

## SPECIFIC THEMES AND OBJECTIVES OF THE PROJECT

### THEME 1: Business Competitiveness and Development

Countries: Austria, Canada, China, Denmark, Ecuador, Germany, Holland, India, Italy, Japan, New Zealand, South Africa, Spain, United Kingdom, United States, Russia and Switzerland.

Justification for choosing the theme:

Improvement and deepening of theoretical knowledge of the faculty, students and researchers of FGV on the theme of business competitiveness and development, with the conduction of specific studies on the following themes: Improvement of the Bankruptcy Law; Corporate Compliance in the BRICS; Coevolution of Supply Chain Competencies; Formalization of Micro-Enterprises; Understanding Recommendations for Use of Products Based on Less Important Attributes; Global Chains and Multistakeholder Governance; Governance of the Collective Decision Process in Mutual Organizations; Competitive Insurance Markets; Economic Regulation, and New Business Models for Utilities and Design of Markets.

Objective linked to the theme: 1: 1.1. Applied Microeconomics: Evaluation of Public Policies and Improvement of the Bankruptcy Law

Coordinator: Prof. Luis Braido

The theoretical and empirical economics literature brings evidence of the important role of mechanisms such as bankruptcy statutes for the development of the credit market, and in the final analysis, the economic development of a country. For this reason, with the goal of increasing efficacy (by, among other changes, increasing the protection of secured creditors), a major reform was undertaken in Brazil's bankruptcy legislation in 2005, strongly inspired by American law. This brought relevant positive impacts on the credit market and productivity of firms, as revealed by two important academic articles: Araujo, A. P., R. V. Ferreira, and B. Funchal (2012). The Brazilian bankruptcy law experience. *Journal of Corporate Finance* 18 (4), 994-1004; and Ponticelli, J. and L. S. Alencar (2016). Court enforcement, bank loans and firm investment: Evidence from a bankruptcy reform in Brazil. *The Quarterly Journal of Economics* 131 (3), 1365-1413). Nevertheless, the rate of credit recovery in the country still remains very low. According to data from the World Bank, there was a substantial increase after the reform (from 0.2% in 2004 to 12% in 2007, where it has remained until 2017), but this level is very low in relation to other countries (Latin America: 26%; OECD: 72%). Despite the great strides made with the reform in 2005, important frictions might be limiting the contributions of the bankruptcy legislation. This project aims to construct an extensive database of bankruptcy and court-supervised reorganization cases in Brazil to investigate potential inefficiencies in the system and propose improvements in the legislation able to overcome them.

The research project will be developed in partnership with Northwestern University and Kellogg School of Management, which have researchers with experience in the matter who have made contributions to evaluation of the Brazilian case.

Action 1.1.a: Construction of a database of bankruptcy and court-supervised reorganization cases in Brazil since 2000

Creation of an extensive historical database about bankruptcy and court-supervised reorganization cases filed in Brazil: (i) development of algorithms to extract data from the websites of the court systems of all Brazilian states on bankruptcy and court-supervised reorganization cases filed since 2000; and (ii) ongoing updating of the database to include new cases and the latest developments in existing cases.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	States and cases collected
Current situation	1
Goal for 2nd year	27
Final goal	27

Action 1.1.b: Treatment of the data gathered: identification of the events of interest from the texts of the judicial decisions

By examining the developments of the cases extracted from the online databases of the justice systems of the Brazilian states, it will be possible to identify, among other information, the interlocutory rulings and final verdicts of the judges. With these data it will be possible to identify the result and dates of occurrence of the various steps of the cases, such as in a court-supervised reorganization proceeding: granting/denial of the petition; approval/rejection of the reorganization plan; recovery/bankruptcy of the company, among other events of interest. For this it will be necessary to extract crude data on the case movements from the court websites: (i) to identify patterns in the texts of the judicial decisions for each relevant step; (ii) to develop an algorithm to identify the events based on the patterns ascertained; and (iii) to apply the algorithm to the cases and generate new variables with the results of these events and their dates of occurrence. This action will take place continuously with the progress of the project – according to the patterns of events of interest identified and new cases collected.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Descriptive working paper
Current situation	0
Goal for 2nd year	Updating of the working paper
Final goal	Updating of the working paper

Action 1.1.c: Enrichment of the database – 1

Obtainment of important additional information about the cases, such as: list of creditors; minutes of the creditors' meetings; reorganization plans; auctions of assets, etc. This information is not structured, but can be obtained for the cases in some states. The main steps of this action are: (i) identification of the availability and sources of this additional information; (ii) development of an algorithm to extract additional information of interest from the documents; (iii) extraction of information from these documents and structuring the database.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Descriptive working paper
Current situation	0
Goal for 2nd year	Updating of the working paper
Final goal	Updating of the working paper

Action 1.1.d: Enrichment of the database – 2

Obtainment of important information about the companies (through collating with taxpayer number - CNPJ) from other external databases (most with restricted access), such as: SCR-BCB (loan contracts); RAIS-MTE (formal employment contracts); PIA-IBGE (structural information about companies in the industrial sector); PAS-IBGE (structural information about companies in the service sector); PAC-IBGE (structural information about companies in the commercial sector), etc.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Descriptive working paper
Current situation	0
Goal for 2nd year	Updating of the working paper
Final goal	Updating of the working paper

Objective linked to the theme: 1: 1.2. Corporate Compliance in the BRICS

Coordinator: Prof. Wanderley Fernandes

The objective of the project is to test to what measure the corporate compliance programs implemented by local and multinational firms in the BRICS countries incorporate local and international legislation. An related interest is to verify to what extent the domestic legislation of these countries follows the main precepts of the legislation in force in the OECD countries. It is a research program in the area of compliance with institutions of the countries that compose the BRICS (Brazil, Russia, India, China and South Africa), with participation of the Law Schools Global League (LSGL).

The study is based on the assumption that a broader understanding of the anticorruption legislation focused on corporate compliance in the BRICS countries will shed more light on the ambiguities and legislative trends in each nation. The work of comparing national and international rules and practices will also reveal how receptive to international initiatives each BRICS country really is. In this way, it will be possible to have a more precise vision of how the BRICS countries have implemented anticorruption rules and the differences and similarities of these countries. The supposition is that this project can supply useful information to the preparation and implementation of integrity measures that reinforce local institutions. Furthermore, the possibility of establishing common practices can favor the development of institutionally more similar markets, thus providing new opportunities for growth.

The results of this project can also be used to form a database that can be used for plurilateral negotiations to seek common guidelines for corporate compliance and anticorruption programs in the BRICS countries.

Action 1.2.a: Holding of meetings and digital publication of reports

The project was conceived to include two research phases, five meetings and publication of the results in digital format. The first phase, already started, is dedicated to establishing the legislative framework of each BRICS country, comparison of the local legislation with the rules of the OECD, and comparison among the five component countries. The project's second phase will encompass field research among national and multinational firms in each of the BRICS countries to verify the practical application of these control mechanisms and other aspects related to the governance of these firms. A survey will be conducted with a sample of national and multinational companies in each country, as well as in-depth interviews with compliance officers of firms, policymakers, legislators and specialists in the area. The meetings will be used to exchange information and discuss the progress made so far. A first preparatory meeting was already held in February 2018 at the IDC (Herzlya, Israel), with the participation of the other members of the LSGL Anticorruption Group. Five more preparatory meetings will be scheduled between 2018 and 2020, the next in December 2018 at Jindal Law School (Delhi, India). Each meeting will generate a report for digital publication.

Start and end: 10/2018 – 12/2020

Type	Quantitative
Indicator	Number of meetings held and reports published
Current situation	0
Goal for 2nd year	5
Final goal	5

Action 1.2.b: Disclosure of the results

The final results of this project will compose a publication with distribution in the five BRICS countries.

Start and end: 11/2018 – 12/2020

Type	Quantitative
Indicator	Publication of the final results
Current situation	0
Goal for 2nd year	1
Final goal	1

**Objective linked to the theme: 1: 1.3. Coevolution of Supply Chain Competencies**

**Coordinator: Prof. Ely Paiva**

The coevolution vision is based on the perspective of selection and adaptation within a dynamics view of changes from internal initiatives and external influences. This approach considers that changes in the external setting can also be caused by internal changes of firms. According to Lampel and Shamsie (2003), the coevolutionary vision assumes interdependence of resources for mobilization and transformation of the firm's competencies. The aim of this project is to understand how companies (micro level) interact with their external actors and the meso level (suppliers) and macro level (institutional environment) to create new competencies based on innovative processes and products. Another objective is the compare how globally competitive firms in different institutional

environments have developed actions to strengthen their key competencies. Hence, three distinct institutional environments will be analyzed: (i) Brazilian, characterized by cyclical instabilities in economic growth; (ii) European, with a stable institutional environment and slow growth; and (iii) Chinese, with a stable institutional environment and fast growth.

Action 1.3.a: Planning meetings for field research

Holding of meetings with representatives of partner institutions of the research project, for planning of the field research:

- (i) 2019 - "Institutional Environment", at the Instituto de Empresa and University of Indiana, Indianapolis; and
- (ii) 2020 - "Institutional Environment", CEIBS, China and Cardiff Business School.

Start and end: 1/2019 – 12/2020

Type	Quantitative
Indicator	Number of meetings
Current situation	0
Goal for 2nd year	2
Final goal	2

Action 1.3.b: Realization of seminars to disclose the results of the studies

Presentation of the results of the studies carried out as part of the program Coevolution of Supply Chain Competencies.

Start and end: 01/2021 – 06/2021

Type	Quantitative
Indicator	Participation at a seminar to present the results
Current situation	0
Goal for 2nd year	0
Final goal	1

**Objective linked to the theme: 1: 1.4. Formalization of Micro-Enterprises**

**Coordinator: Prof. Cesar Zucco Junior**

A large number of informal micro-enterprises exist in developing countries like Brazil. This informality brings various negative consequences, both for the government (tax evasion) and the entrepreneurs, in terms of limitations on access to credit, possibilities for growth and lack of social security coverage. Although programs for formalization with easy access and low costs have been created, the adhesion rates are still low. Among the reasons are lack of information and behavioral limitations, such as lack of attention and forgetfulness.

The study will evaluate the efficiency of different approaches to encourage formalization of micro-enterprises. A field experiment will be conducted in different countries to assess the effects of individual consulting about formalization. In Brazil, besides this treatment, the effects will also be evaluated of text messages, inclusion in WhatsApp groups and endorsement of different public figures.

As a result, actions will be identified that can be incorporated in public policies to encourage formalization.

The study will be conducted in Brazil, Colombia, Congo, Nigeria, India and Malawi, under the coordination of researchers of FGV EBAPE (Brazil); UCLA (Colombia); MIT and Harvard University (Congo); Georgia Tech, Columbia University and EGAP (India); University of Illinois (Malawi); and American University (Nigeria).

Action 1.4.a: The conduction of interviews and experiments planned in the research project, to estimate the effects of the individual consultation, text messages, inclusion in Whatsapp groups and endorsement by various public figures on the rate of formalization.

The following actions will be carried out in Brazil: (i) baseline survey conducted in communities in the western region of the city of Rio de Janeiro, with 4,300 micro-entrepreneurs; (ii) field experiment carried out in communities in the western region of the city of Rio de Janeiro, with 1,260 micro-entrepreneurs; and (iii) *baseline* experiment carried out in communities in the of the city of Rio de Janeiro, with 2,000 micro-entrepreneurs.

. Items i and ii occurred in 2017, and the last action of the study, item iii, will occur in the second half of 2018.

Start and end: 11/2018 – 12/2018

Type	Quantitative
Indicator	Number of micro-entrepreneurs interviewed
Current situation	0
Goal for 2nd year	2,000
Final goal	2,000

Action 1.4.b: Holding of a seminar to discuss the results

Organization of a seminar to present, discuss and receive contributions regarding the results of the study.

Start and end: 11/2018 – 04/2019

Type	Qualitative
Indicator	Number of seminars held
Current situation	0
Goal for 2nd year	1
Final goal	1

Objective linked to the theme: 1: 1.5. Understanding Recommendations for Use of Products Based on Less Important

Coordinator: Fabio Caldieraro

Companies often advertise their products based on less important attributes, hoping that consumers will choose their brands in detriment to competing ones. An example of this occurs in the case of pharmaceutical companies in recommending over-the-counter (OTC) drugs: Pfizer employs the argument that its pain reliever Advil works faster because it comes in “liquid capsules”, so that the medicine is absorbed faster in the stomach, as well as being softer on the stomach. In turn, Johnson & Johnson announces its product stressing that “Tylenol has fewer drug interactions”. This situation is

not specific to OTC drugs. Companies often play up less important attributes of their products to distinguish them from competing brands that are just as good. Naïve consumers who believe in the advertising messages or those who are strongly concerned with the less important attributes communicated choose the recommended product. Others can react differently, in particular recognizing that the competing products have multiple attributes and that companies can have an incentive to communicate only comparative information about attributes in which they are superior to competing alternatives. A better understanding of this phenomenon can help public policymakers to formulate better advertising regulations and improve consumer education programs. The consequences of these policies can directly benefit individuals by informing them how to make better choices.

The objective of this study is to understand the reaction of consumers to recommendations based on less important attributes and the incentives to rely (or not rely) on these types of recommendations. The study will be conducted with researchers from the University of Georgia (USA).

Action 1.5.a: Establishment of partnerships to develop the study

Participation at the Marketing Science Conference to present the works and consolidate the partnership with the University of Georgia to perform the study: (i) definition of the team and (ii) methodological alignment.

Start and end: 08/2018 – 09/2018

Type	Quantitative
Indicator	Cooperation agreement for development of the study with the University of Georgia
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 1.5.b: Development of the study

Development of consumer response models and corporate incentives, to enable answering the research questions. Thus, the researchers will work in collaboration with peers from foreign institutions, to:

- Investigate the efficacy of the product recommendation messages according to the characteristics of the company and evaluate whether people are disposed to react less strategically (accepting the claim) or more strategically (examining the allegation);
- Identify the conditions under which comparative messages about less important attributes can influence people’s buying decisions, leading them to select an ideal brand or a suboptimal one for their needs;
- Investigate the conditions under which companies can have an incentive to advertise their products based on less important attributes or retain information about their products.

Start and end: 10/2018 – 12/2018

Type	Quantitative
Indicator	Development of final consumer response models and strategy of companies total developed and analyzed.

Current situation	0
Goal for 2nd year	1
Final goal	1

Action 1.5.c: Disclosure of the results: participation at international congresses and publication of academic articles.

Disclosure of the results of the study at international congresses and conferences and publication of articles in scientific journals.

Start and end: 01/2019 – 12/2019

Type	Quantitative
Indicator	Participation at an international conference to disclose the results
Current situation	0
Goal for 2nd year	1
Final goal	1

Type	Quantitative
Indicator	Scientific article produced
Current situation	0
Goal for 2nd year	1
Final goal	1

### Objective linked to the theme: 1: 1.6. Global Chains and Multistakeholder Governance

Coordinator: Prof. Luciana Vieira

Studies of interorganizational relations and governance of global supply chains have been intensifying. Understanding how private governance, in which transnationals deal with their supply chains, has been the focus of recent academic studies (Vieira & Traill, 2008; Mattli, 2003; Van Huijstee & Glasbergen, 2010). Brazilian firms have been increasing their activities in international markets, and today several Brazilian transnationals need to manage global supply chains. Especially in the agro-food sector, these transnational groups have created alliances with stakeholders to attain objectives that are not necessarily economic, but that serve the social and environmental interests of the local supply chains in the places of their operations. The multistakeholder initiative is still an incipient theme in studies of interorganizational relations. By comparing two initiatives in distinct contexts, the intention is to shed light on this type of alternative governance and its implications for those involved in the global supply chains of Brazilian companies. The expectation is to identify how the legitimacy of these initiatives is perceived by the markets and stakeholders and what results have been achieved.

Activities will be conducted with the following foreign institutions: Freie Universität Berlin (Germany), King's College (England), Wageningen University and Research Centre (Holland) and Copenhagen Business School (Denmark).

Action 1.6.a: Training of a teacher and researchers – participation in a seminar/workshop

Participation in a short seminar at Freie Universität Berlin (Germany) to improve knowledge of the researchers involved in the study about multistakeholder governance of global chains.

Start and end: 11/2018 – 11/2018

Type	Quantitative
Indicator	Number of teachers trained
Current situation	1
Goal for 2nd year	5
Final goal	5

Action 1.6.b: Conduction of working meetings: mapping of global chains with multistakeholder governance.

Meetings of researchers of the project to gain empirical knowledge about global chains with multistakeholder governance. The meetings will be hosted by King's College and Wageningen University and Research Center and will occur in 2019 (May 19-29) and 2020 (May 19-29).

Start and end: 01/2019 – 06/2020

Type	Quantitative
Indicator	Number of global chains with multistakeholder governance investigated
Current situation	0
Goal for 2nd year	2
Final goal	6

Action 1.6.c: Seminar: discussion of the results of the field studies

Conduction of a seminar with the researchers involved in the study, at Copenhagen Business School, to debate the results.

Start and end: 04/2020 – 06/2020

Type	Quantitative
Indicator	Short seminar held
Current situation	0
Goal for 2nd year	1
Final goal	1

## Objective linked to the theme: 1: 1.7. Governance of the Collective Decision Process in Mutual Organizations

Coordinator: Prof. Joaquim Rubens Fontes Filho

The objective of this proposal is to identify, classify and analyze how the collective decision-making processes are defined and carried out in non-hierarchical organizations and how governance is configured in these conditions. The study aims to expand on a context of international analyses already conducted on this theme in Brazil. The choice of Ecuador (Universidade Andina) represents both a way to consolidate a partnership with the doctoral program in administration in the country (and the only one in the region), and to expand the analysis to another cultural context, where associativism is more developed, but urbanization is less so. In this respect, the partnership will permit submitting the

analytical model – based on the proposals of Elinor Ostrom (various years), Elster (1989) and Bengtsson (1998 and 2001) – to the influence of local culture and values of associativism.

According to Elinor Ostrom (1990; 2005), winner of the Nobel Prize in Economics in 2009, cooperative organizations have a fundamental role in the management of common resources, since they emanate from the organization of the main agents involved in a determined question where the government is inefficient or absent and the market does not have interest or power to act. Despite lesser considerations made by academics regarding the dynamics of these organizations, their importance can be proven in numbers: the Children’s Pastoral has 150,000 people who render services to more than 1.5 million people; the Association for Assistance to Disabled Children (AACD) obtains 40 million reais (R\$) per year in donations; and the Group to Support Children and Adolescents with Cancer (GRAAC) raises R\$ 12 million yearly (Veja, 2001), and all of these are philanthropic organizations. The cooperativist movement, according to the Brazilian Organization of Cooperatives (OCB, 2009), represents more than 7,200 cooperatives, with 8.2 million members, 270 thousand employees and gross revenue of R\$ 88.5 billion in 2009. This entire system is based on participative mechanisms, generally voluntary, and the allocation of political rights (voting) is distributed uniformly among the participants. According to FASFIL, a study of the third sector carried out by the Brazilian Institute of Corporate Governance (IBGC), the total number of condominium units in buildings, horizontal or vertical, residential, commercial or mixed, regulated by Law 4,591/1964, amounted to 153,441, and the corresponding condominium associations handle some R\$ 10 billion per year.

Action 1.7.a: Consolidation of the preliminary theoretical framework.

Deepening of the theoretical framework related to the decision-making process and governance of mutual organizations, by both schools involved (in Ecuador, the doctoral program of Andina University), so as to bring local references and problems to the table: selection of the academic bibliography, press texts, and other sources that allow knowing the national context of mutual organizations, in particular residential condominium associations.

Start and end: 10/2018 – 09/2018

Type	Qualitative
Indicator	Consolidation of the theoretical framework
Current situation	Insufficient
Goal for 2nd year	Sufficient
Final goal	Sufficient

Action 1.7.b: Organization and conduction of a workshop to discuss the theoretical framework and analyze cases.

Work in partnership with the institution in Ecuador to collect data and organize a workshop involving researchers of the network: (i) to discuss the data collected and summarize the types of organizations in local contexts; (ii) to evaluate gaps in the theoretical framework in light of the preliminary evidence of the practice; and (iii) to prepare a working paper with preliminary (conceptual) results.

Start and end: 11/2018 – 11/2018

Type	Quantitative
Indicator	Workshop held

Current situation	0
Goal for 2nd year	1
Final goal	1

Action 1.7.c: Conduction of field research

Based on the results of the workshop and the working paper, field surveys will be carried out in two countries, Brazil and Ecuador, of a sample of mutual organizations, composed of residential condominium associations and other types of associations.

Start and end: 12/2018 – 05/2019

Type	Qualitative
Indicator	Number of organizations surveyed
Current situation	Insufficient
Goal for 2nd year	Sufficient
Final goal	Sufficient

Action 1.7.d: Organization and conduction of a second workshop to analyze the results and draft the preliminary version of the final report.

Organization and conduction of a workshop to discuss the theoretical framework and analyze the cases: (i) to summarize the results and conceptual/theoretical consequences; (ii) to hold a virtual prior meeting to organize the second research workshop; (iii) to organize the logistics and hold the workshop; and (iv) to draft the preliminary version of the final report.

Start and end: 7/2019 – 11/2019

Type	Quantitative
Indicator	Number of workshops held
Current situation	0
Goal for 2nd year	1
Final goal	1

Type	Quantitative
Indicator	Number of research reports produced
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 1.7.e: Disclosure of the results – final paper of the research project

Organization and analysis of the data obtained: considering the previous steps, especially the results of the second workshop, preparation of the final paper, to be submitted to a relevant journal.

Start and end: 10/2019 – 01/2020

Type	Quantitative
Indicator	Number of papers written
Current situation	0

Goal for 2nd year	1
Final goal	1

Objective linked to the theme: 1: 1.8. Competitive Insurance Markets

Coordinator: Prof. Humberto Moreira

The objective of the study is to analyze the functioning of competitive insurance markets with multiple sources of asymmetric information between companies and consumers. The extension of the classic theory of competitive insurance, which assumes that consumers only differ in their risk characteristics, allows understanding the effect of various political interventions, such as restrictions on prices charged, insurance subsidies, risk adjustments and mandates.

One of the main examples of markets with asymmetric information is the insurance market. The total revenue from car insurance premiums paid to private insurers is extremely high. The empirical literature on the subject has focused for a long time on how to identify the presence of asymmetric information in insurance markets. The related tests are adequate for a wide range of cases. However, as correctly mentioned by Einav and Levin, to evaluate the size of the information effect and discuss the effect of various policies, it is necessary to have a better understanding of the sources of information asymmetry. In line with this observation, several papers have identified the type of information asymmetry in various markets (Cohen & Einav, 2007, among other works). As expected, these articles have discovered that consumers are heterogeneous in several dimensions, differing in not only in their levels of risk, but also in their risk preferences. In other words, insurance markets work with multidimensional private information. As pointed out by Einav and Levin (2015), advances in the theory of markets with adverse selection are necessary. The main reason is that after trying different policies, the best tool to predict the possible effects of different governmental interventions is to use models that can be resolved. The absence of such models limits what can be done with the information gleaned from data on consumer choice, as in Cohen and Einav (2007). Recently, this area of theoretical research has received greater attention: for example, Veiga and Weyl (2016) provide a similar characterization when restricting the set of insurance contracts that can be used by insurance companies, and Azevedo and Gottlieb (2014) show that a competitive equilibrium will always exist, but they do not supply an explicit characterization of the set of possible equilibria.

Action 1.8.a: Visits of foreign researchers to FGV/EPGE

Financing of the visits of foreign researchers to FGV/EPGE to work on the research project and also to make presentations at seminars.

Start and end: 01/2019 – 12/2021

Type	Quantitative
Indicator	Visits of foreign researchers to FGV/EPGE
Current situation	0
Goal for 2nd year	2
Final goal	3

Action 1.8.b: Sending doctoral students of FGV/EPGE to take classes a foreign universities.

Granting of sandwich doctoral scholarships to students of FGV/EPGE who work with the research theme.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of students sent abroad as part of sandwich doctoral programs at outstanding institutions
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 1.8.c: Visits by faculty members of FGV/EPGE to foreign institutions and participation in congresses.

Visits by faculty members of FGV/EPGE to foreign institutions and participation in congresses on the theme.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of visits/participations in international congresses
Current situation	0
Goal for 2nd year	1
Final goal	3

Objective linked to the theme: 1: 1.9. Economic Regulation, New Business Models for Utilities and Design of Markets

Coordinator: Prof. Joisa Dutra

To investigate the impacts of new disruptive technologies on the business models of regulated companies in Brazil, as well as the possible implications to consumers, regulatory agencies, investors and new markets. The theoretical framework, besides the traditional theory of regulation, will be supported by the market design theory as well as recent developments in data science. The starting points will be the electricity and urban mobility sectors, both of which have been subject to intense transformations due to the emergence of distributed energy generation/renewable resources, digitization and internet, systems for measurement and efficient use of energy, demand response programs, development of better batteries and more efficient electric vehicles. The interaction with other markets – natural gas for example – will be investigated, with focus on the suitable economic design of physical, financial and derivatives markets for the commodities in question. Below is a preliminary list of the deliverables (results) expected from the study:

- (i) Model to assess the effects of different business models on electricity distributors;
- (ii) Model to assess the effects of different business models on the other stakeholders – consumers, regulators, other government agencies and investors;
- (iii) Proposal for an integrated market for electricity and natural gas, with the design of adequate structures for physical and financial trading of the commodities in question;
- (iv) Pilot model to assess the impact of demand response programs (experiment) and/or insertion of distributed generation/storage of electricity (with use of renewable sources and electric vehicles);

(v) Models to assess the risks and long-term financing, compatible with the new business models, incorporating the concept of green finance;

(vi) Evaluation of the impacts on other utilities – e.g., water and sanitation and natural gas distribution.

This study will involve activities of the following teaching and research institutions and associations: International Association for Energy Economics, Florence School of Regulation, Latin American School of Regulation, Berkeley National Lab (USA), Harvard Electricity Policy Group (USA) and MIT Energy Initiative-Utilities of the Future.

Action 1.9.a: Trips to present the preliminary and final results.

To do groundbreaking research, both theoretical and applied, it is fundamental to interact with researchers who are in the vanguard. Therefore, it is important for the preliminary results to be exposed to leading researchers at the international level, for critiques and improvements. Also, given the applied character of the projects to be developed, it is fundamental to disclose the results to a wide public, such as regulatory agencies and other governmental entities, companies, analysts and potential investors. This requires funds to enable presentation of results at international congresses and other events with strong expression in the particular field of knowledge, with the possibility of technical visits to institutions to prospect for possible partners. Among the standout events are the congresses of the International Association for Energy Economics (IAEE) and the Florence School of Regulation. The project also will involve interaction with researchers of the recently created Latin American School of Regulation, an initiative that includes FGV through its Center for Study of Regulation and Infrastructure (CERI-FGV). Finally, there will be interactions with and/or technical visits to entities like Berkeley National Lab (USA), Harvard Electricity Policy Group (USA), MIT- Utilities of the Future and other similar ones.

Start and end: 08/2018 – 01/2022

Type	Quantitative
Indicator	Number of presentations
Current situation	2
Goal for 2nd year	4
Final goal	6
Type	Qualitative
Indicator	Reception of listeners
Current situation	Good
Goal for 2nd year	Very Good
Final goal	Excellent

Action 1.9.b: Grants to bring renowned foreign researchers and young talents.

Just as it is necessary to expose the results to the international scientific community and to companies and stakeholders involved in the changes under study, it is fundamental for the students and researchers of EPGE involved also to have contact with the main academics who work with utilities of the future and design of markets. For this purpose, it is important for renowned foreign researchers in the area in question to spend time at EPGE, giving classes and

interacting with the students and faculty members. The attraction of young talents is also important.

Start and end: 08/2018 – 01/2022

Type	Quantitative
Indicator	Researchers and teachers with experience at foreign research institutions with visitors to EPGE for studies in the area.
Current situation	0
Goal for 2nd year	0
Final goal	1

Action 1.9.c: Grants for researchers/professors of EPGE to take courses and do postdoctoral research abroad.

Besides exposure of the results and bringing foreign researchers to train the students and faculty of EPGE in the themes in question, it is also important for researchers of EPGE to spend more time in contact with international researchers. Sometimes a trip to present results or articles is too quick to take advantage of all the possibilities for interaction. Therefore, it is necessary for researchers of EPGE to spend longer periods abroad, maximizing contact with international specialists. These more intense contacts generate collaborative research.

Start and end: 08/2018 – 01/2022

Type	Quantitative
Indicator	Number of professors from EPGE abroad
Current situation	0
Goal for 2nd year	1
Final goal	3

## THEME 2: Economic and Social Development

Countries: Argentina, Canada, Chile, France, Holland, Italy, Portugal, Spain, United Kingdom and United States.

To improve the skills and deepen the theoretical understanding of the faculty and students of FGV on the theme of economic and social development, through the conduction of specific studies on: improvement of Brazilian public education; economic development; reduction of the levels of violence with victims in Brazil; education to motivate social insertion; environmental economics; and smart cities.

Objective linked to the theme: 2: 2.1. Improvement of Brazilian Public Education, from Early Childhood to Secondary School

Coordinator: Prof. Kaizô Iwakami Beltrão

Other countries are far ahead of Brazil in the quality of public education, as demonstrated by the results of the PISA (Programme for International Student Assessment) conducted by the OECD every three years. Despite the improvement presented, particularly in mathematics, the results regarding

the learning of Brazilian 15-year olds were among the worst of the 72 countries evaluated in 2015. Besides being a right guaranteed by the Brazilian Constitution, good-quality education is one of the main ways to reduce the country’s social inequalities. The low quality of Brazilian education today poses a huge barrier to the inclusive economic growth of the country.

Therefore, we intend to collaborate with international institutions to produce knowledge and create courses that support Brazilian education authorities to implement policies that result in better and more equitable learning.

Action 2.1.a: Creation of a professional master’s degree program in educational management in partnership with the best international institutions in the area.

Signing of a MoU with: (i) the Stanford University Graduate School of Education and Lemann Center of Stanford to bring the “PED Brasil” (Program for Teacher Specialization) to FGV, as a first step toward emphasis on classroom management. PED Brasil is the Brazilian version of the Stanford Teacher Education Program (STEP), coordinated by Rachel Lotan and Martin Carnoy, professors at the Stanford Graduate School of Education; (ii) NYC Leadership Academy and National Institute for School Leadership, two benchmarks in the training of school managers, to adapt their curriculums and promote interchange of students and professors for the creation of a professional master’s program in educational management; (iii) Harvard Graduate School of Education and the organizations New Leaders for New Schools and Broad Foundation, to adapt their curriculums, methods and materials and promote interchange of students and teachers for the creation of a professional master’s program in educational management. These three organizations have proven expertise in training superintendents of successful education systems in the United States.

In addition to the actions described above, visits will be made lasting at least one week to each of the institutions mentioned as partners for each of the three areas of emphasis of the professional master’s program, so that professors of FGV can personally learn about the structure, audit classes and fully understand the teaching methods used by the partners in their courses.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of professional master’s courses in educational management
Current situation	0
Goal for 2nd year	0
Final goal	1

Type	Quantitative
Indicator	Partnerships with foreign institutions
Current situation	0
Goal for 2nd year	2
Final goal	4

Action 2.1.b: Promotion of the production and dissemination of educational policies based on the best evidence to Brazilian public managers.

Production of educational policy briefs and guidelines based on the evidence produced nationally and internationally in comprehensible and accessible form to Brazilian public administrators, through the following activities: (i) signing MoUs with foreign institutions like CIPPEC (Argentina), SUMMA (Chile), Education Endowment Foundation (UK), Center for Universal Education of the Brookings Institution (USA), Learning Policy Institute (USA), Policy Analysis for California Education – PACE (USA), Lemann Center for Educational Entrepreneurship and Innovation (USA), Harvard Graduate School of Education (USA) and Teachers College of Colombia University (USA) for translation and adaptation of policy briefs, co-production of policy briefs and conduction of studies applied to Brazilian reality involving the students and professors of the master’s and doctoral programs of FGV EBAPE; (ii) organizing seminars at FGV with the participation of international researchers and professors of FGV EBAPE as speakers to disclose the policy briefs and guidelines produced jointly, with the presence of Brazilian public administrators, mainly representatives of Consed and the National Union of Municipal Education Directors (Undime); and (iii) participating in international seminars organized by the partner institutions to present the works produced by the FGV EBAPE about the paths to solve the main challenges faced by Brazilian public education.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of partnerships with foreign institutions for production and dissemination of content
Current situation	0
Goal for 2nd year	1
Final goal	2

Type	Quantitative
Indicator	Number of documents produced, translated and/or disclosed in partnership with foreign institutions
Current situation	0
Goal for 2nd year	2
Final goal	4

Type	Quantitative
Indicator	Participation in seminars to disclose the results and technical documents produced in partnership with foreign institutions
Current situation	0
Goal for 2nd year	1
Final goal	2

Objective linked to the theme: 2: 2.2. Economic Development and Public Policies

Coordinator: Prof. Braz Camargo

To understand what public policies can promote the economic development of a country. This is a question of primary importance for Brazil. We intend to improve the various studies that are being conducted by FGV in the area (productivity and economic growth, education, human capital, institutions), to encourage a multidisciplinary approach with focus on different areas of economics (applied microeconomics, applied macroeconomics, economic policy). To meet the proposed objectives, initiatives will be organized to exchange experiences and conduct debates about the studies developed, such as events, mini-courses, and exchange of faculty and students. Activities will be carried out with teaching and research institutions from Canada, France, Italy, Spain, United States and United Kingdom.

Action 2.2.a: Organization of annual mini-courses on economic development.

Inviting foreign researchers to give mini-courses on specific topics involving economic development.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of mini-courses per year
Current situation	0
Goal for 2nd year	2
Final goal	4

Action 2.2.b: Receiving foreign professor at FGV EESP.

Inviting foreign teachers to give mini-courses on the disciplines of the Graduate Program program of FGV EESP on the theme of economic development.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of foreign professors received by the Graduate Program of EESP
Current situation	0
Goal for 2nd year	2
Final goal	4

Action 2.2.c: Participation of faculty members of FGV EESP at international congresses.

Sponsorship to enable the participation of faculty members of FGV EESP at international congresses to present papers on economic development.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of papers presented by faculty members of EESP at international congresses
Current situation	0
Goal for 2nd year	5
Final goal	10

Type	Qualitative
Indicator	Level of participation of the teachers at international congresses to present papers
Current situation	Medium
Goal for 2nd year	Medium-high
Final goal	High

Action 2.2.d: Sandwich doctorate for students of the Graduate Program of FGV EESP

Granting of sandwich doctorate scholarships to students of the Graduate Program of FGV EESP who are developing research on the theme of economic development.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of doctoral student of FGV EESP participating in sandwich doctorate programs abroad
Current situation	0
Goal for 2nd year	4
Final goal	8

Action 2.2.e: Participation of young talents in the research and teaching activities of the Graduate Program of EESP

Promotion of the participation of young talents as researchers and teachers of the Graduate Program of FGV EESP for a period of one year.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Participation of young talents in the activities of the Graduate Program of EESP
Current situation	0
Goal for 2nd year	0
Final goal	1

Objective linked to the theme: 2: 2.3. Development of Mathematical and Computational Models to Optimize Strategies to Reduce the Levels of Violence with Victims in Brazil

Coordinator: Prof. Eduardo Massad

Violence, understood in its broad sense, can be defined as “aggression by external causes”. In general, there are essentially two types of violence: intentional (crimes) and unintentional (accidents). This division has support in the concepts proposed by Flaminio Favero of “criminal” and “accidental”. For purposes of legal liability, these categories are classified as “intentional” and “negligent”.

The study “Global Burden of Disease 2016”, published in volume 390, pp. 1083-1464, of the magazine *The Lancet*, calculated the total number of yearly deaths by violence in the world at 4.6 million, of them 1.5 million due to traffic accidents, 1.8 million due to unintentional injuries, 1.2 million by interpersonal violence, and 162 thousand due to natural disasters. The same study calculated the

number of disability-adjusted life-years (DALYs) due to the various forms of violence in the world as 255 million, of them 78 million by traffic accidents, 107 million caused by unintentional injuries, 59 million by interpersonal violence and 11 million by natural disasters.

In absolute numbers, Brazil occupies second place in the world in deaths caused by interpersonal violence and twelfth in deaths normalized per 100 thousand inhabitants.

The economic impacts of violence in Brazil still need to be estimated with some degree of precision, and this study will supply rational bases for reliable economic calculation. Besides this, it will provide support for possible alteration of Brazil's Penal Code and Code of Criminal Sentencing.

Therefore, the present project intends to construct databases, as well as optimize and integrate existing databases, to store and recover data of interest for formulating public policies. Mathematical optimization models will be constructed for strategies to reduce the levels of violence in Brazil, as well as its costs in terms of lives lost and economic performance.

The project will count on the participation of the Center for Data Science of New York University (USA), University of Coimbra (Portugal), University of Derby (United Kingdom), York University (Canada) and the Department of Legal Medicine of the University of São Paulo (USP).

Action 2.3.a: Organization by EMAP of mini-courses on the theme of violence with victims.

Invitations to foreign researchers to give mini-courses on the theme, aimed at students and professors of the schools involved in the project.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of mini-courses per year
Current situation	0
Goal for 2nd year	2
Final goal	2

Action 2.3.b: Participation of foreign teachers in the Graduate Program of EMAP

Participation of foreign teachers as visiting professors in the Graduate Program of EMAP, with the objective of conducting research and giving courses and presentations on the theme.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of foreign teachers in the Graduate Program of EMAP
Current situation	0
Goal for 2nd year	0
Final goal	1

Action 2.3.c: Visits of faculty members of EMAP to foreign research centers.

Promotion of visits by faculty members of EMAP, for variable periods, as visiting professor in the graduate programs of teaching and research institutions abroad, with the objective of conducting joint research and giving courses and presentations on the theme.

Start and end: 11/2018 – 07/2021

Type	Quantitative
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Indicator	Number of faculty members of EMAP visiting foreign teaching and research institutions
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 2.3.d: Participation in international congresses

Participation of professors of EMAP in international congresses on the theme, with presentation of papers.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of papers presented by faculty members of EMAP at international congresses
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 2.3.e: Sandwich doctorate abroad for students participating in the project.

Granting of sandwich doctorate scholarships to students abroad.

Start and end: 01/2019 – 12/2021

Type	Quantitative
Indicator	Number of students of FGV EMAP receiving sandwich doctorate scholarships to study abroad
Current situation	0
Goal for 2nd year	2
Final goal	3

Action 2.3.f: Long-duration visits to Brazil by young talents from abroad.

Long-duration visits to Brazil by young talents from abroad to carry out research with Brazilian colleagues.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of young talents visiting Brazil
Current situation	0
Goal for 2nd year	0
Final goal	1

Action 2.3.g: Conduction of an international congress

Conduction of an international congress with large dimension and importance in the premises of EMAP in Rio de Janeiro.

Start and end: 01/2021 – 12/2021

Type	Quantitative
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Indicator	Number of international congresses conducted
Current situation	0
Goal for 2nd year	0
Final goal	1

Objective linked to the theme: 2: 2.4. Education to Motivate Social Insertion

Coordinator: Prof. Pedro Cavalcanti Ferreira

To study the economic impacts of education on welfare, income, consumption and its effects on social inclusion, poverty and violence, among other areas. The program will propose human capital measures linked to the education of each individual (and of the nation as a whole) to reveal the importance of education to the financial development and personal well-being (national well-being). These metrics can guide optimal investment in education from the individual and national standpoints. Activities will be conducted with teaching and research institutions from the United States of America, Portugal, Spain, France and United Kingdom.

Action 2.4.a: Organization of mini-courses on education to motivate social insertion.

Invitations to researchers from foreign institutions to give mini-courses on specific topics within theme of education as a motivator of social insertion.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of mini-courses given per year
Current situation	0
Goal for 2nd year	2
Final goal	2

Action 2.4.b: Receiving foreign teachers at FGV EPGE as visiting professors.

Invitations to faculty members of foreign teaching institutions to give courses in the Graduate Program of FGV EPGE on the theme of education to motivate social insertion.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of foreign teachers received by the Graduate Program of EPGE
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 2.4.c: Promotion of visits of faculty members of FGV EPGE to foreign institutions.

Provision of financing for visits by faculty members of FGV EPGE to foreign institutions as visiting professors to give courses in the graduate programs.

Start and end: 10/2018 – 07/2022

Type	Quantitative
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Indicator	Number of teachers of EPGE that give courses at foreign institutions
Current situation	0
Goal for 2nd year	2
Final goal	3

Action 2.4.d: Participation of faculty members of FGV EPGE at international congresses

Promotion of the participation of faculty members of the Graduate Program of FGV EPGE at international congresses to present papers on education as a motivator of social insertion.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of papers presented by faculty members of EPGE at congresses
Current situation	0
Goal for 2nd year	30
Final goal	59

Action 2.4.e: Sandwich doctorate study abroad for students of FGV EPGE.

Granting of sandwich doctorate scholarships to students of FGV EPGE to study abroad.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of students of FGV EPGE taking part in sandwich doctorate programs abroad
Current situation	0
Goal for 2nd year	2
Final goal	2

Action 2.4.f: Visits of young talents from abroad to do research in Brazil.

Long-duration visits to Brazil of young talents from abroad to do research with colleagues of EPGE.

Start and end: 01/2019 – 12/2021

Type	Qualitative
Indicator	Number of young talents visiting Brazil
Current situation	0
Goal for 2nd year	1
Final goal	1

Objective linked to the theme: 2: 2.5. Environmental Economics: Deforestation, Land Use and Climate Change

Coordinator: Prof. Francisco Junqueira Costa

Clearance of tropical forests is one of the main causes of climate change. These forests capture carbon from the atmosphere and have a fundamental role in the (im)balance of the world's climate. While on

the one hand deforestation imposes environmental costs on society as a whole, the land use for productive purposes can generate income and better quality of life for the people who live in tropical forest biome areas. This is a classic problem in which private agents do not take into consideration the environmental externalities of their actions when deciding about the use of forest resources. This situation has direct implications both on the discussion of land use and its preservation and on the distributive effects of policies to prevent deforestation, agricultural incentives, infrastructure projects and local development. All these dynamics are heightened in a scenario of climate changes with uncertain impacts.

In these cases, given the environmental externalities, the economic theory suggests the existence of clear space for governmental intervention. However, a series of questions need to be addressed: What is the impact of climate change on land use and agricultural output? Which public policies can attenuate the effects of climate change, and how? Which public policies can help reduce the rate of deforestation and promote efficiency in the use of land for productive purposes, and how? What are the redistributive effects of such policies? What is the optimal level of those interventions?

The objectives of this project are to shed light on questions related to environmental economics utilizing microdata and frontier empirical methods.

Activities will be conducted with teaching and research institutions from the United States, United Kingdom and Canada.

Action 2.5.a: Participation of faculty members of FGV EPGE in international congresses and visits to foreign institutions.

Promotion of the participation of teachers from the Graduate Program of FGV EPGE in international congresses to present papers on environmental economics and for technical visits to foreign institutions.

Start and end: 10/2018 – 07/2022

Type	Quantitative
Indicator	Number of papers presented by faculty members of EPGE at congresses
Current situation	0
Goal for 2nd year	7
Final goal	14

Type	Qualitative
Indicator	Increased participation of faculty members of FGV EPGE at high-level international congresses
Current situation	Medium
Goal for 2nd year	Medium-high
Final goal	High

Action 2.5.b: Sandwich doctorate scholarships for students of the Graduate Program of FGV EPGE.

Granting of sandwich doctorate scholarships to students of the Graduate Program of FGV EPGE who are engaged in research involving environmental economics.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of students of FGV EPGE receiving sandwich doctorate scholarships to study abroad
Current situation	0
Goal for 2nd year	1
Final goal	1

Objective linked to the theme: 2: 2.6. Smart Cities: Urban Governance and Infrastructure

Coordinator: Prof. Maria Alexandra Cunha

It is necessary to prepare researchers, teachers and public administrators to meet the challenges of smart cities. In the 21st century, cities and/or urban regions will be the prevailing organizational form of the majority of societies in the world. Therefore, the challenges of sustainable development will be concentrated in cities, especially in developing or emerging countries. This project focuses on three areas: urban infrastructure, smart governance and management of critical events, to enable cities to be resilient. Other themes touched on due to their importance in the national context are urban mobility, health and security.

The focus on government involves identification and/or description of some contextually relevant aspects of governance in smart cities, by studying a local aspect and comparing it with international cases. The focus on management of critical events/resilience entails examining social and cultural aspects of data handling practices. Typically, data flow from the local level to centers of scientific expertise, and warnings of risks and/or interventions are directed to local governments and communities. Rethinking how the data related to critical events are produced and how they flow can help support the construction of sustainable and resilient communities.

The matters of how to define smart cities in emerging economies and the transferability of practices and technological devices to all areas of business and public policies remain open questions. The expectation is that technology can spur new levels of sustainable living in cities, and that new forms of relating between society and the government will develop, supported by technology. It is also expected that improved scientific production in a developing country will improve conditions in that country, considering co-creation of knowledge with practitioners. In Brazil, despite the existence of an agenda with some points in common with the international agenda, there are various particularities that need to be explored. The training of practitioners, public administrators, teachers and researchers seeks to expose them to international practices, but needs to be critically examined, based on the local multidisciplinary context. This project aims to prepare teachers and researchers to satisfy the following characteristics: internationalization, methodological rigor, local context, interaction with practice, and multidisciplinary.

Action 2.6.a: Training of doctoral candidates/researchers.

For a period of four years, the aim of this action is to train doctoral candidates regarding the three foci of smart cities: smart governance, urban infrastructure and management of critical events/resilience. Empirical research projects in each of these areas will be carried out with the participation of teachers and doctoral students in international partnerships. The development of the research activities will have two important characteristics: close

collaboration with officials of Brazilian cities and participation of sandwich doctoral students.

Start and end: 01/2019 – 07/2022

Type	Quantitative
Indicator	Number of PhD's awarded
Current situation	0
Goal for 2nd year	0
Final goal	3

Type	Quantitative
Indicator	Number of MSc's awarded
Current situation	0
Goal for 2nd year	1
Final goal	4

Action 2.6.b: Improvement of faculty members of the Graduate Program of EAESP in Smart Cities.

Training of teachers in the three areas of smart cities: smart governance, urban infrastructure and management of critical events/resilience. There will be two grants for senior Brazilian researchers to work abroad (6 months), one at Utrecht University and the other at Warwick University, and two postdoctoral grants for professors of other institutions at EAESP. The period at the University of Warwick will involve collaboration with the Centre for Interdisciplinary Methodologies for Cities. Professors of the program also will be involved in the empirical research and other actions of the project.

Start and end: 12/2018 – 07/2022

Type	Quantitative
Indicator	Number of senior researchers receiving grants to work abroad
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 2.6.c: Formation of an international network.

This action will involve visits by researchers from the University of Warwick and University of Utrecht and participation at research meetings and international events. The senior researchers will give classes to graduate students with the participation of Brazilian teachers. Of special importance will be the development of courses on research methods involving cities and technology. Permission will be negotiated with the professors to record the classes and make them available online by EAESP.

Start and end: 11/2018 – 07/2022

Type	Quantitative
Indicator	Number of courses given by visiting professors
Current situation	0
Goal for 2nd year	1

Final goal	2
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Type	Quantitative
Indicator	Number of graduate students participating in the courses
Current situation	0
Goal for 2nd year	10
Final goal	20

Action 2.6.d: Formation of a network of practitioners.

Conduction of international events in Brazil to foster integration of the community of practitioners with academia. The events will be open to the public in general with the participation of officials of cities that take part in the empirical cases, in Brazil and abroad, with external participation by videoconference technology.

Start and end: 09/2019 – 07/2022

Type	Quantitative
Indicator	Number of participants in events
Current situation	0
Goal for 2nd year	25
Final goal	50

Type	Quantitative
Indicator	Number of events held
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 2.6.e: Sandwich doctorate for students of the Graduate Program of FGV EAESP.

Granting of sandwich doctorate scholarships to students of the Graduate Program of FGV EAESP who are performing research on the theme of smart cities.

Start and end: 10/2018 – 12/2021

Type	Quantitative
Indicator	Number of doctoral students of FGV EAESP receiving sandwich doctorate scholarships to study abroad
Current situation	0
Goal for 2nd year	2
Final goal	3

### THEME 3: Monetary and Fiscal Policy

Countries: France, Portugal, Spain, United States, United Kingdom.

Justification for choosing the theme: Theoretical improvement and deepening of the faculty, students and researchers of FGV on the theme of monetary and fiscal policy, with the conduction of specific studies about: macroeconomic policy to face the risk of fiscal fragility and external crises; design of

efficient tax systems in the presence of chronic evasion and informality; monetary and fiscal policy efficiency; and financial theory and empirical finance.

**Objective linked to the theme: 3: 3.1. Macroeconomic Theory and Policies**

**Coordinator: Prof. Aloisio Pessoa de Araujo**

The inflation targeting regime, introduced in Brazil in 1999, has been an important ally to guarantee monetary stability. However, the recent fiscal deterioration, during which the gross debt has risen from 50% of GDP in 2013 and will reach 80% in 2020 according to projections by the Brazilian Institute of Economics (IBRE), poses a challenge to the success of the Brazilian Central Bank’s actions. This fiscal trajectory will reduce the capacity to coordinate inflation expectations at low levels and limit the scope of monetary policy.

The proposal of the project is to develop a model to allow evaluating the level of foreign reserves that maximizes a welfare measure of a country that, to acquire external assets, issues sovereign bonds denominated in local currency. In this way, to maintain a determined level of reserves, the country incurs the interest expense on the public debt and benefits from receiving the interest on the foreign assets. The choice of a level of reserves that takes into account the difference in the interest rates paid on the domestic liabilities and that received on the foreign assets contributes to avoid aggravating the public deficit in economies with fragile fiscal situations. The intertemporal approach of the model of Cole and Kehoe (2000) provides a possibility to carry out this study. In this setup, a government exists that consumes a single good in the economy, issues bonds denominated in local currency to domestic creditors and also acquires external assets. Besides this, the government can finance itself externally in foreign currency and accumulate foreign reserves to provide a buffer of liquidity for the economy. This affects the price of these bonds in the international market by reducing the sovereign risk premium. Thus a tradeoff exists between the cost of accumulating reserves and the reduced risk of the country’s default, which affects not only the return on the government bonds, but also those of domestic firms that obtain credits in the international financial market.

Action 3.1.a: Grants to attract researchers and young talents to EPGE.

It is fundamental for students and researchers of EPGE to have contact with the main academics who work with models to address the possibility of crises. For this purpose, renowned foreign researchers will be invited to spend time at EPGE to give courses and interact with the students and faculty members.

Start and end: 08/2018 – 07/2022

Type	Quantitative
Indicator	Number of foreign researchers giving courses and doing research at EPGE
Current situation	0
Goal for 2nd year	1
Final goal	3

Action 3.1.b: Trips to present the preliminary and final results of the research.

It is fundamental for the preliminary results of the studies performed at EPGE be exposed to renowned researchers at the international level, to be criticized and improved. When the final

results are ready, they will need to be disclosed to a broad public. This disclosure will also involve technical visits to foreign institutions to prospect for possible partnerships.

Start and end: 08/2018 – 07/2022

Type	Quantitative
Indicator	Number of presentations
Current situation	1
Goal for 2nd year	4
Final goal	6

Type	Qualitative
Indicator	Reception of audience members
Current situation	Good
Goal for 2nd year	Very Good
Final goal	Excellent

Action 3.1.c: Grants for training of teachers and researchers of EPGE

Besides widely disclosing the results of the study and bringing internationally renowned researchers to qualify the faculty and students in Brazil about the themes in question, it is also important for Brazilian researchers to spend time abroad in contact with their foreign peers. At times a trip to present the research results is too brief to take advantage of all the possibilities for interaction. For this reason, it is necessary for Brazilian researchers to spend longer periods at foreign research centers, to maximize the contact with international specialists. It is during these periods of more intense contact that joint research is conducted.

Start and end: 08/2018 – 07/2022

Type	Quantitative
Indicator	Number of researchers and professors of EPGE involved in international exchange programs
Current situation	0
Goal for 2nd year	2
Final goal	6

Objective linked to the theme: 3: 3.2. Labor Market, Taxation, Social Security and Economic Development: Theory, Evidence and Proposed Reforms

Coordinator: Prof. Felipe Iachan

This research project aims to determine how and to what extent informality and tax evasion affect the design of efficient tax policies. The particular concern is to understand how payroll taxes should be charged and thus what reforms can be proposed to reduce the economic distortions generated by tax evasion. The contributions of this work can be summarized as:

- (i) Gathering of empirical evidence about tax evasion and payroll taxation: to investigate how the level of tax evasion (and/or informality) is related to tax revenues, and to identify regularities between evasion and important sectorial characteristics.

(ii) Theoretical contribution to the literature on taxing policies: to contribute theoretically to the question of optimal taxation and tax evasion, by proposing a model that clarifies the behavior observed from the empirical evidence.

(iii) Taxation and evasion in Brazil: evaluation of the impacts of various policies to reduce or increase the payroll tax burden in the presence of evasion and informality, and to use this information to propose improvements in the tax system.

Activities will be carried out with teaching and research institutions of the United Kingdom.

Action 3.2.a: Grants for visiting professors in Brazil.

It is fundamental for the advancement of the researchers of EPGE to facilitate their contact with the main academics who work with modeling of tax systems. Therefore, grants will be given for renowned foreign professors to spend time at EPGE to interact with the faculty and students.

Start and end: 08/2019 – 08/2020

Type	Quantitative
Indicator	Number of visiting professors at EPGE
Current situation	0
Goal for 2nd year	1
Final goal	3

Action 3.2.b: Training in short-duration courses.

It is also important to the qualification, building of capacity for international articulation and construction of ties for the students of EPGE involved in this study to have contact with the research environment of renowned institutions abroad. For this project, the University of Cambridge would be a propitious setting for taking classes, given that a researcher of that school (Tiago Cavalcanti) is already involved in the project and there is room to expand the relationship with EPGE.

Start and end: 08/2019 – 08/2020

Type	Quantitative
Indicator	Number of hours spent by students abroad (in classes and research)
Current situation	0
Goal for 2nd year	200
Final goal	200

Action 3.2.c: Trips to present the preliminary and final results of the research.

It is fundamental for the preliminary results of the studies performed at EPGE be exposed to renowned researchers at the international level, to be criticized and improved. When the final results are ready, they will need to be disclosed to a broad public. This disclosure will also involve technical visits to foreign institutions to prospect for possible partnerships.

Start and end: 08/2019 – 08/2020

Type	Quantitative
Indicator	Number of presentations
Current situation	0

Goal for 2nd year	1
Final goal	3

Type	Qualitative
Indicator	Reception of audience members
Current situation	Unknown
Goal for 2nd year	Very Good
Final goal	Very Good

Objective linked to the theme: 3: 3.3. Monetary and Fiscal Policy

Coordinator: Prof. João Victor Issler

To investigate how monetary and fiscal policies can be improved under various points of view, including inflation targeting regimes, optimal taxation, and trade opening with floating exchange rate regimes, etc.

In economics, expectations are fundamental for agents' economic decisions. The Central Bank of Brazil has the best and most complete database of expectations in the world, which has whetted the interest of researchers in and outside Brazil. This is a long-term project that aims to understand and improve the efficiency of monetary policy by using this database on expectations. The initial focus is on inflation expectations, which are vital for implementing monetary policy. The objective is to understand how expectations are formed, their main determinants and dynamics, etc.

Activities will be carried out with teaching and research institutions from the United States, Portugal, Spain, France and United Kingdom.

Action 3.3.a: Organization of yearly mini-courses on monetary and fiscal policy.

Invitation of researchers from foreign institutions to give mini-courses on specific topics within the theme of monetary and fiscal policy.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of mini-courses given per year
Current situation	0
Goal for 2nd year	2
Final goal	4

Action 3.3.b: Reception of foreign teachers at FGV EPGE

Invitation of teachers from foreign institutions to give classes in the Graduate Program of FGV EPGE on the theme of monetary and fiscal policy.

Start and end: 10/2018 – 12/2021

Type	Quantitative
Indicator	Number of foreign teachers received by the Graduate Program of EPGE
Current situation	0

Goal for 2nd year	1
Final goal	1

Action 3.3.c: Participation of faculty members of FGV EPGE at international congresses.

Promotion of the participation of teachers of the Graduate Program of FGV EPGE at international congresses to present papers on monetary and fiscal policy.

Start and end: 11/2018 – 06/2022

Type	Quantitative
Indicator	Number of presentations by teachers of EPGE at congresses
Current situation	0
Goal for 2nd year	24
Final goal	49

Action 3.3.d: Promotion of visits of faculty members of FGV EPGE to foreign institutions

Financing visits of teachers of FGV EPGE to foreign institutions as visiting professors to give courses in graduate programs.

Start and end: 11/2018 – 06/2022

Type	Quantitative
Indicator	Number of teachers of EPGE participating in exchange programs at teaching and research institutions abroad
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 3.3.e: Participation of young talents in the research and teaching activities of the Graduate Program of EPGE

Promotion of the participation of young talents as researchers and teachers in the Graduate Program of FGV EPGE for a period of one year.

Start and end: 01/2019 – 07/2022

Type	Quantitative
Indicator	Participation of young talents in the activities of the Graduate Program of EPGE
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 3.3.f: Sandwich doctorate for students of the Graduate Program of FGV EPGE

Granting of sandwich doctorate scholarships to students of the Graduate Program of FGV EPGE who are conducting research on the theme of monetary and fiscal policy.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of sandwich doctorate students of FGV EESP studying abroad

Current situation	0
Goal for 2nd year	2
Final goal	2

Objective linked to the theme: 3: 3.4. Theory of finance and empirical finance

Coordinator: Prof. Cecilia Machado

To study financial theories and empirical finance for the purpose of improving the efficiency of the national financial system, taking advantage of successful experiences of other countries in terms of business climate and regulatory environment.

In finance, it is important to study the interaction between the macroeconomic and financial environments based on a financial theory, because economic agents decide about consuming and saving together. This has macro implications – consumption – and financial implications – how to transfer wealth from one period to another, i.e., how to save. Integrated studies of this nature are relevant to the population, given that the most recent global crises originated in the financial sector.

Activities will be carried out with teaching and research institutions from the United States, Portugal, Spain, France and United Kingdom.

Action 3.4.a: Participation of faculty members of FGV EPGE at international congresses.

Promotion of the participation of teachers of the Graduate Program of FGV EPGE at international congresses to present papers on the macroeconomic theory and policies.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Presentation of papers by teachers of EPGE at international congresses
Current situation	0
Goal for 2nd year	29
Final goal	57

Action 3.4.b: Organization of annual mini-courses on monetary and fiscal policy.

Invitation to researchers from foreign institutions to give mini-courses on specific topics within the theme of macroeconomic theory and policies.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of mini-courses given
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 3.4.c: Promotion of visits of faculty members of FGV EPGE to foreign institutions.

Financing of visits of teachers of FGV EPGE to foreign institutions as researchers or visiting professors to give courses in graduate programs.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of teachers of EPGE involved in exchange programs at foreign teaching and research institutions
Current situation	0
Goal for 2nd year	2
Final goal	2

Action 3.4.d: Sandwich doctorate for students of the Graduate Program of FGV EPGE.

Granting of sandwich doctorate scholarships to students of the Graduate Program of FGV EPGE who are conducting research on the theme of the theory of finance and macroeconomic theory and policies.

Start and end: 11/2018 – 12/2021

Type	Quantitative
Indicator	Number of students of FGV EPGE taking part in sandwich doctorate programs abroad
Current situation	0
Goal for 2nd year	1
Final goal	1

#### **THEME 4: Innovation and Technology**

Countries: Canada, China, Germany, India, Italy, Japan, Mexico, Russia, South Africa, Spain, Switzerland, United Kingdom and United States.

Justification for choosing the theme: To improve and deepen the theoretical knowledge of the faculty, researchers and students of FGV on the theme of innovation and technology, with the development of specific studies on: innovation in the public sector; data science in the social sciences; machine learning for evaluation of public audits and law in the digital era.

#### **Objective linked to the theme: 4: 4.1. Innovation in the Public Sector**

**Coordinator: Prof. José Antonio Puppim de Oliveira**

To understand the relationship between innovation in the public sector and better social development and governance. The general objective of the program is to prepare faculty members and researchers to generate and disseminate basic scientific knowledge in the field of public administration and government, to provide analytical tools for the study of the State, public management and policies. Hence, innovation in the public sector is a central theme of this program, especially due to its bearing on current affairs. The few studies that have sought to understand innovation from a Schumpeterian perspective of the association with implementation of innovative practices classify innovation as not only the implementation of a new public policy conception/practice, but also its diffusion and replicability. Therefore, the objective will be to understand innovation in the following thematic dimensions: local and territorial development, accountability, participation, vulnerabilities, social inclusion, climate change, citizen science, institutional arrangements and strengthening of democracy.

Action 4.1.a: Conduction of doctoral consortiums

Conduction of doctoral consortiums for students of FGV EAESP and Cardiff Business School in São Paulo, at FGV EAESP, for a period of 10 days, to share research experiences and results on innovation in the public sector.

Start and end: 03/2019 - 12/2020

Type	Quantitative
Indicator	Number of doctoral consortiums held
Current situation	0
Goal for 2nd year	0
Final goal	1

Action 4.1.b: Conduction of field study missions - China

Conduction of field study missions in China (Shanghai and Beijing) about innovations in the public sector and climate change, with participation at the Earth System Governance conference.

Start and end: 06/2019 - 12/2019

Type	Quantitative
Indicator	Number of missions realized
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 4.1.c: Conduction of field study missions - Spain

Conduction of field study missions in Spain with Brazilian researchers (FGV EAESP) to learn about innovations experiences in the public sector, with emphasis on accountability, local development and climate change in Madrid, Salamanca and Barcelona.

Start and end: 04/2021 - 07/2021

Type	Quantitative
Indicator	Number of missions realized
Current situation	0
Goal for 2nd year	0
Final goal	1

Action 4.1.d: Organization of a conference on innovation in the public sector in emerging countries.

Realization of an international conference open to researchers for discussion of innovation in the public sector, with emphasis on questions of local and regional development, accountability, participation, vulnerabilities, social inclusion, climate change, citizen science, institutional arrangements and strengthening of democracy.

Start and end: 08/2021 - 10/2021

Type	Quantitative
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Indicator	Number of conferences held
Current situation	0
Goal for 2nd year	1
Final goal	1

Action 4.1.e: Exchange program for doctoral students.

Granting sandwich doctorate scholarships for six months to students of the the program.

Start and end: 11/2018 - 12/2021

Type	Quantitative
Indicator	Number of students receiving sandwich doctorate scholarships
Current situation	0
Goal for 2nd year	6
Final goal	9

Action 4.1.f: Exchange program for professor.

Exchange program for senior and junior Brazilian professors and foreign colleagues, both in Brazil and abroad.

Start and end: 11/2018 - 07/2022

Type	Quantitative
Indicator	Number of professors taking part in the exchange program
Current situation	0
Goal for 2nd year	3
Final goal	6

Action 4.1.g: Encouragement of mobility of young scholars

Reception of professors from foreign institutions or who are working at financial institutions for periods in postdoctoral internships or visitation.

Start and end: 10/2018 - 07/2022

Type	Quantitative
Indicator	Number of professors that participate in internships
Current situation	0
Goal for 2nd year	0
Final goal	1

Objective linked to the theme: 4: 4.2. Data Science and Social Sciences

Coordinator: Prof. Celso Castro

The project will last three years, with the aim of expanding the computational approaches for analysis developed in the first phase of the project called “Big Data for Big Questions” (2017-2018), carried out in partnership with Columbia University. The project will also support innovation in teaching by developing exercises based on quantitative and qualitative methods combined in teaching activities. Finally, new methodological approaches will be developed in the field of digital humanities.

The modeling of the archives of FGV CPDOC will improve accessibility of researchers to the collection, strengthening the links of FGV CPDOC in global research networks and enhancing the global reputation of FGV as a center of academic excellence in the area. Besides this, it will promote the objective of FGV to train students with analytical skills that combine quantitative and qualitative methods. Finally, it will be a platform to foster relationships with other institutions that have centers in this field of rising importance, especially at Columbia and Princeton universities, opening paths for collaborative projects and international financing.

Action 4.2.a: Adaptation of the model of the CPDOC archive

The project will apply methods developed in the first phase to the CPDOC archive by means of topic modeling of key holdings. By exploring the archive with digital tools, the project will establish new connections among the different segments of the collection not envisioned previously. The online diffusion of the results will increase the international accessibility to the archives of CPDOC by providing researchers with a more detailed understanding of the contents. This will contribute to the institutional development, increase international visibility and strengthen the research links between FGV and its international partners.

Start and end: 01/2019 - 12/2020

Type	Qualitative
Indicator	Scope of disclosure of results of applying computational methods to the archive in an online platform and through international partners
Current situation	Regular
Goal for 2nd year	Excellent
Final goal	Excellent

Action 4.2.b: Development of innovative teaching techniques.

The project will contribute to the development of the graduate program by preparing exercises that will apply, in classrooms and activities developed by the students, the results of research that combines quantitative and qualitative analysis. Students will be presented with a large volume of structured and unstructured data, according to the needs of the computational methods being used. Then they will apply their research skills to make sense of the results.

Start and end: 01/2020 - 12/2021

Type	Qualitative
Indicator	Level of learning skills in qualitative-quantitative methods by students of the graduate program, measured based on the grades given during the courses
Current situation	None
Goal for 2nd year	Sufficient
Final goal	Sufficient

Action 4.2.c: Development of new research methods.

The project will deal with opportunities and challenges for the analysis of a broader dataset than in the first phase (2017-2018). The dataset will consist of around 200,000 documents, compared to the 5,700 documents about Brazil used in the first phase of the project. By

overcoming the challenges involved in modeling of this scale, the study will provide a path to future modeling of the entire collection of CPDOC, putting FGV in the vanguard in the field.

Start and end: 01/2020 - 12/2021

Type	Qualitative
Indicator	Efficacy of new methods, based on ongoing evaluation of the challenges and gains for research found during the analysis
Current situation	None
Goal for 2nd year	Sufficient
Final goal	Sufficient

**Objective linked to the theme: 4: 4.3. Machine Learning for Evaluation of Public Audits**

**Coordinator: Prof. Ricardo Lopes Cardoso**

Development of machine learning solutions (applications - Apps) to evaluate the quality of the audits conducted by the various audit tribunals about the fiscal management of Brazilian municipal governments.

In 2017, about R\$ 6 billion was spent on external control in Brazil. Nevertheless, the frequent corruption scandals involving public agents and the inadequate allocation of public resources cast doubt on the Independence and quality of the control exercised by the audit tribunals. Since Brazil has over 5,000 municipalities that prepare financial reports containing various accounting statements and explanatory notes, and that all of these are supposedly audited by the audit tribunals, which in turn prepare extensive reports, the oversight of governments generates big data. Thus, this project is only viable by developing machine learning applications.

Action 4.3.a: Realization of study and research missions – United States

Realization of study and research missions at Rutgers University (USA) to take classes on the theme of machine learning.

Start and end: 11/2018 - 07/2022

Type	Quantitative
Indicator	Number of teachers, students and researchers trained
Current situation	0
Goal for 2nd year	3
Final goal	6

Action 4.3.b: Development of research projects involving administration and/or accounting and machine learning

Encouragement of the development of research projects involving administration and/or accounting with focus on the theme of machine learning in partnership with teachers, students and researchers from Rutgers University (USA).

Start and end: 11/2018 - 07/2022

Type	Quantitative
Indicator	Number of research projects about administration and/or accounting and machine learning begun

Current situation	0
Goal for 2nd year	1
Final goal	2

Type	Quantitative
Indicator	Number of studies completed with articles submitted for publication
Current situation	0
Goal for 2nd year	1
Final goal	2

Action 4.3.c: Realization of seminars about data analytics and machine learning.

Realization of four research seminars (colloquiums) about data analytics and machine learning applied to accounting and auditing, with participation of international researchers, mainly from Rutgers University (USA) and New Castle University (United Kingdom).

Start and end: 11/2018 - 07/2022

Type	Quantitative
Indicator	Number of seminars held
Current situation	3
Goal for 2nd year	4
Final goal	5

Action 4.3.d: Development of Apps – 1st Cycle

Development of ML Apps to integrate the data from the “annual accounts” “RREO” and “RGF” of various municipal governments for various years. These data are available on the internet in non-integrated and inconsistent form from the National Treasury Secretariat, by means of the system called SICONFI.

Start and end: 01/2019 - 07/2022

Type	Quantitative
Indicator	Number of observations (i.e., municipalities/year) integrated in the database
Current situation	0
Goal for 2nd year	800
Final goal	12,000

Action 4.3.e: Development of Apps – 2nd Cycle

Development of applications for visualization of financial data of municipal governments (data visualization).

Start and end: 07/2019 - 07/2022

Type	Qualitative
Indicator	Clarity and representativeness of the dashboard
Current situation	Inexistent
Goal for 2nd year	Good

Final goal	Very good
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Action 4.3.f: Development of Apps – 3rd Cycle

Development of critical Apps and search for inconsistencies in the financial data from Brazilian municipalities (continuous auditing).

Start and end: 07/2019 - 07/2022

Type	Quantitative
Indicator	Number of validators
Current situation	0
Goal for 2nd year	20
Final goal	40

Type	Qualitative
Indicator	Relevance of validators
Current situation	Inexistent
Goal for 2nd year	Good
Final goal	Very good

Action 4.3.g: Development of Apps – 4th Cycle

Cross-checking nonconformities indicated by the audit tribunals with the inconsistencies detected in the financial data presented by the Brazilian municipal governments.

Start and end: 01/2020 - 07/2022

Type	Quantitative
Indicator	Number of observations “read”, tabulated and classified
Current situation	0
Goal for 2nd year	26
Final goal	200

Action 4.3.h: Collation of data.

Collation of the nonconformities indicated by the audit tribunals with the inconsistencies detected.

Start and end: 01/2021 - 07/2022

Type	Qualitative
Indicator	Clarity and representativeness of the comparison
Current situation	Inexistent
Goal for 2nd year	Good
Final goal	Very good

Action 4.3.i: Participation in international research congresses and seminars.

Participation in research congresses and seminars organized by universities or institutions recognized for the quality of their research in data analytics, machine learning, accounting, auditing or business, to develop networking and disseminate the results of the study.

Start and end: 11/2018 - 07/2022

Type	Quantitative
Indicator	Participation in congresses and seminars
Current situation	0
Goal for 2nd year	2
Final goal	4

Objective linked to the theme: 4: 4.4. Law in the Digital Era

Coordinator: Prof. José Garcez Ghirard

In recent years, the internet has transformed the way people relate to each other, acquire goods and services and communicate with the world. The use of new technologies has expanded the channels for international communication and interaction, and has enabled the creation of global networks by means of social networks, besides leading to the creation of new businesses. In the law, these transformations are reflected in the emergence of new areas (e.g., digital law), along with the need to think about new regulatory designs and specific tax models for some goods and services. Besides this, the role of legal practitioners has also been affected by these transformations, since the advent of artificial intelligence tools has intensified the relationship of the law with technology. In this context, it is fundamental to understand: (i) the functioning of these new businesses and sectors of the economy, to know how to react to the social relations arising from this scenario; and (ii) how legal practitioners will be affected and what changes need to happen so that law students and young lawyers can adapt to this new reality. For this purpose, this theme encompasses two central projects: (i) To understand how new technologies are impacting the legal profession, reorganizing functions and activities of lawyers in the private and public sectors, and how this process can impact legal education in Brazil. We will foster debate on the impacts of new technologies on Brazilian society, with special attention to the legal challenges created by the appearance of new conflicts.

(ii) To map the challenges of regulating and taxing the new transactions that arise with new technologies. The idea is to understand and confront the institutional challenges of taxing the cloud. This study intends to concentrate on the theme of cloud taxation and face the challenges that that possibility presents. In this respect, the first question that should be answered is related to the solution of the apparent conflict of competence between ICMS (state value-added tax) and ISS (municipal service tax), raised by the wording of ICMS Convention 181/2015 and item 1.03 of the list annexed to Complementary Law 116/2003.

In the internal ambit, we will stress the expansion of the insertion of debates on the law and new technologies in the curriculums of the undergraduate and postgraduate law programs of FGV LAW SP, to improve the competencies and skills to be developed so that those students can deal with the transformations occurring in an increasingly digital society.

Action 4.4.a: Conduction of in-depth interviews with relevant actors, such as policymakers, specialists in the area and stakeholders in Brazil and abroad.

The conduction of interviews with relevant actors, especially foreign ones, is essential to develop studies about the law and technology. The idea is for these interviews to help qualify the study and frame the international debates regarding the themes to be addressed. The

conduction of interviews is also important to strengthen the institutional relationships at the international level.

Start and end: 01/2019 - 12/2021

Type	Quantitative
Indicator	Number of interviews conducted; matters related to them disclosed
Current situation	0
Goal for 2nd year	4
Final goal	6

Action 4.4.b: Comparative analysis with legislation of other countries.

Comparative analysis with the legislation of other countries is fundamental to accompany international trends regarding regulation of Technologies. Furthermore, various international normative instruments, such as the recent General Data Protection Regulation (European Union) will likely have effects on Brazilian regulation.

Start and end: 01/2019 - 12/2021

Type	Quantitative
Indicator	Number of interviews conducted
Current situation	0
Goal for 2nd year	8
Final goal	12

Action 4.4.c: Dissemination of the results at international events to solidify partnerships with international institutions and promote exchange of ideas.

We believe that the research results can have international reach, since they involve themes with global impact, e.g., the relationships between technology and the law. In the period stipulated, we intend to participate in at least four international events, two in Europe and two in North America, such as: Internet Governance Forum, Internet Law Research Colloquium and TILTING Perspectives, among others. Since the umbrella “law in the digital era” covers themes with global impact, it is essential to participate in these types of events to strengthen the academic and institutional dialog.

Start and end: 01/2019 - 12/2021

Type	Quantitative
Indicator	Number of participations at international events
Current situation	0
Goal for 2nd year	2
Final goal	4

Action 4.4.e: Organization of academic events at FGV to conduct debates involving the impacts of new technologies.

Events will be held to present the preliminary and final results of the study. The events in general will be open to the public and will in many cases be transmitted online. The idea is to disseminate the results as widely as possible and to open an opportunity for interaction of various sectors of society during the events.

Start and end: 01/2019 - 12/2021

Type	Quantitative
Indicator	Number of events held
Current situation	1
Goal for 2nd year	2
Final goal	3

## Counterparts

### **1. Internationalization of the curriculum - Incorporation of international themes in undergraduate and postgraduate classes (up to 2,500 characters)**

The following international themes have been incorporated in FGV's programs: African history, Afro-Brazilian history, African and Afro-Brazilian culture, international economics, international finance, compared sociology, international law, sustainability in unstable environments and developing countries, along with a large set of disciplines composing the international relations program, formed by faculty of various nationalities. The managers, teachers and researchers of FGV integrate Institutional Boards with high reputation in different continents. FGV also promotes international seminars in line with its mission of contributing to Brazil's development. Among these are a seminar on production and use of energy from renewable and non-renewable sources and questions associated with Brazilian and international macroeconomics, with impact on regional and national development. Many of these seminars attract the participation of CEOs of large companies or winners of international distinctions, such as seminars with participation of Jorge Paulo Lehman, John Nash and James Heckman, to name a few.

### **2. Production of international publicity material in other languages, including course websites (up to 2,500 characters)**

FGV will intensify the production of disclosure material in other languages, by:

- 1) creation of a website in English for all the schools' postgraduate programs;
- 2) production of folders, enrollment forms and school orientation manuals in English; and
- 3) annual production of a trilingual (Portuguese, English and Spanish) booklet called "Highlight of Applied Research Projects", containing information on the highlights of research projects considering the relevance of their contribution to advancement in the social sciences and impact on society.

### **3. Training and qualification of staff for institutional internationalization (up to 2,500 characters)**

FGV is already an internationalized institution, where the faculty and technical staff have preparation to interact with researchers, students and other interested people, such as representatives of the UN, Organization of American States (OAS), IMF and World Bank, during the daily routine. Also to assure efficiency and facilitate the visits of foreigners, the schools have bilingual secretaries to deal with visitors. Furthermore, formally speaking, FGV has an International Directorate ready to assist the hosting of visitors from all over the world.

Besides this, the team members of the Research Network, the unit to support researchers, receive training of the highest quality by taking courses abroad. They also pay visits to foreign teaching and research institutions (American and European) for benchmarking in the area of research management, and participate in international conferences such as those sponsored annually by the European Association of Researchers, Managers and Administrators (EARMA) and Society of Research Administrators International (SRAI).

**4. Counterparts offered by foreign partnership institutions, when applicable (up to 2,500 characters)**

The counterparts offered by foreign institutions consist of reciprocity in relation to those offered by FGV. The main counterparts are the joint research carried out, making FGV a world-class institution, and the flow of faculty and students.

**5. Other counterparts, when applicable (up to 5,000 characters)**

An essential component for the development and execution of multidisciplinary research projects with high social impact is the existence of a structure of incentives focused on this type of project. In this respect, FGV has an internal fund to finance the research projects selected by the Research and Innovation Commission, the Applied Research Fund (FPA-FGV). Part of the Fund's money is earmarked to finance research actions related to the ProjII, which will have priority in the selection process and in financing from the FPA-FGV.

## ORÇAMENTO

Benefício	Valor
Valor dos Projetos de Cooperação	R\$ 15.449.686,72
Valor das Missões não vinculadas a projetos de pesquisa	R\$ 253.388,00
Valor das Bolsas não vinculadas a projetos de pesquisa	R\$ 433.821,16
Valor de Outras ações	R\$ 0,00
<b>Valor Total do Projeto</b>	<b>R\$ 16.136.895,88</b>



