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Navigating the landscape: Unveiling the reflection of AI in the sharing economy through bibliometric-based approach^{*1}

Veljko Uskoković², Milica Maričić³, Aleksandra Dacić-Pilčević⁴,
Veljko Jeremić⁵

Abstract

Recent scholarly attention has surged in integrating artificial intelligence (AI) across various scientific domains, prompting a closer examination of AI's pervasive influence on economic paradigms like the sharing economy (SE). This study delves into the multifaceted intersections of AI within the SE, employing a bibliometric-based analytical framework. By establishing a terminological grounding in AI, the study surveys a broad spectrum of AI applications in the SE, culminating in a bibliometric analysis that identifies emerging themes and trends. Analysing literature metadata from the Web of Science database over the past eight years, the focus is on citation topics within the SE. In-depth analyses, facilitated by the Bibliometrix R package, are applied to a curated selection of

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² Teaching Associate, University of Belgrade, Faculty of Organizational Sciences, Jove Ilića 154, 11000 Belgrade. Scientific affiliation: applied statistics, biostatistics, scientometrics. E-mail: veljko.uskokovic@fon.bg.ac.rs.

³ Assistant professor, University of Belgrade, Faculty of Organizational Sciences, Jove Ilića 154, 11000 Belgrade. Scientific affiliation: applied statistics, SEM analysis, multivariate statistical analysis. E-mail: milica.maricic@fon.bg.ac.rs.

⁴ European Medicines Agency, Domenico Scarlattilaan 6, 1083 HS Amsterdam, The Netherlands. Scientific affiliation: ICT & AI in health, Project Management in ICT. E-mail: aleksandra.dacicpilcevic@ema.europa.eu.

⁵ Full professor, University of Belgrade, Faculty of Organizational Sciences, Jove Ilića 154, 11000 Belgrade. Scientific affiliation: applied statistics, scientometrics, quantitative methods. E-mail: veljko.jeremic@fon.bg.ac.rs.

papers. The findings reveal key insights, such as how AI-driven text analytics significantly enhance customer satisfaction through user-generated reviews. Additionally, AI plays a crucial role in promoting energy-efficient behaviour in smart accommodations, while algorithmic oversight is increasingly integrated into digital labour platforms to balance automation with human dignity. Furthermore, AI optimizes resource allocation and improves matching algorithms on online labour platforms, thereby boosting platform efficiency. The study suggests future research avenues, advocating for broader exploration of AI's role in digital economic models and greater governmental involvement.

Keywords: *artificial intelligence, sharing economy, bibliometric analysis*

JEL classification: *D16, O35, O57*

1. Introduction

The expansion of diverse scientific multidisciplinary fields has yielded a plausible number of crisp practices in business, which have gained the potential and capabilities to change the world prosperously. One is the business model of the sharing economy (SE), characterised by sharing resources among peers via platforms, which has significantly impacted modern business and society (Daglis, 2022). It has blurred traditional roles and introduced innovative models of co-functioning (Maurer et al., 2020), improved the level of life satisfaction, introduced holistic social incorporation in local communities (Szymańska, 2021), and fostered sustainability through technology-mediated interactions (Carrigan et al., 2020). However, its societal implications are not thoroughly analysed (Mont et al., 2020). Therefore, it is beneficial for both academia and policymakers to acknowledge modern tendencies of the sharing economy development towards sustainable functioning societies and business models (Sigler and Corcoran, 2021). Future ameliorations in the field might inevitably be fostered by integrating other modern technologies, such as artificial intelligence (AI), with its corresponding capacities, tools and opportunities. Understanding modern businesses might be equally important as understanding the possibilities of embedding technological breakthroughs. Notably, AI is of critical importance in contemporary business and society, driving transformation and innovation across various sectors (Sadiku et al., 2020; Dwivedi et al., 2021). AI enhances productivity, competitiveness, and customer experience (Njeru, 2023; Pendy, 2023). The rise of the application of AI in business and industry has led to improved collaboration and new business interactions (Bharadiya et al., 2023). AI is also a leading representative of transformative business innovation models, particularly in the digital economy (Maslak et al., 2021). Nevertheless, the ubiquitous utilisation of AI also engenders apprehensions regarding transparency and plausible risks (Khamis et al., 2019). Gradually, an issue of interconnection between SE and AI might be perceived as particularly important in navigating the landscape of their joint holistic-oriented impact on society. Spanning

from entanglements in transparency, privacy and security matters that are unequivocally essential topics in terms of acknowledging the application of AI in any industry to various unidentified opportunities for scaling up a business based in digital environments like sharing economy platforms, an enhanced understanding of interconnectedness between SE and AI is constructive.

Firstly, a fusion of two distinct modern phenomena, SE and AI, might be recognised as a firm act of innovation, considering the unfamiliar and unexamined potential of such a compatible grouping. Also, the work of Cockburn et al. (2019) broadened the horizon of the positive impacts of artificial intelligence on economic activities as a whole while highlighting the importance of policies promoting transparency and data sharing for stimulating research productivity and innovation-oriented competition. AI-based tools and technologies might significantly increase efficiency related to current economic tendencies, especially in the SE. Secondly, there have been studious implications stating that AI plays a crucial role in the SE, particularly in enhancing belief, matching assets, and apprehending participants' perspectives and opinions (Chen et al., 2022). Apart from strengthening day-to-day customer-related services and affairs, a combination of AI and SE has found its crucial role in solving persistent global medicine-oriented issues. Amongst many substantial intricacies in modern medicine, healthcare as a holistic concept has thrived, drawing particular attention from academia lately (Groenewoud et al., 2015; Taylor et al., 2020). More to the point, a procedure towards alleviating the scarcity of healthcare resources includes setting up a sharing economy model for the healthcare industry by implementing robust AI technologies and tools as a supportive background of the model (Wu et al., 2019). Thirdly, there is evidence regarding the successful effectuation of AI-related methods in optimising processes in the sharing economy business models. From utilising AI in assessing user routes in shared mobility systems (Kubik, 2023), recognising patterns of consumers' trust issues over the sharing economy platforms (Wu et al., 2017) to assessing distinguishable user profiles on accommodation sharing platforms (Ma et al., 2017). All presented above leads to the conclusion that an in-depth analysis of the connectedness of AI and SE is needed.

This study endeavours to explore and delineate the manifold intersections of AI within the sharing economy, employing a bibliometric-based analytical framework. Adopting a terminological grounding of AI, a comprehensive array of AI-related applications in the sharing economy is surveyed, culminating in a bibliometric-oriented analysis aimed at identifying emergent themes and trends. To accomplish the latter, a thorough bibliometric analysis has been conducted following the representative guidelines (Zupic and Čater, 2015; Funko et al., 2023). Resulting with a suggestion on future research avenues of the topic, the paper outlines the potential implications of the body of knowledge examined towards practitioners and policymakers. Given the paper's objective to furnish a

delineation of the subject matter, it may be beneficial to address the subsequent research questions:

RQ1: What constitutes the intellectual framework underpinning the body of knowledge investigating the interrelationship between the sharing economy and artificial intelligence?

RQ2: What does the landscape of potential future research avenues of the topic consist of?

In general, the paper might enrich the domain of current research tendencies covering both SE and AI in a way that may outline their joint prosperous capacities rather than shedding light on their prominent capabilities. The main body of the paper is systematised as follows. The second chapter underlines major findings while considering the topics of interest in the research. Then, in the third chapter, the methodological background of the paper is presented. In the fourth chapter, a grasp of the most beneficial results is summarised. The fifth chapter consists of a delineation of major bibliometric and qualitative findings. The final chapter presents a holistic overview of an endeavour to encircle the research outcome.

2. Literature review

To comprehensively examine the topic and its associated research domain, this study presents a succinct yet thorough overview of existing scholarship. Divided into three segments, the chapter initially explores critical elements of the SE, followed by an analysis of the core components of AI. Finally, recent academic interests and emerging trends within AI and SE are discussed, laying the groundwork for future research in this dynamic field and guiding scholarly endeavours toward innovative advancements.

2.1. The SE as a contemporary business model

In recent decades, extensive literature reviews have been done to scrutinise and better understand the business model of the sharing economy. Since it is heterogeneous and spans various fields of consumer studies and modern business models, the overview herein focuses on multiple applicational aspects of the sharing economy.

A plethora of academic viewpoints unfolds in the discourse surrounding the sharing economy as researchers attempt to grasp its multifaceted nature (Česnuitė et al., 2022). Central to this discussion is the conception of the sharing economy as a transformative socio-cultural phenomenon, wherein ownership of goods and

services transitions to a framework of sharing and renting, a concept underscored by Avram et al. (2017). Furthermore, Frenken and Schor (2019) delve deeper into the interpersonal dynamics inherent in this economy, characterising it as a mutual guarantee between parties, often motivated by financial incentives. Meanwhile, Martos-Carrión and Miguel (2022) shed light on its positive ramifications, elucidating how it empowers consumers to manage resources more efficiently while opening new avenues for profit for service providers. In a contrasting view, Česnuitytė et al. (2022) highlight the SE's divergence from traditional business models, pointing out its propensity for hyper-consumption and the presence of ambiguous legal frameworks. Expanding on these perspectives, Manuel et al. (2012) propose a broader conceptualisation, framing the SE not merely as a monetary and commercial sector but as a societal ethos grounded in fundamental moral values. Thus, the discourse surrounding the sharing economy encompasses a rich tapestry of insights that span sociocultural, economic, and ethical dimensions, especially entangling trust issues on platform-based businesses (Köbis et al., 2021).

Consequently, SE encompasses several related concepts, functioning as an umbrella term (Lampinen, 2021). Two essential notions generalised under this concept are the face-to-face exchange of goods and demand-based work. Interestingly, intercultural differences exist in understanding this concept across different continents (Majima et al., 2021). In Japan, efficiency in achieving economic effects dominates perceptions, while in Sweden, the focus is on the eco-sustainable significance of sharing economy effects. As per means of this paper, identified subtypes of the SE include the gig economy, collaborative economy, on-demand economy, mesh economy, access-based economy, collaborative consumption, crowd-based capitalism, peer-to-peer economy and digital matching firms (Bojković et al., 2022). A collaborative economy closely resembles a sharing economy, but it involves precisely three actors and an abstract administrative sense of resource sharing (Richardson, 2015). Collaborative consumption pertains to practical sharing applications without strict ownership regulations (Hamari et al., 2016). An on-demand economy connects supply and demand for resources based on explicit demand initiation (Maselli et al., 2016). A mesh economy emphasises optimal resource utilisation through direct communication, often without intermediaries (Turi et al., 2017). An access-based economy prioritises resource access while minimising ownership complications (Acquier et al., 2017). The gig economy revolves around freelance work arrangements (Vallas and Schor, 2020). The peer-to-peer economy involves direct communication between parties without intermediaries (Selloni, 2017). Crowd-based capitalism encompasses the societal impacts of the sharing economy, reflecting its global and decentralised nature (Kaushal, 2017). Digital matching firms facilitate resource sharing through software platforms (Zhou and Wan, 2022). Each subtype uniquely contributes to the sharing economy's multifaceted landscape, highlighting diverse socio-economic dynamics.

2.2. The essence of AI

Defining artificial intelligence is a second-to-none process for expressing the difficulty of providing an exact, precise, and concise answer. Probably the finest way to discuss the latter is to state that there is no widely accepted definition of the topic, resulting from a deeper philosophical issue of explaining what intelligence is (Devedzic, 2022). However, a notable attempt to accomplish this perplexing problem is hidden under the assumption that AI is a theory of applicational advances of computer science which strive to perform tasks and activities demanding raw human intelligence occupying various processes from speech recognition to decision-making (Oxford Reference, 2024). Furthermore, researchers are tirelessly trying to encompass the essential parts of explaining AI. According to Morandín-Ahuerma (2022), it epitomises the computational prowess enabling machines or computer systems to undertake activities traditionally aligned with human cognitive faculties, notably encompassing logical inference, adaptive learning, and intricate problem-solving. This capability relies on machine learning paradigms and technologies, with classifications based on cognitive capacity and autonomy. Additionally, within specific contexts, AI is denoted as augmented intelligence (Pashkov et al., 2020).

On the one hand, AI offers numerous benefits in contemporary business models, including improved decision-making and task automation (Jelonek et al., 2020). It may create new business value streams (Perifanis and Kitsios, 2023) and drive business model innovation (Neuhüttler et al., 2020). However, its practical implementation and strategic usage pose challenges (Kitsios and Kamariotou, 2021). Nevertheless, AI's potential to enhance collaboration between humans and machines is also noteworthy (Verhezen, 2020). Moreover, incorporating AI into business paradigms presents an avenue for adeptly navigating and mitigating digital vulnerabilities inherent in global markets (Buntić et al., 2021). On the other hand, concerns about biased algorithms, privacy, and cyber threats need to be addressed (Verhezen, 2020; Zubalj et al., 2021). Also, the impact of AI on businesses, including potential job loss and the need for retraining, is a crucial consideration (Geisel, 2018). Finally, when embedding its capacities and capabilities into systems of the utmost importance to society, e.g. healthcare, it raises complex issues related to safety, efficiency, privacy, and liability (Pashkov et al., 2020).

2.3. The nexus of SE and AI

Considering the implicit interconnectedness between the two topics, which might also be noted as explicit by gradually understanding the foundation mentioned above of both SE and AI, an issue of in-depth scrutinisation of such a connection between them arises. More to the point, exploring how

complementary applications of SE and AI might find their beneficial role in developing and maintaining contemporary business models is a perplexing issue which goes beyond the research questions at stake. Therefore, a straightforward understanding should establish a pathway leading to comprehensive solutions. An initial idea for achieving the latter might be recognised in research trends suggesting the importance of quantitative and qualitative estimation of the digital competitiveness of countries (Stankovic et al., 2021), as well as general consumers' attitudes towards the sharing economy, e.g. perception of young generations (Martinović et al., 2023). Indicatively, AI tools might be utilised to elicit business value streams following strategic sustainable goals established by policymakers. Meaningfully, this broadens the horizon of advancements of businesses related to the sharing economy, which, in turn, might promote social and economic development both locally and globally (Cui et al., 2021; Gao et al., 2022). Eventually, the following examination of the body of knowledge focuses on empirical findings in relevant literature referencing or proving the feasibility of combining AI tools and methods with the sharing economy platforms and business models.

3. Research methodology

A bibliometric analysis with relevant techniques is used to pursue a thorough methodological framework for navigating the landscape of AI's presence in the sharing economy. Prior to conducting the analysis, a careful paper selection is undertaken. In general, a concise overview of the methodology applied in the paper might be summarised in the following manner. The research's setup suggests using bibliometric analysis as a critical component with a two-fold rationale. Firstly, bibliometric methods, including performance analysis and science mapping, are crucial for understanding scientific knowledge and recognising potential deficiencies in research gaps and trends (José de Oliveira et al., 2019). To accomplish the latter, an efficient literature selection process precedes. Secondly, the analysis should be conducted using specific software tools designed to enhance the overall results and emphasise the output. Notably, various scientific metrics and visualisation tools are available for bibliometric and scientometric studies, each with strengths and limitations (Moral-Munoz et al., 2019).

A general research process workflow follows the guidelines Zupic and Čater (2015), which consists of five stages: establishing the research design, data acquisition, a particular analysis, visualisation of the results, discussion and possible implications. Since the research design is already stated, a data acquisition process is described in Figure 1.

Figure 1: Sequence of Web of Science queries executed for data collection

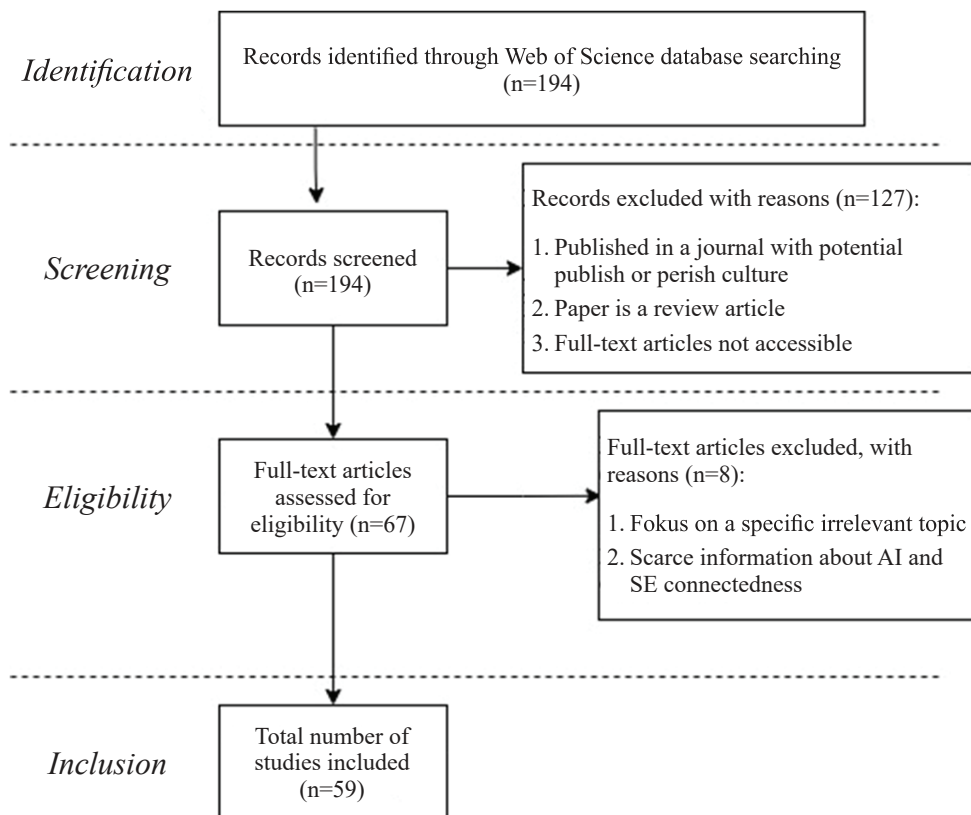
Query 1:	<ul style="list-style-type: none"> • topic: artificial intelligence OR (AI related terms) • time span: 2016-2023 • Indexes: SSCI, SCIE, ESCI and ASCI • n = 104,353
Query 2:	<ul style="list-style-type: none"> • topic: sharing economy • time span: 2016-2023 • Indexes: SSCI, SCIE, ESCI and ASCI • n = 4,047
Query 3:	<ul style="list-style-type: none"> • (Query 1) AND (Query 2) • n = 849
Query 4:	<ul style="list-style-type: none"> • (Query 3) AND (sharing economy related terms) • n = 204
Query 5:	<ul style="list-style-type: none"> • (Query 4) refined by (paper-type) • Articles and Review articles only • n = 197
Query 6:	<ul style="list-style-type: none"> • (Query 5) refined by Language (English) • n = 194

Source: Authors' construction

Web of Science is a database used for study due to its recognition as an authoritative source for bibliometric and scientometric works. On 18th March 2024, a specific sequence of queries executed over the database was conducted. A Bibliometric package embedded in the statistical program language R was used to run the bibliometric analysis for the data acquired. The analysis's output is presented through several visualisations in Chapter 4, including citation topics, co-words, and trending topics analysis.

Furthermore, selected papers have undergone additional scrutiny to enable the effective creation of a knowledge pool encompassing the research interest of this paper in terms of suggesting future research avenues and implications for policymakers. As an exemplary work following the research context, a paper by Xiao and Watson (2019) demonstrates the idea of choosing an adequate number of representative papers for a systematic literature review. Therefore, a semi-customised approach is used to specify papers of specific research interest that outline the future research agenda while providing evidence of AI's prospective role in SE (Figure 2).

Figure 2: Fine-grained assortment of studies for additional scrutiny



Source: Authors' construction

Essentially, the initial compilation of acquired scientific literature is the basis for bibliometric scrutiny. Subsequently, a secondary set of meticulously examined papers is employed to elucidate qualitative nuances pertaining to potential implications for stakeholders and future research trajectories. This dual approach facilitates the execution of both bibliometric and qualitative analyses, leveraging a comprehensive dataset for the former and a more focused dataset for the latter.

4. Empirical data and analysis

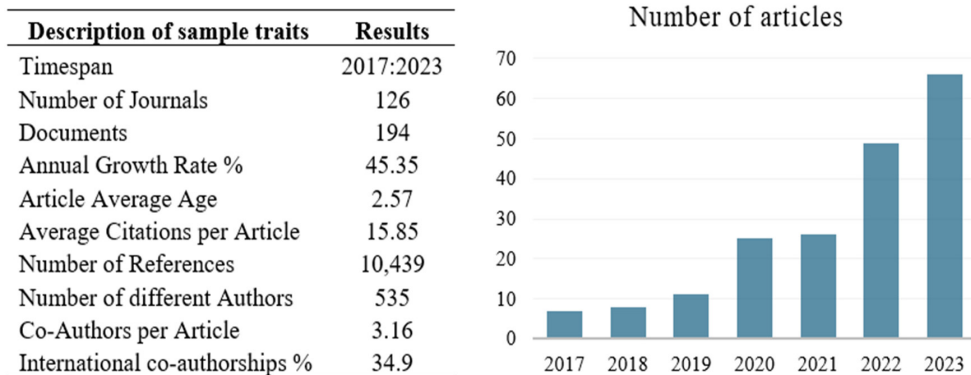
As the third chapter outlines, the research methodology consists of two consecutive phases. In the first phase, 194 scientific papers were selected from the Web of Science database (Figure 1) through a systematic search. These papers are analysed in the first part of the study and presented in subchapter 4.1, which focuses on bibliometric analysis. In the second phase, further scrutiny narrowed the selection to 59 papers

(Figure 2), most relevant to the research area examining the intersection of AI and SE. These 59 papers are used in subchapter 4.2, where implications for various stakeholders within the ecosystem are discussed. This phase sets the groundwork for developing a landscape of qualitative insights that provide various implications for participants in the ecosystem surrounding the AI and SE interrelation.

4.1. Bibliometric analysis

Initiating with an exposition of the bibliometric analysis findings, a concise overview of the fundamental insights gleaned from the sampled dataset is presented in Figure 3. As it suggests, there is a notable occurrence of international co-authorship where more than a third of all included papers are created in multinational cooperation. Also, a reminder following the initial queries executed over the chosen database states that the period is from 2016 to 2023. However, it is evident that no papers from 2016 satisfied the agglomerative conditions that followed in other queries. Additionally, a descriptive briefing might be encircled with information that affiliations leading in scientific production on this topic are those from China, Spain, the USA, and the UK, acknowledging that researchers from these countries are also production leaders.

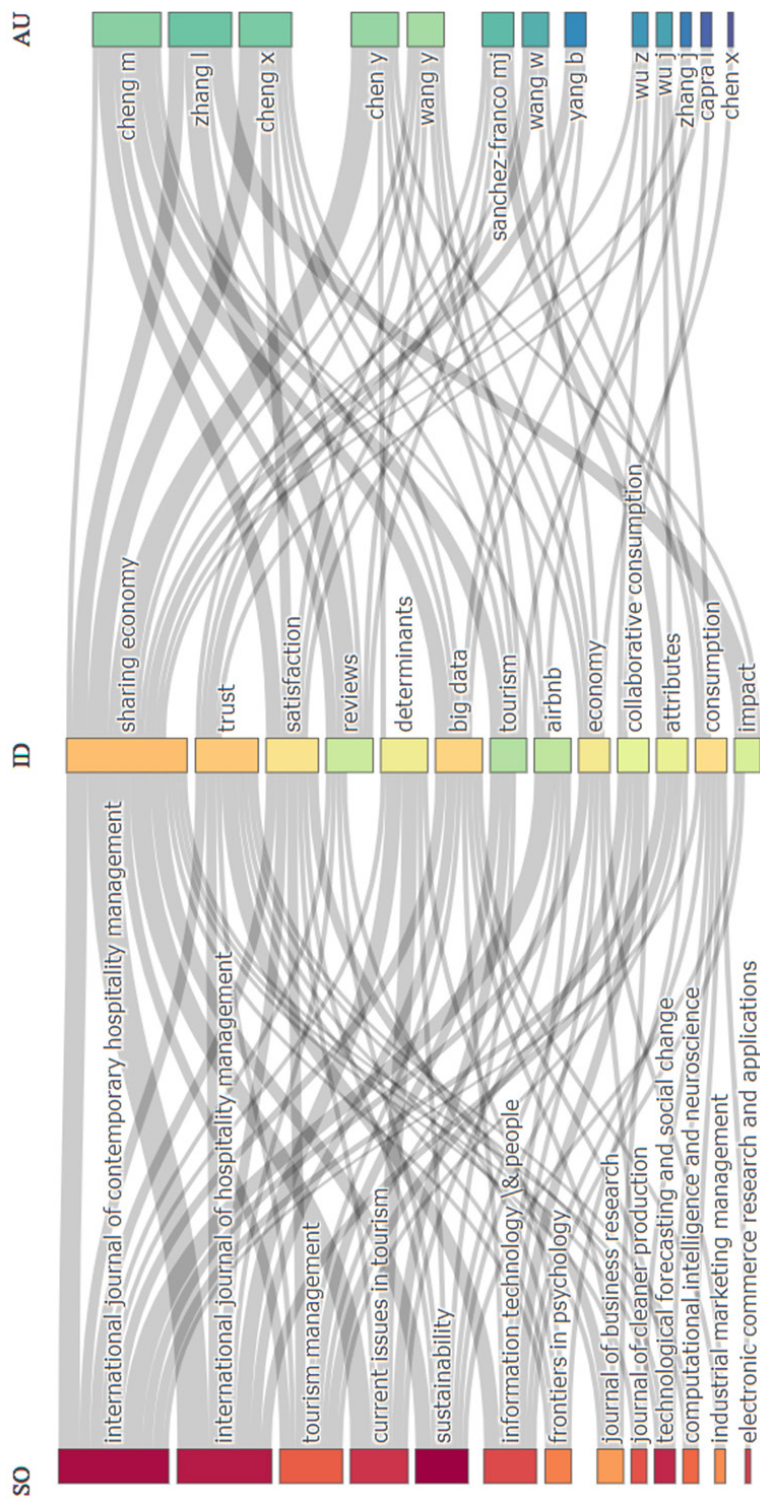
Figure 3: Overview of general sample traits



Source: Authors’ construction

A three-field plot diagram offers valuable insights into the interrelations among different bibliographic entities, connecting scientific journals (left), author keywords (middle), and authors (right), as seen in Figure 4. The size of each element reflects its fractional frequency within its column. This Sankey diagram presents the intricate relationships between journals, topics, and authors in sharing economy (SE) research.

Figure 4: Sankey's diagram – A three-field-plot representing a connection between journals, authors' keywords and authors



Source: Authors' construction

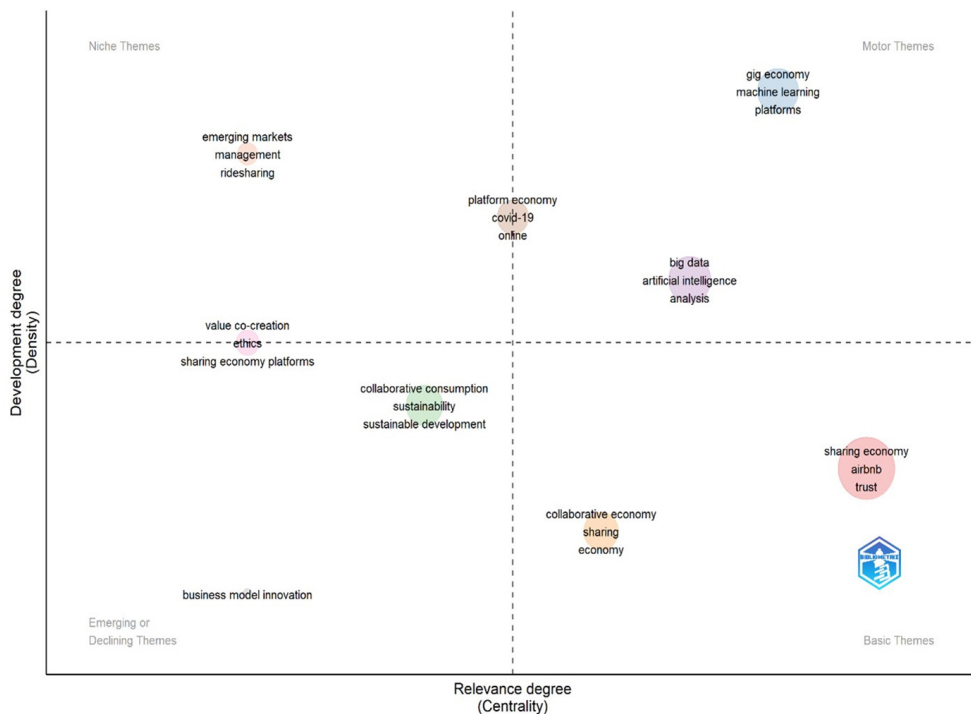
Journals such as International Journal of Contemporary Hospitality Management, Sustainability, and Tourism Management publish on various topics, including the sharing economy, trust, satisfaction, and big data, indicating their broad influence. In contrast, specialised journals like Current Issues in Tourism focus on narrower topics, such as tourism and platform management. Authors like Cheng M, Zhang L, and Chen Y contribute across a variety of SE topics, while others, like Capra L, focus on specific themes such as collaborative consumption and trust. Key topics like trust and satisfaction connect versatile and specialised contributors, underscoring their significance in SE research. The prominence of big data and reviews signals an increasing shift towards data-driven decision-making and platform optimisation. This balance between consumer behaviour and operational themes reflects a holistic approach to SE research and illustrates how AI and technology reshape SE ecosystems. Moreover, the diagram highlights how multidisciplinary collaboration between diverse fields is essential to addressing emerging challenges. Ultimately, these findings underscore the importance of integrating behavioural and technological perspectives in future SE research, paving the way for more adaptive and resilient SE models.

The authors chose co-word analysis combined with thematic maps, provided by the Bibliometrix R package, to emphasise the topics and content of the studied papers, thereby enhancing understanding of the intellectual capital and establishing a solid foundation for future research directions. As a result of co-word analysis, it is possible to amplify the phrases constructed with one (unigrams), two (bigrams) or three words (trigrams) whose co-occurrence in different articles suggests that there exists some interrelation among them in terms of specific topic a paper investigates. Moreover, when examining the most occurring trigrams in abstracts of the scientific papers included in the study, the top trigram is sharing economy platforms, whose number of occurrences is more than two times higher than the second one (*risk prevention models*). Additionally, the titles of these scientific papers unveil that the most frequent trigram is *peer-to-peer accommodation experience* followed by *text mining approaches* and *accommodation rental services*. In sum, terms exhibiting pronounced frequency of occurrence may be construed as constituting a cluster of pivotal topics encapsulating the phenomenon of servitisation within contemporary business models operating on digital platforms within the realm of the sharing economy. Also, the remarkable prevalence of expressions and labels delineating sharing economy platforms and machine learning methods utilised for communication optimisation over these platforms is noteworthy.

Gradually, an analysis which illustrates the bare intellectual context of the body of knowledge occupying the interconnectedness of AI and SE is thematic map analysis. The analysis inclines to adequately visualise the conceptual structure of the specific research field at stake herein. More to the point, key topics are identified as segmented, following their influential character in the development of the whole scientific topic and field being examined. A thematic map plots the identified topics in different graph quadrants as a means of two-dimensional visualisation, directly

appointing topics to their relevant influential character. Considering the cumulative presence of the topic, its interrelations over the years and other factors, every topic is segmented in the part of the thematic map that possibly describes the topics' influential character the best. The map has four main parts (quadrants): *motor themes*, *niche themes*, *emerging or declining themes* and *basic themes*. Thematic map visualisation of the terms identified in this study is portrayed in Figure 5.

Figure 5: Thematic map of authors' keywords



Source: Authors' construction

Before labelling each class mentioned above themes in the thematic map, it is beneficial to designate the method that runs the analysis. Briefly, several clustering algorithms may be utilised to create the *theme clusters* with various hyperparameters to be optimised. In contrast, the minimum cluster frequency of each topic (per thousand documents) was set to six, the number of labels presented in each cluster was limited to three and the most comprehensive solution was acquired using the Leiden clustering algorithm. Progressively, the thematic map is plotted, and the *gig economy*, *machine learning* and *platforms* lead the group of motor themes. These identified keywords are part of the quadrant that occupies both well-established and vital themes that are expected to trace the future itinerary of the field's development. Conversely, in the low-left quadrant, the topics occupied

by collaborative consumption, sustainability, and sustainable development are either emerging or declining in terms of academic interest. A noteworthy quadrant with a marginal influence on the current state of the scientific field but with steady and innovative progress in scientific production is *niche themes*. Herein, the latter comprises *emerging markets*, *management in general* and *ridesharing*. On the contrary, a low-right quadrant depicts *basic themes*. These are the ones with established reputations in the field and are unequivocally crucial for the field; sharing economy, Airbnb, and *trust* are the keywords that determine this theme.

Findings underpinned in the chapter betoken the necessity of apprehending the diverse range of applications of AI in contemporary business models in the sharing economy. A suitable way to understand the latter's importance is to suggest the evidence provided in the selection of papers scrutinised previously. For illustrative purposes, Ranjbari et al. (2020) take advantage of advanced data-mining methods to analyse online review comments from Airbnb guests in Western Australia to extract service attributes without relying on literature. The study employs unsupervised and supervised learning processes to identify patterns and merge concepts, ultimately creating a conceptual map of service attributes. Herein, AI technology is used to elicit attributes directly from customer comments, providing a unique insight into the service quality of Airbnb. Additionally, Newlands (2021) investigates the ramifications of algorithmic surveillance on labourers within the platform-mediated food-delivery sector, accentuating the dialectic between immaterial and material aspects of surveillance and deliberating potential avenues for labourer resistance. Within this context, the employment of AI pertains to the deployment of algorithmic surveillance within platform-mediated enterprises operating within the gig economy, leveraging digital cartography to translate physical space and movement into digital representations, albeit overlooking labourers' subjective perceptions and experiential domains.

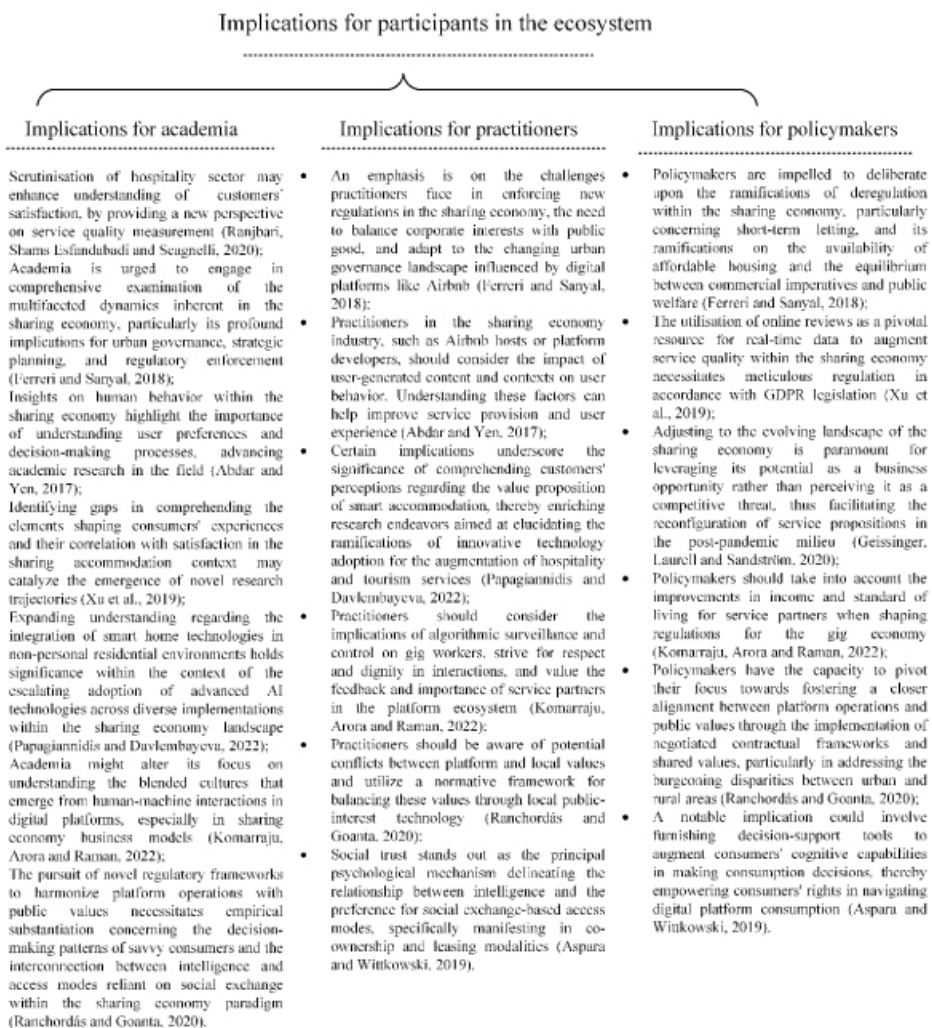
4.2. Implications for participants in the ecosystem

To address qualitative findings related to the research topic and acquired scientific papers related to it, it may be beneficial to acknowledge and silhouette implications for wider audiences generated in the selected papers. Therefore, cross-examination of the main findings of selected papers enables a structural output of possible implications for participants in the ecosystem of interconnectedness between AI and SE. For this purpose, the initial number of 194 papers is narrowed to 59 papers according to the procedure presented in Figure 2. Prior to enlisting the key takeaways concerning different interested parties, authors have foreseen the issue of an overwhelming number of possible implications. Therefore, only those implications found to be straightforward and concise are included in the final output of this in-depth analysis.

It goes without saying that perplexing peculiarities in the research field might be adequately addressed with careful consideration of issues arising from dynamic fluctuations in sharing economy models from as many different aspects as possible.

Puzzling concern about the ethical aspects of utilising AI in the sharing economy is a topic of industry-agnostic debate, speaking of which SE should be a proponent of crisp and suitable solutions. Moreover, multitudinous use cases from business practice might foster the nurturing of niche themes in academic research, which is confronting entanglements considering research novelty (Lyaskovskaya and Khudyakova, 2021; Wojcik-Jurkiewicz et al., 2021). Finally, a three-way perspective is provided, aiming to underpin all-important elements of attainable implications, given in Figure 6.

Figure 6: Overview of implications proposed to academia, practitioners and policy-makers



Source: Authors' construction

However, additional information about each paper used to create an aggregated overview of the implications may be found in the Appendix in Table 1.

5. Discussion

Nevertheless, a prudent commentary may inquire about additional bibliometric analyses backing up the aforementioned statements about the interrelations of AI and SE in the previous terms. Firstly, a moderate answer might be found using extra bibliometric methods comprising co-reference, co-citation analysis, and bibliographic coupling accompanied by historiography tracking. However, that kind of remedy might create an urge to scrutinise the topic more deeply, which could significantly diverge from the scope of this paper and its research interest. Therefore, a firm sufficiency of previously described analysis was conceived as a tool for forming a direction toward identifying intellectual capital in the sense of the research topic in the paper. Secondly, a continuous effort to establish a distinctive representation of AI technologies, methods and tools applied to the sharing economy models in business and practice would be a tireless endeavour with an inclination to diverge in terms of the final output. Therefore, the idea is to summarise key takeaways from bibliometric analysis as follows.

Intellectual capital of the interrelation between AI and SE is established through careful bibliometric analysis of the selected papers in the study. As per the research interest of this paper, the central element defining intellectual capital is the interrelation between authors' keywords used in titles, abstracts and other parts of scientific papers. Notably, it is possible to include a broader area of bibliometric insights such as bibliographic coupling, co-citation analysis and co-reference analysis among authors (Chang and Huang, 2012; Biscaro and Giupponi, 2014; Marzi et al., 2020; Dabić et al., 2021). Over time, bibliometric scrutiny of the research subject intimates a meticulous utilisation of AI technology aimed at comprehending consumers' behavioural patterns on sharing economy platforms, coupled with extensive big data analytics endeavours geared towards cultivating comprehensive insights necessitating policy adaptations amidst the swift transformations within industry dynamics. Specifically, the emergence of the implementation of AI in the healthcare system is of particular interest to both academia and practitioners, and it has manifested in higher scientific production lately.

Furthermore, as previously addressed in Figure 2, a thorough selection of papers is undertaken for high-impact paper extraction. Consequently, 59 papers are used to map a trajectory of future research avenues that encompass the association between AI and SE. Some of these papers are presented in Appendix Table 2, with their overall summary and potential research areas for the future. Following the essence

of each paper's remark related to future research identified research directions might be categorised into governance, business-related, and behavioural aspects of future research. However, it is beneficial to outline which paper may be appropriate for which category. The governance category, addressed by Ferreri and Sanyal (2018), calls for examining how AI can reconcile the pursuit of short-term economic gains with the need to uphold the public good in digital platform economies. This research area underscores AI's potential to enable a more equitable balance between economic development and societal well-being within the sharing economy. In the business domain, Papagiannidis and Davlembayeva (2022) suggest evaluating AI's influence on renter behaviour, particularly in relation to sustainability features in smart accommodations. This highlights AI's role in fostering environmentally sustainable practices while improving the overall user experience. Meanwhile, the social-cultural and behavioural category, as outlined by Komarraju, Arora, and Raman (2022), emphasizes investigating AI's implementation in ways that preserve social dignity and ensure human autonomy. This area of research aims to ensure that AI systems operate ethically, respecting human agency while supporting oversight within the sharing economy. Each category identifies a specific trajectory for future research, situating AI as a powerhouse tool in managing governance, advancing sustainable business practices, and safeguarding human dignity in the evolving sharing economy landscape.

6. Conclusion

The intersection of AI and SE has been the subject of several studies, yet these often provide fragmented insights, lacking a comprehensive understanding of their interrelationship. This research addresses this gap by offering a more integrated perspective on how AI is deployed within SE, the roles it plays, and its potential to influence future trajectories. Through the articulation of a future research agenda, combined with implications for various stakeholders and bibliometric analysis, this study advances the current comprehension of the confluence between AI and SE, providing a structured framework for future inquiry.

A systematic examination of the intellectual framework underpinning the interrelationship between AI and SE (RQ1) establishes a broad synopsis of the extant body of knowledge. The bibliometric analysis demonstrates how AI is harnessed to analyse consumer behaviour on peer-to-peer platforms while also highlighting opportunities for AI-driven services and addressing critical challenges such as consumer trust within gig economy ecosystems. To further explore the landscape of future research directions (RQ2), an in-depth analysis provides actionable insights for stakeholders, identifying three pivotal areas of focus: the integration of AI into healthcare systems and innovative digital platforms within SE, greater governmental involvement, and the alignment of platform operations

with public values, particularly in addressing urban-rural disparities. Additionally, notable insights emerge from specific intersections of AI and SE. For instance, AI's ability to optimise resource allocation and refine matching algorithms on online labour platforms has illustrated how digital ecosystems can be enhanced for both workers and employers. Furthermore, AI's integration into smart accommodation settings has enabled dynamic, personalised services that augment functional value and enhance user experiences. Other insights include AI-driven text analytics improving customer satisfaction through user reviews, AI's role in promoting energy-efficient behaviour within smart accommodations, and the integration of algorithmic oversight in digital labour platforms to balance automation with human dignity. These findings present valuable perspectives on the broader ramifications of AI in various SE domains.

Nevertheless, several limitations of this study must be acknowledged. The exclusive reliance on bibliometric methods may not fully capture the qualitative richness of the literature, and the use of a restricted range of databases may have excluded significant research. Future studies are encouraged to expand the scope by incorporating additional databases, such as Scopus or Google Scholar, considering non-English literature, and exploring AI's role in other innovative digital economic models beyond SE to provide a more comprehensive understanding.

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Appendix

Table 1: Papers, meticulously selected from a cohort of 59 chosen papers, used for a systematic overview of multiversity implications for stakeholders

Authors	Paper summary	Confluence of SE and AI
Ferreri and Sanyal (2018)	This paper investigates the influence of the SE, focusing on Airbnb in London, on urban governance and challenges in enforcing policies and acquiring data from digital platforms. It further examines the implications of corporate-led sharing economies on urban regulation.	This study explores how SE and AI intersect through algorithms and big data in urban governance. AI can mine real-time data to regulate sharing platforms like Airbnb, enhancing governance and raising concerns about corporatisation and regulatory power shifts.
Abdar and Yen (2017)	The paper explores the SE, presents a model to analyse user behaviour, and emphasises the importance of internal and external factors in understanding preferences.	This research examines how AI and the SE intersect, using machine learning to analyse data from platforms like Airbnb. The DKDAR model shows how AI can enhance service quality by analysing user behaviours and considering internal and external influences.
Xu et al. (2019)	This article utilises Herzberg's two-factor theory to analyse 33,892 Airbnb reviews. It identifies that apartment facilities function as hygiene factors, while home experiences serve as key motivators for guest satisfaction.	This paper highlights the integration of AI and SE through AI-driven text analytics applied to user-generated Airbnb reviews. The AI techniques enable a deeper comprehension of customer satisfaction and experiences, demonstrating how AI can analyse large data sets and extract insights, thereby improving decision-making in the SE.
Geissing, Laurell and Sandström (2020)	The paper discusses the expansion of the SE into various sectors beyond transportation, highlighting abundance, scalability, and the tensions it creates.	Though AI is not explicitly discussed, the paper focuses on SE-enabled ICT platforms. AI could optimise resource allocation and enhance user experience on these platforms, suggesting potential future integration.
Papagiannidis and Davlembayeva (2022)	This study examines the functional and emotional value of smart accommodations, considers the role of innovative technologies in business recovery post-pandemic, and offers practical recommendations for adopting smart technologies in the hospitality industry.	The study explores the intersection between SE and AI, particularly through smart home technologies integrated into peer-to-peer accommodations. This integration enhances both functional and emotional service value. AI applications in this context include service personalisation, automation, and monitoring, contributing to improved guest experiences and increased demand for smart accommodations.

Table 1: Papers, meticulously selected from a cohort of 59 chosen papers, used for a systematic overview of multiversity implications for stakeholders

Authors	Paper summary	Confluence of SE and AI
Komaraju, Arora and Raman (2022)	The study discusses the impact of digital labour platforms on worker dignity, focusing on algorithmic surveillance and how gendered labour is transformed within the on-demand platform economy.	The research illustrates how AI is employed within the SE, particularly through platforms like Urban Company, which integrates AI for automated supervision and worker discipline. The term blended automation is introduced, combining traditional supervision methods with algorithmic oversight, exemplifying the evolving relationship between AI and human practices in the SE.
Braesemann, Lehdonvirta and Kässi (2022)	The article investigates economic opportunities in rural areas, analyses the role of online labour platforms in counteracting the urban-rural divide, and discusses the implications for regional economic development based on rural workers' participation in online labour markets.	Although AI is not directly addressed, the paper touches on online labour platforms within the SE, which facilitate remote work by connecting workers and clients. AI could optimise these platforms by improving matching algorithms, automating processes, and analysing large datasets to enhance operational efficiency, thus contributing to regional economic development.
Ranchordás and Goanta (2020)	This paper examines technocratic discourses in the SE and advocates for a framework that balances platform-driven and local values in public interest governance.	The study highlights how AI technologies, like machine learning, in the SE shape smart cities and influence decision-making. While AI enhances service delivery, it also raises concerns about conflicts between platform and public values, requiring careful governance.
Aspara and Wittkowski (2019)	This study explores the relationship between consumer intelligence and preferences for social exchange-based access modes, such as co-ownership and leasing. It suggests that higher intelligence correlates with increased trust and preference for these modes.	While the paper does not specifically mention AI, it discusses the SE about social exchange-based access models like leasing and co-ownership. AI could optimise resource allocation and improve matchmaking on sharing platforms, suggesting potential future applications of AI within these access modes.
Ranjbari, Shams Esfandabadi and Scagnelli (2020)	The paper provides insights into Airbnb's service quality attributes using an Importance-Performance Analysis (IPA) matrix and proposes strategies to enhance service offerings in short-stay accommodations.	This research demonstrates the application of AI in the SE through tools like Leximancer, which analyses large datasets of user-generated content, identifying key service quality attributes. AI enables the processing and analysis of big data, enhancing the understanding of customer feedback and enabling the prediction of trends, thus improving service delivery in the SE.

Source: Authors' construction

Table 2: Overview of selected papers that are setting capacities for establishing future research areas

Authors	Paper summary	Narrative for future research
Ferreri and Sanyal (2018)	The paper underlines the impact of the sharing economy, focusing on Airbnb in London, on urban governance, planning regulations, and the challenges faced by local councils in enforcing regulations and obtaining data from digital platforms. It also discusses the implications of the corporate-led sharing economy on urban governance and regulation.	1) Exploring the use of algorithms and big data for urban governance in the context of the sharing economy; 2) Investigating how AI can help balance short-term economic gains with the wider public good within digital platform economies; 3) Developing a ‘light-touch framework’ that utilises real-time data mining through algorithms for regulatory practices
Papagiannidis and Davlembayeva (2022)	The study amplifies the perceived functional and emotional value of smart accommodation and the implications of innovative technologies for business recovery post-pandemic. It provides practical implications for adopting smart technologies in the hospitality sector.	1) Examining AI-driven technology-user interaction patterns to address surveillance concerns in smart accommodations; 2) Exploring AI’s role in influencing renters’ behaviours and attitudes towards sustainability features in smart accommodations; 3) Investigating AI applications for analysing and promoting energy-efficient consumption behaviours in rented accommodations.
Komaraju, Arora and Raman (2022)	The article explores the impact of digital labour platforms on worker dignity, the role of algorithmic surveillance, and the transformation of gendered work through the on-demand platform economy.	1) Explore the concept of blended cultures and how AI and human cultures interact and reshape each other within the sharing economy; 2) Examining how AI can be implemented in an inclusive way and respects social dignity, as well as how human agency is preserved in the face of algorithmic control.
Sengupta et al. (2021)	The paper discusses Airbnb’s significance in the sharing economy, the unique features of Airbnb homes, the lack of bookings for some homes, and the proposed text-mining framework to address this issue.	1) Incorporating seasonality, economic shocks, and other externalities using AI to predict successful Airbnb reservations; 2) Exploring the effects of cultural dimensions using AI to analyse cultural data and its impact on consumer behaviour in the sharing economy.
Leoni and Nilsson (2021)	The study investigates the impact of intertemporal price discrimination on Airbnb hosts’ revenues using a causal machine learning technique. It sheds light on the dimensions of listings that make price surges detrimental to revenues, contributing to the literature on dynamic pricing strategies and the estimation of heterogeneous treatment effects.	1) Developing AI analytical techniques to determine optimal pricing policies, including when and by how much prices should be changed; 2) Exploring AI methods to obtain and analyse detailed price trajectory data, considering factors such as seasonality and demand spikes; 3) Investigating AI tools that can estimate price variability and discern the direction of pricing strategies, even with limited information.

Source: Authors’ construction

Navigacija krajolikom: otkrivanje odraza umjetne inteligencije u ekonomiji dijeljenja putem bibliometrijskog pristupa

Veljko Uskoković¹, Milica Maričić², Aleksandra Dacić-Pilčević³, Veljko Jeremić⁴

Sažetak

Recentna znanstvena pozornost porasla je u svezi integracije umjetne inteligencije (AI) u različitim znanstvenim područjima, što je potaknulo pomnije ispitivanje sveprisutnog utjecaja AI-a na ekonomske paradigme poput ekonomije dijeljenja (SE). Ova se studija bavi višestrukim sjecištima umjetne inteligencije unutar SE-a, koristeći bibliometrijski analitički okvir. Uspostavljanjem terminološke osnove u umjetnoj inteligenciji, studija istražuje široki spektar primjena umjetne inteligencije u SE-u, što kulminira bibliometrijskom analizom koja identificira nove teme i trendove. Analizirajući meta-podatke literature iz baze podataka Web of Science tijekom proteklih osam godina, fokus je na citiranim temama unutar SE-a. Dubinske analize, koje omogućuje Bibliometrix R paket, primjenjuju se na odabrani izbor radova. Rezultati otkrivaju ključne uvide, poput toga kako tekstualna analitika vođena umjetnom inteligencijom značajno povećava zadovoljstvo korisnika putem recenzija koje generiraju korisnici. Osim toga, umjetna inteligencija igra ključnu ulogu u promicanju energetski učinkovitih ponašanja u pametnim smještajima, dok se algoritamski nadzor sve više integrira u digitalne platforme rada kako bi se uravnotežila automatizacija s ljudskim dostojanstvom. Nadalje, umjetna inteligencija optimizira raspodjelu resursa i poboljšava algoritme usklađivanja na mrežnim platformama rada, čime se povećava učinkovitost platforme. Studija predlaže buduće istraživačke puteve, zagovarajući šire istraživanje uloge umjetne inteligencije u digitalnim ekonomskim modelima i veću uključenost vlade.

Ključne riječi: umjetna inteligencija, ekonomija dijeljenja, bibliometrijska analiza

JEL klasifikacija: D16, O35, O57

¹ Asistent, Univerzitet u Beogradu, Fakultet organizacijskih nauka, Jove Ilića 154, 11000 Beograd, Srbija. Znanstveni interes: primijenjena statistika, biostatistika, scijentometrija. E-mail: veljko.uskokovic@fon.bg.ac.rs.

² Docent, Univerzitet u Beogradu, Fakultet organizacijskih nauka, Jove Ilića 154, 11000 Beograd, Srbija. Znanstveni interes: primijenjena statistika, SEM analiza, multivarijatna statistička analiza. E-mail: milica.maricic@fon.bg.ac.rs.

³ Europska agencija za lijekove, Domenico Scarlattilaan 6, 1083 HS Amsterdam, Nizozemska. Znanstveni interes: ICT & AI in health, Project Management in ICT. E-mail: aleksandra.dacicpilcevic@ema.europa.eu.

⁴ Redoviti profesor, Univerzitet u Beogradu, Fakultet organizacijskih nauka, Jove Ilića 154, 11000 Beograd, Srbija. Znanstveni interes: primijenjena statistika, scijentometrija, kvantitativne metode. E-mail: veljko.jeremic@fon.bg.ac.rs.