

The 2019 Technology Transfer Society Annual Conference

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Session 4.4 – Chair: Georges Hage

Location – Board Room

Title: Socially responsible innovation: Ride-hailing, inclusive mobility and cities

Authors: Shauna Brail, Betsy Donald

Presenter: Shauna Brail

Abstract:

Ride-hailing is a relatively new, disruptive and controversial form of mobility. Controversy over ride-hailing stems in part from questions regarding whether or not it has a negative impact on public transit use, ethical concerns related to the use of algorithms to entice driver and passenger travel, and uncertainty about the impact of ride-hailing on congestion, total vehicle miles travelled and induced travel demand. Although provisions for accessible, affordable and safe intra-urban mobility are usually governed at the local level, privately-held ride-hailing firms have little incentive to address public good through their technology or services. Therefore, intentional public policy and leadership are required in order to derive public benefit from a private good like ride-hailing which is delivered using public infrastructure.

This paper explores the opportunity for municipal governments to leverage ride-hailing technology and services to promote socially responsible innovation. The paper traces the connections between innovation, public policy and private benefit, suggesting that ride-hailing presents yet another example of an emergent technology and industry that would not exist absent public investment. This is followed by three case studies in which ride-hailing technology and/or services are being utilized to promote socially responsible outcomes. In Los Angeles, a US Federal Transit Administration grant is partly funding a ride-hailing pilot to address first and last mile challenges of accessing transit for low income riders. A portion of Columbus, Ohio's \$50M US Smart City Challenge Grant is devoted to a ride-hailing service for 500 pregnant women living in parts of the city where infant mortality rates are high. And, in both the global city of Singapore and the small Canadian city of Belleville, transit users have access to ride-hailing technology to summon a public bus operating on a dynamic, algorithm-based route. Through the above case studies, the paper examines the ways in which private sector ride-hailing initiatives can be designed and prioritized to support socially responsible innovation. The paper concludes with a discussion of how we can learn from these examples to extract public benefit from ride-hailing.

Title: Technology – A boost or a bane? Inclusive innovation and social choices

Authors: Dan Breznitz, Amos Zehavi

Presenter: Dan Breznitz

Abstract:

New technologies are a source of both optimism and dread. This dualism is apparent in the case of People With Disabilities (PWD). On the one hand, new technologies could take the form of assistive devices that help PWD better integrate into the labor market and enhance their capacity to function in society. On the other, new technologies – especially when their development does not follow the principles of universal design – could create new obstacles for PWD often requiring considerable effort to adjust. In an era that is

characterized by technological acceleration it is imperative to ask, from a social policy perspective, whether governments could guide technological innovation and absorption in directions that would mainly benefit PWD specifically, and socially marginal populations more generally?

In this study, we approach this question utilizing a qualitative comparative framework focusing on government programs as they apply to PWD relevant technologies in Canada, Israel, Sweden and the United States. Our research is based on document analysis and semi-structured interviews with primary stakeholders and policymakers in the four countries. Our preliminary findings indicate that across all countries policy thinking on how technological development could be guided in directions beneficial to the PWD is marginal. Nevertheless, over the last decade regulatory frameworks that require universal design (that is design intended to accommodate PWD and the elderly in addition to less limited consumers) are gradually evolving. What is generally missing from policy are government efforts to support customized technological innovation targeted for PWD. We argue that not only is this a major oversight, but that commonly employed government instruments, primarily regulation and market-supporting tax incentives, are ill fitted for promoting customized innovation. Governments that wish to advance innovation for PWD should consider both direct state subsidies and appropriate innovation activities within government-sponsored centers.

Title: Digital platforms for more inclusive agri-food innovation and value chains: A quasi-experimental study of eKutir's microentrepreneur-led digital ecosystem and its societal outcomes in Odisha, India

Authors: Cameron McRae, Laurette Dubé, Yun-Hsuan Wu, Samik Ghosh, Summer Allen, Daniel Ross, Saibal Ray, Pramod K. Joshi, John McDermott, Srivardhini Jha, and Spencer Moore

Presenter: Cameron McRae

Abstract:

Inclusive innovation efforts hold great promise to contribute to society on many levels. However, the impact of such can often be difficult to assess due to the complexity of real-world implementations. In the present case, we present the results of a quasi-experimental study designed to assess the impact of a digital ecosystem led by the social enterprise eKutir on household fruit and vegetable consumption. eKutir aims at providing self-sustaining solutions to poverty and undernutrition in vulnerable communities by leveraging digital technologies through an ecosystem anchored by micro-entrepreneurs distributed across the agri-food value chain. Farming micro-entrepreneurs (FME) provide agricultural knowledge, inputs, and market linkages at household and community levels, followed by progressive integration of other micro-entrepreneurs along the value chain. The present case examines FMEs along with retail micro-entrepreneurs (RMEs) deployed in vulnerable rural and urban communities in Odisha, India. A quasi-experimental approach was used to investigate the effects of the digital ecosystem and the actors within, focusing on the farm (FME) and retail (RME) support. A three-group design was used for the rural sample to compare (1) farmers with access to RMEs only, (2) farmers with access to both FMEs and RMEs, and (3) farmers unexposed to the digital ecosystem. In urban communities, households were grouped as either having access to RMEs within their neighborhood, or those who did not. Structured questionnaires were administered to all participating households at pre- and post-intervention with questions about demographics, fruit and

vegetable consumption, dietary beliefs and attitudes, and agricultural production (for rural farmers only). Structural equation modeling and the product method were used to assess changes in fruit and vegetable consumption, as well as whether homegrown consumption played a mediating role for rural farmers. Multivariable linear regression and ANOVA were used to test group differences in the urban sample. Farmers in rural communities exposed to eKutir's digital ecosystem consumed more overall fruit and vegetables ($\beta = 0.30, p < 0.001$) and fruits alone ($\beta = 0.53, p < 0.05$) than those farmers in comparison villages unexposed to the eKutir ecosystem. Mediated by homegrown consumption, the consumption effect was concentrated in households exposed to both FMEs + RMEs ($\beta = 0.60, p < 0.0001$), with non-significant directional effect in comparing fruit and vegetable consumption in rural households exposed to RMEs only over comparison communities. Urban consumers, exposed to the digital platform ecosystem through access to RMEs operating in their neighborhood community, did not increase their fruit or vegetable consumption compared to non-intervention communities. The results reveal the potential of reaching fruit and vegetable consumption impacts in vulnerable communities through homegrown consumption, with farm-level support enabled by a digital ecosystem outside of governmental/philanthropic intervention. The results also underscore, however, the challenges of both changing eating behavior and intervening across the agri-food value chain. Implications for more effective digital ecosystem design and intersectoral policies will also be discussed.

Title: Inclusive innovation and indigenous culture

Authors: Daniel Brant, Sandra Schillo

Presenter: Sandra Schillo

Abstract:

The inclusiveness of innovation and economic growth has become a central theme in innovation, industry and economic policies around the world in recent years. In this context, inclusive innovation is one approach to mitigate the increasing uncoupling of economic growth and social and economic development (Chataway et al., 2014), as compared to 'mainstream innovation', which is considered a source of inequality by virtue of improving the welfare of higher-income consumers, but not that of more marginalized peoples, the consideration of formal, but not informal, producers, and the prioritization of economic over social development (Heeks et al., 2014).

According to Heeks et al. (2014), the first issue is that of identity, i.e. the consideration of which groups of people have historically been excluded, and the second issue is that of the level of involvement of these groups in innovation activities, ranging from notional intentions through being considered consumers, all the way to structural and post-structural inclusion. Schillo and Robinson (2017) point out that identity should not only consider past, but also future exclusion, e.g. related to the broadening use of digital technologies. Further, they highlight that consequent inclusiveness will likely lead to a broader definition of innovative activities, broader consideration of economic, social and environmental impacts of innovation, and ultimately profound changes to the governance of innovation.

In Canada, indigenous peoples have historically been marginalized and excluded from the mainstream innovation narrative, even though settlers have been quick to adopt indigenous technologies as innovations, and indigenous knowledge is contributing to scientific understanding, not only with regards to the natural

environment but also governance systems. This paper reviews the literature on innovation and indigenous peoples, with a particular focus on indigenous culture.

Although the consideration that innovation and cultural change are deeply linked predates most of the innovation literature (cf references to Barnett, 1953, in Foley, 2000), and although recent work on innovation has gone far beyond the original focus on technological innovation to, for example, include organizational and marketing innovation (OECD, Oslo Manuals), social innovation (Mulgan, 2012), institutional innovation (Hargrave & Van de Ven, 2006) and especially convergent innovation (Dubé et al, 2014), has explored many dimensions of embeddedness in the institutional, economic and societal context (e.g. Systems of Innovation literature), and is beginning to consider indigenous innovation (Walters and Takamura, 2015), there is little work considering culture as the base for innovation, and conversely the impact of innovation on culture from an indigenous perspective. We summarize the existing work and point to promising areas of future research.