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Doctoral School of Regional and Business Administration Sciences

Kinga Szabó

In Trust, We Thrive and the Platforms We Use: Pillars of and a Case for the Sharing Economy

Doctoral dissertation

Supervisor: Professor Gyula Vastag
Corvinus University of Budapest

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SZÉCHENYI EGYETEM
UNIVERSITY OF GYŐR



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Author's Declaration

No portion of the work referred to in this dissertation has been submitted in support of an application for another degree or qualification of this or any other university or any other institution of learning.

Furthermore, this dissertation contains no material previously written and/or published by another person, except where an appropriate acknowledgement is made in the form of bibliographical references, etc.

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It has always been my desire to pursue PhD studies and to receive a terminal degree that I consider instrumental in unlocking the academic and professional potential of an individual. Precisely for this reason, in 2016 I joined the SzEEDS^{M} Doctoral Program of Széchenyi István University in Győr. My Master's degree and ten years of work experience laid the groundwork for this highest academic pursuit.

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Abstract

Sharing economy in some form or the other has been an inseparable part of human civilization from the time immemorial. Hunting, common pastures, tribal ownership, agricultural practices, milk production and marketing, renting of accommodation, hotels, public transport, power supply, public parks and public libraries have all been characterized by sharing economy in one form or the other. However, during the last two decades, sharing economy has taken a new form and has emerged as a formidable force in global economy. It has re-written the rules of the traditional form of economy. Digital platforms, digital identity, Trust and Reputation Index and real time connectivity have enabled individual owners from different corners of the globe to share their personal assets and resources with strangers. Digital modes of payments permit global instant payments facilitating such transactions. Given the nature of its functioning, sharing economy is also called as 'collaborative economy' 'platform economy' 'gig economy' 'access economy' or 'peer-to-peer economy'.

With changing social norms and space constraints ownership has become loose and porous and is no longer an attraction. Thus, individual assets and resources have become liquid and marketable. Following the rapid growth of internet and broad-band, Information Technology Platforms have emerged as new organizational tools. These new IT based organizational systems have permitted scattered assets and resources to be put on a single platform and then divide and sub-divide them into time and use segments to make them available to global markets. Mobile phones, social media and new digital payment applications allow instant global connectivity and global fund transfers. Digital Identity and Trust Reputation Index have brought strangers together cutting across geographical and linguistic barriers by enhancing the radius of trust manifold. Instant grievance redressal mechanisms have boosted user confidence on these platforms. As a result, trust is no longer confined to family and friends anymore. Today individuals share their bedrooms, their meals, their vehicles, their offices, their clothing, their furniture and so on with strangers which was unimaginable even a few decades ago.

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With the rapid growth of the sharing economy new economic giants have emerged. The combined market value of Uber, Airbnb, and Lyft, in 2018 was estimated at US$106 billion. Valuation of Uber stands higher compared to most car manufacturing giants. Similarly, the market value of Airbnb is more than those of many hotel conglomerates. From US$15 billion on 2013, the total value of the sharing economy is likely to be US$335 billion in 2025. This amounts to 2133% growth in 12 years between 2013 and 2025. Moreover, these sharing economy giants are transforming the economic ecosystem, the market behavior, the marketing techniques, the supply chains, the warehousing logistics and above all the consumption patterns. Rapid growth of the sharing economy is also transforming e-commerce and online shopping. Shopping malls are getting replaced with online shopping and renting platforms. People are ordering goods and services from the comforts of their homes and are getting delivery right at the doorsteps of their apartments without stepping out.

Overtime, a variety of sharing economy models have merged. These include car renting, ridesharing, accommodation renting, accommodation sharing, peer-to-peer funding, crowd funding, co-working, office sharing, talent sharing, equipment sharing and so on. All these models allow productive use of idle resources, thereby creating wealth without use of additional resources. Therefore, sharing economy also offers a possible solution for conservation of natural resources and reduction of waste and the global carbon footprint. The exchange, renting or lending of underutilised goods and services to people can give the same benefits as those of ownership without putting extra burden on natural resources on the environment. Thus, sharing economy directly promotes the model of sustainable development which could help in mitigating the challenges of environmental degradation, global warming and climate change and could also contribute to promoting social equality by making idle and unused assets available to the socially deprived section of the society at a fraction of the normal cost.

The sharing economy model offers the following clear advantages over the traditional system of economy.

1. Productive use of under-utilized assets and resources scattered over different geographical areas and under different ownerships using IT platforms and digital technology.

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2. Additional income for households through productive utilization of unused/under-utilized resources.

3. Instant access to assets and resources to the poorer sections of the society without heavy investment in ownership or acquisition.

4. Sustainable development through reduction in utilization of natural resources, thereby containing degradation of environment and carbon footprints.

5. Interaction among strangers and greater social cohesiveness through considerably enhanced radius of trust.

Despite rapid growth of the sharing economy and its many advantages as given above, national regulatory framework, consumer protection and international legal issues remain the major challenges to reckon with. Shady digital platforms engaged in fraudulent activities have been betraying consumer trust. Carrying out legal actions across national borders against perpetrators of fraudulent transactions has not been easy for the lack of an applicable international legal framework. Credible answers are needed against such fraudulent activities in the coming years.

Covid 19 pandemic has plunged the global economy into an unprecedented turmoil. The ongoing recession caused by Covid 19 has been the greatest economic challenge after the Great Depression of the 1930s. According to the World Bank, the global economy contracted by 4.3% during 2020 rendering millions jobless. The situation during 2021 so far continues to be very precarious due to continuing lockdowns in many countries. Tourism and hospitality industries have suffered the most putting severe strain on the sharing economy giants like Airbnb and Uber that are engaged in accommodations and car sharing. On the positive side, the sharing economy platforms have made serious inroads into education and health sectors through online education and health services. Nevertheless, the sharing economy has taken a considerable toll since the onset of pandemic. However, it is too early to undertake an objective analysis at this stage as pandemic still continues. On balance, at this stage it would be suffice to say that despite the setback due to Covid 19, the sharing economy has made serious inroads in some segments of the traditional economy transforming them in a fundamental way. Future growth of the sharing economy could be

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even more diverse covering many more areas due to the unprecedented growth and penetration of platform economy into new areas following the pandemic.

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LIST OF PAPERS USED IN THE THESIS:

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Chapter I.

1. Sharing Economy – an Introduction

1.1. Historical Perspective

Historically, if we have a critical look, sharing economy is not an entirely new concept. It has existed in human civilizations for thousands of years in different forms. Nomadic tribes managed common pastures and water bodies for their animal flocks. Similarly, irrigation facilities were managed and shared by many farmers collectively. Until recently, water wells, water fountains, public toilets, public baths and common resting places were found in all parts of the world. Even now, there are agricultural practices where the crop from the land is shared within the family members on a yearly basis rather than dividing the plot ownership. Similarly renting hotel accommodation or an apartment is an example of sharing economy. In this case the customer, rather than acquiring the ownership of the property, prefers to acquire limited rights of use, based on time and space. Public transport starting from bullock and horse carts to modern era railways, motor vehicles and airplanes has been in use for a very long time.

A very simple practice of sharing economy in everyday life is the access to books in public libraries (Ozanne and Ballentine 2010). This form of sharing economy is very well spread all over the world. There is a well-built system of libraries, which regulates access to books. Strictly speaking the concept of museum is also based on sharing economy. In this case the customer, rather than owning the art pieces, acquires a right to visitation to enjoy the beauty of the art pieces (Chen, 2009). There are many examples in the world where houses and apartments are owned on time-sharing basis. Such apartments are available to the owner only for a specific period of time, for example one month a year; so that twelve different owners can have the right to use it for one month each. Strictly speaking the concept of cooperative societies and associations can also qualify to be part of the sharing economy. Under this concept several individuals pool their resources and share the benefits. Club membership is yet another example of sharing economy which has been in existence for centuries (Botsman and Rogers, 2011).

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In the modern era, particularly during the last two decades, sharing economy has emerged as a new economic concept. Driven by technology, particularly digital platforms, real time connectivity, mobile phones and digital global payment systems; sharing economy has re-written the rules of traditional economy. There are multiple reasons for the growth of sharing economy models. As stated by Chen (2009) and Marx (2011) ownership is no longer the ultimate expression of consumer desire. During the last decade we have seen a proliferation of access systems in the marketplace that go beyond traditional forms of access based on ownership. Ownership and attachment are becoming increasingly loose, porous and liquid. Modernity characterizes the current social conditions in which social structures and institutions are increasingly unstable and are undergoing change and therefore they cannot serve as frames of reference for human actions and long-term life strategies (Bauman, 2007). Increasingly, institutions, people, objects, information, and places considered solid during the last century have tended to dematerialize and liquidize (Ritzer, 2010). Similarly, consumer identity and ethics are also becoming fluid and liquid. Values are constantly changing. Emotional, social and cultural ownership embedded in a property is becoming flexible, transient and liquid. Access has emerged as a way to manage the challenges of a liquid society. (Bardhi, Eckhardt, and Arnould, 2012).

Sharing economy is a highly flexible economic network and therefore has taken multiple forms and dimensions. It allows people to exchange, borrow or rent tangible and intangible goods and services. These exchange relationships often undercut traditional retail or employment arrangements, generally by reducing transactional friction or looping middlemen out altogether. One can now get an unsecured personal loan directly from your peers, share the same office space with dozens of different companies, share a ride with others and stay at a stranger's house instead of a hotel. The principal forms ßinclude car sharing, ride sharing, accommodation sharing, accommodation renting, peer-to-peer lending, crowd funding, coworking, office sharing, equipment sharing and even sale as in case of eBay. Sharing economy allows participants to get by without owning valuable assets such as cars, while creating opportunities for others to extract value from idle possessions or talents (Martucci, 2021).

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1.2. Defining Sharing Economy

Conceptually, sharing economy is an umbrella term involving a variety of consumer options. The concept and the definition of sharing economy is not yet fully clarified in the literature and it is still under debate. There is not even an agreement on use of the term "sharing economy". The current model of the sharing economy has emerged during the last two decades which is based on shared use of physical or human resources. With the expansion of internet and digital applications, IT platforms have transformed the very concept of sharing economy infusing a new life into this ancient concept. According to Botsman & Rogers (2011) the sharing economy has also been referred to as 'collaborative consumption' or 'collaborative economy' which is defined as a socio-economic model based on the shared usage of under-used or unwanted commodities. They further argue that such a collaborative system counters the wastage and underutilization of resources associated with the unequal distribution of wealth and resources. According to Belk (2007); the action of sharing involves "the act and process of distributing what is ours to others for their use and the act and process of receiving or taking something from others for our use". Furthermore, Belk (2014) defines collaborative consumption as "people coordinating the acquisition and distribution of a resource for a fee or other non-monetary compensation like bartering, trading, and swapping." It has been further argued by Eckhardt & Bardhi (2015) that the sharing economy is more like an access economy as the sharing aspect in this context is only secondary, and is market-mediated by an intermediary firm. Sundarajan (2016) defines the sharing economy as crowd-based capitalism since there is a transfer of ownership through on-demand access.

According to the Harvard Business Review the word 'sharing economy' is a misnomer. Harvard Business Review (2015) suggested the correct word for sharing economy is 'access economy'. There are some other scholars, who call it on-demand economy (Jaconi, 2014) or gig economy (Wilson, 2017). Some others prefer to call it a platform economy or 'peer to peer economy'. Therefore, coming up with a definitive definition of sharing economy that reflects a consensus, or a common usage is nearly impossible. Given great conceptual diversity in defining its boundaries, it may be debatable

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whether the use of public parks, public libraries and traditional bed and breakfast services form part of the modern concept of sharing economy or not.

The economic growth since the industrial revolution, considerable growth in human population in the last two centuries and the concept of welfare society born in the 20th century have given birth to consumer society with excessive consumption and fast depletion of natural resources leading to serious environmental degradation. Sharing economy offers a possible solution for conservation of natural resources and towards reduction of waste and the carbon footprint. The exchange, renting or lending of underutilised goods and services to people can give the same benefits as those of ownership without putting extra burden on natural resources or the environment. Thus, sharing economy directly promotes the model of sustainable development. Therefore, the sharing economy offers a kind of answer to sustainability and hyper consumption and also encompass multiple social dimensions such as; those involving values, practices and consumption habits, environmental awareness, quality of life, technological development, and economic and social perspectives. The fundamental base of the sharing economy is not the monetary transactions but the cooperation among people regarding usage of underutilised goods and services, which is resulting in a common advantage for both the parties that are involved in the sharing. While the sharing economy is still an evolving field, it has radically re-written the rules of economic engagement during the last two decades and continues to do so.

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Chapter II.

2. Motivation and Methodology

2.1. Motivation

Being a reasonably good student, it was always my intense desire to pursue PhD studies as the highest academic qualification that helps to unlock the academic and professional potential of an individual. Therefore, after completion of my MA studies in 2006, I decided to gain some practical experience before starting a PhD program. This was an essential step for me to comprehend the different fields of possible research and to gauge my interest and potential. During my work, first with a non-governmental organization and subsequently with an Embassy, the Ministry of Trade and Economy and the Hungarian Central Bank, I acquired enough experience in a variety of fields. During this 10-year period, I also realized that PhD studies will help me to enhance my overall knowledge, my critical thinking and analytical skills and, taking it together, I could develop more effective organizational communication skills that go beyond my envisioned career path.

Given my work experience in an NGO, in an embassy and the economic organizations, I was interested in a topic that was relevant both for the economy and for the society. The SzEEDS^{M} PhD program at Széchenyi István University in Győr offered a good opportunity for me to do so. The program not only offered a variety of choices on the topics of my interest but also offered some financial assistance that I needed. Additionally, I met Prof. Gyula Vastag whom I found academically competent, personally empathetic and helpful. Since he agreed to become my supervisor, I happily and earnestly decided to pursue the PhD program at the Széchenyi István University in Győr.

Nevertheless, it was not easy for me to pin down to a specific topic. At the first SzEM-Jam Conference of the Doctoral School, one of the distinguished professors emphasized in his lecture that one should be in love with his/her research area or topic otherwise it would be impossible to do in-depth research and complete the PhD studies. I found this suggestion of immense value. Therefore, after mulling over several possible topics, I settled for the topic of “Sharing Economy” for a variety of reasons. Firstly, this topic connects economy and society in an integrated way. Secondly, it is a trendy topic which

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is transforming economic methodology and market forces by assigning value to idle resources using information technology platforms. Thirdly, it brings together strangers on the same platform who carry out transactions, finalize business deals and undertake risk without knowing each other or speaking a common language. Fourthly, in this era of global warming and climate change, eco-friendly economic policies are very important to reduce the carbon footprint. The sharing economy model, through sharing of idle assets like motor vehicles, considerably helps in reducing the carbon footprint and in reducing the traffic congestion in large cities. This topic, therefore, was in sync with my thinking and my interest.

At the age of 18, like many of my contemporaries, I got my driving license, but I never drove since I did not have a car. Whenever I visited my parents in Nyíregyháza, I undertook a three-hour train journey plus taxis on both ends. It was expensive, time-consuming and cumbersome; sometimes even annoying. I was therefore, looking for alternative options. One day, however, I got to know the Oszkár platform that offered car-sharing services between Budapest and Nyíregyháza with several trips every day. In the beginning, I was hesitant to travel with strangers, but after a few rides I found these rides safe, comfortable, clean, fast and economical. Initially when I was using Oszkár, I was not aware of the fact that Oszkár platform was part of the sharing economy model. Once I got to know this, my interest in sharing economy models got a further boost. I therefore readily settled for this topic. Subsequently, as part of my research, I even undertook a comprehensive survey and wrote a paper on Oszkár model of long-distance car sharing.

2.2. Research Questions

Well-designed relevant questions are essential for guiding the research in the right direction. The questions have to address the core issues of the research topic so that correct answers could be found. Keeping this in mind I have framed the following five research questions:

1. How do you explain sharing economy and its different dimensions and forms in the recent years?
2. What is the role of trust in the growth of sharing economy and how the expansion of trust amongst strangers has been possible?

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3. What is the role of Information Technology, specially the IT platforms, real time connectivity and IT applications?

4. What is the mechanism to pool together under-utilized assets and resources and to convert them into productive assets?

5. Could the sharing economy contribute towards sustainable development, if so, how?

2.3. Conceptual Framework

Based on the above five research questions, I have prepared a paper-based thesis. Each of my papers addresses one or more research questions given above. The introductory chapter addresses the historical perspective, the concept of sharing economy and a brief literature review. Brief literature reviews have also been included in each of the five articles particularly on the topics that have been covered in that specific article.

The first pillar of my research is 'trust' as sharing involves business transactions among strangers who have never seen each other or unlikely to see in the future. Trust acquires especially critical role in sharing economy as individuals share their private assets with total strangers. The trust is as old as the existence of the human race but the radius of trust which was initially confined to family, friends and local communities; now encompasses strangers who speak no common language and who live oceans apart. The current form of the sharing economy is very much different since strangers are brought together by digital platforms to have access to under-utilized capacities and assets. Trust is the cornerstone of the sharing economy since the participants do not know each other. Evolution of Digital Identity (DI) and Trust and Reputation Information (TRI) have contributed substantially in enlarging the radius of trust. On the sharing economy platforms trust is based on the strong belief that the individual or the institution is going to do things in a consistent and reliable manner in accordance with the exactions and assurances.

Since 'trust' forms the foundation of financial transactions and risk involved in the sharing economy; I have published an article with the title "In Trust we thrive: What drives the sharing economy?" jointly with Dr. Gauri Shankar Gupta at *Corvinus Journal of Sociology and Social Policy*. The article was written after undertaking a comprehensive

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literature review with over 150 articles and critical analysis of real-life situations. The article focuses on the theoretical background of trust, expansion of the radius of trust with use of IT technology and development of specific tools such as Digital Identity and the Trust and Reputation Index. Considering trans-national nature of such transactions, national and international legal framework is also a core element of this research.

The second pillar of my research covers one of the most important dimension of sharing economy - car sharing and some locally designed sharing economy models in smaller cities. Keeping this into mind the article titled "Recovery of Differences, Constraints and Key Elements in Providing Local Sharing Economy Services–A Hungarian Case" has been published in the *Resources Journal* jointly by Katalin Czakó, Marcell Tóth, Kinga Szabó and Dávid Fekete, in which I contributed the literature review part on modern concepts of sharing economy providing a critical analysis of the evolution of car-sharing services in Europe, the largest car-sharing region based on its membership data. The sharing economy services in Hungary especially in Budapest (capital) are on the increase, which implies that there is still potential to expand the sharing economy services in Hungary. There are some European business models, that were adapted to the Hungarian market but still there are many unique solutions, which provide customized business solution specially designed for Hungarian customers. These models could be valuable input in sharing economy activities elsewhere. In this article one of the focus area is on the sharing economy models developed solely for the Hungarian markets outside the capital city. General goal of the study was to reveal the differences between a capital and an economically well-developed rural city in Hungary, The Business Model Canvas (BMC) was applied to undertake a comparative analysis of data of the Hungarian capital and those in a well-developed Hungarian city.

Car-sharing for long distance transport services particularly between cities, was the third important pillar of my research. Since I personally use the Oszkár car sharing service for long-distance travels in Hungary, I undertook a comprehensive study on the functioning of Oszkar model of sharing economy. A survey was undertaken on the experiences of the customers, drivers and the Oszkar platform. Based on this comprehensive survey an article title "Growth of Sharing Economy in Hungary; Long Distance Car Sharing- A Case Study of Oszkár" was published in the *Review of European Studies Journal* jointly with Dr. Gauri Shankar Gupta. Since the Oszkár platform has recorded impressive growth of over 67%

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between 2015 and 2018 with very positive customer reviews, this model presents a good example for long-distance car-sharing services in other countries. Moreover, long-distance car sharing practice represents an environmentally friendly sustainable practice which successfully reduces carbon footprint and traffic congestion.

The IT platform is an important factor of the sharing economy models that has triggered a paradigm shift in the traditional business practices. The platform provides the organizational structure and the marketplace where suppliers and customers meet and transact their business. Precisely for this reason some people prefer the name platform economy instead of sharing economy. Therefore, IT platform is the fourth important pillar of my research. I have therefore written the fourth article titled "Platforms – As Foundation of Sharing Economy". This article has been published in the *Delhi Business Review* in its issue Vol 22, No.1 (Jan-Jul 2021). The article examines the role of IT platforms in transforming the entire economic ecosystem i.e., marketing techniques, business practices, supply chains and consumption patterns. Similarly, consumer behavior has undergone a complete transformation due to IT platforms as several customers are looking for convenient and effective access to goods and services through their computer screens while sitting in the comforts of their home and without the financial, emotional and logistic burden of ownership. The article also examines the role of technology in promoting such platforms, category of different platforms based on their functions and the nature of their mechanism and the role of well-designed platforms in promoting and nurturing trust which is the core factor in promoting and sustaining sharing economy models. The platforms not only offer a market place for suppliers and consumers but also enables individuals to become micro-entrepreneurs.

Sustainability is one of the most important challenges facing the humanity in 21st century. Sharing economy does offer a solution for mitigation of environmental degradation. The sustainability is therefore is the fifth pillar of my dissertation. A paper titled "Sharing Economy and Sustainable Development: A Case Study of Uber and Airbnb", has been prepared. The paper will be submitted shortly to a reputed journal for publication. The paper examines the positive environmental impact of the sharing economy models of Uber and Airbnb, particularly in conservation of natural resources and the lowering of the carbon footprint. Similar sharing economy models, which are based on sustainable development

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could help in mitigating the challenges of environmental degradation, global warming and climate change and could also contribute to promoting social equality by making idle and unused assets available to the socially deprived section of the society at a fraction of the normal cost. Uber and Airbnb, clearly illustrate these benefits to the society at large. I have therefore, chosen these two models in this paper to introduce them through case studies.

Thus, my efforts have been to undertake a thorough review of literature and to undertake empirical studies of important aspects constituting the pillars of the sharing economy models. This provides a balanced view of the theoretical concepts and their practical applications in the real-life situation. Hence, the articles published in reputed journals in different countries covering the core questions provide a comprehensive view of the sharing economy and its ramifications on the economy and the society as a whole. These articles form part of this dissertation from chapter III to VII. The article on the sustainability is yet to be submitted for publication.

2.4. Research Methodology:

Research is at times mistaken for gathering information, documenting facts, and rummaging for information. Research is the process of collecting, analysing, and interpreting data in order to understand a phenomenon (Leedy & Ormrod, 2001). The three common approaches to conducting research are quantitative, qualitative, and mixed methods. The researcher anticipates the type of data needed to respond to the research question. Based on this assessment, the researcher selects one of the three aforementioned approaches to conduct research (Williams, 2007).

According to Maanen (1979, p. 520) the qualitative reseach method is an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. Denzin and Lincoln (2018) associate the qualitative research with an interpretive philosophy since researchers need to make sense of the subjective and socially constructed meanings expressed about the phenomenon being studied. This kind of research is sometimes referred to as naturalistic since researchers need to operate within a natural setting, or research context, in order to establish trust, participation, access to meanings and in-depth understanding.

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A quantitative research method, on the other hand, involves a numeric or statistical approach to research design (Williams, 2007). The methodology of a quantitative research maintains the assumption of an empiricist paradigm (Creswell, 2003). Quantitative research is defined as a systematic investigation of phenomena by gathering and critical analysis of quantifiable data. Quantitative research collects information from existing and potential customers using sampling methods or a questionnaire. After careful examination and analysis of the collected data/information prediction of the future behaviour and changes are made keeping in view the limitations of data collected. While the quantitative method may provide an objective measure of reality, the qualitative method allows the researcher to explore and better understand the complexity of a phenomenon.

The mixed methods approach to research is an extension of rather than a replacement for the quantitative and qualitative approaches to research, as the latter two research approaches will continue to be useful and important (Johnson & Onwuegbuzie, 2004). The mixed methods approach to research provides researchers with the ability to design a single research study that answers questions about both the complex nature of phenomenon from the participants "point of view" and the relationship between measurable variables. Proponents of the mixed methods approach to research advocate doing" what works "within the precepts of research to investigate, to predict, to explore, to describe, to understand the phenomenon" (Carr, 1994; Creswell, 2003; Johnson & Onwuegbuzie, 2004; Mingers, 2001; Sale, Lohfeld, & Brazil, 2002; Tashakkori & Teddlie, 2003). According to Molina-Azorin et al. (2017) mixed methods research is based on the philosophical assumptions that guide the collection and analysis of data and the mixing of quantitative and qualitative collection techniques and analysis procedures.

In the course of research on each of the five papers, I have used mixed methods research, which is the branch of multiple methods research that integrates the use of quantitative and qualitative data collection techniques. The quantitative research methods are usually associated with a deductive approach, where research can be confirmatory, predictive or explanatory (Creswell, 2003). Data are collected and analysed to test theory and to predict the future possible course of events. For example, I used the quantitative research method in the article titled *Growth of Sharing Economy in Hungary; Long Distance Car Sharing – A Case Study of Oszkár* to analyse the growth of number of passengers and

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drivers. While in the same article to ascertain the customer satisfaction level, I used the qualitative research methods. Similarly, in the article titled *Sharing Economy and Sustainable Development: A Case Study of Uber and Airbnb* the analysis of the growth of these two sharing economy giants have been analyzed based on quantitative research methods while the projection of conservation of resources is based on the mixed methods. Thus, it is clear that the type of information required for the research project and research objectives decide on the nature of research methods. Research methods also depend on the constraints of access to data. For instance, the private enterprises are generally very conservative in disclosing their data least they could be utilized by their competitors. This fear is real and therefore guarding business secrets is a natural tendency. I had to face this constraint while gathering information on the growth and functioning of Oszkar – a long distance car sharing company from Hungary. Very often the researchers have to work under such constraints. However, so long as data collected offer a reasonable assessment of the research topic there should be no serious distortion in the outcome of research work.

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Chapter III.

3. In Trust We Thrive: What Drives the Sharing Economy?

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IN TRUST WE THRIVE:
WHAT DRIVES THE SHARING ECONOMY?

ABSTRACT

The rapid growth of the sharing economy in the last two decades may signal a paradigm shift in global capitalism and societal values. Digital platforms have brought together strangers with under-utilized capacities and assets with those who need them but who are not looking for ownership. The radius of trust, which was initially confined to family, friends and local communities, now encompasses strangers who speak no common language and who may live oceans apart. Trust, driven by Digital Identity (DI) and Trust and Reputation Information (TRI), has enabled what was considered improbable or even impossible some years ago. The further expansion and deepening of trust, based on new technologies combined with the international legal framework, has the potential to rewrite the apparatus of modern capitalism and societal values. Civil society and governments need to engage on this issue to guide them in a direction that is most beneficial to society. However, the current extraordinary situation due to the Coronavirus pandemic, coupled with the foreseeable tendency to complete digital control, is likely to have far-reaching impact on the future development of the sharing economy.

KEYWORDS: sharing economy, trust, digital platform, digital identity, trust and reputation information

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INTRODUCTION AND THEORETICAL BACKGROUND

We humans are social animals (Aronson, 2007), driven by a need to belong (Brooks, 2011), and "an urge to merge." Therefore, sharing is as old as the very existence of mankind. In ancient times there were many examples of the sharing economy, involving hunting, fishing, farming, and cooking. Subsequently, these practices took the form of tribal or community behaviour and rules. In more recent times, public toilets, public baths, public libraries, public transport, public parks, hotels, community cooking, and similar other practices are good examples of the sharing economy. With the advent of internet, mobile devices, mobile applications, and technology platforms, the sharing economy has taken on a completely new form in the twenty-first century. Global business models have emerged driven by peer-to-peer (P2P) or consumer-to-consumer (C2C) internet platforms, social media platforms, and information systems based on real-time interaction. With the rapid growth of information technology and a variety of online platforms, the global economy has been witnessing what we call the "sharing economy" (SE), which is new form of business model for time-sharing resources and assets and exchanging goods and services. This is different from opening a store, hiring employees, and selling products to consumers.

DEFINING THE SHARING ECONOMY

Bartering goods and services is an ancient practice. Before the advent of money (currency) as medium of exchange, there were physical markets for enabling the barter of goods and services. In a limited way, the modern concept of the sharing economy started with the sharing of excess- (both in terms of quantity and time) resources and assets on digital platforms. Strictly speaking, the sharing economy was initially identified with peer-

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to-peer platforms for time-sharing excess resources. However, over time the concept expanded and now covers some elements of e-commerce, including the bookings made through online market places. Thus, the sharing economy is an economic model based on peer-to-peer activities on an IT-based platform involving providing or sharing access to an excess of goods and services. Many academic experts describe the sharing economy as a growing ecosystem of online platforms and market places devoted to the exchange and renting of goods and services (Botsman et al. 2010; Hawlitschek et al. 2016; Lessig, 2008; Zervas et al. 2015). Traditional forms of sharing, bartering, lending, trading, renting, gifting, and swapping, are being redefined by using digital technology, which is revolutionizing and mainstreaming the way people consume and share knowledge (Gata, 2015).

While the term "sharing economy" is very popular and has been in use for over two decades, a widely accepted, well-articulated, precise and comprehensive definition is still lacking. Thus, multiple definitions are still under intense debate in academia, government, and the business community. The sharing economy is also known as collaborative consumption, the platform economy, access-based consumption, and so on (Botsman et al. 2010; Bardhi et al. 2012). According to Böckmann, the sharing economy refers to a business model whereby participants share unused resources and assets among them via a peer-to-peer (P2P) platform (Böckmann, 2013). This model implies the creation of economic value or the monetization of unused resources and assets through multiple transactions without loss of ownership mediated by use of a P2P platform. Thus, use of a peer-to-peer business model that provides temporary access to the private resources of other individuals using a real-time IT platform is the fundamental characteristic of the sharing economy. Economic transactions that occur in line with this model are based on payments for one-time use, or time-based rentals or fees, and do not involve the transfer of ownership. However, there are

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sharing economy platforms like eBay where ownership changes hands. Therefore, in this broader sense, the sharing economy implies a new economic model based on digitally-enabled, peer-to-peer platforms for goods and services that connect the spare capacity of individuals with the demand of those who need the former, and offer access by enabling renting, lending, swapping or even selling (Avital et al., 2015; Bardhi et al. 2012; Belk, 2014; Botsman et al. 2010; Möhlmann, 2015). The extensive penetration of information technology and peer-to-peer digital platforms in all spheres of human interaction has created numerous options for online communication. It has transformed the way people think, live, eat, travel, shop, entertain, and interact. On the negative side, the growth of a plethora of digital platforms over the last two decades has also given birth to an increasingly anonymous, impersonal, and virtual society that many perceive to be unpredictable, uncertain, and devoid of warmth (Cook et al., 2005; Giddens, 1990; Luhmann, 1994; Sztompka, 2000).

In most cases, these market places comprise individuals (consumers) who transact directly with other individuals (sellers), while the marketplace platform itself is maintained by a third party (Botsman et al. 2010). This new model of the economy has provided an opportunity for individual owners to use their idle assets/resources to generate regular income through use of an IT platform to generate real-time interaction. For example, Uber's platform that enables idle vehicles to be used for the transportation of passengers, and Airbnb's platform for individuals to rent unused apartments, clearly represent sources of additional income for the respective owners. Although a variety of IT platforms have emerged to contribute to the sharing economy, the sharing of vehicles and accommodation are two principal areas where the sharing economy has spread its wings wide and fast. The personal transportation network Uber and the accommodation-sharing platform Airbnb have

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emerged as global giants (Demos, 2015). The sale and exchange of goods and equipment is another important area where large platforms such as eBay have emerged.

A PwC Consumer Intelligence Series document published in 2015 estimated the size of the global sharing economy at $15 billion, which is like to likely to expand to over $335 billion by 2025. According to this report, peer-to-peer access-driven business transactions are shaking up existing businesses, and 44 percent of US consumers were familiar with the sharing economy. Airbnb hosted 155 million guest stays in 2014, 22% more than the Hilton worldwide which hosted 122 million guests. Within five years, Uber was operating in 250 cities and by February 2015 was valued at $41.2 billion (PwC, 2015). Tech pioneers like Amazon, Google, eBay, and PayPal, coupled with smart phones, IT applications, and IT platforms have changed traditional ways of doing business within a very short span of time. Fundamental changes in social perceptions regarding the ownership of assets are one of the prime movers of the sharing economy. With such changing global perspectives, today the ownership of assets is no longer considered an important symbol of status in society. The younger generation is happy with the time-sharing of assets. According to a study conducted by Nielsen during August-September 2013 that covered 60 countries with over 30,000 respondents, sixty-eight percent of global online consumers were willing to share or rent their personal items for payment. The survey revealed that 28 percent of respondents were willing to share their electronic devices, 23 percent their power tools, 22 percent bicycles, clothing, household equipment, and sports equipment, and 21 percent their car (Nielsen, 2014). According to the Demos study, there are considerable opportunities in this booming market as there is almost $3.5 trillion dollars' worth of resources sitting idle. These idle assets and the desire to share these assets for monetary consideration is therefore the driver of the sharing economy. Environmental considerations, a lack of space, traffic congestion,

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maintenance issues, and other fixed costs are other important considerations. For example, the sharing of cars reduces pollution, traffic congestion, parking problems, and fixed costs such as insurance premiums, interest on investment, and the cost of parking space. Considering the importance of the sharing economy, Rifkin described it as the third industrial revolution (Rifkin, 2011).

TRUST AS THE FOUNDATION OF THE SHARING ECONOMY

While the factors stated above are important, trust is the cornerstone of the sharing economy. A closer look shows that trust is as old as the existence of the human race. To share is to trust. Trust is based on the strong belief that a person or institution is dependable and is going to do things in a consistent and reliable manner in accordance with assurances or expectations. This implies aligning words and action. It is improbable to conceive of the sharing of assets and resources when there is a trust deficit between the parties involved. Moreover, trust is a two-way street. Both sides must reciprocate and reinforce trust through their actions. With consistency in words and behaviour over time, trust grows and becomes firmly rooted. According to Gefen et al., "trust is the belief that the other party will behave in a dependable, ethical, and socially appropriate manner" (Gefen et al. 2003, p. 53).

Historically, trust was initially confined to family members or blood relations, which is why it is said that blood is thicker than water. Gradually, trust expanded to close friends and local communities. While there is considerable debate about the precise definition of trust, it is generally agreed that trust is a psychological state that reflects the willingness of an individual to place himself or herself in a vulnerable position vis-à-vis the actions of another individual or institution, while knowing fully well that they have no direct way of monitoring the behaviour of the other individual. Trust also depends on the place and the

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context. In general, trust has stronger roots in nomadic societies, tribal communities, and close-knit societies. Commenting on the historical evolution of trust, Cook and Putnam hold the view that trustworthiness and trust were initially bestowed only on members of one's family and close family friends, who formed an intimate, homogeneous community with shared norms and sets of behaviours that facilitated honesty and cooperation (Cook, 2001; Putnam, 2000). In this sense, family, neighbourhood, observed behaviour in the past, and physical proximity played an important role in fostering trust.

Sociologists believe that close social interaction helps with initiating and promoting trust. Frequent social interaction during social or religious events or community matters offers such opportunities. Linguistic affinity, ethnicity, and professional and institutional association also foster trust. Coleman argues that trust is not lodged either in the actors themselves or in the physical implements of production, but is usually built among members of closed networks, such as communities that frequently interact, and through close family, religious, and community affiliations and interactions (Coleman, 1988). According to Mayer et al. trustworthiness is the willingness to be vulnerable to the actions of another party, based on the expectation that the other will undertake particular action that is important to the trustor, irrespective of the ability to monitor or control that other party (Mayer et al. 1995). As suggested by Barber, trust in social exchanges is based on the expectation of the consistent fulfilment of fiduciary obligations and responsibilities based on a natural and social order. Thus, from a social perspective, trust is centred on moral duties and obligations (Barber, 1983). From a rational and financial perspective, trust centres on self-interest; an increase in trust will decrease the transaction cost associated with protecting oneself from others' opportunistic behaviour or mischief (Lauer et al. 2007). The non-fulfilment of obligations may result in substantial financial losses to the trustor.

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The sharing economy represents an altogether new setting. Here, individuals are required to interact with strangers with no past experience. Moreover, unlike in a neighbourhood or in a shopping mall, interaction is not physical but mediated through an invisible platform. Additionally, such individuals may come from two different parts of the world, and may not even speak the same language. Hence, sharing goods and services via internet and digital platforms is based on the fundamental premise of de facto strangers interacting with each other in the digital virtual sphere. Most often, the role of vendor is adopted by another private individual or a corporation, such as occurs with renting out cars, two wheelers, apartments, or other equipment. Nevertheless, the platform acts as a mediator between both sides – the supply side and the demand side – of the market. Since transactions on the internet are anonymous, trust becomes a critical factor in decision making. Obviously, no-one wants to risk financial loss or the security of their person. Thus, without trust no sharing is possible, especially on a regular basis, although there may be a period of trial and error in the first few instances. Trust is central to the normal conduct and survival of any online business (Subba Rao et al. 2007), and is of the utmost importance in relation to users' intention to continue using online services (Zhou et al. 2018).

"Sharing, whether with our parents, children, siblings, life partners, friends, co-workers, or neighbours, goes hand in hand with trust and bonding" (Belk 2010, p. 717). In the context of the sharing economy, given its critical role, trust is even referred to as the currency essential for transactions to occur (Botsman et al. 2010). However, trust is a multifaceted and complex construct – often hard to pin down to one particular factor (Keen et al. 1999). Trust allows us to form communities and institutions, to cooperate and interact with each other, and even, at times, to find solutions that go beyond plain self-interest. Trust determines the nature of the relationships we form with our family and friends, and why and

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how we develop business relationships or decide to buy products in the marketplace (Cook et al. 2009).

Being perceived as trustworthy is an important source of motivation that has impacts extending beyond one's immediate community circle (Sztompka, 2000). It involves the concept of reputation, which travels far and wide. A breach of trust could lead to financial loss, mental stress, and even physical harm that adversely affects reputation. For example, a defective vehicle could cause an accident, or unsafe accommodation could become the cause of illness or a source of financial loss. Therefore, given the dominance of strangers, trust in the context of the sharing economy is far more important than in an ordinary business transaction. In practice, trust starts with personal relationships, then moves to communities and functional systems and abstract social objects, and finally transcends all these circles, connecting all of them and being transformed into reputation. Thus, trust and reputation are related but not identical. Reputation is the collective opinion of a group of people regarding the performance of a platform or an entity. Reputation evolves over time. In the context of a traditional business firm or an enterprise, it is also called "goodwill." On the other hand, trust always remains the individual's subjective feeling that guides their decisions. Nevertheless, reputation is one of the most significant elements contributing to trust, and trust is the fundamental requirement for reputation. According to Fukuyama, trust and trustworthiness in the sharing economy stem from interpersonal relationships that expand outwards in a "radius of trust" (Fukuyama, 1995). That is why most empirical studies on trust have focused on reputation method.

The expansion of the sharing economy is directly correlated to the expansion of the radius of trust, particularly between strangers over digital platforms. The larger the radius of

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trust, the better the performance of the sharing economy. The emergence of information technologies, real-time communication networks, and rapid and innovative transport logistics have helped expand the radius of trust through effective and quick customer service without the necessity of local proximity (Mazzella et al. 2016). With new innovations, the expansion of trust has found new forms and models that transcend subjective feelings. Economies of scale, manufacturing and storage in multiple places, global financial integration, and the movement of funds and global marketing techniques have enabled corporations to develop global corporate brands with a worldwide customer base (Mazzella et al. 2016; Sundararajan, 2016). This has involved an unorthodox method of expanding trust beyond normal boundaries. Some may even describe it as substituting trust with global branding. Thus, the sharing economy seeks to mitigate "stranger-danger" bias by designing and developing new trust-building capacities among strangers who interact through digital platforms by placing people at the heart of the system. As digital technologies expand, the human and social world is undergoing a tremendous shift. The way we communicate and interact, and the mechanisms of conducting business and the consumption of products and services has undergone a fundamental shift. Today, not millions but billions of people connect, interact, and transact business over digital platforms based on network algorithms. Ratnasingam argues that in the context of an e-commerce environment, trust has two different forms: trust in technology and IT applications, and trust in partners (Ratnasingam, 2005). The former infuses assurances that the technological infrastructure of platforms and policies adopted by a business entity can minimize risks, whereas the latter relates to one's dispositional trust and the evaluation of one's competence, among other things (Mayer et al. 1995).

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As far as the antecedents of trust are concerned, McKnight et al. classifies trust-related issues into four categories – institutional mechanisms (institution-based trust), dispositional trust (personality-based trust), familiarity and one's first impression of another party (knowledge- and cognition-based trust), and cost-benefit analysis (calculative-based trust) (McKnight et al. 1998). Institution-based trust may take the form of fair, transparent, and binding rules and regulations pertaining to a mode of transaction, for example. Indeed, when transparent rules are in place, users are likely to be more confident that the other party will behave as expected, reposing greater level of trust, assuming risks away. (Gefen, 2002). Cognition-based trust is often addressed through the quality of information and privacy and protection of the security of all the users who are involved (Kim et al. 2008). Users' perceptions that the necessary security measures are in place and that sensitive information will remain protected are important for cognition-based trust. Information quality, on the other hand, relates to the accuracy and the comprehensive nature of available information, but also to the ease of locating and putting this to use (Miranda et al. 2003). Knowledge-based trust depends on perceived competence, goodwill and integrity (Lin, 2011), and brings out the importance of shared goals and understanding (Chen et al. 2014). Knowledge-based trust feeds into expectations that make it easier to associate behaviour with a likely outcome (Matzat et al. 2012). Finally, calculative trust deals with cost-benefit analysis that compares the likely costs and the expected benefits of collaboration (Gefen et al. 2003). However, this distinction is more academic. In practice, the line separating the four varieties of trust described above is very thin and very often overlapping. Individuals normally take a collective view of the impact of all the four categories when making business decisions. In this sense, trust is one single indivisible feeling that allows one to dive into the vortex of the sharing economy.

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TECHNOLOGY AND TRUST

As explained in the previous section, a solid foundation of trust is essential for economic development and the growth of markets. Both attracting investment and successfully marketing final products requires a foundation of trust. Trust-based relationships may multiply the effectiveness of an enterprise, while adversarial or antagonistic relationships could become a drain on resources (Sjoberg, 2008). Researchers and scholars from across multiple disciplines agree that trust is even more significant in relation to the growth of the sharing economy, where strangers interact and conclude business deals on IT platforms. According to Earle and Siegrist, trust is the willingness to make oneself vulnerable to another based on a judgment of similarity of intentions or values (Earle and Siegrist, 2006). Although there are no validated theories concerning the principal driver of trust in the marketplace, a literature review indicates that social capital and institutions are definitely two such drivers. Generalized trust, values, and norms of reciprocity and cooperation are viewed as the key pillars of social capital, while trust in institutions, on the other hand, is influenced by the type of institution and institutional change (Galluccio, 2018). Rothstein and Stolle promote a similar view when they say that one cannot deny that social capital is a primary driver of trust in many markets due to the personal touch and appeal it offers (Rothstein & Stolle, 2001).

In today's world, a majority of the information and opportunities present on the local and global scene are made available to those who are connected to the channels of information or networks. The digitalization of the modern world has promoted the growth of social capital (Galluccio, 2018). Bridging social capital takes place as a result of linkages among people with different backgrounds who build networks to share their ideas, thoughts,

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or useful economic and social information (Nahapiet and Ghoshal, 1998). According to Kinghorn, globalization and social media have provided a platform for the formation of networks with people all around the globe, and obtaining access to privileged information through such social capital. Digital platforms such as Facebook, Twitter, Whatsapp, Instagram, and Google+, and global search engines like Google, Wikipedia, and Investopedia among others have made networking and access to information much easier by speeding up communication and permitting people to access resources that they would otherwise not have had access to (Kinghorn, 2013). Hence, in the modern era, social media represents a considerable stimulus to the radius of trust in the marketplace.

Institutions are human-made legal entities that are structured and designed for political, social, and economic interaction within society. These institutions are based on a well-structured legal framework of rules and norms. Historically, these institutions are known to have been created with the sole purpose of maintaining order and helping reduce uncertainty in societal interactions (Nahapiet and Ghoshal, 1998). Social capital can thrive if connected to official, political, and lawful institutions. It depends on the government, institutions, or politics to survive, and cannot operate on its own (Uzzi, 1999). State laws and rules provide support to social capital through the institutional framework by fostering trust amongst people. The cooperative ability of people is raised when supported by institutional reputation. Institutions can be built to promote the value transformation of individuals and to help generate solutions among teams that struggle with the issue of managing a shared pool of resources. A well-structured and well-run institution is able to inspire people and give them new confidence and trust. People tend to feel appreciated when their views are taken into account positively and their complaints are acted upon (Edwards

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and Foley, 1998). Since trust is centred on credibility or on perceived reliability, the use of the internet and social media and other tools of modern technology by institutions could help enlarge the radius of trust. Thus, modern IT-based technology and social media have emerged as effective tools for strengthening and multiplying trust through the use of social capital and institutional frameworks.

DIGITAL IDENTITY (DI) AND PUBLICITY

Digital identity is an important innovation of the modern era that can foster trust in an unknown situation. The global reach of digital technologies and the internet have created multiple options for interaction and communication with others online. In any sharing economy transaction generally, there are three factors; person, product, and platform (the three Ps). Of course, the person is the most significant of the three, as individuals are the decisionmakers and must accept the related consequences of their decisions. However, the platform that offers a product or service, and the products and services themselves, are equally important. The digital identity of an entity or a platform or an individual is the "overall online footprint over a period of time." Online reviews are considered an important form of computer-mediated communication. Such DI emerges after a reasonable period of time based on the interplay of information and evaluation willingly shared by the users of the sharing economy platform based on their past experiences. Online reviews can be used as an information source about prior consumer experiences, and for disentangling the different service features that impact user perceptions (Siering et al. 2018). Moreover, online reviews tend to be seen as more useful than more standardised information (such as security assurances and certifications), especially because they communicate the actual experiences of others (Cheng et al. 2019). Text-based feedback is becoming even more popular as it

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contains rich qualitative information about perceptions, preferences, and behaviour, with research showing that online reviews exert significant influence on other users' buying choices (Matzat et al. 2012). While in general digital identity is a complex and multifaceted concept, in the context of the sharing economy it acquires new significance and a more precise meaning. This arises from the interplay of the information willingly shared by the users of digital platforms about their peers regarding their past interactions with them, as well as about the performance of platforms themselves. Such reputation-building information constitutes the core of any sharing economy platform.

User Generated Content (UGC) is converted through statistical synthesis into a Reputation Score. Such reputation scores are also knowns as Trust and Reputation Information (TRI). Most sharing economy platforms actively promote mechanisms through which users can share their reviews and rate others. Such reviews and ratings are normally sought out using a scale of 1-5, or 1-10, supplemented with additional questions and comments. Such online reviews have become standard practice in the sharing economy sector. Very often, reputation scores are prominently displayed on the platform. For example, Uber asks both drivers and passengers to review their trips. In addition to the overall review, passengers are also asked questions about punctuality, the behaviour of the driver, the cleanliness of the car, and so on. Similar review statements are encouraged by Airbnb and Booking.com and most other platforms. Based on this UGC, the reputation score of each driver and each unit of accommodation is calculated and displayed on the platform, which helps with building trust and guiding the behaviour of the consumer. Simultaneously, drivers are rewarded based on their passenger reviews.

In the case of car sharing for long-distance travel between two cities and accommodation, such reviews are even more significant. No one wants to undertake long-

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distance travel in a car with an unreliable driver, or stay in accommodation that is unsafe or unhygienic. Precisely for this reason, customer reviews serve as the most significant factor in car-sharing decisions related to long-distance routes, as in the case of Oszkár in Hungary. Similarly, in the case of Airbnb, occupants provide their reviews about the quality of accommodation and services offered, which serve as the basis for decisions by future clients. In practice, such reviews play a significant role in the trust awarded individuals in favour of or against a particular service. While trust is an important factor in any business transaction, the presence of trust is a major precondition for successful transactions in the sharing economy. Trust helps to alleviate uncertainty in a complex and unknown business environment that may be associated with financial and security-related risk.

Internet users interact with multiple sources before they firm up their decisions. Many platforms offer a comparative list of prices to prospective buyers. Price, service, and trust are then woven into one package before the order is placed. Therefore, the buyer's expectation that the behaviour of the other party in the transaction will not deviate from the stated agreement is extremely important. Similarly, the party that offers the service on the platform expects the other party to use resources as per the conditions of the contract. Hence, the notion of platform-mediated, peer-to-peer trust has important implications for the sharing economy. Its multi-entry characteristics involve peers on both the supply and demand side, as well as platform providers. These enlarged human circles empowered by new trust-building digital mechanisms have made "stranger sharing" a growing reality in the modern era. The increasing number of IT platforms, and their success, are good indicators that digitally generated Trust Reputation Information has been successful in fostering consumer confidence and trust. Perhaps without designing for digital trust, the sharing economy might never have emerged the way it did. Today, DI and TRI have become an integral part of

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publicity, not only in the case of the sharing economy platforms, but for the entire range of e-Commerce.

TRUST AND LEGAL FRAMEWORK

The legal framework governing economic transactions is an important element in the promotion of trust. In the traditional economy, transactions are protected through a variety of national and international laws, regulations, and business practices. For example, hotels, taxis, and restaurants are strictly regulated by local laws concerning, pricing, hygiene, quality, security, and so on. If the requisite standards are lacking, customers are duly compensated. However, in the sharing economy an adequate legal framework for consumer protection is still missing, partly due to the evolving nature of this sector, and partly due to the very special operating features and the parameters of the sharing economy. There is a view that any elaborate legal measures governing this segment of the economy have the potential to become very intrusive, impinging on the privacy of individuals. For example, generating a legal framework for governing the millions of individual drivers operating for Uber is not an easy process. It is precisely for this reason that some Uber drivers have been found to be involved in cases of misbehaviour, theft and even rape. Similarly, in some cases accommodation provided through the Airbnb platform has been found to be unsafe and unsuitable for habitation. In the absence of specific laws governing the sharing economy, all such cases are dealt with under the normal civil and criminal laws of the respective country. Therefore, in the absence of a comprehensive legal framework, the trust factor acquires added importance. The sharing economy has four drivers; social, economic, environmental, and practical (Lea, 2015). However, no matter which motive lies behind

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sharing, trust is the key to sustaining the sharing economy's growth and success (Botsman et al. 2010).

Since IT platforms facilitate all peer-to-peer transactions and interactions that take place through their digital channels, the adequate monitoring of such platforms is also needed. To enforce such monitoring at a global level, an internationally accepted legal framework, guidelines, and norms are needed to prevent misuse and manipulation of the vast amount of information that is generated (Sztompka, 2000). Such legal measures would help enlarge the radius of trust that is so critical for the continued growth and success of the sharing economy. Since social evolution gives birth to legal frameworks, new laws governing the sharing economy will emerge in the years ahead. Intense debate is already underway about this issue.

THE WAY FORWARD

The sharing economy is a new disruptive paradigm that has the potential to rewrite the social and economic model of world capitalism. Being successful in the sharing economy means building business models that are based on trust, authenticity, and transparency with customers. Trust is the cornerstone of the sharing economy. With new advances in IT technology, user-generated digital information has further expanded the narrow base of trust which was initially confined to family, friends, and local community. The risk of allowing strangers into one's private space is not an easy barrier to overcome. IT platforms and TRI have made it possible. As of now, global sharing firms are in the lead with regard to transforming business ethics, economic practices, societal norms, and legal and moral codes of conduct. They are engaged in rewriting consumer behaviour and business practices. In a deeper sense, sharing economy actors have initiated a societal shift through facilitating trust

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between strangers. The application of business practices in the sharing economy could be improved further based on the analysis and experiences of platforms in local, regional, national, and international settings. Legislative measures and business guidelines based on best practices could further enhance the radius of trust. In this context, the engagement of civil society and governments is indispensable for reshaping globalized society and business practices. The further enrichment and expansion of digital platforms' feedback mechanisms are important for expanding and deepening trust.

While User Generated Content on platforms is relatively widespread these days, in the future digital trust could be accumulated in the form of trust capital which could be utilized and exported, not just on a single platform, but across a plethora of platforms and applications, similar to the notion of digital social capital that allows users to display Facebook friends or LinkedIn contacts exported from other digital networks. Such trust capital could be collected through the different interactions of individuals on social media, digital platforms, and other virtual fora such as banks, insurance companies, legal firms, and supermarkets. Although this could immensely enrich digital TRI, such a possibility will have to address privacy issues satisfactorily before it could be put into practice, as sensitive information about individuals is also prone to risks regarding cyber security, data exploitation, and surveillance issues. Moreover, the question of statistical uniformity is also important, since at times collecting and collating information from different digital settings and entities could also lead to confusion and contradictions as all these entities may operate in line with different parameters with different objectives. However, rapid advances in blockchain technology have the potential to facilitate direct peer-to-peer interaction in the sharing economy (Sundararajan, 2016). Building trust among strangers is indeed a spectacular achievement of the sharing economy model, particularly when person-to-person

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direct interaction was on the decline in the recent past. Of course, further debate involving all stakeholders is needed about this extremely important and sensitive issue before digital trust can transform our stranger-danger mentality into the perception that "strangers=friends." New national and international legal frameworks could be needed to address some of the fears and legal issues. These economic platforms have penetrated the lives of individuals and society as a whole using the very data provided by the individuals who use these platforms. This penetration has the capacity to bring about a radical shift in human society and the global economy.

Before we conclude, a preliminary assessment of the impact of the Coronavirus which has turned the world upside down would be desirable. The global economy and human activities came to a complete halt during March-June, 2020, as never seen before. Most of the global population were confined to their homes. The incalculable human and economic toll exacted by the rapid spread of the killer virus that originated in Wuhan, China has shaken up the global economy and geopolitics. Since mid-June, economies and human lives have started being unlocked in phases, although the restoration of the former status quo is still far away. The unlocking of economies and human lives has also led to spikes in the spread of Coronavirus in some countries/regions, creating new uncertainties. These uncertainties are likely to continue until an effective vaccine against Coronavirus is available. By most accounts, this may take another three to six months. According to Worldometers, as of July 5, 2020, there were 11.4 million cases of infection and a total of 5,34,164 deaths, with the USA, Brazil, Russia, and India having the most infected (Worldometers, July 5, 2020). Keeping these limitations in mind, the following predictions have been made by the UN, IMF, and other global institutions about the potential economic impact in the near future.

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The UN Department of Economic and Social Affairs (DESA) has predicted serious disruption in global supply chains and international trade, with nearly 100 countries closing national borders during the past months due to the Coronavirus pandemic. DESA has observed that the movement of people and tourism flows have come to a screeching halt. With the large-scale restrictions on economic activities and heightened uncertainties, the global economy has come to a virtual standstill in the second quarter of 2020. "We are now facing the grim reality of a severe recession of a magnitude not seen since the Great Depression" stated DESA (UN News, May 13, 2020). In the same message, UN DESA predicted that the world economy would shrink by 3.2%; the economies of the developed countries would contract by 5%; and those of developing countries by 0.7% during 2020. According to the International Monetary Fund (IMF), the world economy will contract by 4.9% in 2020, 1.9 percentage points less than the April 2020 World Economic Outlook (WEO) forecast of the IMF. The IMF confirms that the COVID-19 pandemic has had a more negative impact on activity in the first half of 2020 than anticipated, and that recovery is projected to be more gradual than previously forecast. In order to ensure a smooth recovery, the IMF has recommended strong multilateral cooperation on multiple fronts, liquidity assistance for countries confronting health crises, and debt relief and financing through the global financial safety net (IMF, World Economic Outlook, June 2020). Statista admits that while there is no way to tell exactly what the economic damage from the global coronavirus pandemic will be, there is widespread agreement among economists that it will have severe negative impacts on the global economy. Early estimates predicated that most major economies will lose at least 2.4 percent of the value of their gross domestic product (GDP) in 2020 (Statista, June 2020).

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Based on the above, it is clear that the global economy will contract somewhere between 3 and 5% in 2020. The re-opening of borders will take time due to fears of a revival of the pandemic adversely affecting the travel and tourism industry. This would naturally have negative impacts on the sharing economy, which could be somewhat greater than the general economic decline. Uber has already closed down some of its offices abroad due to a lack of business. Airbnb has done so as well. This pandemic is a defining moment that could reshape the global economy and human society and the way we interact, socialize, eat, travel, shop, entertain and live. However, it is premature to objectively evaluate the precise impact of this pandemic on the sharing economy at this moment. Moreover, this is the subject matter for another article.

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Chapter IV.

4. „Differences, Constraints and Key Elements of Providing Local Sharing Economy Services in Different-Sized Cities: A Hungarian Case”

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First Author, Third Author and Forth Author:

Conceptual framework, Conceptualization, Investigation, Original Draft, Writing - Review & Editing

Second Author:

Literature review,

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Abstract: European cities provides wide range of sharing economy services in order to support green and comfortable solutions for their citizens. Business models of these services can differ from each other in each city. This paper provides a deeper understanding of the urban environment of implementing locally operating services of car, bicycle and office sharing, with the goal of revealing the differences between a capital and an economically well-developed rural city in Hungary. Our basic assumption is that while there are well-working sharing economy service models in capitals, it is also crucial to implement and improve energy solving sharing economy services in big cities. Applying the Business Model Canvas approach (BMC), we introduce a comparative analysis using data of the Hungarian capital and analyzing the possible service implementation in a well-developed Hungarian city. Results show that BMC can reflect the main differences, constraints and key elements in the models of sharing economy services. We can say that in case of bike sharing service operated by the chosen city includes more segmentation than the same service in the capital. There are significant price differences especially in case of long-term tickets. Number of inhabitants and private capital stay the biggest constraint in case of car-sharing services, but there is also possible chance for implementation by applying good value proposition and segmentation.

Keywords: service-based economy, sharing economy, car-sharing, bike-sharing, shared office, Business Model Canvas

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1. Introduction

Hungary itself is an interesting case for analyzing sharing economy services, because we can say that sharing economy services in the Budapest (capital) are in their upcoming trend. There are more and more solutions each year, which means the market of sharing economy services and the taste of customers toward sharing economy are relatively not saturated. Hungary is in the upstream in implementing sharing economy solutions. Beside adapting some European business models, there are many unique solutions, which provides some customized business model elements, which can be valuable input in sharing economy activity. In this paper we analyze only those sharing economy services which has no national or European or worldwide coverage. This step contributes to the comparative analysis in which we focus on services which are presented both in the capital and the chosen city and services which are presented only in the capital. General goal of the study presented in this article is to reveal the differences between a capital and an economically well-developed rural city in Hungary. We formulate the comparative analysis around three research questions:

(Q1) What are the main differences in the business models of those sharing economy services, which are presented in the capital and in the chosen city?

(Q2) Beside the number of inhabitants, what are the main constraints in implementing a sharing economy service in a chosen city, which is well-operating in the capital?

(Q3) What are the key elements of implementing a sharing economy service in the chosen city, which is well-operating in the capital city?

The “chosen city” is Győr located in western part of Hungary. In term of economic output it is the richest city after Budapest. There is the world’s biggest engine factory in the city, and the car manufacturing industry is the most important economic strength of Győr [1] Due to the so-called Győr Cooperation Model the stakeholders (local government, local companies, university, civil organizations) of the city are working together successfully on the development of the city [2]. We introduce the multifaced application of Business Model Canvas with the goal of revealing main differences between business models of presently operating sharing economy services in the capital and in the chosen city on one hand. On the other hand, we reflect the key elements and constraints to implement sharing economy services, which are presented in the capital city and not presented in the chosen city. We

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focus on bike and car sharing and office sharing services. Reasonability of our research is that although sharing economy has been part of human society for a long time, it has taken a new form and has grown considerably during the last two decades. With transformation in technology and increase in per-capita income, transport industry has registered a phenomenal growth in the last few decades with the number of passenger cars reaching over 1.2 billion in 2015 for the first time ever [3. Increasing numbers of cars and massive migration cities have resulted in congestion, traffic jams, parking problems, increased accidents and deaths and growing pollution in cities. These have given birth to new ideas in car sharing in a variety of ways such as shared taxies, single rides, carpools, ride-sourcing and many more. Implementation of bike sharing is less costly than car sharing. It is interesting to have a look on shaping its market in a city, which has not got attributes like a capital. It the first part of the article a short introspection highlights the modern concepts of sharing economy and gives a short summary about the evolution of car-sharing services in Europe, the largest carsharing region based on its membership data. After that we introduce the research concept, which ease to compare local sharing economy services in a capital and a chosen city and also can be appropriate to make multi city comparison. Findings in the article are presented in the last section. Main differences, key elements and constraints are highlighted as practical contribution. Application of BMC is presented as theoretical contribution.

2. Theoretical background

2.1. Modern concepts in sharing economy

The modern concept of sharing economy has evolved somewhat differently based on a variety of factors. These include, weakening desire for ownership, economic stagnation and economic crises, reduction in disposable income due to growing unemployment, urbanization, evolution of new innovative sharing concepts, environmental considerations and availability of new technological tools and platforms [4]. The consumption can be based on time, space or at a fixed price. Consumer chooses such access when they are not able to afford the objects or they do not wish to own them for reasons of maintenance, space, cost, etc. The consumer is acquiring consumption time with the item, and, in market-mediated cases of access, is willing to pay a premium price for use of that object [5]. Thus, the consumer-object relationship in access-based consumption may be different from that in

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ownership. The owner has the right to regulate or deny access to use, sell, and retain any profits yielded from the object's use; and to transform its structure [6].

According to [7] although the property continues to exit, it is less likely to be exchanged in the market. Instead of buying and owning properties and goods consumers want access to goods and will prefer to pay for the experience of limited and temporary access. As stated by [8] and [9] ownership is no longer the ultimate expression of consumer desire. During the last decade we have seen a proliferation of access systems in the market place that go beyond traditional forms of access. For example, access can be gained through memberships to clubs or organizations where multiple products owned by a company can be shared [10] [11] [12] [13].

Modernity characterizes the current social conditions in which social structures and institutions are increasingly unstable and are undergoing change and therefore they cannot serve as frames of reference for human actions and long-term life strategies [14]. Increasingly institutions, people, objects, information, and places considered solid during the last century have tended to dematerialize and liquidize [15]. Similarly, consumer identity and ethics are also becoming fluid and liquid. Values are constantly changing. Emotional, social and cultural ownership embedded in a property is becoming flexible, transient and liquid. Access has emerged as a way to manage the challenges of a liquid society [16].

The increase in the costs of acquisition and maintenance in case of ownership over time, the instability in social relationships, as well as the uncertainties in the labor markets have rendered ownership a less attainable and more precarious consumption mode than it once was [17]. Many people have started thinking – why own when benefits could be enjoyed at a fraction of the total cost with no problem to access and no headaches of storage and maintenance. With density as a major concern of the re-urbanization movement, sustainable development, apartments, and condos have increased in city centers, offering alternatives to the long commutes and the reliance on cars that dominate suburban living [18]. The consisted urban settings have created a new set of problems that can be addressed by the sharing economy. Unlike earlier generations of information or technology- based enterprises, sharing enterprises rely on a critical mass of providers and consumers who are sufficiently close to each other or to other amenities to make their platforms work, often finding value in the very fact of the beneficial spill-overs from proximity [19]. For example, Uber transports people from one common area to another without involving idle driving or parking

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requirement. The driver picks up the passenger from the nearest area and after dropping picks up another passenger, where the previous passenger was dropped, almost eliminating idle driving or parking needs. Moreover, the passenger need not navigate in the heavy traffic as is the case with self-driving.

Growing awareness on environmental issues has also played its role in the evolution of sharing economy. Air pollution in cities due to growing vehicular population has transformed the thinking process of at least a section of the population. This section, which is environmentally-conscious no longer, wishes to add new vehicles causing additional congestion and air pollution. According to the 2014 Survey by the Center for New American Dream, 90% of Americans believe that the way they live produce too much waste and 70% agree that, Americans consume more resources and produce more waste compared to other countries, 60% agree that sharing economy lowers environmental impact [20]. Commenting on the environmental impact the report of [21], 'clothing, vehicles, furniture, telephones, televisions, toys, sporting goods, home improvement and gardening tools are all examples of the shareable goods that represent about a quarter of household expenditure and a third of household waste, not to mention the energy used to produce them'.

2.2. Evolution of sharing economy through car sharing in Europe

Integration of digital technology with transport systems has further multiplied the transformation. Motor vehicles have provided mobility to people, goods and services in a way never seen before in the history of mankind. Today almost 80 to 90 % of global population uses automobiles in one way or the other. This movement has given birth to interactions between civilizations, cultures and customs. Tourism industry and businesses have expanded globally cutting across national borders. Products and services produced in any part of the world have ingredients from many countries and continents. Similarly finished products, agricultural as well as industrial, move rapidly across national borders. Even short shelf life items like fruits, flowers and vegetables produced in one continent can be found in markets in another continent. The growth of tourism industry has given rise to mélange and assimilation of cultures and customs. In short, the globalization process has been possible because of the growth of automobile industry and its integration with digital technology. This has given birth to what is called smart transportation.

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As the social status associated with car ownership got diluted and the problems of traffic jams, parking space, accidents and high operating costs (price of fuel, insurance cost, toll charges and parking fee, local air pollution, and carbon dioxide emissions on climate change, noise pollution, road damage) started getting worse people were forced to rethink about car ownership. Moreover, there are millions who cannot afford to own a car but wish to use and experience car ownership for a limited duration on payment basis. Environmental considerations due to very high CO2 e-missions also played its role in reshaping the concept of car ownership. Another significant problem with car ownership model is the inefficiency of their utilization. Since most cars are designed to seat five people, the normal occupancy is confined to only one or two. Moreover, most cars are only utilized during a small part of the day, keeping them idle most of the time. All these considerations put together, gave birth to what is known as carsharing. Many carsharing organizations (CSOs) or transport network companies (TNCs) were established in the 1990s mostly in Europe. These carsharing organizations were initially supported by governmental grants. Their system was quite simple, a few vehicles were involved into shared usage by a group of individuals. Since the lack of technology and the grassroots of carsharing system were neighborhood-based programs it was very difficult to transfer them into business venture model. Urbanization, congestion and the modern technology gave a boost to the carsharing companies.

Historically the first commercial carsharing is traced to a cooperative, known as “Sefage” (Selbstfahrergemeinschaft), which initiated services in Zurich, Switzerland, in 1948 and remained in operation until 1998 [22]. This early effort was mainly motivated by economic reasons since there were individuals who could not afford to purchase a car and instead preferred to share one. However, this was a limited experiment confined to a small area. Gradually the carsharing concept became popular in many European countries for the reasons given in the previous paragraph. New concepts and companies came into existence with different concept of carsharing including ‘Procotip’ in France, 1971 to 1973; ‘Witkar’ in Amsterdam, 1974 to 1988; ‘Green Cars’ in Britain, 1977 to 1984; and Sweden’s ‘Bilpoolen’ in Lund, 1976 to 1979, ‘Vivallabil’ in Orebro, 1983 to 1998, and a ‘bilkooperativ’ in Gothenburg, 1985 to 1990 [23] [24] [25] [26].

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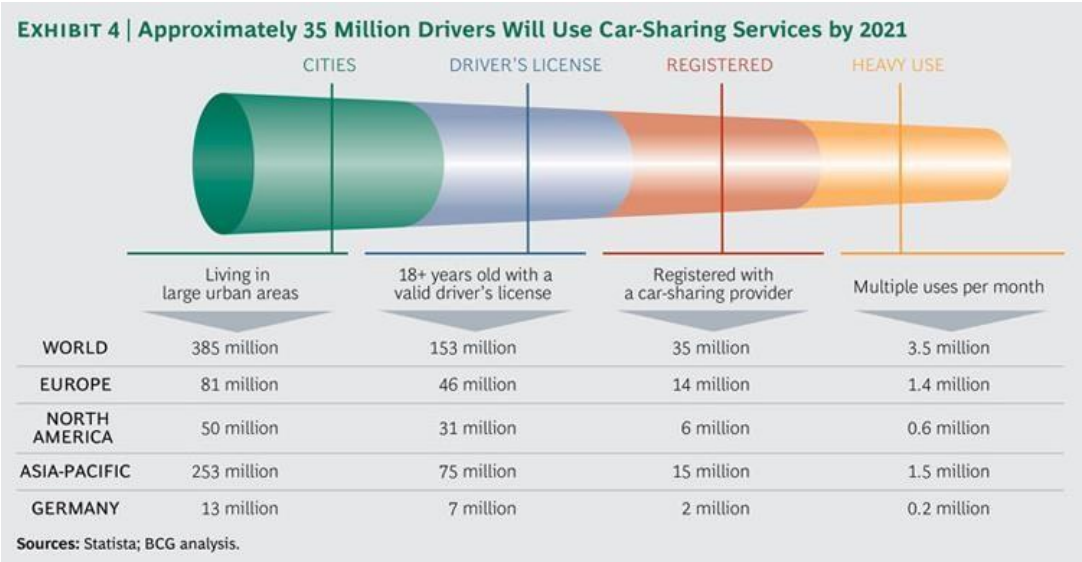


Figure 1. Expected growth of global carsharing services by 2021. Source: adapted from [27].

According to Figure 1. the carsharing in Europe will expand relatively quickly and widely. It is estimated that the number of people living in large urban areas will grow further and this number will be around 81 million people in Europe and 385 million globally by 2021. About 46 million people in Europe will have a valid driving license and about 14 million people will be registered with a carsharing service and about 1.4 million people will be active user, who use the carsharing service several times per month.

A growing concern on climate change and a yearning for social embeddedness by localness and communal consumption has made the ‘collaborative consumption’/ ‘sharing economy’ an appealing alternative for consumers [28] [29] [30]. The chart given below provides a bird’s eye view of the growth of carsharing services in Europe.

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Figure 2. European Trends. Source: adapted from [31].

Today Europe is considered to be the largest carsharing region based on its membership, accounts for 46% of worldwide membership and 56% of global fleets deployed [32]. In the recent years, the big automakers and the car rental companies in Europe are joining hands to form carsharing companies to keep their hold on the market.

3. Materials and Methods

Classically use of BMC has the target of creating new businesses or projects or implementing new activities within a company or organization. In our case, we apply BMC as analytical tool and in two ways:

- BMC is applied here in order to reveal main characteristics of presently operating sharing economy services in the capital and through this defining constraints and key elements of a possible implementation in a city.
- BMC is applied here in order to reveal main characteristics of presently operating sharing economy services in the capital and the city and through this defining main differences between the business models and elaborating possible improvement directions in the city.

3.1. Database, data collection and research boundaries

Our contiguously refreshed and enlarged data base serves national data from eight big cities and the capital of Hungary since 2016. It involves the following data used in the study:

- price of the services,

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- type,
- target,
- owners,
- date of foundation,
- date of implementation in the given city.

These data input was nominated as general data. As link to this database we collected the elements of BMC in case of the capital city and one city, which is well developed in economic point of view and also in providing sharing economy services:

- key partners,
- key activities,
- key resources,
- value proposition,
- customer relationships,
- channels,
- customer segments,
- cost structure,
- revenue streams.

To the collection of elements of BMC we used publicly available websites, news and other documents (marketing brochure, service maps, annual reports and other reports). With this step we show in this study, that BMC elements have good functions for analyzing present services in order to consideration of their further development or implementing their replicas in other economic and social environment.

3.2. Steps and phases of the comparison

Following the approach of comparing services in the capital and one city, it was easy to compare the 15 above listed data, on data to data way. This detailed comparison gave the main differences, key elements and constraints of implementation. Following this concept of analyses gives the opportunity to compare sharing economy services on base of capital-rural dimension, but also in city to city context. Involving more and more service provider in this context can give important input to the further development or more effective operation of sharing economy services. In our opinion screening value propositions is a

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special input in the comparison of sharing economy services. It can show, how the environment protection, the "thinking green" is presented in the service.

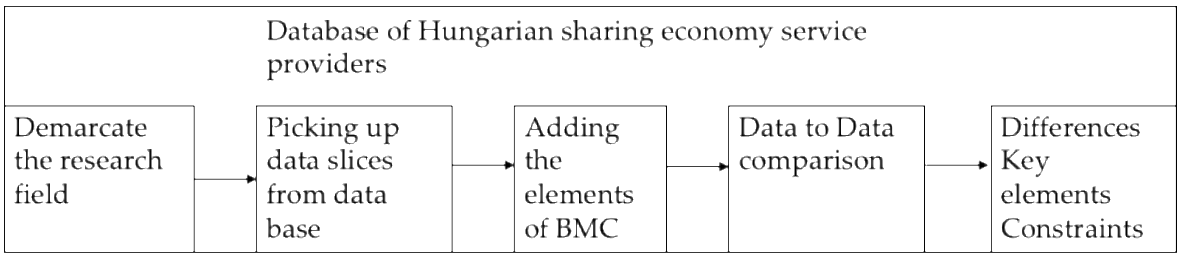


Figure 3. Concept of analysis. Source: self-made.

Figure 3. shows the concept of analysis applied in this paper. We followed some basic approach in demarcation of the research field:

- In the selection process it was important to pick up a city, where the number of sharing economy services are on the closest level to the capital's. To do so, we could realize similar activities on the best way in order to reveal differences.
- Those services, which have national coverage had been taken out from the comparison. Other services, which were founded based on social media communities, were also taken out from the mean.
- It was also dominant approach to pick up a city, which economic output is enough to establish new and green services, which serves the local society.

4. Results and Discussion

4.1. Screening the cities: Number and type of sharing economy services

In case of a survey undertaken in Budapest and Győr it has been revealed that the number of enterprises and service providers in the area of sharing economy are transparent. They show an increasing tendency towards participation in sharing economy, based on collected, represented data 19 service providers in Budapest (capital) and 4 in Győr (city). The survey also revealed that the local sharing economy enterprises are primarily concentrated in the areas of transportation and shared office space.

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Table 1. Solutions for sharing economy in the surveyed cities1.

	Capital city (Budapest)	**Chosen city (Győr)**
Co-working offices	++	+
Shared car services	++	(+)
Shared bicycles	+	+
Shared bicycle (without any dockage)	+	
Shared motor bicycles	+	
Shared scooters	+	
Shared small transportation bike	+	
Other sharing economy activities	+	+

Based on available information, common services in the capital and the city are car-sharing, shared bicycle services and co-working offices. There is no shared bicycle network without a dockage, shared motor bicycle or scooter service and shared small transportation bike service in the Győr. There are specialized social movements or activities based on the principle of sharing economy in both cities, mainly presented in social media platforms. As we focus on recovering main differences and constraints of implementation of sharing services, we do not involve social media-based sharing activities or movements. Firstly, we detail services, which can represent main differences in the two cities: the car-sharing, the shared bicycle and motor sharing services and the co-working offices. After we highlight man differences in BMC of these type of activities.

4.1.1. Car sharing

The following five companies occupy important position in this market in Budapest. GreenGo, MOL Limo and Drive Now in Budapest are following the traditional Business-to-Customer model of car sharing services. Another car sharing company in Budapest namely Avalon Carsharing is undergoing internal transformation. The company will phase out traditional customer services and confine itself to consultancy services on car sharing. In

[1] Explanation: + service is presented in the city, ++ service is present in the city with more providers, (+) there is a system in town but does not target all member of society.

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Győr there is a car sharing activity, namely Audi 1.2.GO, which is an internal Business-to-Employee car sharing service of Audi meant for employees for their movement on official duty and for movements within the factory premises. Audi has devised this online system as a perk to employees to earn their loyalty and to make their work more efficient by facilitating their movements. Under this sharing economy model maintenance cost of cars is borne by Audi. Given the small size of Győr and large number are Audi employees, who are served by the above-mentioned car sharing system, an independent car sharing enterprise has not been able to launch car sharing services in Győr as they are not viable. There is only one car sharing enterprise namely Up! City even in Bratislava which is three times larger than Győr. Even this enterprise operates with a fairly small fleet of cars.

4.1.2. Bike, motorcycle and scooter sharing

Besides car sharing, sharing of other transport vehicles particularly bike, motorcycles and scooters are also important. Among these, the most popular and common in the two surveyed cities, is bike sharing, which has a tradition going back to several years. Bike sharing operates both in Budapest and Győr, thus we can check the correlation between the number of infrastructural elements and population of the two cities.

Table 2. Correlation in bike sharing systems: infrastructural elements and population.

	Bikes	**Stations**	**Dockages**	**Town**	**Population**
MOL BuBi	1526	126	2687	Budapest	1 749 734
GyőrBike	180	31	362	Győr	130 094
MOL BuBi (% of population)	0.08%	0.007%	0.1%	Budapest	
GyőrBike (% of population)	0.1%	0.02%	0.3%	Győr	

If we have a look at the per capita ratios, we can see that there are closing values in the number of bikes. Number of bikes is available on 0,08-0,1% for one citizen. Considering the population, there are relatively more stations and dockages in Győr then in Budapest. From this data we can see that number of bikes can depend on local population, number of stations

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and dockages are mostly infrastructural elements, which are implemented based on other approaches than number of inhabitants. We consider this fact in the BMC analysis.

In addition to the bike sharing, Budapest has enterprises providing electrically operated scooters and motorbikes. Both of these enterprises are new in the Hungarian market. BlinkeeCity started its services in 2018 deals with electrically operated motorbikes, while Lime started its services in spring 2019 deals with electrically operated scooters. Transport bike provider, Cargonomia, which started its operation in 2018 operates transport bike services in Budapest. These transport bikes must be dropped at the same place from where they are picked up. Turning toward the price comparison, we observed significant differences:

Table 3. Price differences in bike sharing: Source: self-made based on available data.

	GyőrBike (% in prices of MOL Bubi)
Registration	120 %
Tickets	
24 hours	80%
72 hours	80%
Weekly	50%
Half year	46%
Yearly	47%
Usage fee	
For less than 30 minutes	Free (also in case of MOL Bubi)
For less than 60 minutes	50%
For less than 90 minutes	55%
For less than 120 minutes	60%

From price differences in Table 3. we can observe that especially prices in long term tickets presents big differences. We include in this comparison only those prices which are presented in both cities.

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4.1.3. Co-working offices

The co-working offices involve use of the same office space by different enterprises on time sharing bases when these enterprises do not require any specialized equipment. Such co-working offices could also facilitate networking and sharing of experiences in addition to the cost savings. Mainly freelancers, home-office workers and start-ups are using this facility in both the surveyed cities. We found nine examples in Budapest and one in Győr. Same examples have also been found in other towns in Hungary. On the basis of BMC there are no significant differences among the users of co-working offices. They are working on the same model. Their principal aim is to access the structured market with minimum cost on infrastructure, as most of their business activities and documents are online. Exception in their business model is that they are providing different variety of connected services: buffet services, café, library, computers, consultation, workshops. The biggest co-working office in Hungary is Loffice, which also provides co-working office at Lake Balaton during summer months for those who wish to work during their holidays.

4.2. Business Model Canvas – main differences

We highlight information here from the above selected service providers observing their communication through their websites and news, which can be connected to them. Keeping the goal of recovering main differences between the capital and other cities of Hungary, we represent the elements of BMC. To do so, we detail key elements which are already presented in the capital in order to implement or improve service models working well in smaller cities.

4.2.1. Key partnerships

Sharing economy models also provide solutions to ecosystem problems of large cities and not only in capitals. The selected services enter into partnerships with a variety of local players such as municipal corporations, local people and other economic and social players and institutions. For car sharing companies the partnerships with local municipality and social organizations are important since the cars are parked in public spaces and car sharing helps in reducing pollution and congestion in cities. There are private service providers behind MOL Limo, GreenGo, and BeeRides. In case of Győr Audi is the biggest engine producer and exporter of Hungary. Therefore, car sharing service in closed system is

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provided for its 12 000 employees in order to decrease the usage of cars and infrastructure of industrial district of Audi. We can observe that in case of the capital there are more private players behind bike sharing. The partnerships evolve in a variety of ways. In case of MOL BuBi, which is a traditional bike sharing enterprise there is a direct partnership with MOL Company and the state-owned Budapest Transport Company (BKK) and indirect partnerships with municipalities of districts. In case of GyőrBike there is a direct partnership with the municipality of the city, which has founded the project. There are partnerships observed in Győr with Széchenyi István University and ETO FC, which is a local football club. These are not financial type partnerships, mostly important due to the placing of stations. At the university campus and hostels, local football stadium and other sport related venues there are several dockages. The survey has revealed that the dockage at the university campus is the most used service station in the city. This close linkage with the university is not visible in Budapest, where one cannot see concentration of dockages close to student hostels. The survey reveals that the bike-service providers who do not have dockages, do not seem to have similar partnerships with local institutions. Lime, an American electrical roller sharing company, which entered Hungarian market in 2019, does not have partnerships with local institutions presented in their website. On the contrary this company has many partnerships in U.S universities, where it has been operating for some time. For transport bikes partnership is very important as the users are expected to provide parking at picking up and dropping points. In case of co-working offices interaction happens naturally with other users of office space, which leads some sort of networking with the local enterprises.

4.2.2. Key activities and resources

Car sharing application is considered the most important element of car sharing enterprises. In case of bike sharing companies on the basis of BMC there is no difference between the service providers in Budapest and Győr. In both the cases the bikes, the dockages, the stations, the IT application and their maintenance are the most important elements for the bike sharing enterprises.

4.2.3. Value proposition

In case of car sharing we could reflect the following value propositions:

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Environment protection: According to the survey there are many differences in the value proposition of different car sharing enterprises. GreenGo, which entered first in the market, lays maximum emphasis on environment protection. Keeping this in view the entire fleet of its car is electric operated. Having a car: The motto of MOL Limo is simple. It says, you have a car. DriveNow, which is the latest entrant into the market has a completely different motto. It provides only luxury vehicles BMW and Mini to the richer segment of the society. Parking: the parking fee is involved in most of the services of car sharing. It is therefore important for securing free parking spaces from the local authorities as it is important element of overall cost of car sharing. As a result of such initiatives the electrical cars with green number plates have been allowed free parking facilities in Budapest. The fleet of GreenGo is 100% electric operated cars while the fleet of MOL Limo has a mix of petrol driven and electric operated cars. Short visits: BeeRides is trying to enter into a partnership with Budapest Airport for free parking space as the main profile of the company is utilise the cars of those, who are leaving the city on short visits. The principle motto of BeeRides is to provide transport to utilize the cars of those who are leaving their airport till their return. Under this system the car owners do not have to pay parking fee at the airport. Moreover, they earn some money by renting out their cars during their absence on visits abroad. In case of bike sharing services the most important value propositions are health and environment. Therefore, the model of sharing economy is based on sustainability and environmental considerations as against the traditional ownership of assets. Thus, the value proposition is the main focus for all players participation in sharing economy. In case of co-working offices, the main focus is reduction of cost.

4.2.4. Customer relations

Based on their respective market segments, the service enterprises are focusing on their customers through their websites and other online communication channels. Since the car sharing services are still confined to a comparatively small segment of population, communication within the segment is comparatively easy.

4.2.5. Distribution channels and segmentation of customers

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In case of car-sharing services in these two cities there is a clear market segmentation. On the contrary in case of bike sharing services the customers are primarily confined to the student community, young sport lovers and hospital visitors.

4.2.6. Cost structure and revenue streams.

For car sharing enterprises in Budapest, car rental fee is the most important source of revenue. On the expenditure side maintenance of the cars, operation of the system and the salaries of employees are the most significant costs. DonkeyRepublic, a bike sharing company in Budapest does not have any linkage with docking places. Their bikes could be picked up and dropped at any place in the city. On the basis of business canvas model its business model is very similar to the traditional bike sharing systems with dockages but they do not incur any expenditure linked to the dockages. Their income is coming from donations of users. In case of other bike sharing service providers the main costs are the operation of IT platforms and cost of dockages. In co-working offices, renting fee is the most obvious revenue stream for providers.

5. Conclusions

Based on the survey it is clear that number of sharing economy enterprises are on the rise in Hungary but they are still primarily confined to the capital. Amongst all the cities Budapest remains the principle arena of their activities. The aim of this article was to examine various sharing economy models and their differences between Budapest and Győr based on the BMC. The article also examined the obstacles in further expansion of sharing economy models in Győr and the key elements for successful operation of this models. On the basis of above we have come to the following conclusions.

5.1. Main differences

- While there is only one big service provider with dockages and stations in bike sharing in each city, there are several smaller providers in Budapest that are competing for their market share and use alternative ways to handle the cycles or collecting the fee of service.
- On the basis of BMC in smaller towns there is a tendency toward segmentation as observed in Győr. This segmentation is obviously apparent in car sharing market. In

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case of sharing of bikes, the segmentation is more in terms of specific groups such as students, hospital visitors and sport persons. The direct partnerships are more visible in Győr in group of users, while the partnerships are more presented in Budapest in service providers.

- In case of the capital private ownership is relatively bigger behind bike sharing. There are more service providers. Prices in Győr are significantly less in case of long term tickets.

From all the above-reflected differences we can conclude especially in case of bike-sharing, that number and type of users is the key factor in implementing sharing economy services and not the population. We can see, that despite of the fact Győr has smaller population, it can operate sharing services successfully, with key partnerships in discovering strategic points of dockages like the local university or sport clubs. Also, important not is that car-sharing is presented in a given segment, so despite of the fact that population of Győr is maybe not critical in terms of car sharing, the biggest corporation is creating its own green solution for decreasing the usage of cars in its area. The above-mentioned conclusions do not mean that the service improvement in both cities is not needed. There are constraints and key elements which are needed to be considered in order to enlarge the number of these services.

5.2. Constraints

- Although the car sharing economy expanding globally, what still really matters in its case is the size of the cities and towns. Population remains the major factor for expansion of cars sharing services. As mentioned earlier even in Bratislava, which is a smaller town compared to Budapest there is only one car sharing enterprise. The value proposition of environment protection is linked to a wider target of possible users. As this type of service has private owners in the capital, profitability is also important factor, which is dependent on the size of the local population. Publicity is also important to make the people aware and to create demand for these services. On the other hand, the obstacle in sharing economy service can be overcome if the services are confined to a specific segment of people as in case of car-sharing service to and from airport and for employees of a big enterprise in Győr.
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5.3. Key Elements

- Value proposition is important and well-presented factor of the analyzed sharing economy services. In case of car sharing there are different value propositions such as environment protection, using premium category cars, having a car and designated travel routes. In case of bikes, scooters and rollers the main value position is dominantly environmental protection and health.
- In case of bike sharing services number of bikes can depend on local population, number of stations and dockages are mostly infrastructural elements, which are implemented based on other approaches than number of inhabitants. We consider this fact in the BMC analysis.
- Analysis of BMC could show us the best practice in the transportation bike sharing service because in Budapest apart from infrastructure partnership is also a key element. The bikes can be picked up and dropped at the place of designated partner or organization. The maintenance of the bikes and the operation of the online application are the two important cost factors. The system runs on non-profit basis. Based on the voluntary donations received the system is maintained. The main value proposition is sustainability and environmental consideration and to help the last mile connectivity.
- BMC was appropriate to reflect key elements of value proposition: Environment protection, Having a car, Parking, Short visits, Health and environment, Reduction of cost.

Based on the above presented study, we can say that BMC elements had good functions for analyzing present services in order to consideration of their further development or implementing their replicas in other economic and social environment. BMC could reflect the main differences, constraints and key elements in the models of sharing economy services. We can say that in case of bike sharing service operated by Győr includes more segmentation than the same service in the Budapest. There are significant price differences. In Győr, especially in case of long-term tickets prices are more than 50% less than in Budapest. We can conclude that Győr would like to attract more the long-term users than Budapest. Number of inhabitants and ownership are the biggest constraint in case of implementing car-sharing services, but there is also possible chance for implementation by applying good value proposition and segmentation.

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Chapter V.

5. Growth of Sharing Economy in Hungary; Long Distance Car Sharing – A Case Study of Oszkár

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Abstract:

Rapid growth of sharing economy in the last two decades is the outcome of a paradigm shift in global capitalism and societal values. Based on digital identity and the Trust and Reputation Index, IT platforms have brought together strangers who under new social construct, share under-utilized capacities and assets with those who need them. Radius of trust which was initially confined to family and friends; now encompasses strangers who speak no common language and who live oceans apart. Hungary is no exception to this global shift. Sharing economy in Hungary has registered healthy growth specially in the areas of transportation and accommodation. Oszkár, a long-distance car-sharing company presents a good example of this paradigm shift in societal values and sharing with strangers. This platform has recorded impressive growth of over 67% between 2015-2018 with very positive customer reviews. Moreover, this represents an environmentally-friendly sustainable practice which successfully reduces carbon foot-print and traffic congestion.

Keywords: sharing economy, digital platform, radius of trust, Oszkár, long-distance car sharing.

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1. Historical Perspective

The concept of sharing economy is as old as human race. In the ancient time, there were many examples of sharing economy while hunting, fishing, farming and cooking. Subsequently these practices took the form of tribal or community behaviour and customs. In recent past, particularly after the Industrial Revolution; railways, public transport, hotels, public toilets, public libraries and collective farming are examples of such practices. However, the modern concept of sharing economy is based on sharing of private assets like apartments, cars, equipment and individual services and skills on an IT platform. Rapid growth of IT and internet facilitated such platforms allowing strangers from across the world to have real time business interaction. Thus, currently, the sharing economy or collaborative economy is an umbrella term that covers online platforms that allows sharing of excess resources and assets such as space, homes, goods, cars, and even skills and knowledge (Hamari et al.,2016). With the rapid growth of Information Technology, evolution of new business models and change in social construct of ownership; individuals and groups are willing to share their assets for profit. Social media platforms like Facebook, WhatsApp, Trip Advisor and Pinterest, where people share ideas, information and insights also facilitate growth of sharing economy (Cusumano, 2014).

The concept of ownership of property and assets are becoming increasingly loose, porous and liquid. Social structure, institutions and values system have undergone radical change in the last few decades. Modernity, education, globalization and technology characterize the current social conditions that are increasingly unstable and are undergoing rapid change and therefore they cannot serve as frames of reference for human actions and long-term life strategies (Bauman, 2007). Increasingly institutions, people, objects, information, and places considered solid during the last century have tended to dematerialize and liquidize (Ritzer, 2010). Similarly, consumer identity and ethics are also becoming fluid and liquid. Social and individual values have been constantly undergoing change; due to urbanization, anonymity and space constraints. Emotional, social and cultural ownership embedded in a property is becoming flexible, transient and liquid. Access to idle resources and assets has therefore, emerged as a way to manage the challenges of a liquid society. (Bardhi, Eckhardt, and Arnould, 2012).

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2. Defining Sharing Economy

While the term sharing economy is very popular and has been in use for over two decades, it still lacks a widely accepted, well-articulated, precise and comprehensive definition. Barter and swapping of goods, assets and services is an ancient practice. Before the advent of money (currency) as medium of exchange, there were physical markets for enabling barter of goods, assets and services. In a limited way the modern concept of sharing economy started with sharing of excess (both in terms of quantity and time) resources and assets on a digital platform. Strictly speaking sharing economy in the beginning was based on the *consumer-to-consumer* (C2C) or *peer-to-peer* (P2P) based activity of sharing access to individually owned goods and services where suppliers can connect buyers in virtual market places through IT based platforms. However, over time the concept expanded and now covers some elements of e-commerce including the bookings done through online market places. Thus, sharing economy is an economic model based on peer-to-peer activities on an IT based platform of providing or sharing access to excess of goods, assets and services. Applications like Uber, Airbnb and eBay are considered good examples of sharing economy.

In any sharing economy transactions generally, there are three factors; person, product and platform (3Ps). Of course, person is the most significant of the three as he/she is the decision maker and takes on the consequences. However, the platform that offers a product or service and the products and services offered are equally important. Digital identity of an entity or a platform or of an individual is the 'overall online footprint over a period of time'. Online reviews are considered as an important form of computer-mediated communication. Many academic experts describe the sharing economy as a growing ecosystem of online platforms and market places devoted to the exchange and renting of goods and services (Botsman and Rogers, 2010; Hawlitschek F. et al. 2016; Lessig, 2008., Zervas et al. 2015.). The traditional sharing, bartering, lending, trading, renting, gifting, and swapping, are redefined by using digital technology that is revolutionizing and mainstreaming the way people consume and share knowledge (Gata, 2015). Sharing economy is also called as access economy, collaborative economy, on-demand economy (Jaconi, 2014), platform economy or gig economy (Wilson, 2017). According to Investopedia; the sharing economy is an economic

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model defined as a peer-to-peer (P2P) based activity of acquiring, providing, or sharing access to goods and services that is often facilitated by a community-based online platform (Investopedia). Thus, peer-to-peer business model providing temporary access to private resources of other individuals using real time IT platform is the fundamental characteristic of sharing economy. The economic transactions under this model are based on payment for one-time use or time-based rentals or fees and do not involve transfer of ownership. However, there are sharing economy platforms like eBay where ownership changes hands. Therefore, in this broader sense sharing economy implies a new economic model based on digitally-enabled, peer-to-peer platforms for goods and services that connect spare capacity of individuals with demand of those who need them and offer access by enabling renting, lending, swapping or even selling (Avital et al., 2015; Bardhi and Eckhardt, 2012; Belk, 2014; Botsman and Rogers, 2010; Möhlmann, 2015). The extensive penetration of Information Technology and peer-to-peer digital platforms in all spheres of human activities has created numerous options for online real time interaction and business transactions. It has transformed the way people think, live, eat, travel, shop, entertain and socialize. Considering the importance and social and economic impact of sharing economy, Rifkin described it as the third industrial revolution (Rifkin, 2011).

3. Growth of Sharing Economy

Historically, sharing was confined to family and friends. Due to lack of trust and privacy factors, people tended not to share with strangers and outsiders. During the last few decades more and more people have been moving to big cities, where the living and storage spaces are limited. This new life-style necessitated a shift in ownership, being able to access objects that are housed or stored elsewhere. Simultaneously, with increasing anonymity in an urban land-scape, the social status associated with ownership also underwent change. Growing environmental challenges, global economic crises, space constraints, increasing cost of holding idle assets, increased education, lack of resources to enable ownership, economy in expenditure, uncertainties in the labor market, rapid expansion of social media and public willingness to trust and share are other important factors that have led to the rapid growth of sharing economy (Hira and Reilly, 2017; Hamari et al., 2016). Growth of efficient IT enabled platforms and effective online rating systems reduced fears substantially and enabled sharing

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among strangers who do not know each other, do not speak the same language, have never met and are unlikely to ever meet. Today, people share their private cars with strangers, eat food cooked and transported by strangers and allow strangers to live in their apartments which was inconceivable a few decades ago. Digital platforms, digital identity (DI) and User Generated Contents (UGC) and the Trust and Reputation Index (TRI) based on well-designed rating systems have enhanced the radius of trust making sharing less risky and more acceptable with strangers. These IT devices and applications have given birth to services like Airbnb, Car2Go, DriveNow, Uber, Ola, Oszkár, Zipcar, Blablacar and so on. In recent years, even the large companies like BMW, MOL and AUDI have launched their own sharing platforms as they find them attractive, sustainable and business friendly.

Thus, powered by efficient digital platforms, willingness of consumers to try mobile applications that facilitate peer-to-peer business models, shared IT-based enterprises, digital identity and TRI, efficient and rapid digital payment systems and changing social concept of ownership of assets sharing economy has registered a spectacular growth during the last two decades. Given the current global trends towards sharing of assets, sharing economy will inevitably become a major part of the global economy in the coming decades. According to an article published by the Brookings Institution, the sharing economy is estimated to grow from $14 billion in 2014 to $335 billion by 2025 (Yaraghi & Ravi, 2017). This estimate is based on the rapid growth of Uber and Airbnb. According to the “Share Economy 2017” report based on a study in selected European countries by the PricewaterhouseCoopers (PWC), the following is the average frequency of share economy usage per year within different industry segments (Share Economy, 2017). According to PWC, 275 companies were operating in Europe in sharing economy in 2017.

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Table 1. Average Sharing Economy Usage within the Different Industry Segments by Users

Media and Entertainment	33.3%
Transport	9.5%
Retail and Consumer Goods	8.6%
Machinery	5.6%
Finance	5.4%
Accommodation	5.0%
Services	4.9%

Source: PWC. *Share Economy, New Business Model,* at https://www.pwc.de/de/digitale-transformation/share-economy-report-2017.pdf

Expansion of mobility-sharing has been the fastest of all segments of sharing economy followed by accommodation and tourism. Today, there are host of such companies spanning over all the continents. These include Uber, Ola, Oscar, BlaBlaCar, VULOG, MOMO Carsharing and Zipcar in addition to the traditional car rental companies like Hertz, Europcar, Sixt, Avis, Rent a Car and so on. Expected growth of global carsharing services are given below in a chart obtained from Statista. According to a study undertaken by Susan Shaheen and Adam Cohen (2016) global carsharing growth has been impressive. As of October 2014, carsharing was operating in 33 countries in 5 continents and in about 1530 cities with approximately 4.8 million members sharing more than 104.000 vehicles. The following chart provides the projected growth of the global carsharing services.

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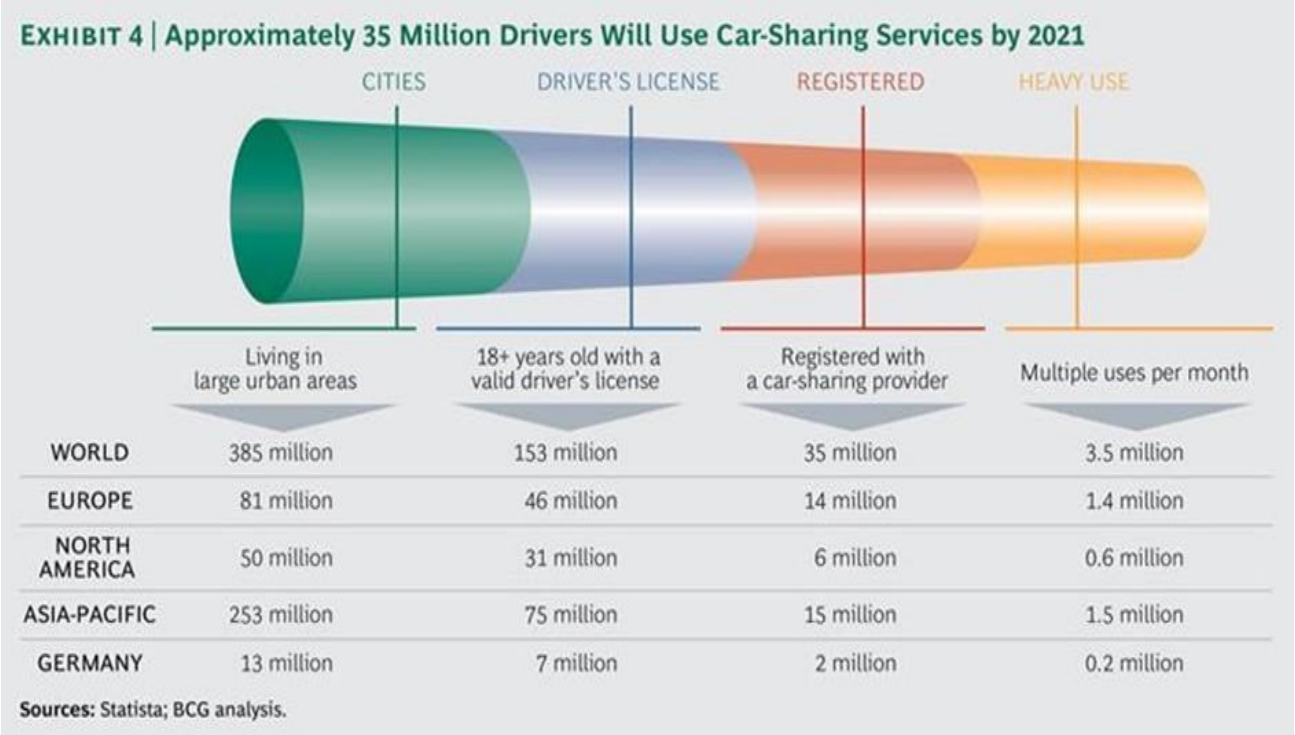


Figure 1: Expected Growth of Global Carsharing Services by 2021

Source**:** The Boston Consulting Group,2016. *What's Ahead for Car Sharing? The New Mobility and Its Impact on Vehicle Sales*, retrieved from https://image-src.bcg.com/Images/BCG-Whats-Ahead-for-Car-Sharing-Feb-2016_tcm9-64441.pdf

4. Contours of Sharing Economy in Hungary

Renting out a cottage at Lake Balaton and Mátra Mountains, the most popular summer holiday destinations for foreigners, time sharing at baths and spa, taking tourists from the airport to hotels and sale and exchange of used goods were common in Hungary; even before online platforms came to exist. In the modern context, Uber was one of the first mobility-sharing service introduced in Budapest. However, due to protest by taxi drivers and stiff regulations governing Hungarian taxi services, Uber was soon banned. All this happened shortly after the company had managed to sign up more than 160,000 customers and 1,200 drivers by mid-2016, following its November 2014 launch. According to Euromonitor International, Airbnb short-term accommodation rental service, is fairly popular among foreign tourists coming to Hungary, who prefer to stay in apartments at economic prices.

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Currently, over 8,000 apartments are listed on Airbnb, mostly concentrated in Budapest. This represents approximately a fifth of all short-term rental outlets in Hungary, which are serving tourists at popular holiday and spa destinations, but other popular destinations across the country are also catching up (Euromonitor International, 2019). A survey conducted by the authors, revealed the following details of the sharing economy in Hungary in mobility sector.

The Hungarian Oil Corporation (MOL), an MNC started a bike-sharing enterprise called MOL Bubi on 8th September 2014 to promote environmental consciousness. As of 10th of May 2019, there were 143 docking stations with 1846 bikes in Budapest where the bikes could be picked up and dropped. A MOL Bubi user can buy a 24-hour, 72-hour or weekly ticket or a quarterly, semi-annual or annual pass by paying the access fee to the public bike-sharing system. Those who have a MOL Bubi ticket or pass, the first 30 minutes of each of the rides are free of charge. Bike can be picked up from any docking station with the help of the terminal or the sensor on the rear-side of the bike or by using the MOL Bubi mobile app.

GreenGo is the first e-carsharing service in Budapest that started its operation in November 2016 with 45 cars. By October 2018 the number of cars went up to 270. As of September 2019 GreenGo, had a fleet of over 300 cars in Budapest. GreenGo provides environmentally friendly electric vehicles, with green license plates. Following the online registration procedure one can access the GreenGo cars with the help of a smartphone application available for iOS and Android. Cars are available 24/7, without any contract and there is no handover of keys either. Payment is automatically charged to the bank card and the invoices are sent out electronically. The charges are all inclusive; user fee, refueling, parking and maintenance. The customer can find the location of the nearest car on the online application and leave the car at any public parking place within Pest County after its use.

MOL LIMO a car renting service was started by MOL on 29th January 2018. Following the registration, MOL LIMO could be accessed through an application 24/7. LIMO zone covers inner districts of Budapest. Currently MOL LIMO offers 450 cars; 20 electric Smart EQ (2 seater), 30 electric Smart EQ (4 seater), 100 electric Volkswagen eUp!s, 250 gas-powered Volkswagen Up!s and 50 Mercedes-Benz A-Class. Anyone over 18 years of age who possesses a valid category B driving license for at least a year and registers him or herself can access the car through LIMO app. The service is available on the basis of per minute fee

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with or without monthly fee. The minute-based fee includes all costs including; user fee, refueling, parking and maintenance costs. There are no designated stations for MOL Limo. The user can leave the car in any public parking space within the Limo zone without paying for it. The payments are automatically deducted from the registered debit or credit card.

DriveNow is a car sharing service wholly owned by the automotive manufacturer BMW. DriveNow service began in Munich, Germany in June 2011. DriveNow Hungary, a locally registered company, launched an application-based car sharing service in Budapest on April 29, 2019 with 240 vehicles. The service cover 63 square kilometers in and around Budapest. Rental fee is charged by the minute with the option of daily and three, six, and nine-hour passes. The cars available in Hungary mainly consist of Minis and BMW i3, X2 and series 1 models. The cars are accessible via the DriveNow application available for iOS and Android.

There are no other public car sharing services in Hungary apart from those listed above and Oszkár which is a long-distance car sharing service which has been covered in detail in the subsequent section. However, German car manufacturer Audi has a car sharing service called Audi 1.2 GO specially designed for its employees for their official movement within the areas of company's operations. This has been specially designed as a perquisite to facilitate the movement of Audi employees and to earn their loyalty. This service is not available to public.

5. Oszkár, Hungary- A Case Study

Oszkár is one of the largest sharing-economy platforms in Hungary. While the company is known as Oszkár in Hungary, international brand name of the company is Motar, which stands for "More Than a Ride". This platform connects on real time basis, long distance drivers with empty seats in their cars with the passengers who are looking for rides on the identical routes. As part of our research on Oszkár, we met some responsible officers from company to find out their operational details. Separately, we did a passenger satisfaction survey in the form of interviews with Oszkár car-sharing passengers on selected routes. (Since these surveys were confidential in nature, we are not in a position to disclose their names). The following details are based on these two surveys.

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Oszkár provides IT platform for long distance car-sharing services from one city to another primarily within Hungary but also to some destinations in Austria like Vienna. Legally speaking, the company only expects passengers to share the cost with the driver and does not offer regular transportation services. The passengers who decide to travel using Oszkár platform, travel at their own risk. Precisely because of this legal status Oszkár could survive in 2016 when the Government of Hungary tightened the legal environment for personal transport services in the country. On the other hand, Uber which was considered as a company offering regular transport services on its platform, could not survive due to new regulatory environment. This led to the closure of Uber in Hungary in 2016. Attila Prácser and Máté Gyürüs both students at the Budapest University of Technology and Economics in the faculty of Transportation Engineering are the co-founders of the company. They conceived, designed and launched this platform in November 2007 in a very limited way. In the beginning, both the co-founders performed everything themselves; from planning, IT platform, technical services and marketing. Subsequently, Mate specialized in technical services and became Chief Technical Director while Attila took over as Managing Director and the company started offering services on multiple routes with higher frequency.

The principal stated aim of the company is to provide travel-mates for drivers on the road who are driving alone and who want to reduce their cost or to have a companion on the route in order to perform a pleasant trip. For passengers, it offers a more economic, faster and more flexible way of travelling. In other words, it's a car-pool or ride-sharing service whereby drivers and passengers are brought together on the same platform. Passengers are picked up either at a designated pick-up point or at the location mutually agreed by them and are dropped either at a pre-determined point or at their final destination. IT platform – Android, iOS and web applications – provides a way for drivers and passengers to find each other on real time basis. Passengers are given driver's contact number while the drivers are provided passengers' contact details to facilitate direct contact between them to avoid any confusion or delay. In case of any unexpected problem, they also have access to the customer service provided by the company.

Given the flexibility of pick-up and drop locations, the multiple timings of the services, reduced travel time and the substantially lower cost of travel; the company has expanded

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considerably during the last six years from 2014-2019. Since the long-distance train and bus services operate as per fixed schedules, passengers have to wait and adjust their schedule accordingly. Moreover, in case of change in passengers' programme, they are obliged to lose the entire cost of their ticket. On the other hand, one can find ride sharing on Oszkár on several times a day. This allows passengers to save time with no idle waiting. Similarly, many times Oszkár services pick-up passengers right from their homes/offices or nearby locations and drop them close to their destinations. This not only saves time but also the cost of hiring taxies both at the origin and at the destination. Since the cost of car-sharing varies frequently, sometimes even on daily basis, it is not possible to compare the cost of car-sharing with the regular fares by trains and long-distance buses. Nevertheless, in most cases the cost of car-sharing compares favourably with the cost of travel by trains and buses. Moreover, in case of cancellation of a trip, the passenger normally does not lose any money. More importantly, in this era of environmental degradation and climate change, car-sharing is environmentally friendly. This is an effective method of reducing CO2 emissions and congestion on roads and highways. This practice also helps in reducing traffic congestions in cities particularly in city centers making parking space more accessible and traffic movement faster. Because of these obvious advantages, the Oszkár car-sharing services have been gaining in popularity every passing day. A passenger satisfaction survey conducted by us spreading over three-year period is given below in two tables. The first table lists 22 drivers and number of passengers and kilometers covered by them. The second table provides details of the customer ratings for these drivers.

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Table 2. Oszkár Drivers and Number of Passengers and Kilometers Covered

Name	Number of rides	Travelled passangers	Travelled km on Oszkár
Judit777	209	534	43587 km
István	296	659	79391 km
zsike53	151	342	41075 km
Nandika26	332	1387	79836 km
Optim Trans Bus Kft	9122	12580	2592614 km
Judit	130	261	28331 km
Péter	491	2822	151411 km
Tamás	263	506	97093 km
György	2227	3198	531063 km
Endre	335	965	76768 km
PajtiKGO	158	319	44483 km
Zoltán	1498	7860	325518 km
Hanna	31	43	3757 km
Ivanho	133	483	31097 km
Laszlo	219	842	66507 km
Roland79	7102	8181	6964839 km
plaszlo90	1337	8081	310966 km
Oliver	251	433	95834 km
Janos	32	31	13117 km
Norbert	96	165	21021 km
Bea	26	55	5622 km
Mirko	258	492	50783 km

Source: Oszkár platform, Hungary at oszkar.com

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Table 3. The Customer Ratings for Drivers.

Name	Evaluation by passangers	Point +	Point neutral	Point minus	Final evaluation	Answer messages	Time answering messages
Judit777	357	355	1	1	5	100%	within few minutes
István	405	401	2	2	5	100%	within few minutes
zsike53	214	212	1	1	5	100%	within few minutes
Nandika26	727	726	0	1	5	75%	within few minutes
Optim Trans Bus Kft	5231	5132	76	23	5	99%	within few minutes
Judit	137	137	0	0	5	100%	within few minutes
Péter	1036	1022	11	3	5	100%	within few minutes
Tamás	282	279	1	2	5	100%	within few minutes
György	1309	1275	17	17	4..8	92%	3 hours
Endre	502	498	4	0	4..9	100%	within few minutes
PajtiKGO	182	182	0	0	4..9	100%	within few minutes
Zoltán	12723	12685	27	11	5	100%	within few minutes
Hanna	186	184	2	0	4..9	100%	within few minutes
Ivanho	238	236	2	0	4..9	100%	within few minutes
Laszlo	356	350	1	5	4..6	73%	within few minutes
Roland79	2516	2379	80	55	4..8	93%	within few minutes
plaszlo90	3597	3591	3	2	5	88%	3 hours
Oliver	216	200	2	14	4..1	100%	within few minutes
Janos	17	17	0	0	5	100%	within few minutes
Norbert	183	181	1	1	4..8	100%	within few minutes
Bea	36	34	0	0	5	100%	within few minutes
Mirko	273	269	2	2	5	86%	2 hours

Source: Oszkár platform, Hungary at oszkar.com

From the tables given above, it is clear that except in one case, all the drivers have been evaluated between 4.8 and 5 on the scale of 5. This clearly indicates very high passenger satisfaction level. Similarly, except in two cases, messages from the passengers have been answered within a few minutes. Obviously, this means that the services at the platform are highly efficient and prompt. Moreover, there was no particular complaint regarding the conduct of drivers. No instance of accident was reported to us during the survey. The regular ratings provided to the drivers as also to the passengers works as safety net both against the rash drivers as also against the unruly passengers. While drivers can refuge to take unruly

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passengers, the passengers can avoid the drivers with poor ratings. Since the passenger satisfaction is fairly high, the demand for the car-sharing service at the platform are rising regularly. Hence the carpooling platform – Oszkár - genuinely benefits both the drivers and the passengers and provides a sensible option. By allowing drivers to off-set the cost of travelling, Oszkár has been able to avoid the criticisms aimed at companies in the sharing economy that appear to encourage unregulated and unfair practices.

This expansion has been clearly reflected in terms of the swelling driver and passenger numbers, expansion of operating routes and the operating staff of the company. The following table provides the details of the growth of number of drivers and passengers during 2015-2018.

Table 4. Details of the Growth of Number of Drivers and Passengers During 2015-2018

Year	**Drivers**				**Passengers**	
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
2015	21921	5262	27183	290469	53582	344051
2016	26063	6282	32345	272997	70178	343175
2017	30253	7429	37682	450559	85102	535661
2018	32064	7832	39896	484774	90619	575393

Source: Attila Prácser, Managing Director Oszkár, Hungary

From the above table it is clear that during 2015 to 2018 the company recorded a passenger growth of 67.24% while the number of drivers grew at 46.76%. These are indeed impressive figures. Moreover, the growth both in male and female segments under both the categories – drivers and passengers - has been in consonance with the overall growth. In fact, a close

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study of these data reveals, that the growth of female participation under both the categories has been slightly higher than in male participation. The number of male drivers increased by 46.27% while the female drivers recorded a growth of 48.84%. The number of male passengers increased by 66.89% while the female passengers recorded a growth of 69.12%. This is a clear indication of the confidence reposed by female drivers and passengers in the operations of the company. Although in a large majority of cases the Oszkár services operate on genuine car sharing basis, in some cases drivers do operate their vehicles primarily to transport their passengers as is done by a public transport company. However, to completely eliminate such practices is extremely difficult as there will always be some drivers who buy their vehicles primarily to transport passengers under Oszkar platform. It would be impossible to establish genuineness of all drivers operating on a route. There are 134,000 followers on the Facebook of Oszkár. In addition, the company also has a sizeable following on Instagram.

According to the statistics provided for the second half of 2018, the following were the most popular routes for travel by Oszkár passenger sharing transport within Hungary. Although the relative popularity of the long-distance routes has changed marginally, the 20 routes given below have remained the most popular ever since 2015.

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Table 5. The Most Popular Routes for Oszkár Passenger Sharing Transport within Hungary

	Long-distance Route	**Fare HUF**	**No. of Passengers**
1	PÉCS-BUDAPEST	2480	31581
2	SZEGED-BUDAPEST	1960	30584
3	DEBRECEN-BUDAPEST	2580	28277
4	MISKOLC-BUDAPEST	2060	26020
5	NYÍREGYHÁZA-BUDAPEST	2800	20436
6	KECSKEMÉT-BUDAPEST	1070	8660
7	KAPOSVÁR-BUDAPEST	2360	7996
8	BUDAPEST-SZOMBATHELY	2770	7444
9	GYÕR-BUDAPEST	1580	6643
10	NAGYKANIZSA-BUDAPEST	2630	5988
11	EGER-BUDAPEST	1630	5863
12	BAJA-BUDAPEST	2190	5594
13	BUDAPEST-GYŐR	1580	5092
14	BUDAPEST-SIÓFOK	1510	5086
15	ZALAEGERSZEG-BUDAPEST	2690	5051
16	BUDAPEST-VESZPRÉM	1520	4456
17	BÉCS-BUDAPEST	3580	4113
18	SOPRON-BUDAPEST	2550	3793
19	MÁTÉSZALKA-BUDAPEST	3610	3131
20	BUDAPEST-KESZTHELY	2300	2935

Source: Attila Prácser, Managing Director Oszkár, Hungary

According to the company officials at least 400,000 people use Oszkár at least once a year. Total users of Oszkár car-sharing services until 2019 were expected in the range of 775,000 with 6.5 million rides. In 2019, alone 135,000 new users were added to the platform. These statistics also indicate that on an average each passenger has taken 8.39 rides on Oszkár. Since the passengers have been using this platform frequently, it is apparent that they are satisfied with the services. Daily usage varies considerably between normal week-days,

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Fridays and week-ends as also the seasons of the year. Maximum usage has been recorded in summer months during the week-ends. As of November 2019, the company had a dedicated marketing and customer service team of six people plus four others who were handling customer services outside of normal working hours. It is therefore clear that rising popularity of long-distance car sharing services in Hungary have contributed to the rapid growth of Oszkár.

6. Conclusion

During the last two decades sharing economy has re-written the rules of the traditional economic system. Individuals and families have come forward to share their private assets and resources with strangers which was inconceivable some years ago. Digital platforms have facilitated real time interaction cutting across time and space barriers. Online reviews and Trust and Reputation Index have enhanced the radius of trust towards strangers. Change in social construct, growing anonymity in urban landscape, economic sustainability, growth of IT platforms and expanding radius of trust has led to spectacular growth of sharing economy in the last two decades. Hungarian economy is also experiencing rapid growth of sharing economy particularly in the field of transportation and accommodation. Oszkár a long-distance car sharing enterprise is a successful example in this sector. Its growth has been spectacular since 2014 and the customer satisfaction level is fairly high. Both the drivers and the passengers have benefitted from Oszkár as outlined above. Moreover, this represents an environmentally friendly sustainable economic model which has successfully reduced the carbon foot-print and congestion of vehicles on roads. However, a regulatory framework for such ride-sharing companies, safety of passengers and accountability of drivers are some of the issues that need to be addressed in the years ahead.

P.S. The current extraordinary situation resulting due to Covid19 pandemic is likely to impact global polity, society and economy in a profound way. Obviously, these profound changes can also re-write the parameters and the rules of the sharing economy in the future.

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Chapter VI.

6. Platforms – As Foundation of Sharing Economy

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First Author:

Literature review, Conceptual framework, Conceptualization, Investigation, Original Draft, Writing - Review & Editing

Co-Author:

Investigation, Supervision,

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PURPOSE

The present study is an attempt to examine the evolution of sharing economy platforms, role of technology in promoting such platforms.

Design/Methodology/Approach: The methodological approach of this research study is descriptive and the data obtained various secondary data sources in thematic form.

Findings: There is a strong role of technology in the evolution and promotion of sharing platforms, category of different platforms based on their functions and the nature of their mechanism and the role of well-designed platforms in promoting and nurturing trust which is the core factor in promoting and sustaining sharing economy models.

Research Limitations: The main limitation for this study was based on the secondary data. Replicating the research approach with primary data would result to better conclusion.

Managerial Implications: The implications of the sharing economy are not confined to financial and business areas alone, they add value to the idle assets, provide space and storage, regular stable income to elderly, enable social interaction, reduce carbon foot-print and help the lower income poor segment of the society by delivering cost-effective goods and services.

Originality/Value: This study showcased the original work of the authors in the field of sharing economy

Key Words: Sharing economy, platforms, Digital Identity, trust in sharing economy, technology and innovation, digital entrepreneurship.

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Introduction

According to traditional economic growth theories; land, labour and capital are considered to be the primary factors of production (Baumol, 2010). Given the fixed nature of land, the neo-classical growth theory focuses primarily on the contribution of labour and capital and does not leave room for new ideas, innovation, technology and initiative-taking in terms of entrepreneurial skills (Wennekers and Thurik, 1999). Thus, according to classical and neo-classical growth theories; entrepreneurship, innovation and technology did not conform to the economic factors of production. The era of globalization and digitalization has given birth to new thinking with regard to economic growth theories. In the past few decades, it has become clear that economic growth cannot fully be described by the combination of land, labour and capital alone as factors of production. Entrepreneurship has been recognized as the fourth important factor of production and a vital component in the process of economic growth. The shift from a managed, to the entrepreneurial economy has strengthened the significance of entrepreneurship (Baumol, 1968), which also fits well in the modern digital age (Prieger et al., 2016).

The development theory of Schumpeter gives the entrepreneur a major role and the innovation he has introduced in the production, distribution and economic growth process. He talks of material and immaterial productive forces. Immaterial productive forces include technological, managerial and sociocultural environment. Furthermore, Richter et al. (2015) contemplate that entrepreneurship in the digital age incorporates new business opportunities, which lead to a 'Schumpeterian creative destruction' by enabling new goods and services that are, for example, in the sharing economy, shared among customers and users and facilitated by technological development such as digitalization (Geissinger et al., 2018). The Schumpeterian view states that innovation and entrepreneurship enable economic growth (Angulo-Guerrero et al., 2017) by predicting that "an increase in the number of entrepreneurs leads to an increase in economic growth" (Urbano and Aparicio, 2016, p. 35). Sussan and Acs (2017, p. 56) hold the view that "the digital entrepreneurial ecosystem is composed of Schumpeterian entrepreneurs creating digital companies and innovative goods and services for many users and agents in the global economy". According to Wennekers and Thurik (1999) the innovation is a direct manifestation of entrepreneurship, which represents the intermediate process linking entrepreneurship to economic growth and furthermore they are

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considered to be the driving aspects of both the sharing economy and economic growth in the modern entrepreneurial economy and information, communication and technology (ICT) revolutions, along with globalization and the digitalized environment (Richter et al., 2017).

An entrepreneur is described as a risk-taking, independent and growth-or profit-oriented individual who is seeking, identifying and using opportunities in markets (Carland et al., 1984). An entrepreneur puts together capital, human resources and organisational structure to convert a commercial potential into an economically viable venture taking the risk of its failure. Entrepreneurship is thus associated with creativeness since starting a new business process requires the recognition of existing economic and commercial opportunities, the development of a marketable product and the creation of new values (Shane and Venkataraman, 2000). These skills are equally valid for entrepreneurs in the digital age (Standing and Mattsson, 2018, Hull et al., 2007). Nevertheless, according to Standing and Mattsson, (2018) there are many differences between entrepreneurship in the digital age and in non-digitized business circumstances. Grimes (2003) states that high-speed Internet access is a major driver in using the digital economy since digital technology increases opportunities for people who want to be entrepreneurs because such technologies and technological opportunities have grown enormously. Moreover, using digital technologies lowers the costs of setting up a business virtually (Hull et al., 2007).

There is a change in the role of consumers as well as producers in digital entrepreneurship as in a traditional business world. Producers are new business-start-ups that sell a new, innovative good or service to individuals or other companies buying it, whereas these roles are much blurrier for digital entrepreneurship. Producers of digital world do not necessarily have to be self-employed persons, but they can be virtually anyone, including the users themselves (Sussan and Acs, 2017, Haefliger et al., 2010). Similarly, the users of digital content are not just receiving a product for usage, but they might also give input regarding new variants and versions or improved types of the products sold, for example, regarding design, functionality, and practicability, thereby turning into “prosumers”, which they can do with the help of platform (Weitzenboeck, 2015). Thus, the digital platforms bring together producers, suppliers, consumers and innovators and contribute to the value addition in variety of forms.

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Hence, entrepreneurship, technological innovations, digitalization and real-time internet-based communication technologies have fundamentally transformed the way businesses are done today. Rapid change of market structures, improved supply chains and logistics, mismatch between idle assets and lack of resources for ownership, innovative customer demands and improved methods of meeting these demands have necessitated constant technological innovations, higher entrepreneurial risks and improved production and innovative marketing techniques. Digital platforms and sharing economy have emerged as one of the most important economic forces to meet these new challenges of technological era.

Sharing Economy on Platforms

The act of sharing is not new. Sharing has been part of human society since antiquity in one form or the other. Bartering systems and communal ways of life have been part of human life and society since a long time ago (Belk 2010; Sundararajan 2016). However, this is distinct from how sharing widely occurs nowadays between like-minded strangers who intersect on a willingness to trust strangers. Sharing economy, a newly coined term has become a widespread notion in the last few years after an intense discussion of sharing and economic collaboration came to light (Cheng 2016). Sharing economy has emerged as a significant third-party alternative business model to "business-to-business (B2B)" and "business-to-consumer (B2C) business models", generating new opportunities and challenges. A new approach to value creation has become a necessity for the existing business firms. The modern sharing economy stems from the financial crisis of 2008, where people needed access to goods and services instead of owning them as they were unable to afford owning, for example, a vehicle. Rather than buying anything, they decided to use it as a service. Moreover, the unpredictable social and economic conditions triggered a shift in consumer behaviour because sharing has become the preferred option if you don't need an apartment all the time or can't afford it. In an economic exchange, now on an online platform hosting the sharing society, the gap between an individual and the desired object is overcome.

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Price Waterhouse Cooper defines the shared economy as an emerging ecosystem monetizing underused assets for borrowing, rental or service of micro-capacity in return for accommodation or money (PWC, 2015). The rapid growth of internet, IT applications, mobile technologies and advances in the areas of Internet of Things, Big Data and Artificial Intelligence have provided new energy and dynamism to platform-based sharing economy models (Wirtz et al., 2019). Viable cost-effective alternatives have emerged to fulfil a variety of consumer needs including; accommodation for short and long stays, transportation-local and long distance, equipment rentals, office rentals, event management, supply of meals, sports facilities, entertainment and even personal loans. Uber, Ola, Oszkar, Turo, JustPark, Airbnb, HomeAway, XiaoZhu, onefinestay, Eatwith and Swiggy are a few such companies that are ready to cater to a range of customer needs. The phenomena of economic sharing have been widespread around the world and it has become a major economic factor since new research has revealed that startups raised more than USD 105 billion in venture capital by early 2015, with the top 17 shareholders worth over USD 1 billion each, employing over 60,000 people (Venture Beat, 2015).

Although sharing has been around for a very long time, the current form has been brought into life by the digital platforms and other large-scale mediating technologies. The internet, digitalization, smartphones, IT applications and platforms, have enabled match-making of those who have idle assets and capacities to rent, sell or share with those who are looking for them. People use these platforms and mobile applications to search a room, a car, a meal, a ride or an entertainment on real time basis. The implications of the sharing economy are not confined to financial and business areas alone, they add value to the idle assets, provide space and storage, regular stable income to elderly, enable social interaction, reduce carbon foot-print and help the lower income poor segment of the society by delivering cost-effective goods and services (Acquier, Daudigeos, and Pinkse, 2017.). As McLaren and Agyeman remarked; “The sharing economy has sparked a forest fire of excitement in terms of its potential to variously change the way we do business, empower previously powerless people, save resources, and increase our social closeness or convinces” (McLaren and Agyeman, 2015).

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The emergence of sharing economy has been disruptive both for the traditional business models as also for the regulatory framework governing the business sector (Shueh, 2014). It has also called into question existing conventional industries such as hotels, vehicles sales, restaurants, home factory and entertainment by offering easy and cost-efficient access to capital without the burden of ownership on a financial, social and economic level. Sharing economics is also described as an economic model in which technology helps people to understand what they need (Owyang, 2015; Maycotte 2015) in such way that social, economic and technological forces are in place to push the shared economy. As economic sharing becomes increasingly common, people continue to find out about the advantages of peer-to-peer trading in goods and services (Maycotte, 2015).

The platforms, which play an innovative role in organising companies and the role of networks and societies, have allowed many people to participate in today's shared economy. The increased use of platforms has encouraged ever more new startups to emerge and enter the movement to share the economy. The platforms are used to invent new approaches and methods to incorporate suppliers and consumers in their value creation processes so as to multiply the effects of new business models and service concepts. For example, eBay – a kind of sharing platform, allows anyone to become a retailer sitting in his home. Similarly, other platforms and sharing sites allows individuals to act as car-hire firms, rental agencies, boutique hotel, and ad-hoc taxi service; converting their idle capacities into productive assets. The sharing model works for items or services that are expensive to buy and are widely owned by people who do not make full use of them (The Economist, 2013). The usage of platforms opens new opportunities for innovative new startups and new business models.

Sharing assets has been possible for several years, however in most cases transaction costs have rendered sharing costly and inconvenient, but the global expansion of internet and smartphones has significantly reduced sharing-related transaction costs, making sharing easier than ever before; borrowing what you don't have and lending those idle properties. Today's shared economy is seen as a very important part of modern economy and innovation, which has risen due to emerging digital technology, rapid growth in artificial intelligence (AI) and big data, and evolving customer habits, consumption trends

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encompassing new forms of consumer-producing engagement. The creative product or service usually operates in a cloud, using Big Data or Artificial Intelligence (Giones and Brem, 2017), including Airbnb and Uber.

The sharing economy represents a distinct type of digital entrepreneurship based on the internet that makes use of digital technologies (e.g., cloud-based services, different variety of applications, a peer-to- peer platform) to offer either physical or intangible, digital goods and services (Giones and Brem, 2017, Cheng, 2016). Uber is a good example since Uber drivers deliver a physical product, but a large part of the service provision is digitally organized (Sussan and Acs, 2017). The case for Airbnb is similar, which uses a digital process to connect the consumers of accommodation with its suppliers, but eventually provides non-digital accommodation services.

These emerging business models for the shared economy are focused on a certain form of effective and scalable technology, which puts together vast networks of people to fit their products or services (May, Königsson, and Holmstrom 2017; Botsman and Rogers 2010; Allen 2017) and facilitate people's direct transactions by linking individuals in unprecedented ways (Caldieraro et al., 2018). The success of sharing economy businesses is often tightly connected with the technologies on which they run (Frenken,
2017). Entry to mutual economic networks can be differentiated in academic literature in three main ways:

(a) "the slice power, for instance when car ownership is divided into smaller times"
(b) "when assets individually too small to deal with are added into something concrete, secure and consistent, the aggregate potential"
(c) "open capacity which – like Google Maps – is open to others to create new services or goods from the excess capacity is the third main capacity"

It is very difficult to systemize the assets and services, which are offered through platforms of the sharing economy since they are vast and diverse to fulfilling a range of customer needs from taxi alternatives, delivery services, personal property sales, sports and entertainment services and home and accommodation rental. Airbnb, HomeAway, Xiao Zhu and one fine

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stay platforms are popular among travellers from budget-conscious students, families, business travellers and luxury consumers. Uber, Lyft, Bla Blac Car, Grab and Ola as ride-sharing platforms have become an alternative mean to the expensive taxi markets around the world. QuillBot rewrite your text. Start by writing or pasting something then press the Paraphrase button.

Based on the current usage sharing economy platforms can be roughly divided into the following categories.

1. **Peer-to-peer Lending:** Peer-to-peer lending networks allow individuals to lend and borrow money without a conventional bank. Technology and IT based applications make it possible for individuals, groups and companies to find borrowers and lenders of money as the case may be. Interest rates and other terms and conditions of a loaner set by the platform, based on the borrower's credit history and the volume of loans taken by him. The most popular type of peer-to-peer loan is an unsecured personal loan on platforms like Prosper and Lending Club. Platforms like SoFi also sell student loans and loans.
2. **Crowdfunding:** Crowdfunding connects lenders and borrowers on real time basis. Kickstarter and Indiegogo follow a somewhat different approach. On this platform prospective borrowers present their projects and the possible funding requirement. Such projects can be presented by the individual borrowers like an artist or an entrepreneur to a community of potential funders. Based on the viability of the project individual lenders can contribute to the funding campaign. This makes raising capital easier and cost effective for small enterprises.
3. **House/Apartment Renting:** Airbnb, Vrbo, Home Exchange and other similar platforms connect apartment owners with idle capacity and those who need accommodation holidays, business trips and short stays. Based on the price and availability, transaction is agreed to. Some platforms also address the potential security and safety issues by putting in place a comprehensive security protocol.
4. **Ridesharing and Carsharing:** With apps like Uber, Ola, and Lyft, you can hail drivers on their personal cars. With services like Turo and Zipcar, you can ask for a shared vehicle and pay for the driving time. Platforms like Oszkar provide long-

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distance routes between cities. Companies like GetAround will rent private cars by the hour or day when their owners don't need them.

5. **Bike Sharing:** There are a large number of bike sharing platforms like bike commute, Bicycle, Bike Sharing and so on, in different countries and cities where bikes can be hired on hourly basis.
6. **Coworking:** Coworking networks allow other professionals to share office rent, utilities, storage, mail and office supplies costs. They don't need to hire their own offices and employees. It's especially useful for freelancers, sole owners, and very small companies who don't have large inventories and can't afford to employ separate offices and employees. Many cities have established coworking centres for small businesses and freelancers.
7. **Reselling and Trading:** Platforms such as eBay, Amazon and Craigslist offer sale of used and fresh items no longer needed by an individual or an organization. These platforms also provide the facility of exchange of goods and services.
8. **Knowledge and Talent Sharing:** Platforms like Mechanical Turk, Task Rabbit, Zaarly, Fiverr, Chalak and so on offer individual services of mechanics, plumber, driver, house cleaning, gardening, website construction and so on. Host of these platforms bring together individual services and talents and those who need them.
9. **Others:** In this category there many different varieties such BorrowMyDoggy for dog lovers, RentMyWardrobe for sharing clothing, EatWith and MealSharing for sharing home-made food and so on.

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Figure 1: Broad Categories of Sharing Economy Platforms based on Functions

These sharing economy platforms offers great benefits such as lower cost to the user, additional income to the provider, new trust and opportunities in the society, sustainable development through use of idle capacities, resource conservation, reduction in CO2 emissions and so on. Consumer safety and legal remedies are some of the major problems that need redressal. Nevertheless, the success of sharing economy is proved by numbers as well.For example, by early 2019, Uber had a market valuation of US$72 billon. This was way higher than the market capitalization of US $56 billion of the General Motors which was the largest car manufacturing company in the US. Similarly, Airbnb with a valuation of US $31 billion was very close to the world's largest hotel chain Marriot which was US $44 billion. These high estimates show that investors have a very positive belief in platforms and think that they will be able to expand their market share and gain high profit.

Digital platform is the central point for the success of the sharing economy. All interactions and transactions take place on the platform. However, there are differing views on the nature of this technology and its configuration (Lee et al., 2015; May, Konigsson and Holmstrom, 2017). This newtechnology is labeled by some as an 'alogorithm' (Lustig et al. 2016; Mohlmann and Zalmanson, 2017) while many others consider it as 'platform' (Scholz, 2014; Cheng, Fu and de Vreede, 2018). Some others call it as IT application (Heinrichs, 2013;

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Cohen and Kietzmann, 2014). Moreover, there is not always consensus on the definition of these terms. Nevertheless, it is certain that these technological tools have transformed all transactionsand interactions into quantifiable and measurable data. Increasing computational power has further improved their computation and analysis (Martin, 2016).

Sharing Economy Platforms and the Extant Literature

While the categories of platforms given in the previous section, depend on the type of functions/services they perform, the nature of platforms in the extant literature has been classified into the following three categories based on their operating system, although there no convergence or consensus on them:

a. Platforms that provide access-based services.
b. Peer-to-peer or collaborative platforms.
c. Sharing Economy Platforms.

The platforms that provide access-based services primarily focus on providing temporary short-term access to an asset or good. For example; accommodation sharing, car sharing, bicycle sharing or equipment sharing services. These services imply limited access to goods or assets without transfer of ownership (Hazee et al., 2017). Access to such assets is provided to multiple customers successively without any change in the ownership (Schaefers et al., 2016). Thus, under this arrangement, the customer gains temporary access to the goods or assets to enjoy the benefits without ownership (Lamberton and Rose, 2012).

Often named collaborative economics and collaborative consumption (Benoit et al., 2017), the concept of peer-to-peer shared economy concentrates on transactional units (i.e. customers and peer service providers) and on online community service. These platforms arrange “peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services” (Hamari et al., 2016) and link a consumer who “aims to temporarily utilize assets with a peer service provider who grants access to these assets and with this delivers the core service” (Benoit et al., 2017). Moreover, they enable people to “collaboratively make use of underutilized inventory through fee-based sharing” (Zervas et al., 2017). In fact, initially the definition of sharing

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economy was confined to peer-to-peer sharing; “Consumers granting each other temporary access to underutilized physical assets (“idle capacity”), possibly for money” (Frenken and Schor, 2017). Looking at these definitions collectively, it is clear that the sharing economy peer-to-peer business models are a subset of the larger access-based platforms. They exclude platform provided assets and services. The primary function of these platforms is to brings the service provider and the consumer together to enable them to enter into a transaction directly like renting of cars on Uber platform or hiring of accommodation on Airbnb. Thus, the individually owned idle assets are offered on time-sharing basis to those who need them and are ready to pay.

Both access-based service networks and the peer-to-peer economy are known as economic sharing platforms. Moreover, networks for exchanging the economy often include platforms such as eBay, which directly pass ownership to customers. Nevertheless, sharing activities primarily focus on online platforms centred on sharing of under-used assets or services between peers and those provided free of charge or fees on the platforms (Hall and Pennington, 2016) and a socio-economic system which enables people to share the creation, production, distribution and consumption of goods and other resources” Unlike peer-to-peer platforms, the term sharing economy also includes those platforms that provide access to company-owned and platform-owned assets and services (Hazee et al., 2017). Thus, the sharingeconomy encompasses all the online-enabled sharing economy platforms offering short-term access to goods, services and other resources that are provided by peers or platform owners.

In the digital age, companies should use technology as a weapon to make their company effective, so they must rely on technology as the source of innovation. The platform is the strongest business model in the modern age. The platforms can be dynamically built and can interfere with existing markets and foster almost invincible competitive advantages. However, with the arrival of the platform age, the technology innovation has become a kind of organization. The platform and its special distinctive features themselves present an organizational form. Thus, the platforms have become the part of digital ecosystems since it links suppliers, marketers and consumers together. Markets were replaced by virtual networks, which can be represented as a local network and a network impact, where

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businesses are exponentially expanding through user networking. (Shaughenessy, 2016). Since Uber and Airbnb, which are considered to be the most successful platform-based business models have become leaders in their respective areas with impressive statistics in comparatively short time; clearly implies that large opportunities do exist for expansion of the sharing economy models (Shaughnessy, 2016).

There is no question that in the digital era the platform business model has become an important competitive advantage for any organization, because technologies like platforms are producing enduring advantages and profit for consumers and not new products and services. For the success of any company, the components of such business models based on networks and their interaction to generate specific consumer value and sustainable competitive advantage are extremely important to recognize. The digital networks are the place for business partners to seamlessly supply their goods and services. While companies that share the economy may appear to be technology companies, they are mainly concerned with linking people together. On the online market, the most common business model used by shared firms matches demand for certain assets or services between peers with other peers owning those assets and services. The differentiation strategies are based on the mechanism that drives matchmaking that can be driven by demand, supply or a combination of (Venture Beat, 2015). The role of the platforms is exclusive since that is the place where the business is realized and it offers a possibility to the customer to give feedback on time, which is the lifeblood of sharing economy brands.

Platform as an Instrument of Promoting Trust

Sharing economy presents an altogether new setting. Here individuals are required to interact with strangers with no past experience. Moreover, unlike in neighbourhood or in a shopping mall; the interaction is not physical but through an invisible platform. Additionally, such individuals could come from two different parts of the world, may not even speak the same language. Hence, sharing goods and services via internet and digital platforms is based on the fundamental premise of de facto strangers interacting with each other in the digital virtual sphere. Most often the role of the vendor is taken by another private individual or a corporation, renting out cars, two wheelers, apartments, or other equipment. Nevertheless, the platform acts as a mediator between both sides - the supply side and the demand side -

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of the market. Since transactions on internet are anonymous, trust becomes a critical factor in decision making. Obviously, no individual would like to risk financial loss or security of his person. Thus, without trust no sharing is possible especially on a regular basis, although there could be trials and errors in the first few instances. Confidence is fundamental to the usual conduct and survival of any online company (Subba Rao et al., 2007), and is of utmost importance to the ongoing intentions of consumers towards a specific online service (Zhou et al., 2018). Therefore, promoting trust between peers and between the platform and the users are extremely important considerations for a successful platform based economic model. Increasing the radius of trust is core to expansion of business on any platform. Mapping the uncertainty reduction framework to platform trust indicates rich and easily accessible self-disclosures by sites that clearly communicate who they are and their functioning. Timely feedbacks give a great chance for companies to change their service or business model both for those who are offering their products and as also for the customers. Digital identity (DI) is an important innovation of platform-based economic models to foster trust in an unknown situation. Global reach of the digital technologies and the internet have created multiple options for interaction and communication with others online. In any sharing economy transaction generally, there are three factors; person, product and platform (3Ps). There is no doubt that the platform business model has become an important competitive advantage for any company in the digital era, because innovations like platforms generate lasting advantages and profit for customers, not new products and services. Recognizing the components of such network-based business models and their interaction to create unique customer value and sustainable competitive advantage is extremely critical to any company's success. Digital networks are where business partners can seamlessly supply their products and services. Although companies that share the economy through seem technology companies, they are primarily concerned with linking people together. On the online market, the most common business model used by mutual firms compares demand from other peers for certain assets or services with ownership of those assets and services. Differentiation strategies are focused on the process that drives matchmaking that can be driven by demand, supply or a combination of such DI arises after a fair period of time, based on the interplay of knowledge and assessment that users of the sharing economy network willingly share based on their past experiences. Online reviews can be used as a source of information about past customer experiences and the different service features that

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influence user expectations (Siering et al. 2018). Moreover, online reviews tend to be seen as more useful compared to more standardised information (such as security assurances and certifications), especially because they communicate the actual ground experiences of others (Cheng et al. 2018). Text-based feedback is becoming even more common as it provides rich qualitative information on perception, preferences and actions with research showing that online reviews influence other users' buying choices (Matzat et al. 2012). Though digital identity is a complex and multifaceted concept in general, it acquires a new meaning and a more specific meaning in sharing economy. This stems from the interplay of knowledge voluntarily exchanged by digital platform users about their peers on their previous experiences with them, as well as the platform success itself. Such reputation-building knowledge is the cornerstone of every sharing economy network.

The User Generated Contents (UGC) are converted through statistical synthesis into a Reputation Score. Such Reputation Scores are also knowns as Trust and Reputation Information (TRI). Most sharing economy platforms actively promote mechanisms through which users can share their reviews and rate others. Such reviews and rating are sought normally at a scale of 1 - 5 or 1 - 10 supplemented with additional questions and comments. Such online-reviews have become a standard practice in the sharing economy sector. Very often Reputation Scores are prominently displayed on the platform. For example, Uber asks both the driver and the passenger to review the trip. In addition to the overall review, the passengers are also asked questions about punctuality, behaviour of the driver, cleanliness of the car and so on. Similar review statements are encouraged by Airbnb and Booking.com and most other platforms. Based on these UGC, Reputation Score of each driver and each accommodation is calculated and displayed on the platform which helps in building trust and guiding the behaviour of the consumer. Simultaneously, drivers are rewarded based on their passenger reviews.

The internet users interact with multiple sources before they firm up their decision. Many platforms offer comparative study of prices to the prospective buyer. Price, services and trust are then woven into one package before the order is placed. Therefore, buyer's expectation that the behaviour of the other party to the transaction will not deviate from the stated agreement is extremely important. Similarly, the party offering the service on the platform

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expects the other party to use the resources as per the conditions of the contract. Hence, the notion of platform-mediated peer-to-peer trust has important implications for sharing economy. Its multi-entry characteristics involves the peers both on the supply and demand side as also the platform providers. These enlarged human circles empowered by new trust-building digital mechanism has made "stranger sharing" a growing reality in modern era. Increasing number of IT platforms and their success is a good indicator that digitally generated Trust Reputation Information has been successful in fostering consumer confidence and trust. Perhaps, without designing for digital trust, the sharing economy might never have emerged the way it did. Today, DI and TRI have become an integral part of publicity not only in case of the sharing economy platforms but for the entire range of e-Commerce.

Conclusions

Evidence quickly shows that shared economy and business platform models are transforming ecosystems, markets and consumption patterns significantly. Models of platform economy sharing have caused a paradigm shift in conventional business practises. Consumer behaviour changes rapidly and they seek convenient and effective access to goods and services from their computer screens while sitting in their home's comfort and with no financial and logistic ownership burden. The onset of Covid19 pandemic has further promoted and strengthened the platform-based economic model. Since people are advised not to go out and mingle with others, they naturally prefer to shop online. Under these circumstances, new and innovative platforms are surfacing on internet challenging established business practices. A well-designed sharing economy platform has therefore become an essential requirement to the success of a business entity. Platform is the market place where the assets, goods and services are offered, where the consumers make their assessment of these offers and then they transact business and take risk. A transparent platform with voluntary disclosure of all essential facts naturally inspires confidence among the resource providers as well as consumers who meet and transact business.

A well generated reputation score and customer reviews form the initial attractions to visit the platform and transact business. Thereafter an effective system of regular feed-back on the experiences on the platform and quick redressal of complaints are essential elements to

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inspire and nourish the confidence of all those who interact on the platform. Although the platforms are built to bear in mind the essence of assets/resources to be exchanged and likely to combine providers and consumers, most platforms still meet vastly heterogeneous assets and user needs, and thus need liquidity and analytics to match high-quality. Transparency, business-friendliness, trust-inspiring digital identity and fast complaint redress are the key qualities of a successful sharing economy platform.

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Chapter VII.

7. Sharing Economy and Sustainable Development: A Case Study of Uber and Airbnb[2]

Sharing Economy and Sustainable Development:

A Case Study of Uber and Airbnb

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Abstract:

With rapidly growing environmental challenges, business models based on sustainable development is the need of the hour. Sharing economy offers an appropriate framework for sustainable development by converting idle and resources consuming assets into rentable economic agents thereby conserving natural resources and investments needed for production of new assets, reducing soil, water and air contamination and contributing to the promotion of social equality by making idle and unused assets available to the socially deprived section of the society at a fraction of the normal cost. The case studies of Uber and Airbnb illustrate these benefits to the society at large. The governments and corporates need to support this new economic model of consumption which could become instrumental in mitigating environmental challenges without any need for new investments, new systems and new institutions through optimal use of existing resources.

Keywords: Sharing economy, sustainable development, environmental degradation, idle assets, Uber, Airbnb, sustainability drivers.

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1. Introduction:

Environmental degradation has emerged as the greatest challenge before humanity during the last four decades. Increasing exploitation of natural resources, evolution of consumption society and growing contamination of air, water and soil coupled with increasing CO_2 emissions have been the main causes of environmental degradation and climate change. The scientists have warned the global leaders in the Special Report of the Intergovernmental Panel on Climate Change (IPCC) released in October 2018, that our window for preventing catastrophic climate change was closing fast (Watts, J.,2018 and IPCC, 2018). Earlier the IPCC Fifth Assessment Report released in 2014 had outlined the continuing and substantial degradation of environment and mounting greenhouse gas emissions. The IPCC report is one of the warnings, that tried to draw our attention to the impending catastrophe. The scientists and the scholars from all over the world also hold the view that unsustainable consumption patterns especially in the developed countries are resulting in over-exploitation of natural resources, diminishing bio-diversity, loss of specie, deforestation and deteriorating ecosystem, substantially contributing to continued and higher greenhouse gas emissions (IPCC, 2018). Finding prompt and durable solutions to unsustainable consumption patterns is the urgent need of the hour. The purpose of this paper is to analyse and bring out the positive impact of sharing economic model on sustainable development.

A simultaneous improvement in both ecological and economic efficiency is necessary to achieve the Sustainable Development Goals (SDGs) adopted in 2015 by UN general Assembly. The sharing economy model offers a potential pathway to sustainable development model through minimizing use of natural resources and thereby reducing contamination and greenhouse gas emissions. Sharing economy helps in leveraging the idling capacity of goods and services in order to reduce our overall consumption and subsequent resource use (Harmaala, M.,2015 and Heinrichs, H., 2013). The sharing economy has positive environmental impacts, through a reduction in the total resources required and it helps reduce pollutants, emissions and carbon footprints. In the transportation sector, vehicle sharing behaviour can have a positive environmental impact by decreasing the number of kilometers travelled. Such sharing activities can also stimulate long-lived

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changes in consumer behaviour by shifting personal transportation choices from ownership to demand-fulfilment through sharing. (Zhifu Mi & D'Maris Coffman, 2019). Similarly, bicycle sharing schemes can reduce the use of motorized vehicles that usually consume petroleum products and generate emissions. The sharing economy is often regarded as an innovation with sustainability benefits and it is claimed to have positive environmental and social effects since more efficient use of goods can save scarce resources otherwise needed for production ((Botsman and Rogers 2011).

2. Sharing Economy:

Sharing economy in its present form is a comparatively recent development. Sharing is an alternative to private ownership. It is mutually enriching whereby two or more persons may enjoy the benefits flowing from ownership. However, there is no consensus over the definition of sharing economy as the concept is still evolving. Nevertheless, literature provides an idea of different facets and modes of the sharing economy. According to Belk, sharing economy is a digitalized platform for peer-to-peer exchange of goods and services (Belk R., 2014). The sharing economy is widely described by academic literature to promote more sustainable consumption practices such as access over ownership and treated as an alternative consumption model, which aims to increase the efficiency of the resources used and create a new value for society (Martin, C.J., 2016; , Light, A. and Miskelly, C., 2015). The sharing economy is an emerging economic model usually defined as a peer-to-peer based sharing of access to goods and services, which are facilitated by a community-based online platform. It focuses on the sharing of underutilized assets in ways which improve efficiency, sustainability and community trust (Zhifu Mi & D'Maris Coffman, 2019). As a result of the economic change, modern technologies and solutions available in the new industrial revolution, the sharing economy offers a new business model based on the exchange of resources and of all the available assets and their optimal use (Nagy, J.et al, 2018; Ciesielski, M.; Wieczerzycki, W., 2012; Zhong, R.Y., 2017). The sharing economy is a term for an emerging set of economic models usually defined as a peer-to-peer based sharing of access to goods and services, which are facilitated by a community-based online platform (Allenm & Berg, 2014). The main focus of this business model is on the sharing of underutilized assets in ways which improve efficiency, sustainability and community trust

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and equality. (Heinrichs, H. Sharing, 2013). The traditional sharing, bartering, lending, trading, renting, gifting, and swapping, are redefined by using digital technology that is revolutionizing and mainstreaming the way people consume and share knowledge (Gata, 2015). Sharing economy represents an alternative business model in which the access to goods, services, spaces, and other assets can be shared or obtained with the help of ICT (Information and Communication Technology). Companies can construct online platforms to increase connectivity between service providers and users (Yaraghi and Ravi, 2017).

One can therefore surmise that the sharing economy framework presents the benefit of capturing value with temporary access-rights to a product or service, instead of traditional system of gaining ownership of a product. In the last two decades, this new consumption model has grown rapidly with the support of IT platforms that provide the market place for peer-to-peer exchanges and transactions on real time basis. A careful literature review would indicate that the main drivers of sharing economy include; growing urbanization and consequent anonymity and space constraints, desire to share idle goods and services for monetary benefits, environmental concerns, lack of economic resources to acquire ownership, a paradigm shift in societal values whereby ownership of assets is no longer considered as an important element of social standing, rapid development of Information Technology platforms and applications and digital identity and online evaluation techniques enhancing trust with strangers (Belk, 2007; Zervas, et al, 2015; Demailly & Novel, 2014). Of these, addressing environmental concerns, caring for social needs of those who cannot afford ownership, use of idle resources and enhancing trust with strangers are of direct concern for sustainable development. According to a PwC report size of the sharing economy amounted to $15 billion in 2015 while expected to grow rapidly up to $335billion by 2025 (PwC, 2015).

3. Sustainable Development:

Existence of life is closely inter-twined, with nature. Nature provides the support system for survival of different species of life that exist on the planet Earth. The Industrial Revolution marked a major turning point in Earth's ecology and humans' relationship with their environment. However, the full impact on the world's psyche would not begin to register until the early 1960s, some 200 years after its beginnings when machines began to

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replace human beings in work places and mass production from large-scale industries at lower prices started flooding the market, making small and cottage industries unsustainable. Mass production with assembly line techniques gave birth to what is known as consumerism or consumer society. Global GDP went up from $5.31trillion in 1950 to nearly $137 trillion in 2018. This massive economic growth has come at a great environmental cost. Human induced activities are leading to massive degradation of environment. Extraction of minerals is taking place at an unprecedented rate of 60 to 65 billion tons each year with gross extraction of over 100 billion tons. With increasing use of chemicals and pesticides, intensive agriculture, and continuing deforestation over 35 percent of world's top soil has been degraded. Fresh water consumption has gone up 9 times during the last century due to increasing industrial, agricultural and municipal use. Water bodies are shrinking and are getting contaminated with increasing amount of industrial and municipal effluent. In addition to the huge quantity of industrial effluent, globally 330KM^3 of municipal sewage and over 1.7 billion tons of solid municipal waste is generated every year. Greenhouse gas emissions started galloping. Between 1750 and 2011 cumulative anthropogenic CO_2 emissions were in the vicinity of 2040 Gigatons leading to global warming and climate change (Gupta, 2018). According to the Intergovernmental Panel on Climate Change between 1880 to 2012 global mean temperatures have risen by about 1.1 degree centigrade. Human actions have significantly altered biogeochemical cycles, of both land and water along with biotic diversity. Overall, since the dawn of agriculture roughly 100 centuries ago, an area of the size of continental United States has been deforested by human actions (Turner et al., 1990). Since global temperatures are on the rise with erratic weather patterns, fast melting glaciers and ice-sheets, rising sea levels and dying rivers and lakes, humanity is facing its existential crisis.

At global level conflict between environment and development was first acknowledged in the 1972 Stockholm Conference on Human Environment which led to the establishment of United Nations Environment Programme (UNEP). the World Commission on Environment and Development was commissioned by the United Nations General Assembly in 1982. The Commission headed by Gro Harlem Brundtland, Prime Minister of Norway presented its report titled "Our Common Future" in 1987. This report gave rise to global awareness. Based on the recommendations of the Brundtland Commission, the

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United Nations Conference on Environment and Development (UNCED), better known as the Earth Summit, was held at Rio de Janeiro, Brazil (June 3–14, 1992), to reconcile worldwide economic development with protection of the environment. The Brundtland Report defines sustainable development as follows (WCED, 1987). This is the most widely accepted and quoted definition so far.

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Sustainable Development or sustainability therefore can be defined as the practice of maintaining processes of productivity indefinitely—natural or human made—by replacing resources used with resources of equal or greater value without degrading or endangering natural biotic systems (Kahle and Gurel-Atay, 2014). Sustainability is considered by many; the best way to address the vast, complex and interrelated environmental and societal problems and is deemed highly imperative for the sake of current and future generations.

After a series of international conferences following the Earth Summit in 1992, United Nations has become very active on the agenda of sustainable development. 8 Millennium Development Goals (MDG) were adopted during the Millennium Summit at United Nations held from September 6-8, 2000 at UN headquarters. In yet another significant development, 2030 agenda for sustainable development goals (SDGs) was adopted at the UN Sustainable Development Summit held at New York on 25-27 September 2015. This became possible following noticeable success on Millennium Development Goals adopted at the UN Millennium Summit in 2000.

Sustainable development or sustainability is an evolutionary process. For example, the quantum of resource base available, the state of technology, the production methods and the quantum and intensity of contamination all depend on the scientific advances and measurements available in these fields. With new discoveries in sciences, these parameters could undergo substantial change in the future. Bagheri and Hjorth assert that sustainability from the evolutionary viewpoint can only be defined as continuous development and learning of sustainability. There cannot be an ideal state of sustainability (Bagheri and Hjorth, 2007 p.84-85). In this sense, it is a work-in progress in perpetuity. Some economists

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find the term sustainable development paradoxical. A very clear summary of this paradox was provided in 1999 by Willard R. Fey and Ann C.W. Lam, who refer to it as the 'Ecocosm Paradox' (Fey and Lam, 2001, p.11). The Ecocosm Paradox is the set of dilemmas that arise from the compound hyper-exponential growth of annual world human consumption. The two main characteristics of the Ecocosm Paradox are:

a. If human consumption growth continues, the planetary life support system will be disabled and the very existence of humanity will be endangered.
b. If the consumption growth is stopped, the viability of the global economic and financial system will be threatened endangering the stability of governments, social systems and individuals.

In the context of this paradoxical situation, sharing economy offers a workable solution to contain further degradation of environment and limit greenhouse gas emissions. It also helps in promoting idle resource use and reduce social inequality by providing shared use of resources to the deprived section of the society.

4. Sustainability Drivers of Sharing Economy:

Research suggests as to how the sharing economy could positively impact sustainability by reducing consumption induced resource depletion when consumer products are shared instead of owned individually (Bartenberger and Leitner, 2013). The sharing economy has the potential to promote transitioning of the societies into a post-ownership economy (Belk R., 2014) and has positive environmental impacts, through a reduction in the total resources required and it helps reduce pollutants, emissions and carbon footprints. In the transportation sector, vehicle sharing behaviour can have a positive environmental impact by reducing the number of vehicles on the road and the kilometers travelled. Such sharing activities can also stimulate long-lived changes in consumer behaviour by shifting personal transportation choices from ownership to demand-fulfilment (Zhifu Mi & D'Maris Coffman, 2019). More efficient use of assets can save scarce resources otherwise needed for production. There is direct financial motivation for participation in sharing economy as it makes possible to have access to goods they previously were not able to own. Thus, it helps to avoid high ownership costs or enables to earn income on products owned. According to

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Fraiberger and Sundararajan (2015) the low-income groups can obtain the most welfare benefits from sharing economy. The act of sharing could bring people together and stimulate closer social cohesion (Agyeman et al, 2013).

Thus, sustainability drivers of the sharing economy can be divided into four broad categories – direct environmental protection, conservation of natural resources, use of idle capacity for profit and reduction in social inequality through sharing with less well-off sections of the society and social cohesion through increased trust as demonstrated in the figure below. The four arms of the sharing economy could help in conservation of resources, reduction in contamination and help the deprived section of the society.

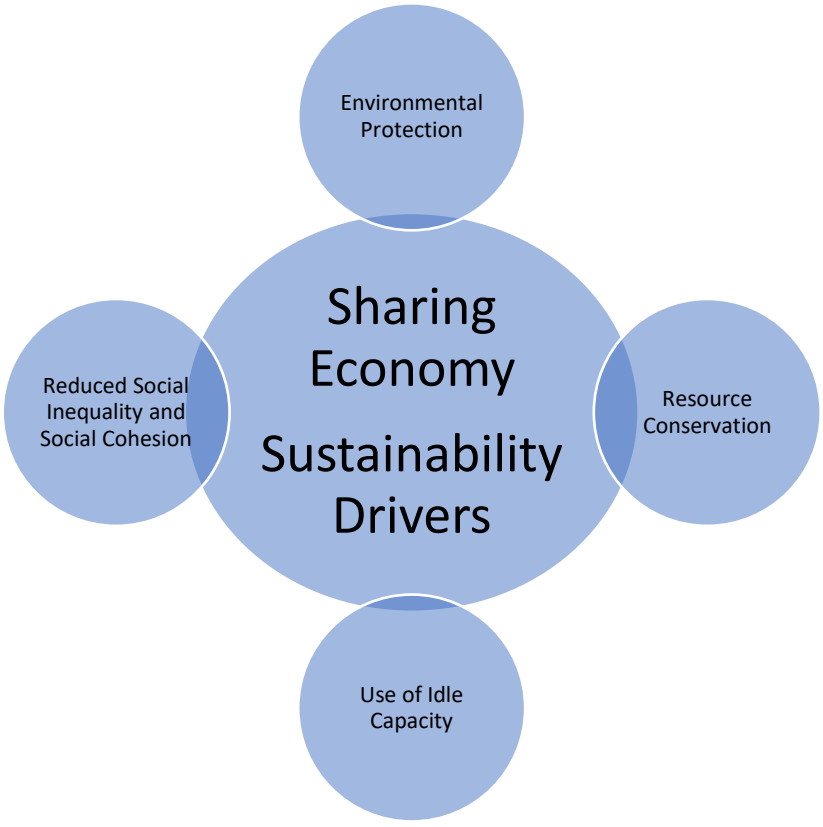


Figure 1.: The four arms of the sharing economy

Corporate Social Responsibility (CSR) can play an important and positive role in further accelerating these processes. Similarly, the governments have a special role in promoting

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these drivers through tax incentives and economic subsidy as they constitute an integral part of sustainable development objectives.

5. Case Study on Uber and Airbnb:

Following the literature review and theoretical concepts, in order to study and analyse the drivers of the sharing economy on the ground, it is proposed to use the performance indicators of the two major sharing economy companies with global reach. These companies are; Uber in the transportation sector and Airbnb in the hospitality industry. Both Uber and Airbnb are well-known representatives of the sharing economy and provide a fairly good basis for an objective analysis and balanced conclusions on the role of sharing economy on sustainable development. Broad performance statistics of these two companies are as follows.

Uber:

Uber which is the largest sharing economy company in transportation sector with a very impressive track record. The company was founded in 2009 by Travis Kalanick and Garret Camp. Uber is hailed as the archetypal disruptive business, which has shaken up the taxi industry in major cities across the world through paradigm shift in its business approach. Spread across 65 countries and over 600 cities Uber offers service to over 75 million passengers, who are served by a total of 3.9 million drivers and over 14 million trips every day. The following statistics provide a glimpse of company's performance (Uber Revenue and Usage Statistics, 2020).

- Uber is available in 65 countries and over 600 cities worldwide.
- 14 million Uber trips are completed each day.
- Well over 10 billion trips have been completed worldwide until May 2019 since its inception in 2009.
- 2018 Uber revenue came to $11.3 billion – a 43% increase over 2017, while gross bookings were up 45%, to $50 billion.
- Uber valuation in 2018 was $72 billion.
- Uber drivers' number 3.9 million worldwide.

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- Average Uber driver income is $364/month.
- Globally Uber had 75 million passengers in 2018 (US 41.8 million, Brazil17million, India 3.5 million).
- 27% of US UberX drivers are female.
- Of the Uber users in US, 48% are female and 52% are male.
- 65% of Uber users in US are below 35 years of age 29% between 36 and 55 and 6% over 55 years of age.

In addition to Uber, there are innumerable local and international share economy companies operating in transportation sector world-wide. Some of them are: Ola, Oszkár, Lyft, EasyCar, BlaBla Car, GetSafeGo, Grab, Didi Chuxing, Sharethebus, NextMover, RelayRides, ConnectRiders, Classics&Exotics, CorPool, and Hykle. Many of them are competitors of Uber in specific countries or region.

Airbnb:

Airbnb was founded in 2008 by Joe Gebbia and Brian Chesky who came up the idea of a website that would allow people to rent out a spare room for the odd night or two after they charged three guests $80 each to sleep on airbeds in their San Francisco apartment when every hotel room in the city was taken. Eleven years on, Airbnb's site lists more than six million rooms, flats and houses in more than 81,000 cities across the globe. In the same period the company has grown from nothing to a $30bn firm. On average, two million people stay in an Airbnb property each night – more than half a billion since 2008. Thus Airbnb, has emerged a major player in hospitality sector and has performed very well in providing shared accommodation in apartments, houses and with families. Once a while, there are stories from hosts, guests and neighbours of excessive noise, damaged homes wild parties, last-minute cancellations and scams. But they are exceptions and more than matched by positive experiences from satisfied travellers who have found affordable alternatives to hotel rooms. On the whole, Airbnb's record in hospitality sector is very impressive as indicated in the statistics given below (Airbnb Statistics, 2020).

- Airbnb listings include; United States - 660,000, France - 485,000, Italy- 340,000, Spain - 245,000 and United Kingdom - 175,000.

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- The top 10 destinations for inbound guests are the United States, France, Italy, Spain, the United Kingdom, Japan, Canada, Australia, Germany, and Portugal.
- Over 150 million users worldwide.
- 6 guests check into an Airbnb listing every second.
- The average rent received by hosts per guest arrival in 2018 was $185.00.
- There have been over half a billion Airbnb stays since the company started.
- There are over 650,000 hosts worldwide.
- There are over 7 million listings worldwide in over 220 countries and regions. In London alone more than 77,000 homes are listed on Airbnb, a fourfold increase since 2015.
- As of January 2020, there are over 100,000 cities with Airbnb listings
- In December 2019, 10.4 million guests stayed in an Airbnb accommodation for the holidays.
- On any given night, 2 million people are staying in Airbnb rentals across the world.
- Airbnb's value worldwide was $38 billion in December 2018.
- Airbnb's yearly revenue in 2018 was $3.6 billion, increase of 38% from 2017.
- Airbnb's yearly revenue in 2017 was $2.6 billion, increase of 73% from 2016.
- As of 2020, Airbnb has over 400 agreements with local and national governments to automate the collection of tourism taxes, collecting over $2 billion in tourism-related taxes through these agreements.
- 54% of Airbnb guests are female while 46% are male.
- Women constitute 56% of hosts and have earned $32 billion since the company began in 2008.
- In 2016, Airbnb supported 730,000 annual jobs.
- Airbnb Plus was launched in February 2018 for exceptional properties meeting stringent guidelines and inspected and photographed by an Airbnb representative. To qualify for a listing, the Host must have:

- *Min. 4.8 rating, 95% acceptance rate for booking rates in the prior 12 months and*
- *Must be "Entire Home" listing or private bedroom with its own bathroom.*

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6. Contribution to Sustainable Development:

With the above background facts and statistics of the operations of these two companies in two different sectors of the economy, let us now see how these and similar other companies are able to contribute to the objectives of sustainable development and what are their constraints and shortcomings.

(a) Direct Environmental Protection:

Although, no authentic statistics are available of reduction in the number of cars on the roads and the consequent decline in the amount of CO_2 emissions due to transport sharing, it can easily be surmised that Uber alone must have helped in reducing at least two million cars (based on 14 million daily trips) on the global roads and the consequent emissions of CO_2. Spread across 65 countries and over 600 cities Uber offers service to over 75 million passengers, who are served by a total of 3.9 million drivers with over 14 million trips every day. Moreover, most of these services are provided in crowded city centres with heavy traffic and no parking space. Similarly, other transport sharing services have made considerable contribution directly to environmental conservation. Such sharing business model can also stimulate long-lived changes in consumer behaviour by shifting personal transportation choices from ownership to demand-fulfilment.

On any given night 2 million people are staying in Airbnb rentals. The number goes up considerably during the holiday season. These accommodations are provided in existing apartments and houses without any additional pressure on land, natural resources or environment. If all these guests are to be accommodated in hotels, we would need not less than 3000 additional hotels of 100 rooms each. One can imagine the amount of CO_2 emission, land use, extraction of natural resources, water consumption and garbage generated from these construction sites and additional hotels located in city centers. This will certainly add to the degradation of environment.

These two examples clearly illustrate the type of direct contribution that the sharing economy is capable of making towards environmental protection and conservation by reducing the carbon footprint in a visible and tangible manner. Moreover, almost all of this

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environmental conservation takes place in the places where most needed - the large cities with traffic congestion and considerable air pollution.

(b) Reduced Social Inequality and Social Cohesion:

Uber engages 3.9 million drivers directly. Most of these people come from the comparatively poorer section of the society. Average income of Uber drivers is $364 per month which is a good amount in developing countries. Hence, the company provides direct employment to 3.9 million people who are comparatively poor and disadvantaged. On the other hand, well over 10 billion trips provided by the company since 2009, have been availed of primarily by those who cannot afford to own a car. Therefore, the company has provided secure and comfortable transport to 75 million people who are comparatively poorer section of the society in their respective countries. Moreover, this facility has been provided at a fraction of the cost compared to the price of a taxi-ride or ownership of a car. Moreover, these rides are hassle-free as the customer need not worry about the route, parking space or the accident on the way. Obviously on both ends, the company is helping the needy and vulnerable sections of the society contributing to social justice and equality.

Airbnb has 6,50,000 hosts world-wide with 7 million listings in most countries of the world. Most of these properties are owned by comparatively elderly people with a few other sources of income. Earning regular rent on these listed properties, therefore is a welcome source of income to these disadvantaged people. Average rent received per guest on Airbnb listed accommodation in 2018 was $185 which is a good sum for those in need. Average monthly income for the host for such properties stands at $924 per month which is a handsome amount in any country for an idle asset. Moreover, when guest come and stay with them, it also provides them an opportunity for social interaction. Since I have personally experienced their hospitality on many occasions, I can say that these hosts are very happy to let out their properties as it enables them to earn their livelihood and have some social interaction. Additional employment is also generated for upkeep of these apartments by the host. Similarly, on the other hand, millions who cannot afford to stay in hotels are now able to travel as they find such homely accommodations at reasonable and affordable prices. Sharing economy is therefore able to extend the privilege of travel to people who are in comparatively lower income groups. Obviously on both ends, these sharing economy

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companies are able to reduce inequality and contribute to social cohesion. The following chart provides an idea of the average direct income generated by some sharing economy companies.



How much do people make in the sharing economy?

AVERAGE AND MEDIAN MONTHLY INCOME PER SHARING ECONOMY WORKER

RANK	COMPANY	AVERAGE/MO	MEDIAN/MO
1	Airbnb	$924	$440
2	TaskRabbit	$380	$110
3	Lyft	$377	$210
4	Uber	$364	$155
5	Doordash	$229	$100
6	Postmates	$174	$70
7	Etsy	$151	$40
8	Fiverr	$103	$60
9	Getaround	$98	$70
	OVERALL	$299	$109

Data is based on tens of thousands of Earnest loan applicants.

earnest EARNEST.COM SOURCE: EARNEST

Source: Uber Revenue and Usage Statistics, 2020 at: https://www.businessofapps.com/data/uber-statistics/

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(c) Use of Idle Capacity:

Another important fact both in case of Uber and Airbnb, to be noted is that they are helping the society in utilizing idle capacity without putting additional pressure on natural resources. Idle capacity is an economic problem. They are resource consuming assets without any productive return. One can see thousands of vehicles dumped on streets and parking lots without any use. Overtime they become non-functional assets and require proper disposal. Similarly, one can see thousands of old building in complete disrepair due to lack of use. Maintaining these buildings and their systems is a mammoth task for many governments and municipalities. Some of them even become societal hazards overtime.

Sharing economy enables drivers to use their idle vehicles to earn extra income by providing transportation to others. This new economic model turns these idle resources into productive business assets. Additionally, this also helps in proper maintenance of the vehicle and savings on parking costs. In case a new vehicle is bought instead of using the vehicle lying idle it will add another vehicle on the road adding to traffic congestion, accidents and parking problems. 3.9 million Uber drivers make use of the idle capacity of their vehicles. This amounts to massive conversion of idle capacity into productive units. Given 14 million Uber trips each day, Uber alone reduces congestion of at least two million vehicles on the road, presuming 7 trips per vehicle per day which is a reasonable assumption based on average daily trips by vehicle owners. In addition, there are host of other sharing economy companies providing shared transportation. Thus, making use of idle capacity is one of the important elements of sustainability.

Similarly, Airbnb has over 7 million listings with over 650,000 hosts. The company provides accommodation utilizing existing idle capacity to at least two million people on any given day. During the holiday season this number goes up by two to three times. Since the upkeep and maintenance of idle housing capacity is a burden on the individual, the society and the economy, the sharing economy models provides a great service to the society and the households by converting them into productive commercial assets. This not only saves these buildings from turning into ruins and societal hazards but helps their owners make a regular income by renting them out. This effectively means that the sharing economy converts a resource sucking asset into a productive economic unit without requiring any

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additional resources contributing tangibly to sustainable development. If new hotels are constructed to accommodate these people it would mean construction of at least 3000 new hotels with 100 rooms each involving additional investments and resources.

In absence of the sharing economy models, the idle capacities would be wastage of resources plus additional resources needed for their upkeep. By putting the idle capacity to use the sharing economy not only generates income for the household but also reduces pressure on use of natural resources and contamination of nature. Moreover, the traveler is able to get a quality transport and accommodation at a lower price. This also helps in maintaining the already constructed housing facilities or else they would soon be reduced to the state of disrepair. Thus, the sharing economy spares us from idle buildings turning into ruins and unused vehicles turning into scrap.

(d) Resource Conservation:

It is very clear from the analysis given above that both Uber and Airbnb contribute substantially to conservation of resources by converting idle capacity of vehicles and accommodation into productive assets. Manufacturing of a new vehicle requires extraction of resources from nature such as iron ore, other minerals, water etc. putting pressure on scarce natural resources and consequent contamination of air, water and soil and more CO_2 emissions. 3.9 million Uber drivers perform 14 million trips every day. Of the 14 million customers served on daily basis at least 2 to 3 million of them would have bought their own vehicles put considerable pressure on natural resources. Thus, use of idle capacity of vehicles through sharing economy models directly help in conservation of resources which can be diverted elsewhere.

Similarly, Airbnb is providing accommodation on daily basis to 2 million travelers utilising the idle housing capacity. During the holiday period such utilization goes up by two to three times. If new hotels or housing facilities are constructed to accommodate these travellers, it would mean massive investment and considerable use of natural resources putting additional pressure on scarce resources. Conservation of resources means that the land, construction material, water and other minerals and metals could be used elsewhere. It

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would be economic blunder to create new assets while the existing assets are lying idle demanding investment for their upkeep.

7. Role of Governments and Corporate Sector:

Despite visible and tangible contribution to sustainability, some studies have cast doubts on the sharing economy's environmental effectiveness and intrinsic sustainability (Fishman et al, 2014 and Ricci, 2015). Fishman et al has suggested that bike sharing can actually increase the overall motor vehicle usage if inventory management is not optimized or when the effects of bike re-distribution and maintenance are taken into consideration. While, it is true that the corporate sector concentrates more on maximizing profits to ensure adequate returns on investments, governments need to maximize the wellbeing of citizens. There are also genuine concerns that some companies may use the 'sharing economy' label as a marketing gimmick to disguise profit-motivation and exploitation under the pretense of making the society a better place (Cohen and Kietzmann, 2014).

Therefore, the governments and the public authorities have a pro-active role in identifying the sharing models that are contributing to sustainability and provide them support through tax holidays, subsidies and free parking spaces. For example, apart from reducing carbon footprint, bike sharing services can contribute to health if managed properly. Many areas in city center can be converted into bike-only area to reduce congestion and emissions. In following such an approach, both environmental and health benefits can be converted into economic incentives for enterprises. Successful government strategies for incentivizing enterprises and nudging consumers will depend on local cultural and social contexts. On the other hand, the sharing service providers should take environmental protection and improvement of societal wellbeing as a Corporate Social Responsibility (CSR) rather than a marketing ploy. With the rise of the sharing economy and sharing enterprises producers could design and make products or services that are more amenable to sharing. Thus, the emergence of B2C and B2B models based on sharing economy needs could improve both the demand and the supply side adding value to the entire supply-demand chain (K Rong et al., 2018).

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8. Conclusion:

In this era of growing consumerism, increasing environmental degradation and urgent need for sustainable development; sharing economy is capable of playing a positive role through use of idle resources and assets by matching the excess with demand through IT platforms. This model based on real-time interaction, not only saves investments on maintenance of idle assets but also converts these idle assets into income generating resources. On the other hand, such idle assets are made available to consumers at a fraction of the total cost without requiring investments in their ownership. This model naturally results in conservation of natural resources, huge financial investments and contamination of nature which are inevitable while producing new assets. The case studies of Uber and Airbnb given above clearly demonstrate their immense economic utility for sustainable development through conservation for resources, use of idle capacities and containing degradation of nature. Sharing economy model also helps in reducing the social inequality as it facilitates access to assets to comparatively poorer section of the society at a fraction of the normal price by utilizing idle resources. The governments should therefore, encourage sharing economy models through an incentive system and reduced taxation for such enterprises. Similarly, the corporate world should keep this new model of economy in the background while designing and producing new products and services so that supply chain could convert into a value chain.

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Chapter VIII.

8. Conclusions and Possible Areas of Future Research

During the last two decades, the sharing economy has emerged an important economic force on the global arena as platforms permit users to gain access to global assets and services in the comforts of their homes since digitalization brought about both social-economic and cultural changes at the same time.

The technological integration with the help of digitalization has played a very vital role in the rapid evolution of the sharing economy. Industry 4.0 and the platform economy are the two major development areas of digitalization. Industry 4.0 is about the digitalization of industrial technologies to increase efficiency and productivity through integration of these technologies creating a multiplier effect. This integration and synthesis using technology and digitalization has made the new industrial processes increasingly faster and much more efficient. This has naturally contributed to increasing competitiveness and optimum utilization of resources. However, the 'question whether this new design is socially acceptable or not remains to be seen' (Pap and Makó (2020) (cited in Kopp et al., 2016, p.7.). The growing role of data is a key driver for the growth of IT platforms. According to Pap and Makó (2020) (cited in Moore, 1965, p. 114-117)) the number of transistors on a dense printed circuit can double every 24 months. It had been stated by Pap and Makó (2020) (cited in McAfee and Brynjolfsson, 2012), that 2,5 exabytes of data were created every day, and this volume would be doubled every 40 months. "Data never sleeps," was mentioned in a study by Pap and Makó (2020) cited in Domo (2018) and they estimated that in 2020 there would be 1,7MB data created by every person every second. Thus, the importance of data in every life is getting more and more significant every passing day. Therefore, Industry 4.0 is characterised by the integration of new technologies, rapidly increasing digital applications and increasing mountains of data in everyday life.

The disruptive paradigm of the sharing economy has shaken the foundation of the traditional economic model based on capitalism since it has been radically reshaping the traditional economic models of value chain. The platform economy is a peer-to-peer model, where a platform company connects the parties for content, goods, or service provision over

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the internet. The novelty of the platform-based business model lies in its ability to trigger entirely new eco-systems. Global spread of high-speed internet, increasing computing power, growth of IT platforms, digitalization of financial sector and online payment services, a large variety of IT applications, mass access to smart phones, changing social norms where ownership of assets is no longer an attraction and expansion of the radius of trust to strangers due to Digital Identity and Trust and Reputation Index; the rules of the traditional economic system are been rewritten.

The combined market value of Uber, Airbnb, and Lyft, in 2018 was estimated at US$106 billion. Valuation of Uber stands higher compared to most car manufacturing giants. Similarly, the market value of Airbnb is more than those of many hotel conglomerates. From US$15 billion on 2013, the total value of the sharing economy is likely to be US$335 billion in 2025. This amounts to 2133% growth in 12 years between 2013 and 2025.

The sharing economy giants are transforming the economic ecosystem, the market behavior, the marketing techniques, the supply chains, the warehousing logistics and above all the consumption patterns. It was very much inconceivable some years ago that individuals and families would come forward to share their private assets and resources with total strangers. The sharing economy platforms have made this possible. Today the IT platforms are not merely matchmakers in the concerned peer to peer (P2P), business to clients (B2C) and business to business (B2B) relations, but they also create new markets for a great variety of services, which did not exist before the appearance of the platform economy and they are the marketplaces and shopping malls and not those physically located in the city centers. The platform economy covers a variety of activities, such as search, sales and marketing (Google, Facebook, Instagram), broadcasting (YouTube, TikTok), funding (Kickstarter), banking (WeChat), travel (Uber, Lyft, Bolt, Airbnb), food delivery (Wolt, NetpincerGo), labor services (TaskRabbit, Gig Smart, Upwork), and logistics (Amazon) since goods and services are made available the doorsteps of the customers who can command them on their computer screens. Idle assets and equipment that used to occupy considerable space in homes and warehouses have been turned into productive assets and have become a source of regular income. This has also helped in mitigating environmental degradation through conservation of natural resources and reducing excessive production. In this global internet of exchange of goods and services, practically every household has become a willing participant both as supplier and as a consumer.

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During the course of my research-journey spanning over four years, I have analyzed over 200 research papers, read several books, undertook empirical survey with over 100 individuals and met many more to assess their views and ideas. I have prepared five comprehensive research papers, three of them are already published, one is at peer review stage and one to be submitted shortly. My knowledge on the subject has expanded both in dimension and in depth. After this long and arduous exercise, I have come to the following principal conclusions.

1. Putting together thousands of under-utilized resources scattered over vast geographical areas; on a single platform and converting them into productive assets has been one of the great services of the sharing economy model. The sharing economy has brought a paradigm shift in the global economy and society transforming the methods of production, supply chains, marketing techniques, consumer preferences and consumer behavior. The traditional economic principles based on land, labor and capital have become obsolete. Entrepreneurship and innovation with the help of Information Technology tools have become critical factors. The economic network of supply and consumption has intruded every household. Access to assets and services has become global and instant, transcending defined marketplaces. The sharing economy has transformed the world into Internet of Things with pervasive reach. The sharing economic model is there to stay and expand. As the Corona Virus continues to inhibit people-to- people contacts and movement; platform-based sharing economy is bound to flourish.
2. Trust is the cornerstone of sharing economy. Sharing between strangers is no possible without expansion of trust. With new advances in IT technology, user generated digital information has expanded the narrow base of trust which was initially confined to family, friends and local community. Risk of allowing strangers in one's private space is not an easy barrier to overcome. IT platforms and TRI have made it possible. As of now, global sharing firms are in the lead with regard to transforming the business ethics, economic practices, societal norms and legal and moral codes of conduct. In a deeper sense, the sharing economy actors have initiated a societal shift through facilitating trust between strangers. The application of business practices in sharing economy could be

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improved further based on the analysis and experiences of platforms at local, regional, national and international settings. Legislative measures and business guidelines based on best practices could further enhance the radius of trust. In this context the engagement of the civil society and the governments is indispensable in reshaping the globalized society and business practices. Further enrichment and expansion of digital platforms feedback mechanism are important to expand and deepen trust.

3. While the User Generated Content on platforms is relatively common practice these days, in future, digital trust could be accumulated in the form of trust capital which could be utilized and exported, not just on a single platform, but on a plethora of platforms and applications, similar to the notion of digital social capital that allows users to display Facebook friends or LinkedIn contacts exported from other digital networks. Such trust capital could be collected over different interactions of individuals on social media, digital platforms and other virtual fora such as banks, insurance companies, legal firms and supermarkets. Although, this could immensely enrich digital TRI; such a possibility will have to address privacy issues satisfactorily before it could be put into practice as sensitive information about individuals is also prone to risks regarding cyber security, data exploitation and surveillance issues. Rapid advancement in blockchain technology offers new potential to facilitate direct peer-to-peer interaction in the sharing economy. Building trust among strangers is indeed a spectacular achievement of the sharing economy model particularly since with the help of digital trust has to transform the stranger-danger mentality into strangers-friend status. The economic platforms have penetrated the lives of the individuals and the society as a whole using the very data provided by the individuals on these platforms, therefore it is crucial to address some of the fears and legal issues by new national and international legal frameworks. The never-seen measure of the penetration of the lives of the individuals through the platforms brings a new radical shift in human society and the global economy.
4. The carsharing models are innovative and have evolved out of the needs of people in the modern era. Their economic, social and environmental benefits are indisputable. In the broader sense this is a step toward more competitive,

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inclusive and sustainable economy. Car-sharing industry in Europe is the largest segment of the sharing economy presently constituting over 50% of the total. Car-sharing industry is also growing in many other parts of the world. Home grown ride sharing companies have emerged in China, India, South East Asia and Latin America. Since carsharing is still an evolving field the ratio of what is known and what is unknown is still very low and there are many loose ends. Concerns have been raised on account of public safety, unfair trade practices and lack of level playing field. Scams on numerous websites and cases of outright fraud and misbehavior have also come to surface in many countries. In most cases carsharing practices are based on *bona fide* behavior which may be lacking in some cases. These unscrupulous elements need to be made accountable to the society. There is need for proper regulatory framework for carsharing companies also known as transport network companies (TNCs). However, since the practices have taken many forms and variations and are still evolving a proper regulatory framework is not easy to develop in such a fluid situation.

5. Long-distance car sharing is comparatively new and not so wide spread. Oszkár, a long-distance car sharing enterprise in Hungary is a successful example in this sector. While the company is known as Oszkár in Hungary, international brand name of the company is Motar, which stands for “More Than a Ride”. This platform connects on real time basis, long distance drivers with empty seats in their cars with the passengers who are looking for rides on the identical routes. A comprehensive survey on the performance of this platform undertaken by me reveals, that this platform has recorded impressive growth of over 67% between 2015-2018 with very positive customer reviews. 22 drivers surveyed over a period of three years, have been evaluated between 4.8 and 5 on the scale of 5 by the passengers surveyed. Moreover, there was no particular complaint regarding the conduct of drivers. No instance of any accident was reported during the survey. Moreover, this platform represents an environmentally friendly sustainable practice which successfully reduces carbon footprint and traffic congestion. Oszkar therefore, offers a good example for long-distance car sharing. Nevertheless, a regulatory framework for long-distance ride-sharing companies is a must for the safety of passengers and accountability of drivers.

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6. The current or modern form of sharing economy came into existence because of IT platforms, that connect suppliers and consumers together at one place. The article titled “Platform- As Foundation for Sharing Economy” which is presently under review, analyses the importance, varieties and mechanism of sharing economy platforms. These IT platforms are well organized market places, where assets, goods and services are offered, where the consumers make their assessment of these offers and then they transact business and take risk. A transparent platform with voluntary disclosure of all essential facts naturally inspires confidence among the resource providers as well as consumers who meet and transact business. A well-designed Digital Identity, accurate Trust and Reputation Information and detailed customer reviews form the initial attractions to visit the platform and transact business. An effective system of regular feed-back on the experiences on the platform and quick redressal of complaints are essential elements to inspire and nourish the confidence of all those who interact on the platform. While the platforms are designed keeping in view the nature of assets/resources to be shared and likely blend of providers and customers still most platforms cater to vastly heterogeneous assets and consumer needs and therefore, they require liquidity and analytics for high-quality matching. The most important qualities of an effective sharing economy platform are transparency, ease of doing business, digital identity that inspires confidence and quick redressal of complaints.
7. The internet users interact with multiple sources before they firm up their decision. Many platforms offer comparative study of prices to the prospective buyer. Price, services and trust are then woven into one package before the order is placed. Therefore, buyer’s expectation that the behavior of the other party to the transaction will not deviate from the stated agreement is extremely important. Similarly, the party offering the service on the platform expects the other party to use the resources as per the conditions of the contract. Hence, the notion of platform-mediated peer-to-peer trust has important implications for sharing economy. Most platforms generally specialize in their activities and offers such as - local car sharing, long-distance car sharing, car renting, knowledge and talent sharing, accommodation renting, equipment renting, co-working, crowd funding,

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resale and trading (eBay), pet caring and so on. Many platforms that are not necesarily sharing economy platforms like Amazon.com also have backward linkages for need-based supplies particularly of slow-moving items so that they need not to buy and stock in advance. Therefore, there are a lot many permutations and combinations of IT platforms. A well-designed sharing economy platform has therefore become an essential requirement to the success of a business entity. User-generated contents and comments provide a very critical input for improvement of the platform.

8. Environmental degradation, global warming and climate change pose the existential challenge to humanity in the 21st century. The sharing economy could help in mitigating the environmental degradation through use of idle assets and frequent resude of others. In my paper on “Sharing Economy and Sustainable Development: A Case Study of Uber and Airbnb” this issue has been examined in detail. The growing consumerism, excessive use of natural resources and mountains of waste generated every single day are the principal causes of environmental degradation. The case studies of Uber and Airbnb have clearly demonstrated their immense economic utility for sustainable development through conservation for resources, use of idle capacities and mitigation of environmental degradation. Moreover, this business model smoothly converts idle assets into income generating resources for their owners based on real-time interaction on IT platforms and saves huge financial investments on storage and protection of these idle assets. Moreover, such idle assets are made available to consumers at a fraction of the total cost without requiring investments in their ownership. Thus, the sharing economy promotes sustainable development, which is the need of the hour. Additionally, my research indicates that to promote sustainable development, the governments should encourage sharing economy models through an incentive system and reduced taxation for such enterprises. Furthermore, the corporate world should keep this new model of economy in the background while designing and producing new products and services so that the supply chain could convert into a value chain.

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Before I conclude, it is very important to assess briefly the impact, the Corona Virus or COVID 19 which has turned the world upside down. The global economy and human activities came to a complete and unprecedented halt during March-June 2020. Most of the global population was forced to confine to their homes. Even after 13 months since its origin in Wuhan China, the virus continues to play havoc with human life, societal structure and global economy. As of now it is not possible to assess its far-reaching impact with some certainty. Only one thing is sure that the incalculable human and economic toll exacted by the rapid spread of the killer virus is unforeseeable. The biggest catastrophe of the virus is the uncertainty. This pandemic has the potential to reshape the global economy and human society and the way we interact, socialize, eat, travel, shop, entertain and live. The travel and hospitality industry have taken the most serious blow. As a consequence, the sharing economic companies like Uber and Airbnb have suffered considerably. However, on the positive side, due to severe restrictions on movement and human to human interaction imposed to contain the virus; many new IT platforms have come up to meet consumer needs right at the doorstep of their homes. These platforms are addressing all essential human needs starting form fruits and vegetables to groceries, to cooked food and medicines. People are able to place orders for all these goods and services from the comforts of their homes and they are delivered at their doorsteps. Strictly speaking, although these new platforms may not follow strictly the sharing economy models, still they do contain several key features of them. Therefore, the platform economy, has become an inseparable part of human life and likely to stay so for the foreseeable future.

8.1. Further Research Possibilities:

There are immense possibilities for further research in the domain of sharing economy. Here are some indicative aspects which could further enrich this fascinating economic phenomenon.

1. A vast variety of new models and variants of sharing economy could be seen on digital platforms representing a mix of online shopping, peer-to-peer sharing, time sharing, asset and office sharing and collaborative economy. Crowd funding of

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projects is also fascinating development. A comprehensive study of these variants would certainly add to and enrich the existing knowledge in this field.

2. International regulatory framework covering sharing economy transactions cutting across national boundaries is another important area where more research is needed. Safeguarding consumers interests from fraudulent platforms is extremely important. Punishment for trans-border crimes remains a big challenge. Regulating the activities of digital platforms also needs international legal framework. All these aspects need further research to add to the existing knowledge.
3. Changes in labor market is another important area for additional research. It has been observed by Makó, Illéssy and Nosratabadi (2020, p. 148) that in the US, which usually acts as a front runner on workforce trends, almost two fifths (36%) of workers participate in the platform economy, through either their primary or secondary jobs, and for more than two fifths (44%) of them platform economy is the primary source of income. Makó Illéssy and Nosratabadi (2020, p. 149) have also discovered that the number of platform workers in different countries vary substantially, with some unexpected findings. For instance, according to a World Bank report Serbia and Romania were found among the leading countries in Europe with per capita platform workers platform workers. Given wide fluctuation in the platform activities on week-to-week basis there is also a trend towards ‘on demand’ work force rather than regular work force.
4. Sharing economy has also triggered many changes in supply chain and logistics. Warehousing, transportation and real time updates of inventory and movements have acquired added significance in this era of platform economy. For example, in case of care sharing, real time availability and location of cars is critical to business transactions. Similarly, for accommodation sharing real time update of available accommodations is central to any transaction. Therefore, research on new IT applications in these areas is very critical.
5. Societal impact of business interaction among strangers, impact on environmental degradation and sustainability, additional income of under-utilized resources/assets for senior citizens and so on are some other interesting areas for future research.

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Of course, there are many more areas. It is not my intention to draw up a comprehensive list of such areas. Since sharing economy has emerged as a vast economic domain, need for further research shall continue to arise. As it is a fascinating matrix of economy, environment and society, I am sure young and talented researchers will continue to pursue new research in various aspects of this domain.

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