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Sharing versus collaborative economy: how to align ICT developments and the SDGs in tourism?

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ABSTRACT

Great hopes have been placed in the sharing economy to provide a new business model based on peer-to-peer (P2P) exchanges of underutilized assets. As a model, the sharing economy has been expected to make significant contributions to sustainability, providing new opportunities for entrepreneurship, more sustainable use of resources, and consumer co-operation in tight economic networks. However, in recent years, digital platforms have turned into the most important actors in the global sharing economy, turning global corporations, such as AirBnB, Booking, or TripAdvisor into intermediaries controlling and profiting from most transactions. Focused on accommodation, this paper conceptualizes the sharing economy in comparison to the wider collaborative economy, and discusses its social, economic, environmental, and political impacts in comparison to the sustainable development goals. It concludes that the sharing economy has great potential to make very significant contributions to sustainability, though the model is increasingly being replaced by the collaborative economy, which performs as an extension and acceleration of neoliberal economic practices.

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Collaborative economy; information and communication technologies; sharing economy; sustainability; sustainable development goals

Introduction

Global environmental and social challenges prove that contemporary economic systems need to change (Piketty & Zucman, 2014; Sassen, 2014; Steffen et al., 2015). The publication of the United Nations World Commission on Environment and Development's (WCED, 1987) report *Our Common Future* is a key marker of the start of the paradigm shift toward "sustainable development." Nevertheless, although endorsed by business leaders, environmentalists and policy-makers alike (Lélé, 1991), the definition as to what would constitute a "sustainable" economy has remained contested even 30 years after the report's inception. To date, "sustainable development" continues to be primarily seen as a form of ecological modernization (Mol & Spaargaren, 2000) based on dematerialization and decarbonization of production (Von Weizsäcker, Weizsäcker, Lovins, & Lovins, 1998), and with the greater objective of supporting the Sustainable Development Goals (SDGs; United Nations, 2015). Despite substantial business and

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institutional support for such an approach, there is little evidence to suggest, however, that consumption, including the case of tourism (Buckley, 2012; Rutty, Gössling, Scott, & Hall, 2015), is becoming more sustainable on global scales, or that economic benefits are more evenly distributed (Piketty & Zucman, 2014). In many ways, the contemporary economy has remained neoliberal in its organization (Jackson & Senker, 2011; Kotz 2015), even where efforts have been made to redesign and re-label economic systems as a "green economy" (Barbier, 2012) or a "circular economy" (Andersen, 2007), as part of the attempt to reconcile economic growth with the maintenance of natural capital (Costanza et al., 2015; Hall, 2015).

In the 2000s, the "sharing economy" emerged as the proposition of an altogether different economic model, focused on changing production and consumption cultures, as well as interactions between producers and consumers (Schor, 2016). Rifkin (2000) was one of the first to propose the short-term use of less-frequently used assets by different actors within a network economy, enabled by developments in Information and Communication Technologies (ICT). Benkler (2004) extended this approach to emphasize "social sharing and exchanges," until Botsman and Rogers (2011, n.p.) suggested a more comprehensive definition of "*an economic model based on sharing underutilized assets from spaces to skills to stuff for monetary and non-monetary benefits, largely focused on peer-to-peer transactions.*" The notion of a sharing economy is not new, although it has historically been aligned to communitarianism and cooperative organizations with strong links to anti-consumption lifestyles, that is, it has been framed as a non-profit or a profit-sharing organizational structure. Traditionally, sharing was intrinsic to the intimate (familial) sector; in contrast to reciprocity, a form of exchange involving calculation of returns in communities and markets; and redistribution, a form of sharing which usually occurs through centralized means such as in the public sector (Yates, 2018). However, the development of ICT and online platforms has broken down the historical links between geographical and social distance and economic exchange (Price, 1975) and provided new trajectories for "sharing." Therefore, rather than a non-profit community-oriented approach, sharing came to be portrayed as a *for-profit business* model with the potential to decentralize production, consumption, finance and learning (Botsman & Rogers, 2011; Ravenelle, 2017) and hence to be fairer, more transparent and participatory (Frenken & Schor, 2017). Given that goods would be shared rather than owned, the sharing economy would also supposedly reduce resource use, including materials, energy or water, and be more environmentally efficient than consumption-focused economic systems (Heinrichs, 2013). This prompted Rifikin (2015) to postulate that "exchange value" would be increasingly replaced by "sharable value," thus redefining global economic systems.

The "sharing economy" is an inherently normative concept, in that it is intended to address shortcomings of the dominant capitalist economic system through optimized use of underutilized assets (Botsman & Rogers, 2011). In some cases this could mean replacing capitalist transactions through peer-to-peer exchanges. However, there is no single definition of the "sharing economy" (e.g. OECD, 2016; Schor, 2016), and the term is widely used interchangeably with "collaborative economy," "participative economy," "peer economy," "gig economy". All of these refer to the exchange of goods and services between individuals and/or communities for both profit and non-profit purposes. The growth of ICT platforms coordinating transactions in the sharing economy has meant that interactions between actors have changed fundamentally in recent years, as platforms have become globally dominant intermediaries in their own right, given the extent of their market penetration, management of significant shares of transactions, and ties with other transnational corporations, capital, and neoliberal discourse (Cockayne 2016; Martin, 2016; Frenken & Schor, 2017). The corporate vision of the sharing economy is fundamentally different from the original understanding (Botsman & Rogers, 2011), and has been described as "platform capitalism" (Srnicek, 2017) and the latest form of neoliberal global economic development (Cockayne, 2016; Ravenelle, 2017). This raises questions regarding the development of the sharing economy, its definition, growth, and sustainability (World Bank Group, 2018).

The sharing economy has been posited as a potentially significant contributor to the SDGs (Novel, 2014; Avelino et al., 2015; O'Rourke & Lollo, 2015). Cohen (2016) suggests that truly

"shared" non-Internet mediated consumption is in decline, or is at the very least are being ignored, and is increasingly replaced with emergent collaborative economies. This article consequently makes a distinction between the sharing and the collaborative economy, in that sharing refers to predominantly private, and often non-commercial transactions, while the collaborative economy is focused on mediating commercial business-to-peer exchanges, virtually always involving platforms owned by global corporations. This has implications for the Sustainable Development Goals (SDGs), as the sharing economy may have promising outcomes for SDGs while the collaborative economy, which is increasingly shaped by neoliberal principles, does not advance these. For a genealogy of definitions of the collaborative economy see Gyimóthy and Dredge (2017).

The SDGs were adopted in September 2015 during the UN Sustainable Development Summit in New York. Consisting of 17 goals related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice, the SDGs are the cornerstones of the UN 2030 Agenda for Sustainable Development (UN, 2018). Section 67 of the UN resolution for the Sustainable Development Agenda specifically notes the role of business: "We call upon all businesses to apply their creativity and innovation to solving sustainable development challenges" (UN SDG, 2015, p. 67). Hafermalz, Boell, Elliott, Hovorka, and Marjanovic (2016) argue that the sharing economy can potentially contribute to four of the UN SDGs: sustainable economic growth (8); innovation (9); sustainable consumption and production (12); and peaceful and inclusive societies (16), while Sundararajan (2016) suggests that in addition to its employment generating potential and its contribution to dematerialization, the sharing economy can lead to the development of a new set of sustainable values as a result of the centrality of sharing as a concept. In addition, the sharing economy is identified as playing a major role in sustainable transitions in cities (Vergragt, Dendler, de Jong, & Matus, 2016) and meeting the SDG goal to "Make cities and human settlements inclusive, safe, resilient, and sustainable." Indeed, much of the literature that connects the sharing economy to the SDGs highlights the neglect of structural change and employment in the SDGs, especially in the Millennium Development Goals (MDGs). To which inequality and leaving economic growth to the market could be added. Such a critique falls within the new developmentalist agenda (Andreoni & Chang, 2016) that sees sustainable development as a process of production transformation, led by the expansion of collective capabilities.

The sharing economy undoubtedly signals a major production transformation that plays a constitutive role in sustainable socio-technical transitions. It also emphasizes new ways of consumption. However, recognition of such a role with respect to tourism and the SDGs is weak, despite its long-standing recognition in development economics. For example, Kuznets (1973, p. 247) observed, "If technology is to be employed efficiently, […] institutional and ideological adjustments must be made to effect the proper use of innovations generated by the advancing stock of human knowledge." Therefore, any analysis of the sharing economy in tourism and its connection to the SDGs needs to recognize the structural implications for the tourism system in the development of any associated research agenda.

This paper conceptualizes the sharing economy's structure and evolution, and investigates its sustainability dimensions, including perspectives on resource use, ownership, participation and control, and the distribution of profits. These are compared to the SDGs to derive recommendations for the development of a sharing economy in its original definition (Botsman & Rogers, 2011).

2. Method

The discussion of this paper is based on discourse analysis, in the sense that the "sharing economy" is a term now widely used (e.g., World Bank Group, 2018) though rarely analyzed in terms

of its meaning. "Sharing" in particular relates to a specific economic model, and frames the way the "sharing economy" is comprehended. Yet, there is no common definition of the "sharing economy," and the term is frequently used to depict a "different" economic model that is somehow more inclusive or socially beneficial. The "sharing economy" consequently represents a discourse, in that its discussion has come to constitute a specific, positively connoted understanding of this economic model. In its first part, the article thus seeks to analyze the different contexts of the "sharing economy" vis-à-vis other economic models, and how these are interrelated.

As highlighted by Potter (2004), discourse analysis posits the existence of different depictions of social reality, and how these are created through discourse. The most relevant implication in the context of this article is that the use of the term "sharing economy" has already produced specific views of what the concept implies; language, in other words, has been socially constructive of a given reality (Gill, 2000). As there are potentially competing interpretations of the "sharing economy," specifically in light of the rise of what is commonly described as peer-to-peer (P2P) platforms, this article sets out with a conceptualization to disentangle the sharing economy's constituting elements and the social reality this creates. As Gill (2000) outlined, discourse is also rhetorically organized, and a form of action. In this view, notions of the "sharing economy" serve specific interests, which the article discusses as well.

This is the basis for the second part of this article, which identifies and discusses sustainability implications of the sharing/collaborative economy on the basis of a non-exhaustive literature review. To identify sustainability linkages, a starting point of which were discussions in various newspapers, highlighted issues such as tax evasion. More systematic crossword searches were then carried out using Google Scholar, focusing on "sharing," "collaborative," "participative," and "peer economy" in combination with "sustainability." Papers were then downloaded. After filtering and iterative searches, in which the identification of specific papers revealed new aspects, a total of 18 issues were identified and categorized as either social, environmental, economic or governance-related, on the basis of 30 related papers. Issues included, for example, "cultural learning" (social sustainability), "rebound effects" (environmental), "market concentration" (economic), or "tax evasion" (governance) (see Table 2). Each of these issues is shortly discussed, and conclusions are drawn in regard to the implications of sharing/collaborative economy for the Sustainable Development Goals (see Table 4). Since the literature review is not exhaustive, the list of implications should be considered indicative.

Finally, findings are discussed with regard to which economic model should be favored, or where regulation will be needed to minimize negative outcomes. Here, the paper relies on foresight perspectives. As highlighted by Popper (2008), there exist a wide range of foresight methods, which are usually selected on the basis of intuition, insight or impulsiveness. Popper (2008, p. 64) consequently suggests that foresight methods should be considered and chosen in a multi-factor process, as methods are generally identified on the basis of capabilities, that is, opportunities to collect information based on "evidence, expertise, interaction or creativity." These methods, in this paper, include a qualitative, expert-based approach to evaluating the desirability of different outcomes of tourism development alternatives under sharing/collaborative propositions for the SDGs. This foresight process relies on opinion and judgment, and is rationalized on the basis of viewpoints found in the literature review.

3. Conceptualization of the sharing economy

Common to both sharing and collaborative economic models is that the exchange involves an entrepreneur or provider, which may be an individual or business, extending an offer to a consumer. This exchange can be direct or facilitated by an intermediary, which currently almost always involves a digital (ICT) platform (Table 1; Figure 1). These platforms may be non-profit,

Table 1. Transaction types and platform orientation.

	Type of provider			
Platform orientation	Peer-to-peer	Business-to-peer	Government-to-peer	Spatial reach
Non-profit	Time banks	Atmosfair, Rescuing Leftover Cuisine, MealConnect	Freimobil, My TSA [Transportation Security Administration]	Primarily local and regional in scope
For-profit	Airbnb, Turo	Zipcar	Systembolaget [Swedish government owned alcohol monopoly]	Local to global, especially in urban centres

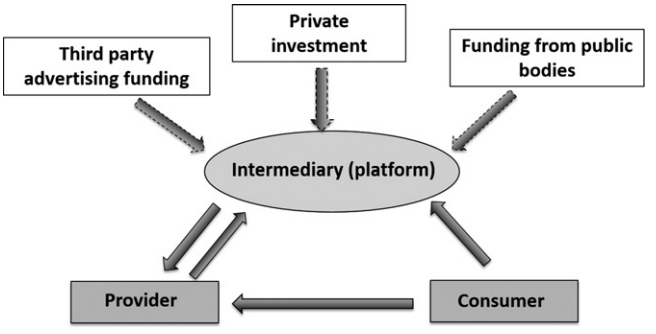

Figure 1. Monetary flows in the sharing economy.

although providers on non-profit platforms tend to be more local in orientation than for profit platforms that are national and international in scale. In this marketplace, transactions have a cost (usually monetary but may also be time). Customers pay a price for the asset or service they use, either as a direct payment to the intermediary or to the provider, who in turn pays the intermediary. Intermediaries may also collect funding through third party advertising, or be financed by private or public entities (Figure 1 illustrates monetary flows). Platforms can be local, crowdfunded initiatives, global corporations backed by venture capital, or government initiatives. The latter can also be a public service, that is travel information, or a profit-oriented state-owned enterprise. Models of provision in the sharing economy can therefore take a variety of forms (DeMaio, 2009; see also Gyimóthy, 2017), that is, a key issue regarding the sharing/collaborative economy concerns the size and direction of exchange flows, which are usually monetary in nature.

Dredge and Gyimóthy (2017) distinguish between digital and non-digital forms of the sharing economy, though given the pervasiveness of at least some form of digital communication for almost all tourism organizations and consumers, it may be more useful to distinguish assets, services, and opinion (Figure 2). In tourism, *assets* can refer to accommodation offers, such as sleep overs (Couchsurfing), or exchanges (HomeExchange). Assets can include transport modes, such as bicycles (Ofo), car sharing (Car2Go), or privately shared cars (Drivy). Examples of activity-related assets include sports gear (Sharewood) or food events (VizEat). *Services* include platforms offering the commercial exchange of assets (Booking, AirBnB), and forms of accommodation such as timeshares (Vistana, Hapimag), in which members are shareholders, and where the service is the organization of management and exchanges. Example of services also includes transport (Lyft, Uber, Mytaxi), activities such as experiences facilitated by national or regional marketing organizations (Visit*Destination*), food deliveries (Lieferando), or weather information (AccuWeather). Finally, *opinion* includes advice, evaluation, or ratings posted by other travellers (HolidayCheck; TripAdvisor); virtual travel based on photographic or video evidence of remote places, including scenic or iconic routes (YouTube); travel visualization (Facebook, Instagram); as

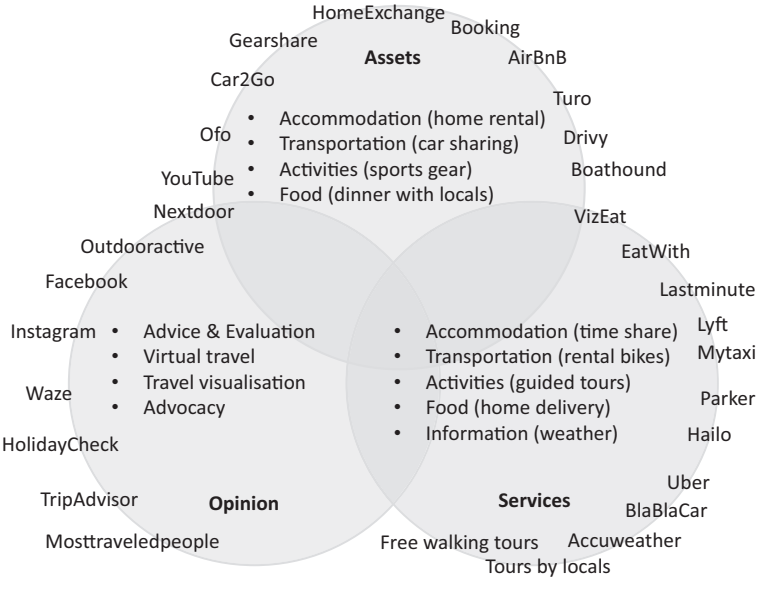

Figure 2. The sharing economy and its building blocks.

well as advocacy including petitions to raise awareness (Avaaz). Distinctions between these three building blocks of the sharing economy may not always be clear-cut; for example, Nextdoor is a platform helping neighbors, including temporary residents, to socially connect and to share assets or skills. All of these have in common that the exchange is facilitated by an intermediary, that is, through an app or website.

According to a common interpretation of the original concept of the sharing economy (Botsman & Rogers, 2011), transactions are largely organized on a peer-to-peer basis, and focus on temporary access to underutilized goods. However, this is not necessarily the case for all platforms highlighted in the preceding section, as exchanges can be professional, rental, reciprocal or free (Palgan, Zvolska & Mont, 2017). The difference between these approaches can be illustrated based on the example of accommodation. Accommodation includes hostels, pensions, self-catering accommodation, bungalows, vacation homes, or campsites. Most of these represent *professional* (commercial) accommodation types, in the sense that accommodation capacity is managed to generate revenue in business-to-customer exchanges (Table 2). Accommodation exchanges can also have a *rental* character, exemplified by flats rented directly from owners (peer-to-peer), or managed as timeshares. *Reciprocal* exchanges include home swaps, in which one party uses the home of the other. *Free* accommodation refers to exchanges in which guests are accommodated free of charge, and without commercial interest (Couchsurfing, Warm Showers). Distinctions may not always be clear. For instance, AirBnB is an intermediary offering both peer-to-peer and business-to-customer exchanges. In contrast, Expedia, Booking or Hotels are platforms that started out with business-to-customer exchanges, and now increasingly also offer peer-to-peer accommodation. Table 2 illustrates the dominance of professional exchanges in the accommodation market.

The example also illustrates that the majority of accommodation exchanges are not aligned with the original notion of the sharing economy. This is illustrated in Figure 3, which distinguishes sharing and collaborative economy on the basis of the exchange type. As an example, a residence rented to a tourist in a situation where the owner is on holiday (peer-to-peer) is a form of sharing, while renting a flat to tourists all-year-round (business-to-customer) is collaborative. A second distinction can be made regarding revenue flows: Where intermediaries (platforms) represent global corporations, profits will accumulate and no longer represent an

Table 2. Accommodation exchange forms and estimated bed numbers.

Exchange type	Example	Bed numbers (estimate)
Professional	Booking	115 million
	Hotels	
	HRS	
	Venere	
Rental	AirBnB	8 million
	HomeAway	
	9Flats	
	Hapimag	
Reciprocal	HomeExchange	0.2 million
	Stays4free	
	Lovehomeswap	
	Homeforexchange	
Free	Couchsurfing	0.5 million
	Trustroots	
	Warm Showers	

Source: Estimate based on Gössling and Peeters (2015) platform websites.

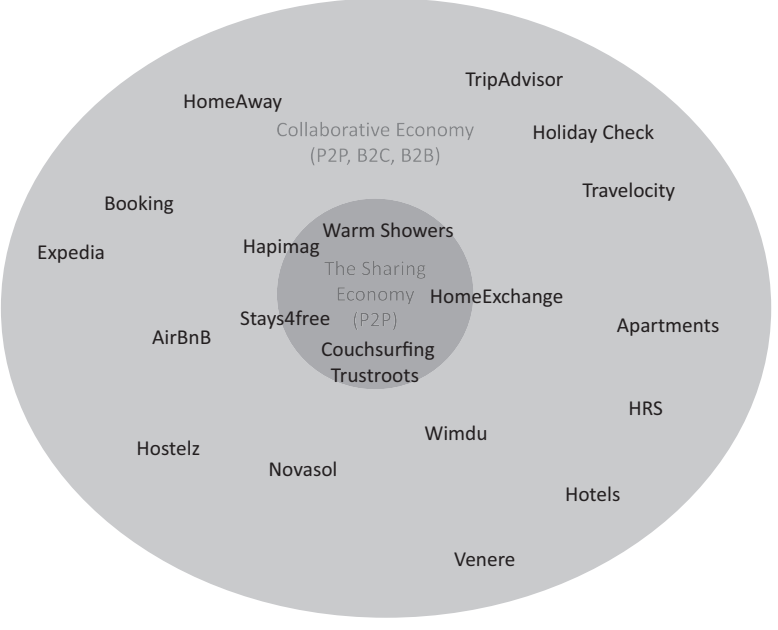

Figure 3. Sharing and collaborative economy in the accommodation sector.

economic model decentralizing production and finance (sensu Botsman & Rogers, 2011; Boffey, 2017). In this model, some platforms fall between the sharing and collaborative economies.

In seeking to promote the sharing economy there is often an uncritical framing of it being potentially more environmentally beneficial as a result of greater "efficiency" (Palgan et al., 2017), creating new economic and employment opportunities and generally contributing to sustainable development (Cohen, 2016; Martin, 2016; Palgan et al., 2017). However, the realities of this portrayal have received insufficient scrutiny. Schor (2014, p. 6), for example, notes, "despite the widespread belief that the sector helps to reduce carbon emissions, there are almost no comprehensive studies of its impact" (see also Novel, 2014). For example, Airbnb (2014) claims a study they commissioned from Cleantech Group (2014) proved that "Traveling on Airbnb results in significant reduction in energy and water use, greenhouse gas emissions, and waste, and

encourages more sustainable practices among both hosts and guests" and suggested that their guests in North America use 63% less energy than the average hotel guest. In contrast Lahti and Selosmaa (2014) claimed that with lower prices for accommodation, there can be a rebound effect where consumption of both accommodation and related travel increase. Tussyadiah and Pesonen (2016) found that the use of peer-to-peer accommodation increases frequency of travel, length of stay, and expands the list of possible destinations consumers may travel to. While, in one of the few studies of the sharing economy in the Global South, Roxas (2016) concluded, "because of the lack of environmental dimensions, the sharing economy is failing to actualize a holistic contribution to sustainability. Instead, … it is heading towards a more capitalistic pathway, fueling consumption, which will likely add to the growing urbanization problems of Metro Manila." Interestingly, Novel (2014) also reports on French data on collaborative economic behavior that shows different levels of participation between sharing and monetized collaborative behaviors. She noted that while over 70% of French population bought or sold via websites less than half exchanged or bartered goods or services with other individuals.

The dichotomy of perspectives on the contribution of the sharing economy to sustainability should encourage examination of a host of questions and issues. Perhaps, most fundamentally, there needs to be a clear recognition of how the sharing economy is understood to be embedded in the tourism system and where the boundaries of any analysis are drawn. For example, the commonly held understanding of immediate financial flows in a sharing economy resource relationship illustrated in Figure 1 does not portray the way in which such relations are embedded in, in the case of international tourism, tourism generating regions, destination regions and communities, and the economic, social and natural capital that is affected by such relations. Furthermore, the infrastructure and impact of the intermediary may be primarily located in a third country with the financial flows actually being managed through fourth and even more countries in an effort to minimize tax. The financial flows of corporations such as Airbnb and Uber are relatively opaque because they are privately held companies. However, in August 2017 it was revealed that Airbnb paid less than €100,000 in French taxes in 2016, despite the country being the room-booking firm's second-biggest market after the US (Boffey, 2017). In response an Airbnb spokesperson said:

> We follow the rules and pay all the tax we owe in the places we do business. Our France office provides marketing services and pays all applicable taxes, including VAT. The Airbnb model is unique and boosted the French economy by €6.5bn last year alone. It empowers regular people, boosts local communities and is subject to local tax. It also makes Airbnb fundamentally different to companies that take large sums of money out of the places they do business (quoted in Boffey, 2017).

Similarly, in a presentation to an Australian Senate corporate tax avoidance inquiry both Airbnb and Uber stated that while they comply with Australian tax laws, their Australian operations merely provide support services to parent companies based in the Netherlands and Ireland respectively (Khadem, 2015). According to Airbnb's Australia and New Zealand manager Sam McDonagh:

> Our small team in Sydney performs the marketing and promotional functions relevant to the local market … All engineering, customer service, legal, business development, maintenance and other functions are administered by Airbnb Ireland and are physically based outside of Australia … Airbnb Ireland develops and manages Airbnb's business operations outside of the United States … All transactions relating to users outside of the United States, including guests and hosts in Australia, are handled by Airbnb Ireland, pursuant to applicable laws and regulations (quoted in Khadem, 2015).

Mr McDonagh also claimed that the sharing economy had "transformed and strengthened the economy at large" and "the emergence of platforms such as Airbnb have enabled people to use their home in a diversity of ways that benefit the broader community" (Ibid.). It is also interesting to note that Airbnb will themselves transfer payments to the offshore accounts of hosts if these were provided to them (see https://community.withairbnb.com/t5/Help/Payment-options-

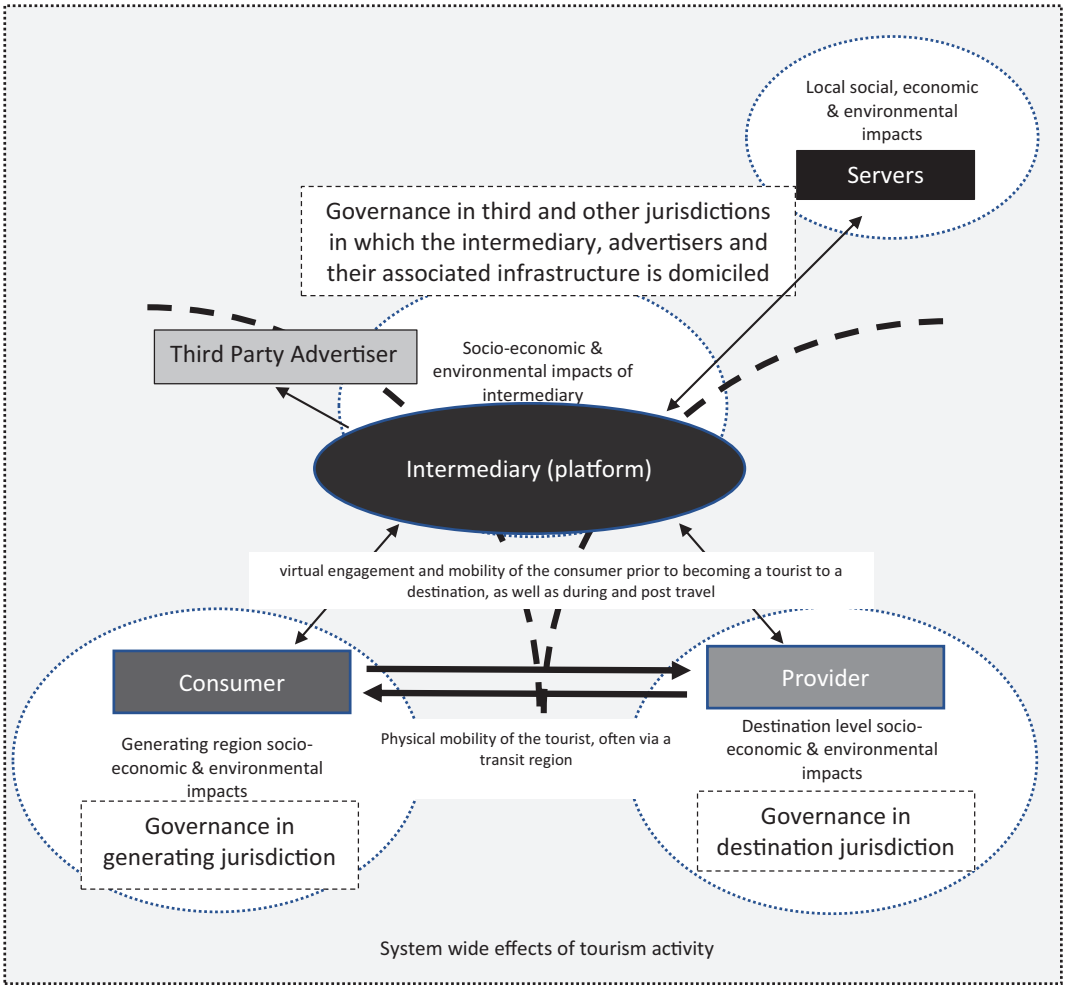

Figure 4. Impacts in the sharing economy of international tourism.

offshore-accounts/td-p/416242; https://www.airbnb.com/help/article/54/how-do-i-edit-or-change-my-payout-method), while a Panama based company PAYOPM Marketplace offers an offshore account for collecting Airbnb earnings (https://www.payopm.com/en/news/payopm-marketplace-offers-an-account-for-collecting-airbnb). The location of the intermediary's servers and cloud infrastructure may even be located in yet another country in an effort to take advantage of cheap energy and/or cooling capacity for servers. Nevertheless, they too will have socio-economic and environmental impacts while financial flows may be complex through multiple holdings and jurisdictions (Figure 4).

The purpose of this discussion of the intermingling between the sharing economy and tourism systems is not to highlight the arcane ways of international financial and information flows of sharing economy corporations, as significant as they may be, but rather to note system complexity and the issue of system boundary determination, as this will affect any assessment of contribution to sustainability. Importantly, it also emphasizes that participation in the sharing economy is not just virtual but has real effects in multiple places on users, workers, competing producers, the communities within which sharing activities occurs, and the range of resources that must be consumed in order to enable such services. Such systems thinking also helps identify the different dimensions of sustainability that may be affected by the sharing economy.

Sharing versus collaborative economy and the sustainable development goals

The literature review revealed 18 issues that have been categorized as either social, economic, environmental or governance-related (Table 3). These are discussed in the following sections from the viewpoint of the sharing economy in comparison to the collaborative economy, and how the different economic models advance or obstruct the SDGs.

Social sustainability

Social effects

In most cities, residential housing opportunities are limited. Affordable housing becomes more difficult to find where a significant number of apartments are removed from the market to be rented to tourists or short-term tenants with no other options to rent (Martin, 2016). AirBnB, as the largest organizer of such exchanges, has been shown to disrupt housing markets. Gutiérrez, García-Palomares, Romanillos, and Salas-Olmedo (2017) show this for Barcelona. The study found that there existed up to 1796 hotel beds per 1000 inhabitants in the most popular parts of the city, as well as 392 beds per 1000 inhabitants offered by AirBnB. Notably, forms of home sharing with constantly changing guests can lead to a significant decline in living quality for longer-term tenants (noise, safety, social networks) (OECD, 2016; World Bank Group, 2018). The potential financial returns from tourist accommodation rentals available via online platforms can also distort housing markets, including investment in second homes which become holiday rental properties, and also affect housing availability for seasonal workers in tourist destinations (Müller & Hall, 2018). Collaborative forms of exchanges, as represented by AirBnB, are consequently likely to have negative consequences for the SDGs. They question well-being (goal 3), increase inequality (goal 10), and undermine sustainable communities (goal 11) and institutions (goal 16), the latter exemplified by AirBnB's unwillingness to reveal data (World Bank Group, 2018). In comparison, platforms such as Couchsurfing and HomeExchange, as part of the sharing economy, will have no negative effects on housing markets and can even reduce pressure as existing capacity is better utilized. This supports responsible production and consumption (goal 12). As guests visit only temporarily, they also have fewer distorting, and potentially even enriching effects on social networks in neighbourhoods (goal 11).

Cultural learning

Accommodation exchanges can help build new social ties, specifically where these exchanges are non-monetary and exchange objectives primarily social (Böcker & Meelen, 2017; Parigi & State, 2014; Molz, 2012). Platforms like Couchsurfing or Warm Showers offer opportunities for cultural learning, as travellers closely interact with hosts in short and emotionally intense physical encounters (Molz, 2012). For many members in the community, hosting at home is a way of participating in travel as well as learning, of authentic experiences, and the negotiation of relations of difference, intimacy, power and control (Molz, 2012, 2013). Host experiences can include both

Table 3. Sustainability outcomes of sharing vis-à-vis collaborative economy.

Social	Environmental	Economic	Governance
1. Social effects	1. Substitution	1. Access	1. Big data
2. Cultural learning	2. Rebound effects	2. Market concentration	2. Control
3. Consumer empowerment		3. Competition	3. Tax evasion
4. Judgement culture		4. Dependency structures	4. Health and safety
		5. Online reputation	
		6. Business ethics	
		7. Revenue distribution	
		8. Value chains	

positive (friendships, reciprocal visits) as well as more negative outcomes (lack of mutual respect, feelings of being misused as hotel) (Geiger, Horbel, & Germelmann, 2018), but the latter have been linked to a declining interest of relationship-building as a motive for participation (Parigi & State, 2014). This may be an indication of transactions moving from more social (sharing) towards more commercial (collaborative) motivations, perhaps also as a result of opportunities for income generation as highlighted by global platforms. Concerns have also been raised that through the economization of private life, perspectives on social networks change (Frenken & Schor, 2017). AirBnB in particular has been discussed in the context of controversial social outcomes, as exemplified with regard to racial disadvantages, such as Black hosts earning less rent, or Black guests being more frequently turned down (Edelman & Luca, 2014; Edelman, Luca, & Svirsky, 2017). Again, this would indicate that the collaborative economy has outcomes less favorable from an SDG perspective, for instance with regard to equality (goal 10).

Consumer empowerment

Platforms empower consumers, because they allow for comparison on the basis of price or quality aspects, as reported by consumers. Factors most relevant for customers in the hospitality industry include stars and chain affiliation, as these are perceived as quality signaling factors (Wang and Nicolau, 2017). This is changing in the sharing economy, as advice posted by fellow travelers is considered more trustworthy (Gretzel, 2006). Consumer-generated content ("opinion") consequently changes power relationships, as well as perceptions as to what is "relevant." For example, in the case of AirBnB, the most important attribute affecting price determinants is "superhost status" (Liang, Schuckert, Law, & Chen, 2017; Wang & Nicolau, 2017). Guttentag and Smith (2017) also find that the platforms themselves affect expectations, with for example AirBnB offers being expected to outperform budget hotels. It may be argued that all platforms represent an innovation in this regard (goals 9, 10).

Judgement culture

Rating and ranking systems affect consumer culture, as they encourage critical opinion. As an example, Booking encourages guests to both post positive and negative experiences (Gössling, Hall, & Andersson, 2018a). In contemporary "judgement culture," assessments are no longer a choice rather than a consumer obligation (Johnson, Matear, & Thomson, 2011). Evidence also suggests that consumers increasingly understand and use their power over reputation (McQuilken & Robertson, 2011), and accommodation managers have highlighted that guests use their power in unjustified ways, increasing pressure on managers (Gössling et al., 2018a,b). This questions peace and justice (goal 16), as well as responsible production and consumption (goal 12). Judgement culture is driven in particular by global platforms fostering competition between businesses as well as guests, who can be rated on platforms, such as AirBnB.

Environmental sustainability

Substitution

Where underutilized assets are offered, this can reduce pressure on production and consumption (Botsman & Rogers, 2011). The sharing of assets is also likely to reduce resource use, including water, energy, and materials, as well as amounts of waste (Palgan et al., 2017). For example, Cleantech Group (2014) estimated that, per guest-night, an Airbnb guest used 63–71% less energy than a hotel guest in North America with CO_2 emissions associated with energy usage being 61–82% lower than for hotel stays. Effects such as these would support SDGs 11, 12, 13, and 14, but these need to be confirmed in independent studies, including potential rebound

effects, such as increased spending on other, non-accommodation consumption (see following section). Yet, both sharing and collaborative economy can have positive substitution effects.

Rebound effects

Sharing reduces resource consumption by providing access to underutilized resources. Frenken and Schor (2017) highlight, however, that this only considers first round effects, arguing that where an income is generated through sharing an underutilized product, this may be used to obtain new goods. Likewise, the low cost of using shared goods may stimulate consumption (Palgan et al., 2017). Tussyadiah and Pesonen (2016) found, for example, that peer-to-peer accommodation offers increase travel frequency, as well as length of stay. This may increase (additional travel) or decrease emissions of greenhouse gases (longer stays). Cleantech Group (2014) estimated that Airbnb induces approximately 1–3% of guests to travel, and approximately 20% of guests to extend their trips. Dyllick and Rost (2017) note that many sharing PSS developments are often detached from life cycle improvements arguing that products offered in sharing schemes are mostly negligent of material use, product design, and resource efficiency. Further rebound effects can occur given that sharing an item typically requires less investment by customers than purchasing it with savings potentially being reinvested in other physical products with adverse effects on the environment (Dyllick & Rost, 2017). This would contradict goals 12 and 13, and is possibly more relevant in the collaborative economy, which largely operates on price competition.

Economic sustainability

Access

Platforms grant access to markets, often globally and at limited transaction costs, and they may empower in particular entrepreneurial women in developing countries with limited resources to reach out to markets (Benkler, 2004). Intermediaries can consequently have considerable importance for the empowerment of small businesses; start-ups with limited resources for marketing; businesses in remote or rural areas; as well as businesses in developing countries. Research also indicates that many small businesses "perform well" in ratings of global platforms (Gössling & Lane, 2015). This indicates that the collaborative economy provides greater opportunities to contribute to economic growth (goal 8) and innovation (goal 9), it needs to be noted that a significant share of all profits accrues to a very limited number of shareholders of the global platforms.

Market concentration

Platforms often have global outreach and a tendency to create monopolies (Frenken & Schor, 2017). The scale of this market concentration is unprecedented in tourism history, and means that formerly national services, including those of destination marketing organizations, are now effectively controlled by entities outside the country. Cooper and Hall (2016) illustrate this for New Zealand, where only one out of six main holiday rental listing services is New Zealand owned. There is also considerable horizontal and vertical integration. As an example, HomeAway also owns Vacation Rentals by Owners, VacationRentals, Homelidays, OwnersDirect, AbritelHomeAway, FeWo-direct, Toprural, bookabach, stayz, travelmob, and Alugue Temporada. AirBnB now also offers activities. TripAdvisor recently assumed the position of a meta-platform, comparing offers across a wide range of accommodation platforms including Booking, HRS, Expedia, Agoda, Opodo, AccorHotels, Hotels, Hotel, Roomdi, HotelQuickly, ebookers, Elvoline, Amoma, and TUI. New services, such as Hostmaker offer to redesign homes for the AirBnB market, while Airgreets or Flatcare provide reception and cleaning services for accommodation owners. These are trends of market integration fostering growth in the collaborative economy, where dominating platforms are seeing

continued rapid growth (see Appendix). With regard to market concentration, the collaborative economy would appear to contradict goals 10, 11, 12, 16, though it also creates new job opportunities in new services (goals 8, 9). In comparison, the sharing economy is far better suited to contribute to the fair distribution of benefits, while leaving control over content and reputation to owners.

Competition

Competition is an issue specifically in the accommodation market, where platforms have introduced competition in two ways. First of all, they offer beds largely on the basis of price, allowing for direct comparison between competing providers. This may lead to a downward adjustment of prices for below-average businesses, though successful businesses will be able to increase their price (Gössling et al., 2018a,b). The overall effect will however be that total revenue is reduced (ibid.). Platforms also allow for comparison between professional and private accommodation, increasing total accommodation capacity with concomitant negative repercussions for revenue generation and employment in the formal accommodation sector (Müller & Hall, 2018). A study by Zervas, Proserpio, and Byers (2016) found, for example, that hotel earnings in Texas declined significantly in places where AirBnB grew. Guttentag and Smith (2017) estimate that two-thirds of AirBnB customers use the platform as a hotel substitute. Gutiérrez et al. (2017) confirm that AirBnB offers are significant in terms of bed numbers and spatially close to hotels (see also Ram & Hall, 2018). Small business, on the other hand, can be winners on platforms, as they can outperform standardized accommodation offers on the basis of more personal and authentic services (Gössling & Lane, 2015). Both sharing and collaborative economy thus foster innovation (goal 9), though the collaborative economy would also have effects that will increase inequality as an outcome of competition (goal 10).

Dependency structures

Where platforms dominate, businesses may have to join in order not to lose market share or access to customers. Accommodation is an example where businesses have reported that signing up to Booking is no longer voluntary, given the platform's market dominance, with up to 80% of individual businesses' accommodation capacity being sold by the platform (Gössling & Lane, 2015). Platform dependency in the accommodation sector implies rating and ranking dependency, requiring businesses to become more service-oriented (Lacey, 2012; Melián-González, Bulchand-Gidumal, & López-Valcárcel, 2013). This can imply vulnerabilities where only few online reviews exist, or where competition is on a best-in-class basis (Gössling et al., 2018a). Such developments linked to the collaborative economy do not empower small businesses, and contradict goals 8, 9, 11, and 12.

Online reputation

In the hospitality sector, sales are closely related to business ratings (Baka, 2016; Öğüt & Onur Taş, 2012). This has significantly increased pressure on managers to perform well. Evaluations are however largely outside the control of businesses, with large players such as TripAdvisor having power over the online reputation of millions of SMEs and destinations. Evidence suggests that removing specific guest evaluations is difficult even when it can be shown that posted comments are false, referring to another business, or include personal attacks on employees (Gössling et al., 2018a), while for many smaller operators the criticism of their service and guest assessment is a source of potential stress (Prayag, Hall, & Wood, 2018). Again, such developments are primarily linked to the collaborative economy, obstructing more responsible production and consumption (goal 12), as well as innovation leading to cooperation (goal 8, 9).

Business ethics

Where pressure to perform well increases, businesses are more likely to engage in ethically questionable activities to improve their online reputation, specifically in accommodation and gastronomy. Managers are under increasing pressure to perform well, and employ a wide range of strategies to improve their reputation, some of which are ethically questionable (Gössling et al., 2018a,b). Reviews and ratings have also been revealed as a source of frustration and suspicion among business managers, owners and staff, as guests may post personal attacks, confuse rated businesses, or vent negative emotions unrelated to accommodation (Gössling & Lane, 2015; Gössling et al., 2018a,b; Prayag et al., 2018). None of these outcomes is supportive of good health and well-being (goal 3), decent work (goal 8), or positive forms of innovation (goal 9). While both sharing and collaborative economy could have similar effects, it stands to reason that the competition focused collaborative economy has more severe impacts in this regard.

Revenue distribution

Given the tendency towards market monopoly, a considerable share of platform revenue remains with a few global players. As an example, Priceline, owner of Booking, reported a gross profit of more than US$10.3 billion in 2016 (Priceline, 2017). Commissions may be as high as 30% (Gössling et al., 2018a). Vertical integration, with for instance AirBnB also engaged in marketing activities at the destination level, means that a growing share of revenue is channeled towards global corporations; a process in which even very small enterprises are involved. Here, the collaborative economy contradicts various goals linked to reduced inequality (goal 10).

Value chains

As a considerable share of revenue is paid to intermediaries, there are various implications for national, destination and business economics. As intermediaries are global players, considerable amounts of money also leave national and regional economies (Gössling & Lane, 2015). A declining share of money is flowing into local, regional and national marketing efforts, which may have involved newspapers, magazines, special interest media, or local destination marketing organizations. These may previously have generated significant employment opportunities and be important local economic multipliers. This would indicate that the collaborative economy is reducing access to economic participation (goals 8, 9), and given implications for media diversity, may also have antidemocratic outcomes (goal 16). In comparison, the sharing economy can make much more positive contributions to empowering value chains, as it has more positive effects for regional development (goals 8, 11, 12).

Governance

Big data

Consumer data collected through platforms is used to assemble consumer profiles for targeted marketing, with the ultimate purpose of further optimizing specific offers and yield management, fueling continued market concentration. In comparison, consumers are increasingly faced with a situation in which they have little insight into the functioning of platforms, for instance with regard to algorithms on which ratings and rankings are based (Gössling, 2017), while considerable concerns are being expressed over privacy and misuse of data, in some cases without consumer permission (Cadwalladr & Graham-Harrison, 2018). For example, the host of the 2018 Commonwealth Games, the Gold Coast City Council, announced the use of a new city wifi service to harvest Facebook data from visitors. According to Smee (2018), "A city spokeswoman insisted the council would only make 'limited use' of the data it mined from tourists. She insisted data would not be shared with 'other agencies' although reports about tourist activity based on

the information could be made available to the tourism sector 'and other sectors as appropriate'." Again, the risk of such developments is much higher where large amounts of data are provided by customers, and where these can be used for marketing. Actors in the collaborative economy are more likely to make use of and collect such data, questioning various SDGs (e.g. goals 8, 10, 11, 12).

Control over economy

In contrast to most economic sectors, where new products can only enter markets after they have been legally cleared, sharing economy platforms often exist without consultation, and act like large informal economy businesses (Darbi, Hall, & Knott, 2018), prompting *ad hoc* government action (Frenken & Schor, 2017). Policy evaluation proves to be difficult because of lack of access to data, which in particular large corporations treat confidentially, with evidence that platforms such as AirBnB are unwilling to reveal data on providers because this may result in legal action. This would indicate that the collaborative economy is more likely to foster structures that contradict goals 11, 12 or 16.

Tax evasion

Tax evasion issues have been predominantly discussed in the context of AirBnB. Many home owners entering exchanges avoid paying taxes, or they might not be aware that taxes should be paid (Frenken & Schor, 2017). This creates unfair competition with regulated businesses, represents a loss of government revenue, and makes it attractive to engage in the unregulated economy. In addition, the platform itself may be subject to claims of tax evasion or minimization. Actors in the collaborative economy consequently question goals 9, 11, 12, or 16 in this regard.

Health and safety

Unregulated businesses may be unaware or ignorant of health and safety regulations, including fire regulations, with concomitant risks for clients (Gurran & Phibbs, 2017). This may be equally true for insurance and safety issues, all of which can have serious implications for tourists as well as for the businesses themselves. In some jurisdictions there are also substantial legal arguments over the relationship between the provider and the platform as to whether it is a form of employment or not. This also has substantial implications for regulatory application and enforcement. While these issues are potentially relevant for both sharing and collaborative economy, questioning SDGs 3, 8, and 16, it seems clear that at least some major actors in the collaborative economy (AirBnB) work proactively to prevent regulations from being introduced in some jurisdictions (Corporate Europe Observatory, 2018).

The discussion of sustainability implications highlights that both sharing and collaborative economy have the potential to make positive contributions to the SDGs. However, interrelationships with the collaborative economy are more ambiguous and potentially obstructive or even contradictory of SDGs (Table 4). In comparison, structures of the sharing economy with its focus on decentralized production and consumption support local economic systems and hence increase systemic resilience (Folke et al., 2002; Lew, 2014). Benefits are potentially retained and distributed among stakeholders, in more transparent and participatory ways, and with more limited environmental impacts. This will directly support a wide range of SDGs, such as "decent work and economic growth," "reduced inequality," "responsible consumption and production," as well as the environmental goals. In comparison, the collaborative economy may contribute to these and other goals, but it also increases structures of external dependency, leads to the loss of revenue and control, and means that local stakeholders become enmeshed in profit-driven global corporations. For the sharing economy to gain relevance in the future, far-reaching

Table 4. Sustainable development goals.

	SDG (UN 2015)	Sharing economy	Collaborative economy
1.	No poverty	Local solutions, market regulation.	Poverty is mainly understood (and measured) as a form of consumption deprivation. Market solutions.
2.	Zero hunger	Local solutions, market regulation. Platforms for redistribution.	Market orientation. Platforms to increase market efficiency
3.	Good health & well-being	Information provision, nudging and regulation. Public health access as a right.	Information provision and nudging. Monetization of health as an industry
4.	Quality Education	Education as a right. Use of platforms to reinforce regional education systems and services	Education as an industry. Use of platforms to enable international education providers to offer product
5.	Gender equality	Gender less salient	Gender salient
6.	Clean water & sanitation	Clean water and sanitation as a right; regional cooperation	Market measures; information provision
7.	Affordable & clean energy	Decentralized smart energy grids	Market measures; information provision
8.	Decent work & economic growth	Focus on decent job/job quality/living wage frameworks. Not just the material reward of employment but also three other dimensions – the physical efforts and the intellectual efforts that work demands of the worker and the intellectual-emotional rewards that workers gain from it.	Work as purely instrumental in securing consumption. Economic growth is the main vehicle for increasing individual income, which expands consumption and thus enhances human well-being. Tourism as a focus of economic growth strategies.
9.	Industry, innovation & infrastructure	Production focus on building domestic ICT and industrial capacities	Importation of ICT capacities
10.	Reduced inequalities	Regulation to reduce inequalities	Using market to reduce inequalities
11.	Sustainable cities & communities	Non-monetized collaborative networks mediated by platforms; public transport;	Monetized sharing platforms and networks; more efficient private transport and commercial sharing
12.	Responsible consumption & production	Changing socio-technological systems and social marketing; promotion of non-monetized exchange	Market forces and nudging; monetized exchange
13.	Climate action	Focus on sufficiency	Focus on efficiency
14.	Life below water	Use regulation, information and nudging to reduce tourism externalities	Use market and information to reduce tourism externalities
15.	Life on land	Use regulation, information and nudging to reduce tourism externalities	Use market and information to reduce tourism externalities
16.	Peace, justice & strong institutions	Strengthening public institutions and developing appropriate public–private partnerships	Public–private partnerships and privatization
17.	Partnerships for the goals	Community and NGO partnerships	Industry partnerships

regulatory changes will be necessary, including greater awareness of tourism stakeholders regarding the implications of the collaborative economic model. Notably, there is major potential for collaborative economy platforms to foster sustainable consumption choices, that is, through changes to ratings and recommendation categories, but there appears no evident interest in fostering such developments.

Fostering the sharing economy – improving the collaborative economy

This paper has conceptualized the sharing economy vis-à-vis the collaborative economy, highlighting that a distinction is warranted given fundamentally different propositions and implications of the two economic models. Currently, organizations such as OECD (2016) or European Parliament (2017) do not distinguish between the sharing and collaborative economies. The collaborative economy is advocated as an opportunity for entrepreneurs, and in particular small and medium-sized businesses in developing countries (World Bank Group, 2018), though some negative aspects such as tax evasion or lack of regulation are acknowledged. Yet, as this article has outlined, although there are clearly substantial overlaps, there also exist considerable differences between sharing and collaborative economies, not last with regard to sustainability. There is considerable evidence that the collaborative economy is turning into an increasingly neoliberal model in which global corporations "collect" a share of revenue even from the smallest social entrepreneurs. Through direct and indirect entanglement in these corporate structures, which may be voluntary or coerced, small and medium-sized enterprises now support the very structures the sharing economy was thought to overcome (Schor, 2014). From the normative viewpoint of tourism contributing to the SDGs, a key question is how the sharing economy can be strengthened, while negative outcomes of the collaborative economy are limited.

The SDGs have reintroduced employment creation and inclusive and sustainable industrialization (Goals 8 and 9) back to the sustainable development agenda, while Goal 10 concerns the closely related issue of inequality reduction. However, the contribution of the sharing and collaborative economies to sustainable development remains problematic given that the central role of production transformation and good employment generation remains under-valued in the SDG framework (Andreoni & Chang, 2016). In particular, the neoliberal orientation of the collaborative economy presents particular challenges to development processes with the present structure of the SDG framework potentially meaning that its supposed benefits are being met uncritically. Three issues stand out. First, social and economic sustainability ultimately depend on production transformation. If such transformation is on the wrong trajectory of transformation, as it is with an insufficiently critical assessment of the collaborative economy, then the SDG goals will not be achieved. Second, the different stages of ICT development in different countries means that a more nuanced approach to ICT infrastructure and service development is required, importing platforms and technologies may not be the best approach to developing collaborative and sharing economy infrastructure and services. Dependence on foreign technologies, platforms, and operators will not assist developing country trade balances. In such situations, the collaborative economy may only further contribute to the economic leakage often associated with international tourism (Goodwin, 2002). Third, trade-offs are inevitable within the SDGs, a focus on a certain form of industrial development, such as the collaborative economy, may generate employment, but its character may be different from other employment and may also have significant social and environmental trade-offs and rebound effects. This is something which appears to be happening with the impact of the platform-mediated informal accommodation sector in some locations. Finally, it is notable that neither the sharing nor the collaborative economies currently pay much explicit attention to environmental SDGs, such as clean water, clean energy, climate action, life below water, life on land. The inclusion of these will be paramount for both models to fully embrace sustainable development.

Online platforms are increasingly permeating all aspects of the tourism system. As the discussion of accommodation in this article has shown, evidence suggests that platforms in the collaborative economy manage a growing share of global accommodation capacity. While the negative implications of these developments in some locations with already restricted housing markets are obvious, far less information is available regarding the means and opportunities for structural change. Available documents from governments only tentatively address a few selected issues, mostly in regard to regulatory needs (safety, health) in urban contexts (European Parliament, 2017). Further policy challenges have been outlined by Dredge (2017) and the World Bank Group (2018), though policy responses remain to be defined. To this end, businesses, destinations and policy makers should consider a number of evaluative questions in order to decide which platforms to support or which policies to follow:

Businesses:

- Are commissions charged reasonable, especially in situations of limited competition or intermediary dominance, and do they affect profitability?
- How much control does the platform provide over online content and reputation?
- How much competition does the platform introduce locally? Will it undermine co-operation in the destination?
- Is it appropriate to create cooperative national or local platforms to market and distribute tourism products?

Destinations:

- Who has control over destination image?
- Which share of accommodation capacity is managed outside the destination? What are the economic consequences?
- Have platforms set in motion competitive processes? What are the implications?
- Is there a clear understanding of new entries in the accommodation market, and whether they work on a professional, rental, reciprocal or free basis?
- Are all businesses in the accommodation market registered, and do they comply with existing regulation?

Policy makers:

- Are there inventories of the number of businesses operating in the accommodation market, and are these complete and regularly updated?
- Is there adequate regulation (taxes, fire, health, safety, insurance) for in particular rental forms of accommodation?
- Are rentals offered all-year-around, drawing capacity from the housing market?
- What is the share of revenue "lost" to a destination or country as a result of platform involvement and commission payments?
- Which consequences do platforms have for competition? Is oligopoly or monopoly power controlled? Do they empower small businesses or more vulnerable stakeholder groups (e.g., women)?
- Do platforms support business development and employment? Are value chains adequately understood?
- Are platforms cooperative, that is, do they share data, require businesses to be registered and to follow regulation?
- Do platforms contribute to greater social, environmental, and economic sustainability?
- Which opportunities exist to directly and indirectly regulate intermediaries?

Future research should address the relative employment, economic growth, and distributional effects of different sharing and collaborative economic models; identify and review relevant policies and regulations that can help secure that risks are minimized and benefits maximized; engage in market analyses; and research to clarify gaps in current knowledge. Such research is necessary in order to provide businesses, destinations, and businesses with advice as to how to maximize the sharing and collaborative economies' contribution to the SDGs and to sustainable tourism in general.

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Appendix

Platform	Founded	Entity number March 2015	User no. March 2015	Entity number June 2017	User no. June 2017
Professional					
Booking	1996	647,000 accommodations	850,000 bed nights per day	1.293 million	1.2 million bed nights per day
Expedia	1996	435,000 hotels	–	–	–
HRS	1972	250,000 hotels	80 million users	300,000 hotels	–
Hotels	1991	240,000 hotels	–	–	–
Rental					
AirBnB	2008	1 million accommodations	25 million guests	3 million accommodations	160 million guests
Home Away	2005	–	–	2 million rentals	
Apartments	1992	–	–	500,000 units	–
Reciprocal					
HomeExchange	1992	65,000 homes	–	65,000 homes	–
Lovehomeswap	2011	–	–		–
Free					
Couchsurfing	2004	–	10 million members	200,000 cities	12 million members
Warm Showers	1993	–	–	43,000 hosts	–
BeWelcome	2007	–	–	916 offers	–
Evaluation, ratings and advice					
TripAdvisor	2000	200 million reviews	315 million monthly unique visitors	500 million reviews	390 million monthly average unique visitors
HolidayCheck	2003	11 million reviews	25 million visits per month	–	–
Trivago	2005	Compares 721,714 hotels	–	Compares 1.3 million hotels	–

Websites continuously update information; to understand growth in the sector, available data for some platforms has been derived from Gössling and Peeters (2015); Gössling and Lane (2015); Gössling (2017).
Source: Various websites.