Abstract

Your Uber is arriving now: An Institutional Analysis of UberX Location Decisions

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Organizational activities to local conditions assume a certain socio-political legitimacy of the nature of firms’ activities; a legitimacy that cannot easily be assumed for services like UberX. Therefore, we argue in this paper that these theories do not always suffice in explaining location decisions for new organizational forms in the gig or sharing economy, such as Uber. By using institutional theory on legitimacy and organizational forms we argue for location theories that focus on more dynamic processes of legitimization, in our case the mobilization of audiences.

Main theoretical arguments:
The traditional literature on MNE location decisions mostly covers socio-political legitimacy, since it focuses on the fit between firms’ activities and formal institutions (regulations, laws, etc.). The carriers of this legitimacy are local regulators and incumbents. However, in the case of UberX this socio-political legitimacy is lacking and therefore we argue that cognitive legitimacy is more important to them. We argue that UberX can overcome their liability of foreignness through cognitive legitimacy spillovers (spread of...
knowledge about UberX) generated by networks of business travelers and the tech community, two of Uber’s early core audiences. In other words, business travelers and the techies that have encountered UberX in other cities, will carry legitimacy for this service in subsequent cities that they visit.

Methods:
In order to examine what influences UberX’s location decisions, we used an time to event analysis in which we can study the impact of different covariates on the risk of an local UberX introductions occurring. We used the Internet Archive’s Wayback Machine to find UberX introduction dates on archived webpages of Uber’s website. We used existing data of the Globalization and World Cities (GaWC) Research Network in order to measure cities global business and tech connectivity and Institutional Profiles Database 2012 in order to measure local formal institutions.

Results:
Our results show that in accordance with the traditional literature, some formal institutions and market characteristics are influencing the likeliness of local UberX introductions. However, what seems to have a big impact is the global business connectivity of a city. The better cities are connected in this global business network to cities that already have UberX, the more likely they are to experience an UberX introduction. The results didn’t show any differences between the tech and the business network connectivity.
Your Uber is arriving now: An Institutional Analysis of Location Decisions of Uber's Hailing Services

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1. INTRODUCTION

The rise of new business models under the labels of sharing economy has raised debate about the disruptive impact of these models. Globally operating online platforms such as Airbnb (Zervas, et al., 2014), Foodora (Tassinari & Maccarrone, 2017), Citi Bike (Campbell & Brakewood, 2017) and Uber (Lashinsky, 2017) challenge local business as well as the prevailing institutions they are embedded in (Mair & Reischauer, 2017). Peers operating on platforms often do not adhere to market regulations nor comply with tax obligations (Martin, 2016; Frenken, 2017). Platforms also raise questions about ways of organizing labor (Friedman, 2014). However, while scholars have started to pay attention to the impact of the sharing economy on local businesses, our understanding of the decisions of companies to introduce their disruptive services in particular local markets in the first place remains rather limited.

Economic geographers have long been interested in the question how companies decide on their locations for business operations. Traditionally these studies have looked at foreign direct investments and global sourcing that enable firms to access local markets and to exploit global efficiencies (e.g. local labor or factor costs, specialized services, knowledge and innovation processes) (Iammarino & McCann, 2013). One of the core tenants in this literature is that companies search for a fit between offshored organizational activity and the advantages of particular local environments (Jensen and Pederson, 2011). In this search they also take local socio-political institutions into account as favorable formal institutional arrangements reduce factor costs and make it easier for companies to overcome a ‘liability of foreignness’ defined as the costs faced by firms doing business abroad that purely domestic firms do not face (Kostova & Zaheer, 1999; Bloningen, 2005).

While overcoming a ‘liability of foreignness’ seems a legitimate concern for companies active in the sharing economy when introducing their services locally, we argue that these companies additionally need to overcome a ‘liability of newness’ being a new organizational form (Stinchcome, 1965; Zhang & White, 2016). We consider liability of newness here as the problems faced by these new platform companies as they introduce a new organizational form that is incompatible with dominant socio-political and cognitive institutions. For sharing platforms, it means that they are not just experiencing a liability of foreignness when introducing their platform service in a particular local market, but also more fundamental institutional opposition by introducing a service that goes against most of the exiting socio-political institutions (Rossman, 2014).

The liability of newness complicates the search for a fit between local institutions and organizational behavior that is central to most location theories from economic geography. One may argue that such a fit cannot exist by definition, as their platform service is, strictly speaking, illegal. Hence, in order to overcome this liability of newness, companies are in need of external legitimacy (Singh, et al., 1986). We argue that location decisions for platform companies are based on more dynamic and global processes involving, what Aldrich and
Fiol (1994) have called, cognitive legitimization. We will analyze the case of Uber to explore to what extent cognitive processes of legitimization played a role in their rapid expansion to nearly 600 cities. More specifically, we analyze city-level introductions of their controversial service UberX, a service that is part of Uber’s app that enables amateur chauffeurs without a permit to drive around passengers in their own cars. Our focus will be on Uber’s possibilities to mobilize both global and local audiences in order to gain legitimacy in a particular city, a process that is better understood as a cognitive process rather than the socio-political one predominantly discussed in location theories. The central question of this paper reads: What are the institutional conditions that affect Uber’s decision to introduce their controversial service on local markets?

We contribute to theorizing in the interface of economic geography and institutional theory in two ways. First, we contribute to the economic geography literature on location decisions of companies by examining how institutions affect location decisions of sharing business models and how this compares to more traditional multinationals. We particularly add by revealing the role that cognitive institutions play in location decisions next to socio-political institutions. Thereby, the paper answers to calls for more detailed approaches in location decision research that takes into account the nature of multinationals’ organizational activity (Jensen & Pedersen, 2011). Second, we contribute to studies from institutional theory and organizational ecology on processes of legitimization. More specifically by analyzing the mobilization of core audiences in order to gain cognitive legitimacy, we add specifications to the prevalent notions of density-dependent cognitive legitimization (Hannan & Caroll, 1992). More specifically, we reveal how the sharing economy sector requires a more dynamic form of density-dependent cognitive legitimization as well as an understanding of the exact inter-city channels carrying legitimacy spillovers. These processes might be of relevance especially for disruptive sectors in which companies challenge existing institutions and are not automatically granted socio-political legitimacy (Aldrich & Fiol, 1994).

2. SHORT HISTORY ON UBER

3. LITERATURE REVIEW

Economic geographers have developed a rich array of theoretical insights about the location decisions of the multinational enterprise. Traditionally, this literature was mostly concerned with multinationals’ strategies to access new geographic markets. This followed logically from Penrose’s (2009) early conception of the multinational organization as a growth stage of a general firm, looking for markets and consumers to continually expand. Furthermore, the literature emphasizes multinationals’ global sourcing practices through which they try to exploit global efficiencies in manufacturing and R&D. The global efficiencies that are discussed over time include local labor or factor costs (Weber, 1909; Vernon, 1966) to local expertise and industrial clustering (Birkinshaw and Hood, 2000), proximity of specialized services and capital markets (Hymer, 1970), local (tacit) knowledge and innovation processes (Howells, 2000), costs of space and time (McCann, 1998) and costs of dispersion of activities (Barba Navaretti & Venables, 2004). In their study on the links between firms’ offshored activities and specific locational features, Jensen and Pedersen (2011) have argued that “the choice of offshoring destination is based on the fit between a broader range of location attributes and attributes of the
offshored business activities” (p. 368). Indeed, it has been shown how different local conditions can be used by firms to gain competitive advantages and thereby provide different motivations for location decisions (Iammarino & McCann, 2013). Even though in this paper we focus on the importance of local institutional conditions, we are not arguing that these traditional explanations of multinational activity should not be disregarded altogether. However, considering the above-discussed ‘new-to-the-worldness’ and platform business models of the sharing economy, the current paper is mostly concerned with the institutional conditions.

The role of institutions in the location decisions of multinationals has received limited attention when compared to most other local conditions (e.g. market, knowledge etc.) (Blonigen, 2005). The debate on the role of institutional factors took off with the seminal paper by Wheeler and Mody (1992), in which they conclude that US foreign investment is not influenced by local institutional conditions (such as stability of labor, degree of inequality, the quality of the legal system etc.), beyond the above-mentioned sourcing factors. In contradiction to this, Gastanaga, Nugent and Pashamova (1998) did find significant effects for several institutional conditions (i.e. contract enforcement, bureaucratic delay and nationalization risk) on FDI. These early contradictory findings led some scholars to further open the institutional black-box. A review of this institutional literature on multinational location decisions shows that most studies account for what has been labelled as the ‘liability of foreignness’, which are the costs and barriers for multinational companies to enter new foreign markets (Zaheer, 1995). These costs and barriers are the result of an unfamiliarity with the environment “arising from the unfamiliarity of the environment, from cultural, political, and economic differences, and from the need for coordination across geographic distance, among other factors” (Zaheer, 1995, p. 341). In their location decisions multinationals often search for favorable socio-political institutions in order to ease this liability of foreignness. This implies that, similarly to the global sourcing arguments, one of the core tenants here is that firms seek for congruence between their organizational activities and local institutional contexts.

A small number of studies have empirically tested the influence of a diverse set of socio-political local institutions. These institutional factors can be roughly organized in three groups of institutional influences: 1) the relation between firms and local authorities, 2) local labor market institutions, and 3) local business regulations. Regarding the relation between firms and local authorities, a first argument is that location decisions are driven by the quality of local legal systems, because here foreign investors’ rights will be more likely to be protected (Campos & Kinoshita, 2003). Some studies have argued for governmental intervention as an important predictor of FDI. For instance Du, Lu & Tao (2008) show that U.S. businesses are more likely to invest in Chinese regions where government intervention in business disputes is low. Ascani, Crescenzi and Iammarino (2016) have shown the impact of the relation between business and local authorities by arguing that for manufacturing companies local authorities play a vital role in supporting demand through public expenditure. Additionally, some papers have shown how government expenses in the form of moving subsidies can play an important role in business location decisions (Lee, 2003). In line with this, capital cities are sometimes considered to be more attractive to multinationals because of the concentration of political power and regulators (Bel & Fageda, 2008). A last but often argued predictor is the negative effect of local corruption on FDI (Wei, 2000; Du, Lu & Tao, 2008).
Another set of important institutional conditions that influence location decisions involve the labor market. Arguments have been made for the attractiveness of regulated labor markets, because these markets signal high quality of products through ‘made-in’ labels (Haucap, Way & Barmold, 1997). However, others found that the more flexible labor markets of potential host locations are relative to the home location, the higher the likeliness of investment in that host location (Jovorick & Spatareanu, 2005). Another part of the literature is concerned with the attractiveness of the local presence of labor unions to multinationals. Here, some papers have found that high unionization rates were associated with higher foreign direct investment (Coughlin, Terza, & Arromdee, 1991). However, other papers found that multinationals actively avoid locations with strong labor unions out of fear for strikes (Bartik, 1985; Lee, 2003).

A third set of institutional conditions concerns local business regulation. Djankiov, McLiesh and Ramalho (2006) have found that companies are more likely to invest in locations with a business friendlier environment, which includes factors like the ease of starting a business, contract enforcement, ease of registering property and investors protection. Furthermore, studies have found that local markets with lower barriers of entry are more likely to be targeted by multinationals in their location decisions, for instance by reducing the costs of obtaining an business licences (Kaplan, Piedra & Seira, 2011) or bribes and taxes experienced upon entry (Ascani, et al., 2016). Other studies have include competition regulation in their models and argue that promoting competition increases the attractiveness for Foreign Direct Investment (FDI) (Globerman & Shapiro, 2002).

The literature review shows that institutions mostly seem to be treated as static conditions that determine the fit for organizations locally. There is only a limited amount of studies that discussed more dynamic processes of fitting organizational activities to local institutional environments, mostly by looking at multinational’s capabilities to adapt to local environments (Wrigley, Coe & Currah, 2005). But most of these studies assume that multinational have a certain socio-political legitimacy and that overcoming the liability of foreignness mostly comes down to finding locations with the lowest barriers to and costs of entry (Zaheer, 1995; Zhou & Guillén, 2015). This legitimacy cannot be easily assumed for many companies active in the sharing economy (as exemplified by cases such as Uber (Lashinsky, 2017), Airbnb (Edelman & Geradin, 2015) and Foodora (Tassinari & Maccarrone, 2017)). Indeed, many of these companies challenge existing institutions in a majority of the economies and do not comply with the above described regulations (Frenken, 2017). Below, we argue that Uber’s location decisions are mostly based on the cognitive legitimacy they achieve with ‘audiences’ (here: prospective drivers and passengers), an aspect of the liability of foreignness that is still understudied. This cognitive aspect mostly results from a lack of information among host audiences about the new service that a multinational aims to introduce in the host country. Therefore, judgements are often based on taken-for-granted assumptions and isomorphic pressures resulting from existing institutions on the host location’s side (Kostova & Zaheer, 1999; Wu & Salomon, 2016). However, besides meeting this lack of audience familiarity due to a company’s foreignness, a sharing platform also seems to experience an audience unfamiliarity with their ‘newness’. This ‘liability of newness’ implies that when companies adopt a new-to-the-world organizational form this usually goes against audience understanding and expectations, as audiences are unfamiliar with what this organizational form exactly entails (Singh, Tucker & House, 1986; Hsu & Hannan, 2005). This means that in
order to overcome the liability of foreignness, companies in the sharing economy sector also have to overcome the liability of newness. In the next section, we will discuss this liability of newness and these firms’ need for external legitimacy in order to survive. We will argue that these companies’ location decisions might not be solely based on the search for a fit between company and environment, but rather on the possibility to mobilize different types of audiences in order to gain cognitive legitimacy (Suchman, 1995).

4. THEORETICAL FRAMEWORK

Studies on organizational forms argue that audiences navigate better in markets that have unambiguous or prototypical organizational identities (Zuckerman, 1999; Durand & Paolella, 2012). Therefore, firms that decide to enter new-to-the-world markets are in need of external legitimacy in order to survive (Singh, Tucker & House, 1986). Aldrich and Fiol (1994) address this legitimacy issue in two (related) senses: socio-political legitimacy and cognitive legitimacy. Socio-political legitimacy refers to the degree in which new firms conform to existing principles, rules and standards. The institutional conditions discussed in economic geography location theories mostly address a search for this socio-political legitimacy, a strategy that Suchman (1995) has termed ‘selecting among environments’. Delacroix et al. (1989) have argued that most profit-seeking activities are seen as legally valid, automatically blessing them with a degree of socio-political legitimacy. However, as we argue above, in the case of the sharing economy this socio-political legitimacy cannot be taken for granted.

The second type of legitimacy refers to the spread of public knowledge about a new venture and addresses the limited taken-for-grantedness of new organizational forms as compared to prevailing forms. For audiences, cognitive legitimacy means that they are familiar with a product or service and knowledgeable about its use. While most profit-seeking firms are socio-politically legitimized in the form of a legal character, firms introducing a new service by definition start with low cognitive legitimacy (Aldrich & Fiol, 1994). This raises the question how a company that is not automatically blessed with socio-political legitimacy nevertheless is able to become widely known and gain cognitive legitimacy among audiences.

In order to gain different types of legitimacy, companies seem to be dependent on different audiences as predominant carriers. In legitimacy theory important audiences are usually broadly defined as including actors and stakeholders with a (potential) interest in the firm (i.e. consumers, investors, media, analysts, critics, regulatory and governmental actors, etc.) (Hsu et al., 2009). The carriers of socio-political legitimacy are mainly regulators and incumbents, since this type of legitimacy is mostly established on what Scott (1995) has called formal institutions (e.g. laws, regulations, technical standards). For cognitive legitimacy, on the other hand, carriers of legitimacy are mostly represented by the consumers or society at large, since this type of legitimacy is institutions such as norms, values and categories.

In contrast to most of the location theory on institutional conditions, we will not focus on the search for a fit between organizational practices and a static institutional environment, but rather explore processes of the build-up of cognitive legitimacy that supports multinational location expansions. Socio-political illegitimacy is clearly addressed by sharing companies by ways of what Scherer et al. (2013) have labelled as ‘strategic manipulation’, “by swaying or even manipulating the perceptions of key actors or policy-makers in their environment” (p. 263). These companies try to manipulate formal institutions in a multiplicity of ways, for
example by ignoring or fighting local regulation and lobbying (Solon, 2017; Teffer, 2017), by claiming to be part of the sharing economy (Meelen & Frenken, 2015), or by claiming the label of (technology) platform rather than that of taxi or delivery services (Kollowe, 2017; Tassinari & Maccarrone, 2017). However, at the same time these companies usually approach new markets by entering quickly to claim and disrupt the new territory, before turning to these socio-political institutions (Salomon, 2016; Kenney & Zysman, 2015). The location decisions often seem to precede these addressing of socio-political institutions, which calls for an analysis of the build-up of cognitive legitimacy before entering a new local market.

**Global cognitive legitimacy spillovers**

Scholars from organizational ecology argue that legitimization in the form of cognitive taken-for-grantedness is driven by the number of organizations in a population (density). The density-dependent process of legitimization is considered a globally operating process, in which a global increase in density in an organizational population increases the cognitive legitimacy of the (new) organizational form (Hannan and Carroll, 1992; Hannan, et al., 1995; Bigelow, et al., 1997). In addition scholars have argued for processes of legitimization that are independent from the total number of organizations. Most of these studies focused on socio-political conformity resulting in increased socio-political legitimacy (Baum & Olivier, 1996; Archibald, 2008). In our approach to density-independent legitimization we focus on cognitive legitimacy as the spread of knowledge about a new venture as carried by mobile consumers. In doing so, we follow Rossman (2014) who has argued that new-to-the-world innovations can only be legitimated by direct observations of peer behavior and word of mouth. As example, Rossman discusses the category of consumer electronics, in which the ‘gadget geeks’ adopt “any new gadget, immediately followed by endogenous diffusion promoting the new gadget to broader populations for whom the category is not as legitimate. This aligns with the idea of Lounsbury and Crumley (2007) on the need of mobilization of different audiences in order to support new innovations. This stresses the role of early adopters as core audiences in the legitimization process for new organizational forms like those in the sharing economy.

In the case of Uber, these core audiences can be found in their comprehensive “launch playbook”, a selection of business strategies and management instructions that are to be used by “launchers” when introducing Uber’s services in a new location (Milian, 2014). Part of this launch book is dedicated to the creation of a buzz among core audiences (Lashinsky, 2017). In their launching strategy, Uber’s target audience mostly included the tech community and the business community (Bosa, 2016; Lashinsky, 2017; Zillman, 2015). Both being heavy taxi users, tech people are assumed to feel attracted to clever new tech solutions, while business people are assumed to especially value lower waiting times (Lashinsky, 2017; Zillman, 2015). The criteria used by these specific audiences for evaluating UberX differ considerably from criteria used by governmental regulators and incumbents firms who would stress not so much the practical use of an innovation but its illegal nature. This is in line with current directions in the studies on organizational forms, which argue for a heterogeneity of cognitive processes among audiences (Durand et al., 2017; Haack et al., 2014). Thus, instead of merely comparing UberX to existing prototypical organizational forms (taxi services) (Zuckerman, 1999), more recent literature argues that audiences differ in their goals (Paolella & Durand, 2016). The organizational form of
Uber, then, can easily be associated with contradictory attributes (Vergne & Swain, 2017). Where global business travelers and the tech community see a creative solution for underperforming incumbents, local incumbents and regulators adopt a legal frame more in line with established socio-political institutions.

What we are proposing here is that Uber was able to gain cognitive legitimacy through the endogenous processes of word-of-mouth and peer behavior among global business travelers and the global tech community. Indeed, when UberX starts operating in a new city, its first customers were often those customers who are already familiar with its services (Knight, 2016; Campbell, 2015). In that sense, business travelers and the tech community are the mobile carriers of cognitive legitimacy transferring consumption behavior from cities where they already made use of UberX to cities where UberX is newly introduced. Hence, we argue that legitimacy often enhanced by the degree of inter-city connectivity allowing repeated interactions between audience members and organizations at different sites. This makes legitimacy is not only dependent on sheer numerical proliferation otherwise known as global density of organizations, but also on the interactions among these organizations and their audiences (Cattani et al., 2008). It is known that Uber is able to check cities for latent demand by looking at the number of people that opened the app in cities worldwide (Johnson, 2016; AD, 2017). Hence, residents in a city who already downloaded the Uber app when using Uber in another city, indicate latent demand. Furthermore, through this word-of-mouth and peer behavior observation the app is more likely to be opened in new cities and the opening of the app functions as cognitive legitimacy signal to Uber. Hence, the rationale here is the better a city is connected with cities that already have seen an UberX introduction, the higher the probability that UberX will experience a legitimacy spillover, the more attractive this city is for an UberX introduction. This brings us to the following two hypotheses:

**Hypothesis 1:** Cities with a higher exposure to UberX through global business connectivity are more likely to experience an UberX introduction than cities with lower UberX exposure through global business connectivity

**Hypothesis 2** Cities with a higher exposure to UberX through global tech connectivity are more likely to experience an UberX introduction than cities with lower UberX exposure through global tech connectivity

Note here that some prior research already showed the influence of a city’s global connectivity on multinationals’ location decisions for regional headquarters (Belderbos, Du & Goerzen, 2017). However, our study does not look on the absolute degree of connectivity as a (rather stable) attribute of a city, but to the time-dependent exposure of a city to UberX as a function of the number of connected cities where UberX is already present at a particular moment in time.

**Local cognitive legitimacy spillovers**

Besides global processes of legitimization some markets or industries also experience legitimization processes that operate on a local scale (Hillman & Wan, 2005; Wenting & Frenken, 2011). Even though Hannan, et al. (1995) and Bigelow, et al. (1997) have shown how legitimacy is a process that operates globally, some studies from organizational ecology have identified the possibility of legitimization through geographical proximity (Wenting & Frenken, 2011). Where arguments for local density-legitimization are mostly based on a taken-for-
grantedness caused by the mere increase of the number of firms in a population, some studies take into account actual interactions and experiences of audiences with similar firms (McKendrick et al, 2003; Amankwah-Amoah & Debrah, 2017).

What we are proposing here is that local audiences can become familiarized with a new organizational form through legitimacy transfers from existing but closely related organizational forms. The signaling of membership of legitimate forms can offset later penalties for illegitimate activities (Zhao, et al., 2013). Research from organizational ecology has shown how de alio organizational activity could legitimize organizations that start new organizational activities (Perretti, et al., 2008; Kuilman & Wezel, 2013). In the context of Uber’s platform services, we argue that Uber is using their legitimate service, called Uber Black, to prepare a city and its local audiences for an uberX introduction. With their Black service Uber has an identity overlap with the existing organizational form of the taxi companies and by drawing on their widespread acceptance their uberX service can experience a legitimacy transfer (Dobrev et al., 2006; Alexy & George, 2013). This connects to Hsu and Grodal’s (2015) finding that when companies have gained a certain taken-for-grantedness, they can start to strategically manipulate their organizational features, sometimes without the audiences even noticing. The idea that an Uber Black introduction would pave the way for the introduction of the controversial UberX leads us to the following hypothesis:

**Hypothesis 3:** Cities that already had an Uber Black introduction are more likely to experience an uberX introduction than cities that didn’t have an Uber Black introduction yet.

Based on these processes of global and local cognitive legitimacy slipovers we do not argue that uberX is seen as a fully legitimate service in their new locations, but rather that these mechanisms increase the legitimacy of uberX in these destinations, making Uber in their legitimacy seeking more likely to introduce their uberX service here.

**DATA AND METHODS**

**Sampling and dependent variable**

Since July 2010 Uber has mostly been introducing their services on the city-level. In order to analyze the likeliness that Uber decides to introduce their uberX service to a city, we use Geonames’ gazetteer data in order to include all cities with a population equal to or above 100,000, resulting in a comprehensive collection of 4,262 cities. A minimum in population is set because 92.8% of the cities where UberX was introduced had over a 100,000 inhabitants. Subsequently, we use Ubers’ cities webpage to create our binary introduction variable. In order to gather the dates of these city’s introductions we use the Internet Archive Waybackmachine. This service enables us to visit archived versions of Uber’s cities webpage in order to see on what date a new city appears on these pages. The Internet Archive states that their archived pages do not represent all historical updates of the web, but rather web crawls done by web traffic companies since 1996. However, with 452 crawls in a period of 72 months (Jan. 2011- Feb. 2017), the crawls are done 6.2 times a month, which makes a good proxy for the introduction dates of Uber’s services. Afterwards, Uber’s blog and later their newsroom is used to find the blog posts about city introductions in order to refine this proxy. Together this binary introduction
variable and the time variable that identifies when events occur constitutes our independent variable. For 572 cities we found an UberX introduction, comprising 13.4% of the cities in our dataset.

Independent variables

Exposure through global business network

In order to measure the business connectivity of cities we make use of an existing global business network as used in the world city networks analysis of the Globalization and World Cities (GaWC) Research Network (Taylor, 2001; Taylor, et al., 2014; Taylor & Derudder, 2016). Their models are based on the premise that networking between cities are based on connections between a firm’s offices in different cities (Taylor, et al., 2014). Therefore, the world city network consists out of cities that are connected to each other through the offices of 175 multinational firms in ‘advanced producer services’ in 2016. The idea here is that the better cities are connected through business firms the more business travelers will move between these cities. How well two cities are connected depends on the type of office present in both cities. For this reason, offices were coded between 0 and 5.

“We use a coding from 0 to 5, whereby in the service values vi,j, 0 indicates a city where firm j has no presence, and 5 is firm j’s headquarters city. Codes 1 to 4 are then allocated as follows: a typical office of firm j scores a city 2; there must be something deficient to lower the score to 1, and something extra for it to rise above 2. For the latter, an especially large office scores 3, an office with extracity jurisdictions (e.g., regional HQ) scores 4. Each firm is assessed individually to decide on boundary decisions away from 2” (Taylor, et al., 2014, p. 273).

Subsequently the connectivity value for cities a and i for firm j is given by the multiplication of the service values of cities a and i have for firm j. The assumption behind using the interaction of service values is that larger offices will generate more intercity work flows than smaller offices. Therefore, the connectivity between cities a and i is given by the connectivity value of these two cities for each of the 175 firms in the network. This intercity business connectivity (ICBCa_i) is given by the following equation:

\[
\text{ICBC}_{a-i} = \sum_{j=1}^{175} b_{v_{a,j}} \cdot b_{v_{b,j}} \quad \text{(where } a \neq i) \]

where \(b_{v_{a,j}}\) is the business service value of city a for the \(j^{th}\) firm and \(b_{v_{i,j}}\) is the business service value for city i for the \(j^{th}\) firm. To get a city’s overall connectivity, we can take the sum of all these intercity interactions for all other cities in our dataset. However, since we are interested in legitimacy spillover effects for UberX, our UberX exposure (UXEB) measure should only include cities that already have UberX, as can be seen in the following equation:

\[
\text{UXEB}_a = \sum_{i=1}^{4262} (\text{ICBC}_{a-i} \cdot \text{UX}_i) \quad \text{(where } a \neq i) \]
where $ICBC_{a,i}$ is the intercity connectivity of city $a$ with the $i^{th}$ city in our dataset and $UX_i$ is a dummy variable indicating whether the $i^{th}$ city has uberX or not. This provides us with an uberX exposure variable that changes over time when uberX starts to get introduced in more cities globally. For a more detailed description on the data collection and operationalization for the world city network we refer to Taylor et al. (2014) and Taylor and Derudder (2016).

**Exposure through global tech network**

In order to test our second hypothesis we replicated the steps taken in Taylor, et al. (2014) in order to create a similar connectivity measure based on tech companies. Therefore, our global tech network consists out of cities that connected to each other through the offices of 25 multinational tech firms (see table I). We decided to collect data on 25 tech firms, since most of the other sectors (accounting, advertising, law, and management consulting) in the world city network were also represented by 25 multinationals. We use the 25 largest tech companies of 2016, based on four equally-weighted measures: profit, revenue, assets and market value (see table 1) (Sharf, 2016). Similar to the world city network collection, we used the firm’s websites where they usually promote their offices locations. Based on the information available on these websites, we coded these offices according to the above-describe 5-point scale. Thereby, the same equation as used for the global business connectivity applies in order to estimate the intercity tech connectivity between two cities $a$ and $i$ ($ICTC_{a,i}$):

$$ICTC_{a-i} = \sum_{j=1}^{25} tv_{a,j} \cdot tv_{i,j} \text{ (where } a \neq i)$$

where $tv_{a,j}$ is the tech service value of city $a$ for the $j^{th}$ tech firm and $tv_{i,j}$ is the tech service value for city $i$ for the $j^{th}$ tech firm. This equation enables us to measure the tech connectivity between two cities through all 25 tech firms. To construct a variable that measure to what extent cities are exposed to uberX through the tech network ($UXET$), we use the same equation as for the global business network:

$$UXET_a = \sum_{i=1}^{4262} (ICTC_{a-i} \cdot UX_i) \text{ (where } a \neq i)$$

where $ICTC_{a,i}$ is the intercity tech connectivity of city $a$ with the $i^{th}$ city in our dataset and $UX_i$ is a dummy variable indicating whether the $i^{th}$ city has uberX or not.

Effects of our variables that measure uberX exposure through global business or tech networks, are hard to compare due to the way we constructed these variables. To address the comparability of these two exposure measures we normalize both of these variables on a scale from 0 to 10. The highest exposure to uberX
through both networks over time therefore scores a 10. The connectivity for both networks is measure in 2016 and doesn’t change throughout our timeframe, since we do not expect cities’ positions to exchange significantly relative towards each other.

**Prior Uber Black introductions**
The last one of our independent variables measures whether on time \( t \) Uber Black is already introduced in the focal city before time \( t \). We therefore take the date that Uber Black was introduced to a city and lag it with one year. This creates a measure that indicates whether Uber Black is introduced before uberX arrives at a city. In order to construct this variable, we use the same method as we did for collecting uberX introduction dates. This means that we use the Internet Archive Waybackmachine to search Uber’s website in order to create our binary introduction variable.

**Control variables**
As discussed in the literature review on legitimacy, the first important control variable for global legitimation is global density: the more cities that have uberX globally, the more taken-for-grantedness this service will experience. Following the logic of Hannan, et al.(1995) and Bigelow, et al. (1997), we calculate global density by subtracting the national (or regional) number of cities with uberX from the global number of cities with uberX at each moment in time. Because prior studies have dealt with national or regional density differently, we calculate for each city on each point in time the number of cities that already had uberX within a radius of 400 kilometers. Global density is thereby measured by the total number of cities with uberX minus the number of cities with uberX within a 400 kilometer radius from the focal city. The variable of geographical proximity is measured in similar vein. Since this variable is about the likeliness that local audiences directly interacted with uberX services in geographical proximate cities, this variable is measured on a smaller scale. We calculate for each point in time the number of cities with uberX in a radius of 100 kilometers from the focal city. We calculate both of these distances as great circle distance between cities by using the ‘geosphere’ package in R.

Our data on socio-political institutions comes from the Institutional Profiles Database (IPD) 2012 (Bertho, 2013), which includes 130 indicators on institutional characteristics for 143 countries. Following the literature review from economic geography on the importance of socio-political institutions for location
decisions, we gather data for three groups of socio-political institutions. For the first group, the relation between firms and local authorities, we include indicators for the quality of the national legal system; the influence of economic stakeholders; and legitimacy of political authorities. The second group of institutions, the local labor market institutions, includes the compliance with national employment laws (in the formal sector); the freedom of trade unions; and the protection of employment contracts. The last groups of socio-political institutions concern the local business regulations, which we control for by including the efficiency of competition regulation; the degree of national barriers to market entry; the public support for innovation; and the ease of starting a business. The institutions in the IPD 2012 database are on country level and we used these as proxies for local socio-political institutions, since we expect that for most countries in our dataset the socio-political institutions of interest will not show exceptional variance within the same country. All of these national institutions are operationalized in the IPD 2012 on a continuous scale from 0 to 4. At last, as noted in the literature review capital cities are sometimes considered more attractive in location decisions (Bel & Fageda, 2008), which can also be considered as a proxy for the relation between firms and local authorities. We used Geonames data in order to generate a dummy variable that captures whether cities are a capital or not.

In order to be able to argue that Uber’s location decisions are driven by city’s exposure to uberX through global business and tech networks, we have to make sure that this is not the result of a city’s overall global connectivity (Belderbos, et al., 2017). Following Boeh and Beamish (2012) we use data provided by openflights.org to add a variable to control for connectivity through air traffic, to control for a more general form of connectivity. At last, we include some typical control variables when predicting MNE’s location decisions. First we add cities’ population numbers as provided in the gazetteer data of Geonames. Next we look at a city’s GDP per capita, which are included as country proxies in US dollars that we retrieve from World Bank (2013) data. Together, these two variables represent local demand, or in other words the attractiveness of foreign markets that is the main concern in most multinational location decisions. Lastly, we control for the impact of uberX introductions in Uber’s homeland by adding an USA city dummy.

**Time to event analysis**

In order to test our two hypotheses we use time to event analysis, specifically Extended Cox models. This analysis can be used to study the impact of covariates on the risk of a specific even occurring, in this case the local introduction of uberX within a city. Therefore, the outcome variable of interest in this analysis is days until an introduction occurs. In order to estimate risk of introduction, Extended Cox models use exponential hazard functions that represent the probability that if at time (t) a city has not seen an uberX introduction, this city will be subjected to an uberX introduction in the next instant. To measure the influence of covariates, this model uses the following equation:

\[
h(t,X(t)) = h_0(t) \exp \left[ \sum_{i=1}^{p_1} \beta_i X_i + \sum_{j=1}^{p_2} \delta_j X_j(t) \right]
\]

where \(h_0(t)\) is the baseline hazard function, \(X_i\) denotes the \(i^{th}\) time-independent variable and \(X_j(t)\) denotes the \(j^{th}\) time-dependent variable (Kleinbaum & Klein, 2012). All predictors at time \(t\) are denoted by bold \(X(t)\). The
baseline hazard function estimates the risk for observations with 0 on all (time-dependent and –independent) covariates \((X_1, X_2, ... X_{p1} + X_1(t), X_2(t), ... X_{p2}(t) = 0)\) and is thus only dependent on time. In total we use five time-dependent variables, which are (1) the exposure through global business and (2) tech networks, (3) the global density, (4) the exposure through geographical proximity and (5) the prior Uber Black introductions. The other variables are added as time-independent variables, where for most of these we assume that they will not significantly change over a period of 72 months. An advantage of Extended Cox modelling is that we can include cities in our analysis that haven’t seen an UberX introduction in our time frame, but may see an introduction in the future. By including these right-censored cities we can more specifically estimate the influence of different covariates on the occurrence of a local UberX introduction. We run Extended Cox models using the package \textit{survival} in R.

**RESULTS**

Tables II shows the descriptive statistics for time-independent variables. It shows that 14% of the cities in our dataset experienced an UberX introduction during our time-frame, while only 3% experienced an Uber Black introduction. Besides the variables \textit{exposure through business network} and \textit{exposure through tech network}, there were no problematic correlations.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>uberX introduction</td>
<td>0.14</td>
<td>0.34</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Uber Black introduction</td>
<td>0.03</td>
<td>0.16</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Population (in millions)</td>
<td>0.46</td>
<td>1.05</td>
<td>0.10</td>
<td>22.32</td>
</tr>
<tr>
<td>GDP per capita (in ten thousands)</td>
<td>1.65</td>
<td>1.80</td>
<td>0.03</td>
<td>10.29</td>
</tr>
<tr>
<td>Incoming airlines</td>
<td>13.50</td>
<td>55.33</td>
<td>0</td>
<td>1224</td>
</tr>
<tr>
<td>Capital city</td>
<td>0.04</td>
<td>0.19</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Quality legal system</td>
<td>2.19</td>
<td>0.77</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Influence economic stakeholders</td>
<td>2.28</td>
<td>0.55</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Legitimacy authorities</td>
<td>2.84</td>
<td>0.71</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Employment law compliance</td>
<td>3.01</td>
<td>1.90</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Trade unions freedom</td>
<td>2.65</td>
<td>1.06</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Employment contract protection</td>
<td>2.40</td>
<td>0.65</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Competition regulation</td>
<td>2.23</td>
<td>1.10</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Barriers to market entry</td>
<td>2.61</td>
<td>0.89</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Public support for innovation</td>
<td>2.12</td>
<td>1.07</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Ease of starting a business</td>
<td>2.79</td>
<td>0.78</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>
Table IV presents the exponential regression coefficients of our nested Extended Cox models that test our three hypotheses. Following Blossfeld et al. (2007) we interpret the effect of the covariates in the Extended Cox Model as the percentage change in the hazard rate, given that all other variables remain unchanged. To do this, we can use the following equation:

\[
\Delta \hat{r} = (\exp(\hat{a}_i) - 1) \times 100\%
\]

where \( \hat{a}_i \) is the coefficient for \( X_i \) (or \( X_i(t) \)) and \( \Delta \hat{r} \) is the percentage change in the hazard rate resulting from a one-unit change in \( X_i \) (or \( X_i(t) \)).

Model 1 only includes our control variables, and shows unsurprising positive significant coefficients for variables measuring city’s characteristics, such as population, GDP per capital and airline connectivity. Model 2 also controls for the socio-political institutions on country level, and table Y in the appendix shows that at any given time \( t \) capital cities are more likely to experience an uberX introduction. Besides, this table shows significant effects for most of the socio-political institutions. Indeed, at any given time \( t \), uberX is especially more likely to be introduced to cities with business-friendly environments, where competition is regulated more efficiently, market barriers are lower and public support for innovation is stronger. In addition, local employment regulations and the quality of a city’s legal system also seems to affect the likeliness of an uberX introduction.

The models 3 to 6 test our first two hypothesis about global legitimacy spillovers. Model 3 shows a significant coefficient of 1.003 for our global density measure. This means then when globally one extra city gets introduced to uberX, the likeliness for other cities to see an introduction increases with 0.3 per cent. Even though it’s measured on a scale from 0 to 572, this seems like fairly weak effect for a global density measure. Considering this effect, it’s not surprising that global density doesn’t show significant effects in the subsequent models. As table III shows, exposure to uberX through the business network and the tech network shows a correlation of 0.82, suggesting that they are almost interchangeable measures of network exposure. Therefore, model 6 includes a variable that combines the exposure through uberX through both the business and tech network. Model 4 shows a significant coefficient of 1.532 for global exposure through the business network, while model 5 shows a significant coefficient of 1.136 for global exposure through the tech network. This implies that for any point in time, given all other variables remaining the same, the hazard rate increases respectively with 53.2 per cent and 13.6 per cent with a one-unit change for these variables (on a scale from 0 to 10). This suggests that the exposure through business networks is a better predictor than exposure through tech networks. However, we should keep in mind that the former network is based on ties between 175 firms and the latter network on ties between only 25 firms. Therefore, the difference between the coefficients cannot unquestionably be asserted to a difference in the nature of these networks and might be due to a difference is measurement of these networks. The coefficient of 1.525 of the combined network in model 6 suggests that together these networks are as strong a predictor as the business network by itself (model 4). Hypotheses 1 and 2 are therefore supported, however the distinction between the two deems unnecessary.

Models 7 and 8 test our third hypothesis about de alio activity as local legitimacy spillover. Geographical proximity to cities with uberX shows a significant coefficient of 0.809, that remains roughly
<table>
<thead>
<tr>
<th>Table IV. Extended Cox models predicting local Uber X introduction</th>
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</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
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<tr>
<td>--------------------------</td>
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<tr>
<td><strong>Control variables</strong></td>
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<tr>
<td>Population (in millions)</td>
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<tr>
<td></td>
</tr>
<tr>
<td>GDP per capita (in ten thousands)</td>
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<tr>
<td></td>
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<tr>
<td>Incoming airlines (in hundreds)</td>
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<td></td>
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<tr>
<td><strong>Global legitimacy spillovers</strong></td>
</tr>
<tr>
<td>Global density</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Global exposure business</td>
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<td></td>
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<td></td>
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<tr>
<td>Global exposure tech</td>
</tr>
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<tr>
<td></td>
</tr>
<tr>
<td>Global exposure (combined)</td>
</tr>
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<td></td>
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<tr>
<td><strong>Local legitimacy spillover</strong></td>
</tr>
<tr>
<td>Geographical proximity to uberX</td>
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<tr>
<td></td>
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<tr>
<td>Prior Uber Black</td>
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<td></td>
</tr>
<tr>
<td><strong>Socio-political institutions</strong></td>
</tr>
<tr>
<td>Model improvement (X2)</td>
</tr>
<tr>
<td>Compared to Null model</td>
</tr>
<tr>
<td>n</td>
</tr>
<tr>
<td>Events</td>
</tr>
</tbody>
</table>

Dependent variable: introduction of UberX to a city, standard errors in parentheses, coefficients are hazard ratios. *** p < 0.001, ** p < 0.01, * p < 0.05
unchanged in model 8 (0.834). This somewhat surprising result suggests that with every extra city that experiences an introduction within a radius of 100 kilometers, a focal city is \((0.834-1)\times100\) per cent less likely to experience an introduction itself. The dummy variable indicating prior Uber Black activity has a significant coefficients of 9.444. This means that, given all other variables remaining unchanged, the hazard rate for cities that already have Uber Black is 844.4 per cent higher than for those that do not already have Uber Black. Hypothesis 3 is thereby also supported.

Most variables’ coefficients retain their strength and significance up to the last model. Only global density turns insignificant and the control variables GDP per capita and incoming airlines lose some strength. Because our independent variables still hold in model 8, we can confirm all of our hypotheses (even though we confirm the first two under the conditions that they are combined). Furthermore, table IV shows for every model a significant model improvement relative to the prior model. However, our independent variables *Global exposure (combined)* and *Prior Uber Black* relatively show the highest model improvements, especially considering the degrees of freedom per model.

**Sensitivity analysis**

Table IV shows us that both of our independent variables have a significant effect at any given time \(t\). However, since the network exposure variable is based on a density argument, this variable needs some time to have an legitimizing effect. Therefore, one can expect that this global spillover effect will mostly hold for later periods in our time frame since cities will be better connected to other cities that have uberX. The local spillover of prior

**Figure 1**

![Time to uberX introduction](image-url)
Uber Black activity on the other hand, might especially hold for the earlier stages of our time frame, since Uber Black predates with 2 years the introduction of the first UberX. As figure 1 shows, approximately up to the first quarter of 2014 most cities that experienced an UberX introduction had already seen an Uber Black introduction before. The line representing UberX introduction without prior Uber Black activity accelerates around the same time and the subsequent difference between the two curves suggests that UberX introductions were less depending on prior Uber Black introductions. Therefore, model R1 in table V includes an interaction effect between our two independent variables. This interaction shows a significant coefficient of 0.715, indicating that when one of these variables increases, the effect of the other diminishes. This seems to confirm our suspicion that the legitimizing effect of prior Uber Black activity is important in the early stages of our time frame and this importance starts to decrease once connectivity to other cities increases later in our time frame.
Our global exposure variable is designed to measure connectivity to other cities that have uberX in the business/tech network and model R2 checks whether this variable isn’t functioning as a proxy for the general connectivity of a city. Therefore, this model includes a (time-independent) global connectivity variable through a business/network in the way the GaWC Research Network has done this (Taylor, et al., 2014). Similar to our exposure models, we normalized this variable on a scale from 0 to 10. The overall global connectivity shows a significant coefficient of 1.353, which we can interpret as a 35.3 per cent increase in the hazard rate per one-unit increase in overall global connectivity. A first interesting result is that the variable incoming airlines, our proxy for general global connectivity, turns insignificant in this model. However, our global exposure measure remains significant and even shows a stronger effect (43.3% compared to 35.3%).

Model R3 introduces a different operationalization of our global exposure variable. The variable is measure as a rank variable, indicating for each instant in time how a city ranks in terms of its exposure to cities with uberX. It is a reversed rank meaning that the city with the highest exposure scores the highest number and the lowest scores a 1. Our original model only includes four time-dependent variable and therefore the effect found for our exposure variable might be due to the fact that this variable is growing over time. By using a rank variable we can assure that an increase in this variable also means that the city becomes relatively more interesting for Uber in terms of its legitimacy locally. The coefficient for this variable in model R3 is hard to interpret because the setup of a Cox analysis inherently alters the rank for each time period. After every introduction the number of cities that risk introduction is reduced by one, meaning that the highest rank that possible reduces with every instant of time. This mean for high-ranked cities that they always lose one position on the exposure rank. However, as a robustness check this model shows that the significant effect of our exposure variable isn’t only due to the fact that his variable is one of the only variables that increases over time.

We can find a differentiated pattern in how different countries are regulating or incorporating the sharing and gig economy (Frenken, 2017). Indeed, Uber has experienced diverging degrees of difficulty when introducing locally in different countries. These difficulties arise from a multiplicity of factors, for instance competition from other ride-hailing companies (Salomon, 2016) or incumbent taxi firms (Johnson, 2016). Furthermore, Uber has experienced multiple lawsuits and national bans around the globe (Grant & Khosla, 2015). In order to control for these country specific degrees of resistance and acceptance, model R4 includes a country dummy. This dummy will also control for country specific regulations and institutions, something we already did in prior models with the socio-political institutions. Finally, since we are discussing multinational location decisions in this paper this dummy also controls for a ‘homeland effect’ that Uber experienced in the USA. As model R4 shows, the inclusion of the country dummy increases the coefficient for both our global exposure variable and prior Uber Black variable. When we specifically look at the results of the dummy variable, is that indeed USA cities are by far the most likely to see an uberX introduction, while countries such as China, India and Thailand, where Uber experienced serious difficulties, show significant decreases in hazard rate of respectively 99.94%, 99.91% and 99.94%. Thereby, the inclusion of this dummy variable seems to take effects of competition and bans into account and shows the robustness of our independent variables’ effects.

As stated in the methods, the GaWC network consists of 707 cities and therefore 3.555 cities in our dataset received a structural zero for the connectivity measures. Our last model checks whether the significant
effects found for our exposure variable aren’t caused by this dichotomous difference between the 707 cities with a value for exposure and the 3,555 cities with an structural zero. Model R5 only includes the 707 cities that are included in the GaWC network, meaning that all cities in this model will have a value for exposure to uberX through the business/ttech network. This model still shows a significant coefficient of 1.337 for our global exposure variable, meaning that even though it is slightly reduced the effects for this independent variable show to be robust.

**Preliminary Discussion**

In this paper we tried to show how companies active in the sharing economy are differently dependent on local institutions in their location decisions compared to more traditional multinationals. Where traditionally economy geography has conceptualized location decisions as a search for the best fit between a location and the organizations’ activity, we argue that for new organizational forms such as the sharing economy this fit by definition doesn’t exist. It is argued that in their search for this fit companies are trying to overcome a liability of foreignness, however companies active in the sharing economy also experience a liability of newness. Indeed, following Rossman (2014) we are not only studying the diffusion of Uber’s services, but rather of the new organizational form of ride hailing, that is in need of local legitimacy in order for Uber’s services to expand. Because the sharing economy goes against most local regulations and legal institutions it is hard to achieve socio-political legitimacy with these new organizational forms. Therefore, in explaining Uber’s location decisions, we looked at possible cognitive legitimization spillovers by mobilizing both global and local audiences.

On a global level, we argue that Uber’s cognitive legitimacy as the spread of knowledge about their controversial service is carried by mobile consumers from the business and tech community. Based on arguments for global density-legitimization, we argue that rather than cognitive legitimacy caused by the mere global increase of the number of cities with uberX, we should take into account to what extent a new city is exposed to this number of cities with uberX through business networks. Indeed, our analysis shows that cities that are more exposed to other cities with uberX allow business travelers to function as carriers of cognitive legitimacy, transferring consumption behavior from one city to another. We thereby follow Belderbos et al. (2017) in their proposition that “more detailed analysis of the connectivity characteristics that drive location choice relating to the best ‘fit’ between the geography of the MNC and the connectivity of the city is a promising avenue for future research”. On a local level we have shown how Uber was capable of familiarizing local audiences with their services by first introducing less-controversial services (Uber Black). This firsthand experience with Uber’s services follows the idea that new-to-the-world innovation needs endogenous processes of legitimization, through peer behavior and word-of-mouth (Rossman, 2014). Through this de alio activity Uber seemed to gain a certain taken-for-grantedness, that prepared local audiences for the introduction of their controversial service. Indeed, prior research has shown that once an organizational form is taken for granted to a certain degree, companies can start to strategically diverge from this organizational form, sometimes without the audiences noticing (Hsu & Grodal, 2015). This audience notice is beyond the scope of the current research, but our analysis has shown that prior local activity (that complies to local legal institutions) of Uber is a strong predictor for a follow-up introduction of Uber’s controversial services. These two processes of legitimacy
spillovers showed that audiences can to some extent play a role in location decisions. Indeed, in some occasions location decisions prove to be more dynamic processes that involve interaction among a broader array of actors that can produce institutional change (Lounsbury & Crumley, 2007).

References:


Although there are fair reasons to question Uber’s part in the sharing economy and label their business as gig economy, this discussion is not relevant for the analysis and beyond the scope of the current paper.

\[\text{www.geonames.org}\] is an open gazetteer database including geographical data such as place names in various languages, elevation, population, lat/long coordinates and more. This data was manually cleaned to exclude duplicates, correct spelling mistakes, etc.

\[\text{www.uber.com/cities}\]

\[\text{http://web.archive.org/}\] is an archive that saves historical web data. Their archived pages are web crawls done by web traffic companies since 1996.

\[\text{blog.uber.com}\] and later \[\text{newsroom.uber.com}\]

\[\text{The 75 largest financial services firms and 25 largest firms each in accounting, advertising, law, and management consulting of 2016. Firms were selected by using trade information that ranked these firms by size (e.g., on turnover) (Taylor et al, 2014).}\]

\[\text{We used the ‘routes’ data as provided by openflights.org. This database contains 59,036 routes between 3,209 airports on 531 airlines that enabled us to capture the amount of incoming routes for each city. We only used the indegree scores of this air routes network, since we are interested possible legitimacy spillovers generated by incoming audiences.}\]

\[\text{http://www.worldbank.org}\]