

Opportunities for profiling overarching research topics

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Roundtable assignment

Develop a memorandum (max. 7 to 8 pages), in which the subject: “Opportunities for profiling overarching research topics (multidisciplinary and interfaculty)” is explored in terms of setting the agenda. This means that the emphasis will be on "exploration" of the subject and less on "exploitation".

1 Introduction

This memorandum is organized as follows. We commence by stating what we believe is obvious, namely that solving large complex problems through interfaculty and interdisciplinary research requires strong disciplinary research from leading field experts as a basis. We next outline three broad societal problem areas which we believe provide rich opportunities for multidisciplinary and interfaculty research and fit well with our existing research activities. We also give an idea of the research that currently already takes place in these themes. We then arrive (in section 3) at the heart of the matter, by outlining the research topics that the roundtable selected. We then offer some viewpoints on how to stimulate interaction and collaboration between research groups, and on how to organize research in a way that supports this. We conclude with some recommendations for next steps.

2 Building on strong disciplinary research

Tilburg University researchers strive to understand and enhance society through social science and humanities research¹. Much of this research takes place within the academic disciplines. It is a core value to be maintained and requires ongoing TiU support. The collective research effort of the TiU community spans a much wider continuum than that highlighted in this memorandum. The richness and structured complexity of this effort characterizes and contributes to the academic research culture.

¹ In the rest of the document, we assume that humanities belong to the social sciences, broadly construed

Tilburg University measures its contribution to social science research through dissemination of research in the internationally leading academic journals, books and forums, and via thought-leadership in the international associations to which Tilburg University researchers belong.

There are imperative, complex problems and research questions that need to be addressed urgently, most likely within a single generation. Social science --for instance understanding human and social decision making or studying how to organize change-- is key to solving these problems. In order to push the boundaries on possible solutions, studying these problems requires the perspective of multiple disciplines. This can be because the problem is inherently multidisciplinary and its solution takes contributions from complementary fields, or conversely, that finding solutions is helped by combining knowledge in related fields. For multidisciplinary and interfaculty research to be truly groundbreaking, it needs a solid foundation of strong disciplinary research.

3 Urgent research themes with high cross-field collaboration potential, and with a Tilburg view

3.1 Introduction

We preface the views of this roundtable on the opportunities for profiling overarching research topics (multidisciplinary and interfaculty) by first outlining three broad themes and some of the disciplinary work that takes place within these themes at the various research units of Tilburg University. These themes do not cover the full richness of research that takes place at our university. We emphasize that our efforts to outline several promising avenues for collaboration in this document, do not imply or endorse promoting some research topics at the expense of others represented by our current faculty.

Motivated by our discussions on important societal challenges and building on the research taking place in our five schools, we arrive at the following themes: (1) the sustainability transition, (2) inequality, (3) well-being and health(care).

Identifying these themes serves as a stepping-stone to exploring collaboration by suggesting a first clustering of researchers and research groups based on an important subset of our current strengths. At the same time, they also address important problem areas which require contributions from the social sciences to be solved.

These themes address broad societal problems and studying them is not unique to our institution. But we study these problems with a distinct Tilburg signature, through four mechanisms of accomplishing change: Law and regulation, markets and organizations, society and citizens, and technology and data.

We now outline the three themes, by means of an introduction to each and next selecting 2 or 3 multidisciplinary and interfaculty research topics for further discussion and exploration.

3.2 Sustainability transition

Tilburg University studies sustainability through the lens of social sciences. We do not develop new technologies per se, but study mechanisms and seek opportunities for society to become more sustainable.

This theme explores the mechanisms of change – law and regulation, markets and organization, society and citizen, technology, and data – that contribute to the transition towards a sustainable society.

Among these legal aspects are questions about how technology and sustainability objectives inform or shape modern organizational arrangements or the Anthropocene in general. We also study, from a legal perspective, the characteristics, advantages, and drawbacks of these arrangements. Which rules need to be put in place to protect legitimate interests and control the negative externalities of these forms of organization.

Thinking about a sustainability transition also requires studying which market mechanisms support sustainability, and which obstruct it. For instance, market complementarity between combustion engines and fuel stations have locked the transport sector in oil dependence. We study alternatives of how can markets be adjusted to support a transition to sustainable energy. Likewise, our researchers study efficient emission trading, circular economies, sustainable pricing and waste management.

What are the (information) technology aspects? For instance, renewable energy like solar power requires electricity markets where firms and households can store electricity to compensate for the intermittency of supply. What are the needs for innovation and data to support sustainability?

We also study how societies, organizations and individuals react and change in response to sustainability opportunities and challenges. How can we communicate the need for action for sustainable development? Individuals and citizens can contribute to more sustainable consumption. For instance, what is needed for consumers to switch to transition into sustainable food or reduce waste production at home?

A sustainable society is a society which can meet its own needs, without damaging the environment or exhausting its resources, and in such a manner that future generations can also continue to meet their needs. Obviously, this applies to natural resources, but also to social and economic ones. Working towards a sustainable society is complex and involves many different sub-themes, as illustrated above. We aim to understand the adaptive and maladaptive reactions and underlying mechanisms of social actors to these changes. Moreover, we want to study how people with different roles, ranging from consumers to policy makers, can be convinced to contribute to a more sustainable society.

Building on these sub-themes, we mention two areas that the Roundtable singled out for cross-school collaboration. An important reason for this is that there are ongoing cross-disciplinary collaborations on these themes already. The appendix lists these collaborations with no intention to be exhaustive.

3.2.1 Future proofing the work(place)/labor market/healthcare for expected aging and new (IT-)technologies

Within this topic, we see at least two areas of collaboration that already exist and can be expanded from. First, TiU already examines how transitions in the labor market can be promoted/facilitated with the aim of creating employment security (instead of job security) and how public-private partnerships can contribute to this. The current Dutch labor market is characterized by a disbalance in terms of employment contracts (permanent versus flexible), in terms of demands and supply (i.e., future skills needed), and in terms of security (job versus employment security). Hence, Tilburg University can develop cross-disciplinary projects that focus on transitions within organizations (i.e., agility), but also from job to employment security and between sectors.

Second, we have several projects pertaining to AI and technological innovations for sustainable healthcare. Due to the aging population and the aging workforce, the demand for healthcare is increasing rapidly and healthcare costs are rising. These and future projects aim to ensure that Dutch

healthcare can fulfil the quantitative and qualitative demands and remains affordable. An example is a WeCare project with the ETZ to develop a module for an e-health application that includes a prediction model for return to work (RTW) and personalized information about RTW sustainability, based on both qualitative and quantitative data.

3.2.2 Transition to renewable energy, recycling, and reuse of materials in products

There are a number of existing collaborations collectively studying three big interrelated societal challenges connected to sustainability transitions: climate action, renewable energy, and sustainable transport. A good example, which also connects to the **Roundtable “ecosystems”**, is the NEON project which combines societal, economic and technological expertise of five Dutch universities and 20+ private and public entities, in order to understand and solve these challenges. Within NEON, engineers work closely with social scientists, NGOs and companies to overcome economic, legal and social barriers to the roll-out and scaling up of promising technologies in the field of sustainable energy generation and storage, smart grids and electric transport. While the focus of the project lies in accelerating the green energy and mobility technologies, it also investigates many other aspects like safety of new technologies, more efficient and resource saving management of energy and logistics services, people's acceptance and resistance, etc.

Complementing the above projects, Tilburg University engages in many topics related to the energy transition, including the sub-theme of Energy Justice as a guide for European and national policymakers for the energy transition. The debate on the energy transition very often tends to focus on technological innovations, such as distributed generation, that are needed to accelerate the transition towards a carbon neutral energy system. However, this transition also has significant redistributive effects. Current energy infrastructures need to be replaced or modernized which involves large societal costs. Furthermore, new energy technologies and new energy services become available, which are not always accessible for all citizens, for instance due to a lack of finances or because of limited digital skills. In international and national policy debates the concept of Energy Justice comes more and more to the forefront to deal with the redistributive effects of the energy transition. The concept of Energy Justice stresses the need for policymakers to ensure that the energy transition takes place in a just way and that costs and benefits are fairly distributed across society. Tilburg University also has cross-faculty teams working on realizing energy-neutral neighborhoods.

Another area with collaboration potential in this context is the use of data mining and AI to facilitate transitions in infrastructure sectors, like the energy and transport sectors. Tilburg researchers already link artificial intelligence research to innovation in legislation and regulation to accelerate the energy transition. Other researchers, combining an organizational-economic perspective on infrastructure operations and maintenance with a legal research perspective study the implementation of data-driven innovations in infrastructure sectors, such as the energy and transport sectors. When combined, these interdisciplinary perspectives help mitigate challenges at the organizational level (i.e. at infrastructure managers and between them and their partners) as well as at the sectoral level (i.e. within and across infrastructures). Methodologically, the project combines a legal-theoretical approach (regulatory theory on economic regulation, law and innovation theory), legal document analysis, case studies, qualitative (longitudinal) case analysis, literature review (Organizational Information Processing Theory), transaction cost economics and behavioral economics.

3.3 Inequality

Inequalities are a manifestation of difference and heterogeneity - inherent features of the global landscape. At the same time, they form part of some of the major research challenges we address as a community: climate change and sustainability, digital innovation and governance, migration, gender equity and poverty. Centering inequalities as a connecting theme of our work leads us to a comprehensive perspective on these challenges, connects our descriptive, positive research to our normative research across faculties and groups, and underlies key themes in international discussions around economics, development, sustainability, intercultural communication and interaction, and inequity. Various kinds of inequality underly contemporary social and economic dimensions of (super)diversity, inclusion, marginalization and the effects of globalization. They are also key to understanding how to apply that understanding to social questions that inform governance, law, regulation, and education. As such, this central concept connects our research community's normative, positive, and applied dimensions, and encompasses the scales on which we work, which range from the micro and local to the macro and global level.

In relation to this research landscape, we see both multidisciplinary and interdisciplinary links across schools. In the subthemes below we indicate common foci where we have the potential to apply our multidisciplinary knowledge, either by linking our work directly, or by recognizing and debating complementarities. The subthemes we identify are:

3.3.1 Global governance and post-globalization

We are seeing the beginning of a post-globalization era, where new arrangements of sovereignty and governance are arising (for example around digital and infrastructural sovereignty, human rights, climate change, and international markets), and driving new forms of inequality. Our research reflects the effects of these new geopolitical and economic configurations on financial economics and innovation, the effects of the pandemic, and the resulting need for decision-making under uncertainty (TSB, TiSEM, TLS). Research is being done on the effects of this shift toward a post-globalization international order on inclusion and exclusion in different spheres: economic goods (TiSEM, TLS), corporate governance (where there is a long-term collaboration at the intersection of law, economics and technology between TLS and TiSEM), the distribution of opportunity, privilege, and representation (TSB, TLS), access to the benefits of technology and innovation (TiSEM), the rise of market power (TLS, TiSEM) and mobility (notably in the collaboration on migration governance between TLS and TSB in the new Tilburg Migration Community). Finally, we see both conceptual and empirical research on the role of law in creating exclusion, structuring inclusion, and providing space for participation and resistance (TLS, TSB).

3.3.2 Behavior and governance of heterogeneous groups, organizations and societies

At TiU we have multiple disciplines studying personal or strategic interactions in heterogeneous groups, organizations or societies. Researchers at TiSEM and TSB study interactions between heterogeneous individuals or other actors building on tools from game theory. Researchers at TSHD, TLS, TiSEM and TSB study interpersonal interactions, trust, cooperation and communication in culturally diverse groups, organizations or societies, covering topics as ethnic and racial discrimination, stereotypes, integration of immigrants, prevention of minority bias (in legislation and through designing appropriate policies), and the effect of cultural diversity on cultural output. A strong linkage already exists in the collaboration between research groups working on AI and discrimination, including within TILT, and amongst the group working on AI, cognition and society withing TSHD.

3.3.3 Inequity and poverty: causes, consequences and remedies

As a research community we continuously build on our interdisciplinary knowledge of the relationship between inequality (as a quantifiable target for policy intervention) and inequity (as an issue of fairness and justice) - a concern that is increasingly a problem for policy, society, and governance. This concern is present across all faculties, and is visible, for instance, in work on the role of technological innovations in creating and amplifying inequities (e.g. the Global Data Justice project at TLS); interventions in development economics (e.g. financial and logistical innovation research at TiSEM); adaptive responses from societies, organizations, and workers (e.g., the Herbert Simon Research Institute at TSB); and work on understanding the changing drivers and political and economic implications of migration (TLS, TSB, TiSEM, TSHD). Another important aspect of inequity and poverty is hunger. Tilburg University researchers study more efficient allocations of food and nutrients to problematic regions to combat hunger (recently awarded the Edelman Award through the collaboration of the Zero Hunger lab and the UN World Food Program).

3.4 Well-being and Health(care)

A final area that lends itself well for multidisciplinary and interfaculty research is Well-being and Health. At TiU we study health and well-being through the perspective of social sciences. We focus on personal aspects of health and well-being, like meaningful living, effects on ageing, individual rights, access to healthy food choices, etc... We also consider health- and well-being aspects that are related to people's life at work, e.g., the effects of globalization and digitization and the changing nature of work. Healthcare has a direct and significant impact on the well-being and health of individuals. We study aspects like selective interventions, personalized healthcare and shared decision making, diagnostics, and health communications and culture. The Roundtable views the following subjects as high potential candidates for multidisciplinary and interfaculty research.

3.4.1 Personal health and well-being

Tilburg University research on personal health and well-being is inherently multi- or interdisciplinary and a significant part of our work is conducted in close collaboration with partners in the healthcare industry (see also, Roundtable "Ecosystems"). Our researchers study psychological and sociological aspects of well-being, e.g., how meaningful life outcomes, like psychological and physical health, eudemonic well-being and personal growth, can be promoted and protected even under difficult circumstances. We also study the role of spirituality and religion in psychological well-being.

A major theme for our health and well-being research relates to *the effects of ageing*. With ageing populations and increasing life-expectancy in many countries, the well-being of the increasing segment of the elderly is under threat. Our research aims to understand the adaptive and maladaptive reactions and underlying mechanisms of social actors to these changes, and whether interventions at the policy and organizational level are effective at improving health and well-being of the elderly. Our sociologists study how citizens and individuals navigate and master key social roles and tasks, and how healthy social relationships (including intergenerational relationships) are established and preserved.

From a perspective of law and regulations, we contribute to research on well-being by studying the protection of individual rights and freedoms of consumers, youngsters and workers, as well as the legal research on hate speech and prevention of subversive crime, as pre-conditions to personal well-being.

Another health and well-being theme concerns the choices people make about food and nutrition. We study the link between obesity and consumption, e.g., understanding how consumers trade off food choices now that affect personal health in their future. Our researchers also evaluate government policies that promote healthy lifestyles, like taxing unhealthy foods, or mandating food labels, in terms of how they affect nutritional quality of consumption.

3.4.2 Health and well-being at work

Apart from well-being and health of individuals in their personal context or as consumers, Tilburg University also has specific attention to health and well-being in a professional context, as workers. People spend a considerable part of their lives at work. Both digitization and globalization affect people in the context of their work. For instance, *globalization* of the world's supply chains puts tremendous pressure on the labor conditions of workers in both developed and developing countries. Ensuring work to be *decent* implies matters such as a fair income, safe working conditions, and social protection for their families. Concerns for decent work both exist in the developing world, as they do in the developed work. Decent work affects well-being. *Digitization* also impacts the future of work. Tasks that have been conducted by humans heretofore, are now increasingly being conducted by machines, e.g., robots that help with order picking in a warehouse, or artificial intelligence algorithms that help banks decide on mortgages. While digitization has an opportunity to improve productivity and associated well-being, there are also considerable risks in relation to, for instance, feelings of autonomy and anxiety on job security. Finally, *shifting employment practices* changes the nature of work, such as employment flexibility and increasing work pressure. Researchers at Tilburg investigate all aspects along this palette, where the future of work due to globalization, digitization, and employment practices affects well-being.

3.4.3 Healthcare, prevention and personalization

Healthcare has significant impact on health and well-being of individuals, both in developed economies like the Netherlands, as in developing countries, and researchers at Tilburg University study healthcare from a wide variety of dimensions. We study health communication and health culture. Other topics include access to healthcare and healthcare economics. Examples include the development of decision support systems for healthcare workers or self-control and self-monitoring of patients in healthcare processes. Tilburg's healthcare research is characterized by a unique combination of various social sciences and disciplines from the humanities, such as psychology, neuroscience and computer science. Another theme is the control of healthcare costs, which rise rapidly. Tilburg University scientists study perspectives on personalized prevention and healthcare that align better with individuals' personal situations, experiences, and needs. *Personalized care* is tailor-made prevention or treatment for (groups of) individuals that works best. This implies giving each patient and citizen the right care, at the right moment, in his or her own home environment, with maximum effect and minimum side-effects and costs. Our research on personalized care focuses on three aspects: selective prevention (including lifestyle interventions), personalized healthcare (including shared decision making) and diagnostics, using computational statistics and predictor models.

4 How to get there: facilitating collaboration across TiU research groups

The potential of multidisciplinary and interfaculty research within TiU is evident from previous sections. Experience has shown that imposing collaboration top down does not lead to stable and enduring relations. Collaboration comes from symbiosis between research groups and must add value to the

development and strength of our researchers. To facilitate cross collaboration of research groups, TiU needs to make sure that researchers find one another, facilitates the setup of interdisciplinary collaborations and knows how to make these collaborations lasting and successful.

What is needed to find one another? A barrier to organic growth and bottom-up collaboration between researchers is that there is more exchange within than across schools. Therefore, to stimulate the emergence of strong interdisciplinary relations between research groups and schools, targeted exchange of ideas across research groups should be a strategic focus of our research policy.

How can this be set up? An important precondition is time and space for researchers to discover new opportunities and explore collaborations. Support from the department and the school is essential, informally and formally, for example in the framework of Recognition and Appreciation. In addition, the current workload is an obstacle in this respect.

We propose to start building research communities along the lines of the three themes. Renowned researchers and school makers in these fields should be given the lead in this. This can be supported by charting the research groups from all Schools who contribute to the theme and setting up an offline (perhaps with a dedicated space) and online community where these researchers can meet (depending on the need, this could include coffee mornings, Faculty club fire-place chats, seminar series, speed dates, means of communication etc.).

Given the breadth of the proposed themes, it is obvious that smaller clusters will arise within these communities, around specific research topics. Establishing good, rooted, interdisciplinary collaboration takes time. To stimulate multidisciplinary and interfaculty research, small incentives could be considered, varying from resources for writing an outline or application, to making a joint PhD position available.

What will make these relations last? For interdisciplinary collaboration to be lasting and successful, the scientists involved must benefit from this collaboration. For instance, intradisciplinary evaluation criteria should not be a barrier to publication in leading interdisciplinary and multidisciplinary journals.

Finally, our commitment to the collaborations should be commensurate with the time it takes to build them. This will likely be on the order of 5 years to a decade. Examples of previous collaborative successes at TiU tell us so: NetSpar, TILEC, TILT, Tranzo, and others.

5 Pre-conditions, methods, and infrastructure

An important aspect of multidisciplinary and interfaculty collaboration is the use of research methods for different disciplines. In our view, it would also be valuable to strengthen cooperation within TiU on the development of research methods such as big data, digitization, modeling, etc.

The initiatives for multidisciplinary and interfaculty collaboration can build on the existing infrastructure and policies. However, these collaborations that will strengthen the TiU research profile also provides an opportunity to work on TiU ambitions with regard to those means (infrastructure, methods, policies) that enable the research.

Truly collaborative, overarching research means exploring new research methods, building on state-of-the-art disciplinary methods.

We have the ambition to expand Open Science at Tilburg University. Consolidating TiU's Open Science Action Plan (2018), we aim to advance the multidisciplinary and faculty research to develop thematic policy lines on Citizen Science/Public Engagement, Open Science Communication, FAIR data and software,

Open Education. This will require a clear infrastructure that makes Open Science easy and attractive and is based on a consensus between all necessary parties (Schools, Board, Research Support, Research Data Office, DCC, Academic Support and HR).

The collaborative research initiatives will be shaped as responsible research practices, as formulated in the position paper for TiU's strategic plan 2022 - 2027 by the sounding board for research integrity.

Research infrastructure can be seen through different viewpoints. It requires digital infrastructure that makes research possible, such as the availability of proper equipment, and work-flow systems that promote portability of research across schools and research groups. It also requires the human resource and support that provides thematic expertise for researchers on the use and storage of data, (the development of) digital skills, digital research environments, computing and research software engineering through for example training, community building and easy to use guidelines and procedures.

6 Next steps

As a round table, we've come a long way in the short timespan that was available. We however would like to emphasize that his advice is just a small step in the journey towards broad-based profiling overarching research topics. We advise the Board to:

- Set up discussions with de deans & vice-deans of research as well as all HoDs of TiU on the suggested themes
- Follow those up with dedicated meetings on each theme, starting with School leaders (renowned researchers) in these fields and then expanding to larger groups of researchers
- Set up input meetings on how to facilitate collaboration across TiU research groups, and translate that input into policy and implementation
- Make sure there is some budget available for the implementation of the policy and support of the themes

Our roundtable would be willing to act as a sort of steering committee for the proposed follow up.

Appendix A: Existing TiU Collaborations in Sustainability Transition

1) Future proofing the work(place)/labor market/healthcare for expected aging and new (IT-)technologies

- a) **Academic Workplace Inclusive Sustainable Labor Market & Social Security (connecting organizations)** is a multidisciplinary project funded by Institute GAK examining how transitions in the labor market can be promoted/facilitated with the aim of creating employment security (instead of job security) and how public-private partnerships can contribute to this. The current labor market is characterized by a disbalance in terms of employment contracts (permanent versus flexible), in terms of demands and supply (i.e., future skills needed), and in terms of security (job versus employment security). Hence, the project focuses on transitions within organizations (i.e., agility), but also from job to employment security and between sectors. Different methods are used in the project, such as interview and survey studies and validation experiments in collaboration with stakeholders. It is now a collaboration between TLS (Irmgard Borghouts) and TSB (Charissa Freese).
- b) **Technological innovations for sustainable healthcare** covers several projects aiming for sustainable healthcare through technological innovations. Due to the aging population and the aging workforce, the demand for healthcare is increasing rapidly and healthcare costs are rising. These projects aim to ensure that Dutch healthcare can fulfil the quantitative and qualitative demands and remains affordable. An example is a WeCare project with the ETZ to develop a module for an e-health application that includes a prediction model for return to work (RTW) and personalized information about RTW sustainability, based on both qualitative and quantitative data. The e-health application will be used to inform patients (and healthcare professionals) and to manage the expectations of trauma patients. It is now a collaboration between ETZ (Ruth Geuze), TSB (Margot Joosen) and TSHD (Emiel Krahmer, Ruben Vromans en Saar Hommes).

2) Transition to renewable energy, recycling and reuse of materials in products

- a) **NEON and COMPOSE project.** NEON is a multidisciplinary project funded by NWO. It addresses three big interrelated societal challenges connected to sustainability transitions: climate action, renewable energy, and sustainable transport. COMPOSE focuses on demand-reducing policies for transport by smart logistics. NEON brings together societal, economic and technological expertise of five Dutch universities and 20+ private and public entities, in order to understand and solve these challenges. Within NEON, engineers work closely with social scientists, NGOs and companies to overcome economic, legal and social barriers to the roll-out and scaling up of promising technologies in the field of sustainable energy generation and storage, smart grids and electric transport. While the focus of the project lies in accelerating the green energy and mobility technologies, it also investigates many other aspects like safety of new technologies, more efficient and resource saving management of energy and logistics services, people's acceptance and resistance, etc. In the NEON project Tilburg researchers explore the concept of Energy Justice from an EU law angle to see to what extent it can guide EU and national policy makers in

designing fair energy transition policies. The usefulness and the limits of the concept of energy justice will be studied by analyzing case studies through the lens of energy justice.

TiU members identified working on the topics mentioned above: Prof. Saskia Lavrijssen (TLS), Laura Kaschny (PhD student TLS), Francesca Ciulli (TSB), Ilja van Beest (TSB), Dirk Brounen (TiSEM), Goos Kant (TiSEM)

- b) SMILE project -Social Innovation Labs Energy transition, 2018-2020** This project consists in an area-oriented approach to realizing energy-neutral neighborhoods in Central Brabant. The project aims to explore how best to approach a complex and comprehensive process like the energy transition on a local level. As part of this project, the climate objectives are translated into plans for concrete sustainable energy measures at ten neighborhoods/villages in Tilburg, Hilvarenbeek, Gilze-Rijen, Oisterwijk, and Heusden. Technological measures are only one aspect; the governance and social aspects are at least as important. How are the dynamics between the authorities, the energy cooperatives, residents, and other interested parties? Who takes the lead? How do you get all those individual households on the same page? And: what role does the context (village or city) play in all this? TiU was involved in SMILE to shed more light on these issues. To that end, regional and local parties in ten Brabant neighborhoods are experimenting with different approaches. The project was co-financed by the European Regional Development Fund of the European Union and by the Province of Noord-Brabant.

TiU participants include Martijn Groenleer (TLS), Saskia Lavrijssen (TLS), Petra Hofman (TLS) . The topic could also be of interest for TSB e.g. to study the role of employers who stimulate employee green behavior, and for TiSEM, where Dirk Brounen has ample expertise in drivers of residential energy-savings.

- c) MEGAMIND** stands for MEasuring, GATHERing, and MINing Data. It focuses on the so-called edges of the electricity system: the distribution networks and the electricity producing and consuming devices connected to them. Electricity plays an important role in the energy transition. The Tilburg researchers will link artificial intelligence research to innovation in legislation and regulation to accelerate the energy transition. They aim to develop fair and consistent regulatory strategies for facilitating and accelerating innovations at the edges of the electricity system and at the same time identify how local energy markets and AI systems can be designed in a fair way and legal way, incorporating public values and legal norms. From the perspective of legal methodologies, the project combines a legal theoretical approach (regulatory theory on economic regulation, law and innovation theory), legal document analysis, ethics theory, empirical philosophy, case studies (participatory observation, interviews, focus groups). The legal ethical approach will be combined with insights from electrical engineering and mathematics and computer science approaches (data driven modelling, neural networks research perspective, scalable decentralized learning algorithms) Five universities, in cooperation with nine industry partners covering the full chain for electricity, participate in the project. Funded by an NWO Perspectives grant and industry investment, the project employs ten researchers, PhD students and postdocs, with the participation of Professor Saskia Lavrijssen, Dr. Merel Noorman and Dr. Leonie Reins from

the TLS. Although the project is well under way, it could serve as an example for collaboration between the TLS and TSHD.

- d) LONGA VIA** investigates which factors obstruct the implementation of data-driven innovations in infrastructure sectors, such as the energy and transport sectors, and how these obstructions can be overcome. It combines an organizational-economic perspective on infrastructure operations and maintenance with a legal research perspective, a combination that is relevant yet hardly pursued. The organizational/economic perspective helps to assess the main hurdles towards the adoption of data-driven innovation and seeks to identify effective business models. The legal perspective identifies regulatory barriers and effective adaptations to existing rules and regulations to facilitate such innovations. When combined, these two perspectives help mitigate challenges at the organizational level (i.e. at infrastructure managers and between them and their partners) as well as at the sectoral level (i.e. within and across infrastructures). ; Methodologically, the project combines a legal-theoretical approach (regulatory theory on economic regulation, law and innovation theory), legal document analysis, case studies, qualitative (longitudinal) case analysis, literature review (Organizational Information Processing Theory), transaction cost economics and behavioral economics.

LONGA VIA is funded by the NWO/Next Generation Infrastructures program.

Participants for the TLS include Prof. Saskia Lavrijssen, Prof. Martijn Groenleer, and Brenda Espinosa (PhD candidate); participants for TiSEM include Prof. Henk Akkermans, Prof. Wendy van der Valk, and Tom Aben (PhD candidate).

Appendix B: Existing Research in Inequality

1) Global governance and post-globalization

- a) Researchers at TILEC (TiSEM-TLS) (governance of economic activity in the digital age, design of competition policy, the study of the creation and diffusion of new knowledge)
- b) Researchers at the European Banking Center at TiSEM (banking systems, globalization of finance)

2) Behavior and governance of heterogeneous groups, organizations and societies

- a) Study of interethnic/intercultural relations/communication:
 - i) Juliette Schaafsma (TSHD) (interethnic relations and communication)
 - ii) Max Spotti (TSHD) (interethnic communication and language)
 - iii) Hans van Dijk (TSB) (ethnic discrimination, stereotypes, integration of immigrants)
 - iv) Connie Rijken (TLS) (legal rights of immigrants)
 - v) Elena Cettolin (TiSEM) (ethnic discrimination, effect of immigrants on political preferences)
 - vi) Jan Potters (TiSEM) (ethnic discrimination, design of interventions to prevent anti-minority bias)
 - vii) David Schindler (TiSEM) (effect of immigrants on political preferences)
 - viii) Sigrid Suetens (TiSEM) (ethnic discrimination, effect of immigrants on political preferences, design of interventions to prevent anti-minority bias)

- ix) Bart van der Sloot (TILT) (design of interventions to prevent anti-minority bias)
 - x) Esther Keymolen (TILT) (design of interventions to prevent anti-minority bias)
 - xi) Merel Noorman (TILT) (design of interventions to prevent anti-minority bias)
 - xii) Eleonora Sciubba (TSHD) (social and racial justice and communication)
 - xiii) Kutlay Yagmur (TSHD) (intercultural communication and language)
 - xiv) Camilla Spadavecchia (TSHD) (gender equity; migration and development)
- b) Study of strategic interaction between heterogeneous individuals/other actors:
- i) Researchers at TILEC (TiSEM-TLS) including Cedric Argenton, Jens Prufer, Florian Schuett, Eric van Damme, Bert Willems (theoretic modeling of strategic decision-making)
 - ii) Several researchers at TiSEM in economics, marketing, accounting, finance and marketing department including Eddy Cardinaels, Niels van de Ven, Rik Pieters (experiments on strategic decision-making)
 - iii) Social psychologists at TSB including Marcel Zeelenberg, Ilja van Beest, Seger Breugelmans (experiments on strategic decision-making)
- 3) Inequity and poverty: causes, consequences and remedies**
- a) Inclusive HRM lab at TSB (Charissa Freese, Sanne Nijs, Brigitte Kroon)
 - b) Patricio Dalton (TiSEM) (determinants of poverty, financial innovations in developing countries)
 - c) Burak Uras (TiSEM) (financial innovations in developing countries)

Appendix C: Existing TiU Collaborations in Well-being and Health(care)

- 1) An ongoing project is the **Data2Person project 'Data-driven shared decision making on cancer treatment'** with Emiel Krahmer (TSHD) as main applicant. Besides colleagues from Emiel's department, Jeroen Vermunt (MTO) and Lonneke van de Poll (IKNL and MKP) are also involved. That project is about data-driven communication with patients after cancer diagnosis (shared decision making). "In this project we use data from millions of Dutch cancer patients to enable newly diagnosed patients to make decisions during treatment. We do this by building new statistical models to determine the pros and cons of relevant treatment options for individual patients. In addition, we are developing a data-to-text system that automatically generates personalized explanations of outcomes, using non-technical language and visualizations. This system is complemented by personalized explanations of inaccuracies and risks associated with the treatments."
- 2) Recently, a **We Care application 'Towards an e-health solution for return to work after injury'** was approved with Ruth Geuze (ETZ) and Margot Joosen (TSB-Tranzo) as the main applicants, but also substantial input from TSHD, namely from Emiel Krahmer, Ruben Vromans and Saar Hommes. That project is about the return to work of patients with traumatic injuries and has the goal "to develop a module for an e-health application that includes a prediction model for return to work (RTW) and personalized information about RTW sustainability, based on both qualitative and quantitative data. The e-health application will be used to inform patients (and

healthcare professionals) and to manage the expectations of trauma patients." It is hoped that this We Care study will later lead to a larger collaboration on this relevant topic.

- 3) TLS (Mijke Houwerzijl, Irmgard Borghouts, Bas Rombouts, Nuna Zekic) and TSB (Charissa Freese) have a long-term research agenda on **Labor Markets Innovations and the Law**, which enquires into how labor law and social security policy is infused by trends in modern labor markets law. Such trends involve dynamism, flexibility, mobility of both firms and workers, yet how to accommodate for interests such as security, protection, and social justice, which are so fundamental to labor law and policy. In that context, specific attention to is drawn to: globalization of work, culminating in 'the fissured workplace' and new social-economic inequalities; technological developments such as digitalization, 'platformization' and robotization of work; ongoing labor mobility between organizations and across borders; the growth of non-standard forms of work and vulnerable groups of (potential) workers.