

White paper on Impact Methods

WG3 - Impacts of the Collaborative Economy

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1. Introduction

The COST Action “From Sharing to Caring” focuses on examining socio-technical aspects of the collaborative economy. As part of the project, this white paper aims at exploring in greater detail some different methods for evaluating the wide range impacts of collaborative and sharing economy initiatives that researchers and practitioners involved in the Action came across/encountered during their experience.

There is no single definition of the terms “collaborative economy” and “sharing economy”. In recent years these have become umbrella terms encompassing a wide variety of activities, and are now synonymous for economic activities with various prefixes such as participative, peer-to-peer, gig, crowd, on-demand, access, etc. Thus, the practices of the sharing and collaborative economy have been associated with myriad activities including swapping, exchanging, collective purchasing, crowdsourcing, crowdfunding, shared ownership, co-operatives, co-creation, borrowing, lending, renting, etc. From the vibrant debate and a growing body of literature around this subject, we are aware that each of these terms has a specific connotation, meaning, “dark sides”, possible outcomes and impacts (Botsman 2013).

According to Juliet Schor’s “Debating Sharing Economy”, “sharing refers to predominantly private, and often non-commercial transactions” (2016) while the “collaborative economy” has a wider meaning being “business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals” (European Commission 2016). These forms of economy, therefore, involve three categories of actors: (i) peers (or providers) who share assets, resources, time and/or skills; (ii) users of these; and (iii) intermediaries that connect — via an online platform — providers with users and that facilitate transactions between them (‘collaborative platforms’).

Building on these premises, the work conducted by the “From Sharing to Caring” COST Action did not aim to provide any new definition and/or classification of the “collaborative economy” or “sharing economy”, but instead brings together the expertise and research experience of a transdisciplinary team to synthesise some of the evidence, insights and critical reflections about qualitative and quantitative methods to measure and assess the wide range of impacts of Sharing and Collaborative Economy (SCE) practices.

Box 1 - Working Group 3 Description

The overarching objective of the WG3 is to explore domain specific issues related to the collaborative economy implementations and their impact on society - people, public institutions, cooperatives, not-for profit, or companies.

The aim is twofold: **1) to develop methodologies to assess the ethical, legal, and social consequences of the emerging collaborative economies;** and **2) to identify guidelines for the design of new platforms that consider the interrelation of practices and artefacts with ethical, legal and social issues.**

(Adapted from the Memorandum of Understanding, CA16121)

The need to evaluate impacts of the CSE arises from the disruptive nature of many CSE platforms, and their potential for harm as well as benefit. The biggest CSE platforms are owned and operated multinationally, and the underlying digital technologies may still be considered fairly new. For regulation of such novel platforms - particularly in the fields of privacy, labour rights, and environmental protection - a clear understanding of the impacts of CSEs is vital, and it is towards this comprehension that this paper strives.

Adopting a mixed-method approach, the techniques discussed in this White Paper cover four main areas of impact: social, economic, political, and environmental. Finally, it presents two different analysis perspectives, based on differing units of analysis: (i) Collaborative and Sharing Economy (SCE) initiatives and (ii) the CSE platform. For the first, a set of indicators is proposed, – for the multi-dimensional assessment of a wide range of CSE practice impacts across several countries, active in a variety of industries and at different geographical levels. By contrast, a new framework of assessment was applied using the ‘Theory of Change’ by considering the CSE platform as “unit of analysis”, in order to evaluate the impact of CSE platforms at industry level.

2. Collaborative and sharing economy practices: conceptual and methodological framework for the analysis

Collaborative and Sharing Economy practices (‘CSE practices’ or ‘CSE initiatives’) cover different sectors of activity such as transportation, food, accommodation, tourism, etc. They can act at different geographical scales (from global to local), their motivational bases as well as their business models can be very different, they may be non-profit as well as for-profit, and their activity can be face-to-face or mediated by a third party.

In relation to this latter point, the growth of ICT platforms mediating transactions between providers and users has allowed online platforms to become globally dominant intermediaries for the sharing and collaborative economy. Nevertheless, in recent years and even more in times of deep socio-economic crisis, there has been a flourishing of CSE practices which are not powered by such technology – such as new forms of volunteering and community-led initiatives, and community and collective ownership models.

Researchers and practitioners participating in the “From Sharing to Caring” COST Action collected and analysed a number of CSE practices that allow individuals or communities to share, produce and/or have access to goods, services and/or experiences. These have been categorised as: research case studies¹ and short stories². These practices are active in one or more countries participating in the Action, sometimes even at a multinational level or globally, and operate in a variety of domains of activities.

¹ These have been collected and categorized per (i) country, (ii) type of activity and (iii) keywords. More information available at <http://sharingandcaring.eu/research-case-studies>

² Based on a structured template, the short stories have been collected according to the following characteristics: (i) country/ies where the initiative is active, (ii) organisational form or legal structure, (iii) domain of activity, (iv) starting year, (v) keywords. For the full repository of short stories: <http://sharingandcaring.eu/short-stories>. The template for the collection of short stories available at: https://docs.google.com/forms/d/e/1FAIpQLSeY0wfdFKqd5fp6_2XQ5IyZHIqvsVd6xQVCASbeoqLk7KTkQ/viewform

CSE initiatives can be analysed using different methodologies and frameworks. Over the past decades a plethora of impact assessment approaches and methodologies have been developed. The wide range of impacts of CSE initiatives can cover different areas, can be analysed from distinct perspectives, and using qualitative and/or quantitative methods or a combination of the two.

The wide range of impacts methods of CSE initiatives can be classified considering the following elements (Grieco et al. 2015), as summarized in Figure 1:

- Typology of indicator for the assessment: can be quantitative, qualitative and qualitative-quantitative;
- Typology of impact to assess: impact on people, environmental, social, economic and holistic;
- Purpose of the measurement: screening, assessment, management, certification, reporting, etc.;
- Industry/domain of activity: general, specific (e.g. accommodation, mobility, food, etc.);
- The subject of the measurement (developer): CSE initiatives (for internal evaluation), university, research institutions, not-for-profit network, not-for-profit organization, consulting firm, local institutions, etc.

There is no single evaluation methodology that can fully capture the variety of impacts and complexities of CSE practices/initiatives. Consequently, creative ways to combine different evaluation frameworks, tools and techniques are sought.

In the context of this White Paper, as a synthesis of the lessons learnt in the various discussions of the "From Sharing to Caring" COST Action, the starting point is to define the 'unit of analysis', which means first to define the subject of the assessment and then from which perspective the analysis will be conducted.

Fig. 1 – Main frameworks of analysis adopted in the White Paper

	Multidimensional assessment (Paragraph 4)	Theory of Change (ToC) Framework (Paragraph 5)
Unit of analysis	CSE practice	Wider organization level of a CSE
Data typology	Qualitative	Qualitative + Quantitative
Impact typology	Environmental, social, economic, political	Holistic
Purpose of the assessment	Assessment	Reporting
Industry/Domain of activity	Multi-domain	Specific
Subject of the assessment	All (CSE practice, university, not-for-profit organization, etc.)	Organizations, Consulting firms

Source: elaboration of the authors

As summarised in Figure 1, one possible option is to focus on the CSE initiative itself as a 'unit of analysis'. In this regard, the assessment will be focused on the internal and external dimensions of its potential impact. By means of an example: (i) an internal impact may be related to the ability of the initiative to effectively deliver benefits to users and/or

participants (i.e. goods and services at lower prices), while (ii) external effects can mostly be associated with the impacts on the “outside” world (i.e. environmental benefits). Accordingly, in paragraph 4 a series of practical indicators for the assessment of a wide range of impacts will be discussed.

Another option is to consider the wider organization level of a CSE platform as the ‘unit of analysis’. This means that the CSE platform is analysed as a whole, to allow the organization that manages the platform to assess and report on its impacts. This is the lens of analysis adopted in the section dedicated to the Theory of Change (paragraph 5).

The discussions between “From Sharing to Caring” COST Action members led us to consider a mixed methods (MM) evaluation approach. This can help by integrating social science disciplines with predominantly quantitative (QUANT) and predominantly qualitative (QUAL) approaches to theory, data collection, data analysis, empirical tests, and interpretation. The purpose is to strengthen the reliability of data, the validity of the findings and recommendations, and to broaden and deepen our understanding of impacts assessed – and how these are affected by the broader context within which the CES initiative operates.

3. The impact of the collaborative and sharing economy

The review and estimation of the impacts of the collaborative and sharing economy is a relatively new area of research and is still a controversial field of study, with some authors emphasizing a series of positive social, economic, political, environmental values and effects, and others debating its negative implications.

A growing body of research has investigated the impacts of SCE using different approaches (i.e. considering the perceived impacts, direct and indirect impacts, internal and external areas of impact, potential outcomes, etc.), by addressing the sharing economy and/or the collaborative economy as a whole, or by focussing on different industries (i.e. hospitality, mobility, food, services, etc.).

This short section of the White Paper aims briefly to summarize recent findings in the field, with the purpose of suggesting and pointing out the main contributions to existing knowledge on the impact of sharing economy. For those who are new to this subject, Box 2 contains suggested foundational reading.

Box 2 - The impact of the Sharing Economy
Main references per topic/industry

Sharing economy impact and controversial issues

Ahsan, M. (2018). Entrepreneurship and ethics in the sharing economy: A critical perspective. *Journal of Business Ethics*, 1-15.

Schor, J. B., & Attwood Charles, W. (2017). The “sharing” economy: labor, inequality, and social connection on for profit platforms. *Sociology Compass*, 11(8), e12493.

Sundararajan, A. (2016). *The sharing economy*. MIT Press.

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.

Accommodation

Celata, F., Hendrickson, C. Y., & Sanna, V.S. (2017). The sharing economy as community marketplace? Trust, reciprocity and belonging in peer-to-peer accommodation platforms, *Cambridge Journal of Regions, Economy and Society*, 10, 349–363.

Guttentag, D. (2015). Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector. *Current issues in Tourism*, 18, 1192-1217.

Zervas, G., Proserpio, D., & Byers, J. W. (2017). The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Journal of marketing research*, 54(5), 687-705.

Food

Ciulli, F., Kolk, A., & Boe-Lillegraven, S. (2019). Circularity brokers: digital platform organizations and waste recovery in food supply chains. *Journal of Business Ethics*, 1-33.

Mackenzie, S. G., & Davies, A. R. (2019). SHARE IT: Co-designing a sustainability impact assessment framework for urban food sharing initiatives. *Environmental Impact Assessment Review*, 79, 106300.

Michellini, L., Grieco, C., Ciulli, F., & Di Leo, A. (2020). Uncovering the impact of food sharing platform business models: a theory of change approach. *British Food Journal*.

Mobility

Martinez, L. M., & Viegas, J. M. (2017). Assessing the impacts of deploying a shared self-driving urban mobility system: An agent-based model applied to the city of Lisbon, Portugal. *International Journal of Transportation Science and Technology*, 6(1), 13-27.

Mugion, R. G., Arcese, G., Toni, M., & Silvestri, L. (2020). Life Cycle Management and Sharing Economy: Methodological Framework and Application in Sustainable Mobility. In *Customer Satisfaction and Sustainability Initiatives in the Fourth Industrial Revolution* (pp. 152-166). IGI Global.

Nijland, H., & van Meerkerk, J. (2017). Mobility and environmental impacts of car sharing in the Netherlands. *Environmental Innovation and Societal Transitions*, 23, 84-91.

Source: elaboration of the authors

One of the most important aspects of the SCE is its social value and contribution given to the creation and/or strengthening of social ties, and to the establishment and enhancement of a sense of community between people, including the creation of “digital communities”. SCE initiatives have been noted as favouring the generation of positive effects on wellbeing and quality of life (e.g. sharing of healthy food). Regarding the negative social impact, the literature – mainly concerning the hospitality industry – has reported conflicts at a community level (e.g. between tourists and residents), decreases in quality of neighbourhood life and coexistence, rising accommodation prices, and gentrification.

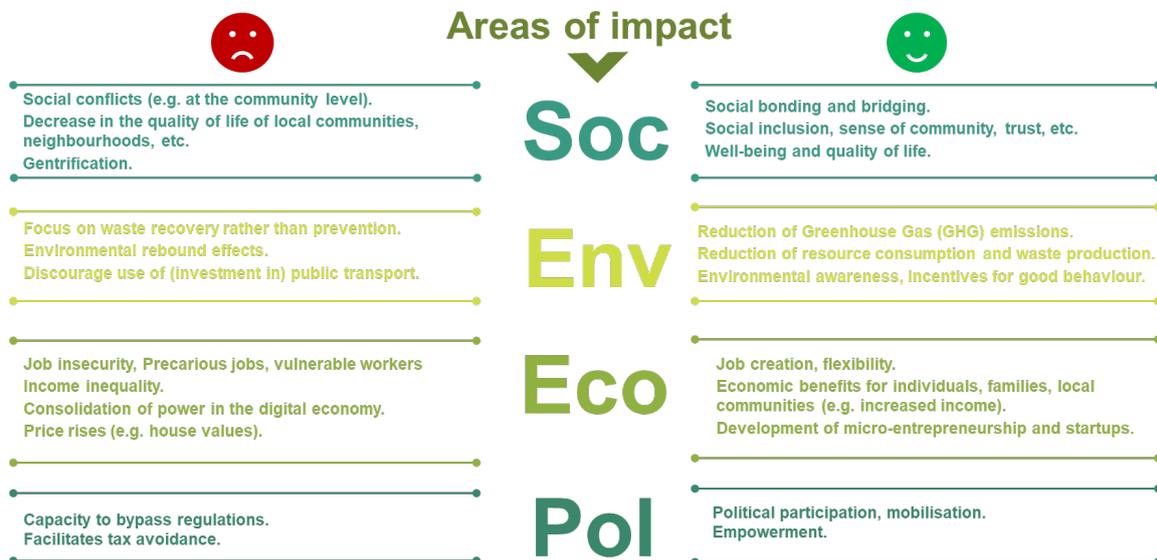
In terms of environmental impacts, recent research mainly identifies the positive impacts derived from the new paradigm of more sustainable consumption and production practices that result in the reduction of Greenhouse Gases (GHG), waste, and resource usage, and more sustainable behaviour at businesses and consumer level. Nevertheless, despite a shift towards more sustainable consumption models, some authors remain sceptical of highlighting the positive effects of the sharing economy on the environment, in particular on its ability to change behaviour at consumer level. Moreover, some research has pointed out that platforms (e.g. in the case of food sharing) focus on waste reduction instead of trying to address waste prevention.

At the economic level, positive impacts vary from job opportunities brought into the economic systems, occasions for additional income for individuals, families and more generally in local communities, as well as the development of micro-entrepreneurship and start-ups. By contrast some authors has highlighted various negative effects related to increased income inequalities, uneven wealth distribution, the shifting of income and opportunity to better-off households and providers, and a deepening polarization of power in the digital economy and equality of access to the SCE. As for the workforce, on one hand the SCE has indeed presented itself as a provider of flexible employment opportunities but on the other the rights, benefits and fair-pay levels of this emerging sector of freelancers seem to be under threat.

At a political (government) level it is often reported that the exponential growth of the SCE has increased the capacity to bypass regulation and favour tax avoidance. From a more positive perspective, some research suggests the opportunity offered by sharing platforms to enhance the participation in social movements (e.g. new forms of social and solidarity economy practices).

The measurement of the impacts of SCE initiatives could also represent a practical tool to inform and improve policies at different levels. Despite the growing attention given in recent years to issues related to the most innovative impacts of sharing and collaborative economy practices, the debate on possible ways to integrate lessons learned from these experiences in the structuring of new policies or in the implementation of existing social, economic, environmental and political systems, is still unripe and not so obvious.

Fig. 2 – Areas of impact of the Sharing and Collaborative Economy



Source: elaboration of the authors

With a specific focus on the impact of SCE platforms, impacts of major “actors” such as Airbnb and Uber in highly profitable industries (e.g. the accommodation sector, urban mobility) have been explored more thoroughly – both in terms of the frequency of research and the range of impacts they encompass.

The actual and potential impacts of Airbnb as a short-term rental market leader, have been assessed from many different angles: impacts on the price and aggregate supply of affordable housing rentals; impacts on residential house prices and rent; multiple effects on more traditional accommodation businesses, and more generally on tourism and the ‘touristification’ of cities, as well as the invasion and gentrification of non-touristic neighbourhoods (Wachsmuth et al 2017); but also from a more urban perspective on the displacement effects on local residents has been well analysed, as well as issues of trust, reciprocity, etc.

It should be noted that policy design is not only concerned with final outcomes and impact, but also timing and ensuring that the speed of change is acceptable. The negative impacts on stakeholders are likely to be less severe if they are given proper time to adjust to fundamental change.

Finally, a key research obstacle in this context needs to be mentioned. Namely, many online platforms have been “restrictive and selective in granting researchers access to their user data, citing privacy and competition concerns” (Frenken & Schor 2017, p. 8). For this reason, researchers have often relied on alternative ways to collect data, i.e. from publicly available but often less comprehensive figures revealed by the online platforms themselves (e.g. Zervas et al. 2017), or by using Google services (e.g. Google trends) to proxy for variables, etc.

4. The collaborative and sharing economy initiative as “unit of analysis”: areas of impact and indicators for the analysis

Adopting an “internal” perspective – in other words considering CSE practices as the “unit of analysis” – from the multidisciplinary discussion among researchers and practitioners, as well from the literature review on the topic and main evidences coming from previous research, the main areas of impact for which it is possible to derive feasible measurements are: social, economic, political and environmental³. For each of these areas, a set of indicators aimed at measuring the potential positive and negative impacts is presented in Table 1.

More in detail, CSE practices can produce a variety of **social impacts** e.g. creating and/or increasing cohesion among heterogenous participants, satisfying the needs of the local community, strengthening social interaction and networking between members, creating new relationships between people who did not previously know each other, enhancing participants’ self- and social awareness, and quality of life.

The **economic impact** of CSE practices may be analysed looking at the internal and external economic challenges faced by initiatives (Sanna 2018). The internal challenges can be investigated assessing the financial sustainability and organizational effectiveness of the activity – e.g. how they are sustained and managed, what assets they require, and how vulnerable they are to shocks. The external effects depend, for example, on both their ability to deliver (directly and indirectly) economic benefits to users and the local community (e.g. increasing individual or household incomes), and on the extent to which an initiative

³ Most of the information about areas of impact and indicators for impact assessment comes from the experience of the EU FP7 project “TESS, Towards European Societal Sustainability” (www.tess-transition.eu). Nevertheless, the elaborations and views expressed in this White Paper are those of the authors only. For more information about areas of impact: http://www.tess-transition.eu/wp-content/uploads/2015/07/TESS-Deliverable_2.2_FINAL.pdf and indicators for the assessment: http://www.tess-transition.eu/wp-content/uploads/2016/11/TESS_D4.2_Multi-criteria-analysis-for-carbon-efficient-projects.pdf

contributes (positively or not) to the local economy (e.g. creating new jobs, improving local economic activities, etc.). Lastly, the scalability of the business model - meaning how easy it is to scale up operations to new regions or user groups - can be assessed. One challenge with estimating economic impact is that the business models of new platforms are often tailored towards growth over profits in the first operating phase. Some of the highest-priced CSE companies have therefore never earned a profit.

For **political impacts**, CSE practices can produce political effects among users and participants, and their external dimension ("institutional effects"). The empowerment of individuals is a main political effect and can occur via the active participation of members in decision-making, or by the mobilization of people towards a common social or political goal. Moreover, the ability to build alliances and coalitions and to influence the political agenda may be considered as an important outcome of a CSE initiative's activity. The political impact may further increase if strong external connections with other or similar initiatives, and to other actors and organizations, have been created.

The **environmental impact** assessment shifts the focus to the interaction between humans and nature. The assessment can be based on a simple and comparable procedure to evaluate the ecological implications of CSE practices, e.g. in terms of consumption of resources (energy, water, etc.) or Greenhouse gas emissions. The ability of CSE practices to raise environmental awareness among members/local community/population can be a feasible, easy-to-use measure as well.

Tab. 1 – Areas of impact and indicators for assessment

Area of impact	Indicator*	Description of the indicator
Environmental	GHG Emissions	To reduce greenhouse gas emissions and to improve the quality of the environment
	Consumption of resources (e.g. energy, water, etc.)	To reduce resource consumption (water, energy, land, etc.) and/or waste production
	Environmental awareness	To raise environmental awareness among members/local community/population
Social	Enrolment	The ability to involve people, and openness towards new members
	Bonding social capital	Strengthening social interaction/networking between members (trust)
	Bridging social capital	The creation of new relationships between people who did not previously know each other; without the initiative relationships would be unlikely
	Internal social inclusion	The heterogeneity of participants in terms of origin, gender, age, social
	External social inclusion	The degree to which the needs of the local community are taken into consideration
	Empowerment 1 (social)	Enhancement of the participants' self- and social awareness
	Quality of life	To improve the quality of life, to promote leisure and/or health issues (to be defined/feedback from experts/partners, open for the pilot)
Political	External networking with other (similar) initiatives	To create a network of engaged/similar initiatives/communities in order to better pursue/diffuse/improve the CBI's aims and practices
	External networking with other actors	To engage with (or create a network of) other (political) actors/organizations/institutions/stakeholders in order to do up-scaling/advocacy/lobbying
	Political mobilization	To mobilise participants towards a common political goal, to promote social/political change and influence the political agenda
	Empowerment 2 (political)	The participation of members in decision-making, capacity building

Economic	Financial sustainability	To be economically self-sufficient and sustainable during time (e.g. measuring surplus creation, revenue concentration index, etc.)
	Organizational effectiveness	To develop/experiment a well-functioning business/ organizational model/ strategy which may be replicated elsewhere (e.g. degree of flexibility in its organization, the substitutability of key roles, the level and degree of hierarchization, etc.)
	Economic benefits to participants	To deliver economic benefits to participants (i.e. quality goods and services at lower prices, etc.)
	Local economic impact	To revitalize the local/community economy (e.g. revitalize deprived areas, improve local economic activities, etc. and/or to improve the self-sufficiency of the local community (local money is spent locally / off-the-grid / self-organization)
	Job creation	New jobs created directly (and indirectly)
	Scalability of business model	Ease to scale up operations to new regions or user groups.

**The proposed indicators are applicable to any kind of initiative active in (at least) one or more of the following domains: food, transport, energy and waste.*

Source: Elaboration on "Multi-criteria analysis for carbon efficient projects" (Celata and Sanna 2016 and 2019)

Finally, the rebound effects of SCE initiatives should also be considered in the definition of an assessment method. Individuals are increasingly using online SCE platforms to share or offer their skills, time and/or underutilized resources to others who need to access, rent, or borrow these goods and services through bartering, swapping, lending, social exchanging, trading or reselling. While this is expected to produce (for example) positive environmental impacts, it is unclear to what degree the savings or earnings from the platforms might increase resource use. Lending, borrowing, or renting items instead of buying new products may be seen as an efficient way to promote a more circular economy. However, changes in the consumption model might liberate resources - such as raw material or financial source - which might inevitably be injected into the system anyway and thus increase production or consumption in other ways.

5. CSE platform as unit of analysis: the application of the Theory of Change

In order to develop and test a new framework to assess the impact of CSE platforms we decided to apply the theory of change at industry level (it is generally used at organizational level) and perform an empirical study on CSE platforms operating in two industries: food and hospitality. The remainder of the section is as follows. The first paragraph presents an overview of the theory of change. The second describes the methodology adopted. In the final two paragraphs the results obtained are presented.

5.1. Theory of Change: overview

The Theory of Change (ToC) approach seems to have first emerged in the United States late in the 1990s, in the context of improving evaluation theory and practice in the field of community initiatives (Weiss 1995). Over the years ToC has become very popular among practitioners and it has been defined in different ways. A clear and practical definition was provided by Rogers (2014) who states that the ToC "explains how activities are understood to produce a series of

results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a programme, a policy, a strategy or an organization”.

The ToC is a flexible framework and it can be applied to identifying the data that need to be collected for measuring impact, it can be a framework for reporting, for strategic planning, and monitoring and evaluation.

This is the reason why it is becoming popular in the social impact assessment field of study.

ToC represents a useful starting point for a social impact assessment as it makes it possible to identify how an organization’s social mission will be achieved. A representation of the ToC includes outcome, output, and activities (Clark et al. 2004). Activities are those initiatives that enable the planned output to be achieved; output is the direct and tangible results that come from the activities and help to achieve the outcome and the outcome is the social change expected in the long-term (Fig. 3).

Fig. 3 – Impact Value Chain



Source: Adapted from Clark et al. 2004

ToC provides a flexible approach which is able to identify how activities are understood to produce a set of results that, in turn, contribute to achieving a final impacts (Grieco 2015; Rogers 2014) and describes the change an organization wants to make and the steps involved in making that change happen. The key steps are often illustrated in a diagram. In short, the theory of change helps an organisation to show how it makes a social impact, what it aims to change, and how that change occurs.

Stakeholder engagement is an essential step for understanding needs and expectations as well as the way in which these are impacted by organizations’ activities. From this perspective the relation with stakeholders is a deep dialogue aimed at working together to solve the addressed social issue and create shared value.

The following steps can be used while dealing with stakeholders and specifying how they are impacted by sharing economy initiatives: (1) identifying stakeholder, (2) mapping and analysing stakeholders’ perception, (3) embedding sustainability in the business model (Bocken et al. 2015).

Identifying stakeholders in the Sharing and Collaborative Economy (SCE) is becoming a complex task due to the proliferation of a broad diversity of actors. For example, stakeholders within the Short-Term Accommodation market would include hosts, guests, the STR platforms (e.g., Airbnb, Booking, Homeaway), intermediaries (e.g., Hostmaker, UnderTheDoormat), the communities where they operate, technological suppliers (e.g., Smoobu, PriceLab), the traditional hospitality industry, STR associations, and policy makers.

Platforms such as Airbnb and Booking.com offer independent hosts the possibility to enter the accommodation industry. Professional and amateur hospitality services collide in these platforms. Nevertheless, as some authors (e.g. Slee 2015; Gyódi 2019) pointed out, only a small part of Airbnb listings can be actually classified as sharing economy services (when an independent host shares the property with the guests), which represents a very tiny slice of the entire service.

Later, mapping and analysing stakeholders' perception, where the direction of changes (either positive or negative) can be noted. Through such a proceeding the assessment of the impact can be conducted, either on the general level of sharing economy, or more likely on the more specific level of business models (e.g. Airbnb and Uber). Finally, embedding sustainability at the core of the business strategy can create values that influence social, environmental and economic areas of collaborative economy impact. Therefore, stakeholders are the main part of impact assessment and their mutual relationships determine further changes. As in the case of using platforms, widely used in the sharing economy, the central actor, which facilitates such platform deals with different, multiple stakeholders, both on the side of demand, as well as supply. Further on activity of such platforms generate changes, which have a wider impact on the society, creating or destroying values.

5.2. Methodology

Unlike previous research we decided to apply the theory of change at industry level, aiming to identify the main area of impact in the "food" and "accommodation" industries. Two focus groups were created involving different stakeholders: academics, platform managers, institutions (as representatives of policy makers), distributors (suppliers) and non-profit organizations. The questionnaire was based on the ToC framework and consisted of the following sections: stakeholders, activities, outputs and outcome.

Box 3 - Focus group questioning route

STAKEHOLDERS

1. What are the main stakeholders of the platform?
2. Does the platform directly or indirectly affect stakeholders? (describe the type of impact)

ACTIVITIES

1. What kind of and how many activities do you carry out?
2. How does their assessment occur?

OUTPUTS: direct and tangible results in the short term

1. What are the main results that will help you achieve the desired changes?
2. Through which indicators do you analyse your short-term performance?

OUTCOMES: The ultimate long-term change in stakeholder life

1. What are the changes you want to generate in the long term?
 2. Who benefits from this change?
 3. What are your main goals?
-

The elements of the ToC framework that drove the interviews were adopted as categories of the analysis in the coding process: all the portions of text that were considered as referring to a specific category were registered under that label. All the elements were then positioned within the map, in order to demonstrate the connections between them. To this end, following the ToC methodology, we started from the activities put in place to identify the concrete output and the outcomes the organizations aim to achieve.

5.3. Food industry: main results

A first set of **activities** are related to the management of providers, aimed at involving and maintaining suppliers who "feed" the platforms, such as distributors, retailers or restaurants and technology and data management. More specifically, data analysis is essential for providers, who require information which can be used to improve the supply chain and procurement process in

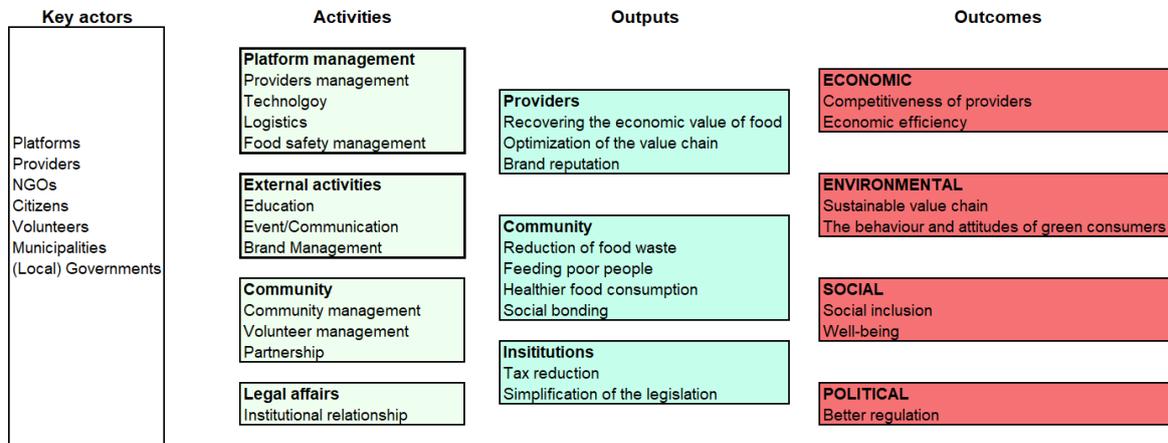
order to prevent waste. A further area of activities pertains to all those actions related to the establishment of the external presence of the platforms, such as events and communication, as well as training and education which have emerged as being essential in promoting sustainable behaviours and raising awareness concerning social good, environment protection and safety. An additional key area of activities is related to food management in terms of logistics and all processes and procedures related to food safety. The focus group identified several activities aimed at establishing and managing relationships with other relevant actors in the ecosystem: volunteers, users/consumers and NPOs. Lastly, institutional relationships play a key role as means to carry out lobbying, in an attempt to raise the issue of food waste at a political level, and to influence the development of specific policies to tackle it.

The **outputs** reflect the multiple perspectives of the stakeholders involved in the ecosystems of food sharing platforms. A first set of outputs is related to the providers' perspective, such as recovering the economic value of food, the optimization of the value chain, and the opportunity to enhance the reputation of their brand. A second perspective refers to the community: collecting surplus food is also linked with the opportunity to feed poor people, who would otherwise have no access to this food. More specifically, these outputs concern the distribution of safe food to people, and also the promotion of healthier food consumption. Within the community perspective there are other several outputs: the reduction of food waste, the increase of neighbourhood relationships (social bonding) and the enhancement of sustainable attitude and behaviour. A further perspective is that of the government and local authorities. It implies potential externalities that result from the actions of the platforms when they are able to influence legal regulations, particularly in terms of tax reduction and simplification of the legislation on food sharing.

The focus group participants identified four main areas of **outcomes**: economic, environmental, social and political. Economic outcomes are related to the providers; thanks to the platform businesses were able to increase their economic efficiency and maximize their profits. Environmental outcomes pertain both to providers and to consumers. Providers were able to improve the sustainability of the value chain, while consumers were able to move towards more environmentally responsible attitudes and behaviours. As for the social outcomes, beneficial sharing practices are seen as a way for consumers to increase their well-being, improve social cohesion, and reduce social distance within society.

The initiatives of food sharing platforms also have an impact in terms of policy changes, working together with governments and local authorities to improve legal regulation, thereby maximizing the societal impact they can achieve.

Fig. 4 - ToC: SCE platforms in the food industry



Source: elaboration of the authors

By applying the theory of change, is it possible to identify the main areas of impact and the related indicators. Indicators can be *qualitative* such as positive attitudes and perceptions in consumers, corporate image, organizational climate and *quantitative* such as tons/items of food wasted/donated over the years, waste tax reduction, inventory management costs reduction etc. For a list of indicators see also Michelini et al. 2020.

5.4. Accommodation industry: main results

As described in the previous chapter, CSE platforms in the area of accommodation have had a major impact on society and the economy over the last few years. In particular, the market share of small independent providers in the area of Short-Term Rental (STR) accommodation is increasingly shifting towards large platforms, which are thus gaining more and more influence. For this reason, the Focus Group made the decision to apply the ToC method to discuss activities, outputs, outcomes and impacts using the example of Airbnb. The focus group consisted of seven participants who discussed interrelationships in the areas of the economy and the market, society and culture, the environment and governments over several hours. The results are not an empirical study but consist of brainstorming based on the experience of the scientists and stakeholders involved.

The operators of the platforms, the hosts and the guests were identified as key actors. Furthermore, residents, local authorities and citizens' associations in cities with a high proportion of STR platforms are also important actors.

The context or drivers of developments within this industry can be divided into the needs of guests and hosts, general market developments and the activities of local authorities. Guests are looking for adequate accommodation and authentic and unique places to stay. They also desire more direct contact with local people in their holiday destinations. Furthermore, collaborative consumption and the sharing economy have become a social trend and reflect a certain lifestyle. Hosts have the opportunity to use idle resources, to get in touch with other people or follow the sharing economy trend. In the tourism market, we have seen a strong increase in online platforms, an increase in STR's in cities, and the rise of low-cost airlines over the last few years. The housing market, on the other hand, has been experiencing pressure on investment since the financial crisis in 2008, which has led to a trend towards deregulation in the real estate sector and to the increasing promotion of tourism over the last few years.

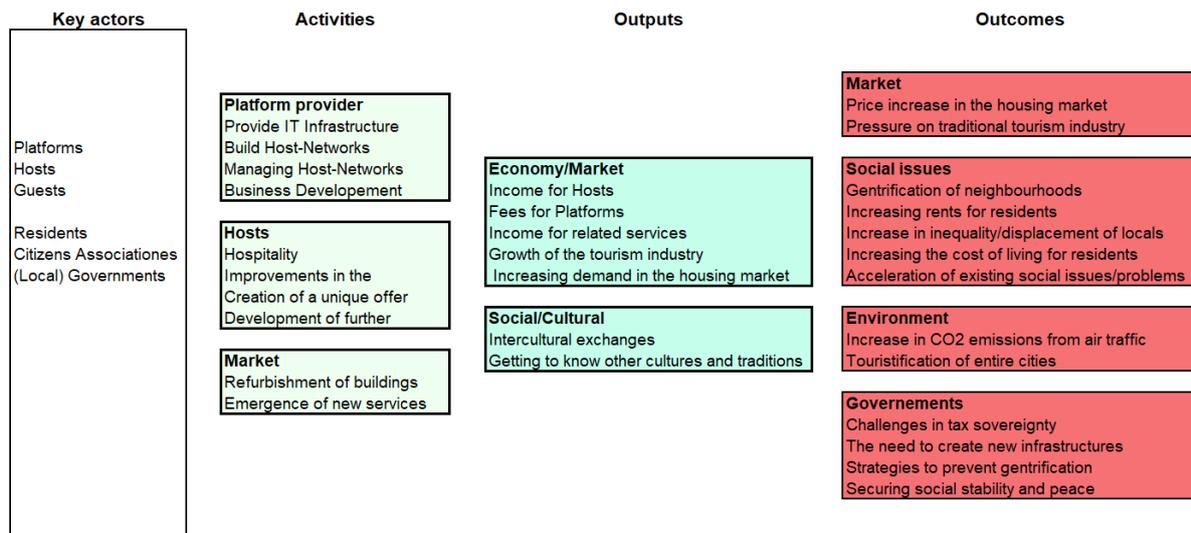
In terms of **activities**, a distinction can be made between platform operators, hosts and general market initiatives. The platform providers mainly provide the IT infrastructure, develop and manage the host networks, and take care of marketing and further development of the business models. Hosts take care of their guests, enhance their accommodation, and create authenticity and new experiences. In the area of markets, there is a tendency to refurbish apartments and residential buildings. Furthermore, additional accompanying services are created around the platform offers. These include cleaning services, breakfast offers, excursions and many more.

The direct **outputs** for the key actors are summarized in the discussion as follows: There is additional income for hosts and service providers. The operators of the platforms receive fees for brokering. This leads to a growth in the tourism industry and an increasing demand in the housing market. In the socio-cultural field new contacts are made and intercultural experiences increase.

At the level of **outcomes**, this leads to increasing pressure on the housing market with an increase in rents. Traditional accommodation providers are facing new competition or additional market pressure. The effects on the real estate markets lead to the gentrification of entire urban districts and an effect of displacing traditional residents. The cost of living is rising and existing social problems and inequalities in cities are accelerated. In addition, traditional urban districts lose their original charm. As far as the environment is concerned, it is noticeable that due to the increase in short-term stays, there is an increase in CO2 emissions from air travel and the spread of tourism through entire cities can have an ecological impact. Governments have to create new infrastructures for guests, address gentrification and social inequality, and at the same time lose sovereignty in tax matters due to the new business models of platform providers in the tourism sector.

Overall, the focus group found that originally positive intentions in the area of the sharing economy in tourism ultimately lead to negative outcomes with profound social and ecological consequences.

Fig. 5 - ToC: SCE platforms in the accommodation industry



Source: elaboration of the authors

By applying the theory of change, is it possible to identify the main areas of impact and the related indicators. Indicators can be qualitative such as positive attitudes and perceptions in

consumers, Changes in policy and legislation and quantitative such Amount of saved money, investments for refurbishment, number of intercultural exchanges.

6. Policy recommendations

Assessing the impact of CSE is not an easy task, especially because of the difficulties in identifying qualitative and quantitative metrics for reporting information to stakeholders. This complexity has resulted in the development of many different models aimed at providing guidelines and indicators for assessing the impact (Grieco et al. 2015). This ongoing proliferation of models is due to the fact that organizations differ in size, capacity, activities, and focus, and consequently there is no single model that is suitable for all of them.

The work done so far, allowed us to identify the main issues that characterized the impact assessment of CSE and the potential pitfalls and to provide some policy recommendations useful to improve the quality of impact assessment (see Fig. 6)

A first relevant issue concerns the “heterogeneity” of domain of activity as CSE practices and/or platforms operate in different industries (such as food, hospitality, mobility, money, etc.) and can adopt different business models (e.g. profit and non-profit). Furthermore, there are many interested parties - such as academics, practitioners, entrepreneurs’ regulatory agencies, policy and program developers - that may have different needs and purposes in using impact assessment methodologies.

A second main issue is related to the “lack of...”, particularly financial resources, shared knowledge and available data and information; but also standards, such as shared metrics or indicators as well as lack of scientific approach that characterizes accounting approaches aimed at assessing financial returns and culture among organizations, institutions, entrepreneurs and public administrations.

Fig. 6 – Impact on policy

Main issues	Possible pitfall	Policy recommendations
Heterogeneity Domain of activity Business models Stakeholders	Risk to encourage: The development of models that are too complex or too vague	Facilitate the creation of an open source library of indicators and/or easy-to-use toolbox of feasible indicators
Lack of... Financial resources Standards Scientific approach Culture	The proliferation of indicators The development of unrealistic and/or not feasible models	Foster the networking of academics, practitioners and policy makers Support the development of methodologies to support impact-investing tools

Source: elaboration of the authors

As for the main pitfalls, they are related mainly to the risk to encourage the develop of models that are too complex or too vague, the proliferation of models, approaches, indicators, and the development of unrealistic or not applicable measurements.

Based on the foregoing analysis, the following policy recommendations can be made:

- ✓ Facilitate the creation of an open source library of methodologies and/or easy-to-use toolbox of feasible indicators: it is recommended to create and make available to researchers, specialists and policy makers an open access and easy-to-use toolbox of feasible indicators and/or a library of methodologies which would allow to make accessible and consolidate existing knowledge and available and tested tools, such as for example those realised in the framework of a variety of EU funded projects (some of which have been also used and mentioned in this White Paper).
- ✓ Foster the networking of academics, practitioners and policy makers: it is recommended to encourage and support greater interaction between academics (from different fields of study), specialists, practitioners and policy makers by creating networks that brings this groups together. The creation of networking opportunities and long-term programmes – such as this Cost Action – can play a crucial role in making the existing knowledge accessible and advance.
- ✓ Support the development of methodologies useful to foster impact-investing tools - namely new and innovative model that leverages market-driven efficiencies - to provide social services such as Social Impact Bonds (SIB)⁴.

7. The Working Group process

The discussions of Working Group 3 (WG3) of the COST Action “From Sharing to Caring” focused on methodologies to measure and assess the wide range of impacts of Sharing and Collaborative Economy (SCE) initiatives. The work brought together specialists and academics from countries across Europe, many types of knowledge as well as practical interests.

SCE practices have been acknowledged for their potentials to produce positive impacts on society, economy, and environment, and their implications. There are also often pointed to their negative consequences. In all cases an assessment requires a way forward — a methodology — for how to do the assessment.

The work of WG3 aimed at contributing with such methodologies. Only by a systematic approach the wide range impacts of SCE initiatives can be compared rigorously and systematically.

This White Paper is the outcome of a continuous discussion of dedicated researchers and practitioners from across Europe; experience and knowledge from many different states and regions entered into the discussions. Many types of knowledge contributed to the discussions, including economics, management, computer science, geography, business administration, tourism, political economy and more.

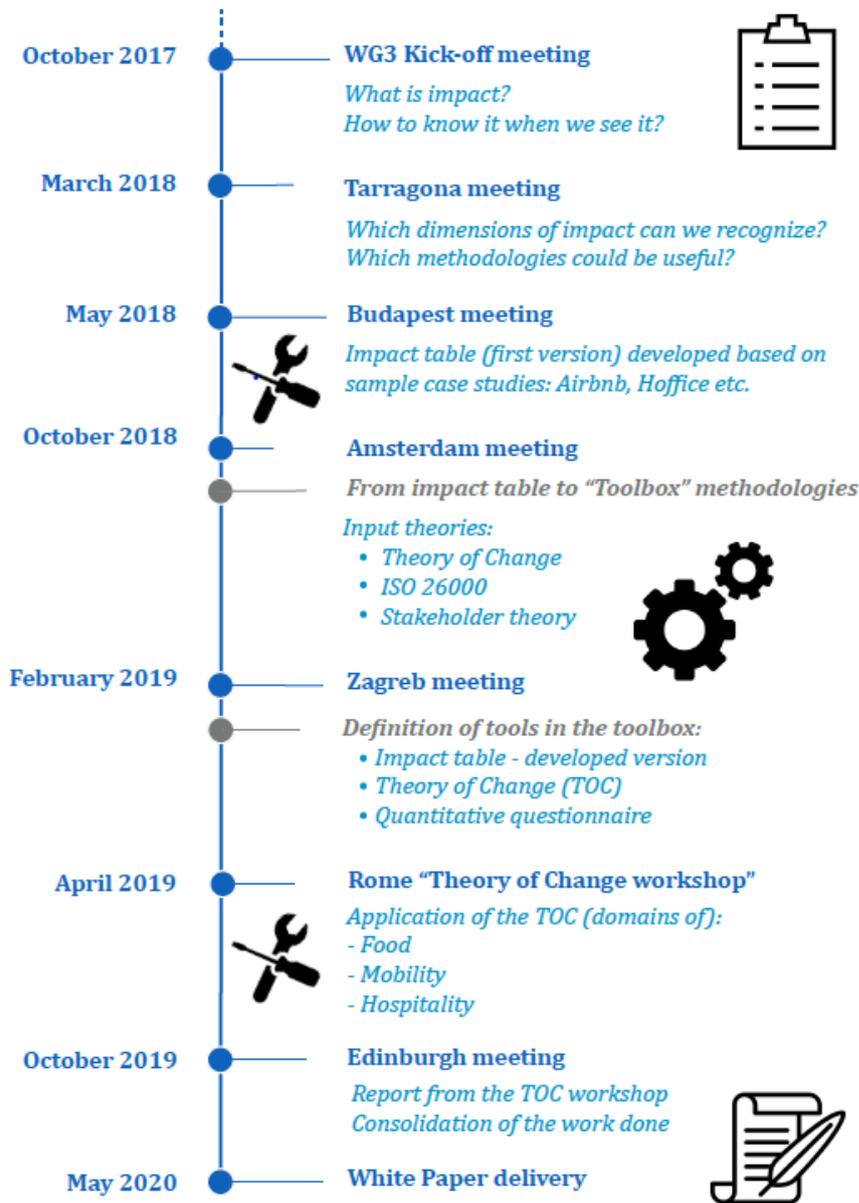
The work reported here took its beginning with collective debates in Madeira in 2017. Since then institutions in several countries have hosted our work. We are grateful for that. The work has approached, walking on two legs. One leg has been our conceptual work, drawing on various inputs and disciplines to establish parameters and procedures for impact assessment. Another leg has been the input from and collaboration with WG1. As part of this our work has benefitted from ethnographic case studies of the hospitality sector and other areas. Together the work combined more deductively and more inductively inclined approaches.

A main finding of the work has been that the identification of (i) subject of the analysis, (ii) unit of analysis, and (iii) purpose of the impact assessment is crucial. Informed by this, WG3 has approached to work with a basket of impact assessments of different type. There are a number

⁴ A SIB is a contractual arrangement between an entity with a mandate to promote social welfare (e.g., governments, development banks, and philanthropic organizations) and a private sector investor that will finance social service interventions up front in exchange for future payouts. The amount of the payout level is linked to the resulting effectiveness of the social service (Bergfeld et al. 2019).

of established methodologies for impact assessment. Based on them, WG3 has developed them and discussed how such established methodologies can be adapted to assessing SCE initiatives.

Fig. 7 - The White Paper process: from the identification of the dimensions of impact to the definition of the assessment methods



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