

Chapter 11

Mapping the Impact: Assessment Methodologies and Policy Implications of the Collaborative and Sharing Economy

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DOI: [10.1561/9781680838411.ch11](https://doi.org/10.1561/9781680838411.ch11)

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Published in *Becoming a Platform in Europe – On the Governance of the Collaborative Economy* by Maurizio Teli and Chiara Bassetti (eds.). 2021. ISBN 978-1-68083-840-4. E-ISBN 978-1-68083-841-1.

Suggested citation: Venere Stefania Sanna and Laura Michelini. 2021. “Mapping the Impact: Assessment Methodologies and Policy Implications of the Collaborative and Sharing Economy” in *Becoming a Platform in Europe – On the Governance of the Collaborative Economy*. Edited by Maurizio Teli and Chiara Bassetti. pp. 231–259. Now Publishers. DOI: [10.1561/9781680838411.ch11](https://doi.org/10.1561/9781680838411.ch11).

In this chapter the authors examine different methodologies for assessing the diverse impact of the Collaborative and Sharing Economies (henceforth, CSE) on many aspects of society, then make policy recommendations based on the outcomes of these assessments. The chapter briefly describes the multifarious CSE landscape, then goes on to enumerate the major frameworks currently used to evaluate and assess CSE impacts. It notes that there is no single methodology that can fully capture the wide variety of impacts, but identifies two methods as the most useful: multidimensional assessment, and Theory of Change (ToC) framework analysis. The chapter then elaborates on the benefits and drawbacks of each methodology, before suggesting the use of both methodologies in a mixed format. The authors undertake a brief literature review to examine recent approaches to impact assessment, and focus in on what those approaches have revealed from the points of

view of social value, environmental impact, economy, and political impact, concluding with findings about ‘rebound effects’ in terms of indirect behavioural and other changes caused by CSE initiatives. The chapter maps out a suggested comprehensive inventory for multidimensional assessment, then describes a methodology for assessing the CSE and its impacts via the ToC Framework. It concludes with determining the implications on policy of the impact assessments. This section views policy through the lens of implications derived from the general impact of the CSE, and then via the impact assessment methods and tools derived from the ToC framework. In the first part it assesses considerations that need to be taken by policymakers due to CSE impacts on the market, government, the workforce, consumers, and the environment, and makes recommendations on each. In terms of impact assessment, it recommends more long-term and strategic actions to cope with the ongoing disruption caused by the CSE. In conclusion it recommends a robust and adaptive approach to assessing the impacts caused by flourishing and inevitable growth of the CSE.

11.1 Introduction

Assessing the impact of Collaborative and Sharing Economy practices (‘CSE practices’ or ‘CSE initiatives’) is not an easy task, especially because of the difficulties in identifying qualitative and quantitative metrics for such an assessment, due to the heterogeneity of the domain of activities, as CSE practices and/or platforms operate in different industries (food, hospitality, mobility, money, etc.), to the wide range of interested parties – such as academics, practitioners, entrepreneurs’ regulatory agencies, policy and program developers – that may have different needs and purposes for using impact assessment methodologies, to the geographical level at which CSE initiatives operate, and so on.

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

This complexity has resulted in the development of many different techniques. This contribution aims to: (i) identify the main areas of impact of the Collaborative and Sharing Economy (CSE), (ii) explore some methods for evaluating the wide range of impacts of CSE practices that researchers and practitioners involved in the COST Action “From Sharing to Caring” encountered during their work, and (iii) provide information and policy recommendations for decision-making on the main open issue relating to the impact of the CSE.

From the vibrant debate and the growing body of literature around the possible definitions of the “collaborative economy” and “sharing economy” (Botsman and Rogers, 2010; Bardhi and Eckhardt, 2012; Botsman, 2013, 2014; Skee, 2015; Frenken, 2017), we are aware that these terms are not synonymous, and that each has a specific connotation, meaning, and potential outcomes and impacts (see Introduction, this volume).

Generally, these forms of economy involve three categories of actor: (i) peers or providers that share (often underutilized) assets, resources, time and/or skills; (ii) users of these; and (iii) intermediaries that connect – mostly via an online platform – providers with users and that facilitate transactions between them ('collaborative platforms' which allow 'access rather than ownership').

Building on these premises, this contribution does 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 of measuring and assessing the wide range of impacts of Collaborative and Sharing Economy (CSE) practices.

The need to evaluate impacts of the CSE arises from the disruptive nature of many CSE initiatives and platforms, and their potential for harm as well as benefit. The biggest CSE platforms are owned and operated multi-nationally, 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 chapter strives.

Adopting a mixed-method approach, the techniques discussed in this chapter cover four main areas of impact: social, economic, political, and environmental. It presents two different analytic perspectives, based on two approaches: (i) a multidimensional assessment based on a set of selected indicators, and (ii) the ‘Theory of Change’ method.

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. The CSE practices may be either platform-based or ‘offline’. The indicators can be selected case-by-case, in one or multiple areas of impact, and can be used with different evaluation methodologies such as multi-criteria analysis, benchmark analysis, cost-benefit analysis, performance assessment system, etc. By contrast, a new framework of assessment was applied using the ‘Theory of Change’ by considering the wider organization level of the CSE platform as a “unit of analysis”, in order to evaluate the impact of CSE platforms at industry level.

Finally, the contribution reflects on the policy implications of the mapped areas of impact and proposed assessment methods, and suggests some recommendations about the most problematic open issues.

11.2 Methodological Framework

The growth of Information and Communication Technology (ICT) solutions to mediate transactions between providers and users has allowed online platforms to become globally dominant intermediaries for the CSE. Nevertheless, in recent years, and increasingly in times of deep socio-economic crisis, there has also been a flourishing of CSE practices that are not powered by such technology – such as new forms of volunteering and community-led initiatives, and community and collective ownership models.

The wide range of methods to measure the impacts of the CSE can be classified considering the following elements ([Grieco et al., 2015](#)), as summarized in Figure 11.1:

- Typology of indicator for the assessment: can be quantitative, qualitative and qual/quantitative;
- Typology of impact to assess: 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 user of the measurement: CSE initiatives (for internal evaluation), universities, research institutions, not-for-profit networks and organizations, consulting firms, 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 contribution, we propose two approaches: (i) a Multidimensional assessment and (ii) the Theory of Change (Table 11.1).

One option is to focus on the CSE initiative itself as a ‘unit of analysis’ using a multidimensional assessment methodology. The assessment would therefore be focused on the internal and external dimensions of its potential impact. By way 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

Table 11.1. Main frameworks of analysis.

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

Source: Explanation by the authors based on typology of methodological approach.

lower prices), while (ii) external effects can mostly be associated with the impacts on the “outside” world (i.e. environmental effects). Accordingly, we discuss existing literature in Section 11.3 and then in Section 11.4 we propose a series of practical indicators for the assessment of the wide range of impacts thus revealed.

Another option is to consider the wider organizational 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 Section 11.5, leveraging the Theory of Change.

This contribution, therefore, is based on a mixed-methods (MM) evaluation approach. 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 CSE initiative operates.

11.3 Mapping 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.

The impacts of CSE have attracted growing interest and research, which explore the topic 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.).

However, to date, little rigorous research has been done on the quantitative assessment of economic, social, political and environmental impacts of CSE which remain largely unknown and to date unquantifiable. Moreover, a range of important induced effects may be indirectly triggered by the increased number of platform-mediated transactions and/or behavioural changes induced by the collaborative and sharing economy – so-called ‘rebound’ effects. These are even more obscure and difficult to be identified and quantified.

This section 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 the CSE. For those who are new to this subject, Table 11.2 contains suggested foundational reading addressing the following issue: how can we analytically conceptualize and empirically assess the various impacts of the Collaborative and Sharing Economy?

One of the most important aspects of the CSE is its **social** value and contribution to the creation or strengthening of social ties and interactions (Frenken, 2017), to the enhancement of social cohesion and the establishment of a sense of community among participants (Parigi *et al.*, 2013; Rosen, 2011; Schor, 2016), including the creation of “digital communities” (Hamari *et al.*, 2016; Reischauer and Mair, 2018; Vaskelainen and Piscicelli, 2018) of collaborative consumption (Botsman and Rogers, 2010; Dillahunt and Malone, 2015; Martin, 2016). In this regard, the role played by trust, reciprocity and sense of belonging to a community have been crucial factors pushing forward the adoption of the collaborative and sharing economy (Belk, 2010; Celata *et al.*, 2017).

Many CSE initiatives – mostly those operating in the food or mobility domain – have also been noted as favouring the generation of positive effects on wellbeing, health (Woodcock *et al.*, 2014), and quality of life (e.g. sharing of healthy food). While other social impacts are related to the creation of (often temporary) employment (De Groen *et al.*, 2017) and the lack of protection of workers’ rights (Berger *et al.*, 2017).

The CSE has also been accused of producing a series of negative social impacts, and commentators have raised concerns, identifying it as a source of “selective exclusion” (Benkler, 2004), social, racial and even digital social discrimination

Table 11.2. Suggested reading by area of potential impact.***Social***

- [Botsman and Rogers, 2010](#), What's Mine Is Yours: The Rise of Collaborative Consumption
- [Celata et al., 2017](#), The sharing economy as community marketplace? Trust, reciprocity and belonging in peer-to-peer accommodation platforms
- [Edelman and Luca, 2014](#), Digital Discrimination: The Case of Airbnb.com
- [Frenken, 2017](#), Putting the sharing economy into perspective
- [Martin, 2016](#), The sharing economy: A pathway to sustainability or a nightmarish form of neoliberal capitalism
- [Parigi et al., 2013](#), A community of strangers: the dis-embedding of social ties
- [Schor, 2016](#), Debating the sharing economy

Environmental

- [Demainly and Novel, 2014](#), The sharing economy: make it sustainable
- [European Commission, 2016a](#), Environmental potential of the collaborative economy
- [Frenken, 2017](#), Political economies and environmental futures for the sharing economy
- [Heinrichs, 2013](#), Sharing economy: A potential new pathway to sustainability
- [Leismann et al., 2013](#), Collaborative consumption: Towards a resource-saving consumption culture
- [Martin and Shaheen, 2011](#), Greenhouse gas emission impacts of car-sharing in North America

Economic

- [Barron et al., 2018](#), The Effect of Home-Sharing on House Prices and Rents: Evidence from Airbnb
- [Guttentag, 2015](#), Airbnb: disruptive innovation and the rise of an informal tourism accommodation sector
- [Malhotra and Van Alstyne, 2014](#), The Dark Side of the Sharing Economy ... and How to Lighten It.
- [Picascia et al., 2019](#), The airification of cities. Making sense of the impact of peer to peer short term letting on urban functions and economy
- [Sundararajan, 2016](#), The Sharing Economy. The End of Employment and the Rise of Crowd-Based Capitalism
- [Wachsmuth et al., 2017](#), Airbnb's Impact on Canadian Housing Market.
- [Zervas et al., 2017](#), The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry

(Continued)

Table 11.2. Continued***Political***

- [De Groen et al., 2017](#), The Impact of the Platform Economy on Job Creation
- [Edelman and Damien, 2016](#), Efficiencies and Regulatory Shortcuts: How Should We Regulate Companies like Airbnb and Uber?
- [Frenken, 2017](#), Putting the sharing economy into perspective
- [Katz, 2015](#), Regulating the sharing economy
- [Malhotra and Van Alstyne, 2014](#), The Dark Side of the Sharing Economy ... and How to Lighten It.
- [Wachsmuth and Weisler, 2018](#), Airbnb and the rent gap: Gentrification through the sharing economy

Source: Elaboration of the authors.

([Edelman and Luca, 2014](#); [Edelman and Damien, 2016](#); [Zukin et al., 2015](#)), and for the commodification of personal assets, sociality, intimacy and identities ([Hearn, 2010](#); [Ronzlyn, 2013](#); [Ert et al., 2016](#)). Issues related to consumer protection and safety, privacy and (big) data use and treatment ([Koopman et al., 2014](#)) are still open and much debated.

Finally, at a wider urban level, much literature – mainly concerning the hospitality industry – has reported conflict at the community level (e.g. between tourists and residents), and has raised concerns about the ability of CSE practices to reshape the landscape of extant urban conflicts around issues such as gentrification, social and economic segregation, quality of life and coexistence between different communities and groups ([Trudelle and Pelletier, 2016](#); [Gutiérrez et al., 2017](#)).

In terms of **environmental** impacts, recent research has generally identified positive impacts derived from the new paradigm of more sustainable consumption and production practices that result in ecological resilience, the reduction of Greenhouse Gases (GHG) ([Martin and Shaheen, 2011, 2016](#); [Chen and Kockelman, 2016](#)), waste, and resource usage, reduction of ecological footprint, provision of green infrastructure ([Heinrichs, 2013](#); [Leismann et al., 2013](#)), and more sustainable behaviour at various levels ([European Commission, 2016b](#)).

Also in terms of environmental impact, rebound effects that are due, for example, to shifts and/or additional consumption of goods and/or services due to a decrease in the market prices should be considered ([Denegri-Knott, 2011](#)). As stated by ([Plepy and Singh, 2019](#), pp. 67–68), “secondary increases in consumption of other goods and services when the residual savings from the consumption of primary goods and services are made available” potentially produce a series of potential environmental that the authors elegantly illustrated using a simplified causal loop diagram (CLD).

Nevertheless, despite a shift towards more sustainable consumption models and increased environmental awareness, 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 (Demainly and Novel, 2014; Frenken, 2017). 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.

In conclusion, as Frenken (2017) argued, thanks to few systematic studies available, “one can—tentatively—conclude that the environmental impacts of sharing are likely to be positive, but possibly much smaller than some claim and hope for” (p. 7).

From an **economic** perspective, the CSE impacts can be examined at different scales and viewpoints. Positive impacts vary from job opportunities brought into the economic systems, occasions for (extra) income for individuals, families and more generally local communities – also improving deprived neighbourhoods (Dillahunt and Malone, 2015), as well as the development of micro-entrepreneurship and start-ups and the economic impetus given to a microcosm of secondary market entrepreneurs supporting the CSE ecosystem (Malhotra and Van Alstyne, 2014).

For the consumer, the CSE has the potential of delivering concrete benefits. The possible decline in the prices of goods and services, cost savings or revenue generation for individuals, allows, in fact, to increase consumer welfare in absolute terms (Frenken, 2017). By contrast some authors have highlighted various negative effects related to increased income inequalities due to the ability of CSE platforms to depose those with less education and lower incomes (Schor, 2016), 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 CSE.

In terms of the workforce, on one hand many platforms presented themselves as providers 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 (Sundararajan, 2016, Murillo *et al.*, 2017; Stabrowski, 2017).

The economic impacts of the CSE at sector- and macro-level are less clear-cut. Some CSE platforms have been associated with fiscal irregularity and tax evasion (Malhotra and Van Alstyne, 2014; Frenken, 2017), lack of transparency and unfair competition in a previously ‘fair’ market, resulting in their being disruptive for traditional markets and economic sectors (Einav *et al.*, 2015; Zervas *et al.*, 2017; Dogru *et al.*, 2019; Gyödi, 2019). Airbnb, for example, has heralded a vast enlargement in the accommodation capacity of cities, with the potential to displace the traditional hospitality sector (Guttentag, 2015; Zervas *et al.*, 2017), has had a significant impact on housing values, availability and affordability (Lee, 2016;

Barron *et al.*, 2018), and has contributed to the “touristification” of many areas (Wachsmuth *et al.*, 2017; Picascia *et al.*, 2019).

In a similar way to other areas of impact, the CSE has the potential to cause economic rebound effects, i.e. impacts on the wider economy from spending the money saved and earned due to new models of collaborative and sharing production and consumption. In terms of “price effects”, for example, improvements in efficiency increases the use of the same product or service (direct rebound) and – often in parallel – net gains and savings increase the demand for other goods and services (indirect rebound) (Warmington-Lundstroma and Laurenti, 2020). Because of the many difficulties in identifying, assessing and quantifying the actual impacts the CSE creates, rebound effects have also been largely overlooked.

When it comes to the **political** impacts, these can be identified by adopting, for example, two different perspectives: (i) the “top-down” viewpoint: when considering the political effects that government policy and its administrative practices (e.g. legislation or regulation) can have on a phenomenon, and (ii) the “bottom-up” perspective: when considering, for example, the opportunity offered by CSE initiatives and/or platforms to increase or transfer various elements of power (resources, capabilities, and positions) to those who do not have them.

In the sphere of “top-down” effects, it is often reported that the exponential growth of the CSE has increased the capacity to bypass regulation and favour tax avoidance because many platforms do not adhere to the market regulations and tax obligations that apply to ‘regular businesses’ (Malhotra and Van Alstyne, 2014). Legislation regulating the CSE (taxation, registration, licensing, etc.) is therefore a fast-changing and a controversial topic of analysis (Edelman and Damien, 2016; Katz, 2015; Codagnone and Martens, 2016).

From a “bottom-up” perspective, some research suggests more positively the opportunity offered by CSE initiatives and/or platforms to enhance the participation in social movements (e.g. new forms of social and solidarity economy practices), to cultivate the political and social skills necessary for citizenship and activism and a “socially-inclusive form of development” (Frenken, 2017), to represent the preferences and wishes of communities and local people in the policy process, and to reclaim the ‘commons’ (Schor, 2016) or the “right to the city” (Wachsmuth and Weisler, 2018).

Measurement of the political impacts of CSE initiatives is yet to come, but could 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 CSE practices, the debate on possible ways to integrate the 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 undeveloped and unclear.

Finally, the **rebound effects** of CSE initiatives should also be considered in the definition of an assessment method. Individuals are increasingly using online CSE 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 materials or funding – which might inevitably be injected into the system anyway and thus increase production or consumption in other ways. Therefore, the degree to which resources thus liberated can be used is an important issue, and should not be excluded from any analysis.

11.4 A Multidimensional Assessment of CSE Initiatives: Areas of Impact and Indicators for the Analysis

Adopting an “internal” perspective – that is, 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 major evidence coming from previous research (Sanna, 2018; Celata and Sanna, 2019), the main areas of impact for which it is possible to derive feasible measurements are: social, economic, political and environmental.¹ For each of these areas, a set of indicators aimed at measuring the potential positive and negative impacts is presented in Table 11.3.

The proposed indicators are mainly non-fiscal: physical (quantity of emissions, quantity of waste saved or produced, etc.) and behavioural (social inclusion, public involvement and participation, environmental awareness, etc.). These have been selected from the wider field as the most relevant and significant for each domain object of the study in our opinion, but clearly the list is indicative and not exhaustive of all the possible direct and indirect, positive or negative impacts that a CSE initiative may produce.

Nevertheless, the set of proposed indicators is diverse and wide, and a case-by-case selection process is therefore needed according to a series of factors:

1. Some indicators have been developed and used in the framework of previous research conducted by Celata and Sanna (2016) in which (i) tools for data collection (e.g. questionnaire), (ii) formulas for calculating the indicators and (iii) indications about the methods for the analysis (e.g. Multicriteria Analysis) are available.

Table 11.3. Areas of impact and indicators for assessment.

Area of Impact	Indicator	Description of the Indicator
Social	Social cohesion	To strengthen/reinforce the sense of belonging of a community and the relationships among P/U* within the community itself.
	Human and civil rights	To promote the protection of human and civil rights (e.g. protection of minorities/targeted groups, worker's rights, consumer's rights, data treatment, etc.).
	Social capital	To strengthen social interaction/networking between P/U.
	Social inclusion and equity	The creation of new relationships between people who did not previously know each other, which would be unlikely without the initiative relationships. The creation/reinforcement of trust.
	Quality of life and wellbeing	The heterogeneity of P/U in terms of origin, gender, age, social status (internal social inclusion). The degree to which the needs of the local community are taken into consideration (external social inclusion).
	Accessible learning	Gender equality, measured e.g. by the percentage of women and men fulfilling key roles in the initiative (e.g. founders, leaders, etc.). To improve quality of life, to promote leisure and/or health of P/U.
	Capacity building and knowledge transfer	To create opportunities for learning and the willingness to make learning resources accessible to P/U. To improve the ability of a person, group, organization, or system to meet its objectives or to perform better.
	Opportunity creation	To retain and/or make available skills, knowledge, tools, equipment, and other resources. The ability to create opportunities for P/U, e.g. to find a job, for social mobility, etc.
		To promote/increase/encourage new forms of micro-volunteering and/or exchange of assets.

(Continued)

Table 11.3. Continued

Area of Impact	Indicator	Description of the Indicator
Environmental	Social empowerment	The enhancement self and social awareness, self-worth, dignity of P/U.
	Public involvement and participation	The ability to allow people to “do/work together”, increasing a community’s social fabric and resilience.
	Digital divide	To strengthen/promote/support civic participation, collective action towards a political goal. E.g. the platform helps and/or gives people and individuals the power to influence, and increases individual ability to act.
	GHG Emissions	The ability to reduce/contrast the “digital divide”. (Normally platforms are accessible only to “digital/expert” P/U. By relying only on digital platforms, the digital divide can be exacerbated.)
	Consumption of resources	To reduce greenhouse gas emissions and to improve the quality of the environment.
	Waste production	To reduce resource consumption (water, energy, land, etc.) and/or waste production.
	Utilization of idle resources	To reduce waste production and/or to promote the reduction of waste.
	Environmental awareness	To promote activities aimed at maximizing the utilization of idle resources by sharing commodities such as vehicles, spaces, tools (etc.) with others.
	Sustainable production	To raise environmental awareness among members/local community/population (e.g. CSE initiative/platform shares/promotes the values of biodiversity and the steps they can take to conserve and use it sustainably).
	Corporate Social Responsibility and Environmental Management	To promote production and/or use of goods/services derived from sustainable sources.

(Continued)

Table 11.3. Continued

Area of Impact	Indicator	Description of the Indicator
Economic	Rebound effects (environmental)	Positive or negative rebound effects e.g. additional consumption of other products or services due to e.g. income effects and/or lower per unit price.
	Economic impact on P/U*	Economic effect on P/U. Can be (a) positive, (b) negative, and (1) direct or (2) indirect. Can be measured as a variation of (e.g.): (i) income, (ii) expenditure, (iii) debt, (iv) savings.
	Job creation	To create new jobs, directly or indirectly.
	Opportunities for providers	Create new economic opportunities for providers, and growth of new economic sectors (e.g. secondary market supporting the CSE ecosystem).
	Local economic impact	Impact on the local economy (positive: e.g. to revitalize deprived areas, the growth of local economic activities, etc. and/or negative: effects on some local businesses or incumbent business e.g. by displacement). To improve the self-sufficiency of the local community (e.g. local money is spent locally/off-the-grid/self-organization).
	Fiscal impact and public spending	Impact on tax revenues e.g. for local governments. This can refer to any direct or indirect tax paid/avoidance (including licence, registration fees, etc.). Economic interventions and economic growth induced/due to increase in public spending.
	Rebound effects (economic)	Measurement of decline of demand and substitution effect on “traditional sectors”, e.g. in some sectors services/products offered by CSE platforms may cause unintended negative cross-sectoral impacts.
Political	Regulatory framework	Effects on the regulatory framework e.g. need/demand/introduction for new regulations and ad hoc legislation regulating e.g. taxation, registration, licensing.
		Effects on different areas of legislation such as labour law, sectoral/specific tax rules, etc.

(Continued)

Table 11.3. Continued

Area of Impact	Indicator	Description of the Indicator
	Policies and instruments	Effect (direct or indirect) on environmental and more sustainable policies and instruments (e.g. integration of principles of sustainable development with policies and programs).
	Political empowerment	Political empowerment and participation of P/U, including in decision-making processes.
	Political mobilization	Political mobilization and increased demand for political change.
	Power	This involves P/U organising with a common purpose or common understanding to achieve collective goals, social mobilisation, building alliances and coalitions.
	Partnership	Forms of control of one person or group over others: the alignment of P/U to the interests and ideologies of its founders, volunteers, and users. In this case can be expressed as the ‘power’ of a CSE initiative or platform to influence its direct surrounding and/or its ‘power’ to influence meaningful decisions. May be seen as negative.

*P/U = For an easy use of the table we would generally refer to “participants and/or users”. Nevertheless, a CSE initiative can reach a wide range of people: Members (e.g. founders), participants (e.g. those taking part to its activities), users (e.g. in the case of a platform-based initiative), etc. These different typologies should be carefully defined while developing the indicators and the analysis.

Source: Elaboration of the authors.

methodology for analysis, availability of data and information, specific needs of the research, etc.

11.5 The Application of the Theory of Change for Impact Assessment of CSE Platforms

In order to develop and test a new framework to assess the impact of CSE platforms we decided to apply the Theory of Change (ToC) at an industry level, even though it is generally used at an organizational level, and then to perform an empirical

study on CSE platforms operating in the food industry. Specifically, food sharing platforms (e.g. “Too Good To Go” and “Copia”) that focus on enabling a digital connection between suppliers and beneficiaries of edible food waste while having social impacts related to reducing waste ([Michelini et al., 2018](#); [Ciulli et al., 2020](#)).

The remainder of the section is organized as follows: the first paragraph presents an overview of the theory of change; the second describes the methodology adopted for the considered case study; in the final two paragraphs, the results obtained are presented.

11.5.1 Theory of Change: Overview

The 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 non-profit sector 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 one reason ToC 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 output and the outcome is the social change expected in the long-term (Figure 11.1).

The ToC provides a flexible approach to identify how activities are understood to produce a set of results that, in turn, contribute to achieving a final impact ([Grieco, 2015](#); [Rogers, 2014](#)), and describes the change an organization aims to make and



Figure 11.1. Impact value chain.

Source: Adapted from [Clark et al. \(2004\)](#).

the steps involved in achieving that goal. In short, the ToC helps an organisation to show how it makes an impact, what it aims to change, and how that change occurs.

Moreover by applying the ToC, it is possible to identify an organisation's main areas of impact and related indicators. Indicators can be *qualitative*, such as positive attitudes and perceptions in consumers, corporate image, organizational climate, and *quantitative*, such as weight/items of food wasted/donated over the years, waste tax reduction, inventory management cost reductions, etc. For a full list of indicators see [Michelini et al. \(2020\)](#).

11.5.2 Methodology

To identify the main areas of impact in the food sharing industry, we adopted the methodology developed and tested by [Michelini et al. \(2020\)](#). It comprises two focus groups which were held involving different stakeholders: academics, platform managers, institutions (as representatives of policy makers), distributors/suppliers, and non-profit organizations. Each focus group consisted of eight individuals and lasted for approximately 90 minutes. The group was composed of three managers of food sharing platforms, one manager from the distribution sector, one representative of the third sector, and three academics expert in the field of sharing.

Questioning of the focus group was based on the ToC framework and consisted of the following sections: stakeholders, activities, outputs, and outcome (see Table 11.4).

Table 11.4. Focus group questioning.

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?

Source: Elaboration of the authors.

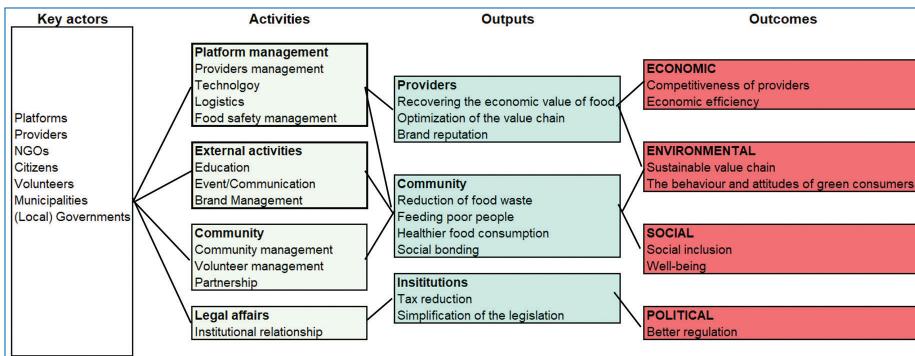


Figure 11.2. ToC: CSE platforms in the food industry.

Source: Elaboration of the authors.

The elements of the ToC framework that drove the focus group were adopted as categories for analysis in the coding process: all the portions of text that were considered as referring to a specific category were recorded under that label. All the elements were then positioned within the map (Figure 11.2), in order to demonstrate the connections between them. To this end, following the ToC methodology, we started by analysing the activities implemented by different types of platform, then we identified the concrete outputs and outcomes that the organizations aim to achieve.

11.5.3 Main Results

The focus groups allowed the identification of the main stakeholders, activities, outputs and outcomes of food sharing platforms. Figure 11.2 summarizes the main results.

Firstly, the main types of **stakeholders** affected directly or indirectly by the platforms were identified: providers of food (such as restaurant, bakeries, supermarkets etc.), not-for-profit organizations that are beneficiaries of food, citizens (involved in peer-to-peer platforms), volunteers who were generally involved in supporting the logistical process, and finally municipalities and governments.

The first set of **activities** relate 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 that require information which can then be used to improve the supply chain and procurement process in order to prevent waste. A further area of activity pertains to all those actions relating to the establishment of the external presence of the platforms, such as events and communications, and training and education, both of which have emerged as being essential for promoting sustainable behaviours and raising awareness concerning the social

good, environmental protection, and safety. An additional key area of activity is related to food management in terms of logistics, and the 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 non-profit organizations. Lastly, institutional relationships play a key role as a mean 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. The first set of outputs relates 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 to 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. From a community perspective there are other several outputs: the reduction of food waste, the enhancement of neighbourhood relationships (social bonding) and 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. In terms of 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.

Food sharing platform initiatives also have an impact in terms of policy change, working with governments and local authorities to improve legal regulation, thereby maximizing the societal impact they can have.

11.6 Conclusion: Policy Recommendations

The impact assessment of CSE practices and platforms raises many implications at policy level that can be addressed via two perspectives. The first viewpoint refers to *implications derived from the general impact of the CSE*, the second one is related to

the *impact assessment methods and tools*. The next two paragraphs will shed light on both of these.

11.6.1 CSE Impact: Policy Implications

In general, the debate around the impact of collaborative and sharing economy is dynamic and multifaceted, with some authors describing its social value and positive effects, and others emphasizing its negative implications. Some scholars have pointed out that while the effects of the CSE are likely to be positive, they are likely to be much smaller than some claim and hope; furthermore due to the uncertainty regarding institutional and technological changes to come, scepticism would be advisable regarding the possibility of providing a realistic assessment of the impact of the sharing economy ([Frenken, 2017](#)).

However, analysis of the current academic literature, reports and articles written by practitioners and consultancy firms on the topic allows the identification of the main trends and controversial issues in this field of study. According to [Murillo et al., 2017](#), the main controversial issues can be classified into the following areas: (i) market, (ii) government, (iii) workers, (iv) consumers and (v) environment. In order to provide insights and potential implications for policy makers, we propose a discussion of these most relevant controversial issues.

With regard to the **market**, the CSE poses the matter of whether or not a particular activity can be qualified as a two-sided or multi-sided platform. Two-sided (or more generally multi-sided) markets are roughly defined as markets in which one or several platforms enable interactions between end-users, and try to get the two (or multiple) sides “on board” by appropriately charging each side ([Rochet and Tirole, 2004](#)). Its importance concerns competition policy implications, since some economic principles used in competition policy do not hold when markets are two-sided or multi-sided. For example, in two-sided markets, pricing to one side below marginal cost is not a predatory behaviour but it can be a profit maximising strategy. Looking at only one side can lead to a market definition that is too narrow ([Codagnone and Martens, 2016](#); [Evans, 2008](#)).

Another important issue refers to the debate between new entrants and incumbents. Incumbents argue that they still face various regulatory burdens that new entrants are evading; these include licensing requirements, price controls, service area requirements, marketing limitations, and technology standards ([Koopman et al., 2014](#)).

At a **political (governmental)** level it is often reported that the exponential growth of the CSE has increased the capacity to bypass regulation and favour tax avoidance. Many actors in the sharing economy do not pay taxes, existing outside the “traditional” economy. Furthermore, the headquarters of these platforms may

be located in tax havens, making tax collection even more difficult (Malhotra and Van Alstyne, 2014; Klobučar *et al.*, 2016; Frenken, 2017).

To this regard, as indicated by Frenken (2017), according to three possible “platform scenarios” (capitalism, redistribution, cooperative) and related “institutional logics” (market, state, community), governments could adopt new taxation systems, e.g. making effective use of platforms to tax activities that previously were hard to monitor, and/or considering putting new and *ad hoc* taxes on property, revenues, or claiming tax on the profits that platforms make as a function of the volume of transactions in their respective territories.

Regarding the **workforce**, on one hand the CSE has indeed presented itself as a provider of flexible employment opportunities, but on the other hand the rights, benefits, and fair-pay levels of this emerging sector of freelancers seem to be under threat. Many platforms do not guarantee social security or pension rights since most of their workers are not considered employees, but as independent contractors (Murillo *et al.*, 2017; Klobučar *et al.*, 2016; Stabrowski, 2017; Sundararajan, 2016).

From the **consumer's perspective**, Schor (2016) investigated how CSE activity is affecting the distribution of income and opportunity. She found that the CSE increases income inequality amongst the bottom 80% of the population (in terms of wealth distribution), shifting more income and opportunity to better-off households and providers.

The CSE could also have a negative effect on social inclusion, since CSE service providers do not always have to follow the same legislation as traditional service providers, and thus certain groups could find themselves excluded. For example, disabled individuals may not be able to use services such as car sharing, because providers are not required to have vehicles adapted to their needs, and private drivers are not obliged to take them as passengers (Klobučar *et al.*, 2016).

In terms of **environmental** impacts, recent research mainly identifies the positive impacts derived from the new paradigm of more sustainable consumption and production practices. However, industry-specific literature has lighted some concerns, for example in the case of food sharing, one of the main issues is the focus on waste reduction, instead of trying to address waste prevention (Michelini *et al.*, 2020).

In the mobility sector, some studies have argued that if shared cars are cheaper and more readily available, this could prompt more people to use such cars instead of public transport, leading CO₂ emissions to rise (Klobučar *et al.*, 2016). Moreover, as noted in Section 11.3, literature concerning the hospitality industry has reported conflict, e.g. between tourists and locals at a community level, decreases in the quality of neighbourhood life and coexistence, rising accommodation prices, and gentrification (Gutiérrez *et al.*, 2017; Trudelle and Pelletier, 2016; Sundararajan, 2016).

Policy implications	Market	Government	Workers	Consumers	Environment
Improve the policy framework	Ensure fair competition between new entries and the incumbents.	Uniform or similar regulation all over the EU (e.g. on taxation issues).	Review all the labour-market relevant legislation (e.g. to guarantee workers protection, minimum wage, etc.).	Data security and protection of consumer rights.	Reform environmental guidelines.
Digital divide reduction	Improve the taxation and regulatory framework.	To train Public Administration (PA) in order to improve and make uniform the digital literacy and make CSE useful at the governmental level as well.	To improve the digital literacy of the workers and guarantee equal access to CSE services.	To improve the digital literacy of the population through effective educational and training systems.	Advance the social goals of protecting the environment, also implementing and/or improving environmental accountability requirements.
Promote and support inclusiveness	Foster equal access to all the interested categories.			To improve the services inclusiveness (i.e., disabled people).	
Transparent lobby campaign		Encourage the dialogue between platforms and policy makers.			
Foster social entrepreneurship	Encourage the start-up of fair and sustainable oriented platforms.				

Figure 11.3. Policy implications and recommendations.

Source: Elaboration of the authors.

Starting from these premises Figure 11.3 shows in brief the most important implications that should be addressed by policy makers for each of the following areas:

- improve the policy framework;
- reduce the digital divide;
- promote and support inclusiveness;
- make transparent lobbying campaigns;
- foster social entrepreneurship.

11.6.2 CSE Impact Assessment: Policy Implications

Identifying qualitative and quantitative metrics for reporting information to stakeholders is not straightforward, which makes assessing the impact of the CSE complex. This complexity has resulted in the development of many different

Main issues	Possible pitfall	Policy recommendations
Heterogeneity Domain of activity. Business models. Stakeholders. Lack of... Financial resources. Standards. Scientific approach. Culture.	Risk of encouraging: The development of models that are too complex or too vague. The proliferation of indicators. The development of unrealistic and/or unfeasible models.	Facilitate the creation of an open-source library of indicators and/or easy-to-use toolbox of feasible indicators. Foster the networking of academics, practitioners, and policy makers. Support the development of methodologies to foster impact-investing tools

Figure 11.4. Impact on policy.

Source: Elaboration of the authors.

models aimed at providing guidelines and indicators for such assessments (Grieco, 2015). The 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 to assess all of them.

The work carried out so far has allowed us to identify the main issues that have characterized the impact assessment of CSE, and its potential pitfalls, and to provide some policy recommendations that will be useful to improve the quality of impact assessment (see Figure 11.4).

An initial and important issue concerns the “heterogeneity” of domain of activity as CSE practices and/or platforms operate in different industries (such as food, hospitality, mobility, finance, etc.) and can adopt different business models (e.g. for-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 major issue is related to the “lack of ...”: particularly financial resources, shared knowledge and available data and information; and also to standards, such as shared metrics or indicators, and the lack of a methodological approach that characterizes accounting practices aimed at assessing financial returns and culture among organizations, institutions, entrepreneurs and public administrations. Even if generally-accepted accounting principles exist to aid financial reporting, a comparable standard related to the measurement and communication of social impact does not yet exist because it is difficult to define the concept universally, and related measurement tools often lack the rigour that characterizes scientific approaches aimed at assessing financial returns (Grieco, 2015).

The main pitfalls relate chiefly to the risk of encouraging the development of models that are too complex or too vague, the proliferation of models, approaches, indicators, and the development of unrealistic or inapplicable measurements.

Based on prior 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 policymakers an open-access and easy-to-use toolbox of feasible indicators and/or a library of methodologies which would allow them 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 contribution).
- ✓ Foster the interaction of academics, practitioners and policy makers: it is recommended to encourage and support improved communications between academics (from different fields of study), specialists, practitioners and policymakers by creating networks that bring these 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 a new and innovative model that leverages market-driven efficiencies – to provide social services such as Social Impact Bonds (SIB). An 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*).

To conclude, taking into account the disruptive nature of many CSE initiatives and platforms, despite the fact that a common and shared metric for the measurement of their wide range impacts does not yet exist, it is suggested that a reinforced interdisciplinary approach based on the networking of academics, practitioners and policy makers/policymakers, supported by an open-source library of methodologies, and an integrated collaboration between private sector and public entities, could represent a feasible way to assimilate the lessons learned from different fields of study, research and practice, and translate them into the structuring of new and more effective policies.

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