IIIEE Theses 2018:35

Wheels of Change

How are bike-sharing schemes and bike kitchens institutionalising collaborative consumption and production in Barcelona?

Julia Winslow

Supervisor

Oksana Mont

Thesis for the fulfilment of the
Master of Science in Environmental Management and Policy
Lund, Sweden, September 2018

iiiee
THE INTERNATIONAL INSTITUTE FOR
INDUSTRIAL ENVIRONMENTAL ECONOMICS

Published in 2015 by IIIEE, Lund University, P.O. Box 196, S-221 00 LUND, Sweden,
Tel: +46 – 46 222 02 00, Fax: +46 – 46 222 02 10, e-mail: iiiee@iiiee.lu.se.

ISSN 1401-9191

Acknowledgements

"Plant ideas, rain critical thinking, grow alternatives;
Plant critical thinking, rain alternatives, grow ideas;
Plant alternatives, rain ideas, grow critical thinking"

I found these words painted on the outside of a bicycle kitchen in Barcelona. They perfectly sum up this inspiring research project and my incredible year here at the insti. How did it all go by so quickly?

Thanks are due to everyone who contributed to this work—my incredibly responsive interview partners, who were always there to answer my multiple follow-up questions despite being very important people with busy lives. Every one of you inspired me with your sense of purpose!

Particular thanks go out to Oksana, I couldn't have asked for a more supportive and helpful supervisor in times of need. Thanks for sending me to Barcelona!

Mis gracias más sinceras a Gaby y Cristi for supporting me in my naïve attempts to translate Spanish interviews. And to my one and only Catalan friend, Jordi, who heard a lot more from me in these last few months than he has in years…you're the best!

A special shout out to the thesis office crew for making this whole process a lot more fun than it should have been. And for supplying me with a steady stream of snacks (you know who you are).

And finally, to everyone else who made this year so special: each and every one of you B23ers; my Björkliden babes; Hanna, for all the waves & laughs; Flo, for all the love & adventures; and to my parents whose constant stream of love, support and dog photos got me through the year.

Finally, thanks to anyone who reads this thesis, you make it worth it!

Abstract

The collaborative economy represents a paradigm shift that could help to address the economic, social and environmental problems of our time. However, its ability to actually deliver that promise is highly disputed. This thesis aims to address the knowledge gap of the types of value that organisations based on collaborative consumption and production actually create, and the strategies that they use to institutionalise themselves in the context of powerful regulative, normative and cultural-cognitive institutions. In order to achieve this objective, the study applies two analytical frameworks to six empirical case studies of bike-sharing schemes and bike kitchens in Barcelona. It was found that the environmental value these organisations create is closely interlinked with the social value they produce, and that this value significantly outweighs any negative impacts of their operations. All case studies were found to employ regulative, normative and cultural-cognitive strategies, but also to be subject to powerful institutions beyond the control of a single actor. Therefore, it is recommended that entrepreneurs, city officials, the public and other stakeholders should all aspire to become institutional changemakers themselves, by engaging in collaborative and open development processes to shape the emerging collaborative economy. This is the first step toward a larger paradigm shift.

Keywords: Collaborative economy, business models, institutions, Barcelona, bike-sharing, bike kitchens

Executive Summary

This thesis aims to contribute to the knowledge gaps on value creation and institutional strategies in the collaborative economy by applying a framework of sustainable business models and institutional theory to empirical case studies.

Problem Definition

We are trapped in a system of overconsumption that exceeds the carrying capacity of our planet (Global Footprint Network, 2018), but there is evidence that a paradigm shift is underway. A global decline in trust of institutions, changing values and the decentralisation of supply and demand enabled by technological developments, have given rise to a new market system called the collaborative economy. It has fostered new business models that are challenging our linear market system by selling access instead of ownership and empowering consumers to become producers themselves.

The collaborative economy holds promises of economic empowerment for individuals, improved social cohesion, and reduced environmental impact by decreasing demand for new products (Botsman & Rogers, 2011). But what some call "a greener form of capitalism" (Stokes, Clarence, Anderson, & Rinne, 2014) is regarded by others as "neoliberalism on steroids" (Murillo, Buckland, & Val, 2017). In reality, the collaborative economy is an emerging field which has not yet established the necessary regulative, normative and cultural-cognitive institutions under which it can reach its full potential. This presents an opportunity for the public, entrepreneurs, organisations and governments to actively engage in shaping the regulations, norms and behaviours that can influence the collaborative economy in ways that enable it to deliver its true promise.

In order to tap into this opportunity, there is a need to understand the types of value these new organisations create, and the strategies they employ to institutionalise themselves. Mont, Voytenko and Zvolska (2018) have proposed a model for analysing the institutionalisation strategies employed by urban sharing organisations, however it has not yet been tested empirically.

Therefore, this thesis serves two aims:

1) To address the knowledge gaps on value creation and institutional strategies in the collaborative economy, by applying a framework of sustainable business models and institutional theory to empirical case studies.

2) To provide an empirical test of the analytical model proposed by Mont et al. (2018).

To achieve these aims, this thesis analyses case studies representing collaborative consumption and production, unified by a common product: bike-sharing schemes and bike kitchens. Bike-sharing has become a popular first/last mile solution in European cities, where it has notably improved cycling modal share in cities without traditional cycling cultures (DeMaio, 2009). Bike kitchens are DIY repair studios that are typically non-profit, grassroots initiatives, and therefore are interesting to compare to the more top-down approach of public and private bike-sharing organisations.

The city of Barcelona provides an appropriate institutional setting for this study. It is a highly populated city struggling with high vehicle density and air pollution. The city lacked a cycling culture until its public bicycle system, one of the first and largest schemes in Europe, was introduced in 2007. In addition, the collaborative economy is under hot debate in Barcelona due to the controversial role of Airbnb in the city's housing crisis (Russo & Scarnato, 2018). Barcelona is home to one of Europe's largest squatting communities, who are not only protesting against the root causes of housing crisis, but also have a vibrant culture of collaborative workshops and maker-spaces such as bike kitchens.

Research Questions

This thesis aims to fulfil the abovementioned objectives by answering the following research question and sub-questions:

How are bike sharing schemes and bike kitchens institutionalising collaborative consumption and production in Barcelona?

1. *What types of value do they create?*

2. *What strategies do they use to institutionalise themselves?*

Methodology and Research Design

The research takes a constructivist approach, employing a case study design. It utilises a rich variety of primary and secondary data sources collected prior to, during and after a two-and-a-half-week field visit to Barcelona. Sources included seven semi-structured interviews, field notes, photographs, academic journals, grey literature, websites, press articles and social media.

The data was analysed using two pre-defined frameworks designed to answer the research questions, the first rooted in research on sustainable business models (2010, p. 14) and the second based on the framework for institutional strategies by Mont et al. (2018). The second framework was used to produce pre-defined codes for analysing triangulated data sources in NVivo software. Photos and direct quotations are included in the analysis to create a 'vicarious experience' for the reader (Stake, 1995).

Main Findings

It was found that the environmental value created by BSS and bike kitchens is inherently linked to the social value they produce. Furthermore, the findings supported claims from the literature that the social and environmental value of these organisations greatly outweighs any negative impacts. Finally, opportunities for increasing that value through operational and institutional strategies were identified.

The analysis of institutionalisation strategies revealed that bike-sharing organisations and bike kitchens are subject to various powerful institutions beyond their direct control, and that they all apply regulative, normative and cultural-cognitive institutionalisation strategies in an attempt to influence these. The most significant distinctions were found between profit and non-profit business models rather than between bike-sharing organisations and bike kitchens. It was found that these types of organisations typically start out as grassroots initiatives but are likely to evolve a more top-down approach, as they become increasingly subject to regulative and normative pressures during their institutionalisation.

Conclusions and Recommendations

Bike-sharing schemes and bike kitchens create social value that is tightly interlinked with environmental value. The value created significantly outweighs the impacts of their operations. Adjustments to their operational and institutional strategies could improve this value even further.

Bike-sharing schemes and bike kitchens in Barcelona all employ regulative, normative and cultural-cognitive strategies to influence the development of their respective organisational fields. They each differ in their approaches, depending on their models for value creation. There is no single pathway for the institutionalisation of collaborative consumption and production. Furthermore, they are all subject to powerful institutional forces beyond the control of any single organisation. This underlines that processes of institutionalisation for organisations in the collaborative economy require mutual support between actors in the organisational field.

Therefore, organisations, city authorities, the public and other stakeholders are encouraged to engage in collaborative and open development processes to shape the emerging collaborative economy. Each of these groups can play a role in securing and protecting public spaces where the local community can benefit from collaborative consumption and production. This is visibly the case in Barcelona. From the collaborative governance employed by the squatting communities, to the collaborative decision-making processes promoted by the current government, Barcelona's example shows that the collaborative economy calls for collaborative governance in order to fulfil its promise of economic, social and environmental value.

Table of Contents

List of Figures

List of Tables

Abbreviations

BSS	Bicycle-Sharing Scheme
B2P	Business-to-Peer
P2P	Peer-to-Peer
PMU	Urban Mobility Plan
RFID	Radio-Frequency Identification
SSE	Social and Solidarity Economy

1 Introduction

According to the international research organization Global Footprint Network, we are consuming our planet's resources faster than they can be replenished—it would take 1.7 Earths to sustain our current global rates of consumption (Global Footprint Network, 2018). If we continue business as usual, this footprint will be amplified to the equivalent of three Earths by 2050 (United Nations, 2016), when the global population is projected to reach 9.8 billion (United Nations, 2017).

The global financial crisis, widening social inequalities and rapidly approaching ecological thresholds are revealing disparities in the regulatory, social and cultural systems that have driven unsustainable mass consumption for the last four centuries. As a result, public trust in institutional bodies such as the government, banks, businesses, media and NGOs is in global decline (Edelman, 2018). There is evidence that values and norms are shifting towards more mindful consumption (Gerzema, Kotler, & D'Antonio, 2014). At the same time, developments in technology are enabling better, decentralised connections between supply and demand by facilitating trust between strangers (Botsman, 2013).

This is all part of a shift toward a market system known as the collaborative economy. It is based on decentralised production, consumption, finance and learning, driven by connected individuals and communities across distributed networks (Botsman, 2013). The collaborative economy has fostered innovative business models that are now challenging traditional institutions of consumption and production by selling access instead of ownership and enabling consumers to become producers themselves (Mont, Zvolska, & Whalen, 2018).

The collaborative economy holds promises of economic empowerment for individuals, improved social cohesion, and reduced environmental impact by decreasing demand for new products (Botsman & Rogers, 2011). But what some call "a greener form of capitalism" (Stokes et al., 2014) is regarded by others as "neoliberalism on steroids" (Murillo et al., 2017). Sharing organisations such as Airbnb and Uber, who started as small, innovative, market disruptors, have today grown into near-monopolies. They make huge profits from the value created by their users and cunningly bypass laws and regulations without showing real regard for the environment or social justice (Murillo et al., 2017).

The reality is likely somewhere in between. The collaborative economy is an emerging field which has not yet established the necessary regulative, normative and cultural-cognitive institutions under which it can reach its promised potential. This is an influential stage in the development of a new market, if not a new economic paradigm (Botsman & Rogers, 2011). It is an opportunity for the public, entrepreneurs, competitors and governments to actively engage in shaping the regulations, norms and behaviours that can influence the collaborative economy in ways that enable it to deliver its true promise.

There is still a lack of understanding of whether business models in the collaborative economy can actually deliver on their promises of sustainable value (Mont, Zvolska, et al., 2018). For the public, entrepreneurs, authorities and other stakeholders to collaborate in this achieving this new economic promise, there is a need to first understand the institutional forces that enable and inhibit a healthy development of the collaborative economy (Mont, Voytenko Palgan, et al., 2018).

1.1 Problem Definition

This thesis aims to address knowledge gaps on value creation and institutional strategies in the collaborative economy by applying a framework of sustainable business models and institutional theory to empirical case studies.

Many studies have studied the general types of value created or destroyed by business models in the collaborative economy (Bocken, Short, Rana, & Evans, 2013; Cohen & Cohen, 2016; Mont, Zvolska, et al., 2018), but cases are often analysed outside of their organisational, institutional or geographical contexts.

There is also growing interest amongst academics studying the collaborative economy to understand the interactions between new actors and conventional institutions. Mont, Voytenko and Zvolska (2018) propose a model for analysing the institutionalisation strategies employed by urban sharing organisations. This new model has not yet been tested empirically. This thesis therefore aims to use the proposed model as an analytical framework for understanding institutionalisation strategies of organisations in the collaborative economy, whilst offering the first empirical test of this new model.

Using a case study format, this thesis offers a rich analysis of examples of collaborative consumption and production in a specific urban setting. The chosen subjects for analysis are bike-sharing organisations and bike kitchens within the institutional context of the city of Barcelona. This scoping has several reasons:

Bike-sharing and bike kitchens are two distinct business models of collaborative consumption and collaborative production based on the same product: the bicycle. The bicycle, a century-old invention, is a symbol of change. It offers simple a solution to complex urban problems (Vivanco, 2013).

From an anthropological perspective, "bicycles are heterogenous, multidimensional and contextual objects, enmeshed in specific technological conditions, practices of life, social relations, cultural meanings and political-economic dynamics" (Vivanco, 2013, p. Preface). This definition shows that the bicycle itself is physically, socially and culturally embedded in institutional contexts. Vivanco adds that the bicycle is "closely tied to complex and dynamic interplays of technological innovation, industrial capitalism, consumerism, advocacy movements, urban change and national and cultural particularities" (Vivanco, 2013, p. Preface). This makes it an excellent subject for this study centred on paradigm shifts and institutional change.

Bike-sharing has become a popular first/last mile solution in European cities, where it has notably improved cycling modal share in cities without traditional cycling cultures (DeMaio, 2009). Whilst numerous studies examine the social and environmental benefits of bike-sharing (Anaya, 2010; DeMaio, 2009; Otero, Nieuwenhuijsen, & Rojas-Rueda, 2018), none have yet applied institutional theory to explain the many successes and failures of these systems. Furthermore, no studies have been identified that compare the business models of private and public operators in the same city.

In contrast, DIY bike repair studios, often called 'bike kitchens', have received far less academic attention than bike-sharing (Bradley, 2016; Lehner, 2019). They are largely a grassroots initiative and are therefore interesting to compare to the more top-down approach of public and private bike-sharing organisations.

The reasons for situating this study in the context of Barcelona are manifold. The capital of the autonomous community of Catalonia in Spain is a highly populated city, struggling with high vehicle density and air pollution. It lacks a traditional cycling culture but experienced a cycling boom after the introduction its public bike sharing scheme, Bicing, in 2007. The scheme was one of the first and largest of its kind in Europe.

In addition, the collaborative economy is under hot debate in Barcelona (Menoyo, 2017; Molas, 2017; Russo & Scarnato, 2018). On the one hand, it provides economic opportunities that are helping citizens to help themselves amidst Spain's nine-year economic downturn. On the other hand, it has exacerbated the city's housing crisis by raising rental prices for tourist rental properties, especially through Airbnb.

A previous evictions activist, Ada Colau, is now the city's first female mayor. She is cracking down on formal institutions such as banks and speculators, as well as Airbnb and Uber—figureheads of the collaborative economy—for their lack of enforcement on permits. At the same time, she promotes the social and solidarity economy (SSE), based on non-profit peer-to-peer (P2P) solutions to address the municipality's economic and social challenges (Miller, 2017).

Barcelona also has one of Europe's largest squatting communities (Squatting Europe Kollective, 2018). 'Okupa' exercise resistance against the formal institutions that have led to the housing crisis and have a vibrant culture of collaborative workshops and maker-spaces.

1.2 Research Question

This thesis intends to achieve the abovementioned aims by answering the following research question:

How are bike sharing schemes and bike kitchens institutionalising collaborative consumption and production in Barcelona?

In order to answer this overriding question, it has been divided into the following sub-questions:

1. *What types of value do they create?*

2. *What strategies do they use to institutionalise themselves?*

1.3 Limitations and Scope

The reasons for delimiting the scope of this thesis to bike-sharing and bike kitchens in Barcelona have been argued in Section 1.1. This highly specific scope is necessary for the in-depth empirical analysis intended by this study. However, it must be noted that this excludes the wide-ranging examples of collaborative consumption and production that exist in Barcelona. Therefore, the insights from this study are not generalisable to the collaborative economy as a whole; neither in the context of Barcelona, nor on a greater scale.

It is also important to note that the researcher only has basic language proficiency in Spanish and no knowledge of Catalan, which may have affected the quality of the results of this study. At any point throughout the data collection for this study, either the researcher or the interviewees were working outside of their native language; therefore, linguistic nuances may

have been lost. The researcher controlled this limitation to the best of her ability, from preparing translations for interview questions in advance, to using translation software and consulting native speakers in order to interpret Spanish- or Catalan-language data.

1.4 Ethical Considerations

All interviews were voluntary and were only recorded at will of the interviewees, who expressed their consent in writing. The purpose of the study was disclosed during the first contact with the interview subjects and again during the interviews. Interviewees were given the option to remain anonymous. Any personal data collected was maintained according to GDPR principles. Recordings and scripts will be stored for five years after publication of this research. To the best of her ability under the aforementioned limitations, the researcher has taken care to provide accurate interpretations of the collected data. All participants who have expressed interest will be provided with the final published work.

1.5 Audience

This thesis will generate interesting insights for entrepreneurs in the collaborative economy and for city officials who are seeking appropriate strategies for interacting with these novel types of organisations. Academic researchers of the collaborative economy may also find it contributes interesting findings on bike kitchens and bike sharing from the perspective of sustainable business models and institutional theory.

In addition, this thesis will contribute to the greater *Urban Reconomy* project at the IIIEE, funded by the Swedish Research Council FORMAS. The project aims "to advance knowledge about urban sharing and collaborative production schemes and their potential contribution to resource efficient economy in cities" (Lund University, 2015). It does so by applying theoretical perspectives of institutional theory and product-service systems to empirical evidence from six European cities. This thesis will provide valuable perspectives from Barcelona.

1.6 Disposition

Chapter 1 defines the rationale for this study, the research question, limitations, ethical considerations, a description of the intended audience and a brief outline of the thesis.

Chapter 2 reviews the existing literature on collaborative production and consumption models such as bike-sharing and bike kitchens. An analytical framework for how they create value is proposed. This is followed by an introduction to institutions and institutional strategies, concluded by presenting an appropriate analytical framework by Mont et al. (2018).

Chapter 3 details the methodology of the paper, the selected case studies and the process for data collection and analysis. The validity, reliability and generalizability of the results is also discussed.

Chapter 4 presents findings about the institutional context surrounding bike-sharing and bike kitchens in Barcelona and briefly introduces the six case studies.

Chapter 5 contains a detailed analysis and discussion of the findings, having applied the frameworks on value creation and institutional strategies proposed in Chapter 2.

Chapter 6 presents the main conclusions of the analysis in relation to the research questions and and provides recommendations for the principle audiences of this study. It explains its contribution to the existing literature, evaluates the usefulness of the analytical framework by

Mont et al. (2018), and states the limitations of the study before concluding with recommendations for future research.

2 Literature Review

The following section reviews the existing literature on collaborative production and consumption models and proposes an analytical framework for examining the value that they create. This is then applied to the available literature on bike-sharing and bike kitchens, to generate a general understanding of the types of value created by these kinds of organisations. This is followed by an introduction to institutions and institutional strategies. Finally, the analytical framework by Mont et al. (2018) that will be tested empirically in Chapter 5 is presented.

2.1 The Collaborative Economy

The collaborative economy has been defined as "an economy built on distributed networks of
connected individuals and communities versus centralized institutions, transforming how we can produce, consume, finance, and learn" (see Figure 2-1) (Botsman, 2013).

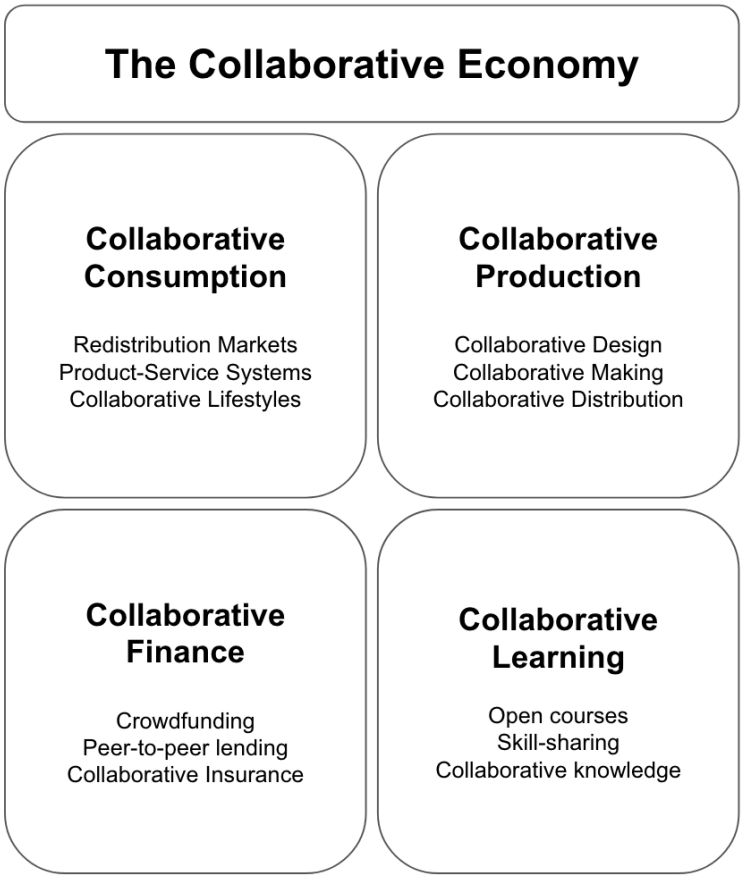

Figure 2-1. The four elements of the collaborative economy

Source: own elaboration based on Stokes et al. (2014)

Particularly the areas of collaborative production and consumption have received attention for their potential for reducing environmental impact and providing societal benefits, but the actual social and environmental value created by these business models remains disputed (Frenken & Schor, 2017). These are analysed in more detail in the following sections.

2.1.1 Collaborative Consumption

Collaborative consumption entails "gaining access to goods or services through bartering, renting, lending, trading, leasing, exchanging, reselling and swapping" (Stokes et al., 2014). It gives users easy and temporary access to products that are already available on the market, relieving them from the high transaction costs of buying a new product (Mont, Zvolska, et al., 2018). It also enables providers to make a profit from products they already own that have high idling capacity (Mont, Zvolska, et al., 2018).

From an environmental perspective, it is hypothesized that collaborative consumption can save resources by maximizing the utilization rates of existing products and thereby reducing demand for new goods (Frenken & Schor, 2017). The social interactions created by peer-to-peer platforms are also believed contribute to community building and social cohesion (Botsman & Rogers, 2011).

However, critics warn that collaborative consumption does not necessarily substitute existing habits with sharing. The money earned from the sale or rental of a second-hand product may be used to purchase a different, new product (Frenken & Schor, 2017). Rather, collaborative consumption creates new market opportunities that can increase the purchasing power of a society and therefore increase overall environmental impact (Frenken & Schor, 2017)

From a social perspective, it can actually increase the social clough through unevenly distributed profits and the commercialization of the social practice of sharing (Frenken & Schor, 2017). The monopolies of Airbnb and Uber have shown that issues such as exploitation of labour, limited liability, avoidance of legal permits and taxes, and privacy concerns are issues that urgently need to be addressed in this developing field (Mont, Zvolska, et al., 2018).

2.1.2 Collaborative Production

Collaborative production describes platforms where consumers take an active role in collaboratively producing, refurbishing or repairing products (Stokes et al., 2014). These platforms can be virtual, such as OpenStreetMaps, or physical, such as FabLabs or bike kitchens (Stokes et al., 2014). They provide access to tools and equipment, knowledge and competencies that otherwise may be reserved for experts and established institutions (Mont, Zvolska, et al., 2018). They also encourage social interaction and promote creative values (Mont, Zvolska, et al., 2018).

Collaborative production may help to reduce material flows by utilising local waste streams or refurbishing existing products. In addition, consumers become 'prosumers' who are likely to feel more emotional attachment to products they have produced themselves, increasing their perceived value and evoking a willingness to maximise products' lifetime (Lehner, 2019). It is also a form of individual empowerment, granting individuals independence from the conventional institutions that they generally rely on for their consumption (Illich, 1973). It has been theorised that the 'maker movement' is a reaction to the isolation and lack of creativity of the mass consumption society (Howard, Gerosa, Mejuto, & Giannella, 2014).

However, from an environmental perspective, it has been argued that when unskilled people become producers, this may lead to inefficiencies that actually use higher volumes of materials and create more waste, while diminishing efficiencies of scale (A. G. Smith, Hielscher, Dickel, Soderberg, & van Oost, 2013).

2.2 Value Creation in the Collaborative Economy

The debate about the sustainability of collaborative consumption and production indicates that there is a need to contribute to a balanced understanding of the types of value these new business models create. Therefore, the aim of this section is to provide a framework for analysing the value created by organisations in the collaborative economy.

2.2.1 Analytical Framework for Value Creation

A business model describes "the rationale of how an organization creates, delivers and captures value" (Osterwalder & Pigneur, 2010, p. 14). Authors such as Elkington (1998), Hawken, Lovins & Lovins (1999) and Porter & Kramer (2011) have long made the case that organisations should look beyond generating only economic value, to include environmental and social value.

Conventional frameworks for business model analysis, such as Richardson's Business Model Framework (2008) and Osterwalder & Pigneur's Business Model Canvas (2010) typically overlook these types of sustainable value creation (Bocken et al., 2013). Joyce & Paquin (2016) apply principles from lifecycle thinking and stakeholder theory to add social and environmental value dimensions to Osterwalder & Pigneur's Business Model Canvas (2010), proposing a 'Triple–Layered Business Model Canvas'. However, the level of analysis required for the Triple-Layered-Business Model Canvas was deemed too extensive for the scope of this thesis. Therefore, the different frameworks were merged to create a simplified model for use in this thesis.

In the following framework (see Table 2-4), the nine building blocks of Osterwalder & Pigneur's Business Model Canvas (2010) have been organised into Richardson's (2008) business model framework of value proposition, value creation & delivery, and value capture. In addition, the framework includes the layers of economic and social and environmental value capture found in Joyce & Paquin's (2016) Triple-Layered-Business Model Canvas.

Table 2-1. Analytical Framework for Sustainable Value Creation

Value Proposition		• Customer Segments • Value Propositions
Value Creation & Delivery		• Key Resources • Key Activities • Channels • Customer Relationships • Key Partnerships
Value Capture	*Economic*	• Revenue Streams • Cost Structure
	Social	• Social Benefits • Social Impacts
	Environmental	• Environmental Benefits • Environmental Impacts

Source: own elaboration, adapted from Richardson (2008), Osterwalder & Pigneur (2010), and Joyce & Paquin (2016).

The result is a simplified business model framework that enables a balanced analysis of sustainable value creation by organisations in the collaborative economy. It not only refers to the social and environmental benefits of the business model, but also the social and environmental costs. This will be used as a tool to organise the findings from the case studies in Section 4.

2.2.2 Value Creation by Bike-Sharing Schemes

The European Commission defines bicycle sharing schemes (BSS) as a "self-service, short-term, one-way capable bike rental offer in public spaces, for several target groups, with network characteristics" (Intelligent Energy Europe, 2009, p. 1). This definition draws a clear distinction between BSS and traditional bike rental, though it appears to relate more to large-scale public schemes rather than smaller, private bike sharing operators. Interestingly, it also does not emphasize the 'sharing' aspect, indicating that the purpose of BSS is not primarily to optimise the use of under-utilized resources or to facilitate social interaction, but rather to provide a new form of flexible mobility.

Bike-sharing systems have evolved since the 1960s. The first generation, 'free bike' systems, were regular bikes, painted in a distinct colour and distributed unlocked throughout the city for free public use, typically operated by environmental groups and non-profits (DeMaio, 2009; Shaheen, Guzman, & Zhang, 2010). However, these systems suffered from high levels of theft, vandalism, and confiscation by the police (Shaheen et al., 2010). The 'second-generation' of BSS featured secured parking and coin-deposits, but the low deposit fees and user anonymity were still conducive to theft (Shaheen et al., 2010). The third-generation of BSS, now considered state-of-the-art, are characterised by a distinguishable design (e.g. colour, construction, advertisement) and technology-enabled docking stations using smart cards, apps or Radio-Frequency Identification (RFID) to identify users (Shaheen et al., 2010, p. 4). The first example of this type of scheme was Velo'v in Lyon, France, launched in 2005 (DeMaio, 2009). Today, approximately 1 724 cities worldwide have a BSS, with a total of 18 243 900 bicycles in use (Meddin & DeMaio, 2018). And fourth-generation BSS is on the horizon: demand-responsive, multi-modal systems integrated with public transport systems, with features like electric bikes, touchscreen kiosks and GPS tracking (Shaheen et al., 2010, p. 15).

Value Proposition

BSS are thought to have many functional, environmental and social benefits. For users, they remove the costs of ownership, such as storage, protection from theft, and maintenance (Mátrai & Tóth, 2016, p. 2346). The main target groups of urban BSS are daily commuters and tourists (OBIS, 2011). For cities, they offer flexible mobility, reduce congestion, and act as a "last mile" connection to strengthen public transport (Shaheen et al., 2010, p. 16). They encourage reducing fuel use and emissions, and they can improve health and raise environmental awareness (Shaheen et al., 2010). However, there is no significant evidence that bike sharing replaces the use of motorized vehicles (Fishman, Washington, & Haworth, 2013).

Value Creation and Delivery

On average, the schemes provide 15 bicycles and 1.5 stations per 10 000 inhabitants (OBIS, 2011). Most offer a 24/7 service, although some, such as in Barcelona, close overnight. In most cases, it is mandatory to register to use the scheme and registration typically entails a small fee or a deposit (OBIS, 2011).

Bikes can be accessed using an access card, code, key or via a person in charge (OBIS, 2011). The bicycles typically feature a distinct and robust design to minimise vandalism, deter theft and ease maintenance (OBIS, 2011). They are usually one-size-fits-all, which unfortunately can also limit accessibility for children, elderly, or disabled people (OBIS, 2011). Often, the bikes feature advertising space for the scheme itself or its sponsors (OBIS, 2011). The majority of urban bike schemes in Europe have a fixed docking system or a built-in lock on the bikes (OBIS, 2011). Most European BSS are located in the most densely populated urban areas, with access to a docking station approximately every 300 m (OBIS, 2011).

The systems are operated using a special software providing registration, rental, information, customer data management and payment functions (OBIS, 2011). The back-end of the system manages station monitoring, redistribution planning, defect management, customer data management and billing (OBIS, 2011). The schemes are often accompanied by an app providing real-time information on nearby bikes and stations, service updates, registration options, advertising and more (OBIS, 2011). Usually, this is part of a wider communications strategy utilising a variety of channels, from advertisements, websites, newsletters, social media, apps and/or customer service centres (OBIS, 2011). Bike sharing schemes are often integrated within the city's public transport system, be it physically at metro and bus stations, or within the IT system providing functions such as intermodal routing and/or enabling access to all modes of public transport, including bike sharing, via the same access card (OBIS, 2011).

A key part of the operations of municipal BSS is the redistribution of the bicycles within the city in order to maintain a consistent service and meet local demand (OBIS, 2011). This is especially the case in mountainous coastline cities like Barcelona, where bikes are more frequently used for downhill trips and need to be redistributed uphill (OBIS, 2011). It is therefore possible that the positive environmental impact from the use of bicycles is cancelled out by the emissions of redistribution vehicles, given that they are not powered by biofuels or renewably generated electricity (OBIS, 2011).

There are several different configurations of bike-sharing business models, as listed in Table 2-2 below.

Table 2-2. Bike-Sharing Business Models

Provider	**Operating Model**	**Revenue Streams**
Advertising Companies	Outdoor advertising or street furniture companies, such as JCDecaux and Clear Channel provide BSS in exchange for public advertising space. The bikes themselves are also used as advertising space.	- Advertising revenues (city street furniture, billboards, bikes, and docking stations) - Usage fees
Public Transport Agencies	Together with the public authorities, the local public transport agency provides BSS to complement the public transportation network.	-Government subsidies -Usage fees -Ads on bikes and docking stations

Local Government	BSS directly designed and operated by the local government, or by a contracted operator.	-Municipal funding -Usage fees - Parking enforcement, congestion charges -Sponsorship - Ads on bikes and docking stations
For-Profit	Privately owned and operated BSS with minimal government involvement	-Usage fees -Sponsorship -Ads on bikes and bike sharing stations
Non-Profit	BSS operates under the support of public agencies or councils	-Public-private partnership funding -Usage fees -Bank loans -Local funding -Donations

Sources: Cohen & Kietzmann, 2014; Shaheen et al., 2010

Value Capture: Economic

The main costs of the system are related to the initial investment and operating costs such as infrastructure, implementation and running costs (OBIS, 2011). In large-scale systems such as Barcelona, implementation of an electronic docking scheme can cost from 2 500 EUR to 3 000 EUR per bicycle (OBIS, 2011). Running costs in large systems range from 1 500 EUR – 2 500 EUR per bike per year, entailing (from highest to lowest share of cost) the redistribution of bikes, bike maintenance, station maintenance, operating the back-end system, administration, and replacements of bikes and stations (OBIS, 2011).

The main sources of finance for BSS come from registration and usage charges paid by the users (OBIS, 2011). Charges are designed to encourage daily short-term use, such as offering the first 30 minutes for free before applying an exponentially increasing charge up to a daily maximum amount or charging a fine when a certain limit is exceeded (OBIS, 2011). An alternative model is a constant charge per time unit up to a less expensive daily maximum. Fees are also applied for unreturned or damaged bikes (OBIS, 2011).

Most municipal BSS schemes are subsidised because revenues are not sufficient to cover the investment and running costs (OBIS, 2011). Other means of financing are advertising, sponsorships (OBIS, 2011).

Value Capture: Social

A recent study found that the 12 major BSS in Europe provide health benefits from an increase in physical activity, which greatly outweigh the risks of increased exposure to air pollution and road traffic fatalities. If 100% of bike-sharing trips in these cities were in substitution of car trips, an average of 73 deaths could be avoided per year (Otero et al., 2018).

Value Capture: Environmental

Bike-sharing has raised bicycle modal share in European cities with previously low rates of cycling by up to 1.5 % and improved facilities for cycling (DeMaio, 2009). It also increases use of public transport by providing a first/last mile solution (DeMaio, 2009). The BSS in Lyon has saved the equivalent of 18 600 000 of carbon dioxide emissions from 2005–2009 (DeMaio, 2009).

However, it appears that the environmental benefits of bike-sharing can primarily be attributed to the fact that it promotes cycling, rather than from reduced resource use due to sharing. Research has shown that bike scheme members are more likely to own private bicycles than non-members (Fishman et al., 2013). There is also no evidence that bike-sharing replaces car use—it has been shown that the majority of bike-sharing users are substituting from other sustainable modes of transport, such as walking or public transportation (Fishman et al., 2013)

2.2.3 Value Creation by Bike Kitchens

Bike kitchens, sometimes also referred to as "bike churches, bike collectives and bike coops" (Johnson, 2014) are "DIY bicycle repair studios where citizens can borrow tools and space for repairing or building their own bikes" (Bradley, 2016). They began to appear in the 1980s and have now spread all over the world (Johnson, 2014). Some of the earliest bike kitchens were linked to the squatting movement, for example in Berlin (Bradley, 2016, p. 4). As will be illustrated later on, bike kitchens are also a common feature of squats in Barcelona.

Value Proposition

Bike kitchens give users free or low-cost access to tools, space and knowledge needed to autonomously fix their bike or build a bike from spare parts. They are based on the premise that "users help each other, thus building a collective learning process and a culture of sharing" (Bradley, 2016, p. 4).

Value Creation & Delivery

Bike kitchens are usually held in low-cost spaces such as community buildings, churches, basements, or as a workshop on wheels (Johnson, 2014). Volunteers give assistance where needed, and users are also encouraged to help each other (Johnson, 2014). Bicycle parts are donated by the neighbourhood, the police, or local shops (Bradley, 2016; Johnson, 2014).

Value Capture: Economic

Bike kitchens are typically non-profit organisations and may be funded by the public authorities, community fundraising, membership fees or donations; however, many bike kitchens do not involve any financial exchange, making them accessible for all (Bradley, 2016; Johnson, 2014).

Value Capture: Social

Bradley (2016) makes the case that bike kitchens empower citizens through autonomous creation, which removes their reliance on traditional institutions, a concept known as *conviviality*[1] (Illich, 1973). Furthermore, by encouraging collaborative creation and social interaction, bike kitchens are often a social meeting point within the city (Bradley, 2016).

[1] Based on Illich (1973), Bradley (2016) defines conviviality as "the opposite of industrial productivity, i.e. as autonomous and creative relations among persons, and between persons and their environment, without people being reliant on a body of specialists controlling the tools or technologies necessary for a good life". Illich (1973) specifies the bicycle itself as a

Value Capture: Environmental

Environmental value is created by reducing the need for virgin resources, through the recycling of old bicycles and parts, and by lengthening the useful life of users' bicycles. Sharing tools also can save resources by reducing the need for individual ownership and maximizing the use of these otherwise under-utilized assets (Botsman & Rogers, 2011).

Bradley's (2016) study of Malmö's bike kitchen, *Cykelköket*, cites that in its first three years of operation, over 1000 unwanted bicycles had been reused and saved from the incinerator. The environmental impact of this recycling behaviour is negligible, compared to the annual sales of new bicycles in Sweden, at 600 000 units in 2015 alone (Lehner, 2019).

However, it has been argued that the behaviours learned from participating in DIY-activities such as the bicycle kitchen may have a spill over effect into other areas of people's lifestyles (Lehner, 2019). Lehner (2019) further proposes that bike kitchens have an opportunity cost which could benefit the environment: as time is a scarce resource, the time spent fixing a bicycle replaces time spent doing other activities with a potentially greater environmental impact.

2.3 Institutions and Institutionalisation Strategies

Voytenko & Mont (2013, p. 9) posit that innovative business models in the collaborative economy, such as those of bike-sharing and bike kitchens illustrated above, can catalyse broader institutional change, by:

- motivating other organisations to consider new ways of delivering value in order to remain competitive against newcomers;
- changing social norms and values; and
- driving change in regulatory, economic and other institutional frameworks.

Therefore, this thesis uses insights from institutional theory to understand the ways in which bike-sharing and bike kitchens, as examples of the collaborative economy, interact with their environment to institutionalise themselves. This is the first step to understanding how they might catalyse broader institutional change.

2.3.1 Institutions

Institutions are the "rules of the game in society" (North, 1990, pp. 3–5) which cause organisational structures and behaviours to become increasingly similar over time (DiMaggio & Powell, 1983). This area of research, called institutional theory, first emerged in the mid-1940s, gained traction in the 1980s, and has become a dominant approach for organisational analysis today (Greenwood, Oliver, Sahlin, & Suddaby, 2008).

Institutions can be understood as "the humanly devised constraints that shape human interaction" (North, 1990, pp. 3–5). They define what behaviours are considered socially acceptable and credible, or *legitimate* (Suchman, 1995). The way we consume is influenced by institutions, as we engage in a personal quest for social legitimacy (Dolfsma, 2002).

---

convivial tool, which enables people to freely transport themselves without significant reliance on costly transportation infrastructure such as toll roads and high-speed railways.

Over time, institutions can develop complex interdependencies that lock-in certain behaviours. This phenomenon, described by the term 'institutional complexity', is well-illustrated in the following statement on consumption by Røpke (2009, p. 4).

"When new products and living standards are normalised, not only are expectations formed, but simultaneously, new standards are built into the social and material structures of society and sometimes even take on the character of constraints. A car-based society with widespread suburban settlements and undeveloped public transport turns the car into a necessity or at least a commodity that requires much dedication to forgo: compulsion becomes the other side of the coin of freedom."

Institutions can take the form of rules and laws (*regulative institutions*), social values and norms (*normative institutions*) or cultural frameworks (*cultural-cognitive institutions*) (Scott, 1995).

Regulative Institutions

These are formal structures of control, such as laws and regulations. They constrain or empower actors through coercive action (Scott, 2014, p. 60). Compliance with them evokes the emotion of innocence, as opposed to fear and guilt (Scott, 2014).

For example, laws against theft are a regulative institution that determine the legitimate means to acquire a good. Regulative institutions can also be used to drive consumption, such as taxes, subsidies and public procurement laws (Brown & Vergragt, 2016).

Normative Institutions

Normative institutions are social standards and obligations, materialised in values and norms. Scott (2014, p. 64) provides useful definitions for both of these concepts: "*Values* are conceptions of the preferred or the desirable, together with the construction of standards to which existing structures or behaviours can be compared and assessed. *Norms* specify how things should be done; they define legitimate means to pursue valued ends".

Norms also define the roles of different actors in society, for example through formal professions, which determine people's "rights, responsibilities, privileges, duties, licenses, mandates and access to resources" (Scott, 2014, p. 64). Compliance with normative institutions brings emotions of honour, while violating them results in feelings of shame (Scott, 2014).

This is aptly described by Adam Smith in *The Wealth of Nations*:

"A linen shirt, for example, is, strictly speaking, not a necessary of life. (…) But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty which, it is presumed, nobody can well fall into without extreme bad conduct." (A. Smith, 1776, p. 368).

Smith's quote still holds true. Ecological economist Tim Jackson (2009, p. 88) of the Sustainable Development Commission heeds that, as long as material commodities remain integral to our social functioning through the avoidance of shame, we will never be able to consume 'enough'.

Appealing to these normative institutions has proven a successful marketing strategy—by addressing the most basic human desires for social acceptance to encourage ever more consumption. As famously stated by retail analyst Victor Lebow in 1955:

"The measure of social status, of social acceptance, of prestige, is now to be found in our consumptive patterns. The very meaning and significance of our lives today expressed in consumptive terms. The greater the pressures upon the individual to conform to safe and accepted social standards, the more does he tend to express his aspirations and his individuality in terms of what he wears, drives, eats—his home, his car, his pattern of food serving, his hobbies." (Lebow, 1955, p. 3)

Cultural-Cognitive Institutions

Scott (2014, p. 67) defines cultural-cognitive institutions as *"the shared conceptions that constitute the nature of social reality and create the framework through which meaning is made"*. They exist as shared beliefs and behavioural logics, expressed in rituals and routines. Compliance with cultural-cognitive institutions asserts certainty, and violating them results in feelings of confusion (Scott, 2014).

Cultural-cognitive institutions can shape our perception of what constitutes happiness and well-being. For example, it has been demonstrated that collectivistic societies such as in East Asia, who have a higher concern for social recognition, strongly believe that money is critical for happiness and place a higher value on extrinsic goods than individualistic cultures like the United States (Suh & Choi, 2018).

Cultural-cognitive institutions can also influence our willingness to share. The interdependence created through the act of sharing is perceived more positively in collectivistic cultures than in individualistic cultures (Belk, 2010, p. 728; Markus & Kitayama, 1991). Our trust of strangers, organisations or the state can also be culturally determined (Hollingsworth, Müller, Hollingsworth, & Gear, 2005, p. 189).

Rudmin (2016, p. 199) theorises that the norms of individual ownership and exclusive use in Anglo-Saxon cultures can be traced back to the rapid distribution of wealth following World War II and the indoctrination of anti-communist ideology during the Cold War which tainted all forms of collective ownership.

2.3.2 Institutionalisation Strategies

An organisational field is made up of *"key suppliers, resources and product consumers, regulatory agencies, and other organizations that produce similar services or products"* (DiMaggio & Powell, 1983, p. 148). Depending on the level of institutionalisation in an organisational field, Scott's (1995) three pillars may be strongly aligned, unevenly distributed, or entirely misaligned—providing low to high opportunity for institutional change (Scott, 2014, p. 71). Highly institutionalised organisational fields are characterised by "clearly defined leading actors, a coherent discourse, structures of cooperation and domination, sets of accepted norms and stable interorganizational relationships" (Maguire, Hardy, & Lawrence, 2004, p. 675).

External events, or 'exogenous jolts', such as an environmental crisis, technological disruption, regulatory change or social upheaval often reveal disparities between institutions (Meyer, 1982). This provides the opportunity for certain actors to question them (Holm, 1995; Lawrence, Suddaby, & Leca, 2009; Maguire et al., 2004; Schneiberg & Lounsbury, 2008).

Those actors who are able to question the institutional context—that they themselves are embedded in—may take actions to *"create, disrupt or maintain"* institutions (DiMaggio, 1988). Such actors are called 'institutional entrepreneurs' (DiMaggio, 1988). In this study, BSS and

bike kitchens, are considered to be institutional entrepreneurs, as they are actors representing a new economic paradigm of collaborative consumption and production.

Faced with the *"liability of newness"* (Suchman, 1995, p. 586), institutional entrepreneurs engage in various strategies to achieve legitimacy for themselves and their activities. These strategies are referred to by the literature as 'institutional work'. The strategies can be categorised as regulatory, normative and cultural-cognitive work, depending on the types of institutions they are targeting (Lawrence & Suddaby, 2006).

Figure 2-2 illustrates these concepts, showing the relationship between institutional entrepreneurs, their organisational field and the institutional context they operate within.

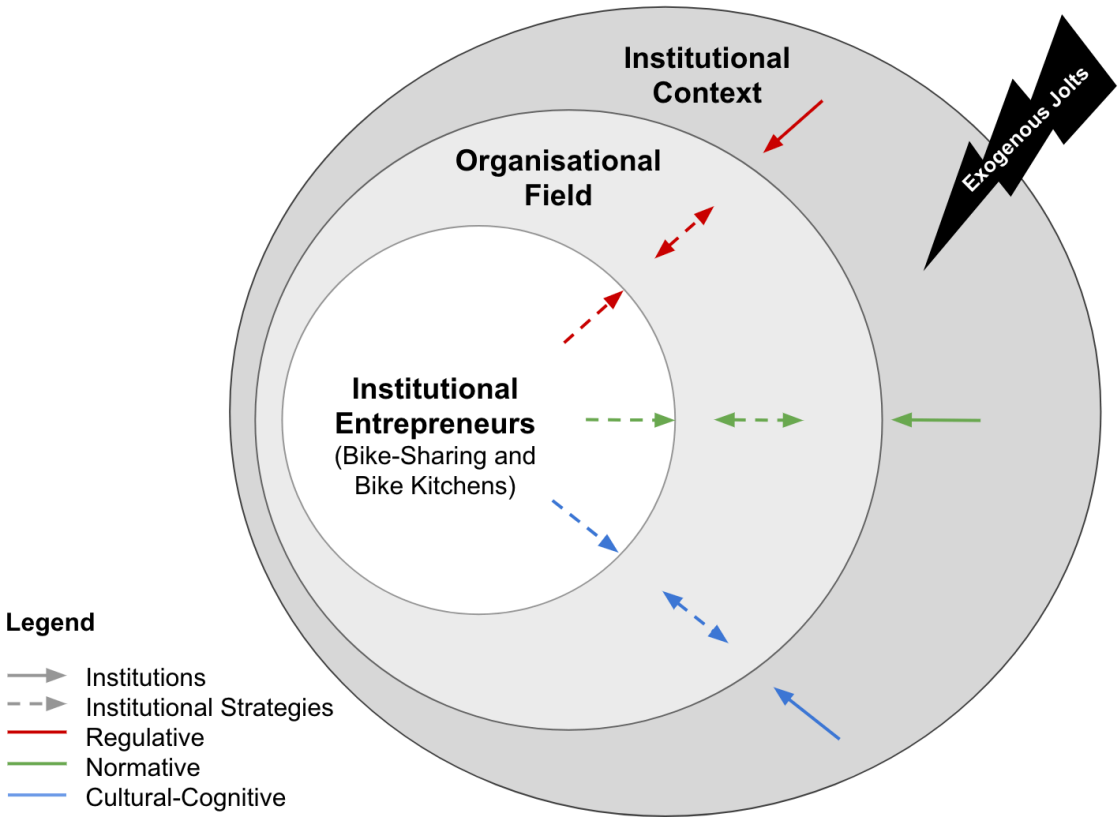

Figure 2-2. Institutions and Institutional Strategies

Source: own elaboration

Lawrence & Suddaby (2006) identify ten strategies for institutionalisation employed by institutional entrepreneurs. These strategies were adapted by Mont, Voytenko Palgan and Zvolska (2018) to reflect strategies for institutionalisation used by Urban Sharing Organisations (USOs), which includes BSS and bike kitchens (See Table 2-3). As a very new framework, it has not yet been tested empirically. One of the aims of this thesis is to provide an empirical context to test the framework against.

Table 2-3. Analytical Framework for Institutionalisation Strategies

Regulative Strategies
Litigation Taking legal action to change policy and/or regulations, e.g. through lawsuits or appeals
Lobbying Attempting to influence local policymakers on an issue
Delimiting Organisational Fields Defining boundaries and delimiting membership in the organisational field for political and regulatory purposes
Normative Strategies
Creating identities and constructing images To reflect organisational values and appeal to other actors in the organisational field
Challenging prevalent norms By offering alternative solutions to traditional consumption practices
Forming normative networks Creating a united voice, entity and common identity through intra- and inter-field networks and develop collective codes of conduct
Altering traditional meanings Redefining the traditional idea of "sharing" by facilitating trust between strangers
Cultural-Cognitive Strategies
Mimicry Associating new sharing models with existing sets of taken-for-granted practices, technologies and rules in order to ease adoption, improve acceptance and ensure long term survival
Isomorphism Imitating other USOs' business models
Developing new meaning systems Creating own vocabulary and new meaning systems to support legitimacy creation for the sharing economy
Educating Educating actors in the organisational field of the sharing economy and beyond

Source: (Mont, Voytenko Palgan, et al., 2018)

3 Methodology

As stated in the introduction, this thesis aims to address the knowledge gaps on value creation and institutional strategies in the collaborative economy, by applying frameworks of sustainable business models and institutional theory to empirical case studies.

This warrants a constructivist approach, recognising that reality is mutually constructed between individuals and groups of individuals and no single true reality exists (Crotty, 1998). This thesis chooses to interpret reality through the sociological lenses of business model theory and institutional theory.

A case study design has been selected, as it seeks to explain "how" a real-life phenomenon occurs (Yin, 1994). The purpose of the case study is instrumental (Stake, 1995), in order to provide insight into a greater issue, namely the institutionalisation of the collaborative economy. In order to do so, the research uses multiple comparative case studies (Yin, 1994) representing collaborative consumption and collaborative production. Rich data was collected from a variety of primary and secondary courses, including a field visit to Barcelona.

The procedures used for data collection and analysis, and the validity, reliability and generalizability of results are explained in the following sections.

3.1 Data Collection and Analysis

The design of the data collection approach was guided by Figure 2-2 of the Literature Review, which indicates that in order to get a holistic picture of the institutional strategies employed by BSS and bike kitchens, it is necessary not only to consider the organisations themselves but also the organisational field and institutional environment they find themselves in. To gather the rich data required in order to understand the workings of these three layers of institutional complexity, a three-week field study was conducted in Barcelona in July 2018.

The research was conducted in three stages using different sources and procedures, as outlined in Table 3-1 below:

Table 3-1. List of Interviewees

Research Stage	**Procedures**	**Sources**
1) Preliminary Research	Identification and Selection of Cases	- Websites - News Articles - Social Media
	Preparation of Interviews	- Academic Journals - Grey Literature - Websites - Press Articles
2) Fieldwork	Data Collection in Barcelona	- Interviews (semi-structured) - Field Notes - Photographs - Flyers, brochures, printed marketing materials

3) Analysis	Interpretation of collected data	- Value Creation Framework - Institutional Strategies Framework
	Supplementation of information where required	- Academic Journals - Websites - News Articles - Reports - Social Media - Press Articles

Source: own elaboration

3.1.1 Preliminary Research

To create a balanced study of organisations in the two fields of collaborative production and consumption, three organisations of each kind were purposefully selected. Due to the instrumental case study approach of this thesis, the organisations were not chosen as a representative sample but carefully selected to reflect different types of organisational forms and backgrounds, adding richness to the overall analysis (Creswell, 2014). Table 3-2 illustrates the selected organisations and the reasoning behind their selection.

Table 3-2. Selected Case Study Subjects

Type of Organisation	**Name of Organisation**	**Description & Reason for Selection**
Bike-Sharing	Bicing	Public bicycle scheme provided by the City Council. It is one of Europe's first and most successful large-scale public bicycle schemes.
	Donkey Republic	Copenhagen-based for-profit bike-sharing company and the first private operator to successfully launch in Barcelona.
	Scoot Networks	A for-profit shared electric mobility company from San Francisco, which launched its first European operations with a fleet of e-bikes and e-scooters in Barcelona in July 2018.
Bike Kitchens	Biciclot	A non-profit bicycle cooperative that collaborates with the city council on various social projects and runs a bike kitchen with professional mechanics.
	Biciosxs	An informal, non-profit bicycle kitchen operating on squatted grounds. Probably the first bike kitchen in Barcelona.
	Can Batlló	An abandoned factory occupied by the neighbourhood community to provide public services such as workshops, including a non-profit 'mobility workshop'

		for all types of vehicles, including bicycles. Supported by the city council.

The preparation of interview questions was guided by the analytical frameworks specified in the Literature Review. However, the questions were formulated so as not to refer to theoretical concepts (Hermanns, 2004) and to avoid bias, assumptions, double-barrelling, confusion, or leading questions (Kumar, 2012). The questions were centred around the history and development of the organisations, operations, funding, challenges, target audience, strategic partnerships, promotional strategies and the rationale for their organisation. A sample of the interview questions is included in the Appendix. The interview guide was adjusted to the specifics of each organisation interviewed.

3.1.2 Fieldwork

A total of eight semi-structured interviews were conducted in Barcelona, supplemented by approximately six informal conversations with bike kitchen users and volunteers. Table 3-2 lists the interviewees that directly contributed to this study.

Table 3-3. List of Interviewees

Type of Organisation	**Name of Organisation**	**Name of Interviewee**	**Position**	**Method of Recording**
Bike-Sharing	Bicing / Barcelona City Council	Álvaro Nicolás Loscos	Advisor to the Mobility Councillor	English Audio Recorded Transcribed
	Donkey Republic	Allard Kalverkamp	Country Manager	English Phone interview Transcribed
	Scoot Networks	Mar Pallás Poy	VP Europe Market Expansion	English Phone interview Transcribed
Bike Kitchen	Biciclot	Erika Laguillo	Administrator	English/Spanish Audio Recorded Transcribed
	Biciosxs	Anonymous	Organiser/Volunteer	Spanish Audio Recorded Transcribed
	Biciosxs	Anonymous	Organiser/Volunteer	Spanish/English Audio Recorded Transcribed
	Can Batlló	Anonymous	Organiser/Volunteer	English Transcribed
Other	Bicyclist's Club of Catalunya (BACC)	Carles Benito	President	English Audio Recorded Transcribed

Source: own elaboration

Interviews were arranged and scheduled prior to arrival in Barcelona and all interviewees were made aware of the purpose and subject of the study. All except two interviews were conducted

face-to-face and on-site of the organisation. Interviews ranged from 30 minutes to 1 hour. Interviews were audio recorded and transcribed where permission was given by the interviewee. The interview guide was used in an open and contextual fashion to encourage interviewees to answer questions freely (Flick, 2006).

Interviews were primarily conducted in English, but it was necessary for some interviews to be held in Spanish. In those cases, the interviews were translated and transcribed into English prior to analysis. All interview transcripts were checked and assured by the interviewees, with assistance from Spanish-speaker, where required, in order to minimise the risk of misinterpretations or meanings 'lost in translation' as far as possible.

The interviews were supplemented with field notes of approximately 1 A4 page per organization, recording impressions of the sites and their immediate surroundings. Photographs of the shared bicycles, bike kitchen sites, and relevant impressions from the city of Barcelona were also taken. Where provided, secondary sources such as printed marketing materials were collected for further background information and in order to see how the organisations promoted themselves.

3.1.3 Analysis

To answer the first research sub-question, the data collected in stages 1 and 2 was analysed using the Value Creation Framework proposed in Section 2.2. Interview data was triangulated with secondary data from company websites, press articles and social media to ensure greater validity. As the information required by the framework was very straightforward and simple to obtain from the collected data, no further interpretation through coding was applied.

To answer the second research sub-question, the framework on institutional strategies from Section 2.3 was used. Codes were pre-defined according to the framework specified in Table 2-3 and applied using NVivo software. This first layer of coding proved sufficient for interpretation and therefore no further layers of coding were applied.

3.2 Validity, Reliability and Generalisability of Results

According to Stake (1995, p. 63), case studies should develop 'vicarious experiences' that enable the reader to feel immersed in the environment of the study. Therefore, the analysis uses photographs and direct quotations to strengthen the validity of the findings and claims made in this study, as well as to convey the setting of the study to the reader as vividly as possible.

The author has attempted to gain the highest possible reliability of results by conducting field research and personal observations and interviews where possible. Nevertheless, it is important to note that the interview subjects were not speaking in their first language, increasing the level of interpretational complexity. Background information about the research context in Barcelona was obtained from secondary materials, which adds a second layer of interpretation which could affect the reliability of results. To minimise this, a wide range of sources was used to inform the research.

Due to its specific nature, the results of this study are not generalizable to other settings. The cases and their institutionalisation strategies are unique to the institutional environment in Barcelona and are influenced by a variety of variables that are beyond the control of this study. However, the results could generate interesting insights when compared bike sharing schemes

and bike kitchens in other cities, or to other types of organisations in the collaborative economy.

4 Findings

This section presents general findings about Barcelona and its socio-economical context in relevance to bike-sharing and bike kitchens before providing brief introductions of the six case studies.

4.1 Barcelona

Barcelona is the second largest city in Spain and the capital of the autonomous community of Catalonia. Over 1.6 million people live within Barcelona's ten municipal districts (Statistical Institute of Catalonia, 2017). It is one of Europe's most densely populated cities, counting 16 000 inhabitants per square kilometre (Statistical Institute of Catalonia, 2017).

4.1.1 Barcelona by Bicycle

Although Spain is often referred to as a country without a traditional cycling culture (OBIS, 2011; SPICYCLES, 2008), historical records indicate that the bicycle was a popular mode of transport in the 1920s. However, it virtually disappeared from the roads after the economic crisis that followed the Spanish Civil War, and especially after the rise and domination of the car industry in the 1960s (Anaya, 2010, pp. 1–2). It wasn't until the turn of the millennium that the bicycle slowly regained its recognition as a vehicle for urban mobility—not just for sport (Anaya, 2010, p. 2).

Figure 4-1 shows the development of cycling infrastructure, such as cycle lanes and bicycle parking, in Barcelona from the 90's until recent years. It is apparent that the revival of cycling for urban mobility was underway well before the introduction of the public bike sharing system Bicing, but it is also clear that the scheme had a catalytic effect on these developments.

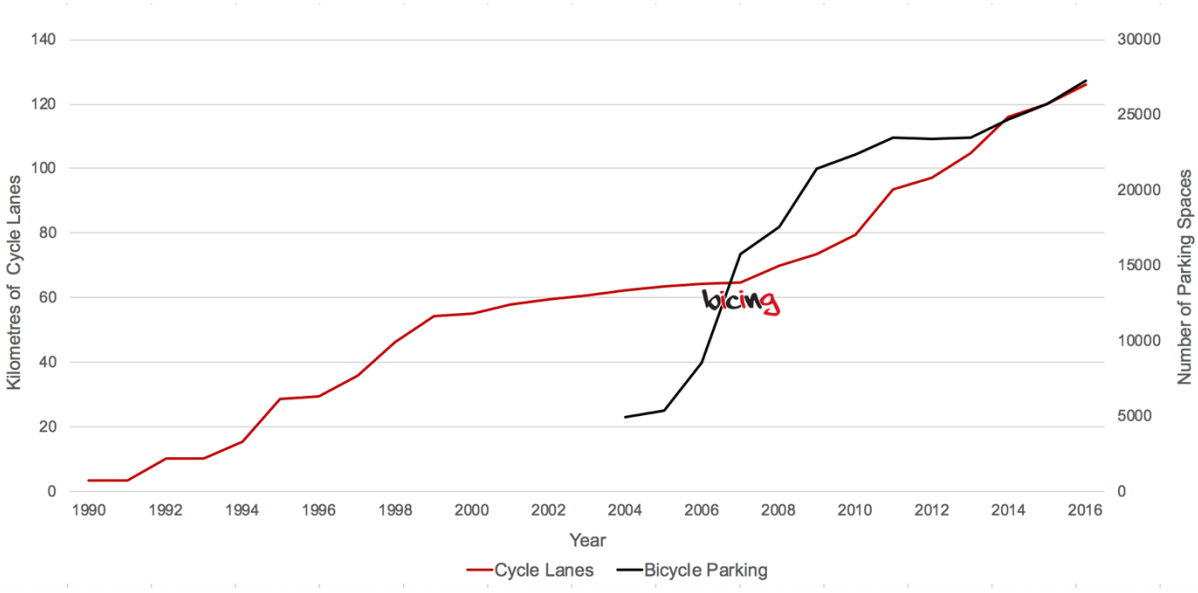

Figure 4-1. Cycling Infrastructure in Barcelona 1990–2016

Source: own elaboration, using data from Ajuntament de Barcelona (2008, 2014a, 2017a)[2]

Not only does Barcelona have one of the highest population densities in Europe, it also has the highest vehicle density, with nearly 6 000 cars per square kilometre (Ajuntament de Barcelona, n.d.-a). The resulting levels of air pollution exceed WHO safety limits, particularly for dangerous particulate matter and nitrogen oxides (Ajuntament de Barcelona, n.d.-d).

"We live in a gas bubble. It's quite bad. And it's coming from traffic in Barcelona", explained Álvaro Nicolas Loscos, Advisor to the Mobility Councillor (Loscos, 2018a). There is an urgent need to reduce the number of motorised vehicles in the city, and bike sharing organisations have a key role to play in achieving this.

The City's 2013–2018 Urban Mobility Plan (PMU) aims to increase the modal share of the bicycle from 1,7 % in 2013 to 2,5 % in 2018 (Ajuntament de Barcelona, 2014b) (see Figure 4-2). It sets an ambitious target for extending the cycling network from 105 kilometres in 2013 to 308 kilometres by 2018. However, with 126 kilometres of cycle lanes in 2016, the municipality would have to double the amount of bike lanes in two years, and this goal will not be achieved (Loscos, 2018a).

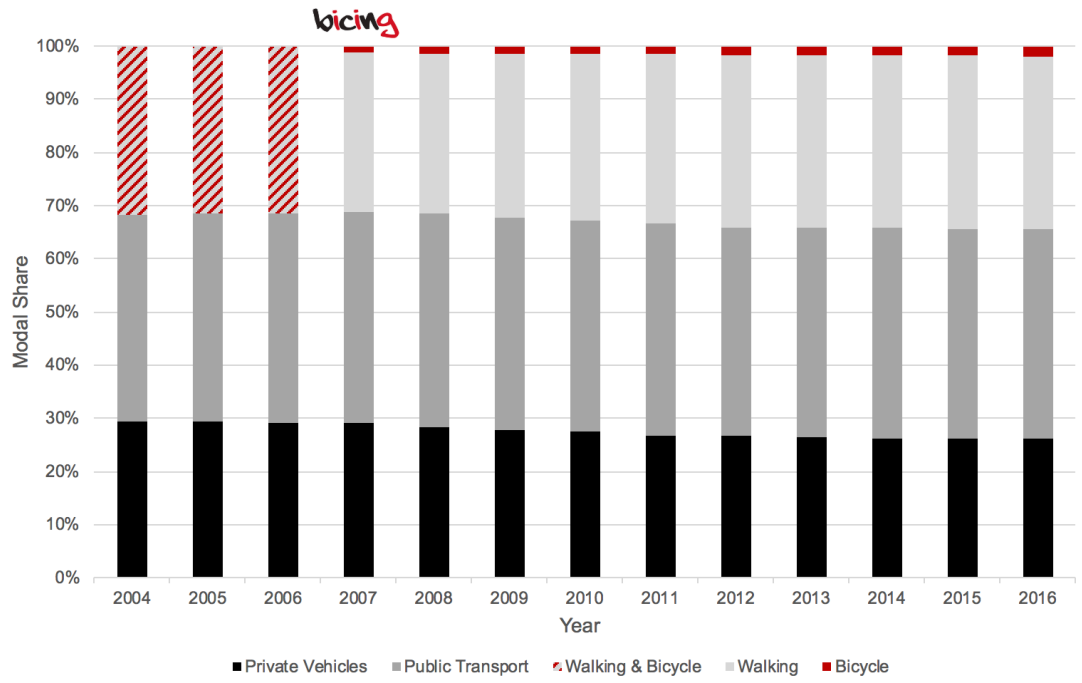

Figure 4-2. Mobility Modal Share in Barcelona 2004–2016

Source: own elaboration, based on data from Ajuntament de Barcelona (2008, 2014a, 2017a) [3]

[2] The measurement system for cycle lanes was changed after 2010, thereafter only measuring cycle lanes in a single direction. Prior to this change, cycle lanes were measured in both directions. To give a more consistent representation of the increase in cycle lanes over this period, figures prior to 2010 were halved. Therefore, the depiction of cycle lanes before 2010 in this figure may have some inaccuracies.

[3] Prior to 2007, the council measured trips by foot and by bicycle together, but separated them into two different measurements after the introduction of Bicing in 2007.

The city's rapidly growing cycling culture is raising a debate about the use of public space by private bike-sharing operators. Therefore, PMU also proposes to adapt regulations to address issues surrounding public space and bicycle use (Ajuntament de Barcelona, 2014b).

Private bike-sharing operators are sometimes accused of operating 'illegally' in Barcelona, because they provide a commercial service in a public space without a license (see Figure 4-3). The truth is that bike sharing providers are operating within a new organisational field, where regulative institutions are still developing. "*For the moment, there is no legal framework for them to operate in the public space*", explained Loscos (2018a), *"but there are not many of them, and we are not having many troubles like in other cities. If we can put norms onto the use of these kinds of bicycles in the public space, then we would like to have like a limited number, to see that nothing goes out of control".*

Allard Kalverkamp, country manager for the dockless bike-sharing company Donkey Republic explained: *"We were in contact with the city council from the very beginning, but they cannot regulate something until it has become a problem—you cannot make a license for something that does not yet exist. (…) Originally, we were the only ones even using the bike racks, but now ownership is rising and people feel that the racks belong to them"* (2018a) (see Figure 4-3).

Figure 4-3, Twitter post criticizing private bike-sharing operators in Barcelona

Source: @BikesAbuses, Twitter.com

An open process for creating a regulatory framework for bike-sharing in Barcelona is underway. *"The legal framework has to come into place before the end of this year"* affirmed Loscos (2018a). It will apply to all shared vehicles, such as cars, scooters and bikes (Kalverkamp, 2018a). For shared bicycles, it will specify where and how the bikes should be parked, insurance requirements, minimum/maximum fleet size, annual tax, minimum usage rates, minimum

service level, and more (Kalverkamp, 2018a). It is also likely to involve a pricey permit system (Kalverkamp, 2018a). Current operators in Barcelona have expressed concern that if permit fees are set too high for them to survive, the system would favour mass providers such as Mobike and Ofo, who have notoriously overwhelmed city capitals with thousands of bicycles and predatory pricing strategies (Ovacik, 2017). *"I don't know if they will be the ones who will have the possibility afterwards to have bicycles in the public space in Barcelona, because we cannot do that—we cannot choose the ones we want—but we will have to open it to anyone who wants to operate once we have the legal framework"* explained Loscos (2018a).

The PMU also hopes to address the number of abandoned bicycles that are collected in Barcelona's bicycle pound by creating *"mechanisms for which if a bicycle is not claimed within a stipulated deadline, it doesn't become a waste (for example, through agreements with institutions for its recovery for social or educational purposes, etc.)"* (Ajuntament de Barcelona, 2014b, p. 37). The bicycle pound held 2 280 abandoned bicycles in 2017 (Loscos, 2018b).

4.1.2 Tensions with Tourism

Bike-sharing organisations offer a sustainable way to get around the city, not only for locals, but also for visitors to the city. Barcelona has a lot of visitors: it is the 20th most visited city in the world, attracting over 30 million visitors per year (Ajuntament de Barcelona, 2017c). The tourism industry has been the economic "lifebelt" of the city after the financial crisis of 2008 (Russo & Scarnato, 2018). Almost 500 000 people were employed in the tourism industry in 2017 (Ajuntament de Barcelona, 2016).

But the impacts of mass tourism in Barcelona have not only been positive. Since the 2000s, there has been increasing public disillusionment with the exponential growth of tourism in the city, which has accentuated gentrification, polarized societal groups and exacerbated the housing crisis (Russo & Scarnato, 2018). Many of the city's historical gathering places in the old city have been overtaken by hordes of tourists, raising the question of social justice in the use of public space (Russo & Scarnato, 2018). In a municipal survey from 2016, 50 % of local residents agreed with the statement that the city's capacity for tourism is being exceeded (Ajuntament de Barcelona, 2016).

There have been countless public protests against tourism and messaging of the public discontentment with mass tourism is visible throughout the city (see Figures 4-4 and 4-5).

Figure 4-4. "We just want to live in our city"

Source: own photograph

Figure 4-5. "Tourism Kills the City"

Source: own photograph

These negative cognitive associations with tourism have affected the perception of bike sharing operators that cater to tourists in the city. In the summer of 2017, the extremist youth group Arran launched an attack against a full tourist bus, slashing the wheels with knives and spraying the statement "Tourism kills the city" across the windshield (Burgen, 2017b). A few months later, the group posted a Twitter video showing two members puncturing the bicycles of bike-sharing provider Donkey Republic with knives (Arran del Poblenou, 2017). This spurred a series of over 800 incidences of vandalism to Donkey Republic bicycles in the following months, amounting to damages of up to 20 000 Euros (La Sexta TV, 2017). *"They see those kinds of bicycles as very linked to tourists, and they think there are too many tourists"*, explained Álvaro Nicolás Loscos from the Mobility Council (Loscos, 2018a). Figure 4-6 shows an example of this cognitive association. This has proven to be a major obstacle for achieving cultural-cognitive legitimacy of bike-sharing amongst the residents of Barcelona.

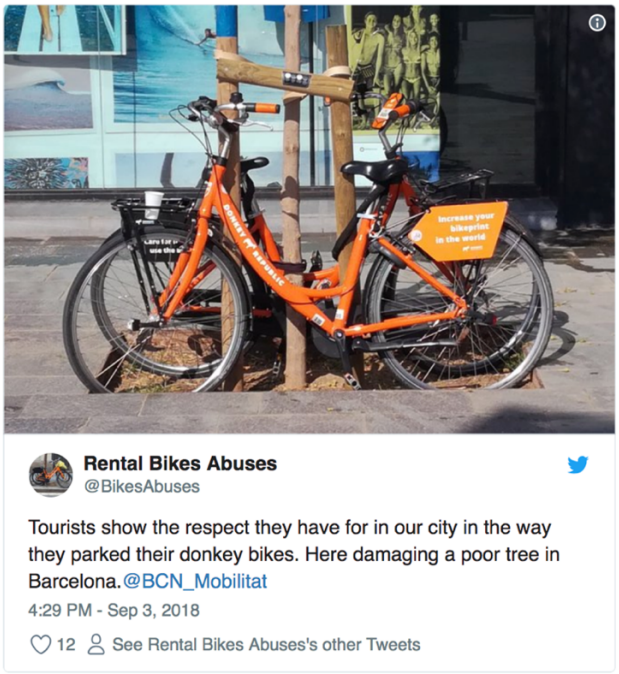

Figure 4-6. Tweet criticizing irresponsible use of bike-sharing by tourists

Source: Screenshot from @BikesAbuses, Twitter.com

The city is trying to address these issues in its new 'Strategic Tourism Plan for 2020', which is a multi-stakeholder initiative working collectively with individual neighbourhoods. The plan states that it is time to move from a promotional strategy for tourism to one of comprehensive management, *"ensuring that tourist policies respond to the general interests of the city"*. This includes plan for protecting the resident population from tourist property speculation and regulating the use of public space for tourism (Ajuntament de Barcelona, 2017c).

4.1.3 Amidst the Rubble of the Housing Crisis

Spain has only just begun to recover from the consequences of the 2008 global financial crisis. Catalonia was hit especially hard by the burst of the real estate bubble (Edwards, 2017). Many banks had accumulated property investments in Barcelona that became unsellable. With banks unwilling to lend, property speculation increased (Burgen, 2017a). Many buildings in the city are empty, owned by speculators and banks waiting for prices to rise (Edwards, 2017).

Rental prices increased by up to 25 % in 2013, with a continuing upward trend until 2017 (Edwards, 2017). At the same time, unemployment in Barcelona skyrocketed, leaving many people unable to pay their rents and mortgages. This put even more housing in the hands of banks (Edwards, 2017). An average of eight to ten evictions are made in the city per day (Edwards, 2017).

The collaborative economy also plays a role in this issue. For many, renting part of their residences on the accommodation sharing platform Airbnb has become their only means of paying the increasing rent. At the same time, it has proven a highly profitable business opportunity. Property owners can make up to five times more on tourist accommodation than renting to locals (Burgen, 2017a). It is therefore no surprise that 40% of Airbnb listings in Barcelona are entire homes or apartments (Inside Airbnb, 2018). Almost 60% are multi-listings, indicating that they are run as a business, rather than by someone permanently living

in the property (Inside Airbnb, 2018). This "Airbnbification" is proliferating gentrification, transforming entire neighbourhoods, and affecting people's daily lives (see Figure 4-7).

Figure 4-7. "Neighbours forced to leave – STOP tourist massification"

Source: own photograph

The people of Barcelona are responding to the crisis. In 2015, the evictions activist Ada Colau was elected as the city's first female mayor. The City Council has since placed major constraints on licensing for tourist accommodation and cracked down on unlicensed Airbnb apartment rentals (Russo & Scarnato, 2018). The Council has also resorted to fining banks and, in some cases, expropriating their properties if they have been held empty for over two years (Ajuntament de Barcelona, 2018a).

Against Speculation: The Squatters' Movement

There is another group speaking up against speculation and housing price inflation: Spain's squatting community, 'Okupa' (see Figure 4-8).

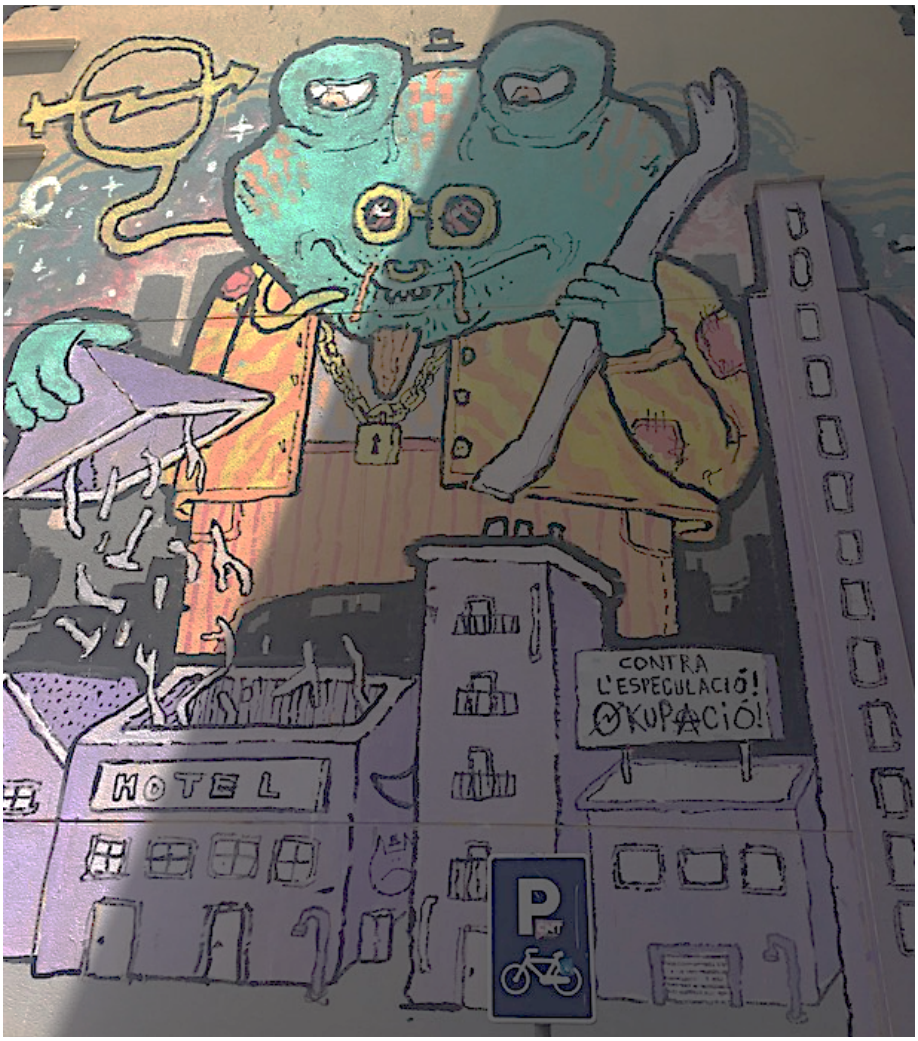

Figure 4-8. Graffiti on a squatted building

"Against speculation! Occupation!"

Source: own photograph

The first squats appeared in Barcelona in 1977 and they have been growing in number since the 1990s. Evictions remained relatively low, evidencing a level of normative institutionalisation of squatting (see Figure 4-9) (Martínez, 2007; Squatting Europe Kollective, 2018). According to data from Squatting Europe Kollective, there are around 60 active squats in Barcelona today (Squatting Europe Kollective, 2018).

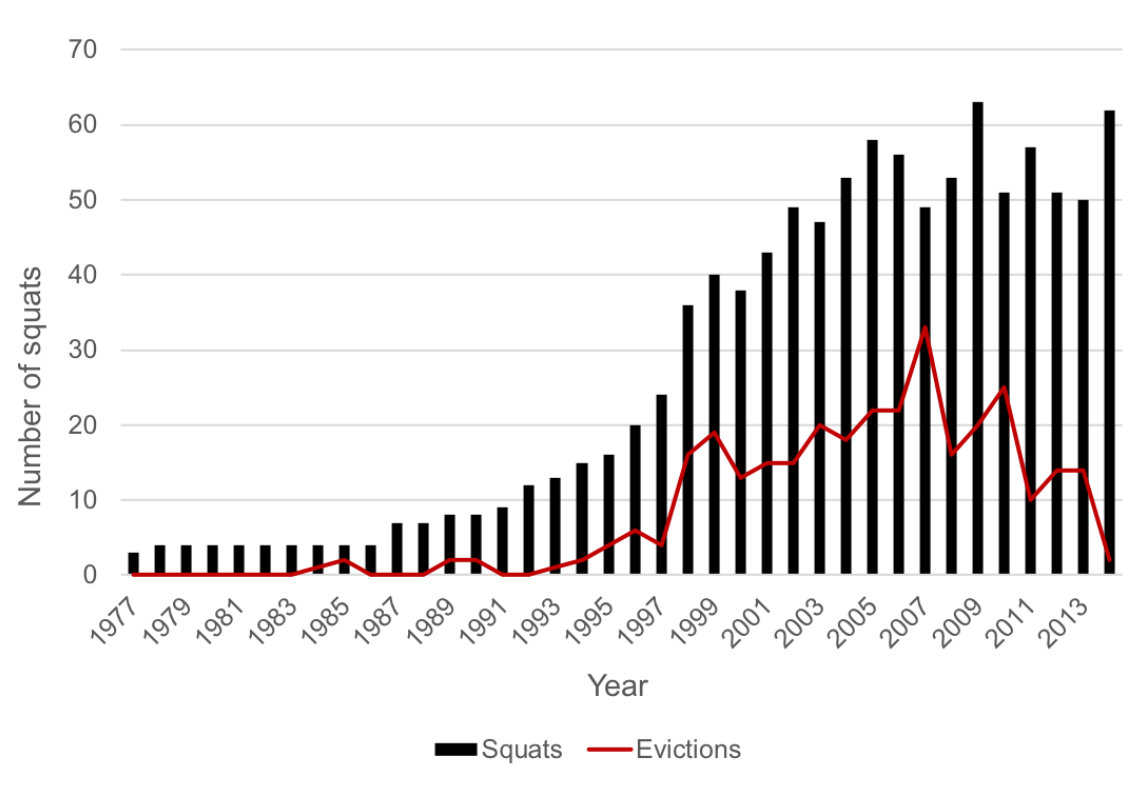

Figure 4-9. Squatted buildings in Barcelona 1977–2014

Source: own elaboration based on data from Squatting Europe Kollective (2018)

The squatted buildings are often repurposed to build vibrant social centres based around principles of self-management. They typically include theatrical, musical and circus groups, as well as workshops (Info Usurpa, 2018). Organic food cooperatives, clothing libraries and bike kitchens are a common feature of local squats in Barcelona (see Figure 4-10).

Figure 4-10. Clothing library in Barcelona squat

Source: own photograph

The idea of self-management, or "autogestión", that governs the squats in Barcelona, can be traced back to the social revolution in Catalonia during the Spanish Civil War in the 1930s. Major parts of Catalonia came under the control of anarchist and socialist trade unions, putting much of the regions' agriculture and industry under the collective self-management of its workers (Seidman, 1982). This is known as anarcho-syndicalism, "a movement that advocates direct action by the working class to abolish the capitalist order, including the state, and to establish in its place a social order based on workers organized in production units" (Encyclopedia Britannica, 1998). Catalonia's wave of anarcho-syndicalism was supressed by Franco's subsequent military dictatorship until his death in 1975, and by the capitalist democracy that followed. The philosophy of autogestión lives on in social sub-groups such as the squatting movement (see Figure 4-11).

Figure 4-11. Squatted Building in Barcelona

"Occupy and resist", written next to a merged okupa & anarchy symbol

Source: photograph taken by Author

Squatting is illegal in Spain, but previous regulations had a loophole: squatters who managed to occupy a building unnoticed for 48 hour could delay an eviction by making a court appeal, a process averaging 15 months in duration (Edwards, 2017; Flores, 2018).

A new bill was approved by the Senate in July 2018 to speed up evictions: squatters who receive an eviction notice from the property owner now must "justify ownership of the property through a title deed, or show lack of one on the part of the claimant" (Alberola, 2018). If they fail to do so, they can be evicted from the property within just a few weeks with no right to appeal (Alberola, 2018). This reform does not apply to occupied properties belonging to banks or investment funds (Alberola, 2018).

4.2 Bike-Sharing Schemes: Case Studies

There are three main providers of bike-sharing services in Barcelona: Bicing, which is the public bike-sharing service provided by the city council, and two private providers, Donkey Republic and Scoot. The ways in which they create, deliver and capture value through collaborative consumption are described in the following section. This provides a solid basis for analysing their strategies for institutionalisation in Chapter 5.

4.2.1 Bicing

The public bike sharing scheme Bicing (see Figure 4-12) was launched in Barcelona in 2007 by mayor Jordi Hereu to "take the next step towards prioritising [Barcelona's] sustainable policy and the promotion of public transport within the city centre" (Scholtus, 2008). It was a huge success, overshooting all forecasted usage rates and catalysing an expansion of cycling culture and infrastructure in the city (Anaya, 2010). By the end of its first year, the service had nearly six times more subscribers than expected, totalling 100 000 subscriptions (Anaya, 2010, p. 8).

Normative pressures from other cities in Europe encouraged Barcelona's politicians to take measures toward increasing urban bicycle use. As Álvaro Nicolas Loscos, Advisor to the Mobility Councillor, explained: *"our politicians travelled other parts of Europe, mainly in the Northern countries, and saw that the use of bicycles was popular. Their plan was not to make a huge development of the cycling infrastructure, but they started to introduce the first bike lanes about 25 years ago"*. Then, once the first 3rd-generation bicycle sharing system was implemented in Lyon, they recognised an opportunity.

Figure 4-12. E-Bicing Station in front of the City Council Offices

Source: own photograph

As illustrated in Figure 4-13, Bicycle trips in the city increased by 82 % in 2007 compared to 2006 (Ajuntament de Barcelona, 2008, p. 15). This was not least due to the expansion of the Bicing system, which normalised the use of bicycles on the streets and sidewalks of Barcelona.

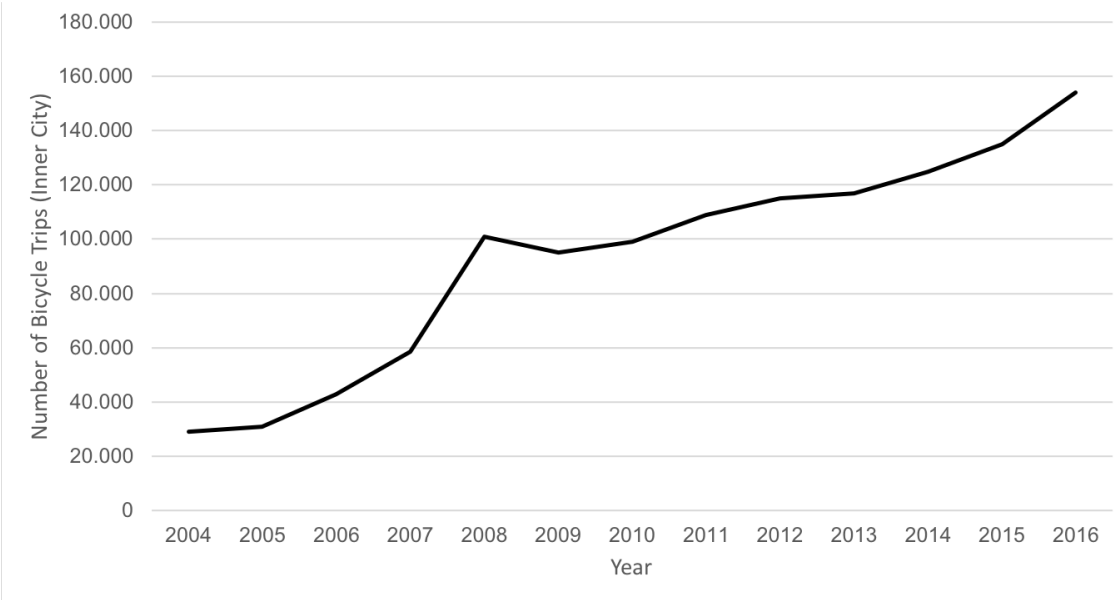

Figure 4-13. Inner-City Bicycle Trips in Barcelona 2004–2016

Source: own elaboration, using data from Ajuntament de Barcelona (2008, 2014a, 2017a)

4.2.2 Donkey Republic

Donkey Republic started 2005 in Copenhagen as a Kickstarter campaign for P2P bike rental (Ovacik, 2016). Today, it is a global bike sharing platform allowing users to access a bike (see Figure 4-14) in cities across the world using a single app. Donkey Republic was the first private bike-sharing provider in Barcelona, having launched there in 2016.

Figure 4-14. Donkey Republic Bicycles

Source: used with permission from Allard Kalverkamp, Donkey Republic

4.2.3 Scoot Networks

Scoot is a shared electric vehicle provider from San Francisco. They opened their first European headquarters in Barcelona in July 2018. Traditionally providing electric scooters, they expanded their fleet to include electric bicycles especially for their launch in Barcelona (See Figure 4-15). Scoot's mission is to provide "Electric Vehicles for Everyone" with their multi-modal offer (Scoot Networks, 2018b).

Figure 4-15. Scoot electric bicycles parked at Platja de Bogatell

Source: own photograph

4.3 Bike Kitchens: Case Studies

Bike kitchens in Barcelona are run by cooperatives, community organisations, or informally by local squats. The case studies in this thesis differ in their degree of regulative legitimacy: Biciclot is a registered cooperative business that works closely with the City Council; Biciosxs is a bike kitchen connected to the squatting movement, with a history of evictions; and Can Batlló is an occupied old factory of self-managed workshops that is acknowledged and supported by the City Council.

4.3.1 Biciclot

Biciclot is a cooperative organisation based all around promoting the use of the bicycle in the city (see Figure 4-16). It was started in 1987 by a group of bicycle activists, trained as mechanics

and cycle tour guides, who wanted to promote the use of the bicycle in the city. In essence, Biciclot provides education about how to ride and how to fix a bicycle.

Biciclot runs a cycling school, VÉSenBICI that teaches children, adults and minority groups to ride a bicycle. It also has a bike workshop, Espai REBICICLEM, where it educates people from underprivileged backgrounds in professional bicycle mechanics.

The REBICICLEM project was created in 2009 to save abandoned bicycles from becoming waste, while helping disadvantaged youth integrate into society and the workforce (Biciclot, n.d.-a). The workshop is also open to members and the public as a space to fix their bicycles using shared tools and recycled parts. The Espai REBICICLEM service is the focus of this study.

Figure 4-16. Biciclot Entrance Hall

Source: own photograph

4.3.2 Biciosxs

Biciosxs (pronounced "Biciosxs") started as a social project on the streets of the Nou Barris district in 2005 by a group of bicycle enthusiasts, to engage with the local youth by teaching them bicycle mechanics and other social values. Today, it has become deeply integrated in the squatting movement. The Biciosxs bike kitchen was the first in Barcelona (Biciosxs, 2018).

Originally, the bike kitchen was held in the street, but when winter came, the project occupied an empty building façade across the road, which became known as Biciosxs. The team built a roof, a wall and installed an electric system. There, they stayed for six years until they were

forcefully evicted from the space because the owner wanted to build new apartments. They were never built (Romero, 2014).

Despite resistance from the community, Biciosxs was forced to move to a new space, from which they were evicted again after just three or four months (Biciosxs, 2018; Romero, 2014). Afterward, they settled into an empty underground garage in a house occupied by the squat CSA La Rampa, where all tenants had been evicted from their homes due to speculation. There, they stayed for six years, but recently the owners cut off the electricity (Biciosxs, 2018).

Biciosxs now temporarily shares the site of another bike kitchen, Baikarka (see Figure 4-17), which belongs to the squat Farigola 24, situated in the neighbourhood of Vallcarca on the outskirts of the city.

Figure 4-17. Birdseye view of the Biciosxs + Baikarka Bike Kitchen

Source: own photograph

The property belongs to the real estate company Nuñez i Navarro, founded by José Luis Núnez Clemente, a known speculator who previously owned the FC Barcelona team (see Figure 4-18). Unfortunately, the days of Biciosxs at this location are also numbered: Farigola 24 have recently been issued with an eviction notice (Biciosxs, 2018).

Figure 4-18. Graffiti against speculators in the neighbourhood of Vallcarca

"Vallcarca is not for sale—it is not a neighbourhood for speculators!"

Source: own photograph

4.3.3 Can Batlló

Can Batlló was built in the 19th Century as a textile mill. Amidst the anarcho-syndicalism of the Spanish Civil War of the 1930s, the factory was collectivized and self-managed by its workers (Giralt, n.d.). However, when the war ended, it fraudulently fell into the hands of a businessman who repurposed the site into an industrial estate housing several different workshops and companies (Giralt, n.d.).

In 1976, the land was reclaimed by the city to provide much-needed green space and public facilities to the neighbourhood of La Bordeta. However, this triggered a long period of negotiations between the industry owners and the community (Giralt, n.d.). At the end of the 1990s, the real estate developing company negotiated to build a luxury housing complex on part of the land and blocked the council's plans for the public space (Giralt, n.d.).

In 2009, after the nine hectares of land had stood unused for almost 30 years and the neighbourhood still lacked green space and public facilities, the local residents united to reclaim their right to the space. In June 2011, they spectacularly stormed the site and were granted permanent rights to by the city to use one of the buildings, "Bloque Onze" ("Block Eleven").

Can Batlló is now a "factory" of collaborative production, filled with workshops for carpentry, circus skills, theatre and music. It also has a library, a bar, a brewery, a climbing wall, a cooperative nursery and an auditorium (see Figure 4-19). The subject of this case study is Can Batlló's "Mobility Workshop", which provides space, tools and shared knowledge for fixing all types of vehicles.

Figure 4-19. Activities at Can Batlló

Source: own photographs

5 Analysis and Discussion

This section applies the two analytical frameworks proposed in Chapter 2. The first framework analyses the value creation of the case study organisations. The second framework applies the model for institutional strategies by organisations in the collaborative economy posited by Mont et al. (2018). Finally, the insights from bike-sharing schemes and bike kitchens are compared and discussed in relation to value creation and institutionalisation of the collaborative economy.

5.1 Value Creation by Bike-Sharing Schemes

Guided by the analytical framework proposed in Section 2.2, the following section analyses the value proposition, value creation & delivery, and value capture processes and activities of the case study organisations.

5.1.1 Bicing

Value Proposition

The objective of the Bicing system is to offer the bicycle as a daily choice for travel and to promote sustainable mobility at an affordable price (Loscos, 2017). As a service provided by the municipality, Bicing is in a better position to be integrated with the public transport network and provide a subsidised, low-cost service.

"*Because it is a public service, and it is the municipality who provides the system, it's different from many other bike sharing systems offered by a private company"* explained Álvaro Nicolás Loscos, Advisor to the Mobility Councillor. *"The quality of the service that they can offer is going to be very different from Bicing. I mean, we spent a lot of money on it, it's expensive, it's everywhere… it's very difficult for them to achieve that. (…) Therefore, what I think is going to happen a little bit is that those kinds of systems are going to be used more by visitors rather than by locals who already have access to Bicing"* (Loscos, 2018a).

The Bicing service is only available to registered citizens of Barcelona. The subscription registration process takes two weeks, intentionally hindering tourists and visitors from using the system in order to protect local bike rental shops (Loscos, 2018a; OBIS, 2011). Bicing is mainly used to commute to work or study, or for running personal errands (Anaya, 2010, p. 38).

The key benefits that users perceive of the system are the avoidance of maintenance, low cost, and not having to worry about theft and vandalism (Curto et al., 2016, p. 721). On the flip side, the Bicing service cannot offer the same flexibility of riding door-to-door and the security of having a bicycle available as owning a private bicycle (Curto et al., 2016). The lack of possibilities to take children on the bicycles is also perceived by many as a barrier to using the service (Curto et al., 2016).

Value Creation & Delivery

Bicing has 6 000 bicycles and 420 stations available for its 100 000+ subscribers (Ajuntament de Barcelona, 2018b). A pilot project in 2014 added 300 electric bicycles at 46 stations (Loscos, 2017). Docking stations are strategically placed within a 300 m catchment area throughout the city centre (see Figure 5-1). The bicycles have a distinct and robust design to deter theft and vandalism. The user is randomly assigned a bicycle by the system and can unlock it using an RFID key card.

Figure 5-1. Bicing Station at Avinguda Litoral – Platja del Bogatell

Source: own photograph

In order to keep the system running smoothly, Bicing redistributes bicycles between stations to meet peak demand. This is a complex logistical process, done primarily using a fleet of gasoline-powered trucks (see Figure 5-2).

Figure 5-2. Bicing redistribution truck

Source: Marc Belzunces, Wikimedia Commons[4]

Bicycles are also maintained and repaired on a daily basis. The system employs approximately 174 workers, with roles ranging from management and administration, maintenance and redistribution (Blanchar, 2017a). Bicing communicates with its users via its website, social media channels (Facebook and Twitter), app and customer service hotline.

BSS in most large cities are managed via a single contract with an outdoor advertisement company, who provides the bike sharing operations and service in exchange for public advertising space. In Barcelona, however, the City finances Bicing from its public advertising contract, but has a separate contract with the municipal services provider B:SM who organises the operations of the Bicing service (Loscos, 2018a). By keeping these contracts separate, Barcelona avoids "advertising pollution" and can remain more flexible with its choice of suppliers (Anaya & Bea, 2009).

From 2007–2018, B:SM commissioned the outdoor advertising company Clear Channel to provide the Bicing service (Scholtus, 2008). However, a new 10-year operating contract worth 149.6 million Euros will come into force in November 2018 with a new provider: a temporary joint venture between Cespa, Spain's leading industrial waste management company, and the global bike-sharing provider PBSC (Blanchar, 2017b). The entire system will be upgraded with a new fleet of bikes and e-bikes, improved docking stations and additional services such as advance bookings of up to five minutes, as well as different tariff systems for annual and occasional use (Ajuntament de Barcelona, 2017b). The relocation trucks will be replaced with a fleet of electric vehicles to reduce CO_2 emissions (Loscos, 2018b).

Value Capture: Economic

The Bicing system cost 15 million Euros to implement (OBIS, 2011) and annual running costs amount to 18 million Euros (Loscos, 2018a). The revenues from user fees are approximately 4.2 million Euros per year, covering about 23 % of the cost of running the system (Loscos, 2017). Previously, a further 8 % were paid for by an advertising sponsorship by Vodafone from March 2014, until the contract ended without renewal in March 2018 (Loscos, 2017; Soto, 2018). The system runs a deficit; the remaining 69 % is funded by the municipality from its public advertising revenues (Loscos, 2017, 2018a).

An annual subscription to the Bicing service currently costs 47,16 €. In order to incentivise short trips, the first 30 minutes of each trip are free and each additional half hour (up to a maximum of two hours) is charged at 0,74 €. If two hours are exceeded, a penalty fee is charged at 4,49 € per hour. The fees for e-bicycles are slightly higher. If a bicycle (mechanical or electrical) has not been returned after 24 hours, a fee of 150 € is charged.

Value Capture: Social

As a public service provided by the municipality, Bicing is intended to provide a social benefit to its citizens by improving public health and enabling last-mile access to public transport. *"Everything started as a matter of social justice and equity, because we should provide public transport for the people who didn't have money to buy their own cars. In our society it's a recognized right to have access to the city. So, we should provide a way to get everywhere, somehow. (…) And also, the positive impact it has on people to use the bicycle and walk on a daily basis"* (Loscos, 2018a).

[4] https://upload.wikimedia.org/wikipedia/commons/d/d0/Furgo_bicing_bcn.JPG

A recent study found that bicycle commuters in Barcelona benefited from up to two more hours of physical activity per week than those who commuted by public transport, car or motorcycle (Donaire-Gonzalez et al., 2015). A representative study of the population of Barcelona also found reduced perceived stress amongst commuters using the Bicing service or a private bicycle (Avila-Palencia et al., 2017). Furthermore, it has been estimated that the Bicing system saves 12.28 lives per year due to the health benefits of cycling, which greatly outweigh the risks from air pollution and road accidents (Rojas-Rueda, de Nazelle, Tainio, & Nieuwenhuijsen, 2011).

In 2016, Bicing made up 27 % of bike trips in Barcelona (see Figure 5-3) (Ajuntament de Barcelona, 2017a). There is no conclusive data indicating whether non-bicycle users who are exposed to cycling via the Bicing service later become users of private bicycles. However, there is an overall increase in urban cycling in Barcelona, but the share of bicycle trips that are done with Bicing was 23% lower in 2016 than in 2013. This indicates that more people are using private bicycles, which is likely an effect of the infrastructure and regulatory improvements that have come with the huge initial uptake of the Bicing service.

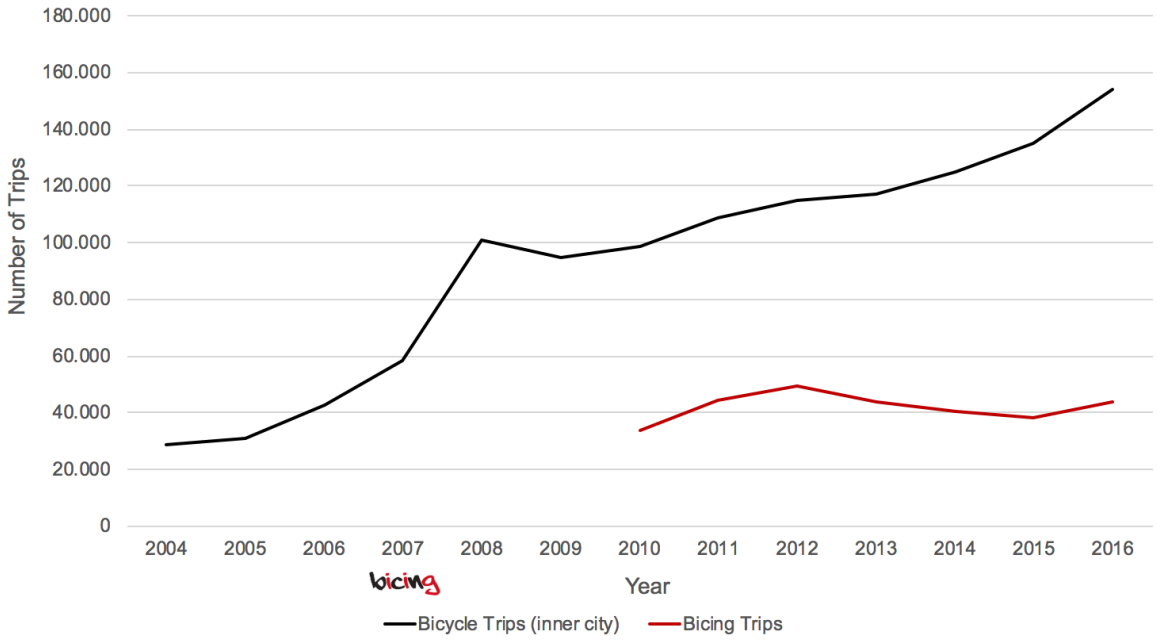

Figure 5-3. Inner-City Bicycle Trips in Barcelona from 2004–2016

Source: Author's own elaboration, based on data from Ajuntament de Barcelona (2008, 2014a, 2017a)[5]

However, as with any business, the Bicing system also has negative social externalities. These include accidents, conflicts with pedestrians or drivers of motor vehicles, operational faults, time lost looking for a bicycle or free parking slot, broken or vandalised bicycles, and increased congestion from the redistribution trucks (Anaya & Bea, 2009). One could also consider the opportunity cost for car users who lose public car parking spaces when docking stations are

[5] Comparable data for trips made using the Bicing service was only available from 2010 onward.

placed on the road (Anaya & Bea, 2009), although a reduction of motorised vehicles in the city is one of the intentions of the scheme.

Value Capture: Environmental

While Bicing began with a social purpose, its rationale is becoming more environmental in light of the Paris Agreement and political developments. According to Loscos, *"The reasons why we are trying to promote more sustainable mobility have changed a lot. Now we are worried about other impacts of the current mobility system—not just on the world from the CO2 emissions, but also because of where the petrol is coming from and the political tensions that it's causing"* (Loscos, 2018a). It has been estimated that the potential reduction in CO_2 emissions from cycling instead of car travel represented 0.9% of emissions from all types of motor vehicles in Barcelona in 2009 (Rojas-Rueda et al., 2011).

Despite its environmental cause, the Bicing system also comes with negative environmental externalities, such as noise, air pollution and CO_2 emissions from the trucks used to redistribute the bicycles (Anaya & Bea, 2009). The new 10-year contract will come with an entirely electric redistribution fleet in order to improve the environmental balance of the service (Loscos, 2018b).

5.1.2 Donkey Republic

Value Proposition

The Donkey Republic app allows users to easily access a bike in cities across the world without the hassle of docking stations, cash payments, ID cards, deposits, or limited opening hours (Donkey Republic, n.d.-c). Bikes are available for both short trips (starting at 30 minutes) and long rental periods (up to 14 days), offering *"a convenient middle-way between bike ownership and pure bike sharing"* that appeals to both locals and tourists (Donkey Republic, n.d.-i). Bikes can be parked flexibly within the city at pre-defined drop-off points.

Value Creation & Delivery

To provide a localised service in every city, Donkey Republic operates as a franchise or joint venture in partnership with local bicycle operators, called "Bike Owners". The Bike Owners have ownership of the hardware (bicycles and special electronic locks) and are responsible for distribution, maintenance and local marketing. Donkey Republic provides the software, customer support, data analysis, online marketing and acquisitions operations (Donkey Republic, n.d.-e). Donkey Republic has been doing business in Barcelona since 2016 and recently acquired the local operator SmartCycles (Kalverkamp, 2018a). Together, they started out with under 30 bicycles; today, there are 500 "Donkeys" available for rent in Barcelona (Kalverkamp, 2018a).

Donkey Republic bicycles are distinguishable by their bright orange colour and robust design (see Figure 4-14). The Donkey Republic operating system consists of two components: a smartphone application and an electronic ring lock. The Donkey Republic "Rider App" allows users to "create an account, find and rent bikes, unlock and lock their rented bicycle, switch bikes, extend and end a rental, or sign up for special memberships available locally" (Donkey Republic, n.d.-k) (see Figure 5-4). Users can either rent bicycles using a pay-per-use scheme or sign up for a local membership which offers free or discounted rides for a fixed monthly fee. These memberships are a new addition to the Donkey Republic service and are only available to Spanish residents, as a local bank card is required in order to subscribe.

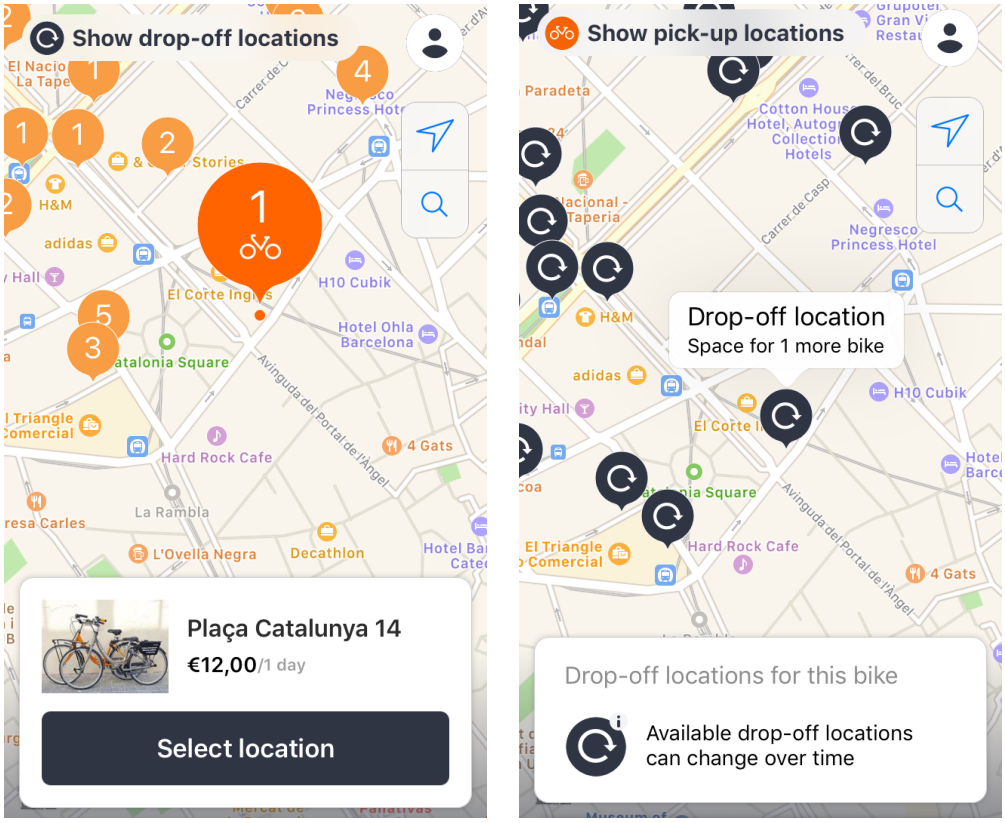

Figure 5-4. Donkey Republic "Rider App" Interface

Source: Screenshots taken by Author

The Donkey Republic "Owner App" is connected to an online dashboard to help the local operators manage their fleet, by keeping an overview of rentals, parking locations, usage data, revenues and other statistics. Bluetooth-enabled electronic ring locks, placed on all bicycles in the fleet, assign bicycles to geo-location-registered pick-up and drop-off locations (Donkey Republic, n.d.-k).

Donkey Republic requires that bicycles are parked using public bike racks within designated drop-off locations called "Hubs". Hubs are geo-located GPS coordinates. Donkey Republic uses geofencing technology (Fratila, 2018) to ensure that users can only end their rental within a fixed radius (e.g. 10 m) of a Hub (see Figure 5-4). Donkey Republic controls the number of bicycles that can be parked on each Hub, determining a maximum capacity depending on the available space and, in some cases, in coordination with the city authorities (Donkey Republic, n.d.-j). This helps to avoid cluttering public space and false parking of bicycles (Donkey Republic, n.d.-a).

Operations typically require at least two full-time employees (operations management and marketing/sales) and one mechanic per 300 bicycles. Each bike in the fleet is checked on a weekly basis (Donkey Republic, n.d.-a). Falsely parked bicycles and bicycles that have been parked outside of a Hub must be relocated. This is done using a bicycle trailer to avoid CO_2 emissions (see Figure 5-5) (Kalverkamp, 2018b). The company is also exploring the possibility of using electric tricycles ("e-trikes") for easier relocation in narrow streets and uphill (Kalverkamp, 2018b).

Figure 5-5. Donkey Republic bicycle trailer used for relocating bicycles

Source: used with permission from Allard Kalverkamp, Donkey Republic

Value Capture: Economic

Donkey Republic originally launched as a Kickstarter campaign, raising 40 000 € (Posetti, 2017). In 2016, the company received a 1.5 million Euro investment to start its global expansion (Posetti, 2017).

Revenues from local operations are split 80/20 between the operator and Donkey Republic (Donkey Republic, n.d.-e). Operators typically earn a monthly average of 40-50 € per bicycle (Donkey Republic, 2018b), adding up to an estimated monthly revenue of 20 000 – 25 000 € for the Donkey Republic fleet of 500 bicycles in Barcelona.

Rental fees depend on the duration of the rental and are calculated using a pre-defined index, starting with the base price of 12 € for a 24-hour rental period (see Table 5-1). The rates decrease over time, incentivising day rental. Theft insurance can be purchased for an additional 2 € at the time of booking.

Table 5-1 Donkey Republic Pricing Model

Duration	Index	Price (€)
30 mins	12	1,50
1 hour	25	3,00
2 hours	50	6,00
6 hours	70	8,40
12 hours	85	10,20
24 hours	100	12,00
2 days	180	21,60
3 days	240	28,80
4 days	290	34,80
5 days	340	40,80
6 days	380	45,60

7 days	420	50,40
8 days	460	55,20
9 days	500	60,00
10 days	535	64,20
11 days	570	68,40
12 days	605	72,60
13 days	640	76,80
14 days	675	81,00

Source: (Donkey Republic, n.d.-g)

Monthly memberships are also available, offering cheaper rental rates for occasional and regular users (see Table 5-2).

Table 5-2. Donkey Republic Membership Prices in Barcelona

Membership Type		*Occasional*	*Regular*
Price per month		0 €	15 €
Rental Price	30 min	0,75 €	0 €
	12 h	5, 10 €	0 €

Source: (Donkey Republic, 2018a)

An additional 5 € fee is charged if the booked rental period is exceeded. A 250 € fee is charged for missing bikes. A stolen bike can cost the user up to 300 € if they did not purchase a 2 € theft insurance at the time of booking. If bikes are not returned to a designated drop-off point, a relocation fee of 10 € is charged. If bikes are returned more than 10km away from the closest drop-off location, a 50 € fee is charged.

Setting up a Donkey Republic bike sharing business requires an initial investment of at least 200 000 €. This can either be split 50/50 between the Donkey Republic headquarters and the operator in a joint venture or covered entirely by the operator in a full ownership model. Running costs include relocation of the bicycles and maintenance. Bicycle maintenance typically costs operators 2,50 € per bicycle per month (excluding personnel costs) (Donkey Republic, n.d.-h). This amounts to an estimated 1 250 € per month for the Donkey Republic fleet in Barcelona.

Value Capture: Social

The Donkey Republic bike-sharing service creates the same social value as the Bicing service in terms of health benefits, reduced car congestion and air pollution, and improved connectivity throughout the city. In addition, it serves a social group that is excluded from the Bicing service—visitors from abroad in Barcelona.

Similar to Bicing, social externalities of the Donkey Republic service include accidents, conflicts with pedestrians or drivers of motor vehicles, operational faults and broken or vandalised bicycles. Since the Donkey Republic system relies on public bicycle parking infrastructure for its pick-up and drop-off points, conflicts have arisen where citizens feel that their public space is being used for private commercial benefit. It is considered by some as an

unfair advantage to bicycle rental shops who must have a license and pay rent for their commercial space (Bicitours, n.d.). These conflicts point toward the current lack of regulative institutions in this area, which could facilitate private operators such as Donkey Republic by introducing a licensing system that helps them gain public legitimacy—or inhibit them with high fees.

Value Capture: Environmental

Like Bicing, the Donkey Republic service contributes to lowering CO_2 emissions from mobility by offering a fossil-free alternative. To keep its service emissions-free, the Donkey Republic service uses non-motorised vehicles to redistribute falsely parked bicycles.

5.1.3 Scoot Networks

Value Proposition

The Scoot e-bicycle system has a convenient dockless system and offers fast, easy travel by electric bicycle. Bikes can be parked anywhere within the central city. The Scoot service is intended only for those who live or work in the Barcelona area (Scoot Networks, n.d.-b).

Value Creation & Delivery

Scoot launched in Barcelona with a fleet of 1 000 electric bicycles. The e-bikes, which can reach a maximum speed of 25km/h, feature a robust, anti-theft construction with a custom design by a local artist of Barcelona. The bikes are run via electric battery packs, which are charged at the Scoot offices and exchanged via an electric Scooter (Pallas Poy, 2018).

The Scoot service can be accessed through the Scoot Networks app. It is necessary to have a Spanish bank card to download the app, making it difficult for tourists from abroad to access. The e-bikes can be unlocked using the app and parked at any public bike rack within the designated "Scoot Area", which covers most areas of the central city. Falsely parked bicycles are manually moved, and bicycles are repaired on a daily basis (Pallas Poy, 2018).

Scoot owns its entire operations in Barcelona. The Barcelona branch office started with a team of 20 employees and plans to grow to 60 employees by the end of the year (ACCIÓ, 2018).

Value Capture: Economic

The project cost for Scoot's launch in Barcelona is estimated at 5 million Euros (Scoot Networks Iberia SL, 2018). The business operations in Barcelona are financed by investors and user fees (Pallas Poy, 2018). The Scoot service has a very simple and straightforward pricing system at 0,10 € per minute.

Value Capture: Social

Scoot offers the same social benefits as its counterparts Bicing and Donkey Republic, such as improved health and last-mile mobility. By providing electric mobility, it may also appeal to user groups with less physical fitness who may be discouraged from using mechanical bicycles. However, like Donkey Republic, Scoot faces public criticism for its use of public infrastructure for commercial activity.

Value Capture: Environmental

Scoot cites that their electric vehicles have 25 % less environmental impact than combustion vehicles (ACCIÓ, 2018). According to Scoot, 300 000 kg of CO_2 were saved by its users in the first three weeks of its operations in Barcelona (Scoot Networks, 2018e). The environmental

impact from redistribution is very low, as falsely parked bicycles are moved manually (Pallas Poy, 2018).

5.1.4 Summary and Overview

This thesis supports the general academic consensus that the social and environmental value created by BSS clearly outweighs their impacts (Anaya, 2010; Anaya & Bea, 2009; Rojas-Rueda et al., 2011). The public BSS, Bicing, shows the greatest potential for environmental value creation amongst the bike-sharing organisations, but a lot of this value is destroyed due to the use of fossil-fuel vehicles to fulfil its complex logistics. In contrast, the private operators use emissions-free methods to redistribute their bicycles, but have a higher perceived social impact, due to their use of public bicycle racks for commercial gain. These two issues will be addressed with the new electric vehicle fleet for the Bicing operations planned for 2019 and the upcoming regulatory framework for the use of public space by shared vehicle providers. This shows that these externalities are not unavoidable consequences of these business models and can be controlled by appropriate organisational and institutional measures.

Bicing provides an integrated first/last-mile solution to extend the reach of the public transport network, thereby contributing to improved social justice and inclusion. However, the scheme is limited to locals only, and it is therefore also exclusive to a significantly large social group in Barcelona. Those private bike-sharing operators that do serve tourists suffer from reduced cultural-cognitive legitimacy amongst locals, as they have become a symbol of the mass tourism plaguing the city. The affected organisations are trying to change these perceptions by creating a more attractive offer for locals. However, the problem can only be effectively addressed by regulative institutions that enable better management of the negative externalities created by tourism in the city—hopefully through Barcelona's Strategic Tourism Plan for 2020.

Table 5-3 gives an overview of the business models of the bike-sharing case organisations and the types of economic, social and environmental value they create.

Table 5-3. Overview of Sustainable Value Creation of Bike-Sharing Business Models

Organisation		*Bicing*	*Donkey Republic*	*Scoot*
Value Proposition		- docking system - mechanical and electric - locals only - cheap - PT integration	- dockless - mechanical only - locals and visitors - fixed drop-off points throughout the city	- dockless - electric only - locals only - drop-off anywhere in designated area
Value Creation & Delivery		- 6000 bicycles - 300 e-bikes - RFID key card - external operator	- 500 bicycles - smartphone app - external operator	- 1000 e-bikes - smartphone app - own operations
Value Capture	*Economic*	23 % user fees, 8% sponsorship, 69% subsidies	- 100% user fees (80/20 revenue split operator/DR)	100% user fees
	Social	+ health + reduced congestion	+ health + reduced congestion	+ health + reduced congestion

		+ last-mile mobility - conflicts with pedestrians and drivers	+ last-mile mobility + inclusive (locals and visitors) - commercial use of public infrastructure	+ last-mile mobility + electric bikes increase inclusivity - commercial use of public infrastructure
	Environmental	+ emission-free travel + less air pollution - CO_2 emissions from redistribution vehicles	+ emission-free travel + less air pollution	+ emission-free travel + less air pollution

Source: own elaboration

5.2 Value Creation by Bike Kitchens

The following section analyses the value proposition, value creation & delivery, and value capture processes and activities of the bike kitchen organisations, according to the analytical framework proposed in Section 2.2.

5.2.1 Biciclot

Value Proposition

The REBICICLEM bike kitchen offers a cheap repair service and access to recycled bicycle parts, professional mechanical advice, materials and space to clean and oil bicycles (Biciclot, n.d.-b). Users with a Biciclot membership also receive discounts for mechanics courses, second-hand bicycles and other services. It is a business-to-peer (B2P) service.

Value Creation & Delivery

REBICICLEM members can access the space per reservation on weekdays from 9am to 2pm and 4pm to 6pm, and on Saturdays from 9pm to 2pm (Biciclot, n.d.-b). The workshop is equipped with tools and spare parts (See Figure 5-6). Recycled parts are free for use by members. Non-members cannot use the second-hand parts, but they can purchase new parts (Biciclot, n.d.-b). However, the intention of the service is for people to become members and recycle old parts (Laguillo, 2018).

Biciclot receives an annual quota of abandoned bicycles from the city authorities, depending on their forecasted needs. They also receive donated bicycles from members and visitors. The bicycles are used for several projects, including the Espai REBICICLEM. Tools and some spare parts are purchased. Biciclot is a cooperative with approximately 10 full-time and 10 part-time employees.

Figure 5-6. The Biciclot Espai REBICICLEM Bike Workshop

Source: own photograph

Value Capture: Economic

The company is registered as a cooperative and is not-for-profit. Biciclot receives grants from the city council for its projects each year. The Espai REBICICLEM project is financed by membership fees, drop-in fees, and purchases of spare parts and second-hand bicycles. An annual membership costs 40 € and an additional 2 € per session. Non-members pay 5 € per session.

Value Capture: Social

Biciclot has always had a social purpose at its core: to promote the use of the bicycle as a tool of empowerment—in other words, as a 'convivial tool' (Illich, 1973). As put by Biciclot employee Erika Laguillo: *"To learn to repair your bike is freedom for you"* (2018).

By teaching people to use a bicycle, Biciclot makes a low cost-cost, healthy, and sustainable form of transport accessible to the public. By training bicycle mechanics, Biciclot provides people with the means for making a living. And by teaching people how to fix their bike themselves, they give them independence.

Further, Biciclot makes a conscious effort to be inclusive of different social groups by offering tailored programs for women, immigrants, elderly and socially disadvantaged individuals (Laguillo, 2018). On the other hand, the cost of using Espai REBICICLEM might also exclude certain social groups.

Value Capture: Environmental

Aside from promoting the use of the bicycle, Biciclot participates in the circular economy by recycling old bicycles and parts that would otherwise be disposed of. However, at approximately 500 recycled bicycles per year (Laguillo, 2018), the number of bicycles recycled is too small to make a significant environmental impact. Nevertheless, the environmental benefit of the knowledge spread about how to fix bicycles could be more significant and even spill-over into other behaviours.

5.2.2 Biciosxs

Value Proposition

Biciosxs stands for learning to fix your own bike through collective and cooperative learning, non-financial exchange, and self-management (Biciosxs, 2018). Biciosxs is a P2P organisation that enables users to fix their bike without the need for money, expert knowledge, or ownership of tools. But people do not only come to Biciosxs to fix their bike, many just come to meet friends and socialise—it is a gathering point for people in the neighbourhood and beyond.

Value Creation & Delivery

The bike kitchen is open every Thursday from 16.30 till late (Biciosxs, 2018). Biciosxs operates on the basis of non-financial exchange: users are encouraged to help each other to fix their bicycles and they can freely use the available tools and spare parts. It is asked that they give another part, or a tool, or their time in exchange (Biciosxs, n.d.).

Currently, three volunteers run the bike kitchen—one volunteer is a member of the squatting movement, another is an academic researcher, and the third is a professional with a family (Biciosxs, 2018). Sometimes, professional mechanics from the local workshops volunteer at the bike kitchen (Biciosxs, 2018). All important decisions regarding the organization of the bike kitchen are made collectively, whereas smaller decisions about daily operations are made by the individual volunteers (Biciosxs, 2018).

Bicycles, tools and spare parts at the Biciosxs bike kitchen are donated by neighbours, evicted squats and sometimes even from official workshops when they have parts they cannot use. Sometimes, specific tools or parts need to be purchased. The Biciosxs team have friends at the local bike shops through whom they can get access to discounted supplies (Biciosxs, 2018).

Value Capture: Economic

The fundamental concept of the Biciosxs bike kitchen is that it is based on non-financial exchange (see Figure 5-8). However, sometimes funds are needed to buy new tools. These are raised through concerts, events, and sales of self-made t-shirts (Biciosxs, 2018).

Figure 5-7. The rules of Biciosxs + Baikarka bike kitchen

"Barter and recycling. Bring the parts and tools you do not use."

Source: own photograph

Value Capture: Social

Having started as a social project for local youth, Biciosxs has invigorated the community in all of its locations. It is not just a space for fixing bicycles, many people come to enjoy a beer together and spend their evening (Biciosxs, 2018). The bike kitchen carries a strong political message, against the speculation in the area that has led to many residents losing their homes and a proliferation of vacant spaces that could instead be used to benefit the community (see Figure 5-9).

Figure 5-8. The Biciosxs + Baikarka Bike Kitchen in Vallcarca

"Neither our bodies, nor our neighbourhoods, are territories of conquest"

Source: own photograph

There is an opportunity cost to real estate owners when their properties are occupied by projects such as Biciosxs, though it is disputable whether their use of those properties would provide comparable social benefit to the community.

Value Capture: Environmental

Biciosxs uses primarily second-hand bicycles and parts, therefore contributing to the circular economy. It currently has around 90–100 second-hand bicycles in stock for recycling (Biciosxs, 2018). The benefits from educating its visitors to save resources and to be self-sufficient are greater than its actual material savings.

5.2.3 Can Batlló

Value Proposition

The mobility workshop at Can Batlló gives free access to space, tools and advice for fixing everything from cars, motorcycles and bicycles to wheelchairs. It is a P2P service run by members of the community, for the community.

Value Creation & Delivery

The mobility workshop at Can Batlló is open on Mondays and Wednesdays from 5pm to 8pm and on Fridays from 11am to 1pm (See Figure 5-10). It is run by volunteers, who typically have a more complex project they are trying to complete (e.g. fixing a car or building a bike) and offer their time and expertise in exchange for free use of the space outside of opening hours (Can Batlló, 2018). The bicycles and spare parts in the workshop are donated by members and evicted squats (Can Batlló, 2018). Approximately seven volunteers currently work in the mobility workshop. The workshop is self-managed and important decisions are made collectively.

Figure 5-9. The Can Batlló Mobility Workshop

Source: own photographs

Value Capture: Economic

The mobility workshop is free for all to use. It has no operating costs, because all of the tools and parts are donated, and it is run entirely by volunteers. If money is needed, it is raised by organising concerts, shows or raffles.

Value Capture: Social

The mobility workshop promotes self-repair of bicycles and it is part of the greater social project of Can Batlló, which is symbolic for bottom-up public services and self-management of local communities.

Value Capture: Environmental

Approximately 200 repairs (of all kinds of vehicles) have been made in the workshop in 2018 only, actively contributing to the circular economy (Can Batlló, 2018).

5.2.4 Summary and Overview

The results of this study affirm Bradley's (2016) argumentation that bike kitchens are 'spaces for convivial tools'. All three bike kitchens were shown to have a deeply rooted social cause. Biciclot provides education and social empowerment by teaching bicycle mechanics. Biciosxs and Can Batlló have revived neglected neighbourhoods and are a social gathering point for the local community. Biciclot, which operates as a cooperative business, is able to offer the most

convenient and professional service—but this comes at a cost, which may deter or exclude some users. The bike kitchens all create environmental value through their promotion of repair and recycling, but the scale of their activities is very small; therefore, their social impact is arguably much greater than their environmental impact.

This study identifies a potential for increasing the environmental impact through more coordinated collaboration with the city authorities to tackle its overflowing bicycle pound. Biciclot was the only bike kitchen that receives bicycles from the city council. However, cooperating with the council is an unlikely strategy amongst the squatting community, who are explicitly anti-establishment, and are not at lack of bicycle parts donated from the neighbourhood and other squats. It is likely that greater environmental value is created from the habits and knowledge transferred to the users of the bicycle kitchens, but this was beyond the scope of this study.

Table 5-4 gives an overview of the value creation by bike kitchens.

Table 5-4. Overview of Sustainable Value Creation by Bike Kitchens

Organisation		*Biciclot*	*Biciosxs*	*Can Batlló*
Value Proposition		- access to space, tools and advice from professional mechanics - B2P (business-to-peer)	- access to space, tools and know-how - P2P	- access to space, tools and know-how - P2P
Value Creation & Delivery		- bicycles donated by city authorities and users - tools are bought - employs professional mechanics to run the workshop - open six days a week	- bicycles, tools and parts donated by community - specific tools are sometimes purchased - open once a week - volunteer-run	- bicycles, tools and parts donated by community - open three times a week - specific tools are sometimes purchased - volunteer-run
Value Capture	*Economic*	- non-profit - membership fees, drop-in fees - sales of new parts	- free - non-monetary exchange - cash is raised through events and merchandise if necessary	- free - non-monetary exchange - cash is raised through events and merchandise if necessary
	Social	+ creates employment + social interaction - cost may exclude certain social groups	+ accessible to anyone (free) + social gathering point - opportunity cost for property owners	+ accessible to anyone (free) + social gathering point

	Environmental	+ recycling of spare parts (100 bicycles per year) + knowledge sharing for more environmentally-friendly behaviours	+ recycling of spare parts (100 bicycles per year) + knowledge sharing for more environmentally-friendly behaviours	+ recycling of spare parts (200 repairs per year) + knowledge sharing for more environmentally-friendly behaviours

Source: own elaboration

5.3 Bike-Sharing Schemes: Institutionalisation Strategies

This section outlines the institutional context of bike-sharing and the institutional strategies employed by the case organisations to influence it.

5.3.1 Institutional Context

The information in Section 4.1 illustrates some of the regulative, normative and cultural-cognitive institutions relevant to bike-sharing in Barcelona. It is apparent that bike-sharing has become relatively institutionalised as a form of urban mobility in Barcelona, but there still are some obstacles to overcome.

Over ten years have passed since the introduction of Bicing, which has enabled the city to iron out initial challenges with the system and improve its service. It is evident that Barcelona's public bike sharing system changed the role of the bicycle in the city's mobility mix and in the minds of its citizens. The cycling culture and infrastructure that developed as a result of Bicing has attracted international private providers of bike-sharing services in more recent years. However, the lack of regulative institutions to promote or control bike sharing providers indicates that the organisational field of bike-sharing is still developing. The following sections illustrate the regulative, normative and cultural-cognitive strategies employed by the case organisations in order to influence the institutionalisation process.

5.3.2 Regulative Strategies

Regulatory work includes litigation, lobbying and delimiting membership the organisational field for political and regulatory purposes (Mont, Voytenko Palgan, et al., 2018). As of yet, there is no regulatory framework for bike-sharing in Barcelona, due to the novelty of the industry. Therefore, there has also been no need for litigation.

Lobbying

Lobbying refers to the efforts by sharing organisations to influence local policymakers on an issue (Mont, Voytenko Palgan, et al., 2018). "*Every week there is someone new, coming from somewhere in the world, trying to sell you this kind of collaboration and it's going to change the city. I mean…not everyone is very worried about the city…they see business here, that's why there is so much investment in this area*" explained Álvaro Nicolás Loscos, Advisor to the Mobility Councillor. The city has recognised the need for a regulatory framework, and this represents an opportunity for the existing operators to apply regulative strategies to influence the outcome.

Amongst other stakeholders, both Donkey Republic and Scoot are members of the working group developing the new regulatory framework with the city council (Loscos, 2018a). Both companies pride themselves on their track record of close collaboration with local authorities to provide efficient solutions that serve the needs of the city and its residents (Kalverkamp, 2018a; Pallas Poy, 2018). According to Mar Pallas Poy, Vice President for European Market Development at Scoot, the company would be open to subsidising bicycle parking spaces if the city planned to add more (Pallas Poy, 2018).

Delimiting Organisational Fields

Delimiting organisational fields refers to *"defining boundaries and delimiting membership in the organisational field for political and regulatory purposes"* (Mont, Voytenko Palgan, et al., 2018, p. 17).

Donkey Republic emphasizes that it is a system *"designed in Europe, for the needs of European cities"*, clearly differentiating itself from Chinese and Asian operators which have caused problems in other cities (Donkey Republic, n.d.-i). It highlights that the Donkey Republic system enables an efficient use of public space and the ability for city authorities to monitor and control the operations (Donkey Republic, n.d.-i), thereby appealing to regulative institutions to gain legitimacy even in a largely unregulated field.

There is evidence that private bike sharing operators are intentionally trying to disassociate bike-sharing from being a service primarily for tourists, due to the public disillusionment with mass tourism in the city. Donkey Republic has recently introduced a membership scheme providing a more attractive proposition for locals, which could be understood as a strategy by the company to address this negative cognitive association as a tourists' service. For similar reasons, Scoot has chosen to provide its service to locals only: *"Scoot wants to work closely with the city council and as there have been a lot of issues with mass tourism in the city, it is intended only as a solution for locals right now"* (Pallas Poy, 2018).

5.3.3 Normative Strategies

Normative strategies for institutionalisation can be identified from all of the case studies, though there are differences between how they are used by private actors compared to the city council as a public provider.

Creating identities and constructing images

This strategy refers to the identities that sharing organisations create for themselves in order to appeal to other actors in the organisational field (Mont, Voytenko Palgan, et al., 2018). All three cases define their relationship to the sharing economy in different ways, in order to appeal to their most important stakeholders.

Bicing defines itself as *"urban transport based on bicycle sharing"* (Ajuntament de Barcelona, n.d.-b). It is clear that the City Council primarily intends for Bicing to be seen as an extension to the city's public transport system. It is also interesting to note that they specifically mention sharing. They highlight all three types of sustainable value created by the system—economic, social and environmental: *"a simple, practical and sustainable service that you can use in your journeys around the city. To go where you want and when you want, without smoke or noise"* (Ajuntament de Barcelona, n.d.-b). Bicing is also clear at defining what it is not*: "[it is] not a public bicycle rental system for tourist or recreational use"* (Ajuntament de Barcelona, n.d.-b), directly addressing the common misconception that public BSS are primarily for tourists. This is in order to appeal to other actors in the field, by reassuring local bike rental businesses that they are not trying to

compete with them, whilst reaffirming residents that the public money funding the system is being reinvested for their own benefit.

Donkey Republic recognises the different needs of its various stakeholders addresses them each directly on its website, with a dedicated landing pages for riders, bike owners and cities. To its riders, it describes itself as a *"24/7 Bike Rental"* service (Donkey Republic, n.d.-c). There is no mention of sharing. This could be interpreted as a strategy by the company to differentiate itself from the negative connotations of bike-sharing created by controversial mass providers such as Obike and Ofo (Fratila, 2018). Interestingly, there is also no mention of an environmental cause; the key benefit that Donkey Republic communicates is its simplicity and its convenience. This could indicate that it is strategically preferable to compete with traditional field actors on a functionality basis, rather than based on environmental benefits. It is clear that the website is targeted at tourists, with information such as "Where do Barcelona Locals go?" (Donkey Republic, n.d.-d) and the webpage provided entirely in English.

In contrast, towards its "Bike Owners", Donkey Republic no longer refers to itself as a bike rental service, but explicitly identifies itself as "bike-share" platform. It emphasizes the profitability of the bike-sharing business with statistics and figures (Donkey Republic, n.d.-f). For city authorities, Donkey Republic also uses the term "bike-share". Donkey Republic wants to be an efficient, sustainable urban mobility solution: *"Our goal is to make urban transportation simple and more sustainable, as well as to make city life in general better for everyone"* (Donkey Republic, n.d.-i).

Scoot clearly positions itself within the sharing economy and associates this with innovative technology like electric mobility and digital solutions: "*Our scoots are shared, electric, smartphone-activated vehicles."* (Scoot Networks, n.d.-a). By defining themselves as a sharing, tech-enabled, electric mobility organization, they position themselves as an innovator. *"We are city slickers, gearheads, tree huggers, and teachers who love our jobs, love our riders, and love the way Scoot is changing how we all get around the city"* (Scoot Networks, n.d.-a). Scoot relate to their target audience by creating an image of themselves as urban dwellers, techies, environmentalists and educators. Scoot makes a conscious effort to be seen as a local service, for locals. The colourful design of the bicycles was created by a local artist, and they announced their launch with *"After many months of work, we can finally proclaim ourselves authentic Barcelonans and we are more than proud of it!"* (Scoot Networks, 2018d). Scoot founder Michael Keating said about the Barcelona launch: *"It's meant to be for locals. Not just a joy-riding thing"* (Kerr, 2018).

Challenging prevalent norms

Sharing organisations often directly challenge traditional consumption norms with the alternative solutions that they offer (Mont, Voytenko Palgan, et al., 2018). It is clear that all three bike-sharing providers present their service as an alternative solution to conventional motorised vehicles.

Álvaro Nicolás Loscos from the Mobility Council explained that with Bicing, *"we are introducing a new variable to the mobility policies"* and trying to *"constrain a little bit or make more difficult the use of cars"* (Loscos, 2018a). Allard Kalverkamp from Donkey Republic stated that *"Barcelona has tens of thousands of noisy dirty scooters. I am proud to be part of changing that to silent, friendly bike use"* (Kalverkamp, 2018a). And according to Mar Pallas Poy from Scoot, *"in Europe, most cities have thousands of private gas-burning cars. By providing multi-modal networks of shared electric vehicles, and through collaborative planning with cities, Scoot can transform urban mobility to make cities more liveable and enjoyable"* (Scoot Networks, 2018c).

However, from these statements it can be seen that the normative institution that these businesses are trying to challenge is not necessarily that of private ownership, but rather the institutions that have turned cities into car-based societies. Sharing is rather a step-stone or an enabler to challenging those institutions by making emissions-free mobility more accessible, than the ultimate goal.

Forming Normative Networks

Sharing organisations might seek to create a united voice and common identity through intra- and inter-field networks (Mont, Voytenko Palgan, et al., 2018). While Bicing is not part of any networks, the private providers in this study have either joined other networks or formed their own in order to form a united voice for the collaborative economy.

In order to get Donkey Republic started in Barcelona and start conversations with the city council, Kalverkamp teamed with another local bicycle rental provider in *"friendly competition",* a demonstration of his ability to use social skills to mobilise allies in his favour (Kalverkamp, 2018a). *"Recently, bicycle and scooter shares have taken the initiative to join in an association to improve their ability to communicate their importance for the city to the city council and public"* (Kalverkamp, 2018a). Scoot is also a part of this association, which does not have an official name yet.

At an industry level, Donkey Republic is a member of the European Cyclists' Federation (ECF) and the UK bike sharing association BikePlus. Scoot has joined the digital economy association Adigital España, which offers training, legal advice and market research and has a special focus on the collaborative economy (Adigital, n.d.; Pallas Poy, 2018).

In these cases, forming networks appears to be a strategy preferred by private providers. This is likely due to the more peripheral social position of private operators, so that coming together can give them a stronger voice and bargaining power.

Altering traditional meanings

In the context of the sharing economy, the word 'sharing' has developed to have many different meanings. Sharing organisations often use normative strategies to redefine the traditional idea of sharing as being a familial practice to something that can also occur between strangers. The private bike sharing providers in the study both define what sharing means to their organisation.

Donkey Republic explains its role in the sharing economy as follows: *"Local operators (…) can set up bikes in a city to be shared among visitors and locals"* (Posetti, 2017). On its company website, Scoot states that *"Scoot is about sharing: sharing vehicles, sharing data, sharing space"* (Scoot Networks, 2018b). It adds, "*we share much more than our vehicles; we share our city and its roads, our way of life and our desire to create cities that are more friendly for their citizens"* (Scoot Networks, 2018d).

Since the bike-sharing organisations in this study are not peer-to-peer (P2P), their definition of sharing is less about creating trust between sharing but rather about the access and inclusiveness created by sharing.

5.3.4 Cultural-Cognitive Strategies

Bike sharing organisations utilise cultural-cognitive strategies such as mimicry, isomorphism, developing new meaning systems and educating to gain legitimacy. These strategies are evident amongst all three case studies but appear to be more prominent and intentional amongst the private operators.

Mimicry

Mimicry occurs when new models of sharing are associated with conventional institutions to ease their adoption and improve their acceptance (Mont, Voytenko Palgan, et al., 2018). Examples of mimicry are primarily evident amongst the private sharing operators.

Donkey Republic originally started out as a Kickstarter for a P2P service, where individual bike owners could place an electronic lock on their bike and rent it out to others. Allard Kalverkamp recognized the potential of this idea, but also that it would be difficult to scale it. "*I told them: your idea is cool, but I think you shouldn't do P2P, you should use my rental business instead"* (Kalverkamp, 2018a). He recognised that by tapping into established bike-rental businesses, Donkey Republic could professionalize and grow its sharing concept.

Scoot tries to ease adoption and improve acceptance by associating its service with existing mobility systems and rules: *"Current transportation infrastructure needs support through flexible networks of shared electric vehicles. Free-float networks achieve this by complementing traditional transportation networks with electric scooters, e-bikes and electric cars"* (Scoot Networks, 2018b).

These examples of mimicry are not particularly strong, however, indicating that this strategy is not used very intentionally by the case organisations.

Isomorphism

Bike sharing organisations engage in isomorphism when they mimic the business models of other successful sharing organisations in order to support their own legitimacy (Mont, Voytenko Palgan, et al., 2018). All three cases show a degree of isomorphism.

For example, Bicing was inspired by the public bike sharing system in Lyon: *"Our politicians (…) saw the system working in Lyon, one of the first in the world. They very quickly took it on as an idea and launched the Bicing process in Barcelona six months later"* (Loscos, 2018a).

In its Kickstarter days, Donkey Republic had actually named its product (the smartphone application and electronic lock combo) "AirDonkey" to associate itself with the successful accommodation sharing organization Airbnb (Ovacik, 2016). They described their company as combining "the simplicity of Uber and the sharing economy of Airbnb" (Donkey Republic, 2015). The idea was also sometimes referred to as "Uber for Bicycles" (Mellino, 2015). However, there was no evidence found that this strategy was used specifically in Barcelona.

Similarly, Scoot founder Michael Keating often describes Scoot as "Zipcar for e-scooters" (Shareable, 2012). In the download centre for their smartphone app, they explain that "Scoot works in a similar way to carsharing apps" (Scoot Networks, 2018a).

Developing New Meaning Systems

This strategy of institutional work refers to the creation of own vocabulary and new meaning systems to create legitimacy for sharing organisations (Mont, Voytenko Palgan, et al., 2018).

Both Bicing and Donkey Republic have created their own vocabulary. The success of Bicing system unintentionally created a new meaning: the term 'Bicing' became a common synonym for public bicycle schemes in Spain (Beroud & Anaya, 2012, p. 17).

By referring to its bicycles as "Donkeys", Donkey Republic has created its own vocabulary that alludes to a distant past, before the introduction of motorised vehicles: *"Once, a donkey was the*

most accessible, dependable and commonplace means of transportation. Nowadays (…) the humble bicycle is taking the role of its hoofed ancestor as a convenient and pragmatic device of urban mobility" (Donkey Republic, n.d.-b). While the meaning itself does not relate to sharing, it is a meaning associated with its bicycles and the quiet revolution they aim to create.

Educating

Educating refers to efforts to spread knowledge and understanding of the sharing economy (Mont, Voytenko Palgan, et al., 2018). In the bike-sharing case studies, educating seems to be performed mainly by private operators toward the city. Operators try to provide recommendations (and influence) city authorities in matters how to effectively regulate bike-sharing organisations. One example is Donkey Republic's *"4 principles for a sustainable bike-share"* (Donkey Republic, n.d.-a). The Scoot blog also promotes the importance of multi-modality for sustainable urban transport. In a developing and unregulated area such as shared mobility, educating appears to be a prime tool for positioning a company as a credible actor in the field and influencing regulators.

5.3.5 Summary and Overview

The observations in this study confirm the underlying assumption of institutional theory that as an organisational field becomes institutionalised, organisations become increasingly similar (DiMaggio & Powell, 1983). The normative trend of public BSS in Europe inspired Barcelona's own scheme, Bicing. This scheme was in itself a normative strategy to institutionalise a cycling culture within the city. The success of the scheme institutionalised BSS not only on the municipal level but also on a national level; "Bicing" soon became a synonym for BSS in Spain. The normative and cultural-cognitive institutions created by Barcelona's newfound cycling culture attracted new, private providers to the market.

While the lack of regulative institutions for BSS was initially an enabling factor for these providers, it is evolving into an obstacle for achieving cultural-cognitive legitimacy amongst residents. Private bike-sharing providers engage in lobbying and delimitation of organisational fields in an attempt to influence the outcomes of the regulatory framework in their favour. Normative strategies, such as creating identities and forming networks, as well as educating—a cognitive strategy—appear to serve a similar purpose.

BSS were found to address different stakeholders strategically by constructing different identities and images of themselves. Interestingly, associating their business with the collaborative economy appears to be favourable for a commercial audience rather than toward customers. Sharing, a feature that unites the three case studies and is a key aspect of the collaborative economy, did not play a central role in the institutional strategies of the case organisations and was used rather anecdotally. This is likely because BSS see themselves more as mobility organisations than as sharing organisations.

Figure 5–10 gives an overview of the institutionalisation strategies employed in the organisational field of bike-sharing in Barcelona.

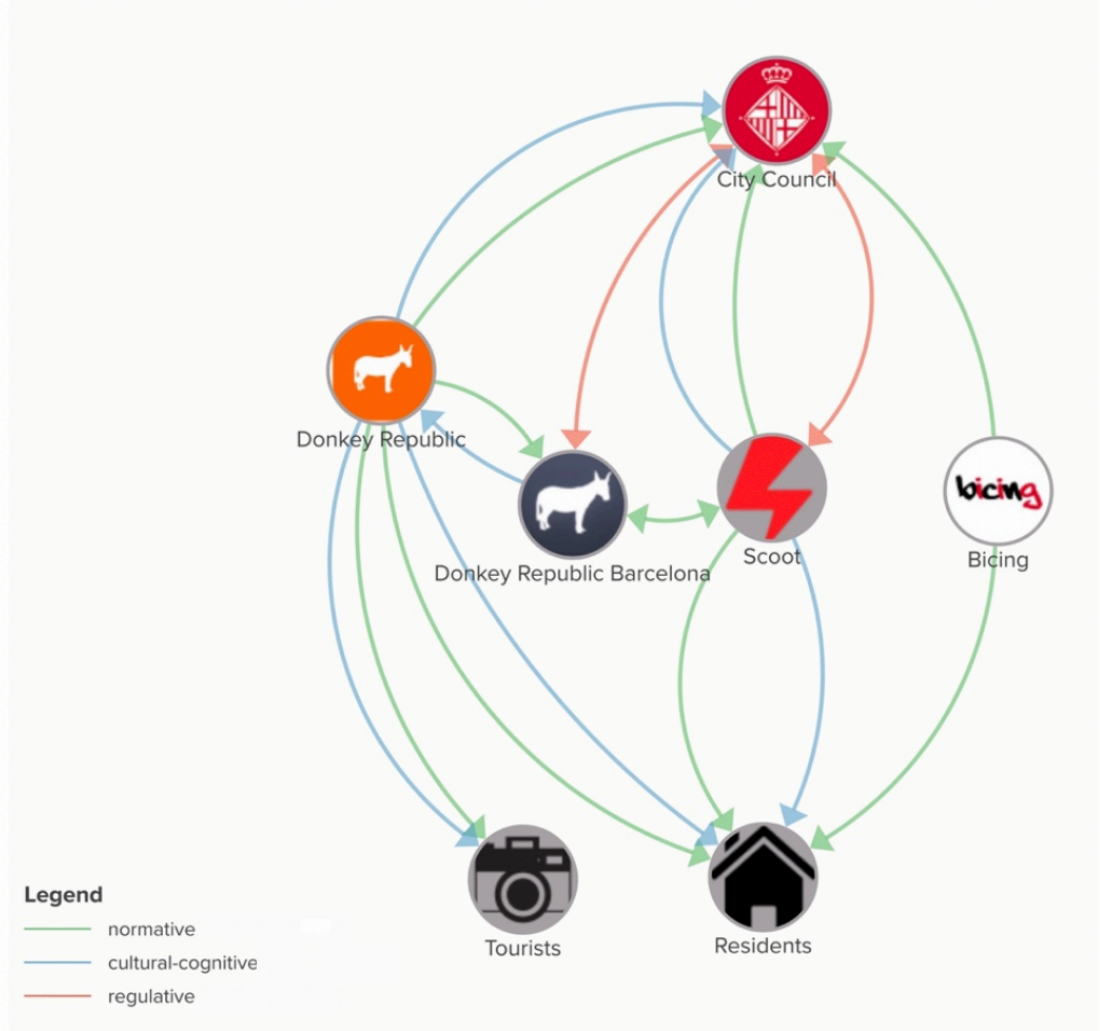

Figure 5-10. Institutionalisation Strategies of Bike-Sharing Organisations

Source: Author's own elaboration

5.4 Bike Kitchens: Institutionalisation Strategies

The following section outlines the institutional context within which bike kitchens find themselves in Barcelona and analyses how they engage with it through institutional strategies.

5.4.1 Institutional Context

The bike kitchen cases in this study are particularly interesting because they have different levels of regulative legitimacy but appear to enjoy similar levels of normative and cultural-cognitive legitimacy. Biciclot is the only bike kitchen that operates as a business (cooperative). Can Batlló is accepted and supported by the city council but does not operate as a business, rather as a community organisation. Biciosxs could also be considered as a community organisation, but it is not recognised by the authorities due to its semi-legal status as part of the squatting movement.

Squatting is a counter-culture that questions the normative institutions of society and has therefore created its own normative ecosystem. It is a growing and visible phenomenon in the

city and the cultural-cognitive institutions linked to Barcelona's anarchist history grant it legitimacy in the eyes of the public. However, powerful actors can inhibit squatting (and therefore the operations of informal bike kitchens) by tightening the very regulative institutions the squatters are protesting against with their institutional strategies.

5.4.2 Regulative Strategies

Regulative strategies are less common amongst bike kitchens because so far there has not been any need for them to be regulated. Due to the more informal nature of most the bike kitchens, there are no examples of formal litigation measures. More common are grassroots initiatives directed at the City Council.

Litigation

The best example of grassroot initiatives against regulative institutions is the retaliation of the residents of La Bordeta against the city's failure to execute their plans to turn Can Batlló into a park and public facilities. The media publicity generated by their spectacular storming of the building in June 2011 pressured the Council to give in and grant them permission to use the space.

By occupying abandoned buildings and making use of the legal loophole to prolong evictions, Biciosxs signals a protest against the effects of real estate speculation on local communities.

Although these two forms of informal litigation are not intended as initiatives to promote the collaborative economy, they draw attention to the need for public provision of spaces for communal activities, such as collaborative production.

Lobbying

There are also no examples of formal lobbying, but the organisations that cooperate with the city council apply for funding. Biciclot submits annual proposals for social projects that promote the bicycle, which it often receives funding for (Laguillo, 2018). Can Batlló also often receives funding for renovations and projects (Can Batlló, 2018).

On the contrary, Biciosxs explicitly does not want any involvement with the city council. *"The idea has always been not to collaborate with public institutions. (…) We don't want any help. No subsidies, nothing"* (Biciosxs, 2018). This is reflective of the anti-establishment philosophy of the Okupa movement.

Delimiting Organisational Fields

Biciclot explicitly associate themselves with the Social and Solidarity Economy (SSE) (this term includes non-profits in the collaborative economy). The City Council offers several initiatives and programs to support organizations within the Social and Solidarity Economy (Ajuntament de Barcelona, n.d.-c).

5.4.3 Normative Strategies

Normative strategies are possibly the strongest amongst the bike kitchen organisations. They emphasize their social and political causes, challenge prevalent norms and create networks to institutionalise cycling and bicycle repair.

Creating identities and constructing images

The bike kitchens primarily communicate their social and environmental causes. They

differentiate themselves from traditional workshops, probably because bike kitchens are less institutionalised and therefore require more explanation.

Biciclot describe themselves as follows: *"We are a cooperative of work, a model of social economy centred on people, democratic service, and social and environmental commitment. We promote the bicycle as a means of ecological, economic, healthy and sustainable transport"* (Biciclot, n.d.-a). It is visible from this statement that Biciclot defines itself primarily through the social value it creates with its cooperative model and views the bicycle as a tool for achieving its social goals. Biciclot is also explicit about what the Espai REBICICLEM bike kitchen is not: *"It's not a store or a workshop. Maintenance and small repairs should be carried out by the user. Bicycles cannot be left in the workshop. There is no varied stock of spare parts available and materials must be paid instantly"* (Biciclot, n.d.-b). This shows that the concept of the bike kitchen is still largely unknown, and it must explicitly differentiate itself from the norms of a regular bike shop.

Biciosxs sees itself as more of a political organisation rather than a bicycle organization: *"We are not part of any bike movement, even though we love bikes and get pleasure from fixing them up. Still, we do feel part of the social, political and resistance movements of the city"* (Biciosxs, 2018). They explain this as follows: *"We saw fixing bikes as a way to connect with neighbourhood youth who come from different backgrounds and realities. But it quickly also became important to work on a third aspect, that of squatting and giving life to spaces that do not have it, first in the streets of the neighbourhood and then in abandoned and disused buildings"* (Biciosxs, 2018). This shows the core purpose of Biciosxs, which is social and political, rather than environmental. It also shows how interlinked these factors are: more vibrant and connected communities can lead to collaborative activities that benefit the environment.

Can Batlló defines itself as a space for "community and self-management" (Can Batlló, n.d.-a). This definition is entirely indicative of the collaborative economy model based on community and self-management.

Challenging prevalent norms

The core purpose of all three organisations is to challenge prevalent norms. Biciclot's slogan is *"volem canviar el món a coop de pedal"*, which means "changing the world with the strike of the pedal" in Catalan. It tries to challenge societal norms by empowering disadvantaged social groups and the norms of mobility by promoting bicycle use. By dedicating itself to the SSE, it challenges economic norms by placing the importance of creating social value over that of economic value.

As part of the squatting movement, Biciosxs challenges the entire system. They denounce real estate speculation by occupying empty and abandoned spaces (Directa, 2014). They challenge the economic system by operating entirely without money. They promote the bicycle as an alternative to the car culture that prevails in the city (Romero, 2014). And they challenge the concept of ownership and isolated consumption: "*Before, when you left your bike to get it fixed, you hardly spoke to the person fixing it for you. (…) Here, you go back home having connected with people from your neighbourhood (…) and you do not end up isolated in your consumption"* (Biciosxs, 2018). And they challenge the norms of what is waste: *"What is garbage in the shops is gold here. Pure gold!"* (Biciosxs, 2018).

Can Batlló challenged the top-down approach of the City by taking matters into their own hands and creating public services from the bottom-up. La Bordeta went from the most underserved neighbourhood to perhaps the one with the most public services (La Vanguardia,

2017). This is also reflected in its own governance, where all decisions are made collectively to provide the services the neighbourhood needs.

Forming normative networks

All three bike kitchens operate within a normative network that gives mutual support and a united voice.

Biciclot is a member of Xarxa d'Economia Solidaria (XES) a network of cooperatives, providing services, training and mutual support for organisations in the SSE (Laguillo, 2018).

As part of the squatting movement, Biciosxs is networked with all the squats in the city. They operate relatively autonomously but show solidarity when a squat it faced with an eviction and help each other where they can (Biciosxs, 2018).

By its very nature, Can Batlló is a normative network, built on collaborative decision-making, cooperation and self-management. By joining together as a united force, the neighbours of La Bordeta were able to push their agenda with the City Council.

Altering traditional meanings

No examples were found of bike kitchens altering traditional meanings of sharing. This might be because they do not view their primary purpose as being a sharing organisation, but rather an organisation with a social purpose.

5.4.4 Cultural-Cognitive Strategies

Evidence of cultural-cognitive strategies amongst the case organisations is limited. There is evidence of isomorphism amongst the informal bike kitchens. Educating is an inherent part of their value proposition of bike kitchens.

Mimicry

Biciclot originally started as a volunteer organisation, called the 'Biciclot Working Group', until it formed a cooperative in 1998 to professionalise its activities (Biciclot, n.d.-a).

Isomorphism

Biciosxs was the first bike kitchen in Barcelona, but this concept was quickly snapped up by the rest of the squatting movement and it is now a standard feature of most squats (Can Batlló, 2018). The idea of introducing bicycles to the mobility workshop at Can Batlló came from a neighbouring squat, Can Vies (Can Batlló, 2018).

Developing new meaning systems

There was no evidence of bike kitchens creating new meaning systems for the sharing economy.

Educating

Collaborative production is in itself an educating process. The bike kitchens in this study educate people how to fix their bike, promoting environmental behaviour and self-sufficiency. *"I see how happy the people are that they have been able to do it themselves and they leave with a smile like a sunrise because of it. And just for that, it's worth it. It's very beautiful, really"* (Biciosxs, 2018).

5.4.5 Summary and Overview

The bike kitchen case studies illustrate the variety of institutional strategies that can be employed to achieve legitimacy for a similar type of value creation. Biciclot evolved from a voluntary organisation into a registered cooperative business. It subsequently benefits from funding and bicycle donations from the city Council. Can Batlló receives the Council's support per informal agreement. Biciosxs chooses explicitly not to cooperate with the city council due to its political associations.

Rather than trying to influence institutions in their favour through traditional regulative strategies, some of the bike kitchens question and challenge the very fabric of those institutions—such as the conflation of public services with private interests (Can Batlló), and the capitalist system itself (Biciosxs). These forms of protest are not explicitly in the name of the collaborative economy, but to draw attention to the need for the public provision of spaces for communal activities, such as collaborative production.

Normative strategies were the strongest institutionalisation tactics identified amongst the bike kitchen case studies. Bike kitchens engage in strong image creation using their social, environmental and political messages. They explicitly set themselves apart from conventional repair workshops. This is could be interpreted as a sign that the cultural-cognitive institutions are not yet efficient for bike kitchens to go mainstream, because the concept is still largely unknown.

As promoters of the bicycle, self-management and recycling, all bike kitchens challenge prevailing norms. Since a primary goal of bike kitchens is to share knowledge about how to prolong the lifetime of the bicycle, educating is a core cultural-cognitive strategy. It is likely that this knowledge transfer creates its own dynamic, multiplying environmental value in a manner unmeasurable within the scope of this study.

Figure 5-11 gives an overview of the institutional strategies employed within the organisational field of bike kitchens.

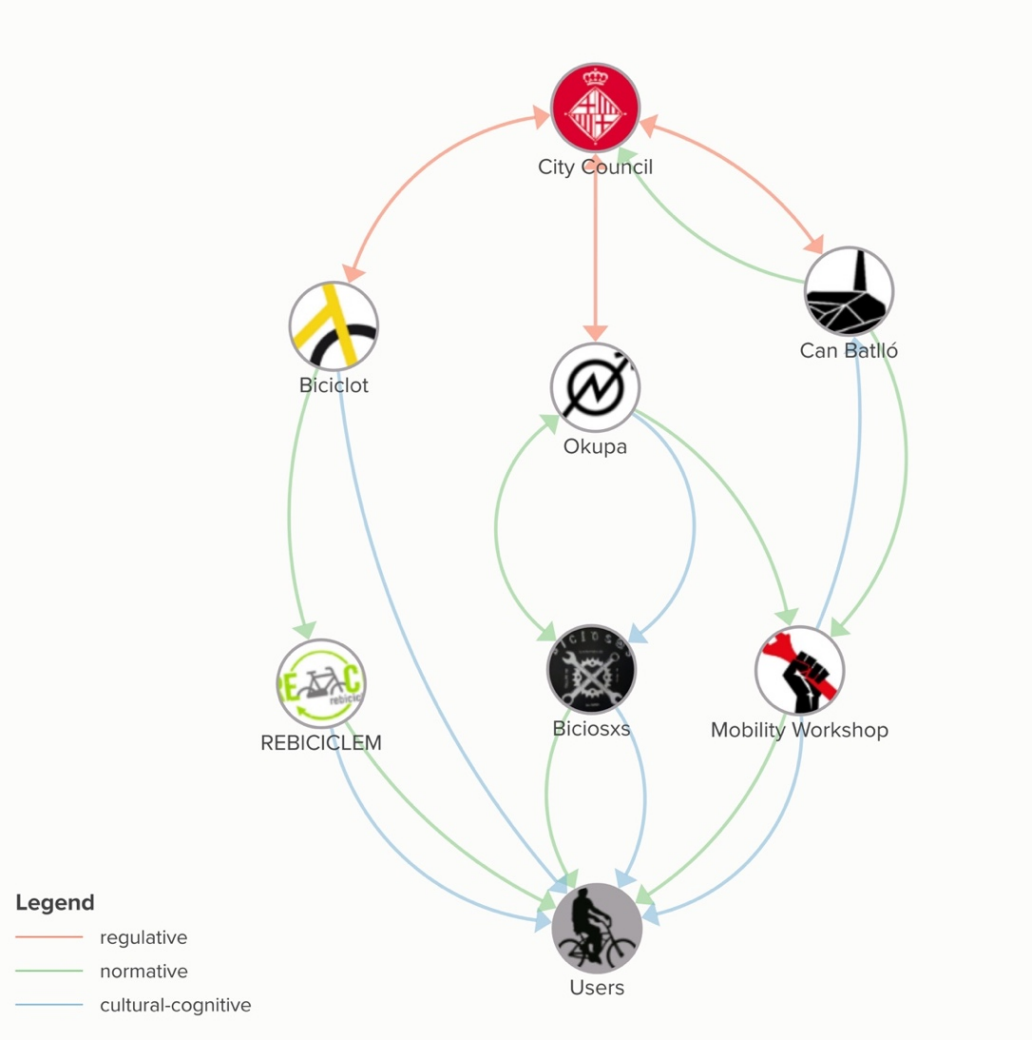

Figure 5-11. Institutionalisation Strategies of Bike Kitchens

Source: Author's own elaboration

5.5 Value Creation and Institutionalisation Strategies of the Collaborative Economy in Barcelona

5.5.1 Value Creation

Both BSS and bike kitchens create social and environmental value. However, the environmental value of BSS appears greater due to their larger scale, provided that the operating model uses emissions-free bicycle relocation measures. While BSS benefit society by improving health and reducing congestion and air pollution, bike kitchens create greater communal value by creating social interactions and increasing social cohesion. It was noted during the study that bike kitchens emphasize their social value far more than their environmental value and see themselves primarily as projects with a social cause.

These observations show how closely interlinked social and environmental value can be in the collaborative economy. Bicing was started to improve social justice in the city's transport system through affordable, first/last mile mobility, but today it has developed into an

environmental campaign and transformed the city's cycling infrastructure and culture. And in the case of bike kitchens, the social value created through communal production generates environmental value in the form of recycling and reduced waste streams.

5.5.2 Institutionalisation Strategies

This study highlighted the complexity of the institutional environments that BSS and bike kitchens operate within. In line with institutional theory, BSS and bike kitchens are a response to 'exogenous jolts' (Meyer, 1982) from the economic, social and environmental crises affecting Barcelona. The time is rife for these business models and the types of value they create, but there are still many regulative, normative and cultural-cognitive institutional challenges to overcome.

It is evident that bike-sharing schemes are more institutionalised than bike kitchens. BSS once began grassroots initiatives but have now evolved into a largely top-down initiative, such as in Barcelona. Bike kitchens, on the other hand, are grassroots organisations institutionalising themselves from the bottom up. In line with this, it was observed that BSS organisations engaged in more formal regulative strategies such as litigation and lobbying, whereas bike kitchens were more engaged in political resistance. The exception to this is Biciclot, which evolved from a voluntary organisation into a registered cooperative business. This supports the findings of Martin et al. (2015) that grassroots organisations tend to become more commercially-oriented over time due to regulative and normative pressures, for example to receive funding or professional recognition.

Bike sharing operators use marketing and rhetoric techniques as normative strategies, whereas bike kitchens use their organizational form to spread normative and cultural-cognitive institutions of collective work and self-management. BSS were more likely than bike kitchens to associate themselves with sharing and the collaborative economy, albeit rather anecdotally. This is another indication of the institutionalisation of bike-sharing, which enables it to identify itself with other established businesses in the collaborative economy. From this observation, it is reasonable to hypothesize that collaborative consumption is more institutionalised than collaborative production. This could be tested in future studies.

6 Conclusion

The causes of our unsustainable rates of consumption are deeply embedded in the regulative, normative and cultural-cognitive institutions that govern our daily actions. However, recent developments in the collaborative economy ignite the idea of neo-institutional theory that individual actors are able to create, maintain and even disrupt these complex institutions. Therefore, this thesis set out to answer the question:

How are bike-sharing schemes and bike kitchens institutionalising collaborative consumption and production in Barcelona?

The study applied two analytical frameworks to six empirical case studies of bike sharing schemes and bike kitchens in Barcelona. The first framework analysed the types of value created by these organisations. This revealed that the environmental value created by BSS and bike kitchens is inherently linked to the social value they produce. Furthermore, it supported claims from the literature that the social and environmental value of these organisations greatly outweigh any negative impacts. Finally, opportunities for increasing that value through operational and institutional strategies were proposed.

The analysis also revealed important distinctions between the institutional strategies employed by for-profit BSS and non-profit bike kitchens, illustrating that institutionalisation of these organisations typically begins in a bottom-up manner and becomes top-down as they become increasingly subject to regulative and normative pressures. It can be concluded that bike-sharing schemes and bike kitchens in Barcelona all employ regulative, normative and cultural-cognitive strategies to influence the development of their respective organisational fields. They each differ in their approaches, depending on their models for value creation. There is no single pathway for the institutionalisation of collaborative consumption and production. Furthermore, they are all subject to powerful institutional forces beyond the control of any single organisation. This underlines that processes of institutionalisation for organisations in the collaborative economy require mutual support between actors in the organisational field.

Therefore, organisations, city authorities, the public and other stakeholders should aspire to take the role of institutional entrepreneurs themselves, by engaging in collaborative and open development processes to shape the emerging collaborative economy. Each of these groups can play a role in securing and protecting public spaces where the local community can benefit from collaborative consumption and production. This is visibly the case in Barcelona. From the collaborative governance employed by the squatting communities, to the collaborative decision-making processes promoted by Ada Colau's government, Barcelona's example shows that the collaborative economy calls for collaborative governance in order to fulfil its promise of economic, social and environmental value.

This study has contributed to the existing literature by providing empirical evidence of value creation in the collaborative economy within an explicit organisational, geographical and institutional context. It has added a new perspective to the recent literature that applies institutional theory to understand the development of the collaborative economy. It has expanded the limited literature on bike kitchens. And, finally, it has provided the first empirical test of the analytical framework posited by Mont et al. (2018). The framework proved a useful tool for an in-depth analysis of the institutional strategies employed by the case organisations. It confirmed that institutional theory is an appropriate approach to understanding to the developing organizational fields of collaborative consumption and production. However, it was found that many of the strategies were more relevant for profit-oriented organisations.

Some of the strategies imply that the case organisations explicitly choose to identify (or not to identify) themselves with the collaborative economy. In this thesis, this was found not to be the case. The non-profit organisations did not appear to be in a stage of their development where associations with the collaborative economy would have influenced their institutionalization. This limited the relevance of the strategies for these types of organisations. Nevertheless, the strategies proved highly relevant for the for-profit organisations in this study. This is because they were more likely to associate themselves with the collaborative economy.

Further value could be added to the framework by developing a method for identifying and analysing the institutional context that the urban sharing organisations operate within. In line with the 'paradox of embedded agency' in institutional theory (Battilana & D'Aunno, 2009), institutional entrepreneurs cannot be viewed as removed from the institutions that they themselves are embedded within. The strategies lose their meaning if they are isolated from the institutional forces they are working against.

It is important to emphasize that the collaborative economy is still in the early stages of institutionalisation. It is constantly redefining itself and the institutions it interacts with. The data collected for this thesis represent a small snapshot in time and a very restricted field of study. In retrospect, the decision to analyse, compare and contrast BSS and bike kitchens as two examples of collaborative consumption and production had more symbolic than functional value. A richer analysis could have been made by analysing more cases of a single type of organisation; a wider analysis could have been provided by including more different examples of collaborative production and consumption. Furthermore, falling into the typical "heroes or villains" trap of institutional entrepreneurship research (Aldrich, 2011), this study focused only on the case organisations themselves and would have benefitted from engaging with a larger pool of stakeholders. The perspectives of the city council, users and competitors would have contributed to a more holistic picture of the situation in Barcelona. For these reasons, this study is not generalisable. It only adds a small piece to the endless puzzle of defining an economic system that can operate within the social thresholds and environmental boundaries of our planet.

The insights from this study point toward many interesting areas for future research. Studies that analyse the environmental value created from the transfer of knowledge and behaviours from collaborative production spaces to users' private habits and lifestyles are long overdue. Furthermore, this study suggests that collaborative consumption may be further along in its institutionalisation process than collaborative production. A broader study could test this hypothesis, which may have important implications for cities and stakeholders in favour of promoting collaborative production. It is also recommended that further studies apply the analytical framework by Mont et al. (2018) to other organisational, institutional and/or geographical contexts, or add to the framework by proposing an analytical model for understanding the institutions influencing organisations in the collaborative economy.

Whether public or private, for-profit or non-profit, entrepreneurs or activists—bike-sharing schemes and bike kitchens do share one common pathway: their belief in the bicycle as a tool for institutional change toward a more just, healthy and sustainable society.

Bibliography

ACCIÓ. (2018, 06). L'empresa californiana de lloguer de vehicles elèctrics Scoot s'instal·la a Barcelona i crearà 60 llocs de treball aquest 2018. Retrieved 1 September 2018, from http://www.accio.gencat.cat/ca/accio/premsa-comunicacio/cercador-premsa-actualitat/article/180604_Scoot

Adigital. (n.d.). Adigital | Asociación Española de la Economía Digital. Retrieved 4 September 2018, from https://www.adigital.org/

Ajuntament de Barcelona. (2008). *Dades bàsiques de mobilitat 2007* (Dades bàsiques de mobilitat) (p. 119). Barcelona: Direcció de Serveis de Mobilitat. Retrieved from http://mobilitat.ajuntament.barcelona.cat/sites/default/files/dadesbasiques2007_complert_1.pdf

Ajuntament de Barcelona. (2014a). *Dades bàsiques de mobilitat 2013* (Dades bàsiques de mobilitat) (p. 17). Barcelona: Direcció de Serveis de Mobilitat. Retrieved from http://mobilitat.ajuntament.barcelona.cat/sites/default/files/dadesbasiques2013baixa_1.pdf

Ajuntament de Barcelona. (2014b, October). Urban Mobility Plan of Barcelona (PMU) 2013–2018.

Ajuntament de Barcelona. (2016). *Tourism statistics. Barcelona: city and region*. Barcelona. Retrieved from https://ajuntament.barcelona.cat/turisme/sites/default/files/documents/171907_estadistiques_curt_2016_ultima_versio.pdf

Ajuntament de Barcelona. (2017a). *Dades bàsiques de mobilitat – Informe 2016* (Dades bàsiques de mobilitat) (p. 44). Barcelona: Àrea d'Ecologia, Urbanisme i Mobilitat. Retrieved from http://mobilitat.ajuntament.barcelona.cat/sites/default/files/DADES-BASIQUES-MOBILITAT16_13.pdf

Ajuntament de Barcelona. (2017b). El nuevo contrato del Bicing amplia los servicios. Retrieved 20 August 2018, from http://mobilitat.ajuntament.barcelona.cat/es/noticia/el-nuevo-contrato-del-bicing-amplia-los-servicios

Ajuntament de Barcelona. (2017c, March). Barcelona Tourism for 2020 - A collective strategy for sustainable tourism. Tourism Department Manager's Office for Enterprise and Tourism.

Ajuntament de Barcelona. (2018a, April 11). Expropriation and social use of empty bank-owned flats to resume | Info Barcelona | Barcelona City Council. Retrieved 12 September 2018, from https://www.barcelona.cat/infobarcelona/en/expropriation-and-social-use-of-empty-bank-owned-flats-to-resume_640261.html

Ajuntament de Barcelona. (2018b, June). Informació del sistema. Retrieved from https://www.bicing.cat/ca/content/informaci%C3%B3-del-sistema

Ajuntament de Barcelona. (n.d.-a). Did you know that Barcelona is the city with the highest vehicle density in Europe? Retrieved 22 August 2018, from https://ajuntament.barcelona.cat/qualitataire/en/did-you-know

Ajuntament de Barcelona. (n.d.-b). ¿Qué es Bicing y Bicing eléctrico? | Bicing. Retrieved 4 September 2018, from https://www.bicing.cat/es/informacion/que-es-bicing-y-bicing-electrico

Ajuntament de Barcelona. (n.d.-c). What is Social and Solidarity Economy? | Economia Social i Solidària | Ajuntament de Barcelona. Retrieved 9 September 2018, from https://ajuntament.barcelona.cat/economia-social-solidaria/en/what-Social-and-Solidarity-Economy

Ajuntament de Barcelona. (n.d.-d). What you breathe when you breathe. Retrieved 11 September 2018, from http://lameva.barcelona.cat/querespires/

Alberola, M. (2018, April 25). Express squatter eviction project divides politicians in Spain. *El País*. Retrieved from https://elpais.com/elpais/2018/04/25/inenglish/1524641566_160164.html

Aldrich, H. E. (2011). Heroes, Villains, and Fools: Institutional Entrepreneurship, NOT Institutional Entrepreneurs. *Entrepreneurship Research Journal*, *1*(2). https://doi.org/10.2202/2157-5665.1024

Anaya, E. (2010). Are public bikes systems good for cycling? The view from Barcelona. In *Bicycle Politics Workshop* (p. 38). Lancaster, UK.

Anaya, E., & Bea, M. (2009, May). *Cost-Benefit Evaluation of Bicing | Workshop 6: The renaissance of cycling*. Presented at the ECOMM Conference 2009, San Sebastián/Donostia, Spain. Retrieved from http://www.epomm.eu/ecomm2009/6_bea.pdf

Arran del Poblenou. (2017, July 31). Ja n'estem fartes de l'ocupació per part d'empreses turístiques de l'espai públic del barri, ACTUEM! UNEIX-TE AL COMBATpic.twitter.com/PG7Ru3xljY [Tweet]. Retrieved 2 September 2018, from https://twitter.com/ArranP9/status/891951255857369089?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E891951255857369089%7Ctwgr%5E373939313b737065636966696635f73706f7274735f616374696f6e&ref_url=https%3A%2F%2Fwww.elperiodico.com%2Fes%2Fbarcelona%2F20170801%2Farran-actua-ahora-contra-las-bicis-de-alquiler-6201692

Avila-Palencia, I., de Nazelle, A., Cole-Hunter, T., Donaire-Gonzalez, D., Jerrett, M., Rodriguez, D. A., & Nieuwenhuijsen, M. J. (2017). The relationship between bicycle commuting and perceived stress: a cross-sectional study. *BMJ Open*, *7*(6), e013542. https://doi.org/10.1136/bmjopen-2016-013542

Battilana, J., & D'Aunno, T. (2009). Institutional work and the paradox of embedded agency. In T. B. Lawrence, R. Suddaby, & B. Leca (Eds.), *Institutional Work* (pp. 31–58). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511596605.002

Belk, R. (2010). Sharing. *Journal of Consumer Research*, *36*(5), 715–734. https://doi.org/10.1086/612649

Beroud, B., & Anaya, E. (2012). Chapter 11 – Private Interventions in a Public Service: An Analysis of Public Bicycle Schemes. In J. Parkin (Ed.), *Cycling and sustainability* (1. ed, pp. 269–301). Bingley: Emerald.

Biciclot. (n.d.-a). Qui som. Retrieved 18 July 2018, from http://www.biciclot.coop/nosaltres/qui-som/

Biciclot. (n.d.-b). Taller d'autoreparacio. Retrieved 7 September 2018, from http://www.biciclot.coop/taller-dautoreparacio/

Biciosxs. (2018, July 20). Personal Interview with two representatives of Biciosxs.

Biciosxs. (n.d.). Trueque. Retrieved 9 September 2018, from http://biciosxs.noubarris.org/trueque

Bicitours. (n.d.). Bicicletas de alquiler en los aparcamientos públicos de Barcelona: | Associació Bicitours Barcelona. Retrieved 1 September 2018, from http://www.bicitoursbarcelona.org/noticias/la-invasion-de-bicicletas-de-alquiler-en-los-aparcamientos-publicos-de-barcelona/

Blanchar, C. (2017a, July 11). El nuevo contrato del Bicing no prevé mejoras en las condiciones laborales. *El País*. Retrieved from https://elpais.com/ccaa/2017/07/11/catalunya/1499773144_177197.html

Blanchar, C. (2017b, December 1). Cespa gana el contrato del Bicing a Clear Channel. *El País*. Retrieved from https://elpais.com/ccaa/2017/12/01/catalunya/1512135485_926526.html

Bocken, N., Short, S., Rana, P., & Evans, S. (2013). A value mapping tool for sustainable business modelling. *Corporate Governance: The International Journal of Business in Society*, *13*(5), 482–497. https://doi.org/10.1108/CG-06-2013-0078

Botsman, R. (2013, November 21). The Sharing Economy Lacks A Shared Definition. Retrieved 8 July 2018, from https://www.fastcompany.com/3022028/the-sharing-economy-lacks-a-shared-definition

Botsman, R., & Rogers, R. (2011). *What's mine is yours: how collaborative consumption is changing the way we live* (Rev. and updated ed). London: Collins.

Bradley, K. (2016). Bike Kitchens – Spaces for convivial tools. *Journal of Cleaner Production*. https://doi.org/10.1016/j.jclepro.2016.09.208

Brown, H. S., & Vergragt, P. J. (2016). From consumerism to wellbeing: toward a cultural transition? *Journal of Cleaner Production*, *132*, 308–317. https://doi.org/10.1016/j.jclepro.2015.04.107

Burgen, S. (2017a, June 2). Barcelona cracks down on Airbnb rentals with illegal apartment squads. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2017/jun/02/airbnb-faces-crackdown-on-illegal-apartment-rentals-in-barcelona

Burgen, S. (2017b, August 1). Barcelona anti-tourism activists vandalise bikes and bus. *The Guardian*. Retrieved from https://www.theguardian.com/world/2017/aug/01/barcelona-anti-tourism-activists-vandalise-bikes-and-bus

Can Batlló. (2018, July 25). Personal Interview with a member of the Can Batlló Mobility Workshop.

Can Batlló. (n.d.). Can Batlló – Espai veïnal i autogestionat. Retrieved 9 September 2018, from https://www.canbatllo.org/

Cohen, B., & Cohen, B. (2016, April 6). Making Sense Of The Many Business Models In The Sharing Economy. Retrieved 29 May 2018, from https://www.fastcompany.com/3058203/making-sense-of-the-many-business-models-in-the-sharing-economy

Cohen, B., & Kietzmann, J. (2014). Ride On! Mobility Business Models for the Sharing Economy. *Organization & Environment*, *27*(3), 279–296. https://doi.org/10.1177/1086026614546199

Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches* (4th ed). Thousand Oaks: SAGE Publications.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. London; Thousand Oaks, Calif.: Sage Publications. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1099439

Curto, A., de Nazelle, A., Donaire-Gonzalez, D., Cole-Hunter, T., Garcia-Aymerich, J., Martínez, D., … Nieuwenhuijsen, M. J. (2016). Private and public modes of bicycle

commuting: a perspective on attitude and perception. *The European Journal of Public Health*, *26*(4), 717–723. https://doi.org/10.1093/eurpub/ckv235

DeMaio, P. (2009). Bike-sharing: History, Impacts, Models of Provision, and Future. *Journal of Public Transportation*, *12*(4), 41–56. https://doi.org/10.5038/2375-0901.12.4.3

DiMaggio, P. J. (1988). Interest and agency in institutional theory. In *Institutional Entrepreneurship*. Cheltenham: Edward Elgar Publishing Limited.

DiMaggio, P. J., & Powell, W. (1983). The iron cage revisited institutional isomorphism and collective rationality in organizational fields. In *Advances in Strategic Management* (Vol. 17, pp. 143–166). Bingley: Emerald (MCB UP). https://doi.org/10.1016/S0742-3322(00)17011-1

Directa. (2014, December 12). Taller biciosxs, nou anys a Nou Barris. Retrieved 7 September 2018, from https://test.directa.cat/node/28025

Dolfsma, W. (2002). Mediated Preferences—How Institutions Affect Consumption. *Journal of Economic Issues*, *36*(2), 449–457. https://doi.org/10.1080/00213624.2002.11506489

Donaire-Gonzalez, D., de Nazelle, A., Cole-Hunter, T., Curto, A., Rodriguez, D. A., Mendez, M. A., … Nieuwenhuijsen, M. J. (2015). The Added Benefit of Bicycle Commuting on the Regular Amount of Physical Activity Performed. *American Journal of Preventive Medicine*, *49*(6), 842–849. https://doi.org/10.1016/j.amepre.2015.03.036

Donkey Republic. (2015). *Donkey Republic Introduction for Partners*. Retrieved from https://vimeo.com/142858016

Donkey Republic. (2018a). Barcelona Bike-Share Membership. Retrieved 1 September 2018, from https://www.donkey.bike/membership/bike-share-barcelona/

Donkey Republic. (2018b, March). What is expected earnings per bicycle? Retrieved 31 August 2018, from http://help.donkey.bike/hc/en-us/articles/212801969-What-is-expected-earnings-per-bicycle-

Donkey Republic. (n.d.-a). 4 principles for a sustainable bike share. Retrieved 2 September 2018, from https://cities.donkey.bike/4-principles-sustainable-bike-share/

Donkey Republic. (n.d.-b). About. Retrieved 5 September 2018, from https://www.donkey.bike/about/

Donkey Republic. (n.d.-c). Bike rental 24/7. Retrieved 4 September 2018, from https://www.donkey.bike/

Donkey Republic. (n.d.-d). Bike Rental in Barcelona. Retrieved 4 September 2018, from https://www.donkey.bike/cities/bike-rental-barcelona/

Donkey Republic. (n.d.-e). Bike-share Operations. Retrieved 2 August 2018, from https://owners.donkey.bike/bike-share-operations/

Donkey Republic. (n.d.-f). Donkey Republic Bike Owners. Retrieved 4 September 2018, from https://owners.donkey.bike/

Donkey Republic. (n.d.-g). Pricing Guidelines. Retrieved 31 August 2018, from https://owners.donkey.bike/pricing-guidelines/

Donkey Republic. (n.d.-h). The bike-share business. Retrieved 2 September 2018, from https://owners.donkey.bike/bike-share-business/

Donkey Republic. (n.d.-i). The Donkey Republic bike-share system. Retrieved 2 September 2018, from https://cities.donkey.bike/donkey-republic-bike-share-system/

Donkey Republic. (n.d.-j). The hub-centric model. Retrieved 2 September 2018, from https://cities.donkey.bike/bike_share_hub-centric-model/

Donkey Republic. (n.d.-k). The technology behind our system. Retrieved 2 September 2018, from https://cities.donkey.bike/donkey-republic-bike-share-technology/

Edelman. (2018). *2018 Edelman Trust Barometer Global Report* (Edelman Trust Barometer Annual Global Study). Edelman. Retrieved from http://cms.edelman.com/sites/default/files/2018-02/2018_Edelman_Trust_Barometer_Global_Report_FEB.pdf

Edwards, S. (2017, June 19). Thousands of homeless people in Spain are squatting, and owners are getting rough as they try to get them out. Retrieved 7 September 2018, from https://www.newsweek.com/homeless-spain-squatting-owners-getting-creative-627190

Elkington, J. (1998). *Cannibals with forks: the triple bottom line of 21st century business*. Gabriola Island, BC ; Stony Creek, CT: New Society Publishers.

Encyclopedia Britannica. (1998). Syndicalism | political economics. Retrieved 10 September 2018, from https://www.britannica.com/topic/syndicalism

Fishman, E., Washington, S., & Haworth, N. (2013). Bike Share: A Synthesis of the Literature. *Transport Reviews*, *33*(2), 148–165. https://doi.org/10.1080/01441647.2013.775612

Flick, U. (2006). *An introduction to qualitative research* (3rd ed). London ; Thousand Oaks, Calif: Sage Publications.

Flores, A. (2018, June 24). New squatting rules in Spain drastically speed up the eviction process. Retrieved 8 September 2018, from http://www.theolivepress.es/spain-news/2018/06/24/new-squatting-rules-in-spain-drastically-speed-up-the-eviction-process/

Fratila, S. (2018, January 23). 2017 - the year bike sharing went crazy. Retrieved 2 September 2018, from https://www.donkey.bike/2017-bike-sharing-went-crazy/

Frenken, K., & Schor, J. (2017). Putting the sharing economy into perspective. *Environmental Innovation and Societal Transitions*, *23*, 3–10. https://doi.org/10.1016/j.eist.2017.01.003

Gerzema, J., Kotler, P., & D'Antonio, M. (2014). *Spend shift: how the post-crisis values revolution is changing the way we buy, sell, and live*. San Francisco, Calif.: Jossey-Bass. Retrieved from http://rbdigital.oneclickdigital.com

Giralt, A. (n.d.). Can Batlló, un referent de la història industrial catalana. Retrieved 13 September 2018, from https://www.canbatllo.org/patrimoni/

Global Footprint Network. (2018). World Ecological Footprint. Retrieved 14 June 2018, from https://www.footprintnetwork.org/our-work/ecological-footprint/

Greenwood, R., Oliver, C., Sahlin, K., & Suddaby, R. (Eds.). (2008). Introduction. In *The SAGE handbook of organizational institutionalism*. Los Angeles ; London: SAGE.

Hawken, P., Lovins, A. B., & Lovins, L. H. (1999). *Natural capitalism: creating the next industrial revolution* (1st ed). Boston: Little, Brown and Co.

Hermanns, H. (2004). Interviewing as An Activity. In U. Flick, E. v. Kardorff, & I. Steinke (Eds.), *A Companion to Qualitative Research* (pp. 225–241). London: SAGE.

Hollingsworth, J. R., Müller, K. H., Hollingsworth, J., & Gear. (2005). *Advancing socio-economics: an institutionalist perspective*. Lanham, Md.: Rowman & Littlefield Publishers.

Holm, P. (1995). The Dynamics of Institutionalization: Transformation Processes in Norwegian Fisheries. *Administrative Science Quarterly*, *40*(3), 398. https://doi.org/10.2307/2393791

Howard, C., Gerosa, A., Mejuto, M. C., & Giannella, G. (2014). The Maker Movement: A New Avenue for Competition in the EU. *European View*, *13*(2), 333–340. https://doi.org/10.1007/s12290-014-0336-0

Illich, I. (1973). *Tools for conviviality* (1. Perennial library ed). New York, NY: Harper & Row.

Info Usurpa. (2018, July 24). Info Usurpa. Retrieved from https://usurpa.squat.net/usurpa.pdf

Inside Airbnb. (2018, June 9). Inside Airbnb: Barcelona. Adding data to the debate. Retrieved 12 September 2018, from http://insideairbnb.com/barcelona

Intelligent Energy Europe. (2009, June). Project Fact Sheet - Optimising Bike Sharing in European Cities (OBIS). Retrieved from https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/obis_project_factsheet_en.pdf

Jackson, T. (2009). *Prosperity without Growth - The transition to a sustainable economy*. (p. 136). Sustainable Development Comission. Retrieved from http://www.sd-commission.org.uk/data/files/publications/prosperity_without_growth_report.pdf

Johnson, C. (2014, November 18). How to Start a Bike Kitchen. *Shareable*. Retrieved from https://www.shareable.net/blog/how-to-start-a-bike-kitchen

Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, *135*, 1474–1486. https://doi.org/10.1016/j.jclepro.2016.06.067

Kalverkamp, A. (2018a, August 2). Personal Communication with Allard Kalverkamp, Country Manager for Donkey Republic. [Telephone].

Kalverkamp, A. (2018b, September 2). E-Mail Communication with Allard Kalverkamp, Country Manager at Donkey Republic. [E-Mail].

Kerr, D. (2018, May 30). Scoot's electric motor scooters spread to Spain. Retrieved 15 October 2018, from https://www.cnet.com/news/scoots-electric-motor-scooters-spread-to-barcelona-spain/

Kumar, R. (2012). *Research methodology: a step-by-step guide for beginners* (3. ed., reprinted). Los Angeles: Sage Publ.

La Sexta TV. (2017, 07). Allard Kalverkamp, víctima de ataques de 'turismofobia': "Hablamos de cuatro meses de ataques y 900 incidencias". *Más Vale Tarde*. Atresmedia. Retrieved from https://goo.gl/gHUW59

La Vanguardia. (2017, February 6). Can Batlló acogerá un gran vivero de cooperativas. Retrieved 10 September 2018, from https://www.lavanguardia.com/local/barcelona/20170206/414053564376/can-batllo-vivero-cooperativas-coopolis-transformacion.html

Laguillo, E. (2018, July 18). Personal Interview with Erika Laguillo from Biciclot.

Lawrence, T. B., & Suddaby, R. (2006). Institutions and Institutional Work. In *The SAGE Handbook of Organization Studies* (pp. 215–254). London: SAGE Publications Ltd. https://doi.org/10.4135/9781848608030.n7

Lawrence, T. B., Suddaby, R., & Leca, B. (2009). Introduction: theorizing and studying institutional work. In *Institutional work: actors and agency in institutional studies of organizations*. Cambridge, UK ; New York: Cambridge University Press.

Lebow, V. (1955). Price Competition in 1955. *Journal of Retailng*, (Spring 1955). Retrieved from http://www.gcafh.org/edlab/Lebow.pdf

Lehner, M. (2019). An exploration of the significance of prosumption for sustainable consumption, and its implications for sustainable consumption governance. In O.

Mont (Ed.), *A Research Agenda for Sustainable Consumption Governance*. Cheltenham, UK ; Northampton, MA: Edward Elgar Publishing Ltd.

Loscos, Á. N. (2017, April). *Present & Future bike sharing systems*. Presented at the Moscow International Cycling Congress, Moscow, Russia.

Loscos, Á. N. (2018a, July 13). Personal Interview with Álvaro Nicolás Loscos, Advisor to the Mobility Councillor at Barcelona City Council. [Personal Interview].

Loscos, Á. N. (2018b, August 21). Personal Communication with Álvaro Nicolás Loscos, Advisor to the Mobility Councillor at Barcelona City Council.

Lund University. (2015). Urban Reconomy: sharing for circular resource efficiency - Lund University. Retrieved 14 June 2018, from http://portal.research.lu.se/portal/en/projects/urban-reconomy-sharing-for-circular-resource-efficiency(1d32ac44-e92b-47fb-87ef-4a41c23d14a0).html

Maguire, S., Hardy, C., & Lawrence, T. B. (2004). INSTITUTIONAL ENTREPRENEURSHIP IN EMERGING FIELDS: HIV/AIDS TREATMENT ADVOCACY IN CANADA. *Academy of Management Journal*, *47*(5), 657–679. https://doi.org/10.2307/20159610

Markus, H. R., & Kitayama, S. (1991). Culture and the Self: Implications for Cognition, Emotion, and Motivation. *Psychological Review*, *98*(2), 224–253.

Martin, C. J., Upham, P., & Budd, L. (2015). Commercial orientation in grassroots social innovation: Insights from the sharing economy. *Ecological Economics*, *118*, 240–251. https://doi.org/10.1016/j.ecolecon.2015.08.001

Martínez, M. (2007). The Squatters' Movement: Urban Counter-Culture and Alter-Globalization Dynamics. *South European Society and Politics*, *12*(3), 379–398. https://doi.org/10.1080/13608740701495285

Mátrai, T., & Tóth, J. (2016). Comparative Assessment of Public Bike Sharing Systems. *Transportation Research Procedia*, *14*, 2344–2351. https://doi.org/10.1016/j.trpro.2016.05.261

Meddin, R., & DeMaio, P. (2018, August). Legend - In Operation - Beginning August 2018. Retrieved 3 August 2018, from https://www.google.com/maps/d/viewer?mid=1UxYw9YrwT_R3SGsktJU3D-2GpMU&hl=en

Mellino, C. (2015, October 1). Finally ... Uber for Bicycles Is Here. Retrieved 6 September 2018, from https://www.ecowatch.com/finally-uber-for-bicycles-is-here-1882106198.html

Menoyo, C. C. (2017). Urban commons: lessons from Barcelona at the beginning of 21st century. *Urban Commons*, 39.

Meyer, A. D. (1982). Adapting to Environmental Jolts. *Administrative Science Quarterly*, *27*(4), 515. https://doi.org/10.2307/2392528

Miller, A. B. (2017, January 18). Barcelona Crowdsourced its Sharing Economy Policies. Can Other Cities Do the Same? Retrieved 27 May 2018, from https://www.shareable.net/blog/barcelona-crowdsourced-its-sharing-economy-policies-can-other-cities-do-the-same

Molas, M. (2017). Barcelona lidera el NO a l'economia col·laborativa capitalista. *Recerca. Revista de pensament i anàlisi.*, (21), 159–164. https://doi.org/10.6035/Recerca.2017.21.10

Mont, O., Voytenko Palgan, Y., & Zvolska, L. (2018). Towards an explanatory framework for institutionalisation processes of urban sharing organisations. In *Sustainable Consumption: Fostering Good Practices and Confronting the Challenges of the 21st Century* (p. 13). Copenhagen: Copenhagen Business School.

Mont, O., Zvolska, L., & Whalen, K. (2018). Sustainable innovation in business models: celebrated but not interrogated. In F. Boons & A. McMeekin (Eds.), *Sustainable Innovation (Upcoming)*. Routledge.

Murillo, D., Buckland, H., & Val, E. (2017). When the sharing economy becomes neoliberalism on steroids: Unravelling the controversies. *Technological Forecasting and Social Change*, *125*, 66–76. https://doi.org/10.1016/j.techfore.2017.05.024

North, D. C. (1990). *Institutions, institutional change, and economic performance*. Cambridge; New York: Cambridge University Press. Retrieved from http://dx.doi.org/10.1017/CBO9780511808678

OBIS. (2011). *Optimising Bike Sharing in European Cities - A Handbook* (p. 90).

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation a handbook for visionaries, game changers, and challengers*. Hoboken, N.J.: Wiley. Retrieved from http://www.myilibrary.com?id=275629

Otero, I., Nieuwenhuijsen, M. J., & Rojas-Rueda, D. (2018). Health impacts of bike sharing systems in Europe. *Environment International*, *115*, 387–394. https://doi.org/10.1016/j.envint.2018.04.014

Ovacik, E. (2016). AirDonkey: Earn Money On Your Bike. Retrieved 5 September 2018, from https://www.kickstarter.com/projects/2084861579/airdonkey-join-the-bike-sharing-revolution

Ovacik, E. (2017, March 27). Bikes are coming back. Let's make sure we don't blow it. Retrieved 3 September 2018, from https://www.donkey.bike/bikes-coming-back-lets-make-sure-dont-blow-time/

Pallas Poy, M. (2018, 07). Personal Interview with Mar Pallàs Poy, VP Europe Market Development at Scoot. [Interview].

Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*, *89*(1/2), 62–77.

Posetti, B. (2017, May). Donkey Republic Company Profile. Retrieved from https://www.donkey.bike/wp-content/uploads/2017/05/EN_Donkey_Republic_Company_Profile.pdf

Richardson, J. (2008). The business model: an integrative framework for strategy execution. *Strategic Change*, *17*(5–6), 133–144. https://doi.org/10.1002/jsc.821

Rojas-Rueda, D., de Nazelle, A., Tainio, M., & Nieuwenhuijsen, M. J. (2011). The health risks and benefits of cycling in urban environments compared with car use: health impact

assessment study. *BMJ*, *343*(aug04 2), d4521–d4521. https://doi.org/10.1136/bmj.d4521

Romero, Ó. (2014, December 9). Biciosxs: nueve años pedaleando en Nou Barris. Retrieved 7 September 2018, from https://www.diagonalperiodico.net/movimientos/24967-biciosxs-nueve-anos-pedaleando-nou-barris.html

Røpke, I. (2009). *The role of consumption in global warming - an ecological economic perspective*. Routledge.

Rudmin, F. (2016). The Consumer Science of Sharing: A Discussant's Observations. *Journal of the Association for Consumer Research*, *1*(2). Retrieved from https://www.journals.uchicago.edu/doi/10.1086/685861

Russo, A. P., & Scarnato, A. (2018). "Barcelona in common": A new urban regime for the 21st-century tourist city? *Journal of Urban Affairs*, *40*(4), 455–474. https://doi.org/10.1080/07352166.2017.1373023

Schneiberg, M., & Lounsbury, M. (2008). Social Movements and Institutional Analysis. In R. Greenwood, C. Oliver, K. Sahlin, & R. Suddaby (Eds.), *The SAGE handbook of organizational institutionalism*. Los Angeles ; London: SAGE.

Scholtus, P. (2008, January 8). The TH Interview: Bicing, Barcelona's Bike Sharing System (Part 1: City Council). Retrieved 28 May 2018, from https://www.treehugger.com/culture/the-th-interview-bicing-barcelonaatms-bike-sharing-system-part-1-city-council.html

Scoot Networks. (2018a). Scoot Networks on the App Store. Retrieved 6 September 2018, from https://itunes.apple.com/es/app/scoot-networks/id1361793328?l=en&mt=8

Scoot Networks. (2018b, April 24). Multi-modal Networks & Electric Vehicles for Everyone. Retrieved 1 September 2018, from https://scoot.co/stories/multi-modal-networks-collaborative-planning/

Scoot Networks. (2018c, May 30). Scoot Launches in Barcelona with Faster Scooters and Electric Bikes. Retrieved 4 September 2018, from https://www.prnewswire.com/news-releases/scoot-launches-in-barcelona-with-faster-scooters-and-electric-bikes-300656152.html

Scoot Networks. (2018d, June 4). ¡Somos Scoot y hemos aterrizado en Barcelona! 🛬. Retrieved 4 September 2018, from https://scoot.co/stories/scootbcn/

Scoot Networks. (2018e, July 4). En tan solo tres semanas habéis contribuido a ahorrar 30.000kg de Co2 en la ciudad de Barcelona. ¡Gracias a todos #Scootlovers! pic.twitter.com/Thlw8E61DQ [Tweet]. Retrieved 1 September 2018, from https://twitter.com/scoot_esp/status/1014458737715744768

Scoot Networks. (n.d.-a). About Us — Barcelona. Retrieved 4 September 2018, from https://scoot.co/barcelona/about/

Scoot Networks. (n.d.-b). Membership Qualifications. Retrieved 1 September 2018, from http://scootbarcelona.zendesk.com/hc/en-us/articles/360000520808-Membership-Qualifications

Scoot Networks Iberia SL. (2018, May 22). Investment Project EIPP-20180527 - Scoot: multi-modal shared electric vehicles. Retrieved 6 September 2018, from https://ec.europa.eu/eipp/desktop/en/projects/project-9511.html

Scott, W. R. (1995). *Institutions and organizations*. Thousand Oaks: SAGE.

Scott, W. R. (2014). *Institutions and organizations: ideas, interests, and identities* (Fourth edition). Los Angeles: SAGE.

Seidman, M. (1982). Work and Revolution: Workers' Control in Barcelona in the Spanish Civil War, 1936-38. *Journal of Contemporary History*, *17*(3), 409–433.

Shaheen, S., Guzman, S., & Zhang, H. (2010). BIKESHARING IN EUROPE, THE AMERICAS, AND ASIA: PAST, PRESENT, AND FUTURE. *Transportation Research Record*, 20.

Shareable. (2012). *Interviewed: Michael Keating, founder and CEO of Scoot Networks*. Retrieved from https://www.youtube.com/watch?v=fY7NIfzeBpU

Smith, A. (1776). *An Inquiry into the Nature and Causes of The Wealth of Nations*. London: W. Strahan and T. Cadell.

Smith, A. G., Hielscher, S., Dickel, S., Soderberg, J., & van Oost, E. (2013). Grassroots Digital Fabrication and Makerspaces: Reconfiguring, Relocating and Recalibrating Innovation? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2731835

Soto, A. (2018, August 13). El Bicing de Barcelona se queda sin patrocinador. Retrieved 21 August 2018, from https://www.elperiodico.com/es/barcelona/20180813/bicing-barcelona-sin-patrocinador-6987647

SPICYCLES. (2008). *Bike sharing – Key findings and recommendations* (No. EIE/05/059/SI2.421631). Intelligent Energy – Europe (IEE). Retrieved from https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/spicycles_key_findings_and_recommendations.pdf

Squatting Europe Kollective. (2018). Barcelona. Retrieved 13 September 2018, from https://maps.squat.net/en/cities/barcelona/squats#

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks: Sage Publications.

Statistical Institute of Catalonia. (2017). The municipality in figures. Barcelona. Retrieved 7 August 2018, from http://www.idescat.cat/emex/?lang=en&id=080193#h0

Stokes, K., Clarence, E., Anderson, L., & Rinne, A. (2014). MAKING SENSE OF THE UK COLLABORATIVE ECONOMY, 48.

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, *20*(3), 571–610. https://doi.org/10.2307/258788

Suh, E. M., & Choi, S. (2018). Predictors of Subjective Well-Being Across Cultures. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. Salt Lake City, UT: DEF Publishers. Retrieved from https://www.nobascholar.com/chapters/45/download.pdf

United Nations. (2016, August 16). Responsible Consumption & Production: Why it Matters. Retrieved from https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/16-00055L_Why-it-Matters_Goal-12_Consumption_2p.pdf

United Nations. (2017). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables* (No. ESA/P/WP/248). Department of Economic and Social Affairs, Population Division. Retrieved from https://esa.un.org/unpd/wpp/Publications/Files/WPP2017_KeyFindings.pdf

Vivanco, L. (2013). *Reconsidering the Bicycle: An Anthropological Perspective on a New (Old) Thing* (1st ed.). Routledge. https://doi.org/10.4324/9780203584538

Voytenko, Y., & Mont, O. (2013). Innovative value creation models for sustainable living. In *Proceedings of SCORAI Europe & InContext Workshop* (p. 360). Rotterdam: SCORAI Europe.

Yin, R. K. (1994). *Case study research: design and methods* (2nd ed). Thousand Oaks: Sage Publications.

Appendix

Sample Interview Questions

Interview Questions for Bike-Sharing Organisations

1. Can you tell me a bit about the history of business?
    - Why did you decide to provide bike-sharing services in Barcelona?
    - Did you face any challenges or obstacles in starting your business in Barcelona?
2. Please explain to me briefly how the system works.
    - How large is your bicycle fleet?
    - What are your parking policies?
    - How do you deal with falsely parked or broken bicycles?
3. Who is your target customer in Barcelona?
4. What benefits does your service offer them that other bike-sharing schemes in the city cannot?
5. Did you need any specific permissions from the city to start your operations in Barcelona?
6. Do you receive any support (financial, technical, promotional…) from the city council?
7. Via what channels do you promote your business?
8. Do you view your business as part of the 'sharing economy'?
9. Are you a part of any industry networks or associations?

Interview Questions for Bike Kitchens

1. How long have you been working for the bike kitchen?
2. What motivates you to work at the bike kitchen?
3. Can you tell me about the history of the bike kitchen? How did it start?
4. Did you face any challenges or obstacles in starting the bike kitchen?
5. How does the bike kitchen work?
    - Where do you get spare parts, tools and materials from?
    - How is it financed?
    - How many people work here?
6. How would you describe the people who come here?
7. How do you spread the message about the bike kitchen?
8. Do you partner with any other bike kitchens or other organisations?
9. In your opinion, what are the benefits of this kind of bike workshop compared to a 'normal' bike workshop?