

Research teams operating in the 2020/21 school year

DOCTORAL SCHOOL OF GENERAL AND QUANTITATIVE ECONOMICS

Empirical study of decision making under uncertainty

Research team leader: Barna Bakó – barna.bako@uni-corvinus.hu

Affiliation: Department of Microeconomics

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: In this research, we analyse decisions people make under uncertainty. The basis of our research is the observations of bets and game outcomes placed on a bitcoin based website, running a very simple coin-flip-type game with a fix house percent. The betting and response data can be extracted - to a closely full certainty - from the public bitcoin ledger, and a contraction of bitcoin addresses can be used to identify games belonging to certain users. This results in a unique database (10+ million games over 3 years) of consecutive user decisions. This gives us the opportunity to test the validity of earlier observations. More specifically, we would like to check the presence of the hot hand, the gambler's fallacy and the house money effect in the dataset.

The main questions we want to answer in this research are:

- How consistent is the presence of the above biases over individual users?
- How persistent are the model parameters of prospect theory over the population and the individual players over time? Is there a connection between user behaviour and closely related external factors of the game, like the price of bitcoin?

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Determinants and dynamics of the shadow economy in Central Eastern Europe

Research team leader: Dávid Burka – david.burka@uni-corvinus.hu

Affiliation: Department of Computer Science

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: The COVID-19 virus has left a mark on nearly all events of the year 2020. There are many studies that examine the medical, economic and social effects of the pandemic; however only a few are concerned with how the reactions of the society effect the spread of the virus. The goal of our study is to explore and analyse the connection between the activities of the pandemic deniers and the spread and caused damaged of the COVID-19 virus.

Even though most of the population adheres to the restrictions, the echo of the COVID deniers and the anti-maskers makes it more difficult to act effectively against the virus. The range of the activity of the deniers is wide; it can be anything between posting an opinion on a forum or the spread of conspiracy theories that led to burning down some of the 5G towers. The common feature of these is misinformation, which for example can lead to anti-mask demonstrations, and thus indirectly to thousands of new infections.

In our research, we will discover the timeline of the activity of pandemic deniers through text mining solutions (i.e.: topic modelling and mood analysis). The required data sources will be gathered through the application of web scraping solutions on the most widespread social media of the respective countries. Results will be compared with the statistic of diseases, deaths and indicators measuring the severity of government actions published by organizations like the WHO. We will examine the Granger-causality of the connections of the time series with Toda-Yamamoto test, and will try to discover the direction and extent of causality between the reaction of the society and the spread of the virus.

Our research was inspired by the EFOP-3.6.2-16-2017-00017 „Sustainable, intelligent and inclusive regional and city models” tender, in connection with which the research leader was engaged with the study of mortality indexes. Our research group aims to examine a new layer of the causal relationships of the pandemic with the help of data mining. The considerable amount of data that we plan to collect within the framework of the research can establish new research directions, our long term plans include simulation modelling.

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Application of Artificial Intelligence in the Prediction of Renewable Energy Generation

Research team leader: Csaba Csáki – csaki.csaba@uni-corvinus.hu

Affiliation: Department of Information Systems

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: This research connects two „trendy” areas, namely Artificial Intelligence and Renewable Energy Production. It plans to apply Neural Network based learning algorithms to improve the prediction of electrical energy production by solar farms (and wind turbines).

DOCTORAL SCHOOL OF BUSINESS AND MANAGEMENT

The impact of teaching sustainability and responsibility topics on university students

Research team leader: Katalin Ásványi - katalin.asvanyi@uni-corvinus.hu

Affiliation: Department of Media, Marketingcommunications and Designcommunications

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: In the 21st century, the structure of higher education has undergone major changes, its framework has been restructured, and the question of what knowledge, skills, attitudes and autonomy higher education students need arises during the design and rethinking of different disciplines. Each course has its own role along the output requirements in relation to each course, so an important question is what each course aims to achieve, what we want to achieve with its teaching, and what impact we can have on the students in the subject. The aim of the present research is to compare the impact of CSR education on students depending on the project topic and the online or offline education.

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Status of PLS-SEM in case of Hungarian academic business and management research

Research team leader: Ildikó Kemény – ildiko.kemeny@uni-corvinus.hu
Affiliation: Department of Marketing Research and Consumer Behaviour
Duration of the research: 5 months
Available scholarships: 1 PhD and 1 MA positions

Research description: In the past years, the PLS-SEM method has become a more and more popular tool not only for the international research community but also for the Hungarian academic professionals. The method has been developed in the previous period and several international recommendations have been formulated as methodological expectations on PLS-SEM research. The main research question for our research group is how the PLS-SEM method appears in domestic academic management research. Is there any typical field or frequent failure? What kind of recommendations might be worded for the Hungarian academic community? In our research, we would like to not only evaluate the domestic situation but also create a fresh manual about the professional application of the method.

Analysis of risk premium using advanced econometric methods based on ESG indicators

Research team leader: Helena Naffa – helena.naffa@uni-corvinus.hu
Affiliation: Department of Investments and Corporate Finance
Duration of the research: 5 months
Available scholarships: 1 PhD and 1 MA positions

Research description: Environmental, social and governance aspects are collectively known as ESG factors, which have gained significant importance in finance recently. The equity risk premium (ERP) is a fundamental quantity in all asset-pricing areas; it is a key measure of risk aversion of investors and an important determinant of the cost of capital for corporations and the savings decisions of individuals also. (Damodran, 2019) The equity risk premium usually moves to the forefront in case of economic shocks, recently for the coronavirus pandemic, as it is a leading indicator of the evolution of the economy, a potential explanation for jobless recoveries, and a gauge of financial stability. (Duarte and Rosa, 2015) In our research, we focus on analysing the effects of economic shocks on ERP by using advanced econometric methods based on ESG indicators. Also, we investigate the reasons behind the economic shocks, especially its recent behaviour, during the coronavirus pandemic. If we have significant results, then

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the implications for the investment industry is obvious. This would provide empirical evidence that taking into account ESG factors in investment decisions helps economies and societies towards more sustained living conditions and improved wellbeing.

DOCTORAL SCHOOL OF INTERNATIONAL RELATIONS AND POLITICAL SCIENCE

Impacts of Populism on Foreign Policy-Making: South America and Europe

Research team leader: Bernadett Lehoczki – bernadett.lehoczki@uni-corvinus.hu

Affiliation: Department of International Relations

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: The phenomenon of populism has emerged on a global scale during the last two decades, as populist politicians, parties and movements have risen from Europe to the United States through Latin America and Asia, with a dynamism and intensity not experienced earlier. Research on populism – first of all in political science – traditionally focused on domestic politics, since it had deep impacts on the given country's political system and economic policy, typically characterized by inward-looking attitude and isolation. In the 21st century, the emergence of populism in a widening space has led to activating links between populist actors. Meanwhile, populism – as an ideology and strategy – influences foreign policymaking more directly as populist actors are not only in opposition but also in power.

Academic literature focuses on 'regional variations of populism' (Moffitt – Tormey: 2014, 383), emphasizing that regional political, economic, social and cultural context essentially influences the practice and elements of populist policies. Consequently, no 'unified' foreign policy practice is shared by populist actors, as these actors perceive the international order from different perspectives, based on which international actors and phenomenon are identified as 'enemies' (them) and as 'friends of our people' (us) (Woods: 2014, 10). Populists in power or aspiring to get into power define themselves and other actors through different roles and identities leading to different foreign policy practices ((Verbeek – Zaslove: 2017). The research defines the impacts of populism on foreign policymaking by changing patterns of behaviour towards external partners and by changing patterns of attitude towards international organisations and institutions (global, regional and inter-regional forums). 'Promise of change' is an integral part of populist campaigns and a common feature of populist actors.

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The research team attempts to explore the links between populism and foreign policymaking through the examples of South America and Europe (with a focus on Spain and Central Eastern Europe) for a deeper understanding of the phenomenon of populism, its impacts on IR and the (post-) liberal international order.

DOCTORAL SCHOOL OF SOCIOLOGY AND COMMUNICATION SCIENCES

We and the AI: narratives on the application of artificial intelligence in education

Research team leader: Tamás Bokor – tamas.bokor@uni-corvinus.hu

Affiliation: Department of Communication and Media Studies

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: Technologies based on artificial intelligence (AI), i.e. self-learning algorithms, are increasingly present in education, among many other areas. In its 2018 report, the Congressional Research Service identifies four main areas in which AI technologies can serve education: facilitating tutoring processes through intelligent tutoring systems (ITS), developing and tracking personalized, individual learning pathways, examinations on fine-tuned levels of difficulty; automation of various teaching tasks (e.g. keeping attendance sheet and grading diary, generating question sets for tests etc.).

Alongside with these perspectives, there is an exciting discourse on the future of education at the intersection of traditional pedagogical processes and (at least in part) automatable pedagogical work. The aim of the research is to map up the opinions of practicing educators and last year high school students preparing from public education to higher education regarding the application of AI in educational technology, and to reveal the narratives of these groups.

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Recognition of imaging artificial intelligence products

Research team leader: Ágnes Veszelszki – agnes.veszelszki@uni-corvinus.hu

Affiliation: Department of Communication and Media Studies

Duration of the research: 5 months

Available scholarships: 1 PhD and 1 MA positions

Research description: Originally, the birth of photography was encouraged by the renaissance artists' intention of illustrating the reality in the most lifelike way. However, thanks to the continuous development of different image editing technologies, this principle has completely transformed by the 21st century: nowadays, photos are not meant to entirely reflect real life, but to construct a whole new reality for their viewers. According to Friston's (2005) research, people have an innate knowledge of how a real human face or an original photo should look like, and this skill makes them able to instinctively recognize whether a picture does not correspond to reality. The results of an American survey carried out in 2017 (Nightingale et al., 2017) contradict the assumption mentioned above: it claims, that people can barely perform better than coincidence, when they have to recognize if a photo is a manipulated or an original one, and even less viewers can precisely locate the exact place of the image manipulation.

The research investigates whether the visually not experienced digital media users are capable of identifying image and video manipulation, and if any differences can be found in the viewers' recognition effectiveness in visual and moving audio-visual contents.

The extremely professional production of manipulated photos and deepfake videos can easily mislead the unsuspecting and inexperienced viewers. The fact, that these manipulated contents are using real image sequences with some very slight changes, makes it even harder to perceive the fake media contents. Thus, the distinction of facts and fictions is becoming more and more difficult. This research is involved in the particularly important, current scientific discourse of misinformation and disinformation.

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