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Sustainable organizational development and human capital in the context of soft systems methodology

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As the world faces major challenges related to the climate change and geopolitical hurdles, soft systems methodology (SSM) and institutional factors offer a complex approach that might be helpful in achieving the sustainable development goals (SDGs) and are therefore gaining an increasing popularity in the research literature. By embracing the principles of SSM within the realm of institutional economics, academics and decision-makers can navigate through the complexities of real-world problems and devise effective strategies for addressing them. Understanding the intricate relationship between SSM and institutional economics offers a unique lens through which organizational performance and sustainability can be enhanced. This synergy, when explored and applied judiciously, provides a comprehensive framework that addresses not only the technical aspects of an organization but also its socio-economic dimensions. In the empirical part of the paper, a bibliometric analysis is used based on the sample of 76 documents indexed in Web of Science (WoS) database between 1995 and 2023. The network cluster analysis using the text data and the bibliometric data is employed using the VOSViewer software for network analysis. The results show that as the economic and social processes are becoming more robust, SSM and institutional economics are currently returning to the spotlight of the academic research focused on topics such as organizational performance and sustainability as well as sustainable human capital efficiency.

Keywords: *soft system methodology; institutional economics; sustainable development; human capital; bibliometrics; network cluster analysis*

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Устойчивое организационное развитие и человеческий капитал в контексте методологии мягких систем

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В настоящее время, когда мир сталкивается с серьезными проблемами, связанными с изменением климата и геополитическими препятствиями, методология мягких систем (ММС) и учет институциональных факторов способны помочь в достижении целей устойчивого развития и поэтому приобретают все большую популярность в исследовательской литературе. Сочетая принципы ММС с положениями институциональной экономики, ученые и лица, принимающие решения, могут ориентироваться в реальных проблемах и разрабатывать эффективные стратегии для их решения. Понимание сложной взаимосвязи между ММС и институциональной экономикой содействует формированию исследовательского подхода для изучения способов повышения эффективности и устойчивости организации в плане технических и социально-экономических аспектов. В эмпирической части работы мы представляем результаты библиометрического анализа 76 источников, проиндексированных в базе данных Web of Science (WoS) в период с 1995 по 2023 гг. Кластерный анализ проведен с помощью программы VOSViewer. Результаты показывают, что по мере роста устойчивости экономических и социальных процессов фокус внимания исследователей возвращается к ММС и институциональной экономике. Основными темами являются эффективность и устойчивость организаций, а также человеческий капитал в контексте устойчивого развития.

Ключевые слова: *методология мягких систем; институциональная экономика; устойчивое развитие; человеческий капитал; библиометрия; сетевой кластерный анализ*

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Introduction

Soft systems methodology (SSM) represents a holistic approach that provides a framework for addressing problematic social and economic situations and managing real-world challenges. It was coined in the 1970s to acknowledge the entaglement and diversity of human systems and aims to understand and improve them through a participatory and iterative process (Checkland, 2010; Salavati et al., 2021). Some reseachers highlight the key principles of SSM that enable its successful application in tackling non-trivial challenges (Warren et al., 2019). The first principle of SSM involves gaining a deep understanding of the institutional arrangements by engaging with stakeholders and exploring their perspectives. This helps to identify different worldviews, assumptions, and tensions existing within the system, allowing for a comprehensive understanding of the context of a problem (Martin and O'Meara, 2020). In addition, SSM emphasizes the importance of defining relevant systems bearing multiple relationships. These systems can be social, organizational, or cultural entities that influence or are influenced by the problem situation. By defining these systems, SSM enables stakeholders to explore interrelationships and dependencies between various components (Dahesh et al., 2020; Xu, 2020). In parallel, institutional economics (IE) (and in particular the New Institutional Economics (NIE) that also emerged in the 1970s (see Ménard and Shirley (2014)) offer invaluable insights into how economic activities are shaped by social institutions - the rules, norms, beliefs that govern behaviour within organizations and societies (see Coase, 1959; Williamson, 1975; or North, 1994;). It examines how organizations and societies evolve over time and influence economic performance and sustainability (Mayhew, 2018). Unlike traditional economics, which often abstracts from rules, norms, and beliefs, Institutional Economics considers them central to understanding economic dynamics (Petracca and Gallagher, 2020; or Volchik, 2020). Within this context, it needs to be mentioned that this paper applied the approach that does not distinguish between the original IE (Hodgson, 1998) and the NIE (North, 1990; Ostrom, 1990) and its main focus and scope are the institutional factors that affect sustainable development.

A core principle of SSM is developing conceptual models to represent stakeholders' perceptions of their problem situation accurately. These models help to facilitate communication among stakeholders that come from different backgrounds and have different perspectives. Another important principle of SSM is the comparison of real-world systems with conceptual models developed during earlier stages of SSM intervention. This helps to identify discrepancies between how things are perceived by the stakeholders and how they actually function in reality (Dumitriu et al., 2019).

Additionally, SSM encourages stakeholders to envision desirable changes within their system by exploring alternative ways to effectively deal with multiple and often contradicting options. This principle fosters creativity and innovation while considering diverse stakeholder viewpoints (Wu et al., 2021). SSM uses a set of tools and techniques known as the "seven-stage model" (Strielkowski et al., 2023) (Fig. 1).

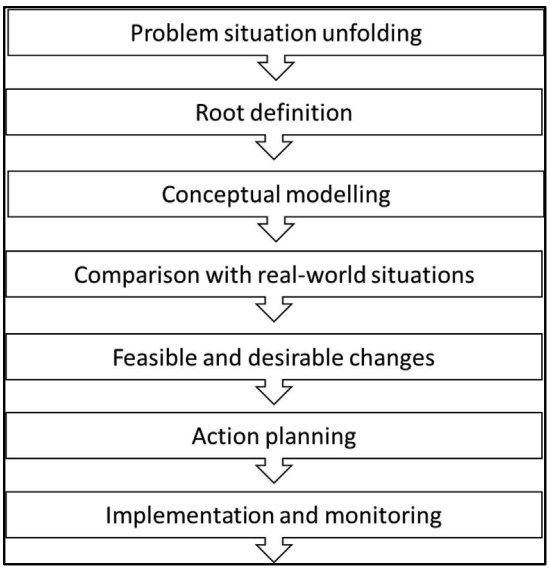

Fig. 1. SSM seven-stage model

Source: own results based on Strielkowski et al. (2023)

Once desirable changes have been identified, SSM focuses on formulating feasible actions that can be implemented within the given problem context. This principle emphasizes practicality and ensures that proposed solutions are realistic and attainable. Moreover, SSM approach recognizes the need for ongoing learning and adaptation in tackling numerous available solutions. The methodology encourages stakeholders to continuously reflect on their actions, reassess their assumptions, and adapt their strategies accordingly (Grewatsch et al., 2023).

Lastly, SSM places significant importance on collaboration and participation throughout the problem-solving process. By involving diverse stakeholders with different expertise, experiences, and perspectives, SSM seeks to create a shared understanding of the wide range of options and pathways while ensuring collective ownership of proposed solutions (Martin et al., 2020; Kutty et al., 2020).

In addition, many researchers agree that in today's complex, globalized, digitalized, and interconnected world, traditional problem-solving methods often fall short in addressing the intricacies of real-world challenges. This is where SSM can help, offering a holistic approach that recognizes the interdependencies and interconnectedness of various elements within complex economic and social systems. By unraveling these complexities, SSM enables a deeper understanding of the underlying issues and facilitates effective problem-solving (Jackson, 2021; D'Amore et al., 2022).

At its core, SSM acknowledges that problems are not isolated entities but rather part of larger systems with multiple stakeholders, diverse perspectives, and dynamic relationships. It emphasizes the importance of exploring these relationships for gaining better insights into how different components interact and influence one another. When applying a holistic approach through SSM, practitioners start by defining the problem situation in all its complicatedness (Kish et al., 2021).

All of the above involves engaging with stakeholders from various backgrounds to identify their diverse viewpoints and understanding their objectives (Singh et al., 2023). By doing so, SSM aims to capture the full spectrum of perspectives related to the problem at hand. Moreover, SSM employs vivid visual representations for depicting the entanglement of the real situations. These pictures and diagrams help illustrate how different elements within a system are interconnected and provide a platform for discussion and analysis among stakeholders (Cradock-Henry et al., 2020).

Once these interconnections are identified, SSM facilitates modeling exercises where practitioners can simulate potential changes or interventions within the system (Ormerod et al., 2023). Through iterative cycles of debate, reflection, and refinement, this process allows for testing different scenarios to assess their feasibility and impact on solving complex real-world challenges. Finally, SSM emphasizes continuous learning throughout its application by encouraging open dialogue among stakeholders (Chan, 2023). This collaborative learning environment fosters shared understanding while promoting creativity and innovative thinking necessary for tackling robust and non-trivial problems effectively.

This paper focuses on exploring how the SSM and institutional factors can be the key elements of human capital for organizational performance and sustainability. It is doing so by reviewing the relevant scientific literature as well as by implementing the bibliometric network analysis.

SSM and organizational sustainability

As mentioned above, SSM is recognized by many researchers as a problem-solving approach that focuses on understanding non-trivial arrangements and improving their effectiveness (Lohman, 2020). When applied to the field of human capital management (HCM), SSM can play a crucial role in enhancing organizational sustainability (Pham et al., 2020). It can be shown that by adopting a holistic perspective, SSM enables organizations to identify and address the underlying issues that hinder sustainable practices within their HCM processes (Vrontis et al., 2022). One of the crucia contributions of SSM to enhancing organizational sustainability is its emphasis on stakeholder involvement and participation. SMM employs the collaborative approach that enables exploring diverse perspectives related to ownership and commitment (Lin et al., 2022).

By involving stakeholders in the design and implementation of sustainable HCM practices, organizations can ensure greater acceptance and adoption of these initiatives (Otenyo et al., 2006). Furthermore, it facilitates a deeper understanding of complex social systems by encouraging reflection and learning (Grewatsch et al., 2023). The methodology encourages organizations to question

existing assumptions, challenge current norms, and explore alternative ways of thinking about HCM processes. This critical reflection helps organizations identify areas where their current practices may be contributing to unsustainability or inefficiency. By engaging in this reflective process, organizations can uncover hidden problems or conflicts that may be hindering sustainable outcomes in their HCM activities (Faller et al., 2020).

Another valuable aspect of SSM is its ability to facilitate learning from both successes and failures. Through iterative cycles of analysis, evaluation, and redesign, organizations can continuously improve their HCM processes over time (Slattery et al., 2022). By experimenting with different approaches or interventions based on feedback from stakeholders, organizations can adapt their strategies to better align with sustainability goals. This iterative learning process enables continuous improvement in HCM practices while also fostering a culture that values innovation and adaptation. Additionally, SSM provides a structured framework for addressing the complexity inherent in HCM processes. By breaking down the system into its constituent parts and analyzing their interactions, SSM helps organizations identify leverage points for intervention. This systemic approach allows organizations to target specific areas where improvements can have a cascading effect on overall sustainability. By understanding the interdependencies between various elements of the HCM system, organizations can implement changes that not only enhance sustainability but also avoid unintended consequences (Hegab et al., 2023).

All in all, it becomes quite clear that SSM plays a vital role in enhancing organizational sustainability within the context of HCM. By promoting stakeholder involvement, critical reflection, iterative learning, and systemic analysis, SSM enables organizations to address the underlying issues that hinder sustainable practices in their HCM processes. Through this holistic approach, organizations can develop comprehensive and effective strategies that contribute to long-term sustainability while also fostering a culture of continuousimprovement and innovation (Vahdat, 2022).

By adopting a SSM approach, various barriers and obstacles that hinder their efforts to enhance sustainability in sustainable human capital management can be effectively addressed. One significant challenge is the resistance to change within organizations (Kineber et al., 2023). Many employees may be resistant to new processes or practices that disrupt their established routines.

Engaging employees through open dialogue, training programs, and incentives can help alleviate resistance and foster a culture of sustainability (Ercantan and Eyupoglu, 2022). Another challenge is the lack of awareness and knowledge about sustainable practices among managers and leaders (Lamé et al., 2020).

One big challenge stemming from this is to translating the principles of sustainable development into effective HCM strategies and approaches. Quite often, organizations might face not only administrational constraints but also the financial obstacles that prevent them from implementing sustainable development principles into managing their human capital (Rana and Sharma, 2019).

Another important issue is the performance management when clear goals and expectations presented and communicated to the employees in a proper way can enhance the sustainability of organizations (Ribeiro et al., 2020). Effective performance management systems also feature training programs, feedback strategies, as well as innovative approaches to identifying potential leaders and fostering their potential for the benefit of organizations (Murphy, 2020).

SSM and institutional economics approach

Both SSM and institutional economics share the appreciation of the specific socio-economic environment for understanding complex systems and operating within these systems (Kish et al., 2021). Institutions and organizations can use methodical approach of SSM with the institutional economics' focus on institutions and their role in shaping economic actitivies for solving complex issues (Williamson, 2005; Venter, 2020). This integrated approach allows for a deeper exploration into how institutional arrangements impact organizational behavior and performance (see e.g. North, 2016). It acknowledges that changes within an organization can lead not only to alterations in its structure but also modifications in broader institutional patterns that may either facilitate or hinder sustainability efforts (Ren and Jackson, 2020).

Moreover, this synergy aids in identifying advantage points where interventions could yield significant improvements in both organizational effectiveness and sustainability practices. For in-

stance, by applying SSM's tools to map out how existing institutional norms influence organizational processes or decision-making pathways related to sustainability initiatives; organizations can uncover innovative strategies for fostering change both within their boundaries and in their wider industry or community context (Nicolini et al., 2022).

Overall, the link between SSM and institutional economics helps to enhace the organizational performance and pursue the sustainable development goals (SDGs) (Eweje et al., 2021). This integrated perspective not only enriches our theoretical knowledge base but also equips practitioners with practical tools for navigating complexity effectively - ultimately contributing towards more resilient and adaptable organizations (Strielkowski et al., 2023; Li et al., 2024).

The role of institutional economics in driving organizational performance and sustainability is both profound and multifaceted (Silalahi and Walsh, 2023). Unlike traditional economic theories that often focus on market dynamics and individual rationality, institutional economics delves into the broader spectrum of social, legal, and political frameworks within which organizations operate. It provides a lens through which we can understand how these institutions – the rules of the game – shape organizational behavior, performance, and ultimately, their sustainability (He et al., 2020).

At its core, institutional economics posits that the performance and sustainability of organizations are not merely outcomes of market forces but are significantly influenced by the institutional environment (Volchik and Maslyukova, 2021; Altman, 2023). This includes formal institutions such as laws and regulations, as well as informal norms and conventions that govern individual and collective behavior. For instance, an organization operating within a strong legal framework that enforces contracts efficiently will likely experience different performance outcomes compared to one where such a framework is weak or absent. Similarly, cultural norms around trust can significantly impact organizational practices related to collaboration and knowledge sharing – essential components for innovation and long-term sustainability (Wang et al., 2021).

Furthermore, institutional economics also emphasizes path dependence – the idea that historical trajectories can lock institutions into certain patterns that are difficult to change. This has critical implications for organizational change efforts towards sustainability (Rai et al., 2022). Within this framework, organizations may find themselves constrained by existing institutional arrangements that favor unsustainable practices. Recognizing these constraints is crucial for designing effective strategies that not only enhance performance but also align with broader sustainability goals (Reddy et al., 2020).

Moreover, institutional economics offers valuable insights into how organizations can influence their institutional environments in favor of more sustainable practices (Banerjee et al., 2021; Volchik and Maslyukova, 2021). Through strategic actions such as advocacy for policy changes or through pioneering new business models that challenge existing norms (e.g., circular economy models), organizations can become agents of change within their institutions (Bocken and Konietzko, 2022). This proactive stance not only contributes to organizational performance through innovation but also drives systemic changes conducive to sustainability.

Thence, it become apparent that understanding the role of institutions also aids in navigating uncertainties associated with external shocks such as financial crises or environmental disasters. Institutions provide a stabilizing force amid turbulence by maintaining order and predictability, which is vital for long-term planning and investment in sustainable initiatives.

Data and methods

The empirical approach described in this section is based on analyzing how SSM and IE might constitute the comprehensive framework for optimizing HCM processes in organizations and enterprises with a focus on sustainable economic development (Strielkowski and Popov, 2017). In order to conduct this analyzis, the bibliometric study has been carried out. Web of Science (WoS) database has been selected as the source of data with major and most relevant scope and history. Figure 2 below provides the description of the algorithm used for the data selection, retrieval, processing, as well as the network analysis in this paper.

Furthermore, a Google Trends analysis has been conducted to yield the popularity of specific terms all over the world measured by the online searches[1].

[1] Google Trends (2024). Improving search results. https://trends.google.com (accessed on December 3, 2024).

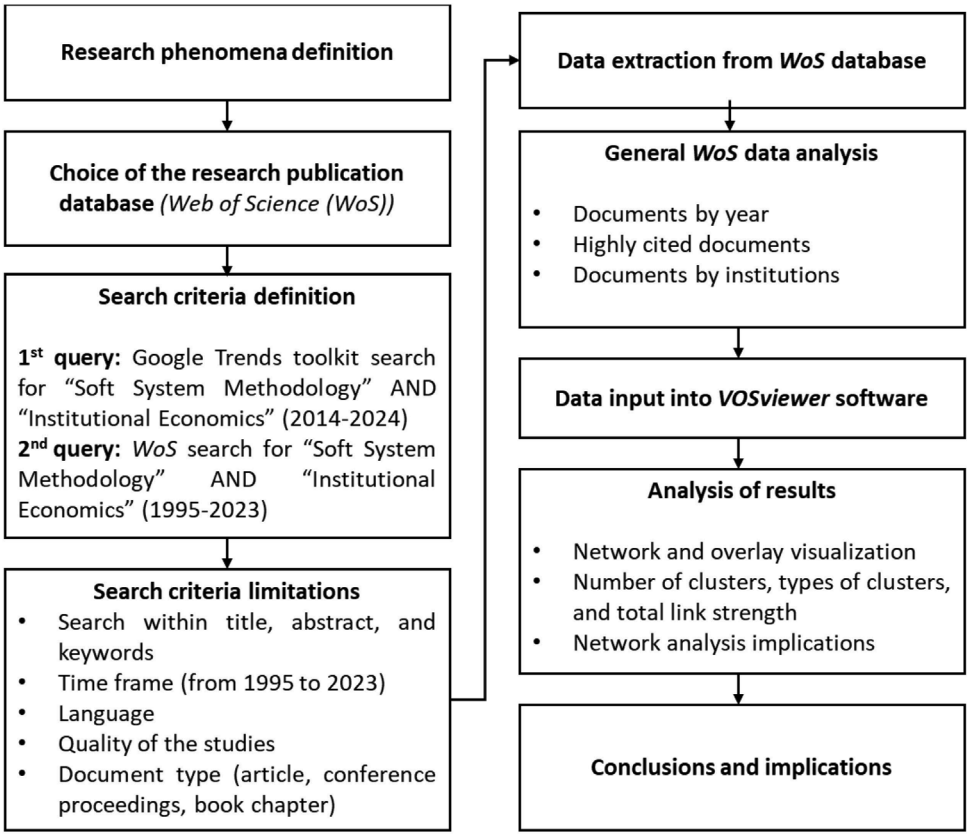

Fig. 2. Diagram of the data selection and network analysis algorithm

Source: own results

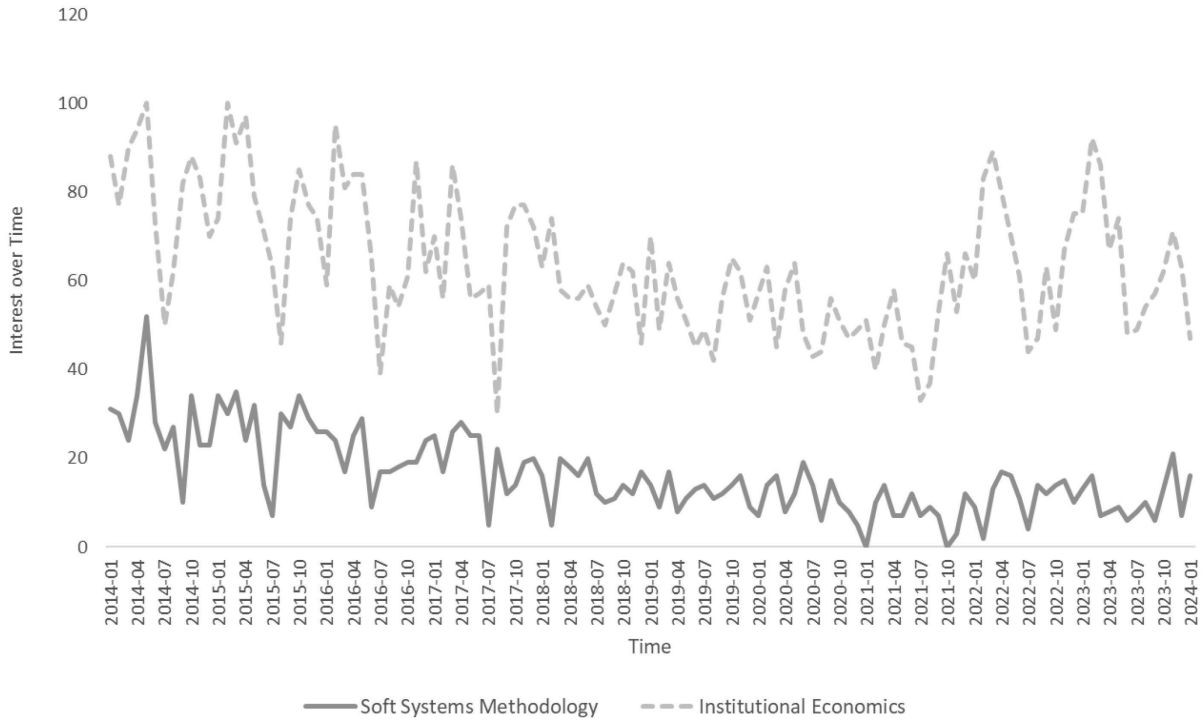

Fig. 3. Google Trends of the publications on "soft systems methodology" and "Institutional Economics" (2014–2024)

Source: own results based on Google Trends

Figure 3 depicts the dynamics of worldwide search with the search items "soft systems methodology" and "Institutional Economics" (Figure 2). From the Figure, it is apparent that the search frequency for both terms was quite different before 2019-2021 with the prevailance of interest in IE.

In addition, in the empirical part of the paper, the statistical analyses on the publications indexed in WoS featuring such information as countries, authors, abtracts, and keywords with the help of assessing the co-occurrences and keywords' cluster analyses has been performed. The Web of Science (WoS) database has been searched using the terms "soft systems methodology" and "Institutional Economics" which produced a total number of 76 results from Web of Science Core Collection (61 articles and 13 proceeding papers among them).

Empirical model: network cluster analysis

The empirical model presented in this paper is based on the bibliometric network cluster analyzis that employs the VOSviewer software often used for analysing bibliometric data (Strielkowski et al., 2022). The analysis yields the results in a form of a visual map that shows main clusters, connections, and relationships. In this very study, a bibliometric network cluster analysis was conducted on a sample of 76 publications indexed in the Web of Science database from 1995 to 2023. By employing keywords and phrases associated with "soft systems methodology" and "Institutional Economics", the analysis revealed 4 main clusters.

Figure 4 presents the visualization of the network cluster analysis with a map based on the text data from the sample of 76 publications indexed in WoS database from 1995 until 2023. The results of the bibliometric network analysis identified 4 main clusters that are described below in greater detail.

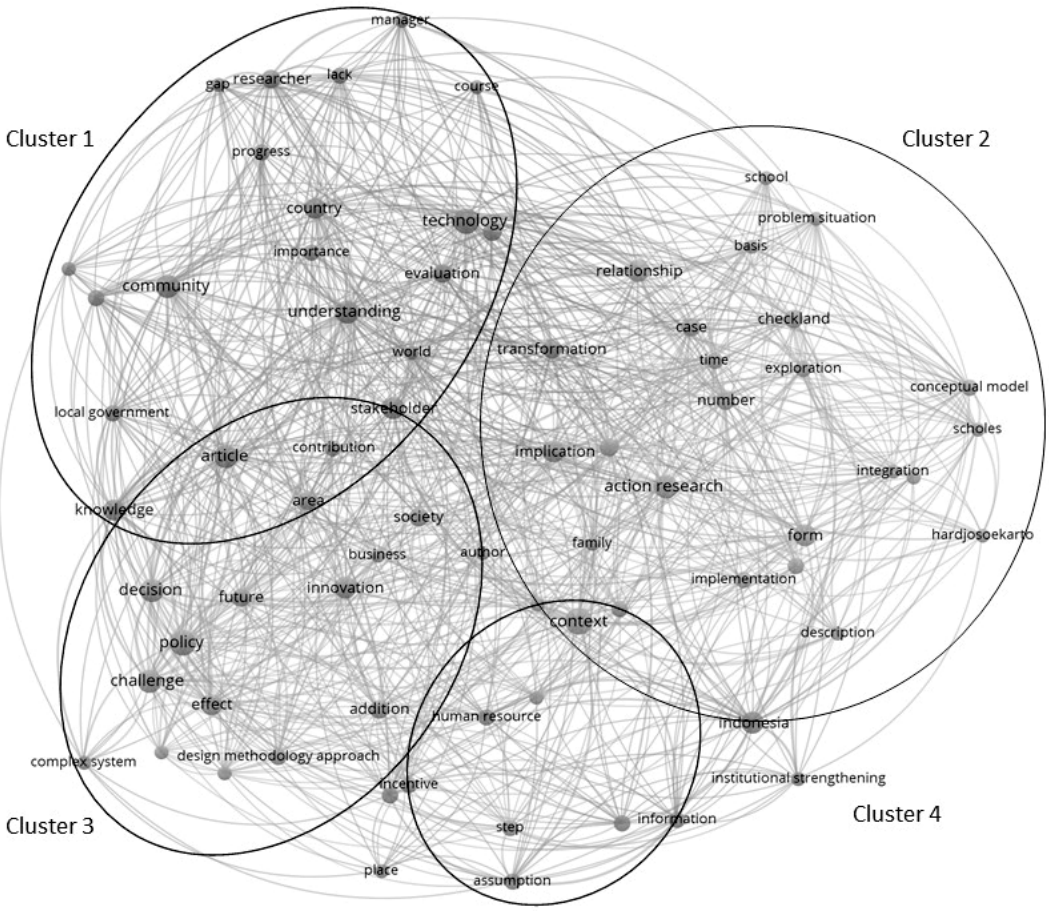

Fig. 4. The dominant clusters of cross-sector research on SSM and IE retrieved from the sample of 76 publications indexed in WoS

Source: own results based on VOSViewer v. 1.6.18 software

VOSviewer results provide a visualizations that helps in understanding the relationships and co-occurrence of terms within a set of scientific publications. In this case, the network cluster analysis is based on the text

data from a sample of 76 publications indexed in the Web of Science (WoS) database, published from 1995 until 2023, using the keywords "soft systems methodology" and "Institutional Economics". In general, four distinct clusters can be identified with each of htem likely representing a thematic focus within the body of literature:

Cluster 1: this cluster appears to focus on community-related aspects, with terms like "community," "local government," "knowledge," "policy," and "complex system." It suggests an emphasis on the application of soft systems methodology to community governance and policy-making, possibly exploring complex social systems within the institutional economics framework.

Cluster 2: this cluster includes terms like "school," "conceptual model," "action research," and "implementation." This indicates a focus on educational settings, conceptual modeling within educational research, and the practical application of theories in institutional economics and system methodologies in schools and educational institutions.

Cluster 3: in this cluster, there are apparent terms such as "transformation," "innovation," "business," and "human resource." This cluster might represent the application of soft systems methodology to organizational transformation and innovation, particularly within the context of business and human resources, likely exploring how institutional economics can inform these processes.

Cluster 4: the terms "information," "assumption," "institutional strengthening," and "Indonesia" suggest a focus on the information assumptions underlying institutional strengthening, possibly with a regional focus on Indonesia. This may reflect a subset of the literature that applies both soft systems methodology and institutional economics to the strengthening of institutions in developing countries, with a case study or focus on Indonesia.

Overall, the network analysis provides a visualization of how different concepts and themes are interconnected within the literature on soft systems methodology and institutional economics. The map indicates the main thematic areas of focus and how they may relate to each other. Each cluster reveals a distinct area of research concentration, showing the multidisciplinary nature of the research that crosses over into community governance, education, business innovation, and institutional development.

Furthermore, Figure 5 that follows reveals the results of the network map based on the bibliographic data (keyword co-occurrences, citation, and bibliographic coupling). In general, five main clusters have been identified.

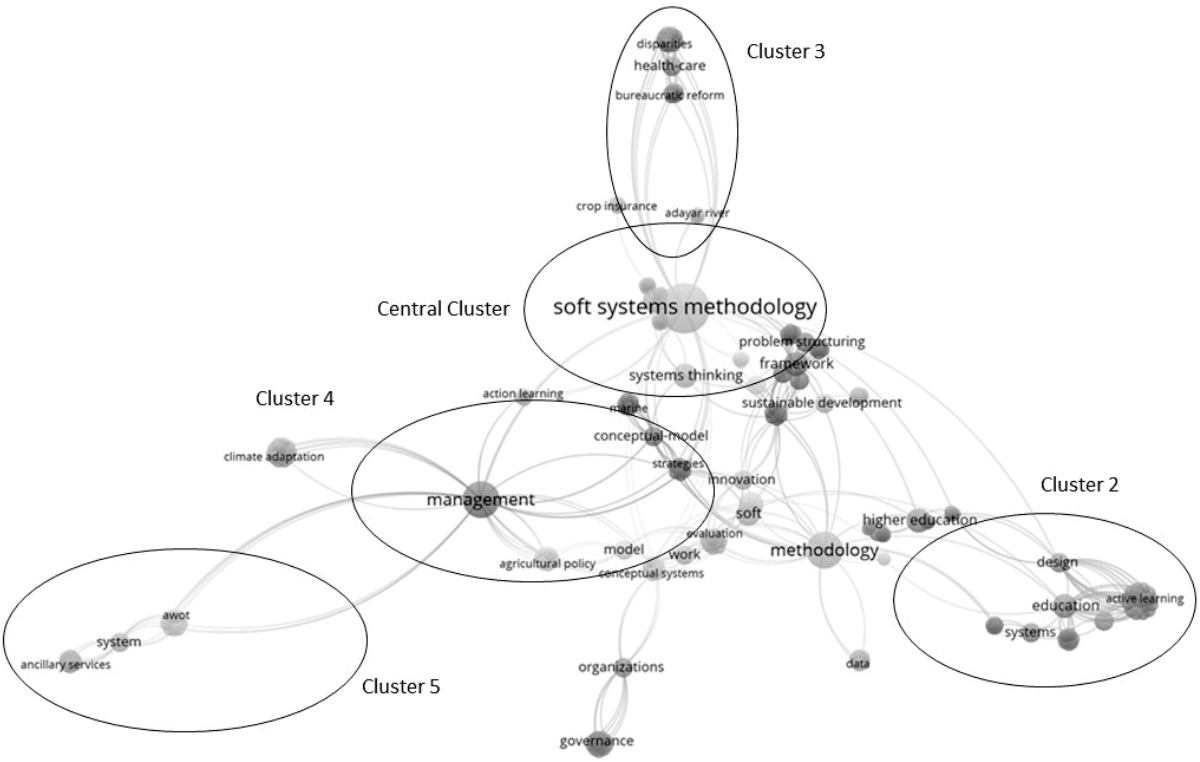

Fig. 5. Network map based on the bibliographic data of the sample of papers containing the keywords "SSM" retrieved from the sample of 5171 publications indexed in WoS

Source: own results based on VOSViewer v. 1.6.18 software

The analysis of the main patterns and results based on the visualization reveals the following trends. The main and the key cluster is Central Cluster (soft systems methodology). The term "soft systems methodology" is at the center of the network, indicating it is a core concept with many connections to other keywords. This suggests that soft systems methodology is a central theme in the literature and frequently appears alongside other key concepts.

Then, there is Cluster 2 (Education and Learning) features such keywords as "higher education," "design," "education," and "active learning." These keywords demonstrate an interest in the educational applications of soft systems methodology that includes instructional design and learning processes in such various socio-economic domains.

Furthermore, Cluster 3 (Health and Governance) containts such terms as "disparities," "healthcare," "bureaucratic reform," and "crop insurance" which indicates an interest in public health and administrative aspects. These outcomes might indicate a line of research where soft systems methodology is applied to understanding and addressing healthcare disparities and to reform bureaucratic processes in healthcare and social care.

In addition, Cluster 4 (Management and Policy) features terms such as "management," "agricultural policy," "model," and "governance" that offers the connection with management and policy-making. The results highlight the importance of using the soft systems methodology in managing resources and formulating policies.

Finally, Cluster 5 (Systems and Innovation) features keywords such as "systems thinking," "conceptual-model," or "innovation" which indicates the use of soft systems methodology in conceptual modeling for innovation, and a general emphasis on systems approach in various contexts, similar to other related works (e.g. Strielkowski and Popov, 2017; or Checkland and Poulter, 2020).

The results from the network analysis demonstrate that soft systems methodology is studued and used across different fields such as education, healthcare, governance, management, and innovation. Furthremore, the results confirm the emphasis of both terms as well as their linkages on problem structuring, conceptual models, as well as sustainable development. In addition, the interdisciplinary nature of the research is also apparent indicating special relevancy across different applications of soft systems methodology.

Conclusion and implications

To sum up, the results of this paper demonstrate that in today's complex world, traditional and old-fashioned approaches to addressing complex modern problems of institutions and organizations might not be sufficient which indicates the need for some novel tools and methods. SSM offers viable solutions for the organizational economic sustainability using the process optimization and human capital by providing a structured framework for understanding and tackling complex issues using institutional approaches.

At its core, SSM acknowledges that the real world is uncertain, biased, and full of diverse and often contradicting perspectives. It recognizes that there is no one-size-fits-all solution to every problem but rather emphasizes the importance of understanding the social context within which problems arise. By taking into account the various stakeholders involved in a particular issue, SSM allows for a more inclusive decision-making process that considers multiple viewpoints and interests.

This research demonstrated that SSM offers an approach that can contribute significantly to achieving sustainable development goals. By embracing the principles of SSM, decision-makers can navigate through the complexities of real-world problems and devise effective strategies for addressing them. One key aspect of SSM is its emphasis on systems thinking. It recognizes that real-world challenges are often interconnected and involve multiple stakeholders with diverse perspectives and interests. SSM encourages the exploration of these complex systems, enabling a comprehensive understanding of their dynamics and interdependencies. By considering various perspectives, SSM helps identify unintended consequences or overlooked factors that might hinder sustainable development efforts. In addition, SSM promotes collaboration among stakeholders by facilitating their active participation in problem-solving processes.

Through techniques such as rich pictures, root definitions, and conceptual models, SSM fosters communication and shared understanding among diverse groups. This collaborative approach ensures that decisions are not imposed from above but emerge through meaningful dialogue and consensus-building. Additionally, SSM offers continuous learning and adaptation over time which ensures flexibility in implementing sustainable economic development.

The bibliometric analysis carried out in this paper using the data from Web of Science (WoS) database that focused on the terms "soft systems methodology" and "Institutional Economics" confirmed that SSM, human capital, and institutional economics appear at the forefront of the academic research focused on revealing the pathways of sustainable organizational development. Soft systems methodology serves as a nexus connecting diverse fields such as community governance, education, business innovation, health care, and management. In the realm of policy-making, the methodology appears instrumental in addressing complex issues like healthcare disparities, bureaucratic reform, and agricultural policy, suggesting its utility in formulating and implementing effective policies (Strelkowski and Popov, 2017). The educational cluster indicates a focus on integrating soft systems methodology into higher education, highlighting its role in enhancing learning processes and instructional design. The frequent association with terms like "sustainable development" and "innovation" underscores its relevance in driving forward-thinking strategies in various sectors. When it comes to the pathways for further research, there is potential in exploring the cross-disciplinary applications of soft systems methodology, particularly in emerging areas like climate adaptation and organizational transformation (similar to Checkland and Poulter, 2020). The analysis underscores the adaptability of soft systems methodology and suggests that it could be a valuable tool in addressing contemporary global challenges. These results that might be of special interest for relevant stakeholders, academic researchers, as well as policymakers.

References

Altman, M. (2023). Mental models, decision-making, bargaining power, and institutional change. *Journal of Economic Issues* **57**(4), 1241–1259. DOI: 10.1080/00213624.2023.2273149

Banerjee, S., Jermier, J., Peredo, A., Perey, R., Reichel, A. (2021). Theoretical perspectives on organizations and organizing in a post-growth era. *Organization* **28**(3), 337–357. DOI: 10.1177/1350508420973629

Bocken, N., & Konietzko, J. (2022). Circular business model innovation in consumer-facing corporations. *Technological Forecasting and Social Change* **185**, 122076. DOI: 10.1016/j.techfore.2022.122076

Chan, C. (2023). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education* **20**(1), 1–25. DOI: 10.1186/s41239-023-00408-3

Checkland, P. (2010). Researching real-life: Reflections on 30 years of action research. *Systems Research and Behavioral Science* **27**(2), 129–133. DOI: 10.1002/sres.1019

Checkland, P., Poulter, J. (2020). Soft systems methodology. In: Reynolds, M., Holwell, S. (eds.) *Systems Approaches to Making Change: A Practical Guide*. London: Springer. DOI: 10.1007/978-1-4471-7472-1_5

Coase, R. (1959). The federal communications commission. *The Journal of Law and Economics* **2**, 1–40. DOI: 10.1086/466549

Coase, R. (2013). The problem of social cost. *The Journal of Law and Economics* **56**(4), 837–877. DOI: 10.1086/674872

Cradock-Henry, N., Connolly, J., Blackett, P., Lawrence, J. (2020). Elaborating a systems methodology for cascading climate change impacts and implications. *MethodsX* 7, 100893. DOI: 10.1016/j.mex.2020.100893

Dahesh, M., Tabarsa, G., Zandieh, M., Hamidizadeh, M. (2020). Reviewing the intellectual structure and evolution of the innovation systems approach: A social network analysis. *Technology in Society* **63**, 101399. DOI: 10.1016/j.techsoc.2020.101399

D'Amore, G., Di Vaio, A., Balsalobre-Lorente, D., Boccia, F. (2022). Artificial intelligence in the water-energy-food model: a holistic approach towards sustainable development goals. *Sustainability* **14**(2), 867. DOI: 10.3390/su14020867

Dumitriu, D., Militaru, G., Deselnicu, D., Niculescu, A., Popescu, M. (2019). A perspective over modern SMEs: Managing brand equity, growth and sustainability through digital marketing tools and techniques. *Sustainability* **11**(7), 2111. DOI: 10.3390/su11072111

Ercantan, O., Eyupoglu, S. (2022). How do green human resource management practices encourage employees to engage in green behavior? Perceptions of university students as prospective employees. *Sustainability*, **14**(3), 1718. DOI: 10.3390/su14031718

Eweje, G., Sajjad, A., Nath, S., Kobayashi, K. (2021). Multi-stakeholder partnerships: A catalyst to achieve sustainable development goals. *Marketing Intelligence & Planning*, **39**(2), 186-212. DOI: 10.1108/MIP-04-2020-0135

Faller, P., Lundgren, H., Marsick, V. (2020). Overview: why and how does reflection matter in workplace learning? *Advances in Developing Human Resources* **22**(3), 248–263. DOI: 10.1177/1523422320927295

Garg, S., Sinha, S., Kar, A., Mani, M. (2022). A review of machine learning applications in human resource management. International *Journal of Productivity and Performance Management* **71**(5), 1590–1610. DOI: 10.1108/IJPPM-08-2020-0427

Grewatsch, S., Kennedy, S., Bansal, P. (2023). Tackling wicked problems in strategic management with systems thinking. *Strategic Organization* **21**(3), 721–732. DOI: 10.1177/14761270211038635

He, Q., Wang, Z., Wang, G., Zuo, J., Wu, G., Liu, B. (2020). To be green or not to be: How environmental regulations shape contractor greenwashing behaviors in construction projects. *Sustainable Cities and Society* **63**, 102462. DOI: 10.1016/j.scs.2020.102462

Hegab, H., Khanna, N., Monib, N., Salem, A. (2023). Design for sustainable additive manufacturing: A review. *Sustainable Materials and Technologies* e00576. DOI: 10.1016/j.susmat.2023.e00576

Hodgson, G. (1998). The approach of institutional economics. *Journal of Economic Literature* **36**(1), 166–192

Jackson, M. (2023). Critical systems practice 4: Check-Evaluating and reflecting on a multimethodological intervention. *Systems Research and Behavioral Science* **40**(4), 617–632. DOI: 10.1002/sres.2912

Kineber, A., Antwi-Afari, M., Elghaish, F., Zamil, A., Alhusban, M., Qaralleh, T. (2023). Benefits of implementing occupational health and safety management systems for the sustainable construction industry: a systematic literature review. *Sustainability* **15**(17), 12697. DOI: 10.3390/su151712697

Kish, K., Mallery, D., Haage, G., Melgar-Melgar, R., Burke, M., Orr, C., Larson, J. (2021). Fostering critical pluralism with systems theory, methods, and heuristics. *Ecological Economics* **189**, 107171. DOI: 10.1016/j.ecolecon.2021.107171

Lamé, G., Jouini, O., Stal-Le Cardinal, J. (2020). Combining soft systems methodology, ethnographic observation, and discrete-event simulation: A case study in cancer care. *Journal of the Operational Research Society* **71**(10), 1545–1562. DOI: 10.1080/01605682.2019.1610339

Li, Z., She, J., Guo, Z., Du, J., Zhou, Y. (2024). An evaluation of factors influencing the community emergency management under compounding risks perspective. *International Journal of Disaster Risk Reduction* **100**, 104179. DOI: 10.1016/j.ijdrr.2023.104179

Lin, C., Wittmer, J., Luo, X. (2022). Cultivating proactive information security behavior and individual creativity: The role of human relations culture and IT use governance. *Information & Management* **59**(6), 103650. DOI: 10.1016/j.im.2022.103650

Lohman, L. (2020). Using soft systems thinking to craft instructional design and technology interventions. *TechTrends* **64**(5), 720–729. DOI: 10.1007/s11528-020-00536-x

Martin, A., O'Meara, P. (2020). Community paramedicine through multiple stakeholder lenses using a modified soft systems methodology. *Australasian Journal of Paramedicine* **17**, 1–11. DOI: 10.33151/ajp.17.793

Martín, E., Giordano, R., Pagano, A., Van Der Keur, P., Costa, M. (2020). Using a system thinking approach to assess the contribution of nature based solutions to sustainable development goals. *Science of the Total Environment* **738**, 139693. DOI: 10.1016/j.scitotenv.2020.139693

Mayhew, A. (2018). An introduction to institutional economics: Tools for understanding evolving economies. *The American Economist* **63**(1), 3–17. DOI: 10.1177/0569434517749157

Ménard, C., Shirley, M. (2014). The future of new institutional economics: from early intuitions to a new paradigm? *Journal of Institutional Economics* **10**(4), 541–565. DOI: 10.1017/S174413741400006X

Murphy, K. (2020). Performance evaluation will not die, but it should. *Human Resource Management Journal* **30**(1), 13–31. DOI: 10.1111/1748-8583.12259

Nicolini, D., Pyrko, I., Omidvar, O., Spanellis, A. (2022). Understanding communities of practice: Taking stock and moving forward. *Academy of Management Annals* **16**(2), 680–718. DOI: 10.5465/annals.2020.0330

North, D. (1990). *Institutions, Institutional Change, and Economic Performance*. Cambridge: Cambridge University Press

North, D. (1994). Economic performance through time. *The American Economic Review* **84**(3), 359–368.

North, D. (2016). Institutions and economic theory. *The American Economist* **61**(1), 72–76. DOI: 10.1177/0569434516630194

Ormerod, R., Yearworth, M., White, L. (2023). Understanding participant actions in OR interventions using practice theories: A research agenda. *European Journal of Operational Research* **306**(2), 810–827. DOI: 10.1016/j.ejor.2022.08.030

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Otenyo, E., Lind, N., Jones, L. (eds.) (2006). *Comparative Public Administration: The Essential Readings*. London: Emerald Group Publishing.

Petracca, E., Gallagher, S. (2020). Economic cognitive institutions. *Journal of Institutional Economics* **16**(6), 747–765. DOI: 10.1017/S1744137420000144

Pham, N., Hoang, H., Phan, Q. (2020). Green human resource management: a comprehensive review and future research agenda. *International Journal of Manpower* **41**(7), 845–878. DOI: 10.1108/IJM-07-2019-0350

Rai, S., Rai, S., Singh, N. (2021). Organizational resilience and social-economic sustainability: COVID-19 perspective. *Environment, Development and Sustainability* **23**, 12006–12023. DOI: 10.1007/s10668-020-01154-6

Rana, G., Sharma, R. (2019). Emerging human resource management practices in Industry 4.0. *Strategic HR Review* **18**(4), 176–181. DOI: 10.1108/SHR-01-2019-0003

Reddy, V., Chiranjeevi, T., Syme, G. (2020). Inclusive sustainable intensification of agriculture in West Bengal, India: Policy and institutional approaches. *International Journal of Agricultural Sustainability* **18**(1), 70–83. DOI: 10.1080/14735903.2019.1698489

Ren, S., Jackson, S. (2020). HRM institutional entrepreneurship for sustainable business organizations. *Human Resource Management Review* **30**(3), 100691. DOI: 10.1016/j.hrmr.2019.100691

Ribeiro, N., Nguyen, T., Duarte, A., de Oliveira, R., Faustino, C. (2020). How managerial coaching promotes employees' affective commitment and individual performance. *International Journal of Productivity and Performance Management* **70**(8), 2163–2181. DOI: 10.1108/IJPPM-10-2018-0373

Salavati, S., Mirijamdotter, A., Elm, P., Perez, M. (2021). Coordinated SSM: An adaptation of the SSM learning cycle. *Systems* **9**(3), 49. DOI: 10.3390/systems9030049

Silalahi, M., Walsh, S. (2023). Analyzing government policies in addressing unemployment and empowering workers: Implications for economic stability and social welfare. *Law and Economics* **17**(2), 92–110. DOI: 10.35335/laweco.v17i2.3

Singh, S., Singh, S., Koohang, A., Sharma, A., Dhir, S. (2023). Soft computing in business: exploring current research and outlining future research directions. *Industrial Management & Data Systems* **123**(8), 2079–2127. DOI: 10.1108/IMDS-02-2023-0126

Slattery, O., Trubetskaya, A., Moore, S., McDermott, O. (2022). A review of lean methodology application and its integration in medical device new product introduction processes. *Processes* **10**(10), 2005. DOI: 10.3390/pr10102005

Strielkowski, W., Popov, E. (2017). Economic modelling in institutional economic theory. *Journal of Institutional Studies* **9**(2), 18–28. DOI: 10.17835/2076-6297.2017.9.2.018-028

Strielkowski, W., Kuzmin, E., Suvorova, A., Nikitina, N., Gorlova, O. (2023). *Organizational economic sustainability via process optimization and human capital: A soft systems methodology (SSM) approach*. arXiv preprint, 2311.17882. DOI: 10.48550/arXiv.2311.17882

Strielkowski, W., Samoilikova, A., Smutka, L., Civín, L., Lieonov, S. (2022). Dominant trends in intersectoral research on funding innovation in business companies: A bibliometric analysis approach. *Journal of Innovation & Knowledge* **7**(4), 100271. DOI: 10.1016/j.jik.2022.100271

Vahdat, S. (2022). The role of IT-based technologies on the management of human resources in the COVID-19 era. *Kybernetes* **51**(6), 2065–2088. DOI: 10.1108/K-04-2021-0333

Venter, C. (2020). A reflection on SSM as a critical social action research method: Towards improvement of project governance. *Electronic Journal of Business Research Methods* **18**(2), 142–152. DOI: 10.34190/JBRM.18.2.006

Volchik, V. (2020). Narratives and understanding of economic institutions. *Terra Economicus* **18**(2), 49–69. DOI: 10.18522/2073-6606-2020-18-2-49-69

Volchik, V., Maslyukova, E. (2021). Narrative Economics perspective on modeling national innovation system. *Terra Economicus* **19**(4), 36–50. DOI: 10.18522/2073-6606-2021-19-4-36-50

Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management: A systematic review. *The International Journal of Human Resource Management* **33**(6), 1237–1266. DOI: 10.1080/09585192.2020.1871398

Wang, S., Abbas, J., Sial, M., Álvarez-Otero, S., Cioca, L. (2022). Achieving green innovation and sustainable development goals through green knowledge management: Moderating role of organizational green culture. *Journal of innovation & knowledge* **7**(4), 100272. DOI: 10.1016/j.jik.2022.100272

Warren, S., Sauser, B., Nowicki, D. (2019). A bibliographic and visual exploration of the historic impact of soft systems methodology on academic research and theory. *Systems* **7**(1), 10. DOI: 10.3390/systems7010010

Williamson, O. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications: A Study in the Economics of Internal Organization*. New York: Free Press.

Williamson, O. (2005). The economics of governance. *American Economic Review* **95**(2), 1–18. DOI: 10.1257/000282805774669880

Wu, C., Tang, Y., Tsang, Y., Chau, K. (2021). Immersive learning design for technology education: A soft systems methodology. *Frontiers in Psychology* **12**, 745295. DOI: 10.3389/fpsyg.2021.745295

Xu, L. (2020). The contribution of systems science to Industry 4.0. *Systems Research and Behavioral Science* **37**(4), 618–631. DOI: 10.1002/sres.2705