

Analysis of Debates on Impact of Sharing Economy

Subjects: Business

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Sharing economy (SE), a mode that improves social efficiency through the usage-based acquisition of idle resources, spans various regions, industries, and backgrounds because of its friendly economic and environmental attributes.

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1. Introduction

As sustainable development (SD) has been viewed and explained as a broad principle, its concrete implementation was broken down into 17 goals ^[1]. For any country, striving to change production and consumption patterns is the primary way to achieve these goals ^{[2][3]}. Only those endeavors can reconcile the present, future, and multiple development contradictions among the economy, environment, and society ^[4]. In reality, SD is challenged by massive resource consumption and environmental damage caused by human activities in a finite material world ^[5]. Current production and consumption patterns are no longer adequate due to ecological burdens and social inequities ^[6].

In this context, supporters treat the emergence of the sharing economy (SE) as a new and feasible way out for the “scarcity world”. Many studies advocate it as an emerging service supply and consumption mode facilitated toward cleaner sustainable consumption ^{[7][8]} by activating idle resources ^{[9][10]}, improving resource allocation efficiency ^[11], and slowing down the resource cycle ^{[12][13]} with the support of Internet technology ^{[14][15]}. Meanwhile, some studies emphasize that it notably blurs the boundary between production and consumption, avoids excessive production, reduces waste ^{[16][17]}, and promotes resource-conserving production and environmentally friendly development ^[18]. In addition, as a remarkably resilient global phenomenon, the SE has also been shown to promote social equity and inclusion through more accessible products and services ^{[19][20]}. To be short, the SE, increasingly integrating cleaner production and sustainable consumption ^{[21][22][23]}, offers an effective way to balance the multiple interests of the present, future, people, planet, and prosperity ^[24], and it has been regarded as a potential path to promote SD in conceptual discourse and practical experience ^[25].

Those positive effects mentioned above were verified in theory and in the early practices of car and accommodation sharing ^{[26][27]}. Additionally, the “low participation cost” attribute attached to its core concept of the separation of ownership and use rights has brought mass corporate and individual participants ^{[28][29]}. However, while the SE has penetrated the domestic economy’s industries through diverse organizational forms and business models, there has been a profound influence from and growing confusion about its sustainability contribution ^{[30][31]}. It remains a complicated and cross-dimensional exercise to evaluate the functionalities of the re-commercialization of already-owned assets, which aims to drive substantial progress toward more sustainable production and consumption patterns ^{[11][32]}. In this regard, some studies hold that “a paradox of openness and distinction” exists between boosting the sharing practices and keeping their commitments to fairness ^[33]. Particularly, when the utilitarian motive replaces the previously altruistic one increasingly, the SE will gradually turn back to the traditional model and become pseudo-sharing, losing the positive effects once promised ^[34]. In addition, opponents insist that the SE is not conducive to improving product and service quality and will reduce the welfare of consumers ^[35]. Simultaneously, the spillover of “tragedy of the commons” in the SE also harms public property and collective interests ^{[27][36]}. When the SE is purely regarded as an economic opportunity by the regime actors continually, coupling with the highly free development dominated by the sharing companies, it leads to a neoliberal nightmare of extreme capitalist exploitation of natural and social resources that is ultimately unhelpful to SD ^{[37][38]}.

It is evident that massive controversies are emerging in the sustainability impact of the SE. The output of the SE presents various possibilities in different regions, industries, and development backgrounds, profoundly affecting cognition, attitude, and behavior. Dialectical materialism suggests we seek unity in opposition. Therefore, it is meaningful and urgent to conduct a systematic and comprehensive review of the sustainable impacts of the SE to promote a deeper understanding of those debates ^{[31][39]}. Only a scientific consensus on the SE can promote sustainable transformation. Any extreme

viewpoint of one-sided emphasis on its positive or negative effects is not conducive to fostering strengths and circumventing weaknesses in practices while pursuing sustainability.

Over the past decade, some scholars have also realized the significance of reviewing the impact of the SE. Their review works are backed by abundant empirical evidence and case studies. Additionally, under the triple bottom line analysis framework, their works often investigate economic, social, and environmental implications in isolation, complicating the comprehensive evaluation ^{[40][41]}. In brief, the existing papers are mainly devoted to clarifying the conceptual evolution of the SE, including definition dilemma discussion ^[42], knowledge structure sorting ^[43], business model comparisons ^{[44][45]}, research clustering, and induction ^[46]. This research divides these influential contributions into two categories by sector—the review of the SE's effect in the broad sense or at an industry level—and summarizes the representative works in **Table 1**.

Table 1. Representative review studies in recent years.

	Research Fields	Software	Data Characteristics		Main Contributions
			Period	Database	Works
Broad sense	Broader SE		2010–2020		20
	Broader SE				Consider more comprehensive, complex, and multi-level sustainable impacts ^[47]
	Broader SE	HistCite	2015–2020	WoS	425
					The existing empirical studies have not put forward conclusive evidence to confirm sustainability claims ^[42]

Research Fields	Software	Data Characteristics			Main Contributions	
		Period	Database	Works		
Industria-level	Mobility Accommodation	VOSviewer	2010–2020.05	WoS	74	Identify the relationships between the SE, sustainability, and SDGs in mobility and accommodation ^[19]
	Accommodation Transportation	ATLAS.ti	1978–2018.04	WoS Scopus	219	Consider the economic, social, and environmental impacts of the SE in the accommodation and transportation sectors ^[28]
	Tourism Hospitality	BigExcel- GephiLeximancer4.0	2010–2015	EBSCO Host Science Direct Google Scholar	66 + 10	Discusses the SE impact on destinations, tourism services, and tourists from the perspective of micro-meso-macroevo-lutionary economics ^[48]
	Hospitality	BibExcel	1982–2018	WoS	189	Review the knowledge structure ^[43] form five research clusters, including the influence on society, economy, negative impacts, etc.
	Tourism	VOSviewer	(2010–2019)	Scopus		
	Sharing mobility					Compare the influence differences of four modes, including economic profit, carbon dioxide emission, waiting time, travel time, comfort and convenience, etc. ^[44]
	Collaborative fashion consumption	ATLAS.ti	Before October 2016	Proquest WoS (Social Sciences Citation)	33	Discuss the sustainability of CFC from the perspective of environmental impact ^[49]

2. Ontology: The Inclined Sustainable Development Theory

The openness and multi-agents of SD conduce contrasting opinions on the normative question of “What must be guaranteed for everyone living in the present or the future?” This research finds these countries spontaneously split into two different schools of development theory when pursuing development suitable for their circumstances, namely favoring environmental protection or economic growth, and held distinct concerns about what promises the SE should deliver. It is revealed that the cognitive mechanism of diverse subjects was not unified, including cognitive and social backgrounds.

More specifically, they implemented different interest balance schemes in practice and organized action with various production and consumption structures, making the SE present multiple forms. They also inspected the SE output from their discrepant cravings and chose different empirical approaches, especially analysis methods. It is self-evident to harvest different conclusions when examining the SE's economic gain, environmental benefits, and social welfare, namely when consulting the two standards of "complete reduction" and "optimization" of production and consumption. In short, different countries hold differentiated economic, social, and environmental commitments under discrepant ontological frameworks. The evaluation of the same sharing activity could not reach a consensus due to uneven criteria.

3. Defining Dilemma: Lack of Consensus in the Sharing Economy

It was found that the confusion about the definition of the SE was spontaneous, being deeply affected by the cognitive background and theoretical background. As an old concept rejuvenated in the Information Age, it has an inherent contradiction between the connotation and extension of historical inheritance and new development. ICT helps optimize their participation modes and efficiency to match transactions in a larger space and shorter time. Meanwhile, it promotes industry diversity by interacting with traditional industries in various emerging forms. However, in essence, technological advances still cannot constrain the motivation to participate. Therefore, the definition of the SE in existing studies remains situational. In dealing with this confusing academic concept, scholars tend to make their descriptions compatible with their topics rather than a universal, generalizable standard by using different terms to make synonymous substitutions with the SE, impeding the clarification of definitions.

Moreover, unclarified cognitive and theoretical background issues raise the difficulty for existing empirical studies to select cases and supporting evidence, as we cannot obtain a coherent answer from an impact assessment of an incoherent entity. Theoretically, when there is no agreement on the research content and object, it is not easy to maintain a consistent research design, logic, and hypotheses, limiting the conclusion's interpretation and extension. Specifically, the diversity of business logic and practices has led to discrete discussion objects, being unable to converge to a clear scope. Worse, while the meaning and boundary of the SE are increasingly blurring with the disunity of the defined standard, many pseudo-sharing activities cannot be identified in time, being hidden away and denigrating its reputation. Despite some scholars having realized that a consensus on the SE is essential for estimating and forecasting its size, importance, and impact, it is regrettable that the "definition dilemma" still hinders research progress. To conclude, the definition dilemma makes it difficult to accurately capture "what the SE is" or even give a consistent answer about whether a specific activity belongs to the SE, and thus debate becomes inevitable.

4. The Ubiquitous Competing Interests among Multiple Stakeholders

The deficiencies of the cognitive mechanism trigger inadequate understanding and non-effective coordination of the widespread contradiction of interests exposed in practices, further aggravating these debates. The reverse logic of market entrance and physical and digital exclusivity generate opposing interests of varying degrees among multiple stakeholders in the SE. Thus, the interests of multiple stakeholders are not equal to the integrated benefits of various groups, nor could a single group indicate their direction. Concretely, technological progress supports the penetration of sharing activities into the industry in reverse market mode. Throughout the process, the participants who are less affected by externalities or higher-order effects "vote with their feet" to provide legitimacy to the rapid development of the platform, resulting in the interests of broader groups being passively involved in and eroded by the savage growth of the SE. That aside, most shared objects are physically exclusive. Still, it was found that micro participants often failed to accurately and globally identify the insecurity caused by such exclusivity in free competition. Cost minimization theory guides them to maximize their utility, including cost, benefit, social interaction, and convenience. Their irrational decisions to deal with changes may induce the enterprises to engage in unfair competition for market share in terms of price, product or service quality, process, etc., undoubtedly intensifying the contradiction between sharing and traditional operation activities. Secondly, when freed from ownership constraints, consumers tend to show worse use behaviors, which generates conflict between users and owners. Thirdly, digital exclusivity refers to convenience barriers formed by technological changes, and the adaptive capacity to those advances determines whether participants are empowered or disempowered in a revolution. Fourth, it was also found that the government had no choice but to take counter-actions to cope with the changes exposed by the SE as it grew to defend the interests of non-participants and the public, which has often been proven to lag. In conclusion, the opposition and competing interests among different groups are ubiquitous and increasingly intensified. The failure to accurately recognize and grasp these laws makes the conclusion discussing the interests of a single group inconsistent with those of other studies.

5. The Differences in Socioeconomic Backgrounds

The effectiveness of an impact assessment hinges on the balance between capturing the details of development conditions closely related to economics, politics, and humanity and the universality of the conclusions. However, there has been a lack of multi-angle comparative studies on how the SE has evolved and its diversity and complexity across different economic, social, and geographical environments. It was observed that developed countries contributed more to the existing research and led the exploration and practice of new industries, revealing that the cognitive background plays a central supporting role in the externalization evidence. The varying development statuses of various countries and regions bring discrepant drivers and obstacles to the SE. First, compared with emerging economies, developed countries and regions have better economic, social, and technological contexts conducive to the birth and spread of the SE. Similarly, compared with rural or suburban areas, the SE in urban areas shows more efficiency advantages in terms of the impacts on the environment and society due to their concentrated populations, diversified and shared resources, and differentiated needs. Still, the current studies do not profoundly discuss the output differences caused by such background differences. They tend to be too deeply rooted in the native conditions to miss the disturbance deriving from the diversity of participants, organizational forms, urban surroundings, and shared objects. As a result, the research conclusions on the same sharing mode are too weak to be extensible in different geographical areas. To summarize, the economic and social context may fundamentally affect the business model architecture of the SE and its output. However, the existing evaluations lack comparative investigation based on the differentiated socioeconomic background. Hence, it is not easy to reach a general and accurate consensus on its impact as influenced by the irregular and situational evolution of the SE.

6. Challenges for Measurement and Empirical Work

This research also finds that the measuring and empirical work of the SE's impact still suffers from multiple challenges, such as those in the analytical methods, data acquisition, and theoretical background. First, the interdisciplinary and multi-dimensional nature of SD makes it complicated to discuss the impact within its framework. The researchers cannot reconcile the analysis depth and breadth simultaneously in research. Second, the diversity of sharing practices and business patterns challenges empirical research. In heterogeneous industries, there is an irreconcilable contradiction between maintaining the size and significance of the data and the feasibility of the empirical work. Quantitative data on its scope and scale can help evaluate the phenomenon's outputs. Still, it is not easy to summarize or compare the outcomes of different forms of sharing organizations and business models in practice. Current studies' selection of indicators and data sources reveals the technical and theoretical background gaps for feature capturing of the analyzed objects. The pragmatic approaches that most researchers take in defining and quantifying the SE, such as choosing more readily available indicators and designating industries and business models, result in distinct observations. Third, the SE's research also generally faces the challenge of data validity and acquisition. Macro-level quantitative data seems to be obtained conveniently but also be less targeted. Aside from the subjectivity of self-reported data, the acquisition of industry-level quantitative data is also limited by the legality and maturity of access to technologies such as web crawling. In addition, it is also a subjective, lengthy, cumbersome, and unstable process to collect qualitative data, including structured and semi-structured interviews with stakeholders, questionnaire surveys, and collation of corporate information and government reports. All three of the above methods influence the selection of research methods and the scheme design to a certain extent, ultimately affecting the explanatory power and extensibility of the conclusions.

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