

Our research impact



Stories and
achievements

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Why we care about impacts

Our research impact brochure turns the spotlight on WU's research impacts on society. Science and research make significant contributions to solving the economic, social, legal, and ecological challenges of the day, to generating and maintaining prosperity, and to improving the quality of our lives. By generating new knowledge, research directly affects business practices, legislation, and public policies. Moreover, it stimulates technological developments and shapes the public opinion.

With its research, WU aims to deliver excellent research performance in fields related to economics and business, generate publicly available knowledge, and create added value from its clear commitment to a diverse range of disciplines. As a public university, WU's research, to a large extent, relies on public funding. This allows WU to pursue long-term development perspectives, but at the same time, implies an obligation towards society to fulfill its responsibility to its stakeholders. This means that WU not only accepts responsibility for the quality of its research, but also that it acts in a socially responsible manner in all that it does.

To live up to this role as a responsible university, WU aspires to create positive impacts on the economy and society, and actively works towards contributing to the UN Sustainable Development Goals. To achieve those positive effects on society, it is necessary to know about impacts and communicate them transparently. To create awareness of its impacts, WU started systematically identifying and mapping the benefits generated for society.

This brochure presents a variety of societal impacts that WU creates through its diverse research and knowledge transfer activities. It provides a selection of 30 impact cases, each of which illustrates one specific research project and its impacts in detail. With these stories, the brochure offers best practice examples of research impact pathways and expresses WU's efforts towards shifting mind-sets from action to impact.

I hope you enjoy reading this brochure and share it with colleagues and friends.

Edeltraud Hanappi-Egger
Rector



Where we started

Increasingly, organizations are being judged not only by their performance, but by the impact they have on society, the economy, and the environment. This also applies to universities, as their activities in the fields of research and education make them a unique, key driver of societal progress.

This brochure features a selection of 30 impact cases illustrating the spectrum of positive impacts that WU's research has on society. It is the result of a project, which was carried out by Florian Findler, Caroline Nwafor, and André Martinuzzi from the WU Institute for Managing Sustainability. Based on a comprehensive WU impact map drawn up beforehand, the project was initiated to raise awareness for research impacts at WU and to inform stakeholders of the societal benefits generated by the university's research activities.

Impacts are understood as all possible effects that are both attributable to an organization and manifest themselves beyond its boundaries. Some impacts are not immediately apparent, and may not always be recognized right away by the organization or its stakeholders. This is why it is important to link impacts to specific activities, to make sure they are successfully assessed, managed, and communicated. For universities, the impacts of publicly funded research are of particular interest.

In the UK, universities already have significant experience in analyzing research impacts. As part of the Research Excellence Framework (REF), they are required to use a

case study template to report their research impacts on a regular basis. WU has decided to start charting its own societal impacts using a similar approach, because case studies offer the best representation of societal effects and complex relationships. Their detailed accounts allow organizations to learn things they could never learn from indicators or multiplier calculations alone. Organizational learning and development have played an important role in the project, which has ultimately also helped to raise awareness of research impacts among WU's researchers.

The impact cases were analyzed using a logical framework approach. This approach is well-established in program evaluations and is intended to help understand the links between activities and their impacts. The concept of the logical framework has been adapted for a university context, and describes the relationships between specific research activities and outcomes and their societal impacts along a so-called impact pathway.

In order to identify WU's impacts on society, the 30 impact cases were contextualized based on the Sustainable Development Goals (SDGs) as a comprehensive framework that is widely known and relevant to the public. The SDGs were adopted jointly by the 193 UN member states and cover a broad range of topics from basic human needs to sustainable industry development, and represent a globally accepted framework for societal challenges. By aligning the impacts of each case with the SDGs, the brochure illustrates clearly how and where WU's research activities contribute to society.

Our approach

This is the first time WU has assessed its research impacts using such a structured approach, which means that drawing on existing research was not an option and data had to be collected firsthand. A qualitative survey was prepared, pre-tested, and set up online. All WU researchers were invited to participate and submit their own story and achievements. Overall, 58 contributions were submitted.

A panel of experts was set up to evaluate the quality of the submissions. The panel reviewed the submissions based on the extent of the impact and the causality of impact pathways. The panel consisted of the following experts:

- › Thomas Dyllick (Head of the Institute for Economy and the Environment, University of St. Gallen)
- › André Martinuzzi (Head of the Institute for Managing Sustainability, WU Vienna)
- › Stefan Pichler (Vice-Rector for Research, WU Vienna)
- › Stephanie Rammel (National Contact Point for Social Sciences and Humanities / Horizon 2020, Austrian Research Promotion Agency)
- › Klaus Schuch (Scientific Director and CEO, Centre for Social Innovation).

The panel selected 30 submissions to be edited and prepared for publication in the brochure by the team of the Institute for Managing Sustainability.

Florian Findler



Caroline Nwafor



André Martinuzzi



What we learned

In each case, research impacts were classified based on the SDGs to demonstrate the specific areas where WU's research contributes to society. Overall, this classification resulted in an impact profile of WU's research that is illustrated by the SDG wheel (see Figure 1).

WU's impact profile reveals a strong focus on SDG 8 "Decent Work and Economic Growth," SDG 9 "Industry, Innovation and Infrastructure," and SDG 12 "Responsible Consumption and Production." This accurately reflects WU's overarching research aim, which is to deliver excellent research performance in fields related to **economics and business**. These SDGs refer directly to economic growth, employment, industrialization, innovation, and sustainable production patterns, and are indicative of

WU's influence on economic processes and managerial practice. One impact case, for example, highlights WU's contribution to creating new jobs and developing new businesses through its entrepreneurial support activities, which are based on research on the success factors of entrepreneurial education. WU's research has also contributed to new business ideas and innovations by developing a framework that helps to make open data more accessible and usable for the private sector, research, and civil society. Another research project helped to reduce food waste by supporting social supermarkets. The study analyzed how these markets operate and identified their potential, which ultimately served as a basis for the establishment of new social supermarkets.



Policy and legislation represent another strong aspect of WU's impact profile, as covered by SDG 16 "Peace, Justice and strong Institutions" and SDG 17 "Partnerships for the Goals." These SDGs emphasize the importance of policymaking, participatory institutions, and cooperation as a basis for a sustainable development. They address topics such as governance, rights, security, inclusion, knowledge, access to technology, and fair trade. One example is a research project on tax legislation and treaties in Africa: The study concluded with proposals on how to improve existing legal frameworks and facilitate the exchange of information between agencies to prevent illicit financial flows. These proposals were endorsed by 35 African countries, and selected countries, including Kenya and Zambia, have implemented the proposals in order to stop illegal movements of money. Another impact case illustrates a European-wide exchange and learning network consisting of experts from politics, academia, non-governmental organizations, and the private sector that supports the implementation of sustainable development policies. The network was established based on the findings of a research project that analyzed policymakers' and stakeholders' experiences in the implementation of sustainable development strategies.

As a responsible university, WU addresses **societal challenges** and works actively towards achieving, amongst others, SDG 1 "No Poverty," SDG 3 "Good Health and Well-Being," and SDG 5 "Gender Equality," as confirmed by a number of different impact cases. One research project helped raise awareness for poverty by developing

a monitoring framework for the World Poverty Clock – a real-time global poverty model that is very prevalent in the media. Another impact case contributed to the reduction of traffic accidents by analyzing how inexperienced drivers react to app-based feedback. The project's research findings have been taken up by insurance companies that now offer app-based programs that reward customers for avoiding risks. A further study encouraged the integration of a gender perspective into public budget design by strengthening the theoretical basis of gender budgeting.

The impact cases also show that WU, despite its special focus on economics and business, contributes to **environmental sustainability**, in particular with regard to SDG 7 "Renewable Energy," SDG 13 "Climate Action," and SDG 15 "Life on Land." The main emphasis of these SDGs is to ensure access to affordable, reliable, and sustainable energy, to take action to combat climate change, and to protect and restore terrestrial ecosystems. The research of the WU Energy & Strategy Think Tank, for example, facilitates the development of innovative business model portfolios that are better suited to respond to challenges in the energy sector. Based on its research, WU also offered recommendations for the carbon permit allocation auctions that were considered when drafting the Australian carbon permit trading scheme. Results of a further study contributed to resource conservation by generating a globally harmonized database for resource consumption and productivity that provided a basis for designing national policies on resource use.

Where we are going

The 30 impact cases in this brochure represent some of the best current research projects and their impacts, but there are many other interesting research projects being conducted at WU. However, for some it is still too early to estimate their societal impact, and for others, the impact pathways are not verifiable enough for them to be included in this collection.

The impact cases illustrate how, as a responsible university, WU contributes to solving important economic, social, and ecological challenges, both on a regional and on a global level. The collection of data and the preparation of the case studies has shown that research impacts are often seen as a given, possibly because of the common assumption that science per se positively contributes to society by generating new knowledge. However, in order to meet rising stakeholder demands and society's expectations, it is no longer sufficient to implicitly assume this positive contribution. WU needs to raise awareness for its research impacts and actively address its contributions to helping solve the major challenges society currently faces. This change will require a shift in the organizational mindset from action to impact.

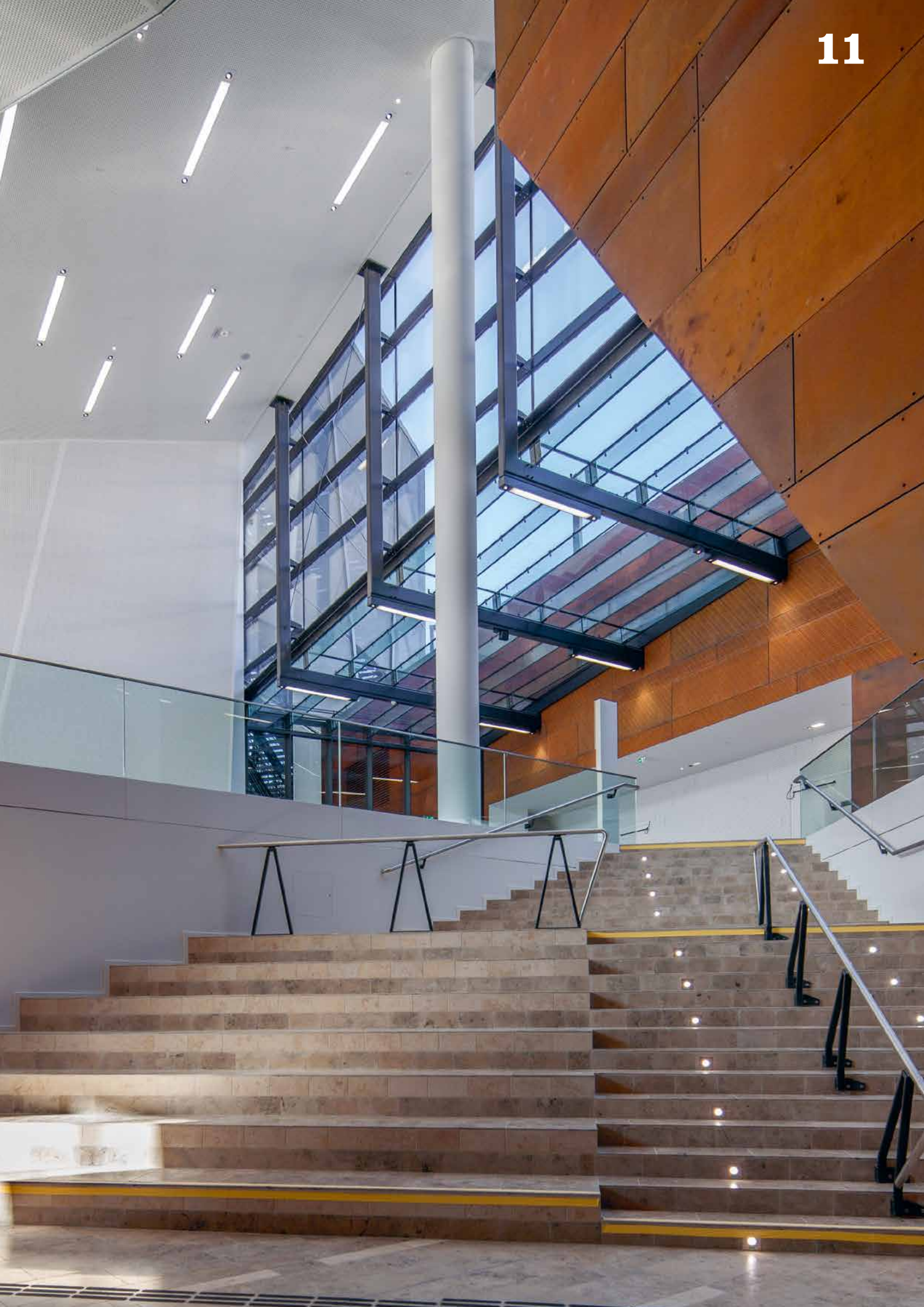
A shift from action to impact means creating a research culture with aims and objectives that go beyond academic boundaries. In this research environment, it is no longer good enough to assess research quality based solely on citations. Instead, it is important to focus on how research shapes the world outside academia and what positive contributions research can make to society, the economy, the environment, and our future. This paradigm shift makes it easier to recognize the complex relationships between science and society and to identify important societal problems, and supports the generation of innovative research ideas and valuable solutions. Ultimately, this will strengthen society's awareness of the relevance of research and help overcome some of the major challenges faced by society today.

Investigating the societal contribution of WU's research and creating this brochure helped to shift mindsets from action to impact. As a responsible university, WU will continue raising awareness for its impacts to strengthen its contribution to society. The next important step is to evaluate WU's teaching impact.

Stefan Pichler

Vice-Rector for Research





A European policy network for sustainable development

Gerald Berger, André Martinuzzi

FACTBOX

Duration	2005–ongoing
Institute	Institute for Managing Sustainability
Department	Department of Socioeconomics
Additional WU collaborators	Markus Hametner, Eric Mulholland



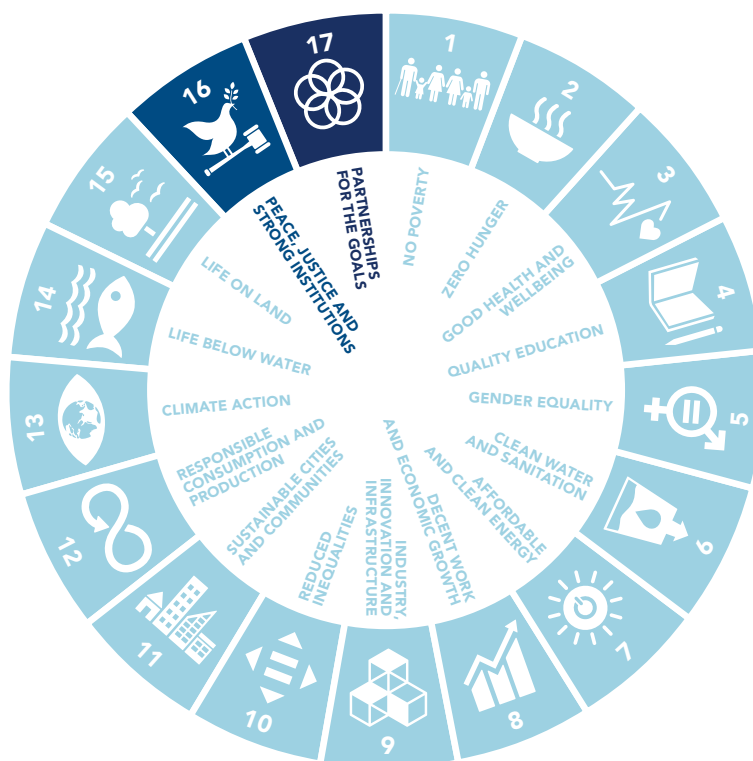
National sustainable development (SD) strategies are important policy tools that help implement the 2030 Agenda on a national level. They also assist various national government ministries in coordinating and aligning their sectoral policy objectives to ensure they are in accordance with the overarching SDGs. The field of SD is very much characterized by cross-sectoral interdependencies and different stakeholder interests, so it is crucial to use strategies, like the national SD strategies, to support the planning and coordination of different policy objectives and stakeholder needs.

The successful implementation of sustainable development policies and strategies requires a high level of cooperation and policy learning among policy makers and different stakeholder groups.

THE RESEARCH

The research project analyzed the experiences of policy makers and stakeholders in developing and implementing national SD strategies in order to identify good practices and key success factors. Researchers drew on empirical evidence primarily from interviews with policy makers and stakeholders, and on strategic management theory and governance concepts that outlined the necessary preconditions for successful strategy implementation. The findings indicated a lack of exchange among policy makers and stakeholders that hindered strategy formulation and the implementation of SD policies at the EU and national levels. To successfully implement SD policies, governance mechanisms and exchange platforms are needed to enable exchange among policy makers, sectoral ministries, experts, and different stakeholder groups involved in the design and implementation of sustainability policies, programs, and projects. This process of learning from and with others was identified as a major requirement for advancing SD strategies and policies at the European and national levels.

The ESDN has become the most important sustainable development policy network in Europe and its ongoing policy-learning activities support effective sustainable development policies.

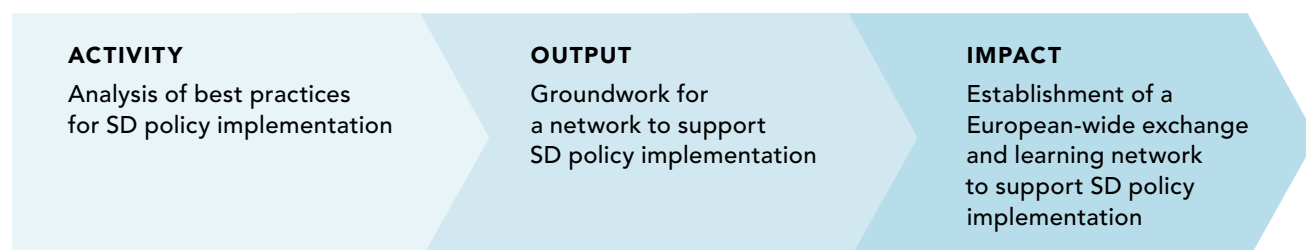


THE IMPACT

The findings highlighted how important close cooperation and policy learning among policy makers and different stakeholder groups are for successfully implementing SD policies and thereby provided the basis for the establishment of the European Sustainable Development Network (ESDN) in 2006. Run by the Institute for Managing Sustainability, this network was included in the EU's SD strategy, which outlines SD policy in Europe, as a main mechanism for facilitating the exchange of good practices and experiences among policy makers. The ESDN is the largest SD network in Europe, consisting of over 350 members from 45 countries, all of whom are SD experts from politics, academia, NGOs, and the private sector. The ESDN website represents the largest SD knowledge repository in Europe, consisting of quarterly reports on specific SD topics, country profiles

on SD governance, and SD policy activities from 36 European countries. The ESDN website has about 14,000 visitors and 70,000 page views per month. On average, the quarterly reports are downloaded 7,000 times each. The ESDN also produces policy briefs that inform EU, national, and sub-national policy makers on good practices and include policy recommendations. In addition, the network organizes a series of exchange and peer-learning events every year, such as the annual European SD Week, which comprises more than 6,000 events and reaches about three million people. The variety of ESDN's activities enables policy makers and other experts to learn from actual SD policy and strategy activities. In this way, the network contributes to the achievement of SDG 16 "Peace, Justice and Strong Institutions" and SDG 17 "Partnerships for the Goals."

IMPACT PATHWAY



Tax literacy – tax education for students

Nora Cechovsky

FACTBOX

Duration	2015–2018
Institute	Institute for Business Education
Department	Department of Management
Additional WU collaborators	Bettina Fuhrmann, Richard Fortmüller, Rosanna Steininger



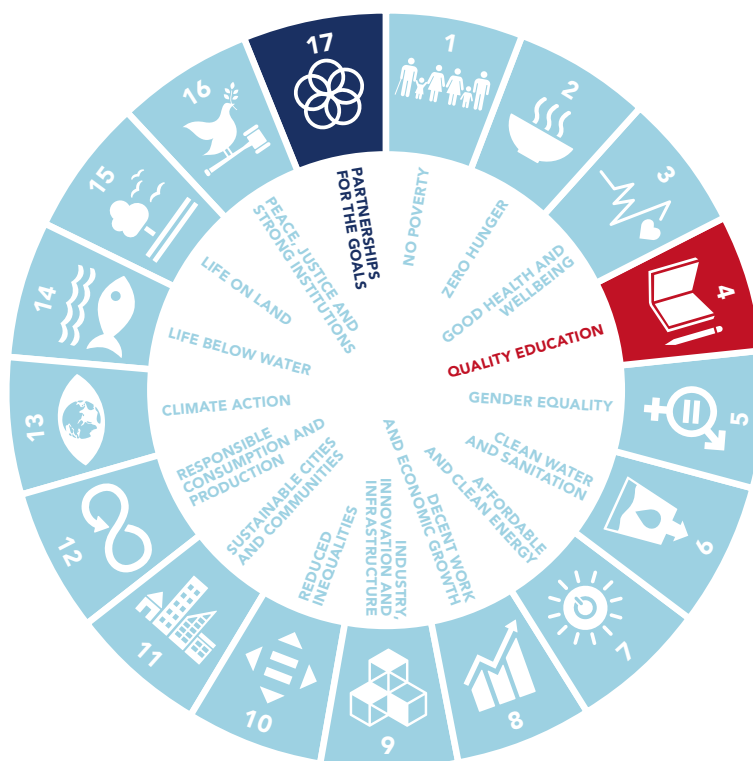
According to the European Commission, EU member states suffer an annual loss of approximately one trillion euros through tax avoidance and evasion. Along with the current tax laws and legal consequences, targeting tax literacy is another way to counteract tax avoidance and evasion. Promoting tax literacy is particularly relevant among students of business-oriented secondary schools, as they will be confronted with possible opportunities for tax evasion in their future roles as entrepreneurs and business leaders. Usually, secondary school students in the fourth year of a business college already have some experience with taxes (e.g. through shopping, but also through work). It is important that they understand the taxation system, the need for taxes, and have a considered attitude towards tax compliance.

Tax knowledge has a positive influence on business college students' attitudes towards tax compliance.

THE RESEARCH

The research project had a number of objectives. One was to develop a tax knowledge model (for all citizens), another to assess fourth-year business college students' level of tax literacy to derive input for instruction and curriculum development. Additionally, the project analyzed the relationship between tax knowledge and the attitudes toward tax compliance, i.e. whether more knowledgeable students had a more positive attitude towards taxes than less knowledgeable students. Qualitative interviews were conducted with students on their conceptions and misconceptions regarding the tax system and paying taxes, which served as a basis for quantitative surveys at business colleges in Vienna, Lower Austria, and Burgenland. Based on responses from 688 students, the study showed that students have a basic understanding of taxes, public goods, and the role of the state in taxation. It also revealed some misconceptions held by students (e.g. perception of tax burden), which might have an influence on their attitudes towards taxation. The analysis also confirmed that more knowledgeable students show a more positive attitude towards tax compliance. Based on these results, a teaching concept was developed in cooperation with Rosanna Steininger. This concept is designed to promote an understanding of the importance of tax compliance in order to reduce tax evasion.

The teaching concept developed is used in classes at business colleges and promotes tax literacy and tax compliance among students.

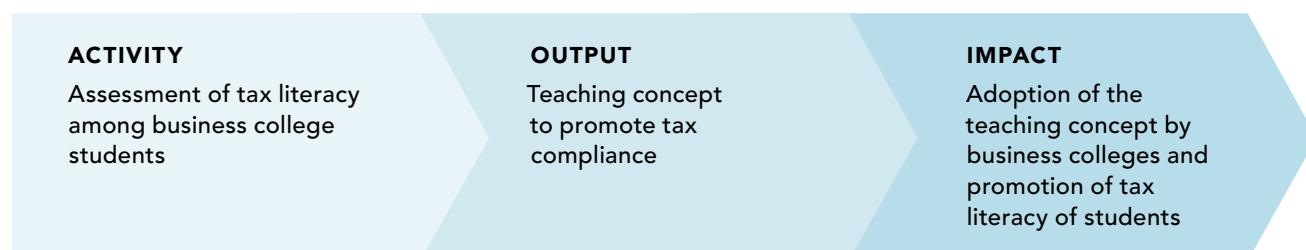


IMPACT

The research findings on students' attitudes towards tax compliance represent an important basis for future instruction at business colleges. They help business college instructors recognize students' misconceptions and knowledge gaps and address them effectively. The results were presented at the two most important conferences on current research findings and teaching practice in the business education field in Austria. These presentations targeted instructors in particular by highlighting students' general level of tax literacy and offering a concept for promoting better tax literacy and tax compliance. A textbook publisher made the teaching concept and the associated teaching materials available for download

online free of charge. A final report encompassing the findings was sent to all participating colleges and school authorities, addressed to both the college heads and instructors who will use the research findings, teaching concept, and materials provided. Additionally, the teaching concept is presented as a good practice example in the WU Master's Program in Business Education, showing the future teachers how tax knowledge can be conveyed in business classes through a classroom experiment. The research findings and adoption of the teaching concept contribute to achieving SDG 4 "Quality Education" and SDG 17 "Partnerships for the Goals."

IMPACT PATHWAY



The World Poverty Clock – modeling global poverty

Jesús Crespo Cuaresma

FACTBOX

Duration	2016–2018
Institute	Institute for Macroeconomics
Department	Department of Economics
Additional WU collaborators	Karim Bekhtiar, Martin Hofer
External partners	Michael Brottrager (JKU Linz), Wolfgang Fengler (World Bank), Homi Kharas (The Brookings Institution, World Data Lab)



Currently, 9% of the world population or more than 650 million people live in extreme poverty, meaning that they have to survive on less than €1.75 per day. In 2015, the UN adopted the 2030 Agenda for Sustainable Development, which aims to end poverty around the globe. Jesús Crespo Cuaresma and his team investigated whether this goal is feasible. They looked into the specific conditions that would allow poverty to be eradicated worldwide by the year 2030, and identified which countries are on track to significantly reducing their poverty rates in the coming decades.

An evidence-based modeling framework provided the foundation of the World Poverty Clock, which allows the speed of poverty reduction in each country to be calculated and compared to the average speed needed to meet the SDGs.

THE RESEARCH

The main aim of the project was to construct an econometric modeling framework to generate poverty trajectories worldwide. The researchers began by modeling income distribution for all the world's countries, and then they combined these figures with forecasts and projections of average income per capita provided by the International Monetary Fund (IMF) and Jesús Crespo Cuaresma's previous work. Comparing the different poverty scenarios highlighted the difficulty of fulfilling SDG 1 "No Poverty" without additional development policy efforts. The econometric modeling framework can help researchers and policymakers understand the driving forces behind poverty dynamics, as well as simulate development policy scenarios by enabling a quantitative assessment of the present and future state of global poverty. In addition, the project devised an attractive online tool for visualizing the analysis results – the World Poverty Clock (worldpoverty.io). The clock allows the speed of poverty reduction in each country to be calculated and compared to the average speed necessary for meeting the SDGs. The World Poverty Clock also offers comprehensive information about the individual countries being monitored, including poverty projections at the sub-national level for some countries.

The media have frequently employed the World Poverty Clock in reports on economic development issues because it provides attractive visuals.



THE IMPACT

The study's findings indicate that fulfilling the first SDG will be difficult without additional development policy efforts. It is worth noting that none of the scenarios generated by the clock predicted a global poverty rate below 3% by 2030. The research directly contributes to SDG 1 "No Poverty" and SDG 10 "Reduced Inequalities" by raising awareness of the need for poverty reduction measures and supporting policies. Driving poverty reduction forward also indirectly helps to achieve SDG 2 "Zero Hunger" and SDG 3 "Good Health and Well-Being." The media reported extensively on the findings, which were widely discussed in policy-making circles both at the national and the international level. International organizations such as the World Bank and think tanks such as the Brookings

Institution discussed and disseminated the findings. Policy makers and researchers in developing and emerging economies have also incorporated the results into their work and policy discussions. Additionally, the release of the World Poverty Clock maximized the research's societal impact. The World Poverty Clock was introduced in Berlin at re:publica 17, one of the largest internet and digital society conferences in the world, and featured prominently at the Bill & Melinda Gates Foundation 2017 Goalkeepers Conference that supports the fulfillment of the SDGs. The media have frequently employed the World Poverty Clock in reports on economic development issues because it provides attractive visuals.

IMPACT PATHWAY

ACTIVITY

Modeling of income distributions and forecasts of average incomes

OUTPUT

Econometric model to assess the drivers of poverty dynamics and the World Poverty Clock

IMPACT

Support of poverty reduction policies and raised awareness of poverty through the media

Vegan garden soil – creating a new market category

Giuseppe Delmestri, Daniel Semper

FACTBOX

Duration	2013–2019
Institute	Institute for Change Management and Management Development
Department	Department of Management
External partners	Royston Greenwood (University of Alberta), ProVeg Deutschland, Swissveg, Vegan Society Austria, Vermigrand Naturprodukte GmbH



Unlike conventional soil, vegan garden soil contains no animal additives. Nitrogen is an important fertilizer added to garden soil, and is usually obtained from hoof and horn meal. In vegan soil, by-products from corn starch production are used instead of the conventional animal by-products. Vegan humus is the exception, as earthworms are used to make it. This leaves the vegan societies in the difficult position of deciding whether or not earthworm humus transgresses their principles, which strictly prohibit the use of animals and animal by-products in any form that causes harm.

Various social mechanisms play a role when the meanings attributed to products shift. Sustainable products face unique hurdles, as the need to maintain credibility on the market while still responding to current developments and the zeitgeist are often at odds. Tensions that may arise inside a movement are also important, since coherence typically plays a key role in social movements.

Consistent values that are relatable and easy to understand are critical to the acceptance of sustainable market categories.

THE RESEARCH

The research looked into how organizations contribute to the social classification of their products into categories that vary in legitimacy and status, and how new categories emerge. The researchers began by studying a formerly low-status product (Italian grappa) to understand what practices and social mechanisms helped elevate grappa's status as a market category in Italian society. Then the project went on to analyze obstacles to the development of sustainable market categories. The study was not limited to observation, and researchers also engaged in active exchange with participants. They closely examined the decision-making processes behind the vegan garden soil and worm humus categories, and also acted as informal mediators between vegan NGO employees and non-vegan entrepreneurs. This provided insight into the problems and advantages of symbolic boundaries in markets and in society. The research generated a theory of status change for sustainable market categories, and found that sustainable categories must embody consistent values that are relatable and easy to understand. In this case, tensions inside a market category's value framework were enforced through exclusion and the refusal to classify worm humus as vegan.

The recognition of vegan garden soil as a new market category promoted the emergence of start-ups and contributed to quality of life for vegans.

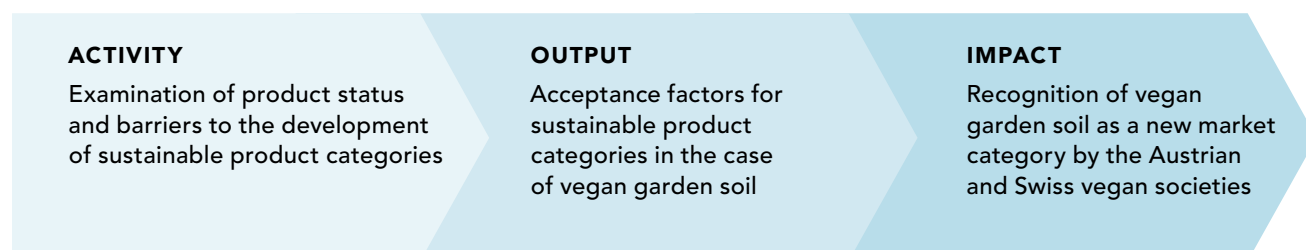


THE IMPACT

The research findings led to the development of vegan garden soil as a new market category in Austria and Switzerland. Since 'vegan' is not a protected designation, the Austrian and Swiss vegan societies (VGÖ and VGS) awarded the garden soil their V-Label, one of the most respected European quality seals for vegetarian and vegan products. The seal makes it easier for vegans to identify animal-free products in shops. This new market category labelled with the quality seal means people who adhere to a vegan lifestyle can plant a vegetable garden even if they cannot produce their own compost. The new market category also opens up new

opportunities. Innovative start-ups have already targeted these new opportunities in Austria and Switzerland. Thus, the research contributes to achieving SDG 8 "Decent Work and Economic Growth," SDG 9 "Industry, Innovation and Infrastructure" and SDG 12 "Responsible Consumption and Production." Consumers' use of vegan garden soil also helps improve soil quality. As vegan soil does not contain organic waste from factory farming that is generally found in conventional garden soil, its use reduces soil contamination and contributes to maintaining soil quality and, consequently, supports SDG 3 "Good Health and Well-Being."

IMPACT PATHWAY



Success factors in entrepreneurship education

Nikolaus Franke

FACTBOX

Duration	2000–2003
Institute	Institute for Markets and Strategy
Department	Department of Strategy and Innovation
External partners	Thomas J. Allen (MIT), Christian Lüthje (TUHH Hamburg), Eric von Hippel (MIT)



Entrepreneurship and start-ups make a critical contribution to job creation, growth, and prosperity. Universities can serve as unique catalysts in the start-up landscape. The Massachusetts Institute of Technology (MIT), for example, found that taken together, the businesses launched by MIT graduates and faculty were equivalent to the tenth largest economy in the world. Austria's universities are also full of knowledge, ideas, and energy, but how can all this entrepreneurial potential be harnessed better? Critics often point to European universities' poor track records in promoting entrepreneurship.

Universities can promote the entrepreneurial activities of students and graduates through application-oriented courses, interdisciplinary cooperation, positive role models, and the teaching of an entrepreneurial mindset.

THE RESEARCH

The research project investigated how entrepreneurship education at universities should be designed to foster start-ups and innovation in practice. In particular, it focused on identifying the key factors that inspire students to make the leap into self-employment. Potential influencing factors were derived from a review of various theories of entrepreneurship. In the empirical part, the research team carried out a number of quantitative and qualitative studies, including at MIT. The study found that universities do in fact have a major influence on the entrepreneurial activities of their students and graduates, and went on to clarify how by identifying the most effective measures used. Decisive factors included application-oriented entrepreneurship courses, targeted interdisciplinary cooperation, positive role models, such as successful entrepreneurs, and teaching an entrepreneurial mind-set. The research results have been disseminated at numerous international conferences and journals and received the 2004 WU Best Paper Award.

The success factors derived from the research formed the basis of WU's entrepreneurship support system, which has rekindled the entrepreneurial spirit in Austria and contributed to the founding of more than 300 companies.



IMPACT

The research showed how entrepreneurship education should be designed to promote the entrepreneurial activities of students and graduates. These findings led to the establishment of the Institute for Entrepreneurship and Innovation and the Entrepreneurship Center at WU (contributing to SDG 4 "Quality Education"). Both institutions focus on the success factors identified by the research: intensifying real-world learning, interdisciplinary cooperation, positive role models, and promoting an entrepreneurial mindset. The projects and courses offered by these institutions bring students into direct contact with practical partners, such as technology companies (e.g. Siemens, Magna, Airbus, ams), research institutions (e.g. TU Vienna, Fraunhofer, CERN), artistic and creative institutions (e.g. the University of Applied Arts Vienna), social institutions (e.g. Caritas, Red Noses), and successful entrepreneurs. This approach not

only familiarizes students with the methods used in the field of entrepreneurship and innovation; it also improves their soft skills and helps them build personal networks. These collaborations also provide partners with specific and practical solutions rooted in a solid, theoretical basis. The research helped to rekindle the entrepreneurial spirit in Austria, and made an important contribution to promoting the start-up activities of students and graduates and thus to the development of the entrepreneurship ecosystem in Vienna (SDG 8 "Decent Work and Economic Growth" and SDG 9 "Industry, Innovation and Infrastructure"). Several hundred projects have already been carried out with start-ups and companies, and graduates and students have gone on to found more than 300 new businesses. These include well-known companies such as Shpock and Hokify as well as the nonprofit organizations Sindbad and Pioneer.

IMPACT PATHWAY



The future of mobility – accessibility for all

Elmar Fürst, Christian Vogelauer

FACTBOX

Duration	2014–2016
Institute	Institute for Transport and Logistics Management
Department	Department of Global Business and Trade
External partners	Austrian Association in Support of the Blind and Visually Impaired, Building Physics and Building Ecology Research Unit, Institute of Architectural Sciences – Vienna University of Technology, ÖBB Infrastruktur AG, VIDE BIS, Vienna Municipal Department MA 39, Wiener Linien



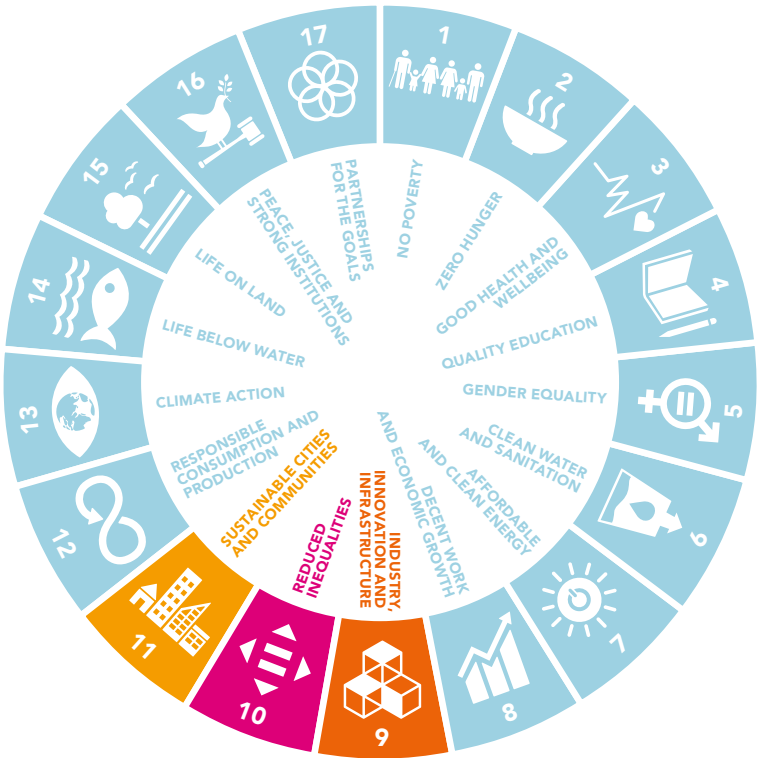
Like “normally” sighted people, visually impaired or severely visually impaired people still rely on their sense of sight to find their way around their environment, even though their vision is limited. Unfavorable lighting conditions and poor color and material choices can drastically reduce their already limited ability to see. Current laws stipulate that people with disabilities may not be excluded from public services though, which means mobility providers have a vested interest in developing technical solutions to help people see better (e.g. information, obstacles, etc.) in everyday life to promote comprehensive inclusion. Our ageing society also reinforces the need to improve technical standards. It is important to incorporate accessibility and universal design at the earliest planning stages and to provide tools for implementing and validating the corresponding designs.

The project generated the first scientifically based findings on how vision, contrast requirements, and glare interact, which set a baseline for designing accessible buildings and services.

THE RESEARCH

The research project aimed to develop a tool to assist architects and planners with accessible design, especially for people with visual impairments. To start, a mixed-method approach (surveys, workshops, and focus groups) was used to identify the needs of people with visual impairments, and real-world test settings were used to assess the impact of lighting and different contrasts and materials on visual perception. These findings on visually impaired people’s needs set a baseline for the accessible design of buildings, vehicles, and everyday objects, and for creating a tool to assist architects and planners. The resulting software was developed using open-source code and can be used to assess visual accessibility to ensure that the built environment is fully accessible to people with visual impairments. As part of the project, the first testing environment in the world was developed that allows people’s visual acuity to be measured under a variety of lighting situations. The data generated will serve as a reliable basis for assessing the needs of people with different eye disorders.

Vienna International Airport used the findings to completely redesign its passenger guidance system, greatly improving accessibility.

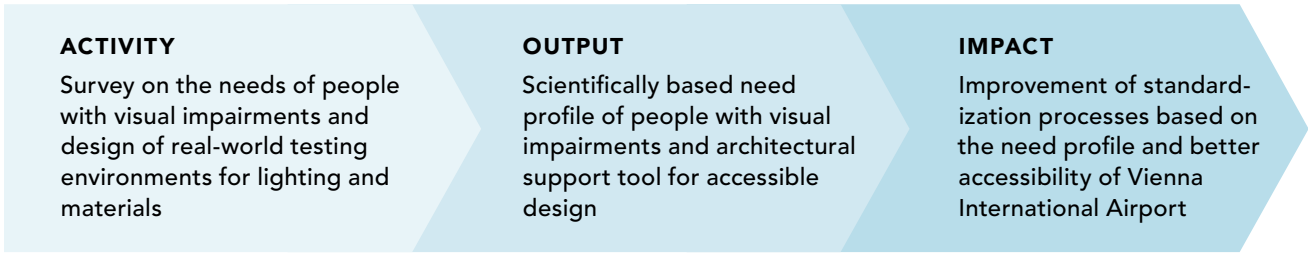


THE IMPACT

Vienna International Airport used the visual accessibility findings to fundamentally redesign the airport’s entire passenger guidance system to make the airport more accessible. This included improving the visual guidance system, which uses clear contrasts, colors, and lettering to help visually impaired people find their way, and the tactile guidance system, which assists blind people. A completely new signage system was implemented during the redesign, and eye-level monitors with departure and arrival information called “Airpoints” were installed. Vienna International Airport now promotes this successful concept around the world. The research results thus directly contributed to the design of inclusive infrastructure (SDG 9 “Industry, Innovation and Infrastructure,” SDG 11 “Sustainable Cities and Communities”) and helped reduce everyday obstacles for people with

visual impairments (SDG 10 “Reduced Inequalities”). Furthermore, the scientific findings on the needs of people with visual impairments were directly incorporated into Austrian and international standardization processes. Construction standards, such as ÖNorm B 1600 “Building without barriers – Design principles,” have already been or are on track to be significantly expanded and improved by the project findings on visual accessibility (color combinations, contrasts, font sizes, lighting), making it easier for architects to plan buildings that are truly accessible. On an international level, the Austrian Association in Support of the Blind and Visually Impaired passed the findings on to the European Disability Forum (EDF), which used the information to lobby for the design of the European Accessibility Act, the central guidelines for the comprehensive inclusion of people with disabilities.

IMPACT PATHWAY



Incentivizing learning – the crowding-in effect

Gerhard Furtmüller, Christian Garaus

FACTBOX

Duration	2004–2019
Institute	Institute for Strategy, Technology and Organization
Department	Department of Management, Department of Strategy and Innovation
Additional WU collaborators	Margit Kastner, Robert Krikawa, Karl Ledermüller, Michaela Nettekoven, Markus Schelenz, Michael Schiffinger



Research into the study habits of students has shown that while they do engage with course content, almost 90% study most intensely right before an exam. Here students express the very human tendency to procrastinate and put in the most work at the last minute.

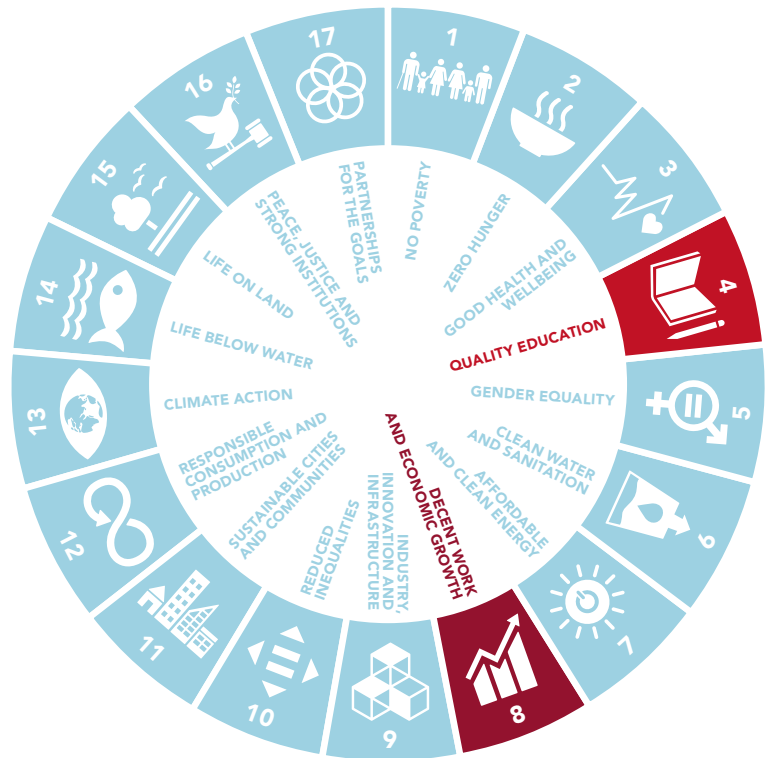
These kinds of study habits could also be described as “bulimia learning” since students learn the materials quickly, but forget them just as rapidly. However, this way of studying is not enough to build up a solid base of knowledge, as research on the learning and forgetting curves has shown.

The analysis of various measures to improve students’ learning success demonstrated the positive effect of small incentives on increasing students’ autonomous motivation to study.

THE RESEARCH

The research investigated possible ways of encouraging students to engage with course content more frequently outside the lecture hall to help them achieve optimal learning success. A number of experiments were carried out in higher education teaching practice, and the effects of a number of measures were analyzed. One experiment that used small incentives to increase motivation achieved a breakthrough. Students were offered small rewards to encourage them to complete homework assignments, and any changes in learning success were measured. In a process called “nudging,” the incentives used were so small that they could not justify the work input. When asked directly how they felt about the size of the incentives, 97.5% of students reported they “would not lift a finger for them.” Still, these incentives yielded unexpected results. An analysis of the experiment showed that four times as many students completed a homework assignment when motivated by a small reward and voluntarily went on to complete many more exercises. Apparently, these tiny rewards provided the activation energy students needed to get started on an assignment. Once they began working, students were more likely to continue and get beyond “bulimia learning” since, as the saying goes, “appetite comes with eating.”

The findings on the crowding-in effect were used to revise university course design and improved students' learning success. Small incentives are now being used in other WU courses and at the University of Salzburg.



THE IMPACT

Until the 2010s, the motivation “crowding-out” effect of incentives was a central issue in behavioral studies. The crowding-out effect describes how incentives can cause children and adults to lose interest in a given activity at school or work. These research findings, in contrast, show that small incentives can encourage students to voluntarily complete homework assignments (the “crowding-in effect”). In numbers, the quality of students’ homework in the courses involved in the study rose by 10%, and they completed 1.5 times as many exercises for which there was no reward. These findings on incentives have been incorporated into the design of various WU courses in subjects like finance, marketing, and innovation. They were also presented to lecturers in higher education, instructors at colleges of education, and heads and managers of academic programs, and were reported in practitioner-oriented journals such as the

Harvard Business Review as well as in national newspapers like the Wiener Zeitung and the Kronen Zeitung, and broadcast on the radio. As a result, other educational institutions (including the University of Salzburg) have also integrated these findings into their course designs. As designing successful study incentives has taken on new significance for university funding in Austria (which will depend in part on the number of academically active students as of 2019), their impact on higher education teaching practice is now particularly important. Workshops will be held for both instructors (e.g. at the universities of Graz, Klagenfurt, and Salzburg) and students (e.g. at WU Vienna). On a more abstract level, the research findings contribute to improving learning and education, and, consequently, to a better qualified workforce for the future (SDG 4 “Quality Education” and SDG 8 “Decent Work and Economic Growth”).

IMPACT PATHWAY

ACTIVITY

Investigation of the effects of small incentives on learning success

OUTPUT

Insights about the positive effects of small incentives on students’ autonomous motivation

IMPACT

Improvement of students’ learning success by incorporating small incentives into course designs

Measuring resource consumption and productivity

Stefan Giljum, Stephan Lutter, Mirko Lieber

FACTBOX

Duration	2015–2018
Institute	Institute for Ecological Economics
Department	Department of Socioeconomics
External partners	Commonwealth Scientific and Industrial Research Organisation, Nagoya University, University of Natural Resources and Life Sciences, Vienna, University of Sydney



The global consumption of natural resources has increased enormously over the last 40 years, roughly quadrupling since 1970. Additionally, relative decoupling was last observed in 2002, which means resource consumption has grown faster than global gross domestic product since then. International trade in raw materials is growing at an even faster rate than global resource consumption. There is a clear distinction between regions of the world that are net raw material importers (Europe and North America) and all other regions that are net exporters. At 20 to 30 tons per person, Europeans' annual consumption of raw materials is about ten times higher than that of people in low-income countries in Africa or Asia.

The research project generated the first globally harmonized database for resource consumption and productivity, two key issues that impact sustainable development.

THE RESEARCH

Funded by the United Nations' International Resource Panel (IRP), the research project explored possible methods for measuring resource consumption and productivity in all countries worldwide.

The resulting data could then serve as foundation for evaluating the progress of specific SDGs, in particular SDG 8.4 "Resource efficiency in consumption and production" and SDG 12.2 "Sustainable management and efficient use of natural resources." A harmonized global database on resource extraction, trade, and consumption was compiled that covered all countries worldwide from 1970 to 2015. A manual was also drafted as part of the project to assist national institutions (like statistical offices) in collecting this type of data to better track and analyze material flows.

The database is publicly available on the UN International Resource Panel website and serves as a basis for designing and evaluating national policies that promote SDG fulfillment.

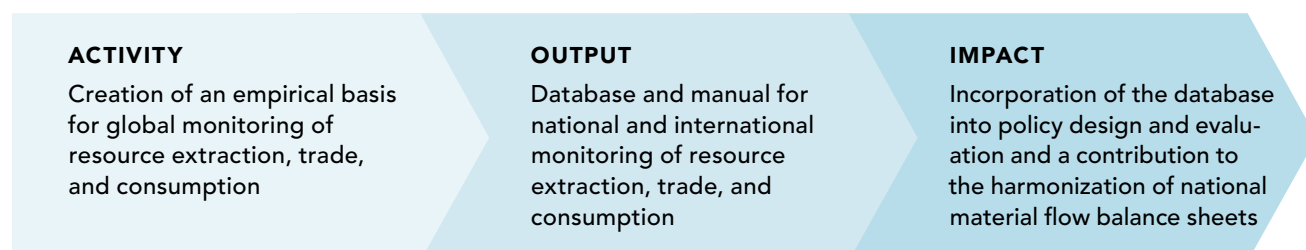


THE IMPACT

The project generated the first consistent empirical basis for measuring resource consumption on a global scale. This foundation is essential for monitoring a number of SDG objectives (e.g. SDG 8.4 “Resource efficiency in consumption and production” and SDG 12.2 “Sustainable management and efficient use of natural resources”). The extraction of raw materials also has an impact on water and land use and thus affects SDG 6 “Clean Water and Sanitation,” and SDG 15 “Life on Land,” respectively. In addition, the generated database supports the monitoring of SDG 14 “Life below water” by including information about marine fish catch. The database was made publicly available on the UN International Resource Panel website (bit.ly/resourcepanel), and the IRP issued press releases in English, French, Spanish, and Chinese on the database and the subsequent report. The database can be used as

a basis for designing and evaluating national policies. It can help identify high resource consumption hot spots in a domestic economy, which should be prioritized in policy instrument development. It can also be used to evaluate whether current policy instruments are sufficient for decoupling economic growth and resource consumption, and provides a starting point for studies on interactions between resource consumption and harmful emissions and resources and biodiversity/ecosystems. Furthermore, the database is compatible with economic models, so it can highlight the environmental dimension in economic scenario evaluations. The manual drafted during the project is expected to become an international standard for creating material flow balance sheets in the coming years and is likely to find widespread application, especially by national statistical institutes.

IMPACT PATHWAY



Constitutional courts in the European Union

Christoph Grabenwarter

FACTBOX

Duration	2018–2019
Institute	Institute for European and International Law
Department	Department of Public Law and Tax Law
Additional WU collaborators	Katharina Struth, Markus Vasek
External partners	Max Planck Institute for Comparative Public Law and International Law, Heidelberg, Venice Commission "Democracy through Law"



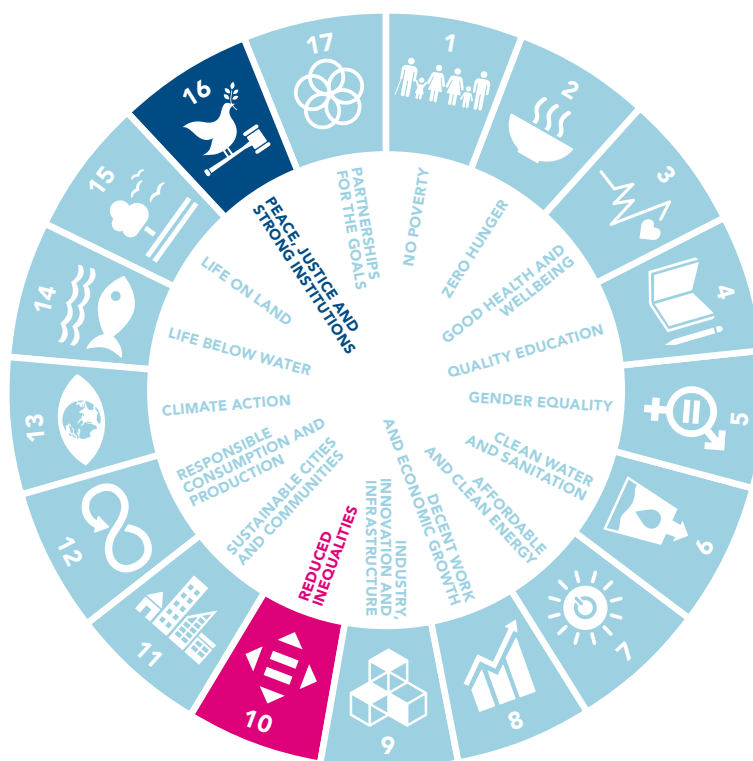
Independent and effective constitutional courts define constitutional democracy in most European countries today. They uphold the fundamental rights of the individual and oversee the separation of powers, thus protecting democracy and the rule of law in equal measure. The independence and effectiveness of these constitutional courts is based on underlying legal frameworks, and certain societal framework conditions also ensure that the constitutional courts' legitimacy is widely accepted. Constitutional courts have always been vulnerable to multiple risks from political actors, which have only increased in recent times. There have been concerning developments in some European countries that could potentially weaken constitutional jurisdiction and have serious consequences for the rule of law as a whole.

The continued existence and independence of constitutional courts is largely dependent on their acceptance in political and social life.

THE RESEARCH

The research set out to analyze the conditions under which the constitutional courts in the European Union function. The historical, institutional, and procedural aspects of constitutional jurisdiction in European countries were examined along with the role of each respective constitutional court in the national system. The research showed that safeguarding the institution of constitutional jurisdiction is not dependent on legal factors alone; it is also contingent on acceptance in political and social life. Political and social actors must understand and be consistently aware of the value of constitutional jurisdiction and the constitutional courts in maintaining the rule of law. So jurists in general and legal scholars in particular must make every effort to ensure that the activities of the constitutional courts are easy for the general public to understand. Clarifying the existing legal framework is part of this process, but not enough on its own.

The insights on the rule of law have been incorporated into expert opinions and recommendations by the European Commission and publicly discussed in various EU countries.



THE IMPACT

The research findings emphasized the importance of social and political acceptance on the resilience of the constitutional courts, and were cited in a number of reports (e.g. expert opinions) drafted by the Venice Commission. Christoph Grabenwarter is the Austrian member and former vice-president of the Venice Commission, an advisory body of the Council of Europe tasked with advising states on constitutional law. The Commission is dedicated to safeguarding and strengthening constitutional standards in Europe and worldwide. The Commission's reports and expert opinions primarily focused on challenges to and crises in constitutional jurisdiction in various European countries, where they were picked up by the national media and had a considerable influence on public discourse. Furthermore, the European Commission has frequently cited and included the expert opinions in

its recommendations on constitutional jurisdiction. The European Commission referenced the Venice Commission's expert opinions multiple times when issuing its recommendations on the rule of law regarding constitutional jurisdiction in Poland. The recommendations prompted the Polish government to enter into discourse with the members of the Venice Commission, a clear indication that even states that reject such recommendations regard them as significant in the debate around the concept of the rule of law. The research into independent and effective constitutional courts has contributed to strengthening important state institutions and thus addresses SDG 16 "Peace, Justice and Strong Institutions." Strengthening the constitution supports, among other things, the protection of minority rights and thus also contributes to SDG 10 "Reduced Inequalities."

IMPACT PATHWAY



Auction design for selling CO₂ certificates

Ben Greiner

FACTBOX

Duration	2010–2012
Institute	Institute for Markets and Strategy
Department	Department of Strategy and Innovation
External partners	Regina Betz (Zurich University of Applied Sciences and University of New South Wales), Sascha Schweitzer (University of Bayreuth), Stefan Seifert (University of Bayreuth)



As part of the worldwide efforts to reduce carbon emissions and the 2009 Copenhagen UN Climate Summit, the Australian Labor Party government began designing a carbon emission permit trading scheme. The plan was to require many industries to purchase permits for their carbon emissions. These permits would be valid for different years (2016, 2017, etc.), sold at public auction, and traded on the free market.

The experimental studies show that when carbon permits for different years are auctioned off, sequential auctions yield higher revenues and efficiency, and open auctions perform better than closed auctions for simultaneous auctions.

THE RESEARCH

The research project sought to identify the optimal auction rules for selling carbon permits to companies and other permit users. It explored questions such as whether permits valid for different years should be sold at one large complex auction or separately in a sequence of smaller auctions, and whether auctions should be open (where bidders can see other participants' bids) or closed. Laboratory experiments were designed to test the different auction mechanisms and observe their effect on revenues and efficiency. Artificial permit markets were created and real people were invited to participate and earn real money. The results showed that open auctions performed better than closed auctions when permits valid for different years were auctioned off simultaneously. This positive effect disappeared when permits for different years were auctioned off sequentially. Sequential auctions also yielded higher revenues for the state regardless of auction format.

The research findings informed the design of efficient carbon emission permit trading schemes and shaped the legislation for the “Australian Auction of Carbon Units.”

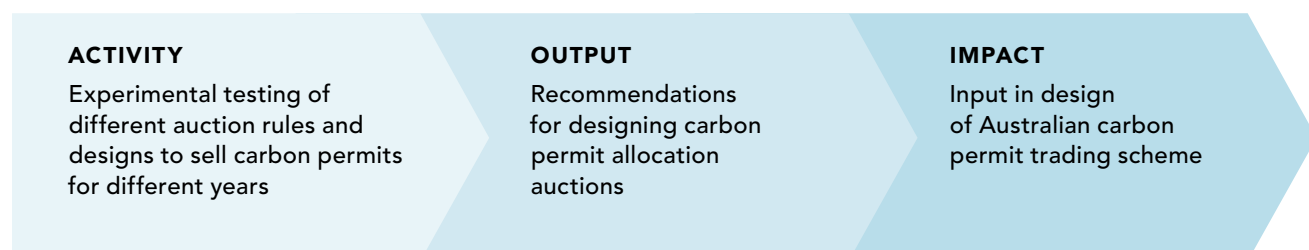


THE IMPACT

The research results illustrating the efficiency of sequential and open auctions in allocating carbon emission permits contributed to SDG 12 “Responsible Consumption and Production” and SDG 13 “Climate Action.” The research findings were crucial in drafting legislation for the “Australian Auction of Carbon Units” which closely followed the researchers’ recommendations and was adopted into law by the Labor Government. The trading scheme was

scheduled to start in late 2014, however the new Australian Coalition Government (elected in 2013) abolished the carbon pricing mechanism altogether, including permit auctions, in July 2014. It was replaced by a “direct action” emissions reduction fund, where money was invested into specific abatement technologies based on reduction proposals elicited by public tender. The effectiveness of this approach proved limited.

IMPACT PATHWAY



Strategic challenges in the energy sector

Nina Hampl, Werner H. Hoffmann, Georg Reischauer

FACTBOX

Duration	2013–2021
Institute	Institute for Strategic Management
Department	Department of Strategy and Innovation
Additional WU collaborators	Paola Belingheri, Philipp Buss, Wolfgang Sachsenhofer
External partners	OMV AG, Wien Energie GmbH



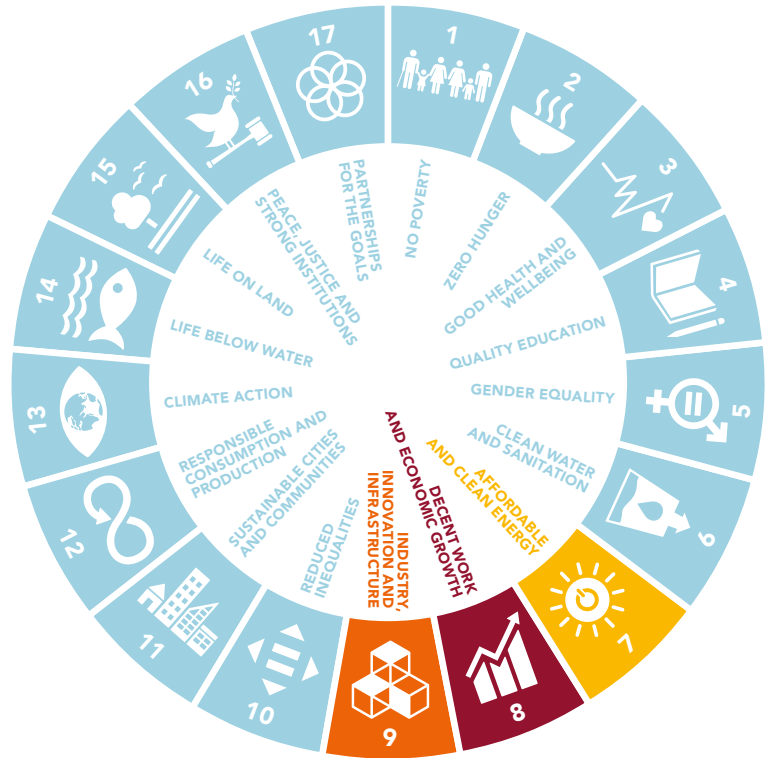
The energy industry is undergoing major changes, as new technologies and business fields gain ground alongside classic business models in areas like electricity, heat, and mobility. Other global trends, such as digitalization and the convergence of separate industrial sectors, are also presenting energy company managers with new challenges. In 2013, the Energy & Strategy Think Tank was established at WU's Institute for Strategic Management to respond to these developments. The think tank promotes management research and education on strategic challenges in the energy industry and fosters exchange between energy industry research and practice.

The exploration of business model portfolio evolution and dynamics in established companies showed that the success of new business models is contingent on a synergetic link to the core business model.

THE RESEARCH

One field the Energy & Strategy Think Tank explores is business model portfolio management (the sum of all of a company's business models) and business model innovation. The research project traced the evolution and dynamics of business model portfolios in a total of six companies (three companies from the energy sector and three companies from other sectors). In a multiple-case study, interviews were conducted with representatives of each company and secondary data (e.g. annual reports, newspaper articles, websites) on the companies' histories and business models were collected. The results showed that business model portfolio evolution and dynamics can be broken down into three phases: (1) drafting of the first "viable" business model (core business model) and its growth; (2) diversification into a portfolio through business model innovation; and (3) evolution of the business model portfolio as the initial core business model is replaced by another business model from the portfolio. New business models contribute most effectively to corporate growth if they have a synergetic link to the core business model.

The findings on business model portfolio evolution and the direct research practice exchange contribute to the management of business model portfolios.

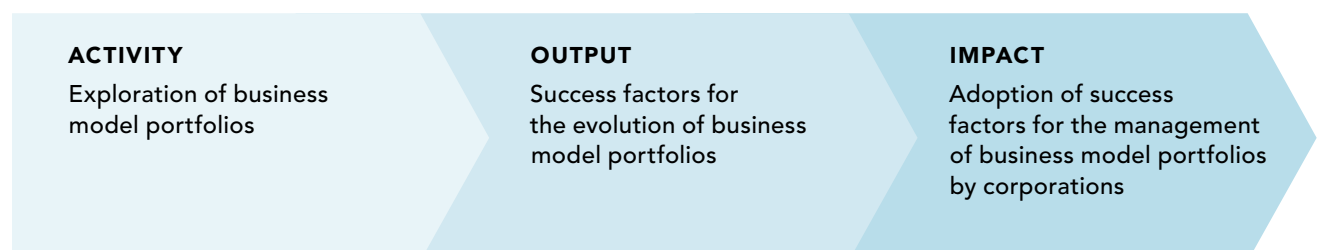


THE IMPACT

The Energy & Strategy Think Tank is a unique Austrian collaboration between a university research institute and corporate partners in the energy sector. Through strategic alliances, the Energy & Strategy Think Tank works closely with private-sector partners to translate its research findings into real-world management practices. The research project findings on business model portfolio evolution and dynamics are part of the ongoing dialog between participating company representatives and Energy & Strategy Think Tank members. During the project, a number of workshops held with corporate partners provided an opportunity to apply the methods developed during the project to illustrate, analyze, and reflect on partners' business model portfolios. This

exchange helped companies identify business areas that could be synergistically integrated into their business model portfolios, and thus contributes to the evolution of their business model portfolios. Students were involved as well in developing ideas for new, innovative business models for corporate partners as part of master's theses and in a course in WU Vienna's Master's Program in Strategy, Innovation and Management Control (SIMC). The Energy & Strategy Think Tank is helping make the energy industry a key building block and driver of our modern society. In this way, it contributes to advancing SDG 7 "Affordable and Clean Energy," SDG 8 "Decent Work and Economic Growth," and SDG 9 "Industry, Innovation and Infrastructure."

IMPACT PATHWAY



Social supermarkets in Europe

Christina Holweg, Eva Lienbacher

FACTBOX

Duration	2011–2016
Institute	Institute for Retailing and Marketing
Department	Department of Marketing
External partners	ECR Austria, Social supermarkets across six European countries (including umbrella companies such as Caritas, Samaritan, the Vinzi Group)



Social supermarkets are retail stores that sell food and consumer products at very low prices exclusively to people who live in or are at risk of poverty. Manufacturers and retailers donate the products sold, which are generally either from surplus production or close to their expiration dates. By collecting and selling these products, social supermarkets help to reduce food waste while supporting financially vulnerable consumers. In 2017, about 17% of the European population, that is 85 million people, were living at risk of poverty. Social supermarkets represent a novel type of retail store that started out in France in the late 1980s and spread throughout Europe after the 2008 economic crisis.

The research project identified more than 1,000 social supermarkets in six European countries, many of which offer reintegration programs for people in long-term unemployment.

THE RESEARCH

The research analyzed the “social supermarket” concept, and detailed how these markets operate (e.g. the assortment of goods available, price points, the logistics involved) and the services they provide to customers. The study also looked into which European countries had social supermarkets and who their key stakeholder groups were. The results of the international survey were summarized in the comprehensive “Social Supermarkets in Europe” report. The study found more than 1,000 social supermarkets in six European countries: France, Austria, Belgium, Switzerland, Luxembourg, and Romania. While the assortments and services differed from country to country, all shared the objective of supporting people living in poverty. The low, almost symbolic prices were about one-third of the regular price for the same product in a conventional retail store. Many stores also offer training and reintegration programs to help people in long-term unemployment back into work. Social supermarkets are mainly non-profit organizations run by volunteers.

The study findings were incorporated into the European Commission's report on social supermarkets and served as a basis for opening new social supermarkets in the UK, Sweden, and Denmark.



THE IMPACT

The "Social Supermarkets in Europe" report provides the first detailed description and analysis of the unique social supermarket concept. The study compared social supermarkets in six European countries with respect to product range, operations, services provided, and cooperation with local stakeholders, providing valuable information for the international expansion of this unique retail concept. Based on the WU researchers' findings and lessons learned, the first social supermarkets recently opened in the UK, Denmark, and Sweden. Politicians have also shown an interest in the findings from the "Social Supermarkets in Europe" report and national media have reported on them (including British "The Guardian," Danish "Berlingske," and Swedish "Almedalen Week"). The study authors

presented their findings to political decision-makers at the Almedalen Forum, the largest annual socio-political forum in Scandinavia. Christina Holweg was invited by the Lord Speaker of the British Parliament's House of Lords to talk about the relevance of social supermarkets in Europe. The European Commission cited the research results in its paper on social supermarkets, which included a feasibility study on social supermarkets and called them an important measure for preventing food waste and a meaningful social initiative. In this way, the research into social supermarkets in Europe has contributed to fighting poverty and reducing food waste, promoting the fulfilment of SDG 1 "No Poverty," SDG 2 "Zero Hunger," and SDG 12 "Responsible Consumption and Production."

IMPACT PATHWAY



Rating model for credit assessment in the Eurosystem

Kurt Hornik, Rainer Jankowitsch, Stefan Pichler

FACTBOX

Duration	2008–2015
Institute	Institute for Statistics and Mathematics, Institute for Finance, Banking and Insurance
Department	Department of Finance, Accounting and Statistics
External partners	Oesterreichische Nationalbank



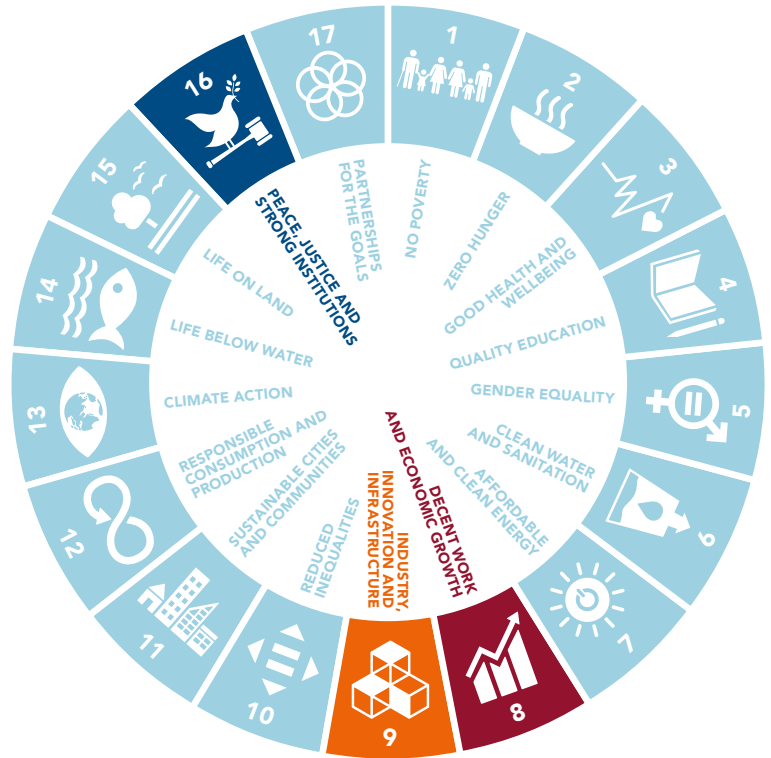
The European Monetary Union established the Eurosystem as the monetary authority over the euro. It consists of the European Central Bank and the national central banks of all EU countries that have adopted the euro as their official currency. In the Eurosystem, the national central banks grant different forms of liquidity-providing credits to banks. Every bank in the Eurosystem must submit eligible assets to its central bank as collateral for these transactions. Credit claims against corporations (often termed enterprises in this context) play an important role in this process, as they can be used as eligible collateral by banks. The creditworthiness of each individual enterprise determines whether and to what extent a corporate credit claim is accepted as collateral. Central banks use appropriate credit assessment procedures (rating models) to analyze this creditworthiness.

The research project developed a model for assessing the creditworthiness of corporations for monetary policy transactions in cooperation with the Austrian central bank.

THE RESEARCH

The research project developed a theoretical framework and an improved credit rating model to assess the creditworthiness of enterprises for monetary policy transactions in the Eurosystem. In cooperation with the Oesterreichische Nationalbank (and later with other European central banks), the project findings were integrated into the CoCAS rating model (Common Credit Assessment System for assessing the eligibility of enterprises). The implementation was performed in three steps: First, a rating model was developed for large corporations with International Financial Reporting Standards (IFRS)-compliant accounting, then a rating model was developed for enterprises in compliance with local accounting standards, and finally a stochastic framework was implemented for the simultaneous consideration of external ratings, balance sheet data, and default information, and entered into the forecasting model.

Important central banks in the Eurosystem use the rating model to determine whether and to what extent corporate debt securities are accepted as collateral.

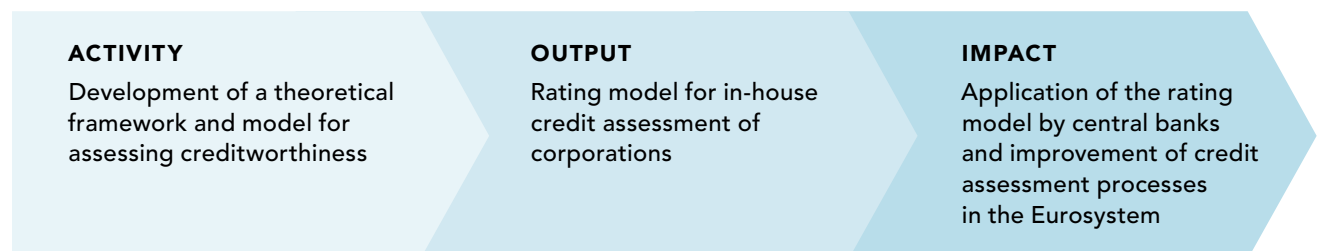


THE IMPACT

In Austria and Germany, the Oesterreichische Nationalbank and the Deutsche Bundesbank have been using the rating model that emerged from the project to assess the eligibility of enterprises since 2011. It has subsequently also been adopted by the central banks of Spain, Belgium, and Portugal. In the Eurosystem, every bank has to submit eligible assets to its central bank as collateral for loans. CoCAS helps determine whether and to what extent certain debt securities are accepted as collateral. Today, CoCAS is the central management tool for liquidity-providing credits granted within the Eurosystem's monetary policy framework. This collateral portfolio has become one of the largest credit portfolios in the world and has contributed to harmonizing the analytical approach in the Eurosystem. In practice, the new assessment system has

shown significantly better forecasting quality compared to the methods employed in the past, which essentially means that the model predicts corporate defaults more accurately than other models. This has raised the economic efficiency of the Eurosystem's monetary policy and, above all, led to more accurate allocations and reduced the credit risk inherent in the Eurosystem's collateral and bond portfolio, which has grown massively since 2008. In this way, the research project and the resulting model contribute to strengthening financial institutions and promote SDG 16 "Peace, Justice and Strong Institutions." They have also had a positive impact on the European Monetary Union economy and contribute to the achievement of SDG 8 "Decent Work and Economic Growth" and SDG 9 "Industry, Innovation and Infrastructure."

IMPACT PATHWAY



Terminating shareholders' agreements

Susanne Kalss

FACTBOX

Duration	2015–2016
Institute	Institute for Business Law
Department	Department of Private law



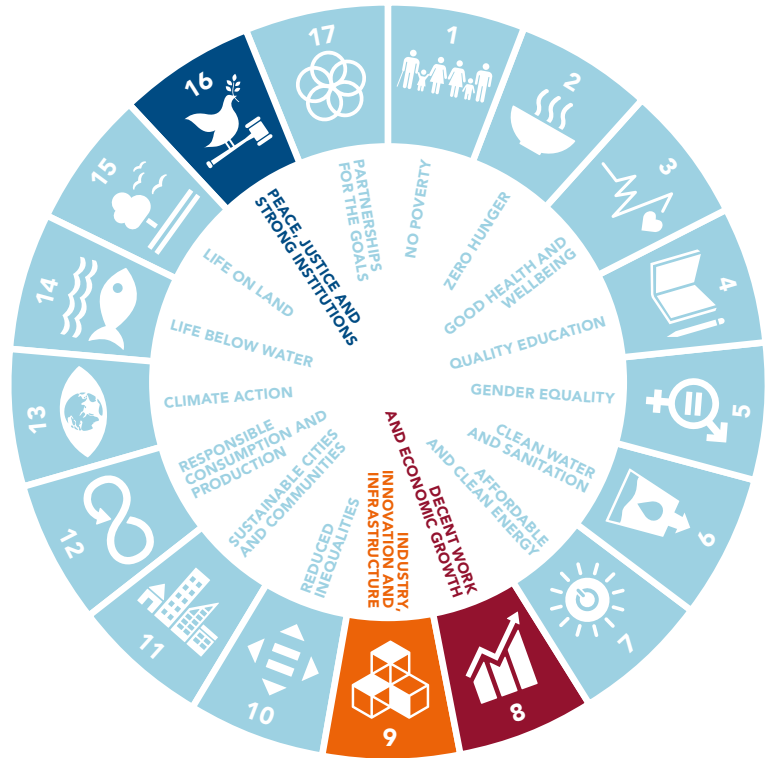
In Austria, many family businesses, joint ventures, and other companies have shareholders' agreements. They define the distribution of power and money in a company, including public and limited liability companies, but also private companies. Shareholders' agreements are important, confidential contracts that divvy up influence and economic interests among a company's shareholders. They ensure stability and cohesion among shareholders, but also allow firms to avoid content control from the registration office. So legislation on the duration and termination of shareholders' agreements is extremely important.

An analysis of the legal provisions governing shareholders' agreements led to a legislative proposal drawn up to improve framework conditions for shareholders.

THE RESEARCH

The aim of the research was to examine legislation on terminating shareholders' agreements, specifically the option for unilateral termination that took effect in 2015. In the past, shareholders' agreements were signed for 20–30 years with no exit options. The new guidelines allowed for termination at the end of each financial year. The analysis focused on the adverse and largely overlooked impact of the new legal guidelines on both syndicates and the companies behind them. The research found the annual exit option greatly limited the central purpose of shareholders' agreements, namely to safeguard the stability of the relationships among shareholders, while also curtailing their cohesive influence on a firm and shareholder stability. This has raised fears that shareholder groups might easily fracture, raised the risk of a family shareholder's sudden exit, and increased the desire to sell shares to outside investors. These findings were incorporated into a legislative proposal designed to exempt shareholders' and other similar agreements from these strict termination rules and increase planning security.

The legislative proposal led to an amendment of the civil code and the fair regulation of the termination of shareholders' agreements for family businesses and other companies.

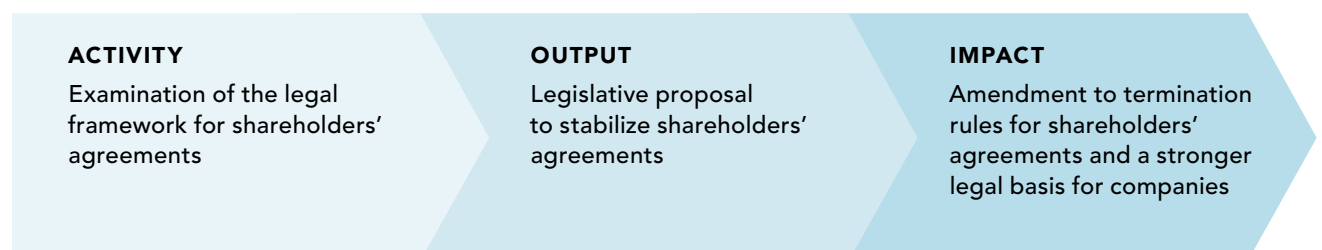


THE IMPACT

The legislative proposal that emerged from the research findings on terminating shareholders' agreements had far-reaching consequences. The Federal Ministry of Justice accepted the proposal, and adapted and incorporated it into an amendment to the law. The proposal convincingly argued that the easy and annual exit option was tailored for other types of companies and was not a necessary protective measure for shareholders' agreements. The research sparked debate in the legal community. The government acknowledged the negative consequences on companies, and adopted the legislative proposal to exempt shareholders' agreements from the termination

provision. The research led to an amendment of the law just one and a half years after it had come into force. The law now exempts syndicate agreements from the general statutory termination option. In this way, the careful consideration, the legal policy analysis, and scholarly illustration of the adverse impact of the law contributed to an appropriate and practical amendment. This provided the Austrian economy with a more solid, legal foundation, promoting SDG 8 "Decent Work and Economic Growth," SDG 9 "Industry, Innovation and Infrastructure," and SDG 16 "Peace, Justice and Strong Institutions."

IMPACT PATHWAY



The ramifications of the insolvency of a province

Georg Kodek, Michael Potacs, Claudia Wutscher

FACTBOX

Duration	2015
Institute	Institute for Civil Law and Civil Procedure
Department	Department of Private Law



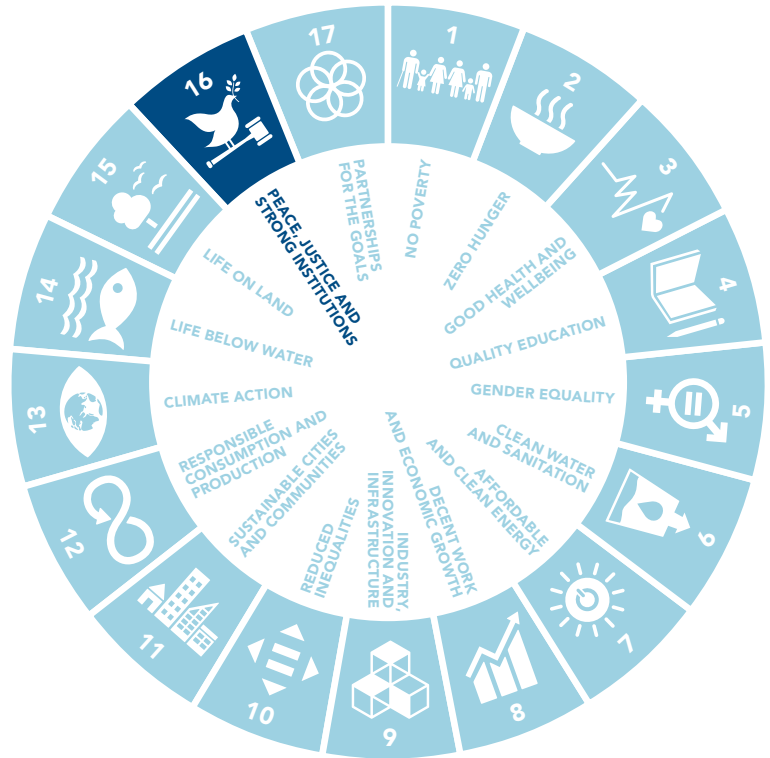
Unlike in other countries such as Germany, municipalities and provinces in Austria are generally eligible for insolvency. However, the insolvency of a province differs in many respects from when a company or individual person declares bankruptcy. Due to the functions and responsibilities the Austrian constitution assigns to provinces and municipalities, a province could not be allowed to simply disband. These functions and responsibilities include providing social security, child and youth welfare and protective services, subsidized housing, running hospitals, childcare centers and public schools, and promoting sports, tourism, and conservation, to name just a few. This raises the difficult problem of reconciling the province's constitutional function and guaranteed existence with the provisions of bankruptcy law.

The functions and responsibilities assigned to provinces in the constitution must continue to be fulfilled during insolvency proceedings.

THE RESEARCH

The Province of Carinthia commissioned the study to investigate which of its assets would be affected by insolvency and how this would impact the province and its people. With the impending collapse of the Hypo Alpe Adria bank, the Carinthian government was facing liabilities for the guarantees it had issued, and asked Georg Kodek and Michael Potacs to detail the possible ramifications of insolvency proceedings. Building on the results of earlier research on insolvencies of states, provinces, and municipalities, the study examined the possible impact of insolvency on a province and its responsibilities, such as financing schools, hospitals, and government employee salaries. These issues were analyzed and interpreted from both a private-law and a public-law perspective. The analysis showed that the province's constitutional functions and responsibilities must be guaranteed even during insolvency proceedings. This functional guarantee means that those assets essential for fulfilling a province's constitutional functions and responsibilities are excluded from the insolvency estate from the outset, and are therefore not subject to the effects of the insolvency proceedings.

The legal assessment on the insolvency of a province and the impact of the constitutional functional guarantee contributed to the decision to use federal funds to acquire most of Hypo Alpe Adria's bonds instead of initiating insolvency proceedings.

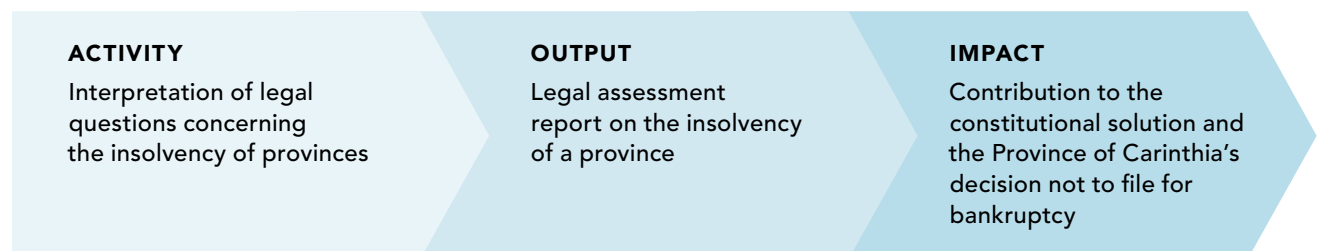


THE IMPACT

The legal assessment of the possible outcomes of insolvency proceedings for the province of Carinthia had far-reaching consequences for the way the collapse of Hypo Alpe Adria was handled. The study's findings, showing that those public assets essential to fulfilling a province's functions and responsibilities to the public (e.g. operating schools and hospitals) would not be affected by bankruptcy proceedings, were presented to Carinthian provincial parliament. The legal assessment was discussed there, and it contributed to Carinthia's decision not to initiate insolvency proceedings, as they would not have led to a discharge of the province's debts. Such a discharge would have required the consent of a majority of creditors, but Carinthia did not have sufficient resources to make creditors an offer that had any hope of succeeding. Ultimately, the Austrian government stepped in and a different resolution was reached. Federal and Carinthian

funds (mostly from the so-called "future fund" into which Carinthia had invested the proceeds from the sale of Hypo Alpe Adria) were used to acquire Hypo Alpe Adria's bond debt. The bondholders of Heta, the assets resolution company for former Hypo Alpe Adria, were offered a buyback option for the securities by the Province of Carinthia if they waived part of their claims in what is known as a "haircut." The Austrian Constitutional Court subsequently ruled that this solution was constitutional. The research thus contributed to securing the functions and responsibilities assigned to provinces in the constitution (SDG 16 "Peace, Justice and Strong Institutions"). The research findings also kicked off a debate on the laws governing the insolvency of provinces. Intensive discussion took place in legal journals and in the media, and some years later as part of the discourse on introducing special laws for insolvency proceedings for provinces.

IMPACT PATHWAY



Gender on British comedy panel shows

Ursula Lutzky

FACTBOX

Duration	2012–2016
Institute	Institute for English Business Communication
Department	Department of Foreign Language Business Communication
External partners	Robert Lawson (Birmingham City University)



Comedy panel shows are a staple in the British television industry. The format usually involves four to six comedians working in teams to answer questions on current events, history, and sports, like *Mock the Week* (BBC, UK), where panelists respond to breaking news. Another common feature shared by panel shows is that the panelists are almost exclusively male comedians. The announcement by a few well-known female comedians that they would not return to *Mock the Week* highlighted the panel show's aggressive style of communication characterized by frequent interruptions. Although there is a great deal of public interest in panel shows, there has been very little research on this area of the entertainment industry.

The linguistic analysis of the *Mock the Week* comedy show found that communicative discrimination against female comedians on the show was not solely due to their gender.

THE RESEARCH

The aim of the research project was to find out whether female comedians were at a communicative disadvantage on British comedy panel shows and, if so, whether this discrimination was due to institutional sexism on comedy shows. Researchers transcribed every episode of the fifth season of *Mock the Week* and the resulting text corpus was analyzed to see how much each panelist spoke, interrupted, and was interrupted. The analysis showed that comedians who talked a lot or frequently interrupted their fellow panelists during the show did not always display communicative dominance. The interruptions also functioned as a strategy to generate humor on the show, meaning this particular communicative behavior cannot be attributed to a single factor, such as gender. Instead, the concept of communicative dominance should be viewed as the interplay of a number of factors. Along with gender, these include format, here the comedy panel show, and other social variables such as each participant's role on the show.

Comedians and entertainment industry organizations picked up on the findings that various aspects, such as a participant's role in the cast, influenced the communicative success of female comedians.

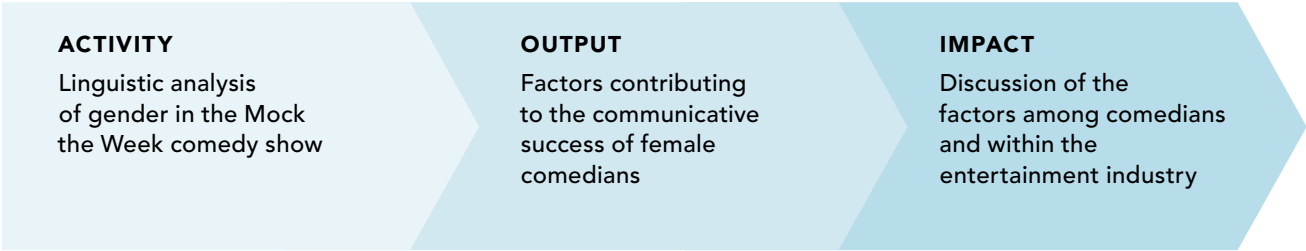


THE IMPACT

As the research project was underway, there were numerous public discussions about the disadvantages female comedians felt in the comedy genre due to their gender and gender-related roles. This led broadcasters such as the BBC to promise to increase the number of female comedians on their shows. The research found, however, that other aspects in addition to gender contributed to the disadvantages experienced by female comedians. So simply increasing the number of female comedians will not address the deeper issues at play. A comprehensive solution needs to consider the role of female comedians on a show, such as whether they are part of the regular cast, and the format as well, since these are crucial factors. The research has provided new insights into the role of female comedians on comedy panel shows and shown that more attention

needs to be paid to the space that participants (both male/female and new/established) are given on these shows in order to support the communicative involvement of all panel participants and compensate for any imbalances. Both individual comedians and organizations that focus on the role of women in comedy expressed an interest in the findings. These included English comedian Jo Brand and the American Women in Comedy NGO, whom Ursula Lutzky advised on options for improving the representation of women and minorities in comedy. Only a more detailed understanding of the processes that influence the successful involvement of all participants in comedy panel shows can lead to positive and effective changes in the industry. As such, the research findings' impact on the entertainment industry contributes to achieving SDG 5 "Gender Equality."

IMPACT PATHWAY



Gender budgeting in European fiscal policy

Katharina Mader, Luise Gubitzer

FACTBOX

Duration	2007–2008
Institute	Institute for Institutional and Heterodox Economics
Department	Department of Economics
Additional WU collaborators	Elisabeth Klatzer, Monika Mayrhofer, Katharina Muhr, Anna Obermair
External partners	Diane Elson (University of Essex), Regina Frey (genderbüro), Mascha Madörin, Birgit Sauer (University of Vienna), Christa Schlager (AK Vienna), Susanne Schunter-Kleemann (Hochschule Bremen)



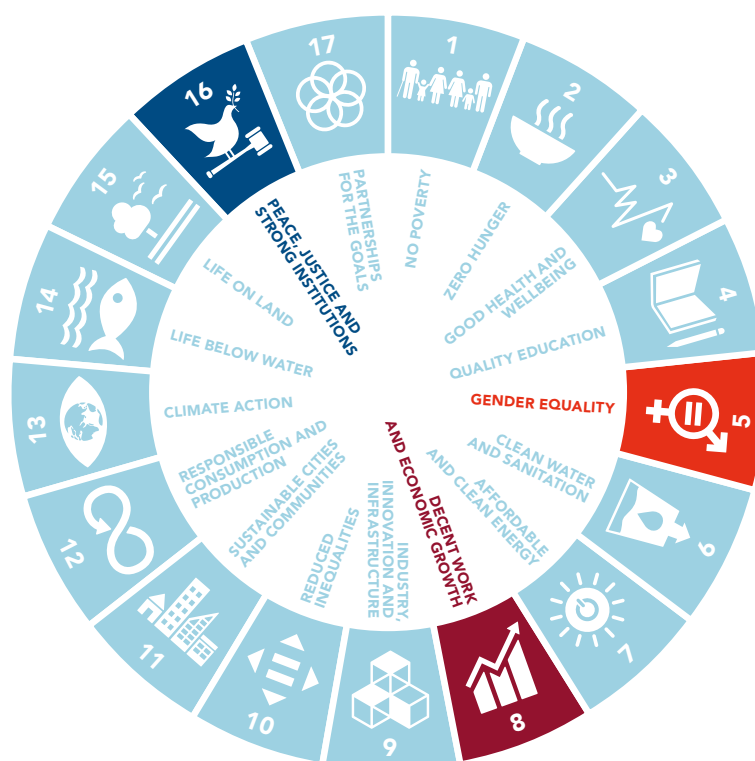
In 2009, Austria embedded actual equality between men and women in budgeting processes in its constitution, making it a pioneer in gender equality. Gender budgeting primarily targets policy changes that promote the gender-equitable distribution of public funds. It goes further than conventional analyses because it also considers unpaid work. Including unpaid work is crucial, because the effects of a budget on equality between men and women are significantly reflected in its effects on the level of unpaid work needing to be done. Fiscal policy turns a (gender) blind eye to budgeting if unpaid work is not taken into account in gender budgeting.

The research project advanced a macroeconomic model that includes both paid and unpaid work and services to support more accurate budget policies.

THE RESEARCH

The aim of the research was to deepen the theoretical basis for the practice of gender budgeting and thus lay the foundations for strengthening the potential of gender budgeting as a contribution to democratizing fiscal policy. Researchers also analyzed current budget policy at a national and EU level to identify options and framework conditions for gender budgeting. As part of the project, an expanded concept of the overall economy was developed by Luise Gubitzer that allows all the economic services inside a national economy to be recorded. This model allows for much more accurate budgeting policy, since both paid and unpaid services and work are included in the calculations. The project identified 14 central criteria and dimensions at the budget-process level, and a criteria list was drafted. This list served as the foundation for creating a model to analyze and design more gender-equitable budget processes and gender budget initiatives.

With the 2009 constitutional amendment, Austria became the first, and so far only, country to embed gender budgeting in its constitution.

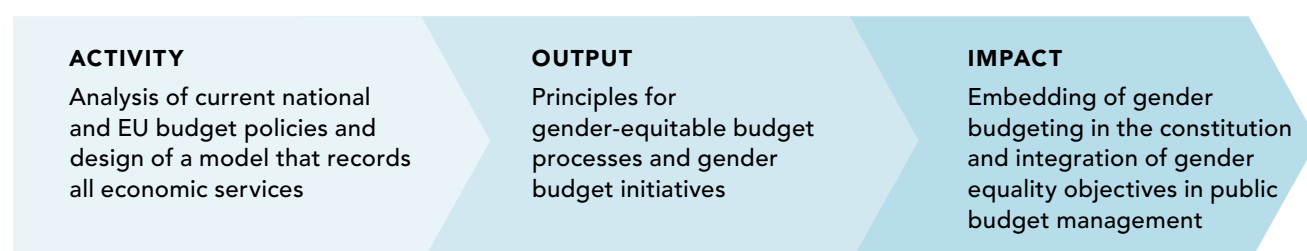


THE IMPACT

The impact of the research project on gender-equitable budget policy and democratic budget process design has been manifold. The project developed a foundation for gender budgeting that served as the basis for wide-reaching state and constitutional reforms as part of the Austrian Convention for fundamental state and constitutional reform. This process resulted in amendments to the Austrian federal constitution, making Austria the first and so far only country to embed gender budgeting in its constitution. Article 13.3 has been in effect since 2009: "The federation, the provinces, and the municipalities must aim at achieving the actual equality of women and men in the budget process." Since 2013, Article 51.8 of the Austrian constitution has prioritized the objective of achieving actual equality between women and men in the Austrian government's impact-oriented budget management policy:

"In the management of the federal budgets, the principles of striving for efficiency, particularly under respect of the goal of equal treatment of women and men, transparency, efficiency, and a true picture of the financial situation of the Federation are to be respected as much as possible." Every government department is now obliged to formulate five desired impact goals for the budget, one of which must address equality objectives. Since January 1, 2009, the 2007 amendment to the constitution has also required each federal ministry to carry out at least one gender budgeting project. The research has contributed to integrating the gender perspective into public budget design, thus contributing to the fulfillment of SDG 5 "Gender Equality," SDG 8 "Decent Work and Economic Growth," and SDG 16 "Peace, Justice and Strong Institutions" through the design of integrative economic policies.

IMPACT PATHWAY



The impact of EU free trade agreements on public services

Verena Madner, Stefan Mayr

FACTBOX

Duration	2014–2016
Institute	Research Institute for Urban Management and Governance
Department	Department of Socioeconomics
External partners	Austrian Association for Public and Social Economy, Austrian Association of Cities and Towns, Vienna Chamber of Labor, younion



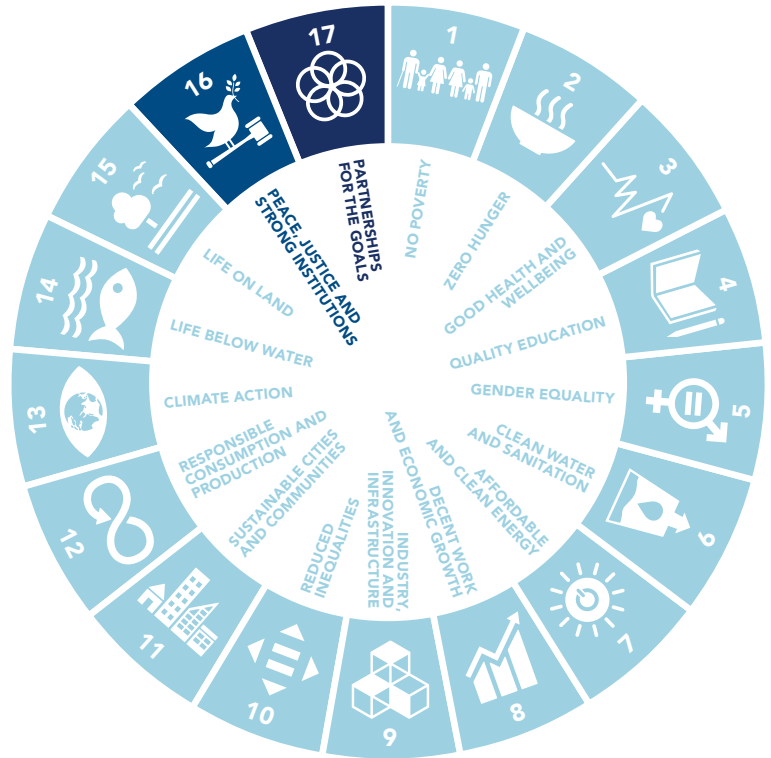
The European Union is currently negotiating free trade agreements with a number of countries that go well beyond liberalizing traditional trade in goods and services. The TTIP and CETA negotiations have been subject to especially fierce public criticism, in part because they were conducted behind closed doors for a long time, and in part because of fundamental disagreement regarding potential benefits and risks. From a legal perspective, many of the issues raised involve complex legal questions, such as whether investor-state arbitration is compatible with EU law. Aside from the controversial issue of investor-state arbitration, the debate has focused in particular on the agreements' potential effects on the organization, provision, and financing of public services. These public services traditionally play an important role in the Austrian welfare state.

The research identified provisions potentially affecting the organization and provision of public services and showed how free trade agreements increase the regulatory complexity for local, regional, and national governments when providing public services.

THE RESEARCH

The aim of the research project was to identify and analyze the various challenges posed by the so-called free trade agreements of a new generation. This included a systematic analysis of the complex regulatory structures and the interactions of different treaty chapters and mechanisms. Based on the CETA text (as negotiated at the time), the analysis aimed at identifying concrete provisions which could affect the policy space for the organization and provision of public services. Apart from an analysis of the potential effects of the planned investment protection regime, the analysis included, among other things, a sector-specific assessment of the effects on public procurement. The results showed that CETA and similar agreements significantly increase the regulatory complexity for local, regional and national governments when providing public services. The research project also included a detailed analysis of the division of competences between the EU and member states in the fields of international trade and investment policy.

The research results on the distribution of competences between the EU and member states informed policies and legislation and were even cited by the German Federal Constitutional Court.



THE IMPACT

The project has succeeded in making a highly complex topic accessible to a diverse audience and the interested public in a legally sound way, thus contributing to a more objective discussion. Verena Madner contributed to various Austrian media formats (ORF, Der Standard), and the study was also quoted in the Luxembourg "Tageblatt" and "Le Quotidien." In addition to numerous discussions with representatives from politics and civil society, the project also advised local governments on drafting effective information materials. The detailed analysis of the division of competences between the EU and member states in the fields of international trade and investment policy generated by the research had a noticeable impact on politics

and legislation. Verena Madner presented her findings to the Austrian National Council as part of a parliamentary expert hearing on free trade agreements, pointing out the plethora of legal and interpretative issues raised by free trade agreements like CETA. In an important ruling, the German Federal Constitutional Court cited a paper by Stefan Mayr on the division of competences between the EU and member states (BVerfG October 13, 2016, 2 BvR 1368/16 and others). The results of the research contribute to strengthening institutions and international cooperation (SDG 16 "Peace, Justice and Strong Institutions" and SDG 17 "Partnerships for the Goals") and promote fair interactions in international trade.

IMPACT PATHWAY

ACTIVITY

Content analysis of current EU free trade agreements

OUTPUT

Detailed insights into the division of competences between the EU and the member states in the fields of international trade and investment policy

IMPACT

Contributions to a more rational and balanced discourse on free trade agreements

How EU research contributes to sustainable development

André Martinuzzi, Markus Hametner

FACTBOX

Duration	2009–2015
Institute	Institute for Managing Sustainability
Department	Department of Socioeconomics
External partners	maystorm GmbH, TU Delft



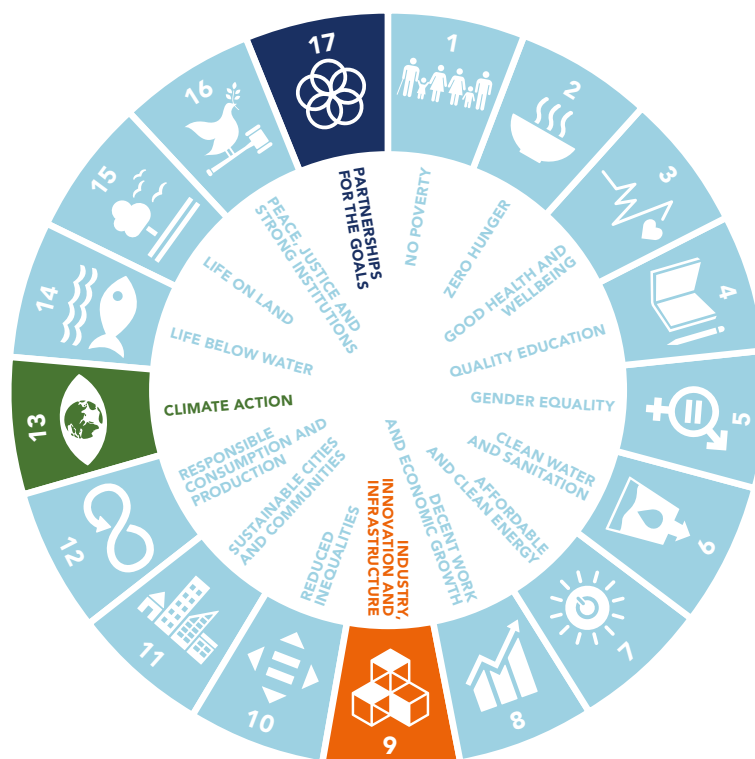
Science, technology, and innovation are fundamental to achieving sustainable development objectives, such as those set out in the EU Sustainable Development Strategy and in the Agenda 2030 and its SDGs. Both strategies call for strengthening research activities aimed at advancing knowledge and technological progress related to sustainable development. The Seventh Framework Programme for Research and Technological Development (FP7), the EU's main funding program for research across Europe from 2007 to 2013, answered this call: About two-thirds of its € 50 billion budget were dedicated to collaborative research (as part of the Cooperation program), with the overarching aim of contributing to sustainable development.

Data from the monitoring process showed that while FP7-funded research already addressed a number of sustainable development objectives, there was room for improvement, especially in ICT and transport research.

THE RESEARCH

The research project aimed to assess whether the Cooperation program lived up to its overarching aim of contributing to sustainable development. As a first step, the researchers carried out a feasibility study on how to best assess the impacts of FP7-funded research projects on sustainable development objectives. The findings supported the launch of the FP7-4-SD monitoring system. Data were primarily taken from expert assessments of expected research impacts, complemented with data on projects funded, project participants, and the European Commission's budgetary contribution. The monitoring results were published on an interactive platform (fp7-4-sd.eu) and included in policy briefs, journal articles, and book chapters. They were also presented at scientific conferences. Crucially, the monitoring process showed that while many of the research activities funded by FP7 considered sustainable development objectives, there was room for improvement, especially in ICT and transportation research.

The monitoring system and its findings helped shape EU research and innovation policies and played an important role in increasing the focus of EU-funded research on sustainable development.



THE IMPACT

The monitoring system developed for FP7-funded research and the findings regarding its contribution to sustainable development objectives had far-reaching impacts on shaping EU research and innovation policies, including the development of subsequent research framework programs. The research led to explicit quantitative targets that were included in Horizon 2020, the EU's research framework program for 2014 to 2020, with at least 35% of the total budget being dedicated to climate action and at least 60% expected to target sustainable development. The research thus contributed to SDG 9 "Industry, Innovation and Infrastructure," SDG 13 "Climate Action," and SDG 17 "Partnerships for the Goals." Furthermore, the FP7-4-SD monitoring system led to greater awareness

of sustainable development in the EU's largest research funding programs, contributed to the specific application of the EU Sustainable Development Strategy objectives in research and innovation, and supported evidence-based decision-making in European research and innovation policies. A report published by the researchers at the end of the project analyzed the FP7-funded research's effect on the SDGs, which was found to be particularly valuable. These findings were incorporated into the planning of future EU research framework programs. The project results also delivered key data for the FP7 ex-post evaluation designed to inform the mid-term review of the Horizon 2020 program, and were also cited during the debate on the next EU framework program, Horizon Europe.

IMPACT PATHWAY

ACTIVITY

Design of a monitoring system for assessing EU-funded research projects' impact on sustainable development

OUTPUT

Implemented monitoring system and data on the extent to which EU-funded research addressed sustainable development objectives

IMPACT

Explicit quantitative targets for budget distribution to promote sustainable development in future EU research framework programs

Management in police detention – safe and healthy prisons

Katharina Miko-Schefzig, Cornelia Reiter, Karin Sardadvar

FACTBOX

Duration	2016–2018
Institute	Competence Center for Empirical Research Methods
External partners	Institute for the Sociology of Law and Criminology (IRKS), Ministry of the Interior of Austria, queraum. cultural and social research



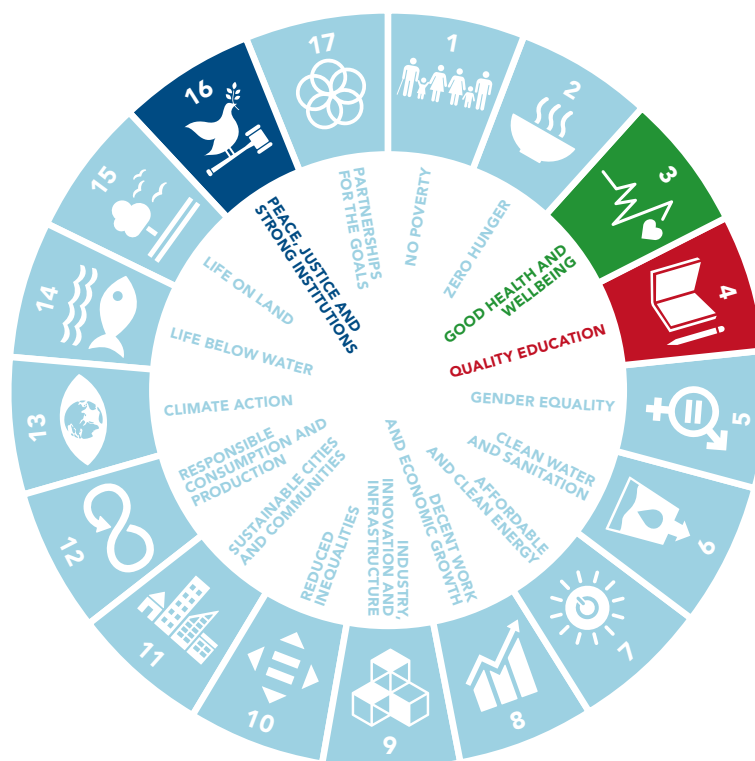
Police detention is a very important, yet little explored field in security research. Socially pressing aspects, such as administrative custody prior to repatriation and movements of refugees, come together in the police custody system, which also organizes administrative and provisional detentions. Although police detention affects human rights, there are very little data and few scientific studies on the prison and custody system.

The project developed concrete tools for modern management that guarantee the fundamental rights and integrity of detainees, as well as good working conditions and the health and safety of detention center staff.

THE RESEARCH

The Modern Management in Police Detention (MOMA) study, funded by the Austrian Ministry for Transport, Innovation and Technology's KIRAS National Research Development Program, assessed the health and social conditions of detainees and detention center staff. The project generated a scientific database and developed instruments for modern management designed to safeguard the fundamental rights and physical integrity of detainees ("healthy prisons") while ensuring a good working environment for police officers and other staff. The researchers conducted qualitative interviews and quantitative questionnaire surveys with detainees and staff in detention centers. Police officers and detainees shared their perspectives in vignette-based focus groups, a unique security research method developed by project lead Katharina Miko-Schefzig and colleagues that incorporates diversity aspects particularly well. The method sheds light on both the functional aspects of current custody enforcement approaches and on problem areas and potential for improvement. Based on the insight gained, a skills profile was drafted for the training and continuing education of police officers in detention centers. The project findings were advanced in participatory workshops with stakeholders and experts (such as academics, addiction counsellors, ombudspersons, NGOs) to provide solutions for the problems identified, which were then summarized in a resolutions handbook.

The Federal Ministry of the Interior's Security Academy employs the educational materials developed during the project in the training and continuing education of detention center staff, where they contribute to improving conditions for both detainees and staff.

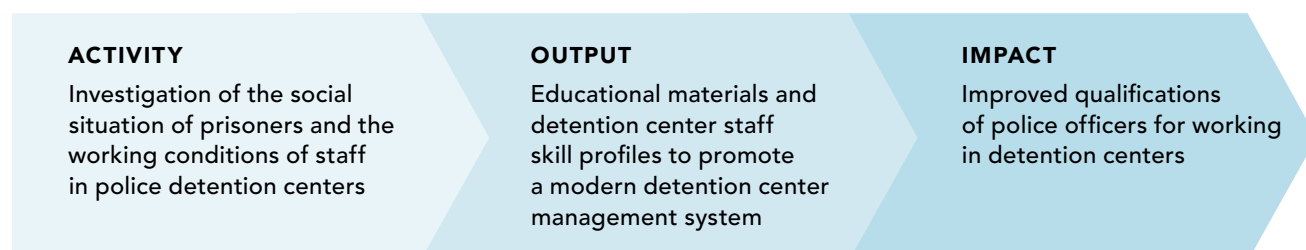


THE IMPACT

The study findings have been instrumental in designing modern approaches to detention center management and highlighted the needs of particularly vulnerable groups, such as detainees in custody pending deportation on the one hand, and the working conditions of prison officers on the other. So the project gave a voice to groups who are often not heard in this context, and the results were presented to the Directorate General for Public Security as well as to participating NGOs. The participation of people directly involved in the management of detention centers (police officers and the ministry's Security Academy staff) ensured the widespread transfer of the findings into practice. The project proposed improvements in the areas of health and safety, the modernization of detention center organization, and the deployment of staff skills in police detention management. The findings on the conditions

and problem areas in police detention centers and the skills profile developed as part of the project served as a basis for drafting educational materials. The Federal Ministry of the Interior (BMI) employs these educational materials in its central training and continuing education center, the Security Academy, to train and hone the skills of police officers working in detention centers, contributing to SDG 4 "Quality Education." In this way, the project is helping to improve the health and social well-being of prisoners, supporting SDG 3 "Good Health and Well-Being" and SDG 16 "Peace, Justice and Strong Institutions." The resolutions handbook developed during the project provides guidance for responding appropriately to difficult situations in police detention centers and can also help prevent such situations from occurring in the first place.

IMPACT PATHWAY



Social businesses in Austria

Reinhard Millner, Peter Vandro

FACTBOX

Duration	2015–2019
Institute	Competence Center for Nonprofit Organizations and Social Entrepreneurship
Additional WU collaborators	Michael Meyer, Clara Moder, Hanna Schneider



Until a few years ago, the boundaries between the state, the market, and the nonprofit sector seemed clearly defined. Recently, more and more organizational forms have begun emerging at the interface of these three sectors that call these boundaries into question. Social businesses can be positioned at the interface between the market and the third sector. As public funds are limited and the demand for social and societal services is on the rise (due to demographic change, unemployment, integration, etc.), social businesses are being considered as a promising concept that could combine the market economy with social objectives. The concept was fully thrust into the spotlight in Austria and around the world when Muhammad Yunus was awarded the Nobel Peace Prize.

Social businesses in Austria show immense growth potential, which the right framework would help realize.

THE RESEARCH

The research project analyzed the current and future potential of social businesses in Austria. The findings were based on a systematic literature review, an analysis of existing sector data, and a comprehensive survey of experts. The study found that there are 1,200–2,000 social businesses in Austria, including start-ups and established nonprofit organizations. The number of social businesses is expected to at least double by 2025. The most important drivers of this development are changes in social values, in corporate culture, and in the role of the state. The biggest obstacle to development and, at the same time, the greatest potential for accelerating the growth of the social business sector lies in the areas of financing and education. The study authors identified the provision of financing for social start-ups and educational programs in key areas for start-ups and innovation as particularly impactful. The study created the first well-founded basis for discourse on concrete options for expanding the social business field in Austria and developing the necessary support measures as well.

The project's recommendations for action led to better state support for social businesses and had a significant impact on job creation in Austria.



THE IMPACT

The research project findings on the current situation and future development of social businesses in Austria have led to better support for social businesses. The Austrian Council for Research and Technology Development included recommendations from the study in its proposals for political decision-makers. The Ministry of Social Affairs and the National Foundation for Research, Technology and Development responded by creating a funding program (€ 3 million) to promote start-ups and companies that focus on social and ecological areas. Austria's economic development bank, aws Austria, used these funds to develop the Social Business Initiative and the Social Business Call, programs that selected 21 social businesses from around 170 applicants and gave them up to € 100,000 in start-up funding. Study findings also played a role in the design of aws policies for driving the social business sector forward.

These have included open innovation events, the organized exchange of experience among all stakeholders in the social entrepreneurship field, as well as the public presentation of model social businesses and the entrepreneurs behind them. The research results were also used to generate the first database on social business in Austria, which has been regularly cited in strategy papers, such as the European Commission's 2018 "Social enterprises and their ecosystems in Europe" report. They have also inspired additional support programs for social entrepreneurs like the NEXT award and program for social entrepreneurship, initiated and organized by WU in conjunction with the UniCredit Foundation and UniCredit Bank Austria. The research results thus contribute to realizing SDG 8 "Decent Work and Economic Growth" and SDG 9 "Industry, Innovation and Infrastructure."

IMPACT PATHWAY



The effects of professional regulations

Andreas Minichberger

FACTBOX

Duration	2015–2016
Institute	Research Institute for Liberal Professions
Department	Department of Global Business and Trade
Additional WU collaborators	Leo W. Chini, Hannah Grafl, Elisabeth Reiner



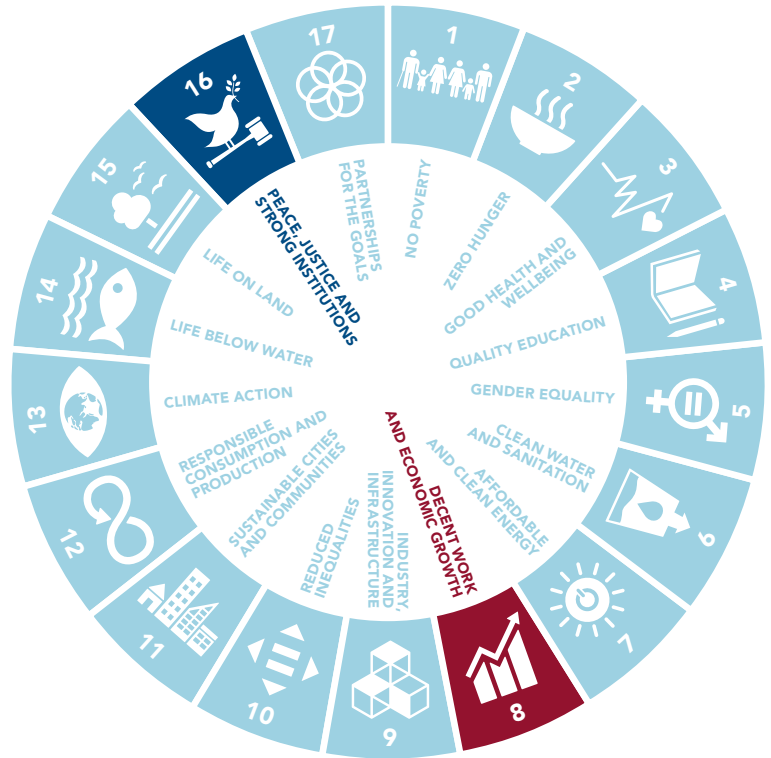
One of the European Commission's central functions is the creation of a single European internal market designed to enable the free movement of persons, services, goods, and capital. The aim of the EU's single market strategy is to ensure the EU's continued economic performance and competitiveness over the long term. One possible instrument for achieving this goal is the standardization of regulatory measures in all member states. Before any standardization can take place, it is important to assess what regulations make the most sense and how any possible amendments would affect them. In 2015, EU member states were asked to carry out such an evaluation to help determine the best way to meaningfully harmonize employment laws inside the EU.

The use of similar regulatory measures for different professions does not always lead to the same effects on income, employment level, and market participation.

THE RESEARCH

The aim of the research project was to analyze the effects of regulatory measures for professions in Austria. The study looked at the effects of regulations for specific professions on income, employment level, and market participation. The researchers also analyzed amendments to the corresponding legal regulations and conducted econometric analyses based on aggregated data provided by Statistics Austria and supplementary data from the respective trade and professional associations. The findings showed that similar measures for regulating different occupations do not always generate the same effects. For example, liberalizing entry barriers for architects increased the number of architectural firms, but had a negative impact on employment and income. When the same regulatory reforms were applied to engineering consultants, they resulted in reduced employment rates, a decrease in the number of engineering firms, and lower incomes. The findings were summarized in a publically available report, and presented and discussed at a Single Market Forum meeting (where policy makers, researchers, and stakeholders meet to discuss a specific issue relevant to the single market strategy) in Brussels. The meeting participants also concluded that similar regulation measures did not always lead to the same effects in different countries.

The findings on professional regulatory measures were incorporated into the EU's single market strategy and contributed to the European Commission's introduction of a proportionality test that allows all member states to specifically regulate various professions.

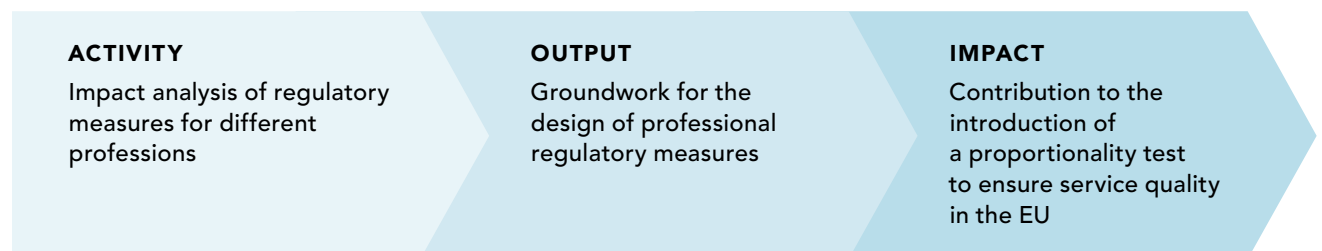


THE IMPACT

The research project showed that similar regulatory measures have different effects on different professions. These findings were incorporated into the EU's single market strategy. They also contributed to the debate on additional harmonization measures inside the EU and led to the introduction of a proportionality test for changes in professional regulations by member states. National regulations of professions are thus allowed, provided they complete and pass the proportionality test and respect the principle of non-discrimination. The proportionality assessment determines whether a proposed regulation infringes on the legal principle of proportionality. In simple terms, this means a regulation cannot excessively interfere with personal rights in the public interest. The proportionality tests must be appropriate to the nature,

content, and effect of the regulation. The testing process was also simplified by removing some of the criteria formerly deemed necessary for a successful outcome. Furthermore, new or amended rules can now be assessed not just for their possible negative, but also for possible positive effects. For industries and individual professions, this means that the EU cannot change via harmonization the national regulations that ensure the quality of services provided, thus eliminating the risk of a loss of quality. By contributing to the introduction of a proportionality test, the research findings contributed to ensuring the service quality of various professions through tailor-made regulations, and, in this way, promote SDG 8 "Decent Work and Economic Growth" and SDG 16 "Peace, Justice and Strong Institutions."

IMPACT PATHWAY



Incentives for improving road safety

Alexander Mürmann, Stefanie Peer

FACTBOX	
Duration	2017–2019
Institute	Institute for Finance, Banking and Insurance Institute for Multi-Level Governance and Development
Department	Department of Finance, Accounting and Statistics, Department of Socioeconomics
External partners	Austrian Road Safety Board, Dolphin Technologies GmbH



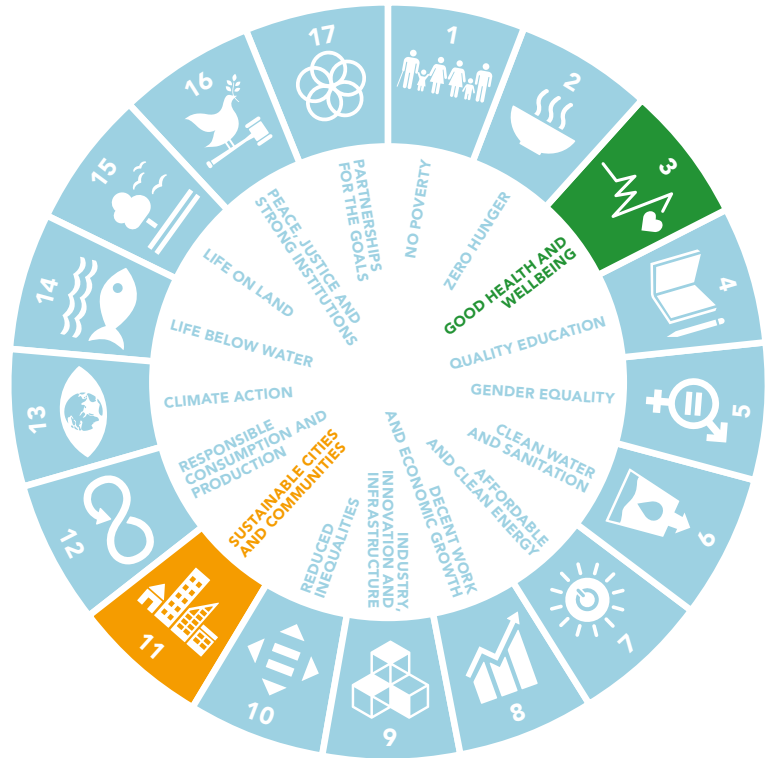
Young, novice drivers run a greater risk of being involved in car accidents, a risk that is two to three times higher than that of older, more experienced drivers in Austria. About a fifth of all deaths in the 14–24 age group can be attributed to motor vehicle accidents. Along with limited driving experience, lifestyle choices and young drivers’ immaturity tend to result in riskier driving, in particular among young men, which increases the likelihood of accidents.

New drivers’ road safety can be improved by intrinsic motivations, such as app-based feedback on driving behavior, and extrinsic motivations, such as monetary incentives.

THE RESEARCH

In a field experiment, researchers investigated whether and how drivers who recently obtained their driver’s licenses reacted to app-based feedback on their safety-relevant driving behavior (speeding, smartphone usage, cornering, acceleration, and braking). They identified the factors that influenced feedback intensity (i.e. how much participants interacted with the app) and examined whether the learning effects from the feedback mechanism were enhanced when coupled with monetary incentives for safe driving behavior. In a sample of 130 Austrian novice drivers, the research found that app use increased safe driving skills. These improvements were even greater when linked to monetary incentives, a clear indication of the potential role extrinsic motivation could play in improving road traffic safety. Moreover, drivers who already practiced relatively safe driving before receiving app-based feedback used the app more intensely, and greater app use led to greater improvements in driving skills.

Insurance companies have launched various programs that not only cover potential damage, but also reward customers for avoiding risks.



THE IMPACT

The study found a positive link between intrinsic motivations and monetary incentives and the road safety of new drivers. A number of insurance providers have incorporated these findings into their program design. Several insurance companies have launched new programs that employ the technology developed by research partner Dolphin Technologies and reflect a departure from the classic approach of insurance companies, car manufacturers, and banks. Instead of just charging novice drivers a premium to cover potential damage and then processing claims after an accident has occurred, customers can now earn rewards for avoiding risks. The companies involved in these novel programs include insurer DEVK Versicherung and Santander Bank in Germany, online

insurer Cherrisk in Hungary, Porsche Austria, and the UNIQA Insurance Group in Austria. The UNIQA Insurance Group and research partner Dolphin Technologies have jointly launched the goSmart app, for example. A points system rewards drivers who do not use their smartphones while driving, and the points can be redeemed at various participating companies. The app also records driving behavior and analyzes elements like cornering and compliance with speed limits, thus promoting safe driving. Over 50,000 drivers currently use the app. The research project therefore contributes to safe traffic systems and, consequently, to reducing accidents (SDG 3 “Good Health and Well-Being” and SDG 11 “Sustainable Cities and Communities”).

IMPACT PATHWAY

ACTIVITY

Field experiment with novice drivers regarding safety-relevant driving behavior and app-based feedback

OUTPUT

Groundwork for the design of app-based insurance programs that promote road safety

IMPACT

App-based insurance programs that reward customers for avoiding risky driving behavior

Reducing early school leaving in Europe

Erna Nairz-Wirth, Marie Gitschthaler, Melanie Fraisl

FACTBOX

Duration	2013–2018
Institute	Education Sciences Group
Department	Department of Management
External partners	Autonomous University of Barcelona, Central European University, Erasmus University Rotterdam, Middlesex University, Stockholm University, University of Antwerp, University of Porto, University of Warsaw



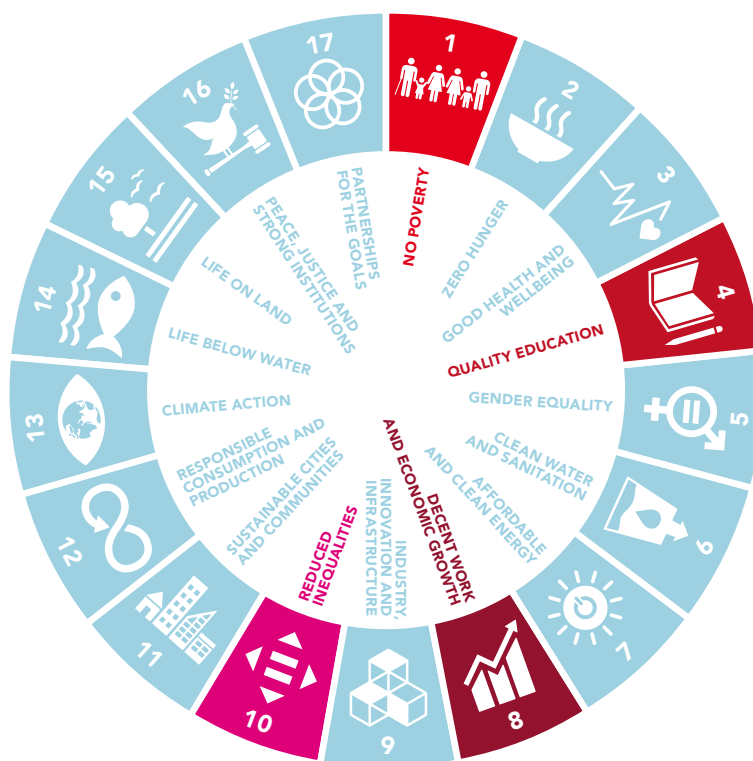
An average of 10.6% of young people (aged 18–24) in the EU-28 were early leavers (ESLs) from education and training, in other words, they had completed at most a lower secondary education. This figure is indicative of an immense waste of young people's potential, and also has serious social and economic consequences. Early school leaving hampers economic and social development for the individual, but also for society as a whole, especially in a globalizing and knowledge-based EU economy. The few existing studies estimate the average societal costs of ESL over the course of a lifetime to be about € 1.1 million per early school leaver.

More than 14,000 students across Europe were surveyed in order to identify the factors that lead to early school leaving.

THE RESEARCH

The European RESL.eu research project was dedicated to improving education systems at the European, national, and regional levels. It involved a total of nine academic institutions and collected new empirical data that allowed for an assessment of the various factors that influence the processes involved in early school leaving and helped identify risk factors that limited students' resilience. A survey conducted with 14,000 students across Europe revealed that ESL is the result of a long, multifactorial process impacted by factors relating to the student, their family, the school, and the community, as well as to the specifics of the national education system. These factors need to be analyzed from a holistic rather than an isolated perspective if they are to serve as the basis for effective measures for reducing early school leaving. Based on these insights, RESL.eu developed a set of policy recommendations and tools to support key actors in the education sector, NGOs, and policymakers. The toolkit (bit.ly/resltoolkit) is primarily directed at educators and practitioners working with youth and supports them in identifying and monitoring students in need of greater guidance and assistance.

The developed toolkit has been included on the European Commission's "European Toolkit for Schools" platform.

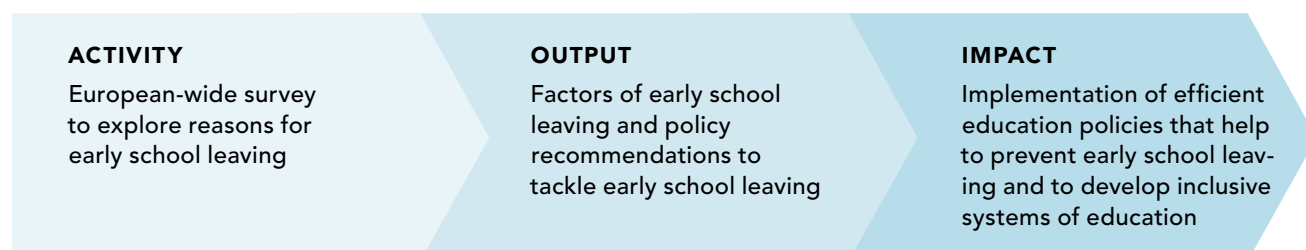


THE IMPACT

Identifying the multifactorial process and the variety of risk factors involved contributed to a better understanding of mechanisms of early school leaving. The research has helped reduce early school leaving and thus directly contributed to SDG 4 "Quality Education." Better education also supports the fight against poverty (SDG 1 "No Poverty"), is a basis for job security and economic growth (SDG 8 "Decent Work and Economic Growth") and reduces inequalities among different demographic groups (SDG 10 "Reduced Inequalities"). The results have supported and influenced regional, national, and international policymakers in developing efficient education policies to strengthen inclusion within education systems, especially for socially disadvantaged adolescents. The project also led to the

establishment of nine national action platforms across Europe that have helped bolster dialogue between policy makers and civil society on early school leaving. In addition, the RESL.eu toolkit was included on the European Commission's "European Toolkit for Schools" platform, which provides educators and parents with ideas and good practices. This wider audience means it promotes a better understanding of early school leaving in the education and continuing professional development of all school staff, especially teachers, who are vital in preventing early school leaving. The toolkit has since facilitated differentiated learning support in an inclusive and individualized way, especially for young people who are at risk of school disengagement and early school leaving.

IMPACT PATHWAY



Civil society in Central and Eastern Europe

Michaela Neumayr, Peter Vandro, Reinhard Millner

FACTBOX

Duration	2015–2017
Institute	Competence Center for Nonprofit Organizations and Social Entrepreneurship, Institute for Nonprofit Management
Department	Department of Management
Additional WU collaborators	Anita Baralija, Kathrin Braun, Michael Meyer, Camilla Mittelberger, Clara Moder, Astrid Pennerstorfer, Nina Resch, Nicole Traxler



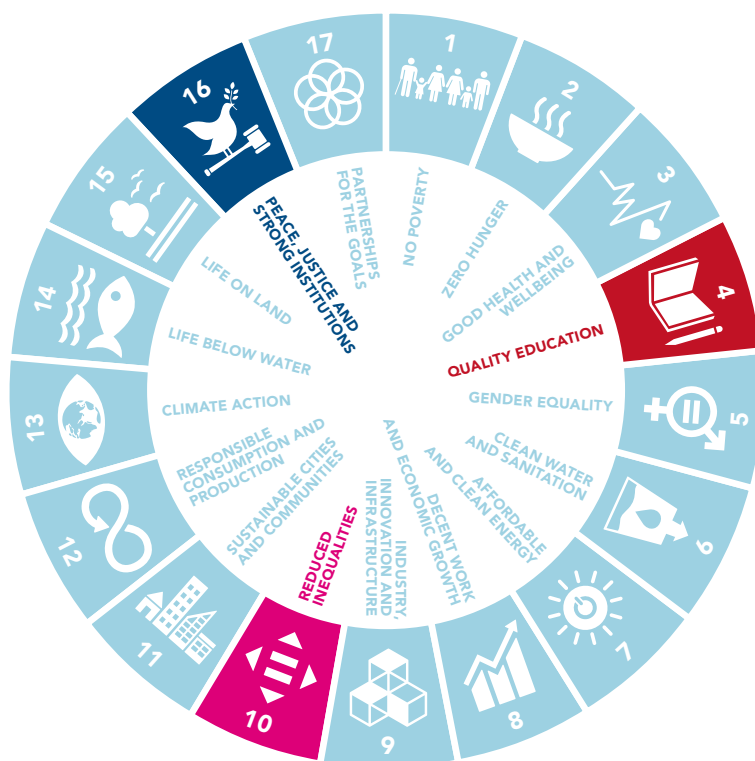
Civil society in Central and Eastern Europe (CEE) has changed enormously since the fall of the Iron Curtain. While at the time many hoped and anticipated that civil society would grow stronger, the current political situations in many CEE countries show little evidence of such a shift. Today, many governments seem to view their citizens' commitment to civil society as undesirable opposition. This is most evident in Hungary with its controversial campaign against the Central European University and NGOs involved in refugee aid, but is also visible in Poland, Romania, and other countries where the civil society climate is growing more aggressive.

The individual country reports on the role of civil society in Central and Eastern Europe showed that only a few countries enjoyed a tolerant and positive relationship between the government and civil society, and that NGOs play an important role in lessening tensions.

THE RESEARCH

The research project aimed to answer a wide range of questions, such as: How have civil societies in CEE developed over the last 30 years? Can certain patterns be identified among countries? What key institutional actors, i.e. governments, the EU, international foundations, and the media, are influencing this development, and how are they influencing it? Country reports and a comprehensive analysis of the state of civil society in the region were drafted based on a comprehensive review of existing studies and a survey of over 400 experts from 16 countries. The analysis showed that the EU in particular plays a central role in the development of civil society, as it provides candidate countries with framework conditions that strengthen civil society's role. In this way, the EU represents an important counterweight to national and regional governments, some of which are perceived to be autocratic and corrupt, and supports the development of NGOs and civil society as a whole. A paradox in the EU's role was also identified, as its support for the development of civil society seems to work best in countries that are still in accession negotiations. After accession, the EU's influence on legislation, fiscal policy, and opinion making drops dramatically.

The compiled country reports formed the basis for the expansion and reorganization of the programs and content offered by the ERSTE Foundation NGO Academy, which focuses on strengthening civil society and NGOs in Central and Eastern Europe.



THE IMPACT

The study paints an up-to-date picture of the current state of civil societies in CEE and highlights the important role of NGOs. The findings have been shared in numerous presentations, media reports, conference papers, and relevant journals and other publications. The study findings served as the impetus for repositioning and extending the ERSTE Foundation NGO Academy. Founded in 2013, the ERSTE Foundation NGO Academy is the largest capacity building and training program for NGOs in CEE, with over 1,500 trainee positions, and contributes to realizing SDG 4 “Quality Education.” The Academy predominantly targets NGOs active in social services (e.g. education, health care, integration) and culture. It also provides

support to over 70 flagship NGOs identified during the study. They have access to the NGO Academy’s services and will subsequently be integrated into the NGO Academy’s international network. Furthermore, the study identified a large number of local experts who were accepted into the ERSTE Foundation NGO Academy’s network as trainers. The Academy’s range of services and programs are in great demand and promote the management and leadership skills of decision-makers in NGOs. The study results thus contributed to strengthening institutions and civil society in CEE (SDG 10 “Reduced Inequalities” and SDG 16 “Peace, Justice and strong institutions”).

IMPACT PATHWAY



Tax and good governance in Africa

Jeffrey Owens, Rick McDonell

FACTBOX

Duration	2016–2018
Institute	Institute for Austrian and International Tax Law
Department	Department of Tax and Public Law
Additional WU collaborators	Jonathan Leigh Pemberton, Clement Migai, Marta Olowska
External partners	Riël Franzsen (University of Pretoria), United Nations Office on Drugs and Crime, World Bank Group



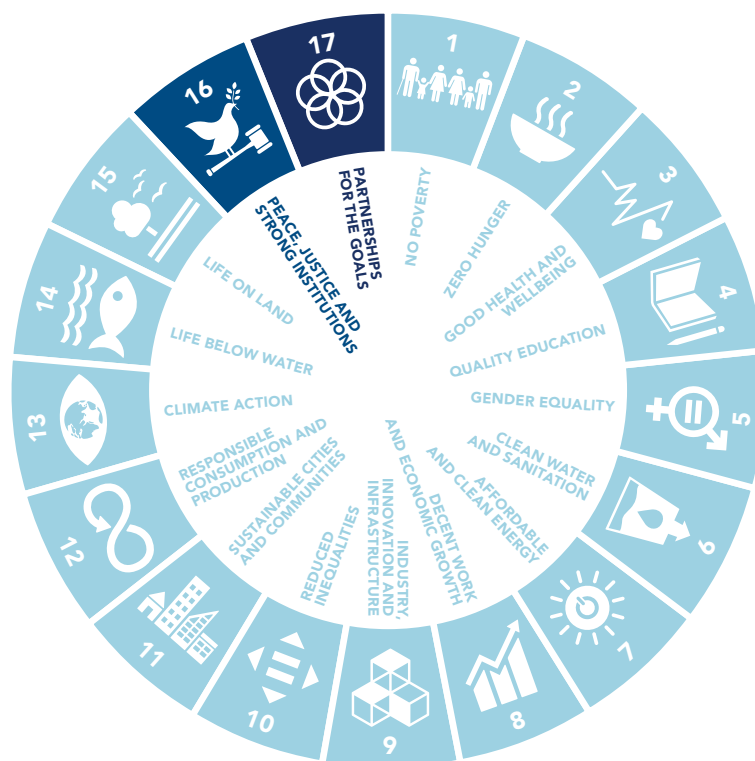
The problem of illicit financial flows has been prominent on the international agenda for the last decade. Illicit financial flows undermine domestic resource mobilization by eroding the tax base. This occurs through the illicit transfer of private capital abroad; tax evasion and tax avoidance by individuals and corporations; and embezzlement of government revenue. This in turn contributes to a greater dependency on official development assistance and to slower economic growth, which may subsequently hinder efforts to reduce poverty and inequality.

Interagency cooperation and emerging technologies are crucial in the fight against corruption, money laundering, and tax crimes in Africa.

THE RESEARCH

The research project identified the links between corruption, money laundering, and tax crimes. It promoted the concept of good tax governance and the importance of a corruption-free and transparent tax system for economic development. Jeffrey Owens and his team reviewed legislation and tax treaties and developed proposals for improving laws in order to build a more transparent legal framework. In addition, a variety of stakeholders in national tax administrations, law enforcement agencies, and private sectors were identified and mobilized, and a network of key institutions in Africa was established in order to build up institutional capacity. These activities were accompanied by training seminars and high-level conferences that brought together academics, government officials from Africa, international organizations (e.g. the African Development Bank, the Commonwealth Association of Tax Administrators [CATA], the World Bank), and regional organizations (e.g. the African Tax Administration Forum [ATAF]). The research findings highlight the importance of interagency cooperation, and of emerging technologies that can play a significant role in stemming illicit financial flows. Additionally, cooperative compliance was identified as beneficial in assisting tax administrations and businesses in achieving common objectives and generating the political will for agencies to adopt a whole-of-government approach.

The proposed legal frameworks have been endorsed and implemented by several African countries, resulting in increased cooperation among national tax institutions and higher tax collections.

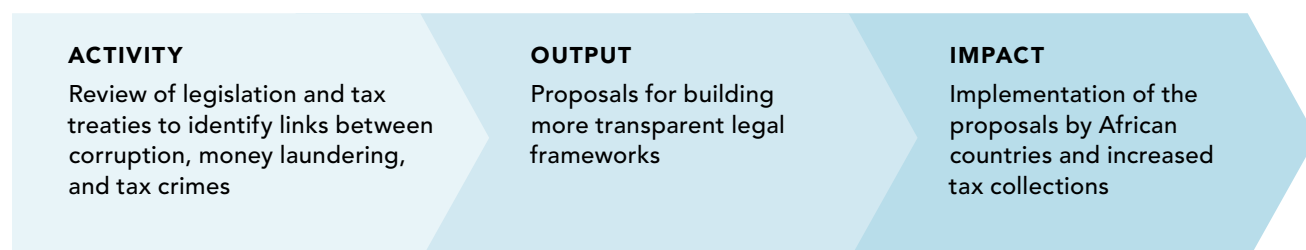


THE IMPACT

The research findings raised awareness of illicit financial flows from African countries, which several institutions have estimated amount to more than the official development assistance going to these countries. Overall, 35 African countries endorsed the research output and several have implemented the proposals for addressing these challenges (e.g. Kenya, Zambia). Some of these countries have already reported that the suggested measures for interagency cooperation have helped to build capacity and empowered various agencies to cooperate better. This has led to an improved exchange of information and increased tax collections domestically, which contribute

to reducing reliance on official development assistance. In March 2016, agencies from three countries signed a memorandum of understanding to foster cooperation at the international level. Thus, the research has helped to strengthen interagency cooperation and tax collection in developing countries and contributed to SDG 16 “Peace, Justice and Strong Institutions” and SDG 17 “Partnerships for the Goals.” The project was recognized for its impact in the “Peace, Justice and Strong Institutions” category at the 4th Global Entreprs Awards and #5Gcitizens International Congress 2018 in Brussels.

IMPACT PATHWAY



Open data – making open data more accessible

Axel Polleres

FACTBOX

Duration	2013–ongoing
Institute	Institute for Information Business
Department	Department of Information Systems and Operations
Additional WU collaborators	Martin Beno, Sebastian Neumaier, Vadim Savenkov, Jürgen Umbrich, Svitlana Valulenko, Institute for Production Management
External partners	Cooperation Open Government Data Austria, Danube University Krems, Discuto, Semantic Web Company, webLyzard



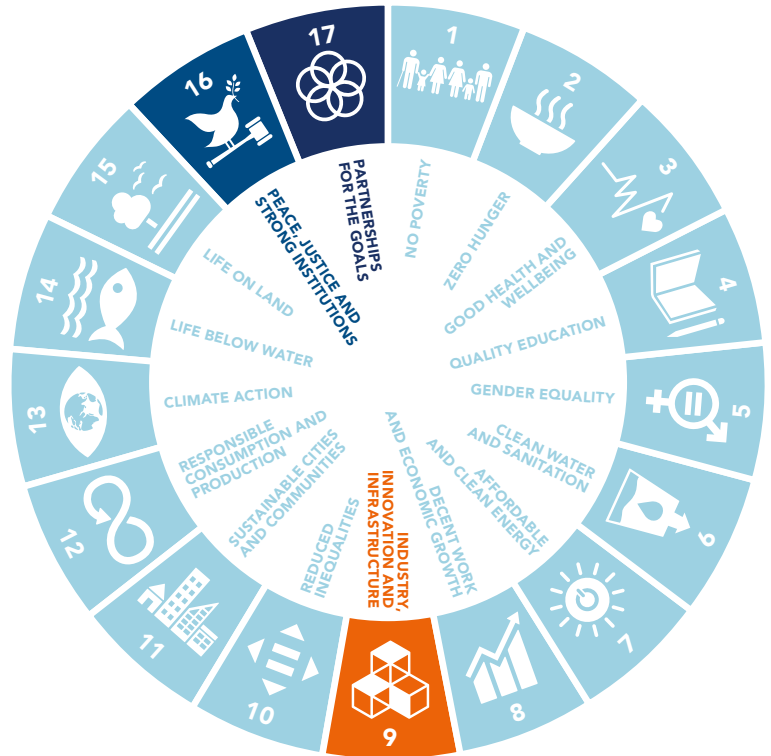
The global trend towards publishing open data is creating opportunities for novel business models for SMEs and large companies and for improving public administration services for citizens. Open data refers to data assets that are freely available to the public. Most are published by governments and public administrations as a way to fulfill their responsibility for transparency. The release of tax-payer-funded data collections also makes them usable and freely available in an easily accessible form, mostly on publicly operated open data portals, such as the Austrian government's data.gv.at portal.

The research project investigated the risks of and barriers to adopting open data and developed a monitoring framework that generates quality metrics for open data.

THE RESEARCH

To make open data more usable and accelerate its uptake, several WU research projects aimed to improve the quality and usability of open data via automated data quality checks. This would in turn enhance the searchability of open data portals, expose the risks of and barriers to adopting open data, and analyze how the usefulness of open data could be increased for local communities. Funded by the WU Anniversary Fund of the City of Vienna and the Austrian Research Promotion Agency (FFG), the research revealed crucial barriers open data publishers faced, and resulted in concrete recommendations on how the quality and accessibility of open data could be improved. Creating a worldwide open data "observatory," which involved collecting and monitoring open data from over 260 portals around the globe, also allows us to illustrate policy changes and draw conclusions about the quality development and sustainability of open data. The research team actively supported open government initiatives, such as Austria's Cooperation Open Government Data, in improving and making the open data they publish more accessible. In collaboration with the Urban Renewal Office in Vienna's Stuwerviertel, the team met with citizens to discuss their data needs and explore how they could benefit from open data.

The quality monitoring framework serves as a tool for monitoring data quality development on the official Austrian open government data portal and provided the basis for the first university open data portal in Austria.

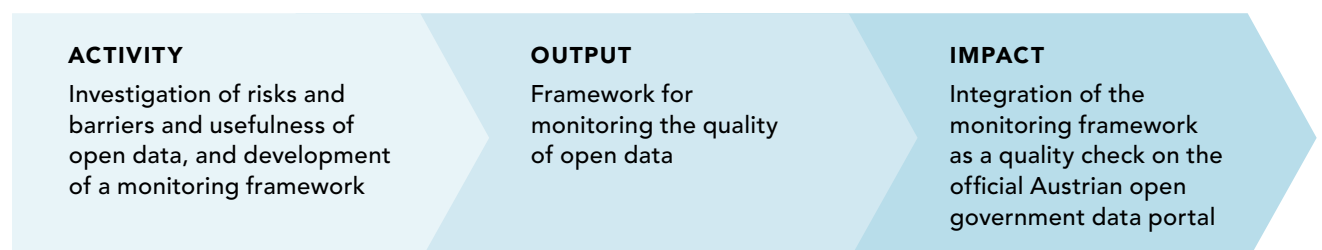


THE IMPACT

The quality and sustainability of initiatives for publishing governmental open data are crucial if open data is to be useful and enable new business models. The research identified important options for improving the quality of open data and facilitating the monitoring and accessibility of such data, thereby contributing to SDG 9 "Industry, Innovation and Infrastructure" by facilitating new ideas and innovations. Increasing the accessibility of open data also helps strengthen the inclusiveness of societies, contributing to SDG 16 "Peace, Justice and Strong Institutions" and SDG 17 "Partnerships for the Goals." The quality-monitoring framework was incorporated into the official Austrian open government data portal. This portal provides a metadatabase that includes datasets from a variety of public administrations in Austria. The framework serves as a quality control

tool that monitors the development of data quality through weekly data crawls. In the course of the research, WU also improved its own open data policy and now maintains the first university open data portal in Austria, launched by the Institute for Information Business in late 2014. It gives WU students and the general public the option of downloading openly accessible data, such as library catalog entries and lecture schedules. The portal contains more than 120 datasets and feeds into the general idea of using open data to spark innovation in the private sector, research, and civil society. By leveraging and actively contributing to web search standards, the datasets on WU's open data portal and on Austria's open government portal data.gv.at are also now indexed and findable via commercial search engines, such as Google's dataset search.

IMPACT PATHWAY



Assistance requirements for people with disabilities

Christian Schober, Selma Sprajcer

FACTBOX

Duration	2012–2015
Institute	Competence Center for Non-profit Organizations and Social Entrepreneurship
External partners	Province of Lower Austria, organizations in Lower Austria that support people with disabilities (e.g. Caritas, assisted living centers, psychosocial centers, VKKJ) and people with intellectual disabilities



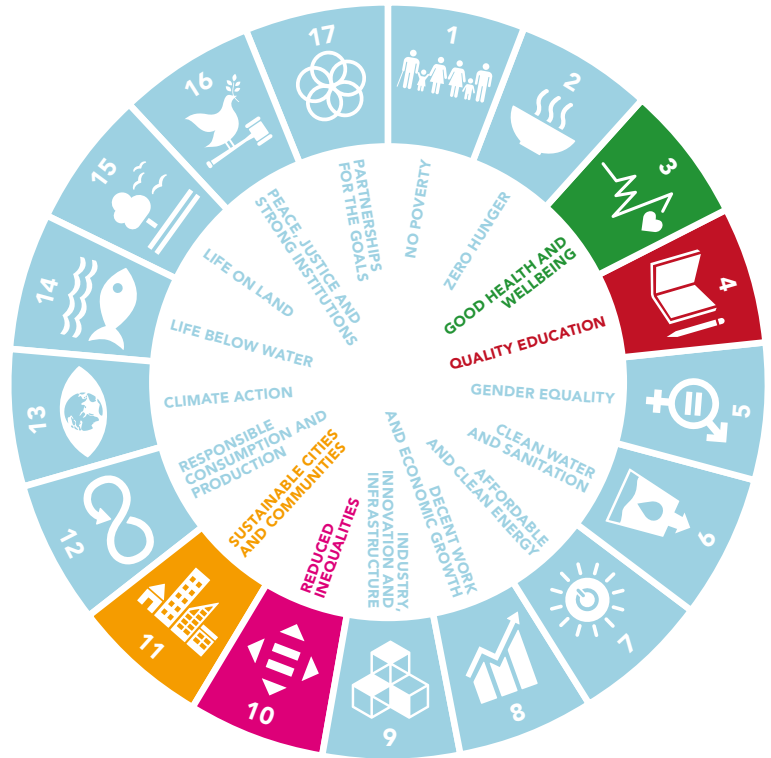
There is little data on people who require support services in Austria. So there are no valid figures on the total number of people who need assistance for everyday life, on the different groups in need of assistance, and the intensity of support required. This not only makes it difficult to plan social spaces. It is also problematic in light of the United Nations Convention on the Rights of Persons with Disabilities, which Austria ratified in 2008. The Convention stipulates that all persons with disabilities must be able to fully exercise their human rights and fundamental freedoms and participate equally in society.

The Lower Austrian requirements plan for people with intellectual disabilities and their support needs showed that the province will have to create 732 additional institutional care places by 2025.

THE RESEARCH

The research project aimed to identify the number of people with intellectual disabilities currently living in Lower Austria, assess their support needs, and predict growth over the coming years. These numbers could then serve as the basis for drafting a state requirements plan for services to be provided to people with disabilities. The researchers began by surveying all the Lower Austrian institutions where people with intellectual disabilities were either living, working, accessing advising services, or being treated. In an empirical survey, data about their support needs were collected. The survey also included any available data on the level of schooling and the benefits they received. This data was used to draw up a forecast for the overall support services required for the years 2020 and 2025. The requirements plan revealed that an additional 732 people will need a place in a care institution in Lower Austria by 2025. Throughout the project, groups of self-advocates (people with disabilities who are 18 years of age or older) and a steering group participated and provided feedback. Meetings were held in simplified German, and a shorter version of the requirements plan was also drafted in simplified German. In addition, the research project provided statistical data not covered in the standard surveys conducted by Statistics Austria.

The precise quantitative and qualitative identification of the services required by people in need of cognitive and multiple forms of assistance promoted the development and adequate design of support services in Lower Austria.



THE IMPACT

The research project generated a detailed analysis of anticipated assistance requirements for people with intellectual disabilities for the years 2020 and 2025. Based on this forecast, Lower Austria began rethinking and adapting the range of assistance options available to people with intellectual disabilities. An adequate service plan was designed based on the precise quantitative and qualitative needs identified, including the number of living spaces, assistance, and therapy services, and the accompanying budget. By creating a foundation for planning and providing a wide range of support services for people in need of assistance, the research thus contributes to SDG 3 “Good Health and Well-Being,” SDG 4 “Quality Education,” SDG 10 “Reduced Inequalities,” and

SDG 11 “Sustainable Cities and Communities”. Additionally, the findings summarized in the requirements plan inspired additional participatory processes involving self-advocates and representatives from the institutions that provide assistance to people with disabilities in Lower Austria. A range of services to improve independent living are currently being complied that will allow people with intellectual disabilities to live largely independent lives in their own homes with some personal assistance. The requirements plan also served as the starting point for amending and augmenting options for older people with intellectual disabilities. This led to the creation of guidelines for the age-appropriate care of elderly people with disabilities.

IMPACT PATHWAY



The fight for digital privacy in Europe

Sarah Spiekermann

FACTBOX

Duration	2009–2019
Institute	Institute for Information Systems and Society
Department	Department of Economics
Additional WU collaborators	Sushant Agarwal, Marie Oetzel
External partners	European Commission, European Industry Consortium (incl. auto-ID industry, Bitcom, BSI, Gerry Weber)



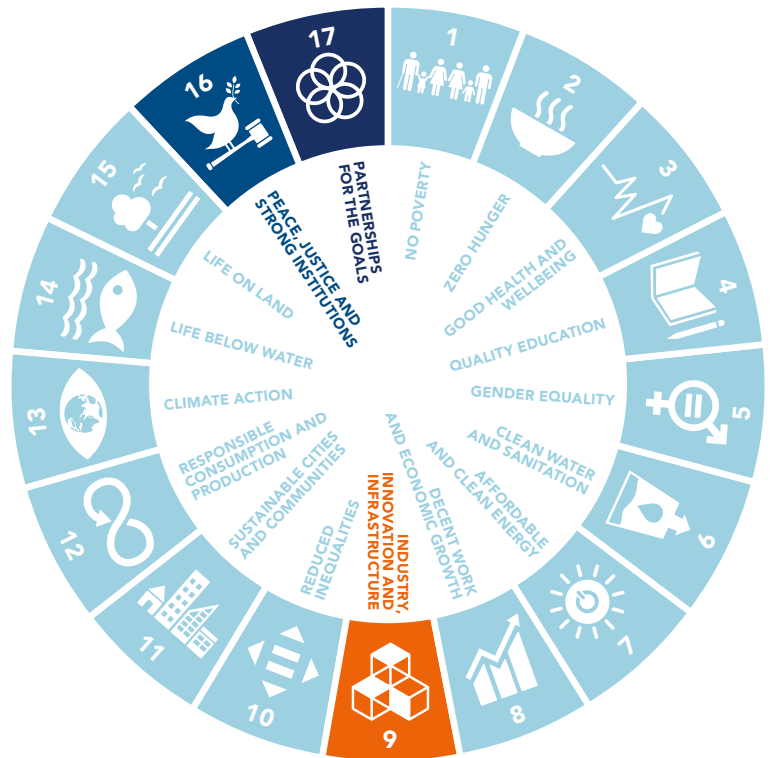
Every year, about 16 billion radio-frequency identification (RFID) tags are sold all over the world. RFID tags are tiny computer chips that give objects “names” and are the core technology involved in the Internet of Things. RFID tags are gradually replacing bar codes in many industries and are used in all sorts of consumer goods, such as clothing, ski tickets, and hotel keycards. As more and more privately owned objects are tagged with RFID technology, the question arises of how to best protect the privacy of consumers when they carry home a multitude of RFID chips every day that could potentially be scanned without anyone noticing the intrusion.

The developed privacy impact assessment method helps companies see where their technologies create privacy issues and improve their information-processing activities to safeguard this important human right.

THE RESEARCH

Sarah Spiekermann began by working with Metro AG’s Future Store Team. Hundreds of consumers were interviewed on how they would feel if they found out they were being digitally tracked through RFID tags in the store. The majority reported feeling powerless when faced with this kind of corporate surveillance, followed by anger at the companies exposing them to this intrusion of privacy. Customers said they would accept the technology, but it made them feel uncomfortable. Based on these initial findings, the research project then focused on developing a method that would enable companies to recognize and tackle the privacy and emotional risks inherent in their IT architecture and help them mitigate these risks as much as possible. Researchers used existing risk assessment procedures – which typically identify threats, damage potentials, and control strategies – as the basis for a unique method of assessing the privacy impacts of RFID technology. This method closely aligns with the European General Data Protection Regulation (GDPR) and shows companies where they might be unwittingly breaching the high European standards for privacy protection. It was also designed to highlight how companies could even go further than the law requires by envisioning the extremely secure and agreeable digital surroundings their customers preferred and embracing a privacy-by-design approach for RFID-enabled premises.

The first privacy regulations signed by the EU Commission and EU and US industry, entitled the “Privacy and Data Protection Impact Assessment Framework for RFID Applications”.

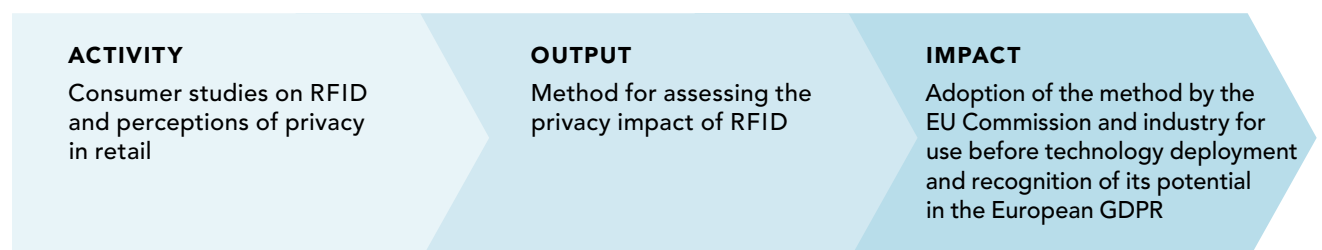


THE IMPACT

The research resulted in the first privacy impact assessment (PIA) method that was recognized by industry and the European Commission. Today, privacy impact assessments are an integral part of European data protection regulations, but in 2011 no one yet had a concept of what a PIA might look like and whether it could be recognized as a legal principle. WU's “PIA for RFID” showed the way. In early 2011, then head of the European Commission's DG Connect Neelie Kroes and representatives from the German automotive industry, the US retail industry, the international auto-ID industry association, Germany's Bitkom association (IT Industry), and the GS1 international barcode association signed an agreement that all RFID technologies that used personal information would henceforth need to pass the stipulated risk assessment

procedure before actual deployment. In these ways, the research contributes to SDG 9 “Industry, Innovation and Infrastructure,” SDG 16 “Peace, Justice, and Strong Institutions,” and SDG 17 “Partnerships for the Goals.” At WU, the PIA framework also led to additional projects. In late 2011, the PIA for RFID method was adapted for use by the German BSI (Federal Office for Information Security) in areas like designing new passports (which use RFID). The PIA process also led to SERAMIS, a large-scale EU project at WU (in cooperation with other European universities) on the use of RFID in retail outlets. Completed in 2017, SERAMIS resulted in the PriWUcy software that start-ups and other businesses can use to identify their privacy risks online and which is accessible on the Institute for Information Systems and Society website.

IMPACT PATHWAY



Taxation of the digital economy

Claus Staringer

FACTBOX

Duration	2016–ongoing
Institute	Institute for Austrian and International Tax Law
Department	Department of Public Law and Tax Law
External partners	International Fiscal Association (IFA)



Nobody can escape the digital shift taking place in our world today. Digitalization is both opening up opportunities and creating risks for every individual and for the economy as a whole. These changes pose major challenges for the existing principles of taxation. Taxing the digital world is a controversial topic and the focus of international debate. One issue under scrutiny is tax avoidance by large digital corporations such as Amazon and Google. A core problem arises with registering these companies for taxation, since international tax law is linked to a physical place of business. Since cross-border activities in the digital age no longer require an actual brick-and-mortar location, companies may be exempt from taxation in a specific country since they do not meet the permanent establishment criterion. While some solutions have been proposed, no international consensus has yet been reached on an effective solution.

An analysis of tax frameworks for the digital economy showed that the proposals being discussed by the European Commission, OECD, and UN were not efficient solutions for tax avoidance practices.

THE RESEARCH

Claus Staringer and his team focused on analyzing the regulations from international, national, and EU tax law that are relevant for the digital economy. They explored whether and to what extent the existing rules and regulations could be applied to the digital economy. Since most regulations have been in force since well before digitalization, it is questionable whether the “old” tax laws can be reinterpreted to cover the new and different business constellations of today without drawing up new regulations. The research team also considered the advantages and disadvantages of reorientation and proposed efficient changes. Here, they critically examined international proposals and their potential effects and efficiency. A critical review of the various opinions expressed in existing studies and an evaluation of models implemented by individual countries revealed that the proposed solutions currently under discussion lacked sophistication and did not, in fact, contribute to greater tax justice. Linking a state’s right of taxation to a digital place of business requires defining and agreeing on the existence of a digital presence. Along with determining a link for taxation, there are also additional income allocation questions that have not yet been sufficiently clarified.

The criticism of the tax proposals prompted the European Commission, OECD, and UN to drop their proposals for taxing the digital economy and to consider alternative ones.

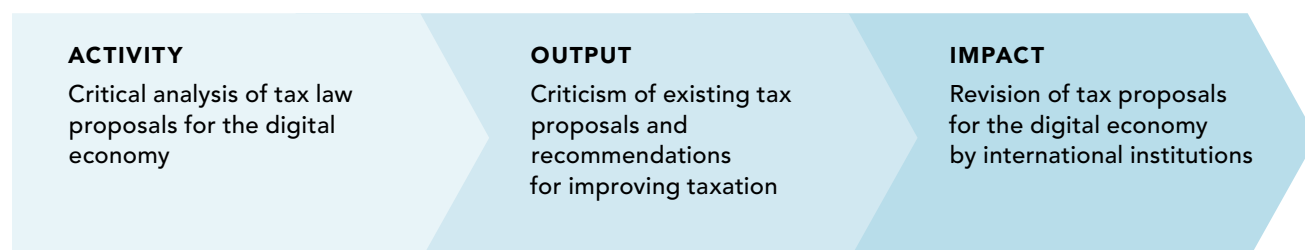


THE IMPACT

The EU Commission, the OECD and the UN accepted the finding that the proposals currently under discussion for taxing the digital economy were not effective solutions. In March 2018, the EU Commission explicitly referenced Claus Staringer and his team's findings in an impact statement released with the proposed directives for fair taxation of the digital economy. In its analysis of the efficiency of the OECD's proposed solutions, the EU Commission concurred with the research, concluding that the proposals did not provide enough significant reference points to define a digital presence. In the proposed directive, the Commission therefore – in line with the recommendations of Claus Staringer and his team – concentrated on the need for a significant digital presence as a tax link. The research findings were also incorporated into the UN's work. The UN Committee of Experts on

International Cooperation in Tax Matters explored the criticisms expressed by the researchers in the report. The critical light shed on the topic and the suggestions made ultimately resulted in a general change of direction internationally, and encouraged the EU, the OECD, and the UN to consider alternative measures to solve the problem of fair taxation of the digital economy. The media also reported on the research and Claus Staringer was quoted as an expert in the daily newspapers "Der Standard" and "Die Presse," among others. The research contributed to the creation of a just taxation framework and, in this way, contributed to the fulfillment of SDG 16 "Peace, Justice and Strong Institutions" and SDG 17 "Partnerships for the Goals," as well as indirectly to SDG 8 "Decent Work and Economic Growth" and SDG 9 "Industry, Innovation and Infrastructure."

IMPACT PATHWAY





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Arriving by public transport:
Subway: U2 stations "Messe-Prater" or "Krieau"
Bus: 82A, "Südportalstraße" stop