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Digital entrepreneurial ecosystem: the role of the sharing economy in driving innovation

Nick Hajli^a, Irina Baydarova^b and Tahir Nisar^c

^aLoughborough Business School, Loughborough University, Loughborough, UK; ^bUniversity of Southampton;

^cSouthampton Business School, University of Southampton, Southampton

ABSTRACT

This study examines the role of the sharing economy within digital entrepreneurial ecosystems (DEEs) and its influence on fostering opportunities for digital entrepreneurs. By exploring the complex interactions among businesses, technologies, and markets, the paper highlights how DEEs facilitate the adoption of sharing economy-related digital business practices. Using a qualitative exploratory approach, we conducted open-ended interviews with 88 business managers actively engaged in the sharing economy across various sectors. Thematic analysis was employed to uncover the key challenges and opportunities businesses face in integrating digital transformation processes (DTP) into their strategies. The research introduces key frameworks, including Sharing Economy Digital Infrastructure Governance (SEDIG), Sharing Economy Digital User Citizenship (SEDUC), and Sharing Economy Digital Marketplace (SEDM), to categorize ecosystem players and analyse their collaborative efforts in supporting digital entrepreneurship. Findings emphasize the need for greater consistency in SEDIG approaches across regulatory bodies, as regional disparities in governance create uncertainty for entrepreneurs. The study also underscores the long-term benefits of responsible operations and technological investments, despite initial costs, and calls for policy interventions to address ongoing entrepreneurial ecosystem challenges.

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Sharing economy; digital entrepreneurship; digital entrepreneurial ecosystem; infrastructure governance; user citizenship; marketplace

Introduction

Entrepreneurial ecosystems (EEs) are recognized as critical environments that foster entrepreneurial success, driving economic growth through job creation, increased GDP, and sustained productivity (Isenberg 2010). Defined by Spigel (2015) as 'localized hubs of culture, networks, capital, universities, and proactive policies that nourish innovation-driven ventures', EEs encompass a broad range of interconnected elements that support entrepreneurial activity. Isenberg (2011) further identifies six key domains within EEs: policy, finance, culture, support, human capital, and markets.

Despite the extensive literature on EEs, there is a growing need to understand the impact of digital transformations on these ecosystems. Digital entrepreneurial ecosystems (DEEs) represent an evolution of traditional EEs, where digital technologies and infrastructure play a pivotal role in shaping the interactions and dynamics within the ecosystem. This study aims to bridge the gap between traditional EEs and the emerging concept of DEEs, with a particular focus on the sharing economy as a key component of this transformation.

CONTACT Nick Hajli  n.hajli@lboro.ac.uk  Loughborough Business School, Loughborough University, UK

Present affiliation of Irina Baydarova is Prince Mohamed bin Fahd University (PMU), Kingdom of Saudi Arabia

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The Circular Economy represents a critical framework for integrating economic activity with environmental sustainability, promoting long-term well-being and addressing the strain of rising consumer demand on our planet (Murray, Skene, and Haynes 2017; Patwa et al. 2021). With new insights into its principles, researchers and practitioners are now equipped to develop effective policies and metrics (Nobre and Tavares 2021). Incorporating informal entrepreneurship into this framework is essential for a holistic approach, ensuring that all aspects of production and consumption are considered (Welter, Smallbone, and Pobol 2015). The sharing economy, characterized by peer-to-peer exchange of goods and services facilitated by digital platforms, has introduced new business models and opportunities for entrepreneurs. However, the integration of sharing economy practices within DEEs remains underexplored. Existing research has primarily focused on the economic and social impacts of the sharing economy (Belezas and Daniel 2023; Han et al. 2022; Martin 2016), with limited attention to its role within DEEs. This study seeks to address this gap by examining how digital entrepreneurial ecosystems influence the adoption and success of sharing economy-related digital business practices.

To achieve this, we pose several research questions:

- (1) How do digital entrepreneurial ecosystems support the development and growth of sharing economy businesses?
- (2) What are the key components and actors within DEEs that facilitate the sharing economy?
- (3) How do regulatory frameworks impact the consistency and predictability of sharing economy practices across different regions?

These questions are essential for understanding the interplay between digital transformations and entrepreneurial ecosystems. By exploring these issues, this study aims to provide a compelling theoretical framework that connects the dots between existing literature on EEs and the evolving digital landscape. Furthermore, we aim to clarify the role of digital infrastructure, technological capabilities, and regulatory environments in shaping the future of the sharing economy within DEEs.

In summary, this research is crucial for addressing the current knowledge gap in the literature on entrepreneurial ecosystems and digital transformations. By focusing on the sharing economy within DEEs, we aim to offer new insights and practical implications for policymakers, entrepreneurs, and academics interested in the future of entrepreneurship in the digital age.

Literature review

The digital revolution has significantly reshaped entrepreneurship and business operations, crucially impacting economic sustainability. Digitalization is now essential for growth across various sectors, ensuring their continuity and survival (Kuckertz 2019; Neck et al. 2004). It is a key element in entrepreneurship, driving economic development, innovation, and foreign investment, especially in emerging markets (Boutillier, Levratto, and Carré 2016). Entrepreneurship thrives under diverse conditions, playing a vital role in both formal and informal sectors, particularly in developing countries.

Entrepreneurship is the skilful ability to identify opportunities, embrace risk, generate ideas, and innovate, which is fundamental to sustained economic growth globally. The 21st century has seen entrepreneurship become a driving force for economic growth and foreign investment (Autio and Thomas 2018; Mujahid, Mubarik, and Naghavi 2019). Success in entrepreneurship requires a robust ecosystem (EE) that includes human, entrepreneurial, and societal support, involving cohesive collaboration from various societal players (Etzkowitz et al. 2000; F. C. Stam and Spigel 2016). Entrepreneurial activities span both formal and informal sectors within dualist economies. M. J. Smith (1998) categorized entrepreneurs as either 'craftsman' or 'opportunistic'. Craftsman entrepreneurs typically have blue-collar backgrounds and less education, while opportunistic entrepreneurs have higher educational attainment, diverse management experiences, and better access to financing and innovation opportunities.

This classification aids in understanding the dynamics of entrepreneurship in different sectors (Isenberg and Onyemah 2016; Mujahid, Mubarak, and Naghavi 2019). As Bolton and Thompson (2000, 96) aptly state, entrepreneurial opportunities ‘can be found everywhere’. They can be entirely new, innovative improvements, or limited growth ideas, ultimately building global businesses or remaining local ventures. Success depends on being distinct and effectively executing ideas. The potential for successful entrepreneurship is vast for those with the right talent and temperament.

The entrepreneurial landscape: The entrepreneurial landscape, as defined by the Organisation for Economic Cooperation and Development (OECD), involves a mix of opportunities, relevant actors, and resources, all shaped by an entrepreneurial culture and political framework (Boutillier, Levratto, and Carré 2016). This diversity in motivation for entrepreneurial activity is evident in both formal and informal sectors. Some ventures arise from necessity and survival, while others are driven by innovation and job creation, reflecting need-based and opportunity-based entrepreneurship. Key characteristics of successful entrepreneurs include risk-taking, vision, creativity, and adaptability, which are crucial across all sectors (Elia, Margherita, and Passiante 2019; Isenberg 2011).

Entrepreneurship is fuelled by various factors such as opportunity, risk, need, motivation, and innovation. The 2019 Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) found that around 400 million entrepreneurs in over 100 economies pursue business ventures with diverse motivations. These range from necessity and wealth creation to addressing societal challenges. Despite their different goals, all entrepreneurs are united by their willingness to take risks (Chmura and Anselmo 2020). These varied motivations shape the entrepreneurial ecosystem, leading to different types of entrepreneurship focused on social impact or business success.

Understanding entrepreneurial ecosystems

An entrepreneurial ecosystem (EE) is a complex network of interconnected and mutually supportive factors that create a conducive environment for entrepreneurship within a specific region (Spigel and Harrison 2018). This concept originated in the 1980s and 1990s, as scholars explored the interplay of economic, social, cultural, and political forces in regions and their impact on entrepreneurial activity (Spigel and Harrison 2018). An EE can be likened to a community of organisms that depend on each other for survival within a defined geographical area. This analogy effectively captures the essence of an EE, which encompasses the social, cultural, and economic contexts that shape local and regional entrepreneurship. It acts as an incubator for innovation, creativity, and opportunity within a specific geographic space (Mason and Brown 2013). An EE provides a nurturing environment that promotes economic development by supporting entrepreneurial activities, enabling innovation, encouraging individual initiative, and facilitating the growth of small businesses.

The success or failure of any entrepreneurial venture is closely tied to the health of its surrounding ecosystem. An EE is more than a passive environment; it is a dynamic structure that empowers individuals, enterprises, and society to collaborate effectively. This collaborative spirit drives economic wealth creation, fosters development, and ultimately leads to increased prosperity for all stakeholders (Malecki 2018; Maroufkhani, Wagner, and Ismail 2018; Spigel and Harrison 2018).

Institutional context and its impact: Further research by D. B. Audretsch et al. (2021) explores the crucial role of institutional context in shaping the productivity of entrepreneurship within cities. Their study, using data from 1652 ecosystem actors across 16 cities in developing and transition economies, reveals that different institutional pillars (normative, cognitive, and regulatory) significantly impact the prevalence of both productive and unproductive entrepreneurship within these urban environments. Khlystova, Kalyuzhnova, and Belitski (2022) delve deeper into this aspect, specifically examining the regional nuances of institutional trust and their influence on entrepreneurial ecosystems.

Dimensions of the entrepreneurial ecosystem

Evolution of entrepreneurial ecosystem dimensions (characteristics)

Isenberg (2010) initially proposed 13 key dimensions for effective entrepreneurial ecosystems (EEs), encompassing elements like culture, capital, government support, education, human resources, economic clusters, infrastructure, leadership, networks, support services, success stories, and early customers. However, subsequent research argued that these could be streamlined into fewer overarching components, prompting a revision. Isenberg updated his framework in 2011, identifying six essential domains crucial for building a sustainable EE: Policy, Finance, Market, Culture, Human Capital, and Supports (Maroufkhani, Wagner, and Ismail 2018; Mujahid, Mubarik, and Naghavi 2019). This revised framework recognizes the need for a balanced and integrated approach to fostering a vibrant and impactful entrepreneurial landscape.

In recent years, digitalization has revolutionized the entrepreneurial landscape, enabling the rise of multi-million dollar startups like Uber, Airbnb, and Instagram. These platforms have eliminated traditional barriers to entry, making self-employment and decent living possibilities even without physical offices or infrastructure. The sharing economy, facilitated by digital technologies, further empowers self-employed individuals by connecting them with opportunities and resources. Digital entrepreneurial ecosystems (DEEs) are a fusion of traditional entrepreneurial ecosystems (EEs) and digital networks. As Bennett (2017) describes, they are interconnected groups of people and businesses who share digital platforms for mutual benefit. Similar to EEs, DEEs involve various actors (D. B. Audretsch et al. 2021; Bennett 2017; Skilton 2016; Skilton and Practice 2016; E. Stam 2015) that play critical roles in shaping entrepreneurial activities.

The digital ecosystems of informal entrepreneurship empower both individual and collective entrepreneurial efforts. They consist of digital infrastructure (e.g. internet access, platforms) and digital user citizenship (e.g. digital literacy, responsible online behaviour). DEEs provide the context for digital entrepreneurship to flourish and evolve (E. Stam 2015). They are populated by 'digital species' that represent resources, tools, and networks that facilitate entrepreneurial journeys, particularly within the informal sector. While DEEs are a relatively new concept, their importance is increasingly recognized. Still, a comprehensive definition remains elusive due to the complex interplay between traditional and digital elements. Sussan and Acs (2017) identify four key components that contribute to understanding DEEs: digital infrastructure governance, digital user citizenship, digital entrepreneurship, and the digital marketplace (D. Audretsch et al. 2018; E. Stam 2015).

Sussan and Zoltan's framework

Bridging the gap between digital and entrepreneurial ecosystems: Sussan and Zoltan's framework seeks to bridge the gap between the established concepts of digital ecosystems (Dini, Iqani, and Mansell 2011; Li, Du, and Yin 2017) and entrepreneurial ecosystems (Isenberg 2011; Neck et al. 2004; Spilling 1996). Their novel approach recognizes the profound ecological impact of digital technologies on both ecosystems and the entrepreneurs within them.

By integrating these two ecosystems, Sussan and Zoltan identify and introduce four key concepts that shed light on the specific sub-systems within a DEE and their interconnected relationships:

Digital User Citizenship (DUC)

This concept explains the connection between institutions and users within the ecosystem. It encompasses both formal regulations and informal norms that enable user participation in the digital society. A robust DUC is crucial for fostering a thriving digital market for new entrepreneurs.

Digital Infrastructure Governance (DIG)

This quadrant addresses the coordination and governance required to establish shared technological standards relevant to entrepreneurial activities. A well-governed digital infrastructure ensures smooth operation and innovation within the ecosystem.

Digital Marketplace (DM)

This sub-system represents the space where value is created and captured through various entrepreneurial activities. A healthy DM is vital for the success of digital entrepreneurs as it provides them with access to resources and customers.

Digital Entrepreneurship (DE)

This concept arises from the intersection of entrepreneurial agents and digital infrastructure. It encompasses the creation of new opportunities and ventures enabled by digital technologies. The rapid evolution and disruption within DEEs, fuelled by their generative infrastructure, is a unique characteristic compared to traditional ecosystems.

Sussan and Zoltan emphasize that DE acts as a crucial pillar for the long-term sustainability of the entire ecosystem. The continuous creation of new entrepreneurial value within the DM, facilitated by DE, is essential for the ecosystem's health and growth. This framework acknowledges and addresses the 'significant gap in our understanding of entrepreneurship in the digital age' (Sussan and Zoltan 2017, 56). Prior to this work, entrepreneurship research largely ignored the transformative role of digital technologies and their impact on both individual ventures and the broader ecosystem.

Building on the previous discussion, Figure 1 visually pinpoints the research gap this study aims to address. As it stands, entrepreneurship has undergone a metamorphosis as traditional entrepreneurial ecosystems morph into digital entrepreneurial ecosystems (DEEs) (Isenberg 2011; Sussan and Zoltan 2017). This iterative process spawns new entrepreneurial opportunities (Botsman and Rogers 2010), shaping the need for a new breed of entrepreneurs. Further fuelling this evolution is the rise and integration of the sharing economy within the DEE (Markard, Raven, and Truffer 2012; Smith, Voß, and Grin 2010). These sharing economy models act as disruptive forces, challenging existing businesses (Acquier, Daudigeos, and Pinkse 2017; Laurell and Sandström 2017). In doing so, they decentralize various regimes, opening up fresh avenues for digital entrepreneurs to capitalize on these microeconomic opportunities.

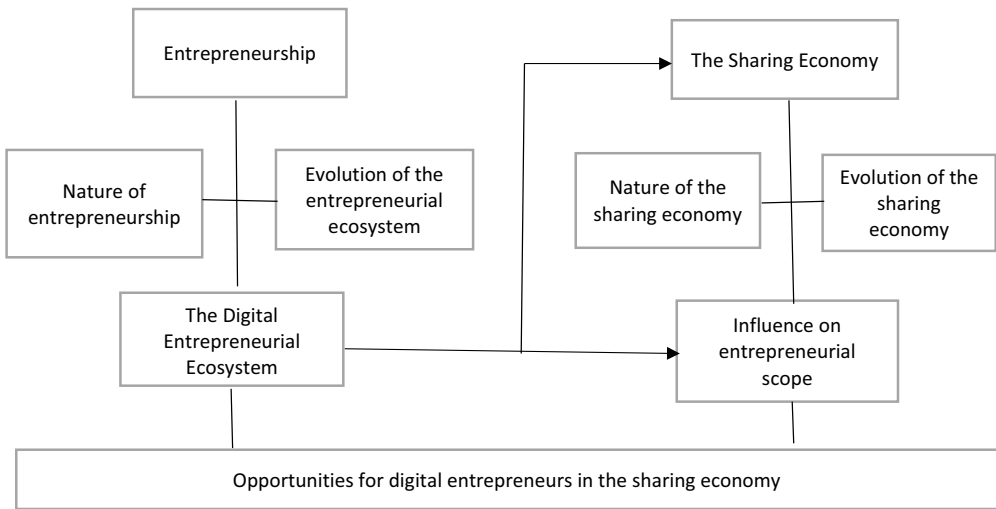


Figure 1. Entrepreneurship in the sharing economy.

Given this evolving landscape, exploring the relationship between the sharing economy and various DEE components becomes crucial. Specifically, we need to delve deeper into how DEEs influence the implementation of sharing economy-related digital business practices. Consider the digital marketplace (DM) quadrant of the DEE framework. This quadrant focuses on value creation within the ecosystem, where new products, services, or knowledge access emerge from the synergy of entrepreneurial activities and user participation (Sussan and Zoltan 2017). Within this quadrant, agents exhibit opportunism with conscious foresight (Williamson 2000), making the DM's composition critical for the DEE's long-term sustainability.

To further formalize these connections, we propose a framework that combines Sussan and Zoltan's (2017) DEE with Isenberg's (2011) EE model. This fusion allows us to extend existing literature by offering a contextualized analysis of the connections between each DEE facet and digital entrepreneurship (DE). This, in turn, sheds light on the direct contributions of the sharing economy to each facet of the entrepreneurial ecosystem.

Sharing economy digital ecosystem: connecting users, platforms, and opportunities

Sharing economy

The sharing economy, characterized by the peer-to-peer exchange of goods and services facilitated by digital platforms, has introduced new business models and opportunities for entrepreneurs. This economic model leverages the power of technology to create decentralized networks where individuals can share access to goods, services, and resources, often resulting in more efficient and sustainable use of assets. Digital platforms such as Airbnb, Uber, and TaskRabbit are prime examples of how the sharing economy operates. These platforms enable individuals to monetize underutilized assets, such as spare rooms, cars, or personal skills, by connecting them directly with consumers in need of these services. This direct connection eliminates traditional intermediaries, reducing costs and increasing convenience for both providers and consumers.

For entrepreneurs, the sharing economy offers a fertile ground for innovation and new business ventures. It lowers the barriers to entry, allowing individuals with minimal capital to start businesses and reach a global audience. The scalability of digital platforms means that entrepreneurs can quickly expand their operations without the need for significant upfront investments in infrastructure or inventory. Furthermore, the sharing economy fosters a culture of collaboration and community. Entrepreneurs can build businesses that emphasize social and environmental values, such as reducing waste, promoting sustainability, and enhancing community engagement. For example, platforms that facilitate the sharing of tools, clothing, or food can help reduce consumption and promote more sustainable living practices.

The flexibility offered by the sharing economy also means that entrepreneurs can operate on their own terms, setting their own schedules and determining their levels of involvement. This flexibility is particularly appealing in a world where traditional employment structures are increasingly seen as rigid and limiting. Moreover, the sharing economy's reliance on user reviews and ratings creates a transparent and merit-based marketplace. Entrepreneurs who consistently provide high-quality services or products can build strong reputations, attracting more customers and growing their businesses. This system of feedback also encourages continuous improvement and accountability.

However, the rapid growth of the sharing economy also presents challenges. Regulatory issues, concerns about job security, and the potential for exploitation are significant considerations that need to be addressed. Entrepreneurs must navigate these challenges while also leveraging the opportunities presented by the sharing economy to create innovative and sustainable business models. In conclusion, the sharing economy, driven by digital platforms, has revolutionized how goods and services are exchanged. It provides a dynamic and accessible environment for entrepreneurs to innovate, scale, and engage with communities. As the sharing economy continues to evolve, it will undoubtedly shape the future of entrepreneurship and economic activity in profound and exciting ways. We can analyse the sharing economy within a theoretical framework linking it to

the entrepreneurial ecosystem, highlighting its role in creating opportunities for digital entrepreneurs. Research demonstrates that digital entrepreneurship offers significant entrepreneurial opportunities (Kraus et al. 2019). One such example is how entrepreneurs exposed to knowledge spillovers are more likely to develop new ventures (Cuvero1 et al. 2023; de Andrade et al. 2023).

The Circular Economy, on the other hand, is the latest approach to merging economic activity with environmental sustainability, promoting long-term well-being (Murray, Skene, and Haynes 2017). This approach focuses on designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. The Circular Economy and its global adoption are increasingly crucial for sustaining the production of goods and services while addressing the growing consumer demand that places strain on the environment and society (Patwa et al. 2021). By reducing reliance on finite resources and minimizing environmental impact, the Circular Economy aims to create a closed-loop system where materials are continuously repurposed and reused.

Researchers and practitioners can now formally develop Circular Economy policies, regulations, and metrics, thanks to the availability of insights into its What, How, Where, and Why (Nobre and Tavares 2021). This formal development enables the establishment of standardized practices and benchmarks that can be adopted globally, ensuring a cohesive effort towards sustainability. These policies and regulations help guide businesses and governments in implementing Circular Economy principles, fostering innovation, and encouraging sustainable practices across industries. Incorporating informal entrepreneurship into studies of economic activity is crucial for the Circular Economy, as it helps to create a more comprehensive approach to sustainability that includes all aspects of production and consumption (Welter, Smallbone, and Pobol 2015). Informal entrepreneurship often involves small-scale, local, and community-based activities that can significantly contribute to the Circular Economy. These activities, which may not always be captured in formal economic analyses, can play a vital role in waste reduction, resource efficiency, and local economic resilience.

By integrating informal entrepreneurship, the Circular Economy framework becomes more inclusive, recognizing the contributions of all economic actors. This inclusivity ensures that sustainability efforts are holistic and representative of diverse economic activities, from large-scale industrial processes to grassroots initiatives. It highlights the importance of community engagement and local solutions in achieving broader environmental and economic goals. Overall, the Circular Economy represents a paradigm shift in how we approach production and consumption, emphasizing sustainability, efficiency, and innovation. Its successful implementation requires collaboration between governments, businesses, and communities, supported by robust policies and inclusive practices that recognize the value of both formal and informal economic activities. As global adoption of the Circular Economy grows, it holds the promise of a more sustainable and resilient future for all.

Sharing Economy Digital User Citizenship (SEDUC)

Digital User Citizenship (DUC) refers to the norms and regulations governing user participation in the digital world. In the context of the sharing economy, Sharing Economy Digital User Citizenship (SEDUC) specifically examines the relationship between users and sharing platforms, focusing on the interactions, trust, and legal frameworks that enable transactions and facilitate entrepreneurial opportunities within this ecosystem.

Sharing Economy Digital Infrastructure Governance (SEDIG)

Digital Infrastructure Governance (DIG) ensures a balance and stability within the digital entrepreneurial ecosystem. Sharing Economy Digital Infrastructure Governance (SEDIG) applies this concept to the sharing economy, focusing on the regulations, policies, and standards governing sharing platforms. This governance framework is crucial for the long-term sustainability of the sharing economy despite the potential disruptions it can cause in established industries, as revealed by qualitative research.

Sharing Economy Digital Marketplace (SEDM)

The Digital Marketplace (DM) quadrant of the DEE represents the sub-system where value is created and captured through various entrepreneurial activities. Similarly, the Sharing Economy Digital Marketplace (SEDM) focuses on the network of connected platforms and services within the sharing economy that enable digital entrepreneurship and generate new opportunities. This section explores the origins and dynamics of these platforms and their role in facilitating value creation.

Sharing Economy Digital Entrepreneurship (SEDE)

Digital Entrepreneurship (DE) arises from the combination of entrepreneurial agents and digital infrastructure within the DEE, leading to new avenues for opportunity. Sharing Economy Digital Entrepreneurship (SEDE) refers specifically to the entrepreneurial output resulting from the technology infrastructure and societal changes associated with the sharing economy. This quadrant, examined in the findings section, focuses on the characteristics and success factors of sharing economy entrepreneurs, both small and large.

Drawing on Audretsch et al. (2023) and Audretsch and Belitski (2023), Figure 2 explores the critical factors for success in sharing economy small and large firms, considering the specific context and challenges related to SEDUC, SEDIG, SEDM, and SEDE.

The study's propositions are as follows:

Awareness and Understanding: (1) Sharing economy firms positively recognize and grasp the long-term benefits of digital business practices.

DEE Support: (2) DEEs support sharing economy firms in adopting performance-enhancing practices.

Challenges to Digital Integration: (3) There are significant challenges that prevent sharing economy firms from incorporating digital business practices into their strategies.

	Sharing Economy Large Firms	Sharing Economy Small Firms
Critical Factors	Innovation; New design; New Market	Digital infrastructure; Market support; Competitor strategy
Non-critical Factors	Digital market support; Customer reviews; Competitor strategy	New product design; New customers

Figure 2. Small and large firms in digital entrepreneurship ecosystem.

Methodology

Given the exploratory nature of this research, the design aimed to delve deeply into respondents' perspectives to gain a nuanced understanding of the challenges and opportunities associated with integrating digital transformation processes (DTP) into firms' strategic plans. As outlined in the research objectives, it was crucial to explore the role of the sharing economy in creating avenues for digital entrepreneurs. Coe et al. (2017) argue that such a nuanced understanding can only be achieved and refined through iterative interactions between researchers and respondents.

Data collection & analysis

Given the qualitative approach and sample size, semi-structured interviews emerged as the ideal method for this study. The flexibility of this format allowed for in-depth probing with open-ended questions, encouraging interviewees to freely express their thoughts and interpretations (Byrne 2004; Noaks and Wincup 2006). This method avoided leading the conversation and enabled the organic identification and understanding of emergent themes. This approach allowed for the exploration of key areas not initially considered, leading to a comprehensive understanding of the relationship between the sharing economy and opportunities for digital entrepreneurs within the ecosystem.

To gather data, we conducted open-ended interviews with 88 sharing economy business managers. These interviews were primarily conducted face-to-face, with the flexibility to utilize Teams or Skype calls to accommodate interviewees' preferences. Each interview took one hour.

Sampling approach

As Byrne (2004) points out, qualitative studies often employ purposive sampling, where smaller, strategically chosen samples are more valuable than random selections. Rapley (2004) echoes this, emphasizing the importance of selecting cases that can provide in-depth information. Initially, this study utilized a non-probability, purposive sampling approach with heterogeneous sub-sampling. To expand the participant pool, we also employed snowball sampling after the initial interviews, wherein interviewees recommended potential contacts based on their relevance to the research.

Data analysis

According to Byrne (2004), qualitative data analysis involves deconstructing and reconstructing the data, a process known as thematic analysis. Noaks and Wincup (2006) define thematic analysis as a technique where researchers identify, analyse, and elaborate on themes within their data. To effectively analyse data, it's crucial to first establish its nature to choose the appropriate approach. Therefore, we focused on the emerging research themes from our data to facilitate thematic analysis (Dreyfus 1990). This approach revealed the connection between the sharing economy and opportunities for digital entrepreneurs.

Applying thematic analysis expanded the potential audience for these findings (Boyatzis 1998), justifying the use of Gioia et al.'s data structure theory (2012) for this study. Following their framework, the analysis was organized into three distinct categories:

- (1) 1st Order Concepts: An initial, extensive list of categories for the collected data.
- (2) 2nd Order Themes: Deeper insights explaining the relationships between data sets.
- (3) Gestalt Analysis: (Gioia and Chittipeddi 1991) This level led to the formulation of new questions and ideas to explore in subsequent interviews.

In addition, we connected participant quotes to the corresponding first-order categories to provide clarity and context. For example, comments related to technological challenges were classified under barriers within the digital marketplace.

Finally, we distilled these themes into '2nd order aggregate dimensions', summarizing them and providing a holistic perspective of the findings (Pratt 2008). We acknowledged the potential for overgeneralization, a common criticism of Gioia's theory (Gehman et al. 2017), which can lead to vague results. Additionally, for comparisons between ecosystem elements, we employed ecosystem analysis techniques from Belitski and Büyükbacı (2021) and Godley, Morawetz, and Soga (2021).

Findings

In this section we critically assess the responses of participants, linking them to the second-order dimensions identified (the analysis also connects the quotes provided to the codes linked to the first-order categories). For instance, when discussing the barriers to the digital market, we highlighted specific quotes that illustrated common challenges such as regulatory inconsistencies and technological limitations. These barriers were then linked to the second-order dimension of the digital marketplace.

Barriers to Digital Market

Participants frequently mentioned regulatory inconsistencies as a significant barrier. One interviewee noted, 'The varying regulations across regions make it difficult to standardize our operations'. This comment, along with similar responses, was categorized under regulatory challenges in the first-order concepts and linked to the second-order dimension of the digital marketplace.

Opportunities within the digital market

On the opportunity side, many participants highlighted the potential for long-term cost savings through investment in digital infrastructure. For example, one manager stated, 'Investing in innovative digital marketplaces is expensive initially, but it pays off in the long run'. This was categorized under economic benefits and connected to the second-order dimension of the digital marketplace.

Collaboration and ecosystem dynamics

The need for greater consistency in Sharing Economy Digital Infrastructure Governance (SEDIG) was another critical theme. Participants emphasized that inconsistencies create regional disparities and unpredictability for sharing economy entrepreneurs. This insight was linked to the governance framework within the digital entrepreneurial ecosystem.

Digital entrepreneurial ecosystems: bridging traditional and digital worlds

The study identifies the Digital Entrepreneurial Ecosystem (DEE) as a unique blend of traditional and digital ecosystems that fosters entrepreneurial activities. Many participants highlighted the crucial role digitalization plays in their sharing economy businesses, emphasizing that without the internet, their entrepreneurial dreams would have remained unfulfilled. They acknowledged that unemployment and the absence of online platforms would have significantly hindered their ability to start their own businesses.

Digital as the lifeblood of business

One participant poignantly stated, *'My business revolves around the Internet. Without it, I don't know where I would be. I operate using Instagram, Facebook, and WhatsApp, and that's my main way of acquiring customers and delivering services'.*

This sentiment was echoed by many, solidifying the notion that the internet and technology are not just tools but the very lifeblood of these digital ventures. Participants emphasized the importance of online platforms in facilitating learning and self-development, crucial aspects of running their businesses successfully.

Staying ahead of the curve: digital trends and inspiration

For example, a fashion retailer shared, *'As a fashion retailer, it's very important for me to keep updated with current trends, fashion, and designs. So, I watch so many fashion videos on YouTube and search for new fashion inspiration. Then, I send the designs to my supplier, who ships them down to the market'.*

This quote highlights how digital platforms like YouTube become invaluable sources of inspiration and knowledge, allowing entrepreneurs to keep pace with the ever-evolving trends in their respective fields.

Showcasing the hustle: digital marketing takes centre stage

One of the most prominent themes that emerged from the study was the widespread use of existing technological applications to promote and showcase businesses. Participants consistently mentioned platforms like WhatsApp, Instagram, Facebook, and Snapchat as integral tools for digitizing their ventures.

One participant aptly captured this sentiment: *'The idea of technology is fascinating yet scary because if you think about it, it makes me realize that ten years ago, we wouldn't have been able to have a business because we wouldn't have had a clue. We learned everything online. We couldn't afford to have a shop, but now you can say our location for our business is WhatsApp, Facebook, and Instagram because that's where you can find us if you need us. Almost everyone uses these platforms to deliver services'.*

This statement underscores the transformative power of digital technologies in democratizing access to the marketplace. With a smartphone and an internet connection, these entrepreneurs can reach a wider audience and build successful businesses, even without a physical storefront.

In conclusion, the study reveals the vital role of the DEE in empowering digital entrepreneurs in the sharing economy. The ubiquitous presence of digital technologies, from social media platforms to online learning resources, has levelled the playing field and opened doors for individuals who might otherwise have faced significant barriers to entry. As the DEE continues to evolve, it will be fascinating to see how technology shapes the future of entrepreneurship and empowers even more individuals to pursue their dreams.

Employability and human capital

Employability was a top concern for most participants, who viewed human capital as a key driver of growth in the sharing economy. Due to the specialized nature of many sharing economy businesses, recruiting the right talent was crucial.

As a bespoke fashion designer, I find it challenging to find skilled workers. Many claim to know how to sew, but end up harming my business due to their lack of expertise. Skilful artisans are essential for my business, which aims to empower young people with skills and create jobs.

The interviewees' responses strongly supported the claim that skills are essential for survival in the sharing economy. Reliance on a single income source was seen as risky.

'I firmly believe in having multiple skills. If one fails, you have a backup'.

Self-development and investment

Most participants acknowledged self-development as a core aspect of their businesses. They emphasized the need for continuous learning and improvement to adapt and grow their businesses. Financial investment in skill development was seen as crucial for expansion.

During the COVID-19 lockdown, I took online printing classes. Though it involved an expense, it was worth it. My print quality has improved significantly, and my customers are happier.

I've started taking sewing courses and even enjoy making clothes myself. Initially, I was only interested in the business side, employing tailors. Now, I can sew, not perfectly, but it has significantly improved my business.

Sharing Economy Digital User Citizenship (SEDUC)

User perceptions of the sharing economy

Across the interview samples, diverse perceptions of the sharing economy emerged, shaped by individual experiences and interactions. A young digital entrepreneur, perhaps influenced by the novelty of online platforms, viewed it as:

The sharing economy is this new phenomenon which is all about people using up their resources which aren't already used like time/money.

This perspective underscores the emphasis on resource utilization as a defining characteristic of the sharing economy. However, generational differences were also evident. Senior business owners and mentors presented a contrasting view:

As opposed to being a new phenomenon, sharing economies do work without a web-placed platform to do it and these principles have existed for years.

Their statement highlights the historical roots of sharing principles, even before the advent of digital platforms. This underscores the broader context of shared resources and mutual benefit that predates the modern sharing economy.

Trust as an enabling mechanism

Throughout the research, trust consistently emerged as a key enabler for the sharing economy, influencing the opportunities available to digital entrepreneurs. A participant explained:

I don't think before it (the sharing economy) could've worked so much because of the element of trust. Millennials like us have grown up with it, we are adaptable and used to technology, so we are more likely to trust people through it. I doubt our parents and grandparents are too keen on the sharing economy because of trust, they probably wouldn't trust people to use their house through Airbnb, but millennials will happily use Airbnb and trust these people, so these attitudes are a key driver.

This quote highlights the generational differences in trust within the sharing economy. Millennials, accustomed to online interactions and digital platforms, tend to exhibit higher levels of trust towards strangers. The participant also acknowledges the double-edged nature of trust:

The lack of trust puts a setback on the sharing economy

While trust facilitates transactions and fosters a positive environment, the possibility of bad actors can deter participation and hinder growth.

Another interviewee echoed these concerns:

You will always get bad people that trash things, but as a whole, it (the sharing economy) is based on the trust and respect between members.

This quote emphasizes the importance of collective trust and mutual respect as foundational pillars of the sharing economy. Despite the potential setbacks, trust remains a crucial element for its continued success. Overall, these corrected sentences and accompanying images provide a clearer and more nuanced understanding of user perceptions and the role of trust within the sharing economy.

Sharing Economy Digital Infrastructure Governance (SEDIG)

Policy and government support

The interviews revealed a lack of government involvement and policy support for sharing economy entrepreneurs. Participants expressed frustration with the perceived disinterest of the government in fostering their businesses' growth.

Government reforms that support entrepreneurial growth are non-existent in our sector. This is very disappointing as entrepreneurship is known to have become an integral part of economies globally and should therefore be driven forward. Our business, although registered, never got funded even when we sought for it.

This quote highlights the gap between government rhetoric and actual support for entrepreneurs. Participants also emphasized the need for policy reforms that would:

Create partnerships: Encourage collaboration between the government, private sector, and sharing economy platforms.

Offer financial support: Provide grants, loans, or tax breaks specifically for sharing economy ventures.

Foster a friendly entrepreneurial environment: Reduce bureaucracy, streamline regulations, and promote innovation.

These reforms would provide a much-needed boost for sharing economy businesses and contribute to their long-term sustainability.

Financial sustainability

The research revealed that most sharing economy entrepreneurs are self-funded or rely on family support. Some manage to secure funding through crowdsourcing, but this is often limited and unreliable.

I would not say there is any financial support, but there are funding opportunities available to only businesses that are qualified, connected, have corporate angles and viable. I was fortunate to be a recipient of this support. Also, they provide quarterly mentorship programs to businesses that have been chosen. I guess what I am driving at is there are no set out financial support programs, but as sharing economy entrepreneurs, we need to search, apply if not you get nothing.

This quote highlights the challenges faced by entrepreneurs in accessing funding. They often rely on luck, personal connections, and sophisticated business models to secure financial backing. Participants suggested the need for:

Scholarship schemes: Provide financial aid to promising entrepreneurs, especially from marginalized groups.

Vocational schools: Offer training programmes specific to the needs of the sharing economy.

Developmental aids: Create resources and support networks to help entrepreneurs navigate the challenges of starting and running a business.

These initiatives would help level the playing field for sharing economy entrepreneurs and unlock their full potential.

The research findings emphasize the need for government intervention and policy reforms to support the growth of the sharing economy. Providing financial assistance, creating a friendly regulatory environment, and fostering collaboration are crucial steps towards empowering entrepreneurs and unlocking the potential of this dynamic economic sector.

Influence of government regulation

The interviews highlighted the diverse perspectives surrounding government regulation's influence on the digital entrepreneurial ecosystem (DEE) and the sharing economy (SEDIG). While some participants viewed it as a necessary evil to level the playing field and protect existing businesses (e.g. taxi trade), others criticized it as over-restrictive and outdated, hindering innovation and growth:

Recent regulations have proven to be outdated and over-restrictive to SEDIG businesses, especially new ones. It contradicts the spirit of capitalism but is also a necessary evil to protect traditional businesses.

This quote captures the balancing act governments face in regulating SEDIG. While regulations can protect consumers and ensure fairness, excessive restrictions can stifle innovation and growth. The research suggests that finding the right balance is crucial for fostering a thriving DEE.

Human capital and skill development

Human capital was repeatedly emphasized as a cornerstone of the DEE. Participants recognized the importance of skill acquisition for both economic development and individual empowerment. One example highlighted this connection:

Within our sector, skill acquisition is the buzzword. As a wigmaker, we train young girls and equip them with the skills for wig making, increasing our workforce and empowering them financially.

This example showcases how investing in human capital can create a win-win situation: businesses benefit from a skilled workforce, while individuals gain valuable skills and financial independence. Participants also emphasized the need for accessible training programmes, such as apprenticeships, vocational education, and on-the-job training:

When I finished school, I couldn't afford university. My uncle introduced me to a carpenter who trained me and gave me the opportunity to learn the trade. That's all I needed. I retracted my university application, perfected the trade, and now run a carpentry school and own my own furniture shop.

This story demonstrates the transformative power of skills training. It can provide alternative pathways to success and empower individuals to become entrepreneurs and business owners.

The above findings provide a clearer and more nuanced understanding of the complex issues surrounding government regulation and human capital development within the DEE. They highlight the need for a balanced approach to regulation and the importance of investing in skill development initiatives to empower entrepreneurs and foster a thriving sharing economy.

Culture and entrepreneurship

The research paints a vivid picture of a booming entrepreneurial culture in your country, fuelled by digitalization and globalization. Digital platforms have lowered barriers to entry, making business

ownership more accessible and even trendy. Several participants highlighted the crucial role of culture in shaping this vibrant ecosystem:

In my community, almost everyone is an entrepreneur... This culture stems from the low barriers to entry and fosters a supportive environment, but also high competition and demand for skill development.

This quote illustrates how culture encourages and normalizes entrepreneurship. The prevalence of role models and the supportive environment can motivate individuals to embark on their own ventures. However, participants also acknowledged the competitive landscape and the need for continuous skill development to thrive in this dynamic ecosystem.

Another quote further explores the intertwined nature of culture and entrepreneurship:

Culture is a way of life, and so is entrepreneurship. Even those in full-time jobs engage in 'side hustles', representing informal sector entrepreneurship. I'm a lawyer and a fashion retailer on the side!

This highlights how the entrepreneurial spirit permeates different facets of life. Many individuals pursue additional ventures, blurring the lines between traditional employment and entrepreneurial pursuits. This entrepreneurial mindset reflects the cultural influence and creates a dynamic mix of formal and informal businesses. The definition of entrepreneurial journeys as either 'opportunistic' or 'survivalist' adds another layer of complexity. The cultural context likely influences which path individuals choose. For example, a supportive environment with accessible resources might encourage opportunistic ventures, while challenging economic circumstances might lead to survivalist entrepreneurship.

The above findings present a nuanced understanding of the relationship between culture and entrepreneurship in your country. They highlight the enabling role of culture, the competitive landscape, and the blurring lines between formal and informal entrepreneurship. The research points to a thriving ecosystem shaped by cultural norms, digitalization, and individual aspirations.

Sharing Economy Digital Marketplace (SEDM)

Local market

The interview findings reveal a supportive local market as a key driver for sharing economy businesses. Even with high competition, participants noted the uniqueness and niche potential for creative ventures.

I'd say the local market is really good for small businesses because if marketing is done well there is always someone in need of your services or product.

This quote highlights the market access and potential customer base offered by the local environment. However, some participants also mentioned the limited presence of foreign investors as a factor influencing their operations.

Lack of digital infrastructure

The research emphasizes the crucial role of digital infrastructure in fostering entrepreneurial growth, especially for communities reliant on it for economic development. Participants underscored the importance of accessible and affordable technology (DTP) for the new economy:

How can we smoothly adopt the digital economy when we don't have the infrastructure to facilitate it? Even downloading Zoom took me 30 minutes, and it keeps reconnecting during our call. Imagine potential clients? They'd lose interest instantly. We need better, cheaper network providers.

This quote clearly illustrates the challenges posed by poor and expensive digital infrastructure. It can hinder communication, limit market reach, and ultimately stifle business growth.

Cost of digitalization

The research identifies the cost and limited awareness of digitalization as major challenges for many communities. Less educated or rural entrepreneurs often lack the knowledge and resources to leverage digital tools effectively, resorting to survivalist approaches instead of growth strategies.

Most people in the sharing economy are less educated or operate rurally. They have limited access to the idea of digitalization and how to apply it to their business. This leads to a survivalist approach.

This highlights the need for digital literacy initiatives and affordable access to technology to bridge the digital divide and empower these entrepreneurs.

Lack of appropriate funding

Funding concerns were closely linked to policy and infrastructure challenges. Participants expressed difficulty in acquiring technical and vocational skills due to high training costs. Additionally, access to affordable loans was seen as limited, with government loan options being scarce and private lenders offering prohibitive interest rates.

Whether digital or not, any business needs funding to be sustainable. Many people lack access due to few government loan houses and high private lender interest rates.

This points towards the need for improved access to financing options tailored for entrepreneurs, with reduced interest rates and targeted schemes for skill development.

The above findings provide a clearer picture of the challenges and opportunities faced by sharing economy entrepreneurs in your country. The research highlights the importance of a supportive local market, robust digital infrastructure, digital literacy initiatives, and accessible funding mechanisms for fostering their growth and unlocking the full potential of the sharing economy.

Enhanced connectivity

The research reveals enhanced connectivity as a defining feature of the digital marketplace (DM). Technological advancements and a growing acceptance of online trust have facilitated deeper connections between consumers and businesses. This seamless communication plays a crucial role in the DM's success, enabling effective customer service and personalized experiences. One participant aptly captured this:

It's all about connectivity, advice, support, and things like that... That's what the ecosystem is all about, the connectivity for entrepreneurs which helps them grow.

This quote highlights the ecosystem's value in fostering connections that support and empower entrepreneurs. By providing access to information, mentorship, and collaboration opportunities, this connectivity becomes a key driver of business growth.

Capacity to build networks

Building on the theme of connectivity, the research identifies network building as one of the 'three flavours' of privilege within the DM ecosystem. Participants emphasized the critical role of strong networks in facilitating business success:

One of the three 'flavours' of privilege is access to networks, a key component to the health of the ecosystem which is facilitated by the theme of connectivity.

This quote underscores the interdependence between connectivity and network building. The enhanced online interactions facilitated by the DM create fertile ground for forming valuable professional connections. Another participant further elaborated:

As an employee within the sharing economy, I can vouch for the fact that it creates wonderful networking opportunities for me. I'm exposed and put in contact with a wealth of people on a regular basis through sharing economy platforms where we communicate and share our skills for mutual benefit and for the good of the business.

This personal experience showcases the practical benefits of DM's networking potential. Individuals can connect with others to share knowledge, skills, and resources, ultimately contributing to the success of both individual businesses and the broader ecosystem.

The above findings provide a deeper understanding of the critical role of connectivity and network building within the DM. They highlight how these factors contribute to improved communication, collaboration, and shared success, ultimately powering the DM's vibrant ecosystem.

Sharing Economy Digital Entrepreneurship (SEDE)

The research indicates that sharing economy platforms (SEPs) offer a wealth of new opportunities for digital entrepreneurs. Participants see these platforms as catalysts for inclusiveness and economic transformation, envisioning a future where resource sharing becomes the norm.

It's going to be more impactful to digital entrepreneurs because it's going to become more inclusive, everyone's going to be using it. . . I reckon in twenty-thirty years our whole economy is going to be based on the principle of sharing these resources, so this is going to impact digital entrepreneurs a lot in the future.

This quote captures the optimism and potential associated with SEPs. They are seen as democratizing access to resources and creating a level playing field for entrepreneurs, regardless of background or resources.

Alignment with research objectives and methodological framework

The authors clearly outline how their research findings, as presented in the discussion, are aligned with the study's objectives and methodological framework. They specifically mention D. Gioia's, Corley, and Hamilton (2012) data structure theory and how it guided the data analysis by categorizing it into four quadrants based on the digital entrepreneurial ecosystem (DEE) dimensions discussed in the literature review. To demonstrate this, the data structure composition was divided into the four quadrants from the digital entrepreneurial ecosystem discussed within the literature review, as illustrated below by [Figure 3](#). Accordingly, as crucial components of the digital entrepreneurial ecosystem, the main themes aligned with them were presented above.

This explanation allows readers to understand the rigorous approach taken in the research and builds confidence in the validity of the findings. It demonstrates how the data was systematically analysed and categorized according to relevant theoretical frameworks. The findings provide a clearer and more concise explanation of the research findings and their connection to the study's objectives and methodology. They highlight the potential of SEPs for digital entrepreneurs and offer insights into the future of the sharing economy.

Discussion

This study investigates the role of the sharing economy within the digital entrepreneurial ecosystem:

Impact of the Sharing Economy on Digital Entrepreneurial Practices

The findings confirm that the sharing economy significantly impacts digital entrepreneurial practices by enhancing market accessibility and fostering collaboration. This aligns with Isenberg's (2011) and

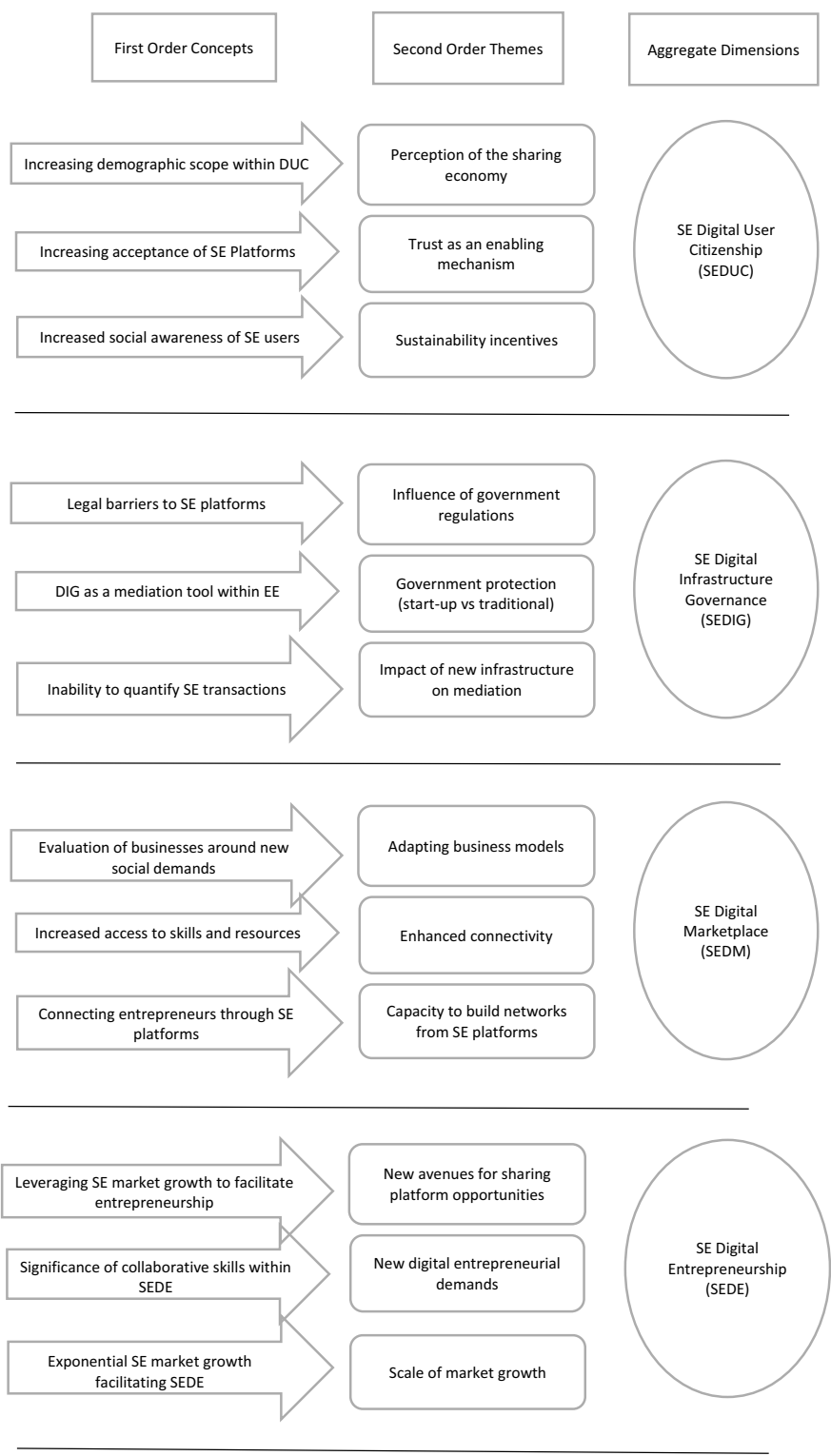


Figure 3. Data structure composition.

Sussan and Zoltan's (2017) frameworks, which emphasize the transformative role of digital platforms in entrepreneurial ecosystems. Our results support the theory that digital platforms within the sharing economy create new opportunities for entrepreneurs by reducing geographical barriers and facilitating innovative business models.

Barriers and opportunities in digital transformation practices

Our research identifies several barriers to DTP adoption, including financial constraints and technological limitations. These barriers are consistent with Boutillier, Levratto, and Carré (2016) observations that SMEs face unique challenges in adopting digital tools. However, the study also highlights opportunities, such as the potential for long-term cost savings and enhanced operational efficiency, which supports the notion that digital transformation can be a viable strategy despite initial hurdles. This confirms the theory that, while DTP adoption presents challenges, it can ultimately lead to substantial benefits for digital entrepreneurs.

Influence of DEE dimensions on entrepreneurial success

The analysis reveals that the DEE dimensions – cultural support, human capital, financial resources, and digital infrastructure – are crucial for the success of digital entrepreneurs in the sharing economy. The positive influence of a supportive culture and robust human capital is consistent with the literature, which underscores the importance of these factors in entrepreneurial success (Drucker 2015; Uliah 2019). Financial support and effective governance also emerge as critical dimensions, confirming the theoretical framework that emphasizes the need for organized support and policy reforms to foster entrepreneurial growth (Spooner and Booner; Sussan and Zoltan 2017).

Digital entrepreneurial ecosystem and its dimensions

The literature review establishes the digital entrepreneurial ecosystem (DEE) as a concept that merges the traditional entrepreneurial ecosystem (EE) with the transformative power of digitalization. This research focuses on the most relevant dimensions of the DEE for the growth and sustainability of informal sector entrepreneurs. Drawing on insights from Isenberg (2011) and F. C. Stam and Spigel (2016), we delve into three key areas:

- (1) Entrepreneurial Inputs and Outcomes of Sharing Economy and Digital User Citizenship: This explores the relationship between user behaviour and engagement within the sharing economy and its impact on entrepreneurial success.
- (2) Sharing Economy and Digital Infrastructure Governance: This examines the regulatory frameworks and policies governing the sharing economy and their influence on digital entrepreneurship.
- (3) Sharing Economy and Digital Marketplace (SEDUC, SEDIG, SEDM): This focuses on the interactions and dynamics within the sharing economy marketplace, analysing its role in creating opportunities for digital entrepreneurs.

By examining these interconnected variables, we gain a comprehensive understanding of how the DEE fosters digital entrepreneurship (DE). This, in turn, allows us to explore the specific ways in which the sharing economy can empower informal sector entrepreneurs to thrive.

Domains of the digital entrepreneurial ecosystem

The DEE builds upon and expands the traditional EE by incorporating the crucial role of digitalization. Here's a closer look at one of its key domains:

Culture

In the context of the Digital Entrepreneurial Ecosystem (DEE), culture includes the factors that nurture and support entrepreneurial endeavours. It covers the entire entrepreneurial process, from identifying opportunities to overcoming challenges within the environment. Societal norms and values play a significant role in determining how easily business ideas can be pursued and implemented without facing significant barriers (Uliah 2019).

The research highlights the positive impact of a supportive culture on the sharing economy in the informal sector. Businesses are successfully transitioning from ideas to implementation, despite the lack of established innovative practices. This success is attributed to the low barriers to entry and minimal setup costs compared to developed nations. Culture is crucial in shaping entrepreneurs, supporting the idea that they are often nurtured by their environment and social conditions (Uliah 2019). Additionally, participants emphasized the importance of promoting an entrepreneurial mindset among millennials through entrepreneurship education, further underscoring the role of culture in fostering a thriving DEE and empowering informal sector entrepreneurs.

Human capital

The research underscores the importance of education and skill development for success in the sharing economy. Participants highlighted the positive impact of entrepreneurial education in providing the necessary knowledge and mindset for navigating the entrepreneurial journey, aligning with the understanding of human capital as a key driver of success (Drucker 2015). However, the sharing economy faces unique challenges in finding and retaining skilled workers, with high turnover rates and labour shortages indicating the need for targeted skill development initiatives.

Investing in skill acquisition programmes is crucial for improving employability, reducing unemployment, and fostering the growth of the sharing economy, which can drive economic development. The research also emphasizes the interconnectedness of entrepreneurial ecosystems (EEs), noting that the success of multinational corporations (MNCs) with the right skills and knowledge highlights the importance of government reforms and supportive policies for human capital development. An increasing trend of educated individuals entering the sharing economy points to the need for normalizing skill acquisition across different social classes (Uliah 2019). Effective knowledge transfer and training schemes are necessary at both managerial and operational levels, and networking forums and educational initiatives can further foster a culture of entrepreneurship.

In conclusion, the research highlights the importance of embedding skill acquisition and development as a core component of human capital development within the sharing economy, requiring a holistic approach that considers the interplay of entrepreneurial culture, digitalization, and supportive policies.

Financial accountability

Access to financial resources is a critical concern for many participants in the sharing economy. Financial assistance, as research in developed economies suggests (Spooner and Booner), is essential for the establishment, growth, and sustainability of sharing economy ventures. The research

emphasizes the interconnectedness of different dimensions of the Digital Entrepreneurial Ecosystem (DEE) and the need for organized support and reforms to promote entrepreneurial activities. Participants highlighted the necessity for funds and grants specifically aimed at sharing economy SMEs to facilitate their growth and development.

In scenarios where financial support is limited, alternative mechanisms like access to machinery or equipment are crucial for entrepreneurs. Grants can support the initial stages of businesses and act as catalysts for expansion and sustainability, contributing to job creation and economic growth (Mujahid, Mubarik, and Naghavi 2019; Spooner and Booner). Overall, the research underscores the importance of addressing the financial needs of sharing economy entrepreneurs to unlock their full potential and enhance the sector's positive impact on the economy.

Government and policy reforms

The research underscores the critical need for government and policy reforms to support the sharing economy, highlighting the negative impact of current policies on entrepreneurship and businesses within this sector. Many sharing economy entrepreneurs operate in the informal sector, which hinders their access to government initiatives and benefits. To address this, the research suggests establishing organizations and trade unions focused on the informal sector. These entities can help build relationships between informal entrepreneurs and the government, promoting visibility and encouraging formalization. Formalization can, in turn, unlock access to government policies and support, enabling businesses to scale up and contribute more significantly to the economy (Spooner and Booner ; Wadee and Padayachee 2017).

Digital market dimension

Participants frequently attributed their business success to favourable conditions in both market and culture dimensions. The research confirms a positive market environment for small businesses within the sharing economy, marked by strong patronage and abundant opportunities. However, the ease of entry and low costs also result in high competition. Digitalization has significantly impacted the market dimension, making it more accessible and facilitating relationship building through the internet. This has led to partnerships and intensive supply chain management, enhancing efficiency and growth potential.

Digital networks

Digital networks, encompassing digital infrastructure, user citizenship, entrepreneurship, and marketplaces, are crucial to the sharing economy. The research explores the impact of digitalization on entrepreneurial growth within this sector, confirming through literature that digitalization is a global growth strategy across sectors. Frameworks like Isenberg's (2011) and Sussan and Zoltan's (2017) show how digitalization can be integrated into traditional entrepreneurial ecosystems (EEs) and benefit the sharing economy specifically.

Digitalization eliminates geographical and temporal barriers, aiding the development and implementation of business ideas. Technology hubs and networks facilitate relationship building and partnerships, driving the growth of the sharing economy. However, the research acknowledges that addressing digital transformation issues requires collaboration among multiple stakeholders. It emphasizes the need to raise awareness and foster collaboration within ecosystems to help sharing economy businesses incorporate digital practices into their strategies. Understanding the presence and role of different EE domains, particularly those supportive of the sharing economy's growth and development, is crucial.

Challenges of DTP adoption by sharing economy firms

The research highlights the unique challenges sharing economy firms face in incorporating digital transformation practices (DTP) into their business strategies. According to Boutillier, Levratto, and Carré (2016), small and medium-sized enterprises (SMEs) have inherent limitations compared to large enterprises in adopting these tools and techniques. Tilley (1999) emphasizes that it is unrealistic to expect SMEs to 'scale down' large-scale DTP solutions. This underscores the crucial role of entrepreneurial ecosystems (EEs) in supporting SMEs, as confirmed by this research. These ecosystems provide resources and assistance to help businesses achieve sustainable performance goals. By combining Boutillier, Levratto, and Carré (2016) key forces driving DTP adoption with the EE domains explored in this study, the research identifies both similarities and differences, offering a valuable new contribution to the field.

Stakeholder conflicts and collaboration

While the identified forces are relevant for SMEs, they are not exclusive to them. The research highlights the presence of multiple stakeholders with varying motivations regarding digital business performance, which can lead to conflicts of interest and hinder progress. Isenberg and Onyemah (2016) provide an example of multinational companies collaborating to address environmental challenges, illustrating the influence of the 'support' domain in the EE even for large firms. This research builds on that by showing how large enterprises also engage in partnerships with other companies. Certification schemes, identified as supportive partnerships, aim to raise awareness and encourage better business practices. However, as F. C. Stam and Spigel (2016) note, these schemes can be prohibitively expensive for SMEs, often discouraging their participation.

Size-based differences in DTP adoption

The research revealed significant differences in digital transformation practice (DTP) adoption between large and small firms in the sharing economy. Large firms did not see finance and market domains as influential, as these were not mentioned in their interviews. In contrast, SMEs highlighted issues with access to external funding and a perceived lack of tourist preference for DTP offerings. The domains identified for SMEs aligned with Dewhurst and Thomas's (2003) study on DTP adoption forces. However, literature on the DEE surrounding large firms was limited. While Esty and Winston (2009) heavily documented the 'support' domain, this study also identified policy, culture, and human capital as influential factors for large firms and their entrepreneurial ecosystems (EEs). The research challenges the notion that sharing economy businesses simply follow size-based trends in DTP adoption. While Dewhurst and Thomas (2003) suggest that many such firms are hesitant to change their practices, this study found that SMEs are willing to integrate DTP, despite initial costs, with the expectation of long-term savings.

Impact of Shared Economy Digital User Citizenship (SEDUC) on SEDE

The research indicates that while Sharing Economy Digital User Citizenship (SEDUC) is crucial within the Digital Entrepreneurial Ecosystem (DEE), its impact on digital entrepreneurship (DE) depends partly on the technological capability of users nearby (Acquier, Daudigeos, and Pinkse 2017; Laurell and Sandström 2017). Therefore, the success of DE initiatives in the sharing economy requires fostering user engagement and ensuring a sufficient level of technological literacy among potential users. Furthermore, the research highlights the importance of trust in sharing economy platforms. An increasing sense of trust boosts user engagement, creating more opportunities for digital entrepreneurs who develop 'match-

making’ platforms (Evans and Schmalensee 2016; Khlystova, Kalyuzhnova, and Belitski 2022). This finding aligns with Davidsson’s research, suggesting that trust gained through personal engagement is a key entrepreneurial input for DE.

Sharing Economy Digital Infrastructure Governance

Sussan and Zoltan (2017) highlight the essential role of Digital Infrastructure Governance (DIG) in coordinating and setting technological standards for entrepreneurial activities. Achieving legitimacy, as defined by Autio and Thomas (2018), requires aligning operations with governance, either by adhering to established rules or creating new ones through manipulating meanings, instrumentality, and regulations. This is particularly relevant in the sharing economy, where unique logistics redefine traditional business principles (Acquier, Daudigeos, and Pinkse 2017; Laurell and Sandström 2017), affecting governance in distinct ways. Isenberg (2013) argues that a thriving entrepreneurial ecosystem (EE) needs large companies to help cultivate it, whether intentionally or not. This underscores the critical role of large sharing economy companies within the DEE in nurturing startups. Over-regulation within the DEE can hinder startups that depend on its thriving state for success. Thus, facilitating startups is a collective responsibility shared by local and national actors, including academic institutions, large corporations, and governing bodies, to enhance digital entrepreneurship (DE) and create new opportunities within the DEE (see Figure 4).

Visible barriers to governance present both challenges and opportunities for startups. Some may need mediation from larger players to stay competitive (Morris, Lewis, and Sexton 1994; Sussan and Zoltan 2017), while others might benefit from less stringent regulations (Frenken and Schor 2017) (see Table 1).

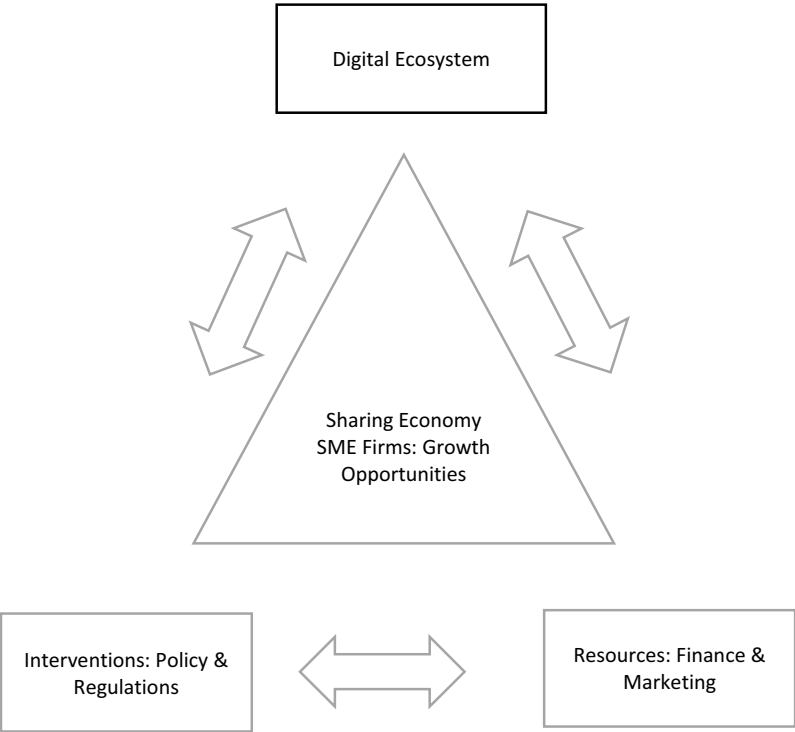


Figure 4. Sharing Economy SME growth factors.

Table 1. DE Development.

Support for Governance	DE Impact	DE Development
Policy support	Available support for start-ups can lead to competition within the DEE	Policy support available in areas like technology and skills
Governance attention	There're now incentivizes available for new start-up formation and growth	Firms can utilize government and policy support to enhance their opportunities
Governance environment	Less geographical disparity as all entrepreneurs now have better incentives	Firms can collaborate and meet the market challenges more effectively
Innovations & skill development	New product development opportunities for growth	Firms become more innovative and spend on research and development

Digital entrepreneurship

Connections between infrastructure, agents, and DE

This analysis explores the connections between infrastructure, agents (people), and digital entrepreneurship (DE) within the sharing economy. The authors aim to understand how interactions with DE from other sectors impact the Digital Entrepreneurship Ecosystem (DEE) and the opportunities for digital entrepreneurs.

They examine the interconnectedness and mutual influence of the four 'quadrants' (variables) within the DEE, analysing each quadrant's relationship with DE as a distinct entity. This dynamic discussion clarifies how each quadrant specifically contributes to creating opportunities for digital entrepreneurs in the sharing economy. The analysis integrates Sussan and Zoltan's (2017) DEE framework with Isenberg's (2011) EE model to explore entrepreneurial inputs and outputs within each facet of the DEE. This examination reveals the extent to which each element fosters opportunities for digital entrepreneurs in the sharing economy context.

Cohesive equilibrium for DE sustainability

The discussion argues that the entrepreneurial outputs of the three quadrants – Shared Economy Digital User Citizenship (SEDUC), Shared Economy Digital Infrastructure Governance (SEDIG), and Shared Economy Digital Market (SEDM) – serve as entrepreneurial inputs for digital entrepreneurship (DE). However, sustainable digital entrepreneurship depends on maintaining a balanced equilibrium across all quadrants. Understanding this cohesion is essential to achieving the research objectives outlined in Table 2. Table 3 supports these findings through the employed coding system.

Conclusion

This paper explores how digital entrepreneurial ecosystems (DEEs) influence the adoption of digital business practices within the sharing economy. It traces the historical development of the entrepreneurial ecosystem from traditional to digital, leading to the conceptualization of the sharing economy business model. This overview aims to highlight how the sharing economy reshapes entrepreneurial scope, influences approaches, and creates new opportunities for digital entrepreneurs.

The study underscores the importance of social networks and connections, which facilitate access to new knowledge, skills, capital, resources, and markets. A lack of connections can significantly impede business success. Most participants identified private-sector startup events as crucial for building valuable connections with suppliers, customers, and markets, suggesting a need for increased government involvement in such events to support network formation. Social capital, recognized by participants, is beneficial for accessing markets, suppliers, and promotions, with entrepreneurs possessing high social capital enjoying several business advantages. Robust networks



Table 2. Summarizing the impact of the sharing economy on opportunities for digital entrepreneurs.

Model	Second Order Input	Connection to DE	DE Output	Impact on Opportunities within the DEE
<i>SEDUC – Shift in demographics</i>	<i>Perception Change</i>	Improving technological capability to enable a shift in demographic can increase the availability of assets and size of the market	<i>New avenues for sharing platform opportunities</i>	A shift in demographics will enhance DUC and can lead to a greater DM within the DEE, facilitating DE and consequently creating a myriad of opportunities for entrepreneurship
<i>SEDUC – Personal engagement</i>	<i>Trust</i>	Trust is viewed as the ‘currency of the sharing economy’, making sharing economy transactions possible	<i>Scale of market growth</i>	Increasing trust can improve DUC, in turn increasing engagement within the DM and creating scope for DE within the DEE
<i>SEDUC – Environmental incentives</i>	<i>Sustainability</i>	Sustainability is seen as an incentive for SE engagement	<i>New avenues for sharing platform opportunities</i>	Incentives of sustainability create scope for new avenues of growth within the DM, whilst also increasing engagement within DUC. This creates opportunities for entrepreneurs by increasing users in existing markets whilst also creating new ones
<i>SEDIG – Mediating influence</i>	<i>Regulation</i>	Plays an important role in ‘levelling the playing field’. Mediating DE within the DEE	<i>New digital entrepreneurial demands</i>	Can support start-ups but may also restrict growth of more mature sharing economy platforms, which may decrease DE and stifle the growth of the DEE
<i>SEDIG – Facilitation of start-ups</i>	<i>Protection</i>	Crucial to the facilitation of start-ups and the long-term sustainability of DE	<i>New avenues for sharing platform opportunities</i>	Can both help and hinder opportunities within the DEE, dependent on the context of the firm, as discussed in ‘facilitation of start-ups’
<i>SEDIG – Barriers to governance</i>	<i>Infrastructure</i>	Complexity of infrastructure can create inconsistencies and difficulties in regulating DE	<i>New avenues for sharing platform opportunities</i>	Dependent on the geographical and technical context of the firm, opportunities may vary dependent on the context, as discussed in ‘barriers to governance’
<i>SEDIM – Opportunity in transition</i>	<i>Adaptivity</i>	New demands and expectations of entrepreneurship can lead to a shift in market regimes	<i>New digital entrepreneurial demands</i>	Opportunities exist within the market space of key enabling mechanisms, which create new opportunities for DE
<i>SEDIM- Sharing of assets</i>	<i>Connectivity</i>	Increased sharing of assets increases market scope to facilitate DE	<i>New avenues for sharing platform opportunities</i>	Increased opportunities for DE, as entrepreneurs can leverage increased market space and availability of resources, giving more scope for new platforms/services
<i>SEDIM – Integration of ecosystems</i>	<i>Network capacity</i>	Network capacity enables the integration of ecosystems, providing the intangible benefit of knowledge/skill share to enhance DE	<i>Scale of market growth</i>	Creates an intangible synergy within the DEE through greater access to skill/knowledge

Table 3. Evidence on DE and Sharing Economy (examples/codes).

Variable	Interviews	Codes
Digital Entrepreneurial Ecosystem	<i>I operate using Instagram, Facebook and WhatsApp and that is my main form of acquiring customers and delivering service</i> <i>As a fashion retailer, it is very important for me to keep updated with current trends, fashion and designs, so I watch so many fashion videos on YouTube and search for new fashion inspiration and then send the designs to my supplier</i> <i>During the COVID-19 lockdown, I took some classes that helped in developing my printing skills, I took those classes online and although I had to pay I believe it was worth it because the price of my prints have significantly increased and my customers are happy with what they get</i> <i>I find myself taking courses and finding interest in sewing and actually making clothes, initially that was not the case because I was only interested in the business side of things</i>	Increased social awareness of SE users – First Order Concepts SEDUC Increased access to skills and resources – First Order Concepts SEDM Enhanced connectivity – Second Order Theme SEDM Increased access to skills and resources – First Order Concepts SEDM Enhanced Connectivity – Second Order Theme SEDM Increased access to skills and resources – First Order Concepts SEDM Enhanced connectivity – Second Order Theme SEDM
Sharing Economy Digital User Citizenship	<i>The sharing economy is this new phenomenon which is all about people using up their resources which aren't already used like time/money</i> <i>I don't think before it (the sharing economy) could've worked so much because of the element of trust.</i> <i>Millennials like us have grown up with it, we are adaptable and used to technology, so we are more likely to trust people through it.</i> <i>The difference now is that customers understand why everyday actions are becoming important for the environment. People are more aware than ever before</i>	Increasing acceptance of SE platforms – First Order Concepts SEDUC Trust as an enabling mechanism – Second Order Themes SEDUC Trust as an enabling mechanism – Second Order Themes SEDUC Sustainability incentives – Second Order Themes SEDUC
Sharing Economy Digital Infrastructure Governance	<i>Government reforms that support entrepreneurial growth are non-existent in our sector. This is very disappointing as entrepreneurship is known to have become an integral part of economies globally</i> <i>I would not say there is any financial support but there are funding opportunities available to only businesses that are qualified, connected, have corporate angles and viable</i> <i>I believe that given the right support entrepreneurs can be empowered to contribute significantly to the prosperity and social development of our community</i> <i>In my community almost everyone you meet is an entrepreneur . . . this has set a pace for the culture and can be seen as a result of the low barriers to entry</i>	Influence of government regulation – Second Order Themes SEDIG Evolution of businesses around new social demands – First Order Concepts SEDM Leveraging SE market growth – First Order Concepts SEDE Capacity to build networks from SE platforms – Second Order Themes SEDM
Sharing Economy Digital Marketplace	<i>I'd say the local market is really good for small businesses because if marketing is done well there is always someone in need of your services or product</i> <i>It's all about connectivity, advice, support and things like that. . . That's what the ecosystem is all about, the connectivity for entrepreneurs which helps them grow</i> <i>Originally business rejected it and tried to stop it, artists hated it, but when the model got to the point where it would be here to stay, people adapted to create a model that worked</i> <i>As an employee within the sharing economy, I can vouch for the fact that it creates wonderful networking opportunities for me</i>	Increased access to skills and resources – First Order Concepts SEDM Enhanced connectivity – Second Order Theme SEDM Adapting business models – Second Order Themes SEDM Enhanced connectivity – Second Order Theme SEDM
Sharing Economy Digital Entrepreneurship	<i>Different forms of entrepreneurship within the sharing economy mean you do not have to be experts in a field, instead you need to recognise the things that exist, you license the technology and assemble what you need.</i> <i>It's going to be more impactful to digital entrepreneurs just on the basis that it's going to become more inclusive, everyone's going to be using it</i>	New digital entrepreneurial demands – Second Order Themes SEDE Exponential SE market growth facilitates DE – First Order Concepts SEDE

and technology infrastructure were found to significantly impact business performance, with social media platforms enhancing operations and sales. Business connections can serve as both opportunities and obstacles to a firm's survival.

Overall, networks and technology are critical components influencing a business's digital performance, as evidenced by increased sales and improved operations. Finance is another critical factor for sharing economy startups, presenting both opportunities and barriers. Access to funding can spur growth, while financial limitations can hinder progress. Contrary to the literature suggesting SMEs often lack the resources to implement digital transformation practices (DTP) (Dewhurst and Thomas, 2003), this study found that size was not seen as a significant barrier among sharing economy SMEs. This suggests that there may be alternative barriers specific to the sharing economy that require further investigation.

Barriers and resilience in the sharing economy

The main barrier identified was the lack of public policy support for sharing economy firms. Despite this challenge, the interviewed firms showed remarkable resilience and resourcefulness, which opens opportunities for mainstreaming digital transformation practices (DTP) within the sharing economy and building a more supportive entrepreneurial ecosystem. The research significantly extends existing literature by offering a contextualized analysis of how each facet of the Digital Entrepreneurial Ecosystem (DEE) interacts with digital entrepreneurship (DE) within the sharing economy. It highlights the direct contributions of the sharing economy to each aspect of the entrepreneurial ecosystem and investigates how the sharing economy creates new opportunities for digital entrepreneurs. Table 2 delves deeper into these connections, aligning with the second research objective.

The research underscores the critical role of governance, particularly in the context of Shared Economy Digital Infrastructure Governance (SEDIG). However, it reveals a lack of consistency and clarity in governance approaches across different regulatory bodies, creating unpredictability and challenges for digital entrepreneurs in the sharing economy.

Theoretical contributions

This study advances the theoretical understanding of the digital entrepreneurial ecosystem (DEE) by addressing a significant gap identified in the existing literature: the integration of the sharing economy within entrepreneurship frameworks, particularly in the context of societal transitions. While prior research often overlooks the intersection of the sharing economy and digital entrepreneurship, our study fills this void by investigating how the sharing economy influences and interacts with various dimensions of the DEE.

We contribute to the theoretical discourse by merging Isenberg's (2011) traditional entrepreneurial ecosystem model with the concept of digital entrepreneurial ecosystems. This hybrid framework provides a novel lens for analysing how different elements of the DEE – such as culture, human capital, financial accountability, and digital infrastructure governance – interact and influence digital entrepreneurship (DE) within the sharing economy. Our research highlights the importance of examining the sharing economy's role in shaping the DEE's dynamics and creating opportunities for digital entrepreneurs. By exploring the specific inputs and outcomes of key factors like digital user citizenship, infrastructure governance, and marketplace dynamics, we offer new insights into how these elements contribute to fostering digital entrepreneurship. This expanded perspective enriches current academic discourse and provides a comprehensive understanding of how the sharing economy can drive digital entrepreneurial success in various contexts.

Implications for policy makers and digital entrepreneurs

This research provides practical insights for both policymakers and digital entrepreneurs. By combining existing literature with their findings, the authors offer a nuanced understanding of the digital entrepreneurial ecosystem (DEE), guiding policymakers in sustaining it through governance. For digital entrepreneurs, the research highlights the opportunities and challenges within the sharing economy. The study adapts Acquier, Daudigeos, and Pinkse (2017) model on societal transitions to the sharing economy, emphasizing the significance of ‘enabling mechanisms’ as entrepreneurial opportunities. This adaptation extends existing theory by highlighting the importance of supportive mechanisms in unexplored research areas, potentially catalysing further industry research on digital entrepreneurship opportunities in societal transitions.

For digital entrepreneurs, the research offers guidance on capitalizing on the unique environmental factors of the sharing economy. By understanding the connections within the DEE, entrepreneurs can identify and exploit potential growth areas. The study also raises questions for governing bodies about the sustainability of mediation-based approaches in regulating the sharing economy, aiming to prompt reconsideration of governmental processes that might hinder development. Effective, long-term regulations can foster responsible sharing economy practices and vibrant opportunities for digital entrepreneurs.

The study highlights the importance of understanding societal transitions and their opportunities for digital entrepreneurs, noting a significant gap in existing literature on ‘enabling mechanisms’ and their impact on the DEE. This area holds potential for uncovering new opportunities for digital entrepreneurs within transitioning societies. Further research is needed to inform and empower entrepreneurs in these dynamic landscapes. A deeper understanding of governance’s role in the DEE is crucial for effective policymaking. The research suggests that reluctance to adapt governance alongside technological advancements in the sharing economy could negatively impact the ecosystem’s sustainability. Further research is needed to evaluate the interplay between governance, technology, and the sharing economy to develop responsible regulatory frameworks that support innovation and ethical practices.

Disclosure statement

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