

Framing the sharing economy: Toward a sustainable ecosystem

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ABSTRACT

The sharing economy has been a controversial phenomenon since its inception. This study employed the frame analysis method to examine and understand how the sharing economy is conceptualized in the news media discourse. A total of 340 online news articles regarding the sharing economy published between 2011 and 2017 were selected from 13 U.S. news entities. Six issue-specific frames and seven interest groups were identified to organize the whole public discourse of the sharing economy. Based on the frame analysis results, an ecosystem framework was proposed to display the underlying structure of the sharing economy. The findings reveal that the sharing economy is in its early stages and the ecosystem is not yet in healthy shape. Therefore, three strategies were suggested to pave the way for sustainable development of the sharing economy ecosystem: alignment to mutual interests, collaboration for shared success, and commitment to social responsibility.

1. Introduction

“Sharing economy” became a buzzword in the beginning of this decade due to the changing values and mindsets of the public and the development of technology-enhanced digital platforms (Cheng & Edwards, 2017). As an economic model, it enables individuals to share access to under-utilized goods or services for monetary or nonmonetary benefits (Belk, 2014; Ferrell, Ferrell, & Huggins, 2017). Although the sharing economy involves various products, services, and industries, the modern concept of the sharing economy gained popularity with the success of startups like Airbnb and Uber (Martin, 2016; Schor, 2016). Airbnb, the leading room-sharing company, was valued at over US \$25 billion, while Uber, the pioneer ride-sharing business, has an estimated value of \$62.5 billion (Telles, 2016). Thus, the growth of the sharing economy has always been interwoven with the tourism and hospitality industry (Cheng, 2016a).

The new sharing economy phenomenon has not only created new ways for individuals to generate income from their excess capacity of goods of services (Heo, 2016), but also changed the nature of product and service accesses and redefined the concept of ownership and employment (Ferrell et al., 2017). Proponents of the sharing economy extol its positive environmental impact, economic benefits (i.e., lower costs), and social benefits (i.e., increased social interactions) (Gonzalez-Padron, 2017; Schor, 2016). Nevertheless, the sharing economy has also invoked a series of debates as to whether this disruptive form of economy will lead to equitable and sustainable development of the

industry (Martin, 2016; Schor, 2016; Williams & Horodnic, 2017). Some major concerns of the sharing economy include the unfair competition between traditional businesses (e.g., hotels and taxis) and the sharing economy companies (e.g., Airbnb and Uber), the increasing casualization of the tourism and hospitality workforces, the elusion of government regulations, and the potential monopolization of the sharing economy companies (Cheng & Edwards, 2017; Williams & Horodnic, 2017).

Even though the sharing economy has become an ongoing concern for the tourism and hospitality industry, an extensive review of literature revealed the lack of a theoretical framework that explains its underlying structure and mechanisms of the sharing economy (Heo, 2016). Although previous studies have investigated the impact of the sharing economy on the tourism and hospitality industry (Cheng, 2016a, 2016b), they failed to address the holistic relationships among diverse parties involved in the sharing economy and the sustainable development of this new economy. Furthermore, given the immense impacts of this disruptive business model on the tourism and hospitality industry (Cheng & Edwards, 2017), both scholars and practitioners need a systematic understanding of the sharing economy.

Frame analysis is a classic theoretical method in mass communication research commonly used to interpret the basic conceptual and ideological framework of a specific social phenomenon (Morley, 1976). This social approach can be used to not only simplify and explain complex phenomena for the public, but also illustrate potential options and facilitate the decision-making process for policy-makers (Nisbet,

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2009). In order to understand and depict the organizing principles and underlying mechanisms of the sharing economy, the frame analysis approach serves as an effective tool in this study to uncover the news media discourse on this topic. By employing the frame analysis method, this study aims to address the gap in the literature by systematically assessing major news media coverage on the sharing economy. Specific objectives of this study are threefold: (1) identifying major frames, subframes, interest groups, companies, and sharing products in the selected news articles using the frame analysis method; (2) developing an integrated theoretical framework to reveal the systematic structure of the sharing economy; and (3) providing suggestions and insights to tourism and hospitality scholars and practitioners on how the sharing economy can achieve healthy and sustainable development.

To achieve the research goals, this paper proceeds with a review of literature in frame analysis and the share economy. In the methodology section, details regarding research design, data collection, and frame coding are explained. Subsequent sections discuss the results of frame coding and propose an ecosystem framework of the sharing economy. Finally, the conclusion and implications of this study are provided.

2. Literature review

2.1. Frame analysis

The idea of frame analysis originated from the work of Goffman (1974, p. 21), who defined frames as “schemata of interpretation” that can be used to decode the structure of experiences in individuals' social lives. Minsky (1977) considered frame as a mental representation of human knowledge of the world that is made up of layers, with high level frames providing more generality and lower level subframes adding more details. Later in the mid-1980s, frame analysis was advanced and applied extensively to social movement studies, shifting the focus toward how actors actively engage in the production of social issue meanings (Snow, Rochford, Worden, & Benford, 1986). Since the early 1990s, the use of frame analysis has grown in media and communication studies to examine the way in which news is socially constructed (Vliegenthart & van Zoonen, 2011). Frames are defined as aspects of a perceived reality that is made more salient in a communicating text in order to “promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (Entman, 1993, p. 52). In other words, frame analysis reveals how people talk and think about a social issue “by examining how they think and talk about issues in the news” (Pan & Kosicki, 1993, p. 70). The goal is to understand how certain idea elements are linked together into packages of meaning and deployed in discursive activities in the news (Gamson & Modigliani, 1989).

Different frame analysis methods have been reported in the previous literature. Frame analysis methods can be broadly grouped into two categories: issue-specific frames and generic frames (de Vreese, 2005). Issue-specific frames are pertinent only to specific topics or issues (de Vreese, 2005). For example, Jasperson, Shah, Watts, Faber, and Fan (1998) identified four issue-specific frames of US national budget deficit in newspaper reports: talk, fight, impasse, and crisis. Shah, Watts, Domke, and Fan (2002) identified three issue-specific frames of Clinton presidency in the news discourse: Clinton behavior scandal, Conservative attack scandal, and Liberal response scandal. On the other hand, generic frames describe structural aspects and general features of news that can be applied across different topics and issues (de Vreese, 2005). For example, Iyengar (1991) proposed an episodic-thematic frame typology - the episodic frame focusing on one specific event while the thematic frame placing social issues in a broader context at the societal or governmental level. Semetko and Valkenburg (2000) developed another commonly used frame typology: conflict, human interest, attribution of responsibility, morality, and economic consequences.

2.2. Frame analysis in tourism and hospitality

In the early 2000s, Santos and her colleagues employed frame analysis to explore socio-cultural aspects of tourism by revealing the ideological forces shaping tourism representations (Buzinde & Santos, 2008; Santos, 2004). For example, Santos (2004) identified both traditional and contemporary frames used in U.S. news articles to portray Portugal as a tourism destination. Buzinde and Santos (2008) distinguished regional politics and economy and the prowess of the white gentry as the two dominant frames of slavery emphasized in promotional materials of a cultural heritage site. Pan and Ryan (2007) analyzed New Zealand's image in print media reports and identified nature, adventure, and culture as the three master frames of destination image. Pan, Tsai, and Lee (2011) identified that atmosphere and leisure/recreation were the two most salient frames of New Zealand's image in two TV commercials.

More recently, the application of frame analysis in tourism and hospitality was expanded to other social and political issues. For example, Wu, Xue, Morrison, and Leung (2012) explored the Golden Week holiday policy reform in China and pinpointed six issue-specific frames: welfare and rights, economic effects, tourism development, distribution of power, policy-making, and cultural evolution. Pan and Ryan (2013) studied public policy changes in a film-induced heritage site in Hong Kong shaped by news media and identified three issue-specific frames: urban renewal, protect business profit, and conservation. Liu and Pennington-Gray (2015) applied two types of generic frames in examining the bed bug issue featured in news coverages. One was episodic-thematic frames and the other was health crisis-related generic frames. Carey and Mason (2016) investigated event crisis management in the 2010 Delhi Commonwealth Games and used four generic frames: attribution of responsibility, conflict, consequences, and human interest.

2.3. The sharing economy

The concept of the sharing economy, often referred to as collaborative consumption, can be traced back to Botsman and Rogers's (2011) book, which defined it as “a system activating the untapped resources of assets through models and marketplaces that enable greater efficiency and access” (p. 24). A variety of definitions of the sharing economy are available in literature (Richardson, 2015). Dredge and Gyimóthy (2015) listed 17 terms related to the sharing economy, including sharing economy, social sharing, collaborative consumption, and peer-to-peer economy. They framed the sharing economy around the three metaphors: models of economic systems, human coexistence, and efficiency. Frenken and Schor (2017) distinguished the sharing economy from the other types of platforms as it has the three defining characteristics: consumer-to-consumer interaction, temporary access, and physical goods. Although central to all definitional terms is the contested meaning of the word sharing (Belk, 2014), Ranjbari, Morales-Alonso, and Carrasco-Gallego (2018) extracted 11 common features characterizing the sharing economy from 67 different definitions in the literature. They then proposed a comprehensive definition for the sharing economy: an economic system in which an online platform connects the supply and demand sides to facilitate transactions of giving temporary access to idle resources. Thus, in the sharing economy, businesses utilize information technology to connect consumers with demands to providers with excess capacity (Gonzalez-Padron, 2017). Schor (2016) categorized sharing economy products into four main types: recirculation of goods, like eBay and Craigslist; increased utilization of durable assets, like Airbnb and Uber; exchange of services, like TaskRabbit and Zazzy; and sharing of productive assets, like Hackerspace and Skillshare.

Recently, the sharing economy has inspired research interests in the tourism and hospitality fields. The rise of P2P accommodation rentals has especially led to a plethora of studies on Airbnb, the most famous

room-sharing company (Heo, 2016). Various facets of Airbnb have been explored, including marketing (Liu & Mattila, 2017), pricing and price determinants (Chen & Xie, 2017), traveler's behavior (Priporas, Stylos, Rahimi, & Vedanthachari, 2017), travel experiences and value co-creation (Brochado, Troilo, & Shah, 2017), host-guest interactions (Karlsson, Kemperman, & Dolnicar, 2017; Paulauskaite, Powell, Coca-Stefaniak, & Morrison, 2017), and competition with hotels (Gutiérrez, García-Palomares, Romanillos, & Salas-Olmedo, 2017). On the other hand, ride-sharing companies like Uber and Lyft have received relatively less attention in academia. The limited literature regarding ride-sharing focused on innovative technology (Agatz, Erera, Savelsbergh, & Wang, 2012; Amey, Attanucci, & Mishalani, 2011), regulatory issues (Bolton, 2015; Posen, 2015), and workers' identity (Izvanariu, 2016; Malin & Chandler, 2017).

The recent growth of the sharing economy has also triggered a discussion of its merits and drawbacks (Schor, 2016). The economic benefits of the sharing economy are two-fold: extra income to owners and a reduced cost and risk of ownership to clients (Bellin, 2017). In the tourism and hospitality industry, scholars have praised the sharing economy for more choices of products and services at better prices (Shaheen, Mallery, & Kingsley, 2012), authentic encounters with locals and better experiences (Molz, 2013; Paulauskaite et al., 2017), and increased employment and income for locals (Fang, Ye, & Law, 2016). On the contrary, critics of the sharing economy denounce it on the grounds of its confusing definition, disruptive power, lack of regulation, and predatory and exploitative nature (Gonzalez-Padron, 2017). Bellin (2017) listed employee identity, safety regulation, protection of theft or damage, and tax obligations as the challenges facing the sharing economy. In the tourism and hospitality industry, Cheng (2016b) identified the casualization of tourism labor, avoidance of regulations, risk-shifting of intermediaries, unfair competition with traditional business, and privilege of members with elite economic and social capital as major drawbacks of the sharing economy. In order to solve the challenges presented by the sharing economy, researchers proposed that new regulations are needed (Dredge & Gyimóthy, 2015; Williams & Horodnic, 2017).

Although the sharing economy phenomenon has been explored from various perspectives, a theoretical discussion of the nature of the sharing economy is largely missing in the literature (Heo, 2016). As an effective method for evaluating complex social issues (Schon & Rein, 1994), frame analysis helps to decode the nature and structure of the sharing economy, to display the interwoven interests of different players in the sharing economy, and to provide suggestions on how the sharing economy can achieve healthy and sustainable development. Therefore, this current study intends to advance the literature on both the theoretical foundation of the sharing economy and news media framing in the realm of new trends in tourism and hospitality.

3. Methodology

3.1. Research design

This exploratory study adopts frame analysis as the theoretical approach and analytical method to investigate the dynamics and complexity of the sharing economy. News articles regarding the sharing economy obtained from news websites are analyzed to examine both the frames in which the sharing economy is constructed and interpreted and the interest groups that are involved in the news discourse. Based on the findings, the study further proposes an integrated theoretical framework for the sharing economy, revealing the underlying system of the sharing economy and the interconnectedness of its components.

The key process of frame analysis is to identify frames in news articles. Since the purpose of this study is to reveal and understand a profound level of details relevant to the public discourse on the sharing economy, only issue-specific frames are used in the study (de Vreese, 2005). In Minsky (1977) theory, a frame system consists of both a

higher level of thematic frames that provide a higher level of generality, and a lower level of subframes that provide more details regarding a specific issue. In this study, the central concepts and signifying ideas of each news article are identified and organized into a lower level of subframes. The subframes are then generalized and grouped to form a higher level of issue-specific frames. Due to a lack of theory or framework of the sharing economy in the previous literature, instead of applying Liu and Pennington-Gray's (2015) and Pan and Ryan's (2007) deductive method of identifying frames, this study uses the inductive method to derive the subframes and frames from an exploratory analysis of the data (Matthes, 2009).

3.2. Data collection

The current study selected news media entities based on the Pew Research Center's annual report on the U.S. news media industry (Pew Research Center, 2016). Fifty newspapers and 12 news magazines included in the report served as the original list of news media entities in this study. Google Advanced Search was then used to search news articles related to the sharing economy on these news media websites. A list of key terms like “sharing economy,” “share economy,” “shared economy,” “peer economy,” “collaborative economy,” and “collaborative consumption” (Dredge & Gyimóthy, 2015) was applied to search the titles of the online news articles. After removing duplicate news articles, only news media websites with constant coverage on the sharing economy were retained (i.e., websites with more than 10 articles published regarding the sharing economy). Table 1 lists the final selection of news media entities, including eight newspapers and five news magazines. The news article collection was conducted in the final list on January 1, 2018, using the aforementioned Google search method. Although the study did not define the search period, the earliest news article concerning the sharing economy appeared in 2011. The final search yielded a sample of 340 news articles published between 2011 and 2017 (Table 1).

3.3. Frame coding

To obtain the data for analysis, three researchers coded each news article separately and compared their results afterwards. Basic information including the title of the article, the news media entity, the date of publication, referenced sharing products, and referenced sharing companies were collected. Frames, interest groups, and interest groups' attitudes were then coded.

The inductive method of frame coding in this study has four steps. First, the three researchers randomly selected 30 news articles from the sample news articles and coded subframes and frames independently.

Table 1
Sample articles by news media entity.

News Media Entity	# of Sharing Economy-related News Articles
Newspaper	146
Wall Street Journal	38
NY Times	21
SF Gate	19
Washington Post	16
LA Times	16
Mercury News	14
USA Today	12
The Boston Globe	10
Magazine	194
Forbes	117
Wired	25
Fortune	24
Time	15
The Atlantic	13
Total	340

Second, the three researchers compared their coding results and developed a preliminary coding scheme with a list of frames and sub-frames. Third, using this preliminary coding scheme, the three researchers coded all 340 news articles independently. The researchers modified the preliminary list of frames and sub-frames when needed. Lastly, the three researchers compared their coding results and further revised the preliminary list of frames and subframes. The result of this last step was a final list of six frames and 24 subframes that simplified the complex public debate around the sharing economy. In the process of frame coding, when a news article had more than one main idea or proposition, all the frames in that article were coded (Matthes, 2009), resulting in a total of 491 frame codes in the 340 news articles.

Besides frames, the researchers also coded the interest groups that expressed opinions within the news article (D'Angelo & Kuypers, 2010). In the sharing economy context, this study identified seven interest groups that were involved in the public debate. In addition, the researchers also defined interest groups' attitudes (i.e., positive, negative, and neutral) toward the sharing economy in each frame. Cohen's kappa test was used to test inter-coder reliability. The results showed that the reliability values of the four coding items - frame, sub-frame, interest group, and attitude - varied from 0.455 to 0.721, indicating moderate (0.41) to substantial (0.61) agreement level (Altman, 1991; Landis & Koch, 1977). The three researchers then discussed the discrepancies in coding with one another until a final consensus was reached.

4. Results

4.1. The sharing economy in the discourse

The sharing economy has been a complicated and discursive topic since it came into the public eye in 2011. Fig. 1 shows both the number of news articles and the attitudes reflected in the news articles. When the news discourse on the sharing economy started in 2011 and 2012, people were generally optimistic about the new phenomenon, with neutral and positive attitudes prevalent in this period. In 2013, negative opinions of the sharing economy appeared, indicating the public begun to recognize its negative impacts. Between 2014 and 2015, the public debate of the benefits and downsides of the sharing economy turned white-hot. In 2015, the negativity reached a peak with numerous lawsuits against the sharing economy companies. The public discourse regarding the sharing economy started cooling down in 2016 and 2017. Meanwhile, with the increasing intervention of the government, negativity subsided in 2016 and 2017 and advocates of the sharing economy

started to dominate the public discourse.

In total, 73 different companies were discussed in the news articles, indicating the boom of the sharing economy. Fig. 2 lists all the sharing economy companies that were mentioned in at least two articles. Uber ($n = 72$) and Airbnb ($n = 68$) were the most frequently mentioned companies, followed by Lyft ($n = 30$), Relay Rides ($n = 9$), Sidecar ($n = 7$), and TaskRabbit ($n = 6$). A “long-tail” trend is observed in the distribution, indicating that the public attention paid to the sharing companies was skewed toward a few big names. In addition, the sharing economy offered a rich number of products that spanned across a variety of industries. Overall, 46 products of the sharing economy were mentioned and grouped into eight categories: accommodation, transportation, food, labor, fashion, education, other intangibles, and other tangibles (Table 2). Among them, accommodation (41.9%) and transportation (41.2%) were the two most frequently mentioned categories. The two categories accounted for over 80% of the products mentioned in the news articles, indicating that the tourism and hospitality industry plays a dominant role in the sharing economy.

4.2. Framing the sharing economy

To gain a better understanding of the complex sharing economy discourse, the study identified six issue-specific frames and 24 subframes in the news articles, representing the key issues facing the sharing economy. The six frames are discussed below in order of frequency with sub-frames highlighted and frequency counts in parentheses.

4.2.1. Business model

Business model ($n = 170$) refers to a variety of issues related to the design, development, management, and operation of sharing economy businesses, in which seven sub-frames were identified. **Strategy** ($n = 51$) was the dominant sub-frame, covering topics such as market expansion, business collaboration, acquisition, fundraising, differentiation, competition, pricing, investment, realignment, and monopolies. While making strategies, companies should keep **ethics** ($n = 6$) in mind by putting “people and planet at the heart of their businesses,” since “sharing” itself is based on principles of community. Another critical issue for the sharing economy business model was to design a proper **product** ($n = 68$) that entices customers to share. Therefore, topics such as introducing a new kind of product, comparing a variety of products, and upgrading and/or modifying an existing product were emphasized in the media discourse.

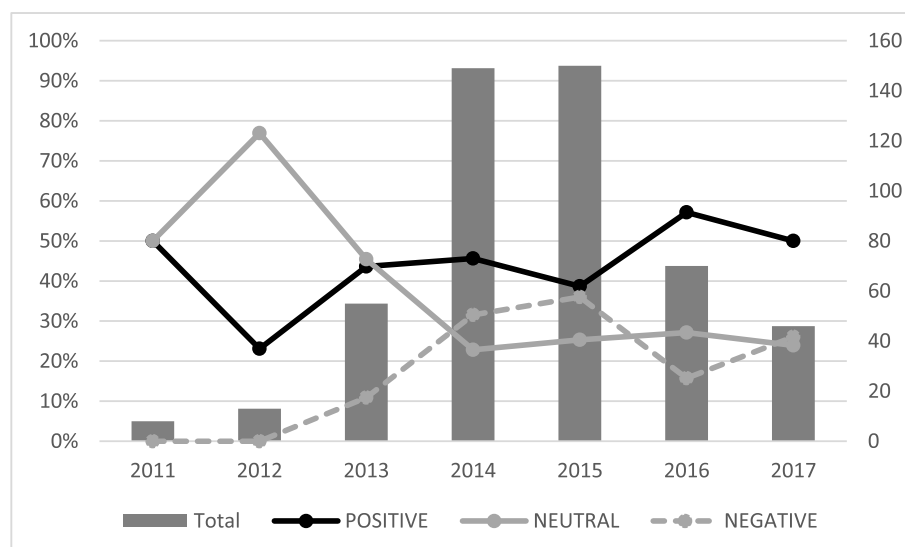


Fig. 1. The number of sample news articles with attitude breakdown.

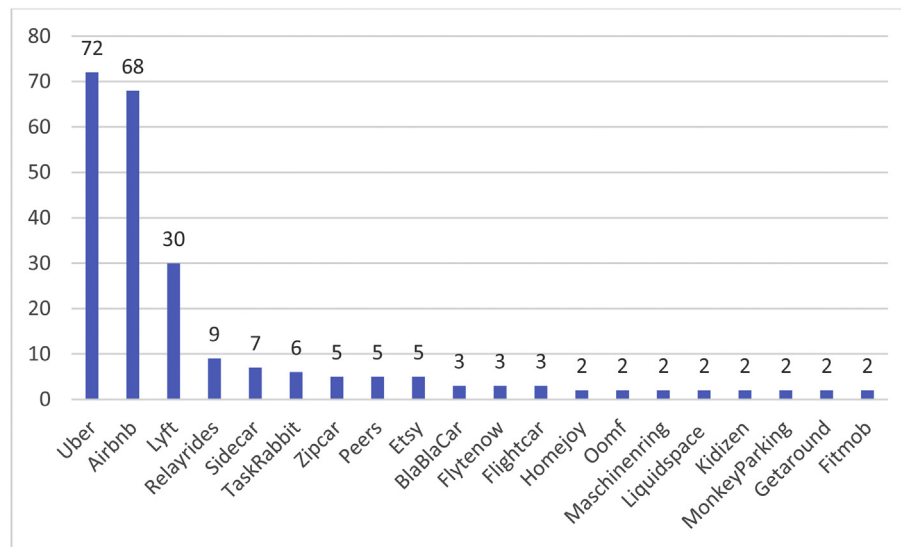


Fig. 2. The sharing economy companies focused in the news articles.

Table 2

The sharing economy products covered in the news articles.

Categories	Products
Accommodation (281)	Room (260), House (8), Office (5), Land (3), Neighborhood (2), Living Space (1), Toilet (1), Sleeping Capsule (1)
Transportation (277)	Ride (225), Car (43), Flight (5), Parking (3), Jet (1)
Labor (35)	Task (11), Home Clean (10), Delivery (10), Skill (3), Service (1)
Fashion (21)	Clothes (5), Closet (4), Craft (4), Fitness Service (3), Shoes (3), Apparel (2)
Food (15)	Meal (11), Restaurant (3), Chef (1)
Education (9)	Lesson Plan (5), Course (3), Textbook (1)
Other tangibles (23)	Music (6), Umbrella (3), Battery (3), Tool (3), Bike (3), Laundry (1), Machine (1), Furniture (1), Bag (1), Basketball (1)
Other intangibles (11)	Talent (3), Tour (3), Sales Team (2), Knowledge (1), Insurance (1), Business (1)

Note: numbers in the parentheses indicate the frequency of the product mentioned in the news articles.

Premise ($n = 10$) provided the pre-existing conditions that encourage the growth of the sharing economy. Thanks to the invention of the smartphone that enables mobile payment and GPS positioning, growing population density, and the financial crisis, the public quickly embraced the sharing economy. **Technology** ($n = 13$) is a key factor that drives the future development of the sharing economy. For example, big data and algorithms, artificial intelligence, and self-driving cars were all mentioned in this sub-frame. After all, the ultimate goal of the sharing economy was to “use technology to make the world more efficient.”

Despite agreeing upon the “the unstoppable rise” of the sharing economy (**growth** ($n = 14$)), the public started questioning the **naming** ($n = 8$) of the “sharing economy” as a misrepresentation of the business model. As one author noted, “The ‘sharing economy’ was outed as the ‘rental economy.’ Nobody is sharing anything. People are making money, plain and simple.” Names such as “collaborative consumption,” “the trust economy,” “the on-demand economy,” and “peer-to-peer economy” were proposed as alternatives to better describe the capitalist and market-driven business model.

4.2.2. Governance

Governance ($n = 85$) refers to the processes of governing over the sharing economy as a new economic paradigm. It is undertaken by either government or industry organizations and includes the creation, modification, or reproduction of laws, regulations, and norms. **Legalization** ($n = 19$) was once a big challenge for sharing economy businesses. Some cities, including New York and San Francisco, have once banned sharing economy companies because they were deemed illegal at that time. Interest groups representing sharing economy businesses were **lobbying** ($n = 5$) for proper **regulations** ($n = 45$) in

the areas of safety, health, and other issues. The key question was whether the sharing economy should be regulated under existing laws and regulations or whether new regulations should be made “to be fit for purpose in [the] digital age.” While some insisted that sharing economy companies should be in **compliance** ($n = 3$) with existing government regulations, others proposed innovative methods such as peer regulation, self-regulatory organizations, and data-driven delegation. In addition, **taxation** ($n = 13$) has also been a big concern in this frame. On one hand, sharing economy businesses, especially Airbnb, have been accused of not collecting sales tax on behalf of local government. On the other hand, people participating in the sharing economy have experienced difficulties in figuring out their new personal taxes “that come from having nonsalaried sources of income.”

4.2.3. Employment concerns

Employment concerns ($n = 81$) include three sub-frames related to the participation of individuals as providers in the sharing economy: **income** ($n = 14$), **entrepreneurship** ($n = 35$), and **identity** ($n = 32$). Making extra **income** was a direct and major motivation for providers, such as Airbnb hosts or Uber drivers, to join the sharing economy. For some providers, working for the sharing economy was also a “micro-entrepreneur” business in which they felt a sense of flexibility, empowerment, and entrepreneurial opportunity. As one author put it, “With the rise of the shared economy, everyone is now an entrepreneur.” However, this new way of living also brought about challenges such as job insecurity, income instability, uncertainty, and lack of benefits, especially for those who chose to work full time in the sharing economy.

Whether individuals working for sharing economy businesses should be considered employees or independent contractors was a

Table 3
Attitudes of frames.

Frames	Negative	Neutral	Positive	Total
Business model	13	72	85	170
Governance	33	32	20	85
Employment concerns	35	11	35	81
Externality	34	4	24	62
Triadic relationship	12	17	23	52
Consumption practices	3	5	33	41

Note: numbers in bold represent the dominant attitude of the frame.

longstanding debate in the news media. From the individuals' perspective, they were experiencing **identity** confusion due to the lack of clarification in this matter. From businesses' perspective, workers were considered independent contractors in a “*come-and-go-as-you-please form of employment*.” Although this stance allowed businesses to avoid providing benefits to workers, it also made them subject to a seemingly endless string of lawsuits from workers, government, and competitors. As one critic noted, “*The big money goes to the corporations that own the software. The scraps go to the on-demand workers.*”

4.2.4. Externality

Externality (n = 62) encompasses positive and negative consequences of the sharing economy that affect players outside of the industry. Externality constituted a big part of the sharing economy discourse as its growth has affected other economic sectors and the global community. The sharing economy produced a range of positive **economic** (n = 36) externalities, including creating new jobs and income, boosting the local economy, addressing inequality, and reducing inefficiency. However, the sharing economy was also criticized for negative economic externalities such as market disruption on traditional businesses, a surge in housing prices, and the loss of government revenue. The sharing economy contributed to many positive **socio-cultural** (n = 21) outcomes. It not only increased social well-being by cultivating trust and strengthening social connections, but also improved quality of life by making products and services better quality and more affordable. However, the sharing economy also led to some socio-cultural problems such as overcrowding, inequality, housing shortages, racial discrimination, and tenant eviction. Finally, the sharing economy was beneficial to the **environment** (n = 5). It optimized the utilization of resources and assets and helped to address issues like “*traffic and congestion, transportation systems, urban density, availability of housing and environmental standards,*” targeting at a more sustainable world.

4.2.5. Triadic relationship

The frame of triadic relationship (n = 52) deals with the key issues related to interactions and processes among the three players at the core of the sharing economy: businesses, individuals who provide products/services, and individuals who purchase products/services. **Trust** (n = 29) was the foundation on which the sharing economy was built. As one author noted, “*Reputation, credibility and trust are the currency in the sharing economy.*” Without trust, people would never invite strangers to live in their house or ride in their car. Furthermore, businesses used institutional arrangements to monitor and control participants' behavior to build trust in the system, such as reputation systems, liability coverage, identity verification, and transaction protection.

Safety (n = 14) posed another challenge for the sharing economy. When connecting unknown individuals with each other, the sharing businesses also exposed users to a high level of risk. There were horrible stories of Airbnb hosts having their homes trashed, or Uber drivers committing murder. Despite the risks, participants of the sharing economy cherished the opportunities to make meaningful **social connections** (n = 9) that otherwise would not be possible. Indeed, the sharing economy “*opens up a new world for everyone and the potential for*

friendships to grow across cultures.”

4.2.6. Consumption practices

Consumption practices (n = 41) reflects the participation of consumers and their experiences in the sharing economy. Three sub-frames emerged within this frame: **experience** (n = 22), **cost** (n = 10) and **mindset** (n = 9). For most consumers, the sharing economy products were money-saving alternatives to conventional choices. Consumers not only paid less for what they needed (e.g., Airbnb rooms versus hotels, Uber rides versus taxi rides), but also saved a large up-front investment and maintenance **cost** in assets that were underused, as the sharing economy allowed “*individuals to purchase what were formerly expensive assets at a cheap price.*”

Better **experience** was another reason consumers were attracted to the sharing economy. Compared to traditional industries, the sharing economy provided more personal, differentiated, and authentic experiences, “*providing consumers with convenience and an irresistible end-to-end experience.*” Choosing the sharing economy also meant more options, “*a wider choice of rentable cars or accommodations.*” This new consumption trend was also facilitated with a shifting **mindset** that emphasized access over ownership. Technology has made sharing so convenient that people started questioning the necessity of owning goods if they could easily access them. As one author stated, “*We're moving from a world where we're organized around ownership to one organized around access to assets.*”

The news discourse also contained conflicting opinions within each frame, demonstrating the controversial and complex nature of the sharing economy. Table 3 displays the distribution of the three different attitudes in the six frames. Among the six frames, business model, consumption practices, and triadic relationship illustrated mostly positive opinions. The results indicate that the sharing economy is largely a good innovation as a business model, which brings positive outcomes to consumers and their social interactions. Governance and externality garnered mostly negative opinions, suggesting that the quick expansion of the new economy has presented challenges to existing regulations and economic and social orders. Indeed, government agencies were “*under mounting pressure both to enforce existing rules and regulations and to update them for new business models that didn't exist five years ago.*” Meanwhile, traditional industries were also threatened by the quick expansion of the sharing economy, coupled with new social and economic problems. Employment concerns attracted equal numbers of positive and negative opinions. Scrutiny of the data reveals that more positive opinions were expressed regarding income and entrepreneurship, while negative views were mainly directed toward the issue of workers' identity and its associated employment benefits.

4.3. Interest groups in the sharing economy

Hertog and McLeod (2003) stated that frame analysis includes a process of matching frames with groups that publicly express the idea. D'Angelo and Kuypers (2010) also noted that these interest groups might have different opinions and attitudes toward a specific issue. The study identified seven interest groups of the sharing economy in the news discourse. **Platform** (n = 166) is the online marketplace that connects individuals to shared products/services, such as Airbnb and Uber. **Provider** (n = 73) refers to the group of people who offer products/services in the sharing economy, such as Airbnb hosts and Uber drivers. **Consumer** (n = 48) is the group of people who purchase products/services from providers, such as Airbnb guests and Uber passengers. **Competitor** (n = 13) encompasses traditional companies that compete with the sharing economy platforms in the market, such as hotels and taxi companies. **Partner** (n = 20) refers to companies/organizations that collaborate with the platforms to participate in the sharing economy and benefit from it, such as auto manufacturers. **Government** (n = 81) includes government, industry organizations, and politicians who have expressed their views on the sharing

Table 4
Attitudes and major concerned frames of interest groups.

Interest Groups	Attitude				Frames Concerned
	Negative	Neutral	Positive	Total	
Platform	6	71	94	171	Business model (131), Triadic relationship (17)
Government	36	25	22	83	Governance (54), Employment concerns (18)
Community	32	16	34	82	Externality (44), Business model (16)
Provider	37	8	28	73	Employment concerns (53), Triadic relationship (11)
Consumer	10	9	30	49	Consumer concerns (31), Triadic relationship (16)
Partner	1	7	12	20	Business model (11), Employment concerns (6)
Competitor	8	5	0	13	Externality (8), Business model (4)

Note: numbers in bold represent the dominant attitude of the frame; numbers in the parentheses represent the frequency count of each frame.

economy. **Community** (n = 80) refers to people who do not have a direct interest in the sharing economy but who are directly or indirectly impacted by it.

Table 4 shows the attitudes of the interest groups and the frames which concerned them most. Among the seven interest groups, competitors held the most clear-cut negative opinions towards the sharing economy, since they were particularly impacted by the devastating economic effects of the new industry (**externality**). In the hotel industry, it is believed that “the big brick-and-mortar hotel chains, with their huge overhead and operating costs, simply can’t compete” with the sharing economy. Traditional industries made use of lawsuits and campaigns to protect their rights against the newcomers. Meanwhile, they started to realize their need to adopt strategies and modern technologies (**business model**) “to modify portions of their business in order to remain competitive in the sharing economy.”

Governments expressed negative attitudes as they were under pressure to propose new regulations to manage the safety, workforce, privacy, and tax issues of the sharing economy, since many existing regulations were inapplicable to the new industry (**governance**). Politicians, like U.S. presidential candidate Hillary Clinton and Senator Bernie Sanders, also joined the debate on the employment conditions of workers (**employment concerns**), arguing that the platforms should treat their workers as employees instead of contractors.

Providers expressed negative opinions more often than positive ones, implying that they were concerned more about the risks than opportunities brought by the new economy. Among the risks, they particularly worried about their employment status (**employment concerns**) and trust and safety issues (**triadic relationship**). As one author noted, “Gig enterprises may also end up disempowering workers, degrading their access to fair employment conditions.”

Communities held an almost equal number of positive and negative attitudes, due to their observation of both the positive and negative **externalities** of the sharing economy as an innovative and disruptive **business model**. On one side, “the sharing economy is good for the economy and good for the world.” On the other, “an economy that exists solely on consumption has no long-term future.”

Platforms, consumers, and partners all expressed positive attitudes toward the sharing economy. Platforms focused on developing their businesses (**business model**) and creating a safe and reliable marketplace built on trust and mutual understanding (**triadic relationship**). Consumers praised the sharing economy as it lowered the cost and provided a better customer experience (**consumption practices**). It also created a new form of social interaction, which “fosters a stronger community” (**triadic relationship**). Partners were actively involved in the new economy and found ways to take advantage of the new **business model**, as “a number of infrastructure businesses will be built around the sharing economy models.” One example was a company called Peers that provided social and legal supports to the providers (**provide concerns**).

5. An ecosystem framework of the sharing economy

The main purpose of this study is to employ frame analysis to simplify the complicated nature and reveal the system structure of the sharing economy. From a systems theory perspective, an ecosystem framework of the sharing economy is proposed to integrate all the frames and the interest groups based on their roles and their interactions with each other (Rothschild, 1990). An ecosystem is defined as “a system of organisms occupying a habitat, together with those aspects of the physical environment with which they interact” (Peltoniemi & Vuori, 2004, p. 2). The sharing economy can be considered an ecosystem as it incorporates multiple interconnected “organisms” (i.e., interest groups) that coexist and interact in a dynamic environment.

Based on Bronfenbrenner’s (1979) ecological systems theory, the ecosystem of the sharing economy is made up of four interrelated subsystems with diverse goal-seeking interest groups residing at different layers (Fig. 3). The first layer, the microsystem, consists of providers and consumers, the activities and interactions between which constitute the core product and/or key experience of the sharing economy. The second layer, the mesosystem, is composed of platforms as intermediary agents that connect providers and consumers on a large scale with the assistance of modern technology. These three interest groups together form the focal scale of the ecosystem (Zurlini et al., 2006): a symbiotic triadic system based on mutual beneficial relationships among the three players. However, the three players also express

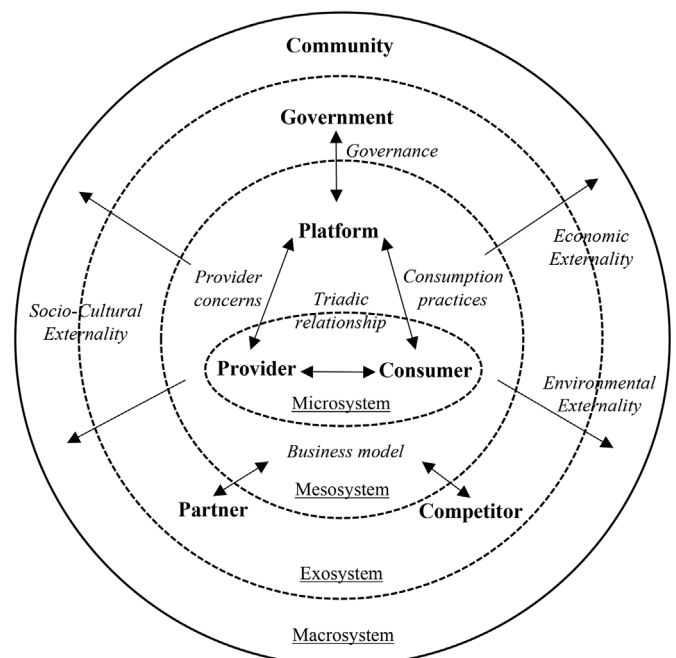


Fig. 3. An ecosystem framework of the sharing economy.

different interests for their own benefits. For example, platforms are profit-seeking businesses and therefore mainly concern themselves with building and developing their business models. Providers articulate employment concerns when working for platforms, while consumers encounter consumption practices in the sharing economy.

The third layer, the exosystem, includes partners, competitors, and different levels of government. These three interest groups influence and are influenced by the inner part of the system. Both partners and competitors face challenges and opportunities presented by the new business model. In response, they either adapt to the new economy through collaboration or incorporate new elements into their existing business models. Different levels of government supervise the operation of platforms through governance efforts, and at the same time are urged to update existing regulations to better fit the new business model. The interactions between the three players and the core part of the sharing economy allow for the maturation and continuous adaption of the system. The last layer, the macrosystem, is formed by the world community as a whole. On one hand, the community forms cultural values, belief systems, and lifestyles within which the sharing organisms are embedded. On the other hand, it receives a variety of socio-cultural, economic, and environmental externalities from the sharing economy.

The healthy condition of the sharing economy ecosystem is manifested through attitudes of the interest groups toward all frames. Only if an ecosystem does good to a greater part of the community instead of a smaller part, shall it be evaluated as healthy. Thus, the negative attitudes of three interest groups and toward two frames reveal that the ecosystem of the sharing economy is not in healthy shape yet. Government, competitors, and providers are the three players that express more negative attitudes in the public discourse. Governance and externality are the two frames that aroused more suspicions and doubt in the discourse. In the framework, more negative attitudes were found in the outer layers, the exosystem and macrosystem, and affected a bigger part of the community, while more positive attitudes were found in the inner layers, the microsystem and mesosystem, which involved only the most relevant part of the community. This finding demonstrates that the sharing economy is still in its early stages when the needs and goals of the players in the inner layers are first met. The future development of the sharing economy should focus on meeting the goals of the outer layers and more players to pave the way for a healthy and sustainable ecosystem.

6. Conclusion and implications

The sharing economy is a hot topic in the public discourse and a complex phenomenon for the academia to understand. Employing frame analysis, this study decoded the intricate structure of the sharing economy through a systematic assessment of 340 online news articles retrieved from 13 news entities. The public discourse concerning the sharing economy started in 2011 and 2012, peaked in 2014 and 2015, and declined in 2016 and 2017, with a general attitude switching from neutral to negative and finally toward positive. The tourism and hospitality industry dominated the sharing economy in terms of the numbers of products and companies. This study identified six frames and 24 subframes that comprised the key issues in the media discourse. The six frames were *business model*, *provider concerns*, *consumption practices*, *triadic relationships*, *governance*, and *externality*. This study also identified seven interest groups involved in the sharing economy: *platform*, *provider*, *consumer*, *government*, *community*, *partner*, and *competitor*. Based on the findings, an ecosystem framework of the sharing economy was proposed to illustrate the underlying structure and interactions of the players, as well as the roles of the frames. The ecosystem framework reveals that the sharing economy is still in its initial stages with the interests of some players not yet fulfilled.

The findings of this current study, especially the ecosystem framework of the sharing economy, have important practical implications on the sustainable development of this brand-new industry. As *Ostrom*

(2009) pointed out, a social-ecological system must learn to dissect and harness complexity to sustain itself. The main goal of this study is to understand who the players of the sharing economy are and how they interact with each other. The ecosystem framework proposed in this study organizes all the elements into a hierarchical symbiotic system and presents a clear picture of the mechanism by which different interest groups interact with each other. From an ecosystem perspective, the study suggests the following three practical strategies for the sharing economy in pursuit of a sustainable future.

Alignment to mutual interests. For the sharing economy to become a healthy and sustainable ecosystem, mutual interests and the common good must be emphasized over conflicting interests of individual players. Each player need pursue its own goals without harming others' interests. When the majority of the players express positive attitudes and most of the frames reflect favorable opinions, the sharing economy will be on the right track to a sustainable future. For example, platforms rely on providers and consumers for profit and growth. Therefore, platforms should proactively solve issues such as trust, privacy, safety, employment income and benefits, consumer costs, and experiences while focusing on their business models. Platforms should also facilitate localization of the sharing economy as an interest shared with the community. Meanwhile, consumers and providers should adopt the idea of responsible tourism while participating in the sharing economy to align with the interests of the community. In addition, competitors need change their business thinking and strategy to co-exist with platforms instead of directly competing with them. Traditional businesses can utilize their strengths, such as brand recognition, quality consistency, and safety/security guarantees, to differentiate themselves from the sharing economy platforms. What's more, government, when making regulations for the new economy, should consider all players' interests to address market access requirements, legal liability, consumer protection, and new labor policies.

Collaboration for shared success. The reciprocal nature of the sharing economy makes collaboration and cooperation among all the players possible, which creates a path to achieve the mutual interests. Current problems and concerns in the sharing economy can only be solved by collaboration. For example, platforms, partners, and government should work together to address employment concerns. On one hand, platforms could offer benefits and/or training programs to providers, sometimes through partnerships. On the other hand, government could create new programs that provide benefits, such as health insurance and retirement plans, for providers in the sharing economy. Platforms, providers, and government can also collaborate to address problems in governance. Platforms should take responsibility for collecting sales tax and reporting providers' income to the IRS. Platforms should also provide the necessary education for providers to correctly report personal income taxes. Government should be inclusive and transparent in making new regulations. In terms of competition, traditional businesses could collaborate with platforms to take advantage of new opportunities, and thus become partners in the sharing economy. Through collaboration, diverse interest groups, although having different individual goals, learn, adapt, and innovate together to form a dynamic and co-evolving sharing economy ecosystem (*Kelly, 2015*).

Commitment to social responsibility. The stability and sustainability of the sharing economy system is largely determined by the externalities it exerts on the world community. Only if the business model has mostly positive impacts on other parts of the world will its innovative outcomes and disruptive expectations be welcomed. Therefore, collaborative efforts should be taken to properly measure, control, and manage the external impacts of the sharing economy. Social responsibility is the idea that businesses should "go beyond their profit-oriented activities and boost the wellbeing of the community, making the world a better place" (*Nicolau, 2008*, p. 990). By committing to social responsibility, interest groups in the sharing economy should act responsibly to advocate for positive outcomes, such as the

efficient use of resources and job creation, and to minimize its negative impacts including housing shortages, racial discrimination, and tax evasion. Interest groups should also set up long-term institutions and design targeted programs to enhance the system's relationships with society. In the end, the sharing economy ecosystem will become a resilient and sustainable system that not only vigorously grows and expands itself, but also helps to create a more efficient and sustainable world.

Theoretically, this study demonstrates the usefulness of frame analysis to decode and explain the dynamics of a complex social economic phenomenon. In addition, this study proposes a brand-new ecosystem framework of the sharing economy that displays the positions, linkages, and interactions of all players involved in the sharing economy. This new framework provides a very first overview of the structure and interconnection of the sharing economy ecosystem. This framework not only provides industry practitioners and policymakers with practical implications on sustainable development of the sharing economy, but also presents academia with a preliminary framework for future research directions on the sharing economy.

Despite its contributions, the study has two limitations. First, the sample news articles were selected from only 13 U.S. news media entities, excluding other news media in the U.S. and in other countries. However, since both Airbnb and Uber are U.S. start-ups, given the representativeness of the sample news media entities, the findings of this study are still meaningful. With the rapid growth of the sharing economy in other countries, especially Asian countries, it would be interesting to compare the media frames of the sharing economy across different cultures. Another concern is that the current study only focused on issue-specific frames expressed by interest groups while ignoring media intervention caused by journalists inevitably imposing their own frames in the process (D'Angelo & Kuypers, 2010). Therefore, future research could examine and combine both issue-specific frames and generic frames, or even take a step further to explore how media frames may influence travelers' attitudes and perceptions of the sharing economy.

Author contribution

Three authors contributed equally to data coding. Lan Xue did data analysis and wrote the results. Han Wen wrote the introduction. Xi Leung proposed the ecosystem framework and took the lead in writing the manuscript. All authors provided critical feedback and helped to shape the research, analysis, and manuscript.

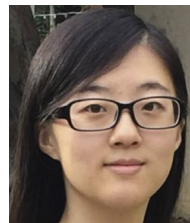
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