federal University of Amazonas (UFAM) Federal University of Espírito Santo (UFES)(*) Federal University of Minas Gerais (UFMG) Federal University of Pernambuco (UFPE) Federal University of Rio de Janeiro (UFRJ) Federal University of Rio Grande do Sul (UFRGS) Federal University of Roraima (UFRR) Federal University of Santa Cantarina (UFSC) Federal University of São Carlos (UFSCAR) Federal University of São João del Rei (UFSJ) Federal University of the State of Amazonas (UEA) Federal University of Viçosa (UFV) Fluminense Federal University (UFF) Institute Faber-Ludens ISE Business School Pontifical Catholic University of Minas Gerais (PUC-Minas) Pontifical Catholic University of Rio de Janeiro (PUC-Rio) University CEUMA (UNICEUMA) University of Campinas (Unicamp)		Kalinga Institute of Industrial Technology (KIIT)(*)	Beijing University of Posts and Telecommunications (BUPT)(*) China Mobile Research Institute Dalian Maritime University(*) Nanchang University(*) Shenzhen University(*) Tianjin University(*) Tongji University(*) Xi'an Jiaotong University(*)	Campus-based Engineering Center - Pretoria (CEC)(*) Council for Scientific and Industrial Research (CSIR)(*) Ikamva National e-Skills Institute (iNeSI) Rhodes University University of Fort Hare Walter Sisulu University

*Only HEIs marked with an asterisk are involved with currently active members of ENoLL.
Source: authors' elaboration with information from the selected networks' and labs' official websites.

4. The DESIS Network and the BRICS: a Multiscalar Comparative Analysis

This section is divided into five parts. The first and second part provide brief descriptions of the DESIS Network and the DESIS Labs that comprise our six case studies, namely (1) UFRJ/COPPE DESIS Group (Rio de Janeiro, Brazil); (2) DESIS SPbU (Saint Petersburg, Russia); (3) NID DESIS Lab (Paldi, India); (4) TSU DESIS Lab (Beijing, China); (5) HKDI DESIS Lab (Hong Kong, China); and (6) DSD DESIS Lab (Johannesburg, South Africa). As we already pointed out (see footnote 11), these labs were not arbitrarily selected. Rather, they reflect the agreement of their respective coordinators and/or operational managers to participate in our research. Participating lab teams either responded to a questionnaire sent by email or were interviewed by this paper's corresponding author. In the third part of this section, we analyze some of the main trends concerning these labs' creation processes and main projects through a comparative, governance-centric perspective. In the fourth part, we adopt a Social Network Analysis (SNA) framework to depict case labs' interactions with local-, national- and inter/transnational-level actors. Finally, in the fifth part, we investigate the extent to which such interactions might reveal the occurrence of an ongoing trend across BRICS HEIs for social innovation/entrepreneurship activities to operate within a complex, multiscalar governance framework.

4.1 The DESIS Network[21]

As briefly mentioned above, the DESIS Network currently comprises 49 design labs based at HEIs around the globe. The main ideas behind the network are that social innovation can be 'a powerful driver towards sustainability,' and that 'design schools could help in supporting and accelerating this process.' Accordingly, DESIS 'aims at using design thinking and design knowledge to co-create, with local, regional and global partners, socially relevant scenarios, solutions and communication programs.'

The network originated from three main activities carried out from 2006 to 2008 in Europe: the 2005 European research EMUDE, the 2008 UNEP Program CCSL, and the 2008 World Design Capital international conference, held in Torino (Italy). DESIS was officially founded in 2009 by the Politecnico di Milano (Polimi, Italy) together with The New School/Parsons (United States), the University of Arts London (United Kingdom), the Federal University of Rio de Janeiro (UFRJ, Brazil), Jiangnan University and Tongji University (both in China). As Cipolla (2017; interview) points out, its creation followed the efforts of individual scholars who had gotten their PhDs from Polimi under the supervision of Ezio Manzini or else had previous personal connections with him. Upon returning to their original countries, those scholars created the first DESIS Labs in the abovementioned universities, giving birth to the DESIS Network. Since then, DESIS quickly evolved into an internationally cooperative network of design labs engaged with local, regional and global partners.

Drawing on Manzini's thesis that we are currently witnessing a wave of social innovations derived from open co-design processes in which the collaboration between *diffuse design* (performed by everybody) and *expert design* (performed by trained designers) can generate and support meaningful social changes (see Manzini 2015), DESIS's vision states that 'In the complexity of contemporary society, social innovation is spreading and its potential, as a driver of sustainable change, is increasing. To facilitate this process, the design community, in general, and design

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(21) All details informing this description were extracted from the DESIS Network official website (www.desisnetwork.org), unless otherwise cited.

schools, in particular, can play a pivotal role.'

DESIS adopts a definition of social innovation informed by the ideas of the highly influential British writer and social entrepreneur Geoff Mulgan (currently Chief Executive of the National Endowment for Science Technology and the Arts (NESTA); previously CEO of the Young Foundation, both located in the United Kingdom). DESIS takes his conceptualization of social innovation and expands it further:

> Social innovation is a new idea that works in meeting social goals (Mulgan, 2006). In other words, social innovation can be seen as a process of change emerging from the creative re-combination of existing assets (social capital, historical heritage traditional craftsmanship, accessible advanced technology) and aiming at achieving socially recognized goals in new ways. A kind of innovation driven by social demands rather than by the market and/or autonomous techno-scientific research, and generated more by the actors involved than by specialists (DESIS official website).

Each Member-DESIS Lab is an administratively and economically autonomous entity with its own budget, administrated by the HEI where it is based at. Besides sharing DESIS motivations and visions and supporting the network's activities, members are required to: **(1)** collaborate in promoting and developing at least one DESIS Initiative (i.e. actions that result from specific written agreement between two or more Members); **(2)** participate in the annual DESIS Assembly; and **(3)** present a short report on their activities and programs at the annual Assembly. Members are allowed to foster cooperation through partnerships with the public and private sectors, NGOs, intergovernmental organizations, among others.

The DESIS governance model comprises an Assembly, a President (Ezio Manzini), an International Coordinator (currently, Carla Cipolla), a Platform Team, and an International Coordination Committee. The Assembly[22] is composed of one representative per Member–DESIS Lab, and approves the Annual Program previously elaborated by the International Coordinator (together with the International Coordination Committee and the Platform Team) and the President. The International Coordinator and the Platform Team are elected every two years by the Assembly, which also deliberates on the adhesion of prospective labs and on the 'overall political, cultural and organizational direction of the DESIS network.' The International Coordination Committee is composed of 8-10 people chosen amongst the most active DESIS Labs' coordinators (Cipolla, Joly and Afonso 2015: 6). Until 2016, Polimi DESIS Lab served as the network's International Office, under the coordination of Anna Meroni. In 2017, a new 2-year Coordination Project (2017-2019) was approved, and the International Office moved to UFRJ/COPPE DESIS Group, under the coordination of Carla Cipolla.

DESIS is notably endorsed by the United Nations Environment Programme (UNEP), and its main partners include the Social Innovation Exchange (SIX), an initiative founded in the UK, and the International Association of Universities and Colleges of Design, Art and Media (CUMULUS). Other collaborations encompass the abovementioned LeNS, in addition to the Partnership for Education and Research about Responsible Living (PERL), and the UK innovation foundations NESTA and the Young Foundation (Cipolla, Joly and Afonso 2015: 5-6). LeNS and PERL are supported by the European Commission (Erasmus+), which is also a major partner and funder of several projects carried out by SIX in collaboration with a range of European universities. Many DESIS Labs also partake in those networks and projects. In addition, the DESIS President and some DESIS Labs' coordinators have also been involved in the Sustainable Everyday Project (SEP), whose events have taken place under the patronage of UNEP.

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(22) "Non-Member Partners" (non-members universities or other non-member legal entities) can participate at the Annual Assemblies, but with no right to vote.

It is within this complex web of interrelated connections that the DESIS Network operates. In the following section, we analyze the extent to which this broad governance arrangement manifests itself in the processes and practices of specific DESIS Labs located in the BRICS countries. We take six of such labs as case studies and then identify some common patterns and trends among them.

4.2 Cases Descriptions[23]

Case Study 1
UFRJ/COPPE DESIS Group (Federal University of Rio de Janeiro – UFRJ, Brazil)

Creation process

Initially linked to the Technology and Social Development Laboratory (LTDS) of the Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering (COPPE) at UFRJ, the UFRJ/COPPE DESIS Group evolved into an autonomous research group upon gaining certification by Brazil's National Council for Scientific and Technological Development (CNPq). Coordinator Carla Cipolla completed her PhD at Polimi (Italy), where she was advised by Prof. Ezio Manzini. As previously mentioned, the UFRJ/COPPE DESIS Group is among the eight original co-founders of the DESIS Network.

Main projects and partners

The Group's key projects include *Rio Vivido* and the *Informal, Formal, Collaborative Cluster* (IFC Cluster). *Rio Vivido* was carried out in collaboration with the Center for Studies on Research on Aging (CEPE), and funded by the Research Support Foundation of the State of Rio de Janeiro (FAPERJ). It developed a collaboration-based service model focused on active aging and domestic hospitality, in which elderly residents of Rio de Janeiro offer empty rooms in their home to tourists via an online platform.

The *IFC Cluster* was a DESIS thematic cluster that connected researchers from different DESIS Labs already working on the issue of social innovation in underserved communities, such as Brazilian favelas, South African townships, North African shantytowns, Indian slums and specific neighborhoods in cities in the Global North. By investigating 'situations and cases for design and collaborative services as opportunities for social leapfrogging,' the *IFC Cluster* aimed at identifying 'potential ideas for a new generation of services that could be designed from the underserved communities' perspective.' The UFRJ/COPPE DESIS Group coordinated the *IFC Cluster* together with Polimi DESIS Lab (Politecnico di Milano, Italy) and Designmatters DESIS Lab (ArtCenter College of Design, United States). Besides that, UFRJ/COPPE DESIS Group contributed to the IFC Cluster by investigating particular social innovation initiatives in the favelas of Rio de Janeiro. Among them were the initiatives Da Roça, Favela Experience, Favela Orgânica, and Fight for Peace. The cases were studied by COPPE graduate students (Master and Doctoral) advised by Prof. Cipolla and funded by the Brazilian Federal Government through scholarships granted by CNPq and the Coordination for the Improvement of Higher Education Personnel (CAPES).

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(23) All details informing these summaries were extracted from personal communications with the coordinators of the DESIS Labs included in our study, as well as from the DESIS Network website and/or labs' official websites, including digital documents with overviews of select projects.

Regarding UFRJ/COPPE DESIS Group's international presence, the Group has participated in the already mentioned TRANSIT and LeNS projects and a number of additional activities. In TRANSIT, the Group was responsible for studying the DESIS network, and focused on the cases of the Polimi DESIS Lab (Italy) and the NAS Design DESIS Lab (Federal University of Santa Catarina (UFSC), Brazil). The Group is also a member of LASIN. Three main initiatives derived from the Group's participation in LASIN: (i) the elaboration, in partnership with Universidad del Desarrollo (UDD, Chile), of the guidelines of a generic "Social Innovation Support Unit" (SISU) model for the LASIN partners; (ii) the subsequent establishment, in 2017, of the Social Innovation Support Unit (USIS) at UFRJ, which managed to move the concept of social innovation up to UFRJ's institutional agenda in line with the SISU framework; and (iii) the realization the LASIN Social Innovation Studio (SIS), which was established in partnership with the Federal University of the State of Rio de Janeiro (UNIRIO, Brazil) and the global network SIX (originally from the United Kingdom). Notably, all three of these projects (i.e. TRANSIT, LeNS and LASIN) have been funded by the European Commission.

Prof. Cipolla has also acted as research consultant in the SEP project, collaborating with other scholars affiliated to institutions and organizations based in Europe (Italy, Brussels, France, and Netherlands) and China. UFRJ/COPPE DESIS Group's collaborations with other DESIS Labs mostly involve those located in Europe. Among the BRICS, interactions have been more prominent with DESIS Labs in China and, to a lesser extent, in South Africa. Recently, a dialogue began to evolve with the Russian lab, mostly due to Cipolla's new role as the DESIS International Coordinator.

Future challenges

As the Group's coordinator points out, future challenges include the need to strengthen relations with other DESIS labs and collaborate with other DESIS Labs in Brazil, so as to further promote the network in the country.

Case Study 2
DESIS SPbU (Saint Petersburg State University – SPbU, Russia)

Creation process

DESIS SPbU originated with a proposal for a new design laboratory to be added to SPbU's Research Park program. The timing of this proposal paralleled a proposal from Ezio Manzini that SPbU join the DESIS Network. The Lab's Project Coordinator, Mariia Zolotova (currently also a PhD student at Sapienza University of Rome, Italy), met Prof. Manzini at a conference, where they discussed the possibility of starting the first DESIS Lab in Russia. The Lab officially joined DESIS at the end of 2017.

Main projects and partners

SPbU students participated in a workshop at Sapienza (Italy), where they developed the Lab's first project, *Eco.Co*. The Lab describes Eco.Co as a 'platform for collaboration between SME owners for sustainable business management.' Through Eco.Co, SME owners share knowledge and experience, with the goal of building mutual support, enhancing ecological and economic performance, and boosting company visibility. *Small Laundromats* represented the pilot SMEs for this project. DESIS SPbU's initiatives fall under the heading of either Communication Design, or Environmental Design. Related to Communication Design, students are currently working on

projects intended to support an organization called Nochlezhka, which aids homeless residents of St Petersburg.

Projects carried out prior to the Lab's acceptance in the DESIS Network include the AICSEC's *Ecofuture* project in St Petersburg, a workshop on sustainable packaging conducted in conjunction with students from Russia and abroad (Italy, India, and China). The workshop culminated in a sustainable design proposal for the participating dairy company, Food Union. Related to Environmental Design, SPbU students conducted research on the 'Healthcare environment in Russia: Before, after and 100 years after the Revolution.' The goal of the research was to formulate guidelines for the development of therapeutic landscape design for the medical institutions of St Petersburg, and Russia more broadly. SPbU students from the Design department have also worked on additional Communication and Environmental Design projects, with partners including St Petersburg PRO ARTE Foundation for Culture and Arts (Russia), University Alliance for Sustainability/Freie Universität Berlin (Germany), and the Beuth University of Applied Sciences Berlin (Germany).

Future goals and challenges

DESIS SPbU's team identify two main goals to get the labs' working processes together, and stimulate the interest of professors and students within the SPbU to participate in the labs' projects and activities. This would include interdisciplinary projects in collaboration with students and professors in, for example, the Information Technology, Cognitive Psychology, and Sociology fields. The Lab's main challenge involves finding external partners for collaboration, possibly among the BRICS countries.

Case Study 3
NID DESIS Lab (National Institute of Design – NID, India)

Creation process

Following a long association between Ezio Manzini and professors of NID, Ahmedabad, the NID DESIS Lab came to exist through a memorandum of understanding signed by the director of the Institute, and the DESIS Network. Since then, Prof. Shashank Mehta have coordinated the Lab.

Main projects and partners

NID DESIS Lab's key projects include *Crafting Confidence: targeting the Kotwalia community in Gujarat,* and *Khadi: "way of living" for Kalamkush, Ahmedabad*. The former project focused on promoting the production of bamboo crafts by the Kotwalia community members for the local market. The international development organization Aga Khan Foundation and the Gujurat Bamboo Mission have since then supported the craft brand VIVAN and associated shop.

The second project also relates to craft development. It aims to facilitate the production and distribution of Kalamkush brand handmade paper products, thereby linking a traditional practice to contemporary needs and market demand. Gandhi Ashram partnered with the Lab for this project, as it supports the Kalamkush brand and shop.

Both projects followed a co-design methodology in which, first, the Lab's team conducted

ethnographic studies of the local communities and of the regional economic opportunities, and then got together with local groups in co-creation design sessions. Theses sessions were aimed at developing products that could be later commercialized in local markets, as an attempt to contribute to the economic development of those regions.

Future goals and challenges

According to the NID Lab's team, future goals include exploring possibilities for connecting the Lab with neighbouring countries in order to foster collaboration projects and to exchange knowledge through different platforms. Its main challenge consists of finding funding to support cross-border opportunities, including possible collaborations with labs in the BRICS countries.

Case Study 4
Tsinghua University DESIS Lab (Tsinghua University – TSU, China)

Creation process

Following a long-term cooperative relationship with Polimi (Italy), the Tsinghua University (TSU) DESIS Lab was one of the original founders of the DESIS Network. The Lab, coordinated by Prof. Liu Xin, is hosted by the Academy of Art & Design at TSU, and is fully managed by the Design School staff. At launch, the Lab already had a specific focus on ecological design. It co-organizes and participates in many DESIS Network events with other Chinese HEIs.

Main projects and partners

TSU DESIS Lab's key projects include *Lettuce House: Sustainable Lifestyle Lab; Urban Planting*, and *Urbannovation: Urban Innovation with citizens*. The *Lettuce House* project was carried out in collaboration with the Participatory Community Center (PCC) and co-funded by one of its members. It involved a co-design initiative aimed at designing and building container houses with clean energy systems and integrated with organic farming practices, among other ecological features. The *Urban Planting* project yielded a series of products geared toward local producers and designed to facilitate cultivation in an urban environment, such as plant lights, recycled bag pots, and an intelligent information service system. As for *Urbannovation*, it was funded by the international NGO Clean Air Asia and culminated in the design of multiple mobile applications related to urban sustainability. For example, the *Micro Travel* app targeted youth hostel users, while *Walk!Man*, conceived in partnership with Stanford University students (United States), guides pedestrian to ideal walking paths. *Breathe of Life* monitors air pollution via the WeChat platform, and *Green Cloud* provides truck drivers with real-time information on loads.

TSU Lab is also a member of the international network LeNS.

Future goals and challenges

According to the TSU Lab's coordinators, future goals include trying to establish cooperation with local neighborhoods, as well as with other departments at TSU, such as the Sociology department and the Public Management School. Its main challenge relates to budgetary constraints to maintain the Lab's activities and to expand cooperation projects, which have mostly included partnerships with other Chinese universities and organizations. The Lab's team would appreciate the opportunity to strengthen relations with other labs in the BRICS countries and to perform activities within and outside the DESIS Network.

Case Study 5
HKDI DESIS Lab for Social Design Research (Hong Kong Design Institute – HKDI, China)

Creation Process

Dr. Yanki Lee, founder and former director of the HKDI DESIS Lab for Social Design Research, arrived at HKDI in 2010 as a visiting fellow in the Product and Interior Department (PID). She became familiar with the DESIS Network through participation in academic conferences and workshops. Pursuant to discussion with the Academic Director of HKDI, the Lab gained DESIS Network membership, and the endorsement of both the Design Institute Advisory Board and the Vocational Training Council (VTC), HKDI's parent organization. Currently, Prof. Magnum Lam coordinates the Lab.

Main projects and partners

HKDI DESIS Lab has coordinated, together with the Linnaeus University DESIS Lab (Sweden) and the LUCA DESIS Lab (Belgium), the DESIS *Ageing & Ingenuity Thematic Cluster*, which was set up to 'investigate different design approaches that address the full spectrum of challenges around ageing.' The project sought to identify 'new services, tools, and solutions that can be designed together with the elderly, when thinking about future societies.' Indeed, HKDI Lab's key projects largely target the topic of Aging Population, including *Design Our Future Village with Elders* (DOVE), the *Open Dementia Project*, and *Diamond Pods Project*. In the case of the *Open Dementia* project, the Jockey Club Centre for Positive Ageing (JCCPA) commissioned the Lab to develop a set of educational 'dementia experience tools'. The Hong Kong Hospice and Palliative Care Foundation Limited (HKHPCF) is another key partner, having provided 80% of the funding for the *Diamond Pods Project*. The enterprise Culture Homes supported the DOVE project with partial funding. HKDI has also initiated a study entitled "Fine Dying," which explores ideas on death rituals and 'life education', with input and advice from elderly citizens of Hong Kong. Local activist William Outcast also promoted this study and has inspired many of the Lab's work on these topics.

The Lab actively interacts with numerous external actors, both in mainland China and abroad. To name but one additional international linkage, the Royal College of Art (RCA) in London (UK) has been a major influencer and partner in some of the Lab's initiatives. For example, it has inspired the creation of the DesignAge HK Club (DAHK), 'an association open to local citizens, especially elders,' which derived from HKDI's students and professors interactions with the DesignAge Programme at RCA.

Future goals and challenges

HKDI Lab's main goal, the team points out, is to continue to work with local community and social innovators, and to explore the possibility of design leading to social change that benefits the local society. Future challenges include developing close connections with other DESIS Labs in China and East Asia in order to develop research collaborations for social good in the region.

Case Study 6
Design Society Development DESIS Lab (University of Johannesburg – UJ, South Africa)

Creation process

What came to be the Design Society Development (DSD) DESIS Lab at the Faculty of Art, Design and Architecture (FADA) first began as a small supportive Community of Practice (COP) involving lecturers, researchers and practitioners who were working in the broad realm of Human-Centered Design, Social Design, and Design Theory at the UJ. The to-be lab coordinators, Angus Campbell and Kyle Brand, learned of the DESIS Network in 2012, through the AgrIndustrial 2 Conference held in Ismir (Turkey), where they met the DESIS International Coordinator at the time, Prof. Anna Meroni (Polimi, Italy). They soon realized that their work in the COP and the activities of the DESIS Network were well aligned, and that the opportunity to join an international network and learn from other labs would be appealing to the UJ's internationalization strategy. After a formalization process, the Lab was finally accepted into the network.

Main projects and partners

DSD has engaged in several socially innovative projects, including *Researching Architecture as Urban Method* (RAUM), and *Achieving inclusive cities through scaling up participatory planning in Africa*. RAUM is 'a collaborative project investigating spatial design education in relation to global urban development challenges.' It has been carried out in partnership with University of Sheffield (UK) (the project's host institution), the Centre for Environmental Planning (India), and Nanjing Univeristy (China). The project is funded by the European Commission. The *Achieving inclusive cities* project 'aims to develop the knowledge needed to move from participatory community-led neighbourhood planning to city-scale planning processes.' It is coordinated by the Global Development Institute of the University of Manchester (UK) and funded by the Leverhulme International Network Grant (UK). Additional partners include Slum Dwellers International Alliance (Kenya), the University of Nairobi (Kenya), Dialogue on Shelter for the Homeless in Zimbabwe Trust (Zimbabwe), and the National University of Science and Technology (Zimbabwe).

The Lab has also coordinated, together with the Polimi DESIS Lab (Italy) and Strategic Design Scenarios (Belgium), the DESIS *Food Cluster*, which explores 'design knowledge for social innovation and sustainability in the food system.' DSD has particularly contributed to this thematic cluster through two case studies: *Izindaba Zokdula*, which aimed to create space for engagement between urban farmers, stakeholders and the City of Johannesburg (CoJ); and the *Khula Soweto Farmers' Mobile Application Project*, which aimed to 'leverage the affordances of contemporary digital technologies in order to fulfil the existing and future needs of Soweto farmers.' Other key projects carried out by the Lab include the *Slovo Park Project* and *Resolving the South Africa Textbook Crisis*. The former has garnered support for the Slovo Park community in Soweto, represented by the Slovo Park Community Development Forum (SPCDF), in the effort to create a 'self-sustaining community' in light of poor service delivery, lack of budget, and a lawsuit against CoJ. The latter project aimed to apply human-centered design theory to the problem of textbook shortage in South African schools, and involved collaboration with other departments at the UJ. Many of these projects were constructed around individual Masters and PhD work conducted by the Lab's researchers.

More recently, the Lab has established connections with SIX (originally from UK), Hivos (Netherlands), the Rockefeller Foundation (USA), and the Multilateral Investment Fund of the Inter-American Development Bank Group (FOMIN/IDB). The Lab is also a member of LeNS.

Future goals and challenges

According to the DSD Lab's coordinators, key challenges comprise increasing contact with other DESIS Labs, and helping other labs establish themselves in the region. Potential goals include exploring ways of strengthening South-South relationships, especially with Latin American countries, where the Lab's researchers have found good overlaps with respect to exploring decolonization and the recognition of grassroots design practices.

4.3 Comparative Analysis (1)

From the descriptions above, some common trends regarding these DESIS Labs' creation processes and main project partners stand out. From a governance-centric perspective, we highlight three main points.

First, in all cases, Polimi (Italy) worked as a core center from which initiatives to create our six DESIS Labs cases followed. DSD Lab (South Africa) and SPbU Lab (Russia) are partial exceptions to this, since previous labs already existed by (or coincided with) the time each of them officially turned into a DESIS Lab. However, even in these cases, the decision to become a DESIS Lab followed personal interactions with the network's International Coordinator or President. This overall trend largely reflects the DESIS International Office and President's strategies to promote the topic of design for social innovation through academic conferences and workshops, while incentivizing the foundation of such labs globally. In other words, our case labs show a pattern in which the creation of the DESIS Labs in the BRICS tended to be influenced by a specific node of the DESIS Network (i.e. Polimi), rather than resulting from pre-existing intentions on the part of the to-be DESIS Lab's coordinators to adhere to the network.

Secondly, while each DESIS member lab is independently administrated by the HEI it is based at and has its own budget to carry on regular activities, specific projects tend to be at least co-funded by external financial sources, including local, national and international governmental agencies and not-for-profit organizations. Notably, the European Commission has been a major funder of projects and networks both the UFRJ/COPPE DESIS Group (Brazil) and the DSD DESIS Lab (South Africa) have engaged in.

Finally, the third point concerns the level of participation and influence of local, national and inter/transnational actors in the formulation and implementation phases of our case studie's projects and activities. Below, we comparatively present what these labs have self-reported in this regard (Figures 1, 2, 3 and 4), and contrast some of those values with information provided in the labs' descriptions provided above. Then, in items 4.4 and 4.5, we further analyze case labs' interactions with local-, national- and inter/transnational-level actors.

For the purposes of this paper, we adopt the following criteria for characterizing "local," "national" and "inter/transnational" actors:

1. Local actors comprise partners, funders, or influencers who are based in the same city, state or province as the Lab's host HEI;
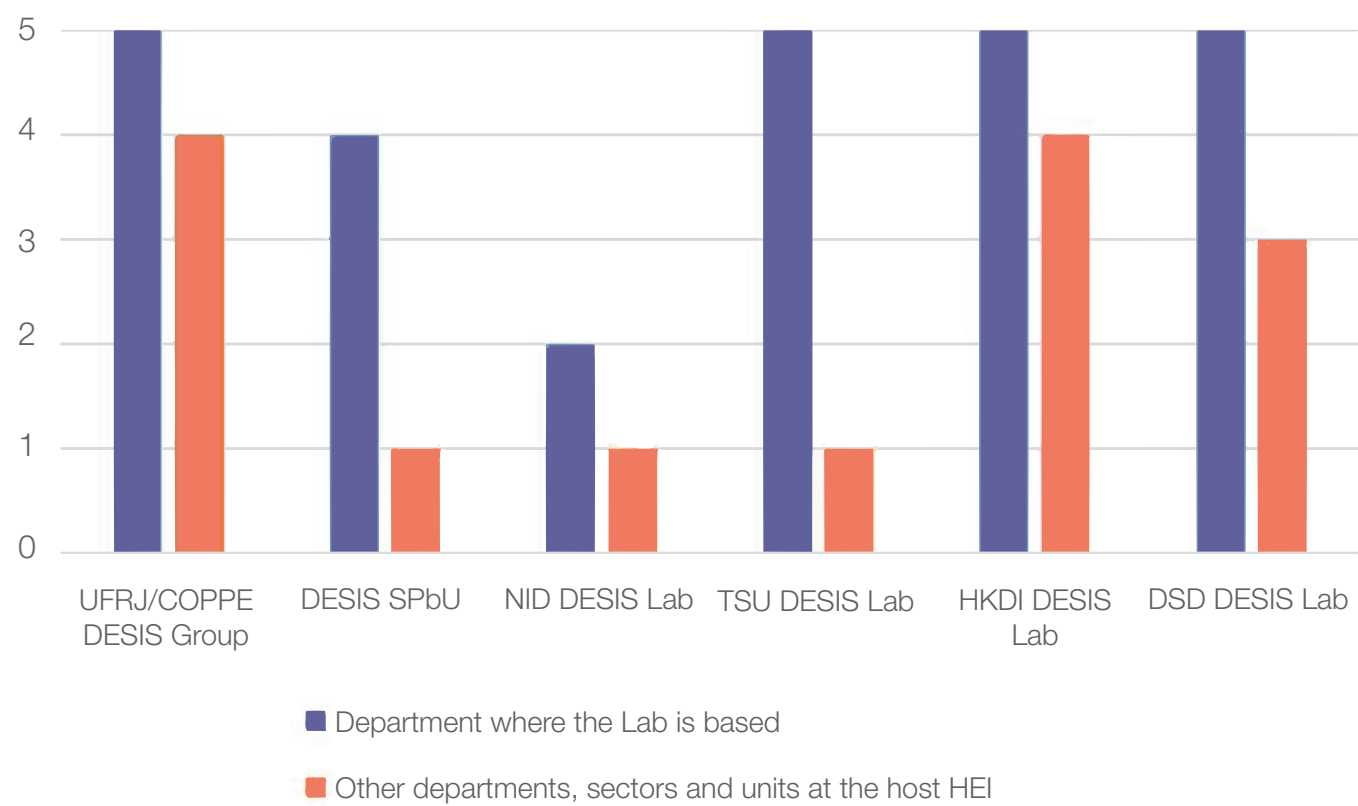
2. National actors are either based in other national regions or act nationally, including federal/central governmental bodies and other institutions;

3. International or transnational actors are either based in a different country, or span global regions.

The intensity levels shown in the charts below (Figures 1, 2, 3 and 4) follow a 0-5 scale, where:

0=Null, 1=Very low, 2=Low, 3=Moderate, 4=High, and 5=Very High.

Figure 1
Local (1): Self-perceived levels of participation/influence of actors within case labs' host HEIs in/on projects, on a 0-5 intensity scale
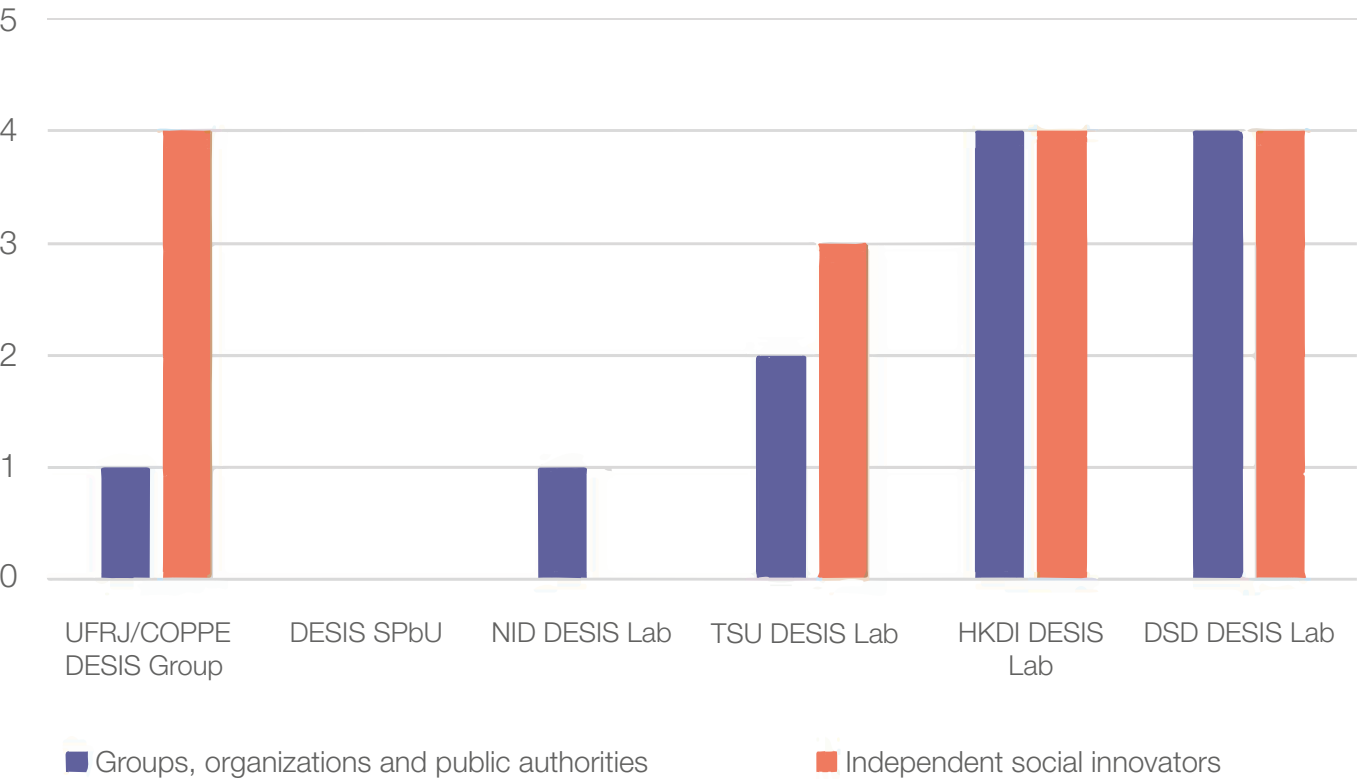

Source: authors' elaboration with information from questionnaires/interviews

At the *local level*, almost all labs reported a significantly high level of participation/influence coming from their own host departments with respect to the formulation and/or implementation phases of their projects and activities (Figure 1). The only exception was India, which reported a low level of participation/influence by its host department.

Regarding other departments, sectors or units within their respective host HEIs, UFRJ/COPPE and HKDI reported a high level of participation/influence on projects. DSD reported a moderate level; however, one must observe that, since its origins, this lab has been conceived as an interdisciplinary project involving scholars from a range of different departments (see Case Study 6 description above). In contrast, the three remaining labs (i.e. SPbU, NID, and TSU) reported a low level of participation/influence coming from other units at the HEIs they are based at.

Figure 2
Local (2): Self-perceived levels of participation/influence of local extramural actors in/on case labs' projects, on a 0-5 intensity scale
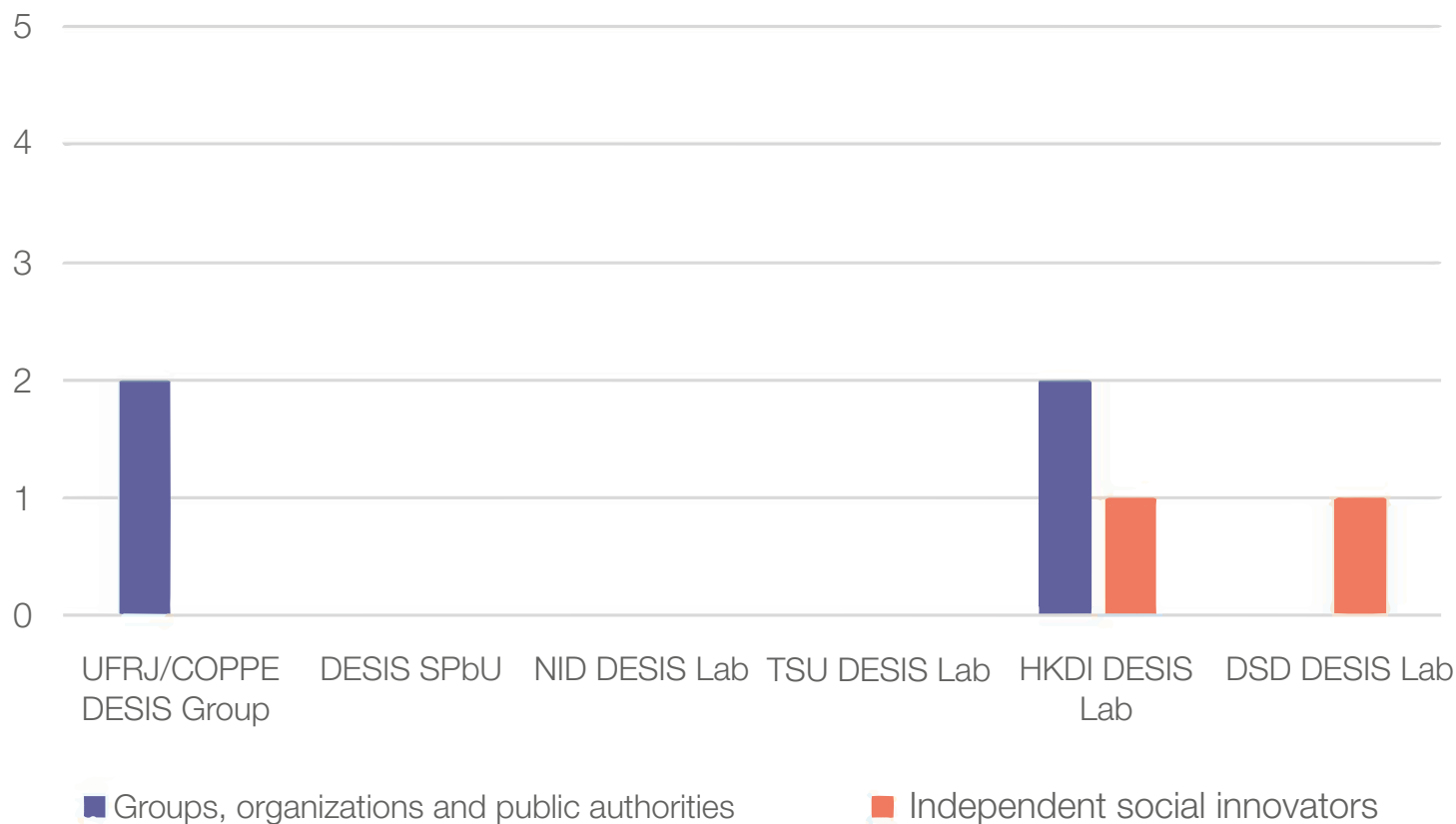

Source: authors' elaboration with information from questionnaires/interviews

As Figure 2 above shows, UFRJ/COPPE, HKDI and DSD perceive that local independent social innovators have had a high level of participation/influence in/on the implementation phase of their projects. TSU reported a moderate level, while SPbU and NID reported null to low level of participation/influence coming from this type of actors. However, the co-design methodology adopted by NID's in its two main projects (see Case Study 3 description above) suggests that at least a moderate level of participation by local grassroots groups might have occurred in those projects' implementation phases.

As for extramural local groups, organizations and public authorities, DSD and HKDI reported a high level of participation/influence in/on their projects, followed by TSU (low), UFRJ/COPPE (very low), and SPbU (null).

Figure 3
Self-perceived levels of participation/influence of national-level actors in/on case labs' projects, on a 0-5 intensity scale
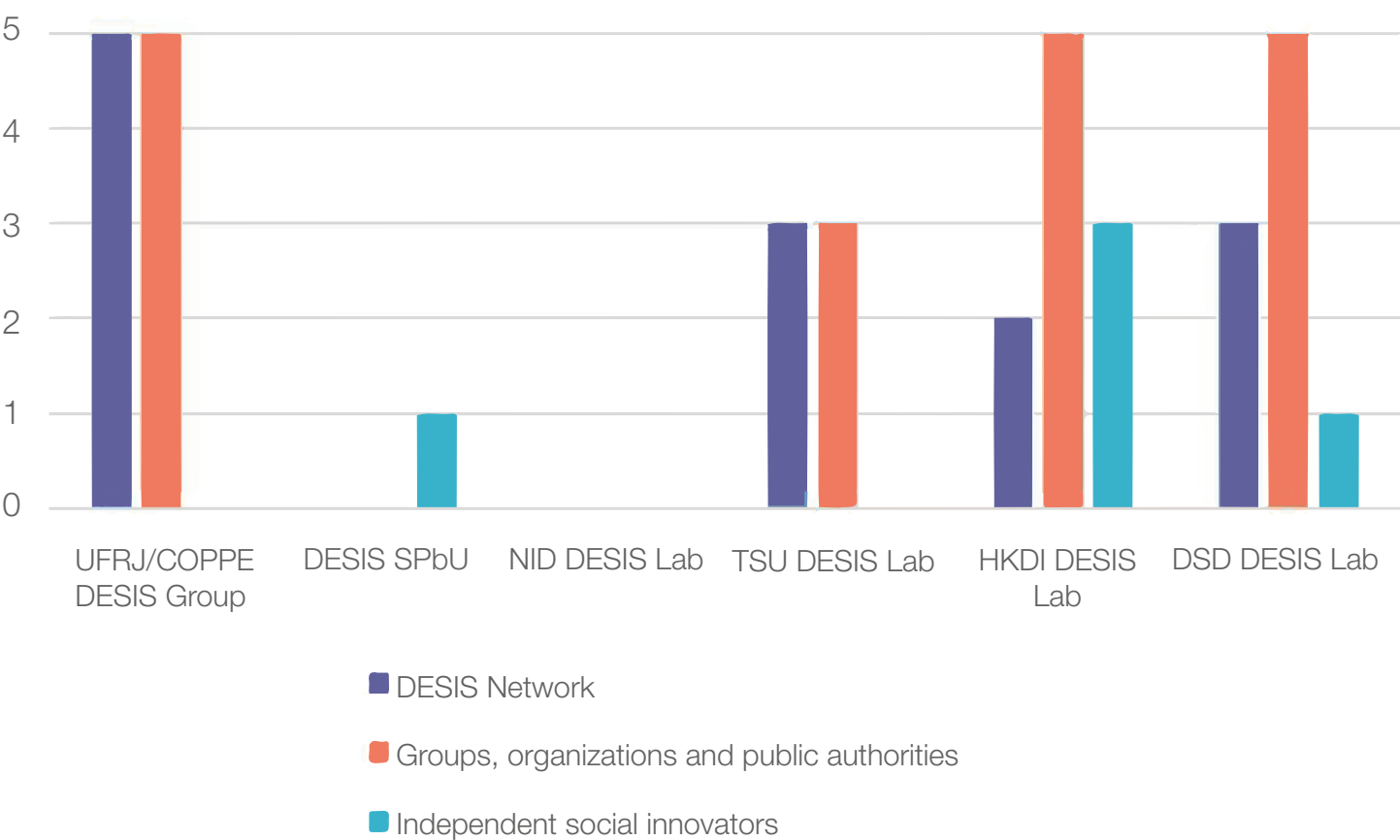

Source: authors' elaboration with information from questionnaires/interviews

At the *national level* (Figure 3), all cases reported very limited levels of participation/influence of actors based in other national regions or acting nationally in/on the development of projects. Virtually all cases perceive such participation/influence as being null, with a few exceptions— namely, UFRJ/COPPE and HKDI, which reported a low level of participation/influence coming from groups, organizations and public authorities from other national regions, including federal/ central governments.

As for national-level independent social innovators, only HKDI and DSD reported some (though very low) level of participation/influence. These general trends are in line with information provided in our case labs' descriptions (see item 4.2), which generally suggest a great disparity between the participation of, on the one hand, local and international actors, and national actors, on the other. We further analyze this trend in items 4.4 and 4.5.

Figure 4
Self-perceived levels of participation/influence of inter/transnational-level actors in case labs' projects, on a 0-5 intensity scale

Source: authors' elaboration with information from questionnaires/interviews

Finally, at the *inter/transnational level* (Figure 4), UFRJ/COPPE, HKDI and DSD reported a very high level of participation/influence of groups, organizations and public authorities from abroad in the development of their projects. Notably, this trend reveals a level of participation/influence equivalent to the level of participation/influence coming from those labs' own host departments (see Figure 1). NID and SPbU indicate the reverse: they reported no participation or influence of inter/transnational actors in the development of their projects since their acceptance in the DESIS Network. However, as mentioned in SPbU's description (see Case Study 2), this lab had previously engaged in activities and projects involving international universities, especially in Germany and Italy, before its official admission to DESIS.

With respect to the level of participation/influence of independent social innovators from abroad, all cases reported null to very low levels, with the exception of HKDI, which reported a moderate level of participation/influence of international social innovators in supervising and implementing some of the labs' projects.

Based on those reports, one observes some key similarities among our case labs. First, case labs in Brazil (UFRJ/COPPE), Hong Kong (HKDI) and South Africa (DSD) show the same patterns with respect to the type of actors that most participate in or influence the development of their projects. All these three cases reported a very high level (score = 5) of participation/influence from both inter/transnational actors and actors from within their respective host department/faculty. The next highest category of participation/influence comes from local independent social innovators (score = 4).

Secondly, case labs in Russia (SPbU) and India (NID) show similar patterns, but here the trend is for these labs to perceive a very low (score = 1) or null (score = 0) level of participation/influence coming from extramural actors, regardless of their origins. SPbU's reports are partially explained by its very recent creation. As for NID's, given its long existence as a DESIS Lab, the general lack of external local, national and international partners appears rather unusual when compared to the other well-consolidated case labs, such as UFRJ/COPPE, TSU, HKDI, and DSD. In contrast, these labs seem to be more integrated in collaborative networks, including their own levels of participation in the DESIS Network.

Finally, the case lab located in mainland China (TSU) seems unique among its counterparts, having reported a moderate level (score = 4) of participation/influence of both local independent social innovators and international groups, organizations or public authorities alike.

In the remaining of this section, we further investigate our case labs' interactions with local, national and inter/transnational actors. We provide a set of three social network visualizations, followed by an additional comparative analysis.

4.4 Social Network Visualizations

The three social network visualizations presented below draw on data from either interviews conducted with or questionnaires completed by each of our six case labs. Further data has been extracted from those labs' profiles on the DESIS Network official website, as well as other relevant official websites. Specifically, the visualizations illustrate responses to questions regarding:

- External actors who influenced the Lab's formation;
- Partners or funders that enable the Labs to carry on regular activities;
- Partners or funders involved in the formulation and/or implementation of projects to date;
- Co-organizers of events directed to DESIS Network members; and
- Coordinators of DESIS events the Labs participated in.

Each of the three visualizations bellow depicts case labs' interactions with local, national and inter/transnational actors, respectively. The criteria adopted here to define these three levels are mentioned above (see Comparative Analysis – 1). Importantly, we have chosen to name institutions instead of persons in Figures 5, 6, and 7, despite the fact that *some of the interactions illustrated in these graphs took place between individuals, and did not necessarily involve formal institutional arrangements*. In such cases, the institutions shown in the visualizations refer to individuals' professional affiliations. Equally important to mention, ties in the graphs illustrate the occurrence of at least one direct interaction between actors, other than simply partaking in the same network(s). In other words, participating in the same network was not considered to be a sufficient criterion for depicting linkages between actors.
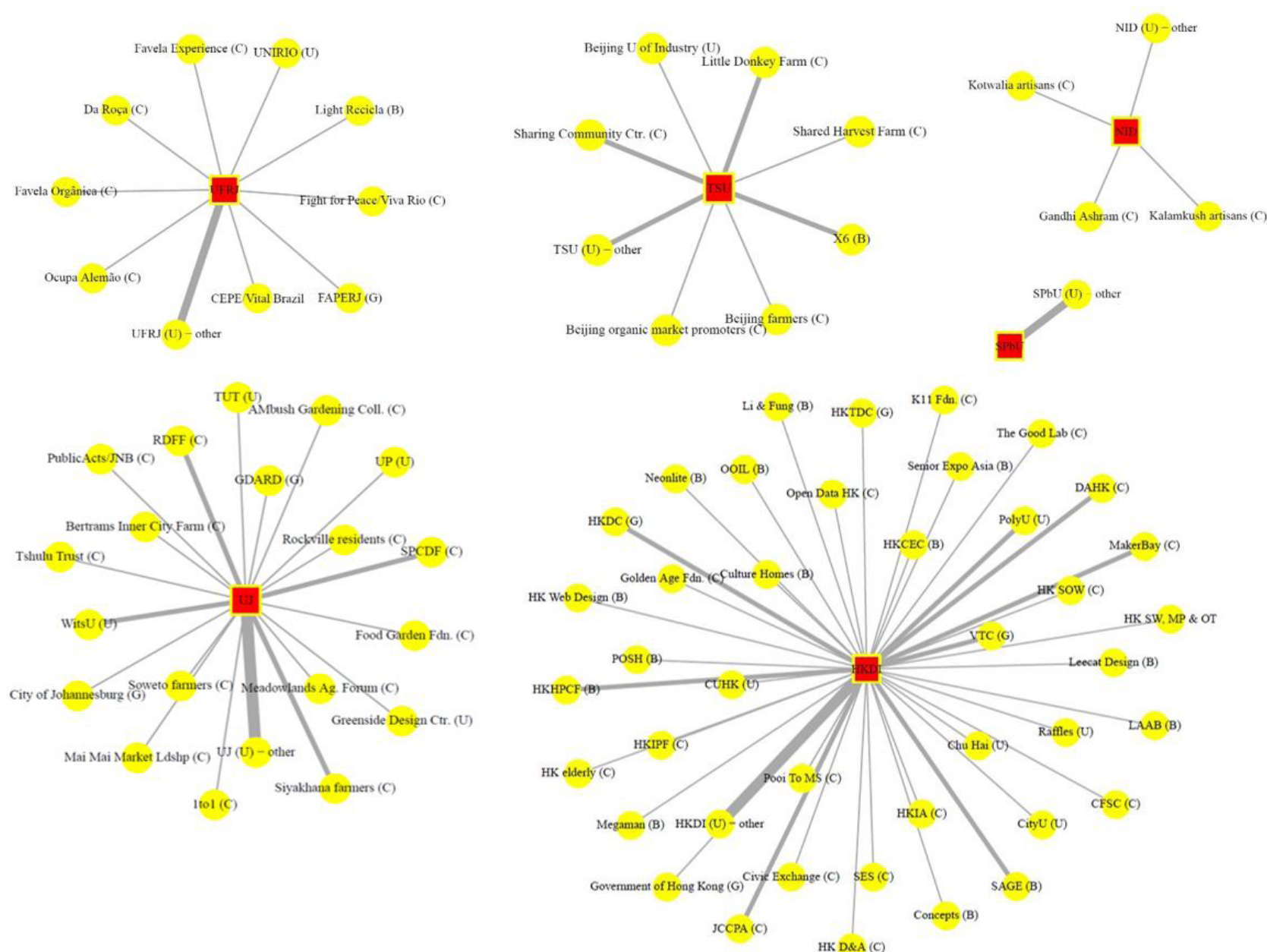
All visualizations were generated using R statistical software. In all three graphs, case labs are represented by square nodes, while circular nodes represent the partners, funders, and influencers named in response to the questionnaire or interviews and complemented with information available online. Labs are color-coded red, while transnational networks are in orange, and all other actors are yellow. These actors include HEIs, grassroots groups, governmental bodies, for-profit and not-for-profit organizations, and international organizations, among others. Undirected ties connect each lab to actors it has interacted with to date. The international/transnational graph (Figure 7) depicts ties between actors the labs interact with, as well as international or transnational networks and associations these actors participate in. *The graphs do not represent potential ties among actors*

our case labs have interacted with. Put differently, the graphs show our case labs' interactions with external actors, but do not include potential linkages among external actors themselves.

Finally, ties are weighted by thickness according to the frequency of interaction. For example, TSU DESIS Lab has collaborated more frequently with Jiangnan University than with other national-level actors. Further, in the international/transnational graph (Figure 7), nodes are scaled by in-degree centrality (calculated on a directed version of the graph): size increases as the number of ties each node receives increases.

Annex 1 provides the list of abbreviations and acronyms used to label nodes in the three graphs (i.e. Figures 5, 6 and 7).
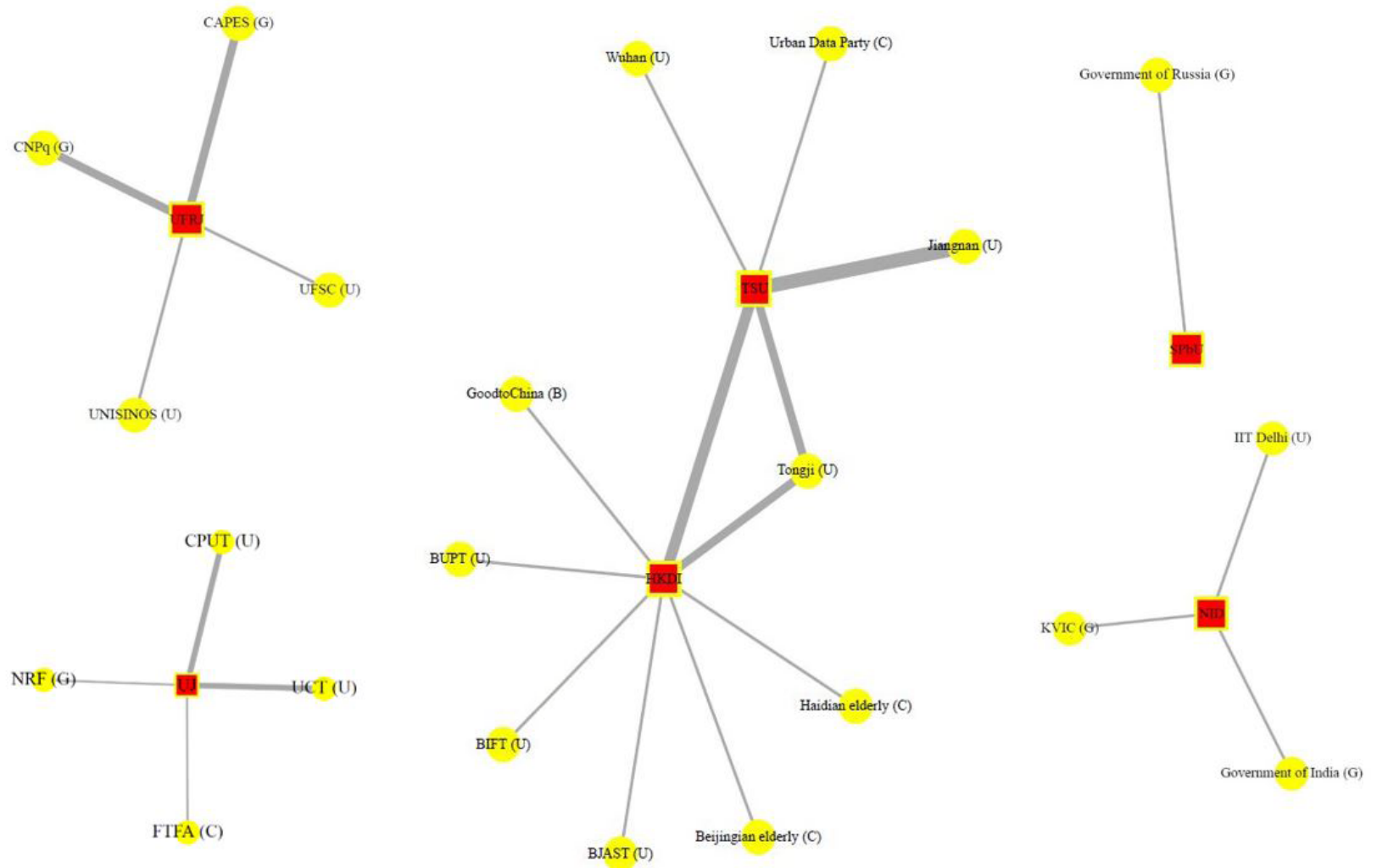
Figure 5
Local: Case labs' interactions with local actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

Legend:
(U) = HEI
(G) = Government
(B) = Business (for-profits)
(C) = Civil society (including nonprofits)

Figure 6
National: Case labs' interactions with national actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

Legend:
(U) = HEI
(G) = Government
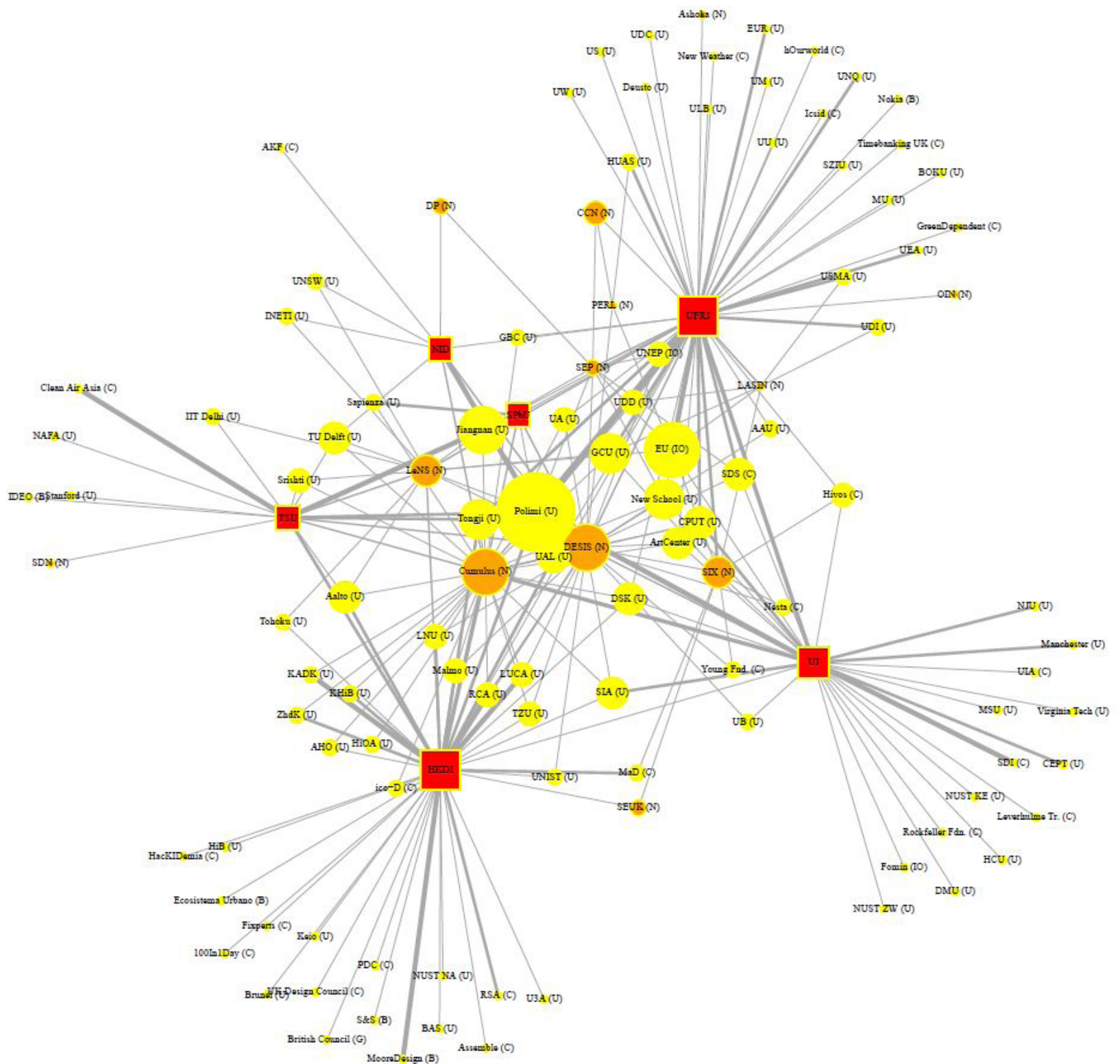(B) = Business (for-profits)
(C) = Civil society (including nonprofits)

Figure 7
International/Transnational:
Case labs' interactions with international and transnational actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

Legend:
(U) = HEI
(G) = Government
(B) = Business (for-profits)
(C) = Civil society (including nonprofits)
(IO) = International Organization
(N) = International Network / Association
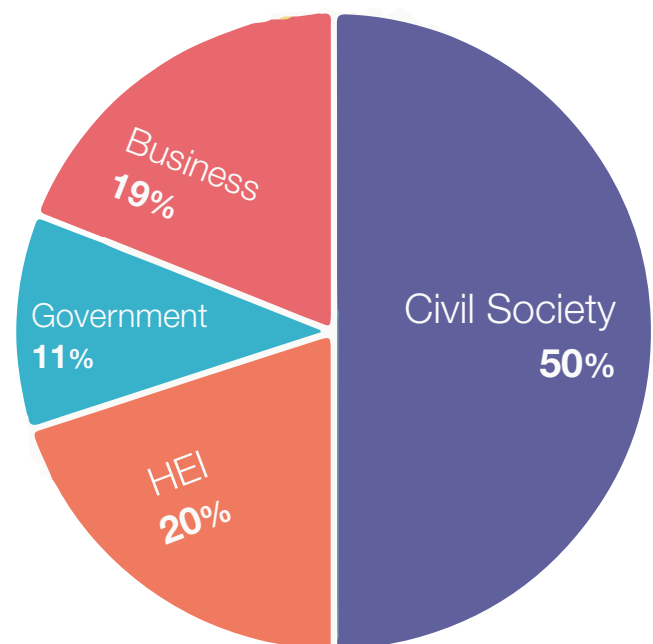
4.5 Comparative Analysis (2)

By contrasting the three graphs above, one easily notices great disparity between the number of partners and linkages established by our six case studies. We identified a total of 84 local actors, 25 national actors, and 150 inter/transnational actors. As the patterns in tie thickness illustrate, interactions with some actors have occurred more often than others.

In this section, we provide a quantitative analysis of case labs' interactions both in terms of the types of actors they have tended to interact with (i.e. HEIs; governments; civil society arrangements (including groups and nonprofits); and businesses) and the frequency of those interactions. Our quantitative findings complement qualitative findings resulting from both our analyses provided in the previous sections of this paper as well as in our previously published working paper, entitled "Social Innovation and Higher Education in the BRICS: a background overview" (see Cruz, Rebourseau and Luisi 2018).

Interactions with local-level actors

In the *local graph* (Figure 5), the degree centralization score[24] is the highest among the three graphs: 0.449. As there are no connected triangles in this graph, the transitivity[25] score is 0. Thus, the ego networks are clearly distinguishable. The edge density of the local graph is also the lowest among the three; the ratio of present to possible ties is 0.021. As expected, interactions with local actors mostly involved not-for-profit civil society arrangements, including grassroots groups and not-for-profit organizations (here grouped under the label "Civil Society"). They account for 50% of all 84 identified local actors (see Figure 8 below). These comprise both groups and communities targeted by those labs' projects, as well as implementing nonprofit partners.

Figure 8
Overall local-level partners, by type of actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

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(24) *Centralization* answers the question 'How much variation is there in the centrality scores among the nodes?' It is a graph-level measure, as opposed to centrality, which gives a calculation for each individual node. A very centralized network is dominated by one or a few very central nodes. A network with low centralization is the opposite. The degree centralization of a full graph describes the extent to which it is organized around its most central points (in terms of local degree centrality).
(25) *Transitivity* measures the probability that the adjacent vertices of a vertex are connected. The global transitivity of a graph is simply the ratio of triangles and connected triples in the graph. Higher transitivity leads to more clustering, and vice versa.

Apart from the labs based at HKDI (41%) and SPbU (null), all other labs presented at least 50% of their respective overall connections with local civil society actors, reaching 65% in the DSD Lab. As already mentioned, the recently-founded SPbU Lab is still striving to organize itself internally and to initiate collaborations within its own host HEI. In contrast, the well-consolidated HKDI Lab presents a reverse image and stands out among all other labs with respect to the number of connections established with local-level partners.

HKDI Lab's local partners also include a significant percentage of businesses (34%). In fact, this lab almost exclusively accounts for the 19% of all local actors depicted in the local graph. In general, business participation in case labs' social networks has been very low: they comprise 10% of UFRJ/COPPE Group's partners and 13% of TSU Lab's, while no local business partner was identified in the three remaining labs (i.e. SPbU, NID, and DSD). As for local HEIs (including the HEIs where each lab is based at), these comprise 20% of all case labs' local partners. Taking each lab separately, local HEIs represent 20-25% of most labs' local partners, except for HKDI (15%) and SPbU (none).
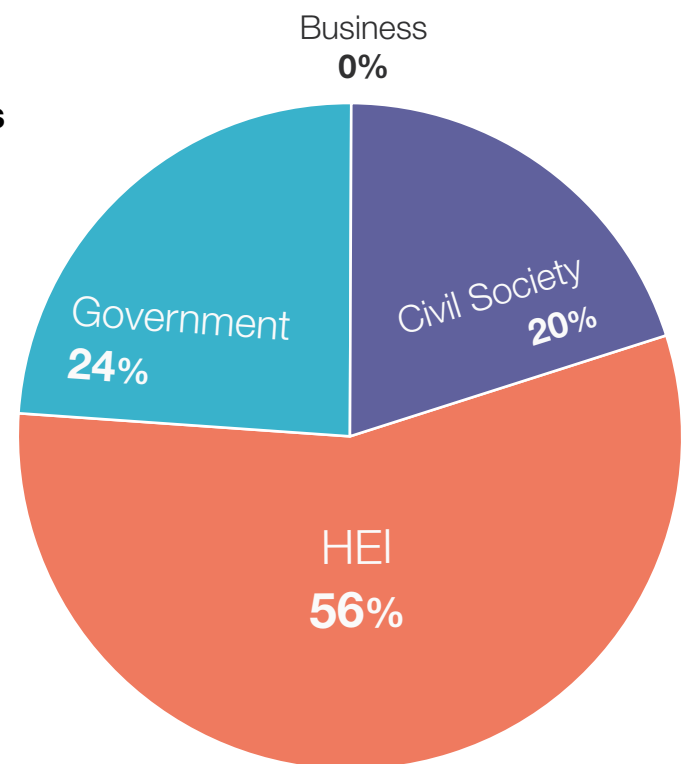
In general, the percentage of national governmental actors (24%) tend to exceed their local counterparts in (11%) in the national and local graphs, respectively (compare Figures 8 and 9). However, in absolute terms, case labs have interacted more with local-level governmental bodies (9) than with national-level ones (6). Furthermore, interactions with governmental bodies tend to involve funding, not operations (see item 4.2, Cases Descriptions). Governmental bodies account for 20-25% of UFRJ/COPPE's and NID's respective overall local partners, and 10% of both HKDI's and DSD's. No interactions with local governments were found in the TSU and SPbU cases.

With respect to the frequency of interactions, not surprisingly, all cases have most often interacted with other departments and units at their respective host HEIs. This is depicted by the relatively greater thickness of the ties connecting the case nodes to their respective host HEIs (see Figure 5). At the same time, TSU and DSD show repeated interactions with particular rural communities and local nonprofits. Moreover, HDKI and DSD have established reiterated interactions with external local HEIs. The former also constantly relates with the Vocational Training Council (VTC), a local governmental body under the jurisdiction of which HDKI operates (see item 4.2, Cases Descriptions).

Interactions with national-level actors

The *national graph* (Figure 6), considerably smaller, is composed of locally centralized components (ego networks) focused around the six case labs. The graph is sparse overall, with a density of 0.059. The transitivity score is 0.047, and the low triangle ratio is evident upon visual inspection. The comparatively higher degree centralization score-0.216-validates the inevitable structural dominance of the case labs. Interactions with HEIs predominate among case labs' overall relations with national-level actors. 56% of all 25 identified national actors comprise HEIs (Figure 9 above).

Figure 9
Overall national-level partners, by type of actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

TSU presented the highest percentage (80%) of national-level HEI partners, followed by HKDI (63%), UFRJ/COPPE and DSD (50% each), and NID (33%). SPbU presented no interaction with other Russian HEIs apart from its host university. As mentioned in our case labs' descriptions (see item 4.2), coordinators of some labs have been particularly engaged in promoting social innovation in their respective regions and countries. They have done so mainly through collaboration established with other local- and national-level academics and research groups. With respect to collaborations with national-level HEIs, the TSU, HKDI and DSD stand out: not only has the majority of each of their total national partners comprised HEIs, these were also the type of national actors those labs have more frequently interacted with. This feature is depicted in the national graph (Figure 6) by the greater thickness of those labs' ties with national-level HEIs in contrast with their governmental and civil society counterparts. Additionally, HKDI and TSU form a structural cluster with a third Chinese HEI (i.e. Tongji University) (see Figure 6). Interactions among these nodes have been particularly frequent, as the thickness of ties linking them to each other shows.
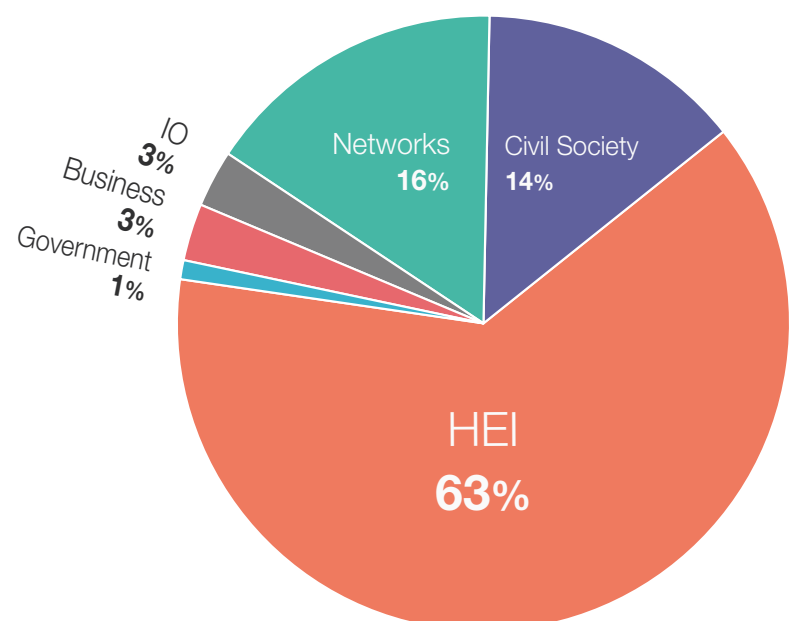
Although UFRJ/COPPE presents the same number of interactions with both national-level HEIs and governmental bodies (50% each), the lab's relations with the former type of actor are considerably less frequent than with the latter type. This reflects the fact that most research conducted by the UFRJ/COPPE lab team is funded by the Brazilian Government through graduate student scholarships, whereas partnerships with HEIs have been more sporadic in nature, normally established in the context of specific projects. National governmental bodies comprise the main type of national partners in the cases of NID (67%) and SPbU (100%). In contrast, this type of actor corresponds to only one quarter of DSD's overall national partners, and to none of TSU's and HKDI's national-level partners. This finding is rather unexpected, given the fact that the Chinese Government tends to interfere in Chinese HEIs institutional affairs (Zha and Hayhoe 2015). However, this finding corroborates the fact that the Chinese Government has not particularly adopted a social innovation-oriented approach to the promotion of innovation in HEIs (though recent efforts aimed at embedding social entrepreneurship in the Chinese higher education system have been taken place in China; see Cruz, Rebourseau and Luisi 2018).

Civil society arrangements represent 20% of the total number of national-level actors identified in this study. However, this percentage corresponds to interactions established with only half of the case labs, namely the HKDI (37%), DSD (25%) and TSU (20%), since all remaining case labs presented no interaction with national civil society partners. In addition, no partnership was identified among our case labs and national-level businesses. This may reflect a relative lack of interest on the part of national for-profit organizations to invest in or collaborate with HEIs' social innovation endeavors in the BRICS. Alternatively, this may also reflect a lack of interest or failed attempts on the part of our case labs' teams to establish partnerships with businesses operating across their respective countries. Either way, we contend that forging such relationships could help to further promote social innovation in the BRICS, and hence contribute to fostering inclusive development processes in those countries.

Interactions with inter/transnational-level actors

The *international / transnational graph* (Figure 7) presents a low density of 0.034. This is partially due to the method of data collection that, given our research constraints, did not include potential interactions among actors tied to our case labs. The transitivity of this graph is higher, about 0.115. As transitivity describes the graph's ratio of triangles and connected triples (see footnote 24), this implies that the graph displays some degree of clustering. This occurs, for example, when a case lab belongs to the same (non-DESIS) transnational network as another institution that the lab is tied to. Or, two case labs may report interactions with the same institutional actor; for instance, there is a triangle between NID, UFRJ/COPPE, and Polimi Labs. In this case, the centralization is 0.398-the highest measure of cohesion for this graph.

Figure 10
Overall inter/transnational partners, by type of actors

Source: authors' elaboration with information from questionnaires/interviews and related websites

Interactions with inter/transnational-level actors have predominantly involved HEIs, which comprise 63% of all 150 identified interactions with international and transnational partners (Figure 10). This suggests an important trend with respect to how social innovation has been promoted and disseminated in the BRICS higher education contexts. As mentioned in the case labs' descriptions (see item 4.2), influencers from abroad have played a major role in these labs' creation processes. This is particularly reflected by the centrality of Polimi in the inter/transnational

graph (Figure 7). This kind of influence continues to evolve as new collaborations are developed and labs participate in additional inter/transnational networks, conferences and workshops. Considering each lab's overall inter/transnational partners, international HEIs correspond to 66% of both UFRJ/COPPE's and DSD's, followed by 63% of TSU's, 60% of HKDI's and 50% of both NID's and SPbU's. Particularly noteworthy here is the fact that nearly 60% of those HEIs are based in Europe (Figure 11 below). Collaborations with HEIs from other regions and continents have been relatively sparse. They account for just 16% in Asia, 10% in North America, 6% in Latin America, and 1% in Australia.
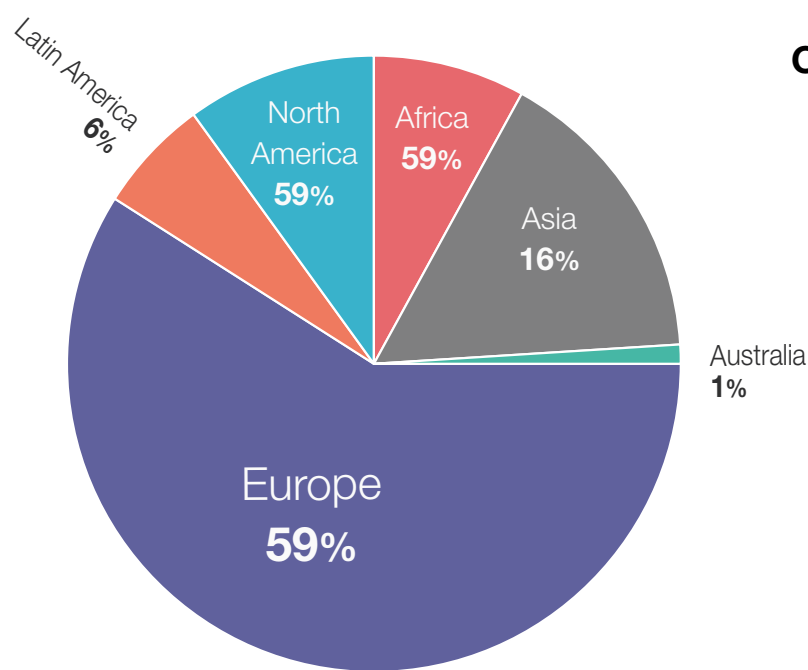

Figure 11
Overall international HEI partners, by region

Source: authors' elaboration with information from questionnaires/interviews and related websites

Besides Polimi (Italy), our case labs' collaborations with international HEIs have mostly involved European universities in the United Kingdom (GCU, UAL, SIA, RCA), Sweden (LNU, Maalmo), Netherlands (TU Delft), Finland (Aalto), Denmark (DSK), Belgium (LUCA), and Portugal (UA). This is illustrated by the sizes of nodes representing those universities in the inter/transnational graph (see Figure 7). Since most of these European HEIs host their own DESIS Labs, it is not exactly surprising that they appear in our case labs' social networks. The same applies to case labs' interactions with universities in the United States (New School/Parsons and ArtCenter), China (Tongji and Jiangnan) and South Africa (CPUT). However, the centrality of nodes corresponding to these international HEIs catches the eye, upon inspecting our case labs' inter/transnational social network.

The fact that most of these universities host DESIS Labs partially explains their presence in the graph, and even suggests a certain degree of cohesion and relative success of the DESIS Network in facilitating interactions and collaborations among its member labs. In particular, the DESIS thematic clusters seem to be the most consolidated platform through which the DESIS Labs engage in partnerships with their counterparts from abroad. For example, the UFRJ/COPPE DESIS Group (Brazil) promoted the *Informal, Formal, Collaborative Cluster* together with DESIS Labs based at Polimi (Italy) and the ArtCenter (United States); HKDI DESIS Lab (Hong Kong/China) coordinated the *Ageing & Ingenuity Cluster* together with DESIS Labs based at LNU (Sweden) and LUCA (Belgium); and the DSD DESIS Lab (South Africa) took part in promoting the *Food Cluster* with both Polimi (Italy) and Strategic Design Matters (SDS, Belgium). At the same time, however, the relative predominance of European stakeholders in case labs' social networks evidences a significant lack of South-South collaborations, including partnerships between case labs and other DESIS Labs based in the BRICS. Furthermore, although not inexistent, connections among our six case labs themselves have been sparse.

In contrast to international HEIs, virtually no partnership with international governmental bodies were identified on the part of our case labs (aside from the European Commission, an intergovernmental institution here labeled as an "International Organization"). The only exception was HKDI, which presented a connection with the British Council. This may reflect the latter's recent endeavors to embed social enterprise in the BRICS countries. As we emphasized elsewhere (Cruz, Rebourseau and Luisi 2018), the British Council has been actively engaged in promoting social innovation in the BRICS, especially in India, China, and South Africa. In that paper, we also argued that this fact relates to the UK Government's efforts to increase UK social enterprises' exports in the world, and, more particularly in the BRICS. As pointed out, evidence reported by the British Council (2014) itself supports this claim: in 2014, the ten main export markets reached by UK social enterprises included China (in the second place), India (in the third place), and South Africa (in the ninth place). Moreover, the ten main markets UK social enterprises were interested in exporting to included India (in second place), South Africa (in fourth place), Brazil (in fifth place) and Hong Kong (in the seventh place). Besides being the only case lab to present a connection with an international governmental body, HKDI also presents the largest number of international business partners. These represent 7% of this lab's overall inter/transnational-level partners, followed by TSU (6%) and Brazil (2%).
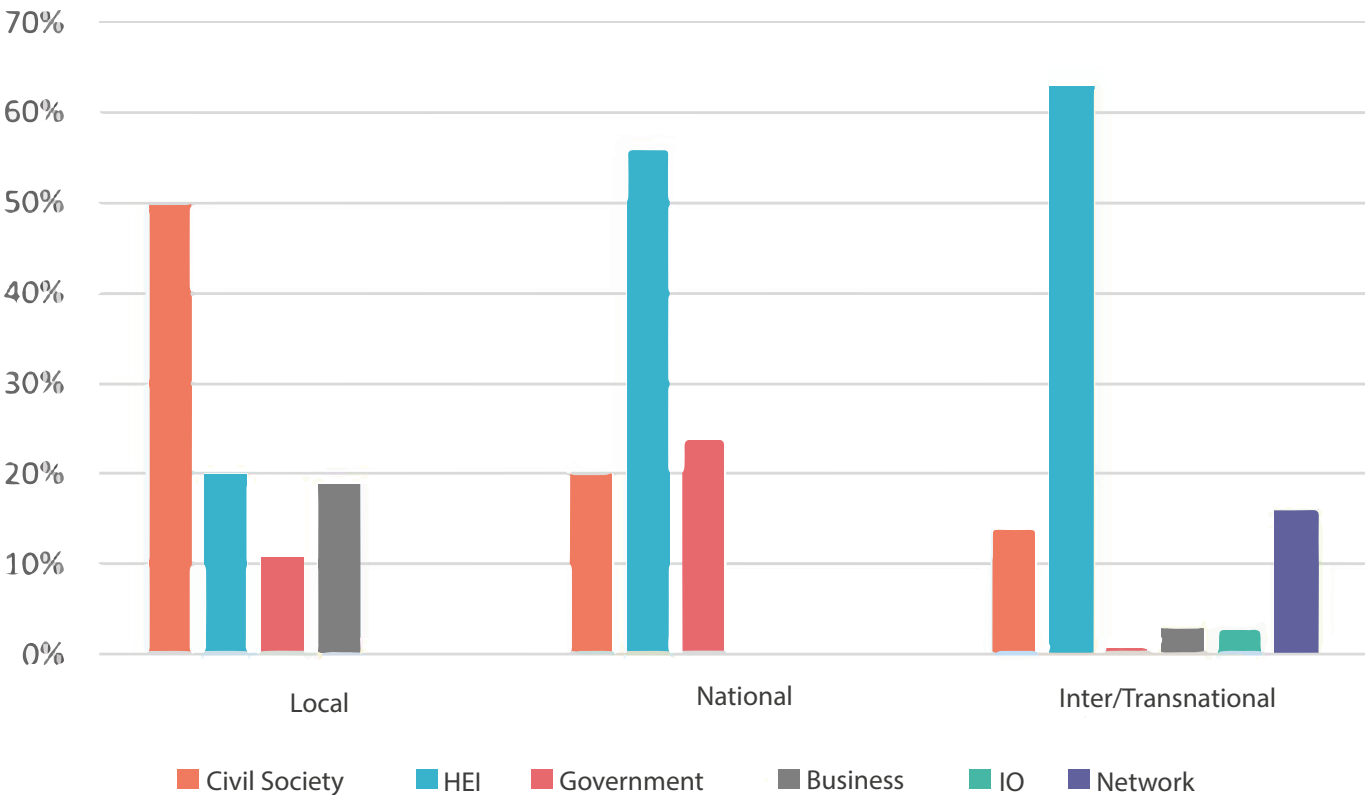
Taken together, inter/transnational civil society arrangements and networks represent 30% of all 150 identified inter/transnational actors the six case labs have interacted with (Figure 10). The majority of them comprise the peripheral nodes in the inter/transnational graph (see Figure 7). Taking each case lab individually, these types of actors account for 51% of NID's overall inter/transnational partners, followed by 50% of SPbU's, approximately 30% of both TSU's and HKDI's, and 28% of both UFRJ/COPPE's and DSD's. As case labs' descriptions suggest (see item 4.2), interactions with inter/transnational civil society arrangements have mostly taken place in the contexts of specific projects carried out in partnership with international universities. Moreover, as with international HEIs, most of these arrangements are based in (or originally from) Europe and North America. This is the case of, for example, the international nonprofits Hivos (Netherlands), SDS (Belgium), Nesta (UK) and Young Foundation (UK), and of the networks SIX (originally from the UK), CCN (originally from Norway) and LeNS (originally from Italy). Notably, aside from DESIS and CUMULUS,[26] SIX, CNN and LeNS comprise the three largest nodes representing networks in the inter/transnational graph (Figure 7). All these three networks have been promoted by the European Commission, which in turn represents the second largest node in the entire graph. As we mentioned in the case labs' descriptions, the European Commission has been a major funder of the projects and initiatives the UFRJ/COPPE Group and the DSD Lab have engaged in to date.

A multiscalar (meta)governance mode?

The last set of charts below summarizes our general findings commented above. Figure 12 takes all case studies as a whole and contrasts the overall prevalence of their interactions with specific types of actors according to the levels these actors are based in or act at. Figure 13, more relevant from a multiscalar governance perspective, illustrates a general imbalance between connections established between each case lab and local-, national- and inter/transnational-level actors.

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(26) Since Cumulus is not particularly focused on social innovation, being an international association of universities and colleges of Art, Design and Media, we do not analyze its presence in our case labs' social networks. However, its significantly large size in Figure 7 suggests that this might be an important additional platform through which the DESIS Labs can interact with each other, and potentially establish collaborative initiatives.
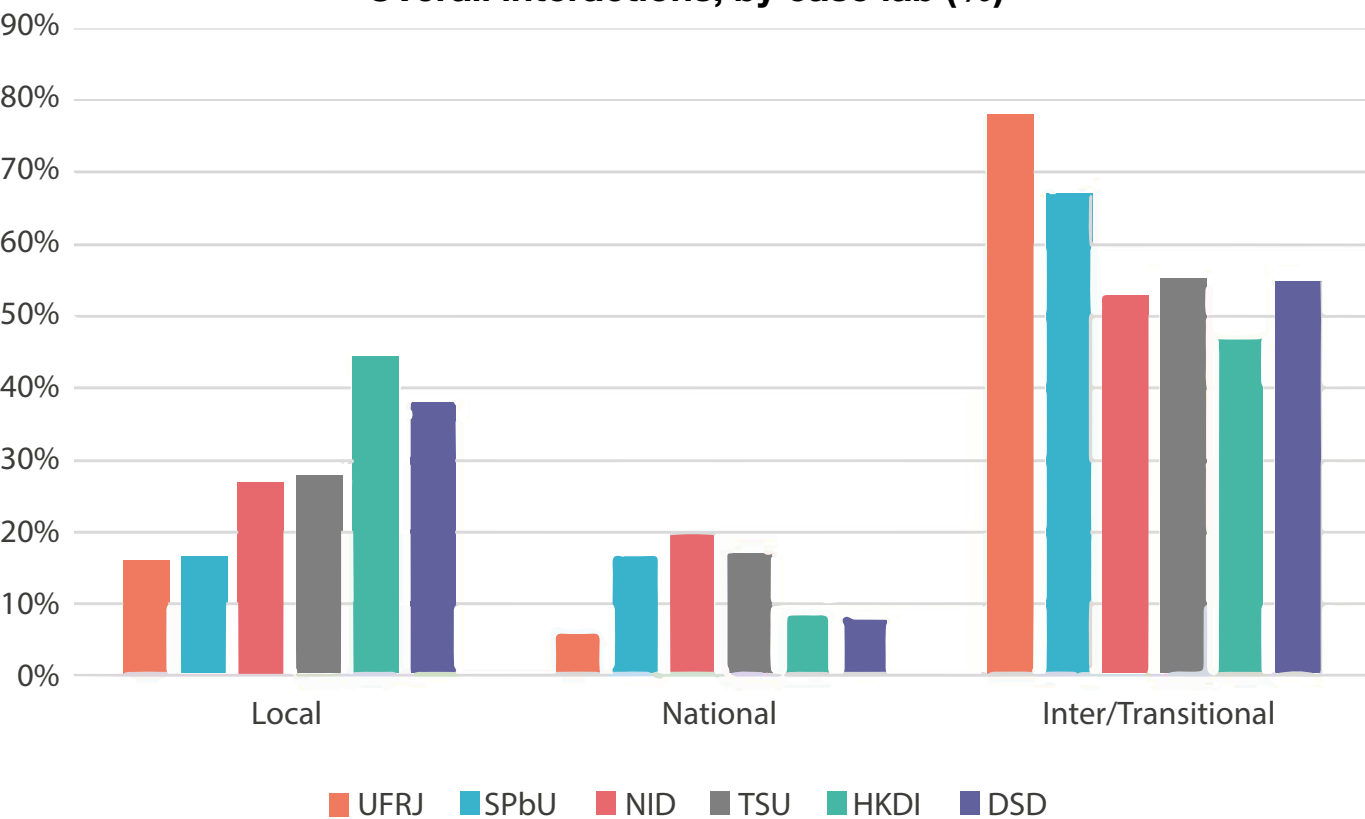
Figure 12
Overall interactions, by type of actors (%)

Source: authors' elaboration with information from questionnaires/interviews and related websites

As Figure 12 shows, in general, civil society arrangements, especially local grassroots communities, have been the main type of extramural local-level stakeholders in our case labs' initiatives. This largely reflects these labs' engagement in local development projects. In contrast, HEIs have been the main type of both national- and inter/transnational-level stakeholders. This normally reflects, on the one hand, case labs' collaborative projects and efforts to further promote social innovation in their respective national academic landscapes, and, on the other hand, a significant involvement of international HEIs (especially European universities) in these labs' creation processes, as well as in the development of social innovation initiatives they engage in.

Figure 13
Overall interactions, by case lab (%)

Source: authors' elaboration with information from questionnaires/interviews and related websites

Regardless of the type of actors, Figure 13 illustrates the preponderance of inter/transnational actors (including partners, funders and influencers) in processes and practices involving our six case studies. As we highlighted above, inter/transnational actors have influenced and participated in these labs' activities through funding mechanisms, collaborative research projects, academic and non-academic events (such as conferences and workshops), as well as academic mobility (above all, between students and scholars from the BRICS and European universities). This indicates that, even though these labs are situated within particular HEIs in the BRICS countries, and despite the fact that their projects and activities largely focus on the development of local communities, these labs tend to operate within a broader complex, multiscalar type of governance, in which inter/transnational actors play a significant role.

Moreover, the involvement of state actors must not be disregarded. As Figure 12 shows, both local- and national-level governmental actors have been involved in case labs' initiatives, although the latter type has been more often involved than the former. Such involvement has occurred through traditional funding mechanisms, enabling many of those labs' research and outreach activities to be performed. Notably, international state actors have also been involved. The centrality of the European Union in our case studies' social networks (as depicted in the international/transnational graph, see Figure 9) is a case in point. The British Council's efforts to promote social enterprise in the BRICS countries, especially in India, China and South Africa, can also be pointed out (see Cruz, Rebourseau and Luisi (2018)).

This general pattern indicates that states have enrolled in governance practices connecting the social innovation and the higher education fields in all BRICS countries. To use Jessop's words, state actors have been enrolled, if 'not as the prime mover or as primus inter pares,' at least 'as one actor-cum-stakeholder among others with distinctive resources to contribute to governance arrangements and projects that are initiated beyond the state' (Jessop 2016: 83). This phenomenon suggests the occurrence of a multiscalar metagovernance scheme playing out in the promotion of social innovation/enterprise in the BRICS higher education contexts. More broadly, state actors' endeavors, such as the British Council's *Global Social Enterprise Programme* (see Cruz, Rebourseau and Luisi (2018), suggest the occurrence of a metagovernance mode operating in the social innovation field globally. This hypothesis could be further investigated by studies focused on the dynamics of the global political economy of social innovation/enterprise.

5. Conclusion and Recommendations

In conclusion, despite variations between our case studies, in general, the empirical data analyzed in this paper evidences that a multiscalar governance mode has played out in these social innovation labs' processes and practices. Multiple local-, national-, and inter/transnational stakeholders operate in such governance mode, with prevalence of international and transnational actors based at or originally from the Global North, especially Europe. This finding adds complexity to understanding social innovation labs in the BRICS HEIs as eminently local. Rather, they can be said to act as multiscalar sociospaces where territories, places, scales, and networks are 'mutually constitutive and relationally intertwined dimensions of sociospatial relations' (Jessop, Brenner and Jones 2008: 389).

The involvement of local, national and international state actors further suggests that these labs tend to operate within a multiscalar metagovernance framework. The preponderance of European stakeholders in our case studies' social networks is an interesting finding which could be further

studied from a post-colonial or decolonial perspective. Moreover, global initiatives of particular state actors, such as the British Council, could be investigated through a metagovernance perspective by scholars focused on the global political economy of social innovation/enterprise.

Drawing on the main findings suggested throughout this paper, below we provide a set of recommendations. They are especially directed to academics, experts and policymakers in the BRICS countries. We contend that drawing attention to these issues might help them critically (re) examine higher education governance in an increasingly globalized world, and implement more suitable strategies for promoting truly inclusive and sustainable development processes.

Given that social innovation-oriented collaborations among HEIs in the BRICS countries have been rather sparse and fragmented in nature, our recommendations mainly focus on the creation of more institutionalized mechanisms—as well as on the further exploration of existing platforms—with the purpose of facilitating connections and partnerships aimed at promoting social/inclusive innovation initiatives in the BRICS. This could take shape of a sixfold strategy, as indicated below.

A sixfold strategy to promote social/inclusive innovation in the BRICS higher education systems

• **FIRST**, academics in all BRICS countries could take further advantage of the already-existing platform of cooperation established by the BRICS NU by connecting research on social/inclusive innovation with the BRICS NU's knowledge field priorities (i.e. energy; computer science and information security; BRICS studies; ecology and climate change; water resources and pollution treatment; and economics).

• **SECONDLY**, by doing so, they could help to raise awareness among BRICS policymakers about the potential role of social innovation in more inclusive and sustainable development strategies. This would help move the issue of social innovation up in the BRICS group's political agenda and possibly result in the establishment of new cooperative arrangements focused on social/inclusive innovation.

• **THIRDLY**, given the relative lack of involvement on the part of national-level stakeholders in social innovation labs' projects and activities, federal/central governments should create specific funding mechanisms directed to support social/inclusive innovation in those countries. Such mechanisms could also be devised to incentivize funding from both for-profit and not-for-profit organizations acting nationally in the BRICS countries. Public procurement and tax exemptions are particularly well-suited mechanisms, given that social/inclusive innovation is in inherently committed to the provision of public goods.

• **FOURTHLY**, South-South collaborations among scholars and practitioners focused on social innovation could lead to the development of new perspectives and theories on social/inclusive innovation, including post-colonial / decolonial theories. The current "Indian Model of Innovation," which particularly rests on the notion of "inclusive innovation" could help other BRICS countries to re-orient their approach towards innovation (from a narrow vision that privileges technical innovation to a broader vision that is socially/inclusive-oriented in nature) (see Cruz, Rebourseau and Luisi 2018). Additionally, the expertise of the South African DSD DESIS Lab on decolonial studies could help to further advance the development of decolonial approaches to social innovation in the BRICS, and to encourage other social innovation labs to adopt methodologies in which local communities participate not only as beneficiaries of their projects but as protagonists in the

designing and implementation of projects that aim to promote socioeconomic development in their respective regions.

• **FIFTHLY**, more mutual knowledge transfer should be encouraged, bringing lessons learned from BRICS environments to the Global North, in the hope of expanding the influence of Southern voices in the global body of scholarship on social innovation.

• **FINALLY**, new networks dealing with social innovation and related practices—including the Brazilian notion of university extension and the South African notion of community engagement (see Cruz, Rebourseau and Luisi 2018)—could be created as to connect and foster partnerships between HEIs both in the Global South and North. This would be a promising route towards a model of university in the 21st century that is more aligned with the notion of inclusive and sustainable development. This would certainly be more aligned with the very idea of social innovation itself.

6. References

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List of Abbreviations and Acronyms

Figures 5, 6 and 7

1to1
1 to 1 movement

Aalto
Aalto University

AAU
Aalborg University

AHO
Oslo School of Architecture and Design

AKF
Aga Khan Foundation

ArtCenter
ArtCenter College of Design

BAS
Bergen School of Architecture

Beijing U of Industry
Beijing University of Industry

BIFT
Beijing Institute of Fashion Technology

BJAST
Beijing Research Center of Urban System Engineering

BOKU
University of Natural Resources and Life Sciences

Brunel
Brunel University London

BUPT
Beijing University of Posts and Telecommunications

CAPES
Coordination for the Improvement of Higher Education Personnel

CCN
Consumer Citizenship Network

CEPE/Vital Brazil
Center for the Study and Research of Aging / Vital Brazil Institute

CEPT
Centre for Environmental Planning and Technology

CFSC
Christian Family Service Centre

Chu Hai
Chu Hai College of Higher Education

CityU
City University of Hong Kong

CNPq
National Council for Scientific and Technological Development

CPUT
Cape Peninsula University of Technology

CUHK
Chinese University of Hong Kong

Cumulus
Cumulus Association

DAHK
DesignAge Hong Kong

DESIS
Design for Social Innovation Network

Deusto
University of Deusto

DMU
De Montfort University

DP
Doors of Perception

DSK
Design School Kolding

EU
European Union

EUR
Erasmus University Rotterdam

FAPERJ
Foundation for Support of Research in the State of Rio de Janeiro

Fomin
Multilateral Investment Fund / IDB

FTFA
Food & Trees for Africa

GBC
George Brown College

GCU
Glasgow Caledonian University

GDARD
Gauteng Department of Agriculture and Rural Development

HCU
HafenCity University

HiB
Bergen University College

HiOA
Oslo and Akershus University College of Applied Sciences

HK D&A
Hong Kong designers and artists

HK SOW
Hong Kong Solution-on-Wheels

HK SW, MP & OT
Hong Kong social workers, managing personnel and occupational therapists

HK Web Design
Hong Kong Web Design

HKCEC
Hong Kong Convention and Exhibition Center

HKDC
Hong Kong Design Centre

HKDI
Hong Kong Design Institute

HKHPCF - Hong Kong Hospice and Palliative Care Foundation

HKIA
Hong Kong Institute of Architects

HKIPF
Hong Kong International Photo Festival

HKTDC
Hong Kong Trade Development Council

HUAS
Hedmark University

ico-D
nternational Council of Design

Icsid
International Council of Societies of Industrial Design

IIT Delhi
Indian Institute of Technology Delhi

INETI
Instituto Nacional de Engenharia, Tecnologia e Inovação

JCCPA
Jockey Club Centre for Positive Ageing

Jiangnan
Jiangnan University

K11 Fnd.
K11 Art Foundation

KADK
Royal Danish Academy of Fine Arts

Keio
Keio University

KHiB
Bergen Academy of Arts and Design

KVIC
Khadi and Village Industries Commission

LASIN
Latin American Social Innovation Network

LeNS - The Learning Network on Sustainability

Leverhulme Tr.
Leverhulme Trust (International Network)

Li & Fung
Li & Fung Limited

LNU
Linneaus University

LUCA
LUCA School of Arts

MaD
Make a Difference

Malmo
Malmo University

Manchester
University of Manchester

MSU
Michigan State University

MU
Maastricht University

NAFA
Nanyang Academy of Fine Arts

Neonlite
Neonlite Electronic & Lighting (HK) Ltd

New School
The New School/Parsons

NID
National Institute of Design

NJU
Nanjing University

NRF
National Research Foundation

NUST KE
University of Science and Technology - Kenya

NUST NA
University of Science and Technology - Namibia

NUST ZW
University of Science and Technology - Zimbabwe

OIN - Open Innovation Network

Polimi
Politecnico di Milano

PolyU
The Hong Kong Polytechnic University

Pooi To MS
Pooi To Middle School

POSH
POSH Office Systems (HK) Limited

Raffles
Raffles International College (Hong Kong)

RCA
Royal College of Art

RDFF
Region D Farmers' Forum

RSA
Royal Society for the encouragement of Arts, Manufactures and Commerce

S&S
Saatchi & Saatchi Ltd

SAGE
SAGE International Group Limited

Sapienza
Sapienza University of Rome

SDI - Slum Dwellers International Alliance

SDN - Service Design Network

SDS - Strategic Design Scenarios

SEP - Sustainable Everyday Project

SES - Social Enterprise Summit

SEUK - Social Enterprise UK

SIA - Sheffield Hallam University

SIX - Social Innovation Exchange

SPbU - Saint Petersburg State University

SPCDF - Slovo Park Community Development Forum

Srishti - Srishti School of Art, Design and Technology

Stanford - Stanford University

SZIU
St. István University

Tohoku
Tohoku University

Tongji
Tongji University

TSU - Tsinghua University

TU Delft - Delft University of Technology

TUT
Tshwane University of Technology

TZU
Tokyo Zokei University

U3A
University of the Third Age   UA - University of Aveiro

UAL
University of the Arts London

UB
University of Botswana

UCT
University of Cape Town

UDC
University of A Coruña

UDD
Universidad del Desarrollo

UDI
Universidad del Istmo

UEA
University of East Anglia

UFRJ
Federal University of Rio de Janeiro

UFSC
Federal University of Santa Catarina

UIA
The Union Internationale des Architectes

UJ
University of Johannesburg

ULB
Université Libre de Bruxelles

UNEP
United Nations Environmental Programme

UNIRIO
Federal University of the State of Rio de Janeiro

UNISINOS
University of the Sinos Valley

UNIST
Ulsan National Institute of Science and Technology

UNQ
National University of Quilmes

UNSW
University of New South Wales

UP
University of Pretoria

US
University of Sussex

USMA
Universidad Católica Santa María La Antigua

UU
Utrecht University

UW
University of Waterloo

Virginia Tech
Virginia Polytechnic Institute and State University

VTC
Vocational Training Council

WitsU
Wits University

Wuhan
Wuhan University

X6
X6 Architecture Studio

ZhdK
Zurich University of the Art

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