Understanding Multisided Platforms, Circular Economy and Tourism

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Abstract

A multisided platform is a model that creates value by facilitating exchanges between two transaction partners which means the platform plays an intermediary role between the two groups. This is also called “knowledge economy” or “third globalization” which has been brought into one platform through technology and information. In business, the platform is recognized as a marketing terminology. Comparatively the state, government, and civil society are influenced by various technologies in several fields of human activities and provide beneficiaries to human beings. This study aims to introduce the multisided platforms and their respective fields in businesses on one side and the other side, it shows the link between tourism and circular economy and explains why is circular economy becoming a key factor for contributing to keeping the balanced environment in highly industrialized, urbanized, overpopulation including over-tourism. These days the circular economy has become closely associated with sustainability and sustainable tourism and development.

Introduction

International tourist arrival has increased from 25 million globally in 1950 to 278 million in 1980, 674 million in 2000, and 1,235 million in 2016. International tourist
arrival worldwide is expected to increase by 3.3% a year between 2010 and 2030 to reach 1.8 billion by 2030, according to UNWTO's long-term forecast report “Tourism Towards 2030”. The market share of emerging economies increased from 30% in 1980 to 45% in 2016 and is expected to reach 57% by 2030, equivalent to over 1 billion international tourist arrivals (Kurtagic, 2018, p.13). In 2019, Travel & Tourism's direct, indirect and induced impact accounted for: US$8.9 trillion contributions to the world's GDP(10.3% of global GDP),330 million jobs, 1 in 10 jobs around the world, US$1.7 trillion visitor exports (6.8% of total exports, 28.3% of global services exports), US$948 billion capital investment (4.3% of total investment) (WTTC, 2020).

With the growth of tourism impacting the economy, many developed countries are now talking about sustainability to cope with climate change. For this to achieve the use of technology has been increased than before and a new idea of circular economy has been developed as a tourist (defined by the World Tourism Organization as a person traveling and staying at least one night and less than one year to a destination outside his usual environment) (Luciano, 2019) can contribute a lot in reducing the waste while consuming tourism products throughout his journey.

With the pace of tourism mobility in the world, travel operators are working on managing this industry with technology. The advancements in information and communication technology have a direct effect on the economy, business, daily routines, and lifestyle of people at large. It has touched almost all the sphere of human life. Similarly, the travel and tourism industry also have such impacts in both supply and demand sides. The evolution of the internet brought a major shift and change in the travel industry with the launch of direct-booking websites by airlines and hotels, Online Travel Agencies (OTAs), metasearch engines, Application Programming Interface (API) connectivity, New Distribution Capability (NDC), etc. (Gholami et al., 2017; Loureiro, 2016).

The author of this paper accumulated all information through the secondary source of information. The paper has been divided into two parts. The first part deals with multisided platforms while the second part deals with the circular economy. The first part of this study sheds light on the introduction to different platforms and its second part is based on umbrella review. Out of fourteen types of review, umbrella review refers to compiling evidence from multiple reviews into one accessible and usable document. Focuses on the broad conditions or problems for which there are competing interventions and highlights reviews that address these interventions and their results (Grant & Boot, 2009, p.95). The objective of this study is to understand how the previous scholars conducted research and developed the concepts of the multisided platform and circular economy. Although this topic has been extensively studied outside Nepal, particularly in China, Europe, and other independent countries, it is still untouched in Nepal. Therefore, to disseminate knowledge on the multisided
platform, circular economy to the students of various disciplines, it is quite essential to have the studies carried out on this important topic.

**Multisided platforms**

Multisided Platforms (MSPs) have been around for several centuries. Only recently, however, MSPs have become prominent in the economy, especially due to the internet and digitization wave across many industries. The idea behind MSPs is to connect two or more interdependent user groups, by playing intermediation or a matchmaking role (Gawer, 2014; Evans and Schmalensee, 2016).

Multisided platforms could be conceptually differentiated from other organizational forms that involve two or more transaction partners and highlight different streams of platform research that are relevant to the proposed activity system perspective. Prior literature characterizes multisided platforms as hubs or intermediaries for value exchanges between two or more markets of users and producers (Gawer, 2014; Hagiu & Wright, 2015; Rochet & Tirole, 2003; Parker & Van Alstyne, 2005). For example, Cennamo and Santaló (2015, p. 12) define multisided platforms as “networks that bring together two or more distinct types of users and facilitate transactions among them”, and McIntyre and Srinivasan (2017, p. 143; in Zhao & Buck, 2019) conceptualize multi-sided platforms as “interfaces that can serve to mediate transactions between two or more sides”. Implicit in these definitions is the notion that value creation through multisided platforms is dependent on enabling interactions between different sides of the market, or as Chakravarty et al. (2014, p. 3; in Zhao & Buck, 2019) note: “a core benefit that each side seeks from the platform is access to participants on the other side.” An example of a multisided platform is the e-commerce marketplace eBay that facilitates consumer-to-consumer and business-to-consumer sales. eBay’s role is to attract participants to join, consummate matches between buyers and sellers, and facilitate value-creating exchanges by providing transactional architecture, and setting rules and standards.

The MSPs are technologies, products, or services that create value primarily by enabling direct interactions between two or more customer or participant groups (Evans & Schmalensee, 2016, p.4). A multisided platform is a business that operates a physical or virtual place (a platform) to help two or more different groups to find each other and interact. The different groups are called “sides” of the platform. For examples of MSPs and the participants they connect include Alibaba.com, eBay, Taibao and Rakuten (buyers and sellers); Airbnb (dwelling owners and renters); the Uber app (professional drivers and passengers); Facebook (users, advertisers, third-party game or content developers and affiliated third-party sites); Apple’s iOS (application developers and users); Google’s Android operating system (handset manufacturers, application developers, and users); Sony’s PlayStation and Microsoft’s


Xbox gaming consoles (game developers and users); American Express, PayPal and Square (merchants and consumers); shopping malls (retail stores and consumers); Fandango (cinemas and consumers); and Ticketmaster (event venues and consumers) (Hagiu, 2013 https://sloanreview.mit.edu/article). The multisided platforms are recognized as the new economics of the 21st century which has been variously heralded as a knowledge economy, the data economy, the eCommerce economy, and so on. The new economy is commonly believed to have started in the late 1990s, as high tech tools, particularly the internet and increasingly powerful computers made their way into the consumer and business market place. This study begins with various new economies and finally discussed on circular economy under the theme of environmental economics, tourism, and sustainability.

**Digitization and economic models**

Tourism is an important global industry. The advancement in the cloud-based technologies in the world has gained momentum in this industry to make it more accessible and convenient. According to the Global Tourism Economic Forum (2020), the travel industry has been at the forefront of digital innovation and continues to be transformed at an exponential rate across the globe. According to the World Economic Forum's Digital Transformation Initiative (DTI), from 2016 to 2025, digitalization in aviation, travel, and tourism is expected to create up to US$305 billion of value for the industry through increased profitability, migrate US$100 billion of value from traditional players to new competitors, and generate benefits valued at US$700 billion for customers and the wider society. International tourism essentially refers to the activities undertaken by visitors also known as visitor economy. The tourism industry encompasses all activity that takes place within the visitor economy. While studying Airbnb, a rental platform, the researcher encountered with several terminologies such as “moral economy” (Bauman, 2003; Bauman & Rogers, 2010), “resistive economy” (Golmohammadi, 2015), on-demand economy” (Gurvich, Lariviere, & Moreno, 2016), “platform economy” (Kenny & Zysman, 2016; Hands, 2013), “shut-in economy” (Stainton, 2020), “experience economy” (Pine & Gilmore, 1999), “sharing economy” (Belk, 2010, 2014; Matofska, 2016), “gig economy” (Friedman, 2014), “collaborative economy” (Dredge & Guimothy, 2015), “peer-to-peer economy” (Bauwens, 2012), and “circular economy” (Naydenov, 2018).

For Bauman (2003), a moral economy is a community, a neighborhood, a circle of friends, partners in life and partners for life, a world where solidarity, compassion, sharing, mutual help, and mutual sympathy... A world whose residents are neither competitors nor objects of use and consumption, but fellows (helpers and helped) in the ongoing, never-ending joint effort of shared life-building and making shared life livable (p.70; in Germann Molz, 2013; Bauman & Rogers, 2010).
The resistive economy is a way to circumvent sanctions against a country or region experiencing sanctions. This can involve increasing resilience by substituting local inputs for imported inputs, the smuggling of goods, and an increasing imprints. A country may even attempt to turn these pressures into opportunities. In some ways, sanction economies bear some resemblance to an economy on war or emergency footing (Golmohammadi & Min, 2015). Historically, the term resistive economy was first introduced in 2005, following the blocked of Gaza by Israel (Isaac, Hall, & Higgins-Desbiolls, 2015; in Seify & Hall, 2018) to describe attempts to maintain the regional economy. The term was then adopted in Iran by the leader of the country in 2010 as a response to toughened international sanctions imposed over Iran's economic lifeline oil exports along with restrictions on international activities of the central bank (Smyth, 2016; in Seify & Hall, 2018). Over the years, sanctions have taken a serious toll on Iran's economy and people. In general, resistive economic policies are aimed at reducing vulnerability to external economic pressures, including such events as the global financial crisis along with domestic production. To meet the needs of the country, Iran developed a policy of “knowledge economy” (Toumaj, 2014) in which vocational and technical education was given high priority. It was believed that education decides on innovation and competitive ability in the economy (Golmohammadi & Min, 2015). This can involve increasing resilience by instituting local inputs for imported inputs, the smuggling goods, and increasing imprints. A country may even attempt to turn these pressures into opportunities. In some ways sanction, economies bear some resemblance to an economy footing (Golmohammadi & Min, 2015). As far as sanction and tourism were concerned, Iran adopted three major restive strategies. First, Iran attracted friendly countries such as Russia, China, and neighboring countries which they could ignore American sanctions. Second, increased attention was given to attract members of the diaspora abroad. Third, currency devaluation was utilized as a means of encouraging more tourists to visit a ‘cheap destination’ (Seify & Hall, 2018).

The terms “On-demand economy” or “access economy” (Gurvich, Lariviere, & Moreno, 2016) are sometimes used in a broad sense, to include all activity from transaction platforms, and much else. The term “platform” simply points to a set of online digital arrangements whose algorithms serve to organize and structure economic activity. In the IT world, the term means a set of shared techniques, technologies, and interfaces that are open to a broad set of users who can build what they want on a stable substrate. As used more widely, the term also points to a set of digital frameworks for social and marketplace interactions (Kenney & Zysman, 2016).

“Platform economy” or “digital platform economy,” a more neutral term that encompasses a growing number of digitally enabled activities in business, politics,
and social interaction (Kenny & Zysman, 2016). The application of big data, new algorithms, and cloud computing will change the nature of work and the structure of the economy. But the exact nature of that change will be determined by the social, political, and business choices we make. Platforms and the cloud, an essential part of what has been called the “third globalization” reconfigure globalization itself (Kenney & Zysman, 2016).

The platform economy is economic and social activity facilitated by platforms. Such platforms are typically online matchmakers or technology frameworks. By far the most common type is “transactions platforms” also known as “digital platforms” (Kenny & Zysman, 2016; Hands, 2013). Examples of transaction platforms include Amazon, Airbnb, Uber, and Baidu.

Since the early 2010s, the platform economy has been the subject of many reviews by academic groups and NGOs by national governments and by transnational organizations like the EU. According to Hands (2013), “Platform is a useful term because it is a broad enough category to capture several distinct phenomena, such as social networking, the shift from desktop to tablet computing, smartphone, and ‘app’ based interface as well as the increasing dominance of centralized cloud-based computing. The term is also specific enough to indicate the capturing of digital life in an enclosed, commercialized and managed realm.”

The shut-in economy is an economic model that is based on the principles of home-based consumerism. Whilst many of us did not realize that in the shut-in economy existed last decade, it has been growing and evolving for some time. In essence, the shut-in economy revolves around the concept of staying at home. This includes eating at home, working at home, socializing at home, etc. People swapped supermarket trips for online grocery shopping.

The term “Experience Economy” was first used in a 1998 article by B. Joseph Pine II and James H. Gilmore describing the experience economy as the next economy following the agrarian economy, the industrial economy, and the most recent service economy. The concept had been previously researched by many authors. The Experience Economy is also considered the main underpinning for customer experience management. Pine and Gilmore (1999) argue that businesses must orchestrate memorable events for their customers, and that memory itself becomes the product: the “experience”. More advanced experience businesses can begin charging for the value of the “transformation” that experience offers, e.g., as education offerings might do if they were able to participate in the value that is created by the educated individual. This, they argue, is a natural progression in the value added by the business over and above its inputs (Pine & Gilmore, 1999). Although the concept of the experience economy was initially focused in business, it
has crossed into tourism, architecture, (Lonsway, 2009) nursing, urban planning, and other fields.

The ‘Sharing’ in the Sharing Economy refers to the use and access to shared physical or human resources or assets, rather than the fact that there is no monetary exchange (Matofska, 2016). A sharing economy enables different forms of value exchange and is a hybrid economy. It encompasses the following aspects: swapping, exchanging collective purchasing, collaborative consumption, shared ownership, shared value, cooperatives, co-creation, recycling, upcycling, re-distribution, trading used goods, renting borrowing, lending, subscription-based models, peer-to-peer, collaborative economy, circular economy, on-demand economy, gig economy, crowd economy, pay-as-you-use economy, wikinomics, peer-to-peer lending, micro-financing, micro-entrepreneurship, social media, the Mesh, social enterprise, futurology, crowdfunding, cradle-to-cradle, open-source, open data, User Generated Content (UGC) and public services (Matofska, 2016).

The Congressional Research Service defines the “gig economy” as: the collection of markets that match providers to consumers on a gig (or job) basis in support of on-demand commerce. In the basic model, gig workers enter into formal agreements with on-demand companies to provide services to the company’s clients. Prospective clients request services through an Internet-based technological platform or smartphone application that allows them to search for providers or to specify jobs. Providers (gig workers) engaged by the on-demand company provide the requested service and are compensated for the jobs. (Kalleberg & Michael 2016).

A peer-to-peer (p2p) economy is a decentralized model whereby two individuals interact to buy sell goods and services directly with each other or produce goods and services together, without an intermediary third-party or the use an incorporated entity or business firm, in a peer-to-peer transaction, the buyer and seller transact directly with each other in terms of delivery of the good or service and the exchange of payment. In a peer-to-peer economy, the producer is usually a private individual or independent contractor who owns both their tools (or means of production) and their finished product (Chappelow, 2018; in Bauwens & Iacomella, 2012). The solution of contemporary capitalism, according to Bauwens and Iacomella (2012), needs to address these three issues integrally, i.e., a production that allows the continued survival, sustainability and flourishing of the biosphere; protecting and promoting the free sharing of social innovations and knowledge, and the recognition that social and economic justice will not be achieved unless we first recognize the actual scarcity of nature and the actual abundance of knowledge and innovation (p.7). The peer-to-peer vision relies upon the three major sectors of society- the state, market, and civil society- but with different roles and in a revitalized equilibrium. At the core of the new society is civil society, with the commons as its main institution (Bauwens & Iacomella, 2012).
A collaborative economy is a market place where consumers rely on each other instead of large companies to meet their wants and needs. Collaborative economics consist of giving, swapping, borrowing, trading, renting and sharing products and services for a fee, between an individual who has something and individual who needs something generally with the help of a web-based middleman. A collaborative economy may also be known as a “sharing economy“, or a “peer-to-peer economy". (Frankenfield, 2018; Dredge & Gyimothy, 2015).

The current state of the environment is still decreasing, as several indicators as showing. Without going into all the details, we can conclude that especially the old economies are using and continue to use the natural resources of planet Earth faster than nature can regenerate them. The UNEP Yearbook 2012 indicated that in 2011 the world population reached 7 billion. It is expected to grow to 9 billion by 2043, placing high demands on the Earth’s resources (UN DESA, 2011). Climate change exacerbates pressure to meet a growing and wealthier population’s need for food. Global agricultural production may have to increase 70 percent by 2050 to cope with this demand (FAO, 2011a, ..." (UNEP, 2012, p.5; in van Rheede,). During the past decades, many concepts and approaches such as ‘sustainability’ or ‘sustainable development’ and ‘green growth’ have been introduced to tackle the serious global problems connected with the prevailing growth-based production and consumption models, such as resource scarcity, climate change, and pollution of land and oceans. These changes gave birth to the concept of sustainable development. The concept of sustainable development adopted by the Brundtland committee (1987; Kunwar, 2017) emphasizes “the needs of the present without compromising the ability of future generations to meet their own needs". This has also focused on the environment, social and economic sustainability. Environmental sustainability refers back to themes such as pollution and limited resources (for example, energy, waste, and water), social sustainability is “how individuals, communities and societies live with each other and set out to achieve the objectives of development modes, which they have chosen for themselves taking also into account the physical boundaries of their places and planet earth as a whole” (Colantonio, 2009; in van Rheede, 2012) and it is linked to themes such as “equity, poverty reduction, and livelihood, are increasingly been complemented or replaced by more intangible and less measurable concepts such as identity, sense of place and the benefits of social networks...” (Colantonio, 2009; in van Rheede, 2012). Finally, economic sustainability refers to the way the companies combine the effects on the environmental and social aspects in day-to-day business decisions. The fundamental principles of sustainable development are holistic (both environmental and development goals), futurity (long time capacity Global ecosystem), and equity. Also, more specific objectives are formulated for development: concerning: quality of life for all people, a satisfaction of basic needs,
self-reliance (including political freedom and local decision making for local need and indigenous development. The specific objectives formulated for sustainability are sustainable population levels, minimal depletion of non-renewable resources, and pollution emission within the assimilative capacity of the environment. Important to realize is that the concept of sustainability and sustainable development also creates confusion. Sharpley (2000; in van Rheede, 2012) compared the concept of ‘sustainable tourism’ with ‘sustainable development’ and concluded: ‘... whilst it embraces the objectives of environmental sustainability, sustainable tourism does not appear to be consistent with the developmental aspects of sustainable development. This is, perhaps, not surprising. Neither the inherently imperialistic, dependent nature of tourism products on a global scale nor the characteristics of tourism consumption fit easily with the principle of endogenous, alternative development’ (Sharpley, 2000, p.14; in van Reede, 2012).

While following Evans and Schmalensee (2005), Sanchez-Cartas and Leon (2019) describe that “a platform is a technology that minimizes transaction cost, or a technology that creates a value allowing transactions that otherwise would not occur.” While reviewing the six seminal papers, Ardolino, Saccani, and Perona (2016), have identified the terms used for the research as follows: “two-sided platform”; “multisided platform”; “platform business model”; the two-sided market”; “multisided market”; “multisided network”; “two-sided network”. Among these various terminologies, Ardolino et al. (2016) use the term multisided platform and define that it is an economic model enabled by a product, service, firm or technology with all the related relationships; the single term platform is instead referred only to the element which enables the interactions among the different group of users. The authors write, all the definitions seem unanimous on the fact that multisided platforms aim at facilitating enabling interaction between different groups of users. The platform acts as a mediator between a group of end-users and one (or more) group of actors which hold the owners of the products sold or the resources to deliver services (through the platform). Therefore, since MSP could be considered as a particular case of a network good characterized by a network benefit which depends on participation or usage actions of other users (Bhargava & Choudhary, 2004; Bhargava, 2014; in Ardolino et al. 2016).

**Circular economy and sustainable tourism**

Nearly two decades ago, there was also talk of sustainable tourism. According to World Tourism Organization (2005), sustainable tourism is “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment, the host communities. The Circular Economy (CE) has many similarities with other concepts and approaches which address the relationship between humans and their environment. It does,
however, have a distinctive usage and does generally have more radical implications than, for instance, the concept of sustainability, as defined and used in seminal Brundtland Report reported to the United Nations (Brundtland, 1987; in Manniche et al., 2017).

The origin of the CE term dates back to the 1920s, through different perspectives and schools of thought. Leontief (1928; in Rodriguez, Florido & Jacob, 2020, p. 3) introduces the concept in his research ‘The Economy as a circular flow’, Von Bertalanffy (1968; in Rodriguez et al., 2020, p. 3) developed in 1937 the first breakthrough of ‘The general system theory’ and Lyle (1996, in Rodriguez et al., 2020, p. 3) promoted recovery and systems regeneration (materials and energy) through regenerative design. However, it was at the end of the 1990s when the CE concept was first coined by the environmental economists Pearce and Turner (2003, in Rodriguez et al., 2020, p. 3) who claim that the term was first used in Western literature in the 1980s to describe a closed system of the economy–environment interactions.

Nowadays, this term has received a great impulse with the work of the Ellen MacArthur Foundation, founded in 2010 to spread these innovative ideas and to accelerate the transition towards a circular regenerative and restorative economy (Rodriguez et al., 2020, p. 3). Other schools of thought related to the CE concept are Degrowth theory, Economy for the Common Good, Collaborative Economy, and Social Economy (Rodriguez et al., 2020, p. 3). Circular Economy as a new economic model has its origins in Environmental Economics, whose aim is the integration of science into sustainability and sustainable development (Andersen, 2007; Rodriguez et al., 2020, p. 4).

While searching about circular economy and tourism, Rodriguez et al. (2020, p. 8) found many keywords such as ‘circular economy and tourism’, ‘circular tourism’, ‘circular tourists’, ‘hotel and circular economy’, ‘circular hotels’, ‘green practices and tourism’, ‘environmental practices and hotels, tourists or tourism’, ‘eco-innovations and hotels, tourism or tourists’, and so on.

The vast majority of the publications found are from Chinese authors; this may be because the government of China has chosen CE as its sustainable development strategy. This strategy, formally accepted in 2002, has been already implemented and developed in several pilot areas in the country (Su, Heshmati, Geng & Yu, 2013; Rodriguez et al., 2020, p. 8).

Literature mainly focuses on the construction, energy and water consumption, utilization and new uses, and less on other relevant aspects, such as the need for a change in the business model, reuse of organic waste and synergies with agriculture, the circularity of tourist destinations, the application of CE as a model to achieve sustainable development of the local economy through synergies with tourism or
the use of CE as a model to achieve inclusive and sustainable tourism with local development (Rodriguez, Florido, & Jacob, 2020, p. 21).

**Origin of the circular economy concept**

| Year | Author/Institution | Topic/School of Thought |
|------|-------------------|-------------------------|
| 1928 | Leontief           | ‘The Economy as a circular flow’ |
| 1937 | Von Bertalan_y     | ‘The general system theory’ |
| 1966 | Boulding           | Improved durability |
| 1977 | Stahel and Reday   | Performance economy |
| 1989 | Frosch and Gallopoalus | Industrial ecology |
| 1990 | Pearce and Turner  | A closed system of economy-environment interactions |
| 1991 | Robèrt             | 'Most environmental problems are based on the same systemic error, linear processing of material' |
| 1994 | Pauli              | Blue economy |
| 1996 | Lyle /regenerative design | Regenerative design |
| 1997 | Benyus             | Biomimicry |
| 1999 | Hawken et al.      | Natural capitalism |
| 2002 | McDonough and Braungart | Cradle to Cradle |
| 2011 | Mathews and Tan    | ‘Closed-loop economy’ |

*Source: Rodríguez, Florido & Jacob, 2020, p. 9*

Johnston et al. (2007; in Geissdoerfer, Savage, Bocken, & Hultink, 2017) estimated that there are around 300 definitions of sustainability. To cite but a few, sustainability can be defined as a situation in which human activity is conducted in a way that conserves the function of the earth’s ecosystems (ISO, 15392, 2008), a transformation of human lifestyle that optimizes the likelihood that living conditions will continuously support security, well-being, and health, particularly by maintaining the supply of non-replaceable goods and services (McMichael et al., 2003; in Geissdoerfer et al., 2017), or an indefinite perpetuation of all life forms (Ehrenfeld, 2005; in Geissdoerfer et al., 2017). Sustainability concerns are increasingly incorporated into both the agendas of policymakers and the strategies of companies. The term sustainability itself originates in the French verb soutenir, “to hold up or support” (Brown et al., 1987; in Geissdoerfer et al., 2017) and its modern conception has its origins in forestry. Later, it was transferred to the context of ecology, as a principal of respecting the ability of nature to regenerate itself (Duden, 2015; in Geissdoerfer et al. 2017), from
where the modern definition of being “able to be maintained at a certain rate or level” (Dictionary 2010) developed.

Though the term sustainability comes together with a circular economy, it is increasingly gaining attraction with academia, industry, and policymakers. The concept of circular economy has been gaining momentum since the late 1970s (EMF, 2013b). Several authors, like Andersen (2007), Ghisellini et al. (2016), and Su et al. (2013) attribute the introduction of the concept to Pearce and Turner (1989; in Geissdoerfer et al., 2017). By describing how natural resources influence the economy by providing inputs for production and consumption as well as serving as a sink for outputs in the form of waste, they investigate the linear and open-ended characteristics of contemporary economic systems. This is influenced by Boulding’s (1966) work, which described the earth as a closed and circular system with limited assimilative capacity, and inferred from this that the economy and the environment should coexist in equilibrium (Geissdoerfer et al., 2017).

The contemporary understanding of the circular economy and its practical applications to economic systems and industrial processes has evolved to incorporate different features and contributions from a variety of concepts that share the idea of closed loops. Some of the most relevant theoretical influences are cradle-to-cradle (McDonough & Braungart, 2002; in Geissdoerfer et al., 2017), laws of ecology (Commoner, 1971; in Geissdoerfer et al., 2017), looped and performance economy (Stahel, 2010; in Geissdoerfer et al., 2017), regenerative design (Lyle, 1994, in Geissdoerfer et al., 2017), industrial ecology (Graedel & Allenby, 1995; in Geissdoerfer et al., 2017), biomimicry (Benyus, 2002; in Geissdoerfer et al., 2017) and the blue economy (Pauli, 2010; in Geissdoerfer et al., 2017).

According to Kirchherr, Reike & Hekkert (2017), there are more than 100 different definitions of a circular economy are used in scientific literature and professional journals which portray so many different definitions in use, because the concept is applied by a diverse group of researchers and professionals (Kirchherr, Reike & Hekkert 2017). A philosopher of science emphasizes a different aspect of the concept than a financial analyst. The diversity of definitions also makes it more difficult to make circularity measurable.

According to M. Ellen (2011; in Kirchherr, Reike & Hekkert, 2017), a circular economy is an economic system of closed loops in which raw materials, components, and products lose their value as little as possible, renewable energy sources are used and systems thinking is at the core. Kirchherr, Reike & Hekkert (2017) define: “A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes,
thus operating at the micro-level (products, companies, consumers), meso level (eco-industrial parks) and macro-level (city, region, nation and beyond), intending to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations.” (pp. 224-225). The most renowned definition has been framed by the Ellen MacArthur Foundation, introducing the circular economy as “an industrial economy that is restorative or regenerative by indentation and design” (2013b, p.14; in Geissdoerfer et al., 2017). Based on the different contributions of Ellen MacArthur (2013b), Geng and Doberstein (2008,p.331), Webster (2015,p.16), Yuan et al., 2008,p.5), Bocken et al. (2016, p.309), Geissdoerfer et al. (2017) define the circular economy as a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.

World Economic Forum (2020) states that a circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models.

The circular economy is gaining increasing attention worldwide as a means to reduce dependency on primary materials and energy, while at the same time becoming an economically viable alternative to the linear economy and recycle economy. A linear economy is more about using products and then disposing of them, recycle economy is using the product and reuse if possible otherwise dispose of them but still creating the waste.

A circular economy is an alternative to both linear economy and recycles economy in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life. These three types of economy can be best described in the figure below.
From the figure above, it can be said that the circular economy aims to close the loops. In this model nothings is waste: it is opposite to the linear model and a more advanced version of the recycling model. A circular economy is one in which resources are used efficiently to gain the most value from them. What is leftover at the end of their life is recycled or reused to reduce waste? The importance of a circular economy is growing to mitigate the impact of climate change which is mostly discussed topics in media these days. This is also trying to combat some of the problems linked to overconsumption, continuous growth, and resource depletion. The overall goal is to achieve a better balance between people, planet, and economic growth. Often the concept circular economy associated with the tourism sector is essentially related to goods and services production without wasting and to the using of sharing platforms (Airbnb). The latter is part of the sharing economy that is different from the circular one. The sharing economy is an economic model based on assets of exchange and sharing practices, both material goods and services and knowledge. It refers to the sharing of goods or other resources by multiple people (Naydenov, 2018). The tourism sector for a long time did not show much attention to analyze of a circular economy. But, the importance of a circular economy is increasing, especially in developed countries. This is because of the link between a circular economy and the tourism sector. This link has been connoted as circular tourism. There are mainly seven steps in the tourism process for any individual as shown in the figure below.
This paper analyzes, first, all the publications on circular economy and tourism and classified them into eight streams according to their keywords and the topics covered, as can be seen in the following table (Rodríguez et al., 2020, p. 8).

**Circular economy and tourism by streams**

| Circular Economy and Tourism                      | Keywords                                                                 |
|-------------------------------------------------|--------------------------------------------------------------------------|
| Agriculture and rural tourism                   | Leisure agriculture, agro-tourism, forestry economy, eco-agriculture, agro-circular economy, Phyto-depuration, fertilizer |
| Application of renewable energy in the tourism sector | Renewable energy, waste-to-energy, low carbon economy, cleaner production, sustainable energy, smart technology |
| Cultural tourism and circular economy           | World heritage sites, cultural urban landscape, alternative tourism, scenic spots |
| Hotels and tourists’ circular practices         | Circular hotels, tourists, hotel business case, eco-innovations, hotel sector’s competitiveness, |
At a given destination both producers and tourists are concerned with the circular economy. Tourists are the ones who decide which transportation mode to use and what activities to be done there.

Applying the principles of the circular economy to tourism means asking how we either redesign our systems to avoid causing these externalities or rethink them so they can be factored productively back in. As Alexandre Limille (Smith, 2018, p.14), a circular economy expert working to add a social perspective to current models, writes: These externalities also exist at societal levels in our unequal- unable- inaccessible model: inequality, unemployment, factious capital(debt) creating poverty so that wealth could be built for others, people living with disability seen as less ‘performing’, and so on. How about taking this opportunity to also see poverty as the result of a wrongly designed system? How about claiming that - like waste-poverty is an externality of our current model? Like waste, shouldn’t it be designed out too?

Seen in the context of sustainable development, circular tourism can combine tourism and sustainable resource management. Its purpose is to produce goods and tourist services while limiting the impact on the environment (including consumption and renewable energy). It aims to balance the interests of tourists and the local population. For example, impacts on health and well-being can both be beneficial to residents and tourists. Nowadays many destinations have developed the concept of this type of tourism through sharing platforms (Naydenov, 2018; Kunwar, 2020). In many countries, tourists are urged to purchase products, materials, and services that are renewable and sustainable, recycled, or recyclable, biodegradable. Most hotels have an eco-friendly laundry policy. Organic cleaning products are
also commonly used in them Naydenov, 2018). On the one hand, the whole circular tourism is mainly concerned with the management of the waste cycle. On the other hand, it can be dealt with and further developed toward a broad urban economy, its social system, and its management and urban productivity. Circular tourism follows the logic of the circular economy, a business model consistent with the principles of sustainable development. In the same way, circular tourism proposes a model in which each actor of tourism (traveler, host, tour operator, and supplier) adopts an eco- friendly approach. Circular tourism is a general term for mass tourism that is designed or intended to restore nature. Material flows are two types: organic nutrients designed to safely reintroduce into the biosphere and technical nutrients that are of high quality without entering the biosphere. Environmental education and the environment are still important for sustainable development training. Besides the circular economy, there is also a sharing economy. On the same principle, there is Circular Tourism and Shared Tourism. They are inherently different, but they are connected can be integrated. While circular tourism refers to the life span of tourist goods and services, shared tourism refers to the way tourist goods and services can be used during their lifecycle. The sharing economy referred to as the collaborative consumption, represents one of the various business models able to drive the circular economy and thus contribute to making tourism sustainable. The shared economy associated with joint consumption is one of the different business models capable of managing the circular economy and thus contributing to the sustainability of tourism to help the reorientation system, the use of materials is changing and manufacturers are transforming their behavior (leasing and sharing of durable goods) (Naydenov, 2018).

A circular economy can be integrated into the tourism value chain at all stages of the value chain, through resource extraction, processing, manufacturing at industrial and service scale, storage and distribution, and use. The concept is calling not only for more resource-efficient manufacturing but also for resource-efficiency after use in terms of extension of the product life-span through use, reuse, and repair. Products of every industry linked to the tourism sector, such as the food industry, construction industry, textile industry, or furniture industry have to be designed to allow repair, reuse and recycle. Designers, contractors, and suppliers will need to consider longer-term relationships. Valenturf and Purnell (2020) write, the idea of a circular economy is simple; to make better use of resources, close loops of resource flows by fully recovering materials instead of wasting them, and prevent waste and pollution by better design of products and materials and keeping them in use of longer.

The COVID-19 pandemic has upended normal economic activity, dipping the global economy into what may become the worst economic downturn since the Great Depression. Rather than try to revive a system that’s inherently wasteful to European
Commission has vowed to build a sustainable circular economy post-pandemic (Valenturf & Purnell, 2020). There is significant potential for the circular economy to change the existing value chain around the design, construction, operation, renewal, and repurposing of tourist facilities. For the circular economy in the construction of tourism facilities, the following different types of circular business models are relevant: Circular design; Circular recovery; and Circular use (Kurtagic, 2018). The circular economy concept does not have a single origin or originator. Contributors from several sources are noted. Theoretically, the CE concept is mainly rooted in ecological and environmental economics and industrial ecology (IE). Since its very beginning, CE presented itself as an alternative model to neoclassical economics both from a theoretical and practical point of view as it acknowledges the fundamental role of the environment, including its functions and the interplay between the environment and the economic system. Moreover, CE looks at the environment as a system to imitate when redesigning production activities, in particular industrial or development patterns (Ghisellini et al., 2015; in Manniche et al., 2017).

The concept of CE defines a set of principles for production and consumption, radically different from the linear ‘take- make - dispose of’ regime prevailing in today’s market economies, based on continuous economic growth and increasing throughput. The CE goes further than calling for the implementation of ‘sustainable’, ‘green’, resource-effective, and environment- friendly technologies in isolated links of production systems. It requires a broader and more comprehensive design of radically alternative solutions over the entire life cycle of products and adoption of closing- the- loop production and consumption patterns within the entire economic system. The CE relies on value creation through restoration, regeneration, and reuse of resources, enabled by new types of business models and forms of consumption that discard of ownership and rely on active ‘users’ rather than passive ‘consumers. Thus, the CE concept introduces an agenda for radical change, which involves and integrates the production and consumption sides of our societies (Manniche et al., 2017). Circular economy -take- make- use- remake-is: ‘an industrial system that is restorative or regenerative by intention and design. It replaces the ‘end -of- life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models.’ (Ellen MacArthur Foundation, 2013; in van Rheede, 2012). To help take- make- use-remake system, the ownership of materials changes. Producers are transforming to usage over ownership: e.g., leasing and sharing of durable goods. Looking at the core business of hotel operations make you realize that this is ‘business as usual’ for the hospitality industry, but only in the offer of hotels rooms or conference facilities. We have not seen much follow up and applying the aspects in other business models. The
concept of a circular economy is very to, for instance, the Cradle to Cradle principle (McDonough & Braungart, 2010; in van Rheede, 2012) and some other theoretical approaches.

The principle of the circular economy is (Ellen MacArthur Foundation): Design out waste; Build resilience through diversity; Rely on energy from renewable sources; Think in “systems”; and Waste is food (upcycling). A central aspect of transition toward a circular economy is the innovation of circular business models. A business model is a conceptual tool used to depict how an organization creates, delivers, and captures value (Renswoude et al., 2015a; Renswoude, Wolde, & Joustra, 2015b; in Manniche et al., 2017). To obtain a circular business model, a business does not need to close all its resource loops in the firm. A circular business model can also be one in which the company operates as part of a larger system and adds to other companies’ circular business models, which together create a closed-loop system (Manniche et al., 2017). In more and more countries, attempts have been made to pursue sustainability acceptance through circular business models which are as follows:

- Short cycle: Pay per use, repair, waste reduction, sharing platforms, progressive purchase
- Long cycle: Performance-based contracting, maintenance, take back management, next life sales, refurbish& resell, product-based services
- Cascading: recycling, upcycling, collaborative production, biomass cascading
- Pure circles: Cradle to cradle, circular sourcing
- Digitization: physical to virtual, subscription-based rental
- Produce on-demand: Produce to order, 3D printing, customer vote/design (Naydenov, 2018; Manniche et al., 2017).

These circular business models lead to the creation of a circular economy concept. Thus, the circular economy is regulated. So far as sustainability is concerned, it is related to how individuals should act towards nature and how they are responsible for the other and the future. The vision of sustainability aims at “justice” is the domain of the individual - nature relationships and given the long-term and uncertain future including three specific relationships such as justice between individuals of different generations, justice between different individuals of the present generation and justice between individuals (Oyku & Iyglin, 2015; in Golmohammadi & Min, 2015, p.72).

**Conclusion**

Tourism resources are the foundation of the tourism industry and the pillar of the tourism economy. A circular economy is based on the limitations of the earth's
resources, it requires that the environmentally friendly way to use natural resources and environmental capacity, to realize the economic activities of the ecological turning. It is an entirely new way of economic growth, to realize the effective utilization of material and the sustainable development of economy and ecology. The circular economy the requirement and relying on the tourism resources of the tourism development model are the same. Therefore, to realize the sustainable development of tourism, the need to develop the tourism cycle economy.

While searching about circular economy and tourism, Rodríguez et al. (2020, p. 8) found many keywords such as ‘circular economy and tourism’, ‘circular tourism’, ‘circular tourists’, ‘hotel and circular economy’, ‘circular hotels’, ‘green practices and tourism’, ‘environmental practices and hotels, tourists or tourism’, ‘eco-innovations and hotels, tourism or tourists’, and so on.

CE is a crucial way to contribute to a more sustainable tourism industry. For this, the involvement of all academics, tourists, resident population, public administrations, and DMOs are required. The hotel sector is a major consumer of resources and a generator of waste. Therefore, governments need to support circular tourism and focus on defining circular tourism and focus on defining circular strategies and designing circular certifications for hotel establishments. Also, tourists have to be aware of the importance of this transition to the CE model. Hotels can carry out some actions to reduce their waste generation, such as composting organic waste, prioritizing repair over replacement or offering closed menus at restaurants to reduce food waste, among others. Laws and common rules to reduce the waste generation in the tourism sector need to be designed and implemented (Rodriguez et al. 2020, p. 21).

In a word, walk the road of a circular economy is the inevitable requirement of a transformation of the model of economic growth. Tourism circular economy system construction is an effective carrier, promote the healthy development of the circular economy is the realistic choice to enhance the comprehensive competitiveness of national tourism (Zhang & Tian, 2014, p. 2093).

As propagated by Mac Authur E. (2011), underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: Design out waste and pollution, keep products and materials in use, Regenerate natural systems. Similarly, the sustainability theories also relate to Social, Environmental, and Economic factors in accounts. Therefore, there is a coherence between the sustainability studies and the circular economy. There is a link between the tourism industry and the circular economy and the importance of the circular economy in the tourism industry is increasing. This paper gives a futurist approach to the multisided platform and circular economy and their coherence in the travel and tourism industry. In the current situation like COVID-19, where
there is complete immobility in tourism, there is a serious question as to how these platforms could be helpful in the future. Further research is recommended to analyze the relevance and importance of concepts like multisided approach and circular economy to overcome the impact of the current crisis in tourism from immobility to staycation and globalization.

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