

Pathways and Mechanisms for Catalyzing Social Impact through Orchestration: Insights from an Open Social Innovation Project

Zhang Shuchen¹, Amiya Bhaumik², Srikrishna Banerjee³,
Archita Chakraborty⁴

¹Research Scholar, Department of Public Administration, Lincoln University, 47301 Petaling Jaya, Selangor D. E., Malaysia

^{2,3,4}Faculty, Department of Academic Affairs, Lincoln University, 47301 Petaling Jaya, Selangor D. E., Malaysia

Abstract

There is a rising interest in the literature on entrepreneurship in understanding how groups of entrepreneurs might work together to solve social problems. In this research, the researchers analyze how an open social innovation initiative brought together government agencies, people, and organized civil society to work together to solve several societal problems. By analyzing data collected on-site and in real-time during the project, they show how social impact orchestration may generate influence along four pathways: leading with the lead user, concentrating on the solution, focusing on the problem, and focusing on the ecosystem. They show how orchestration made it feasible to learn and scale, which in turn raised the potential for impact for all parties involved in each route. The findings of our research add to what is already known about impact entrepreneurship and the practice of organizing innovation for social good.

Keywords: Literature, Entrepreneurship, Social problems, Orchestration, Government agencies.

Introduction

Entrepreneurs are increasingly being looked upon as potential agents of change in societal issues. Academics have been studying social and environmental entrepreneurship for almost a decade (Baskaran et al., 2019). As per the findings of recent research conducted by Vedula et al. (2022), it is imperative for social entrepreneurship to emphasize the inherent public good aspect and the pivotal role of collectives. The concept of impact entrepreneurship has gained increasing attention as a means to more effectively recognize the involvement of citizens and the public sector in social innovation (Markman et al., 2019).

Commencing the social innovation process requires entrepreneurs to engage with and orchestrate the efforts of multiple stakeholders. Collaboration and coordination among individuals, governments, foundations, and non-governmental organisations (NGOs) are essential to effectively address societal challenges such as climate change, pandemics, and inequality (Grey et al., 2022; Markman et al., 2019).

While there has been some research on orchestration within the realm of impact or social entrepreneurship, the majority of focus has been directed towards its function within innovation networks and hubs (Busch & Barkema, 2022). The efficacy of orchestration in promoting the growth of social enterprises has been demonstrated by various authors, including Busch and Barkema (2022) and Logue and Grimes (2022). However, orchestration encompasses more than a mere supplementary skill for the expansion of ethical enterprises. Businesses are increasingly emphasizing social impact orchestration as a core competency. For instance, EYElliance facilitates city-wide efforts to combat vision impairment and blindness. These organizations differ from traditional social enterprises in that their primary goal is to create social change via the concerted efforts of stakeholders from different sectors. To better understand how social impact orchestration works, this study examines it in the context of real-world collaborative attempts to solve societal issues. Our mission is to compile a comprehensive list of the potential positive societal impacts that may be orchestrated. According to Peters et al., (2021), "social impact" describes the production of outcomes that help in the elimination or reduction of social and environmental problems.

Our study is based on how the German nonprofit Project Together used social impact orchestration in practice. They followed Update Deutschland, an open social innovation effort launched by initiative Together to tackle societal issues in Germany, for one whole year.

Based on our analysis of interview and observation data, they were able to identify four pathways via which Project Together coordinated its social impact. Different emphasis points—the primary user, the solution, the problem, and the ecosystem—lead to different arrangements of these pathways. They also show how the collective action project's stakeholders were able to scale their efforts and gain insight from their experiences as a result of social impact orchestration. Our studies promote collaborative entrepreneurial solutions for resolving societal problems.

Social impact Orchestration

According to Touboulic and McCarthy (2020), the implementation of impact entrepreneurship, which is centered on social issues, requires the utilization of both collective action and dispersed agency. The successful execution of various stages in the innovation process, such as resource mobilization and awareness-raising, necessitates the active participation of diverse stakeholders from various sectors, each with distinct interests, mandates, and resources, as highlighted by Mikwamba et al. (2021). Collaboration is an essential aspect of social innovation, encompassing all stages of the process, including problem identification, solution development, testing, refinement, scaling, and institutionalization. The term "Open Social Innovation" (OSI) has been introduced by scholars to denote a practice that fosters the involvement of diverse stakeholders in the innovation process. This concept has been derived from an examination of recent initiatives that have emerged in response to the Covid-19 pandemic, including hackathons of significant scale. Henriques and Suarez (2022) have conducted research on OSI and have found that the process's open, collaborative, and co-creative nature necessitates orchestration. The authors Markman et al. (2019) suggest that adopting a collaborative approach to social innovation may enable them to effectively evaluate the potential advantages and disadvantages of our endeavors. In order to comprehensively examine social innovation through collective action, scholars must not only consider Social Innovation Organizations (SIOs), but also the various initiatives that arise from the process. These initiatives can be viewed as constellations of issues, solutions, and actors. (Giones et al., 2020).

Due to the collective pooling of resources, expertise, and shared perspectives, groups may possess a greater social influence as a cohesive unit. Notwithstanding, orchestration encompasses more than mere facilitation of individuals or synchronization of endeavors to enhance cooperation. The present study investigates the agents involved in the open and participatory procedures of social innovation and characterizes orchestration as an entrepreneurial pursuit aimed at generating a beneficial social impact through synchronized collective endeavors. Scholarly research on networks and innovation has emphasized the possible organizational difficulties that orchestrators may encounter. These challenges include the need to address power imbalances among stakeholders, manage knowledge flows across organizational boundaries, balance multiple perspectives, as well as resist the temptation of mission drift. (Reypens et al., 2021; Logue & Grimes, 2022). The literature on social and impact entrepreneurship has yet to explore the correlation between orchestration, the innovation process, and impact, despite the proven effectiveness of collaborative efforts in addressing societal challenges.

Setting, methods, and analysis

Their investigation centers around Project Together, a social enterprise based in Germany that is committed to facilitating social impact. This case study examines an open social innovation project launched by the initiative Together. An update pertaining to Germany. In order to address pressing societal issues in Germany, the German Chancellery has supported a collaborative initiative involving citizen innovators, government officials, and organized civil society. In March 2021, the project was initiated through a 48-hour virtual event that facilitated the collaboration of 4400 individuals towards devising novel solutions or improving pre-existing ones in six distinct problem domains, namely climate-neutral future, education, city and rural life, health, democracy and civic engagement, and digital government. An implementation plan was devised by Project Together with the aim of facilitating the success of 330 social action initiatives during the period spanning from March to August 2021. The primary objective of Project Together was to establish a connection between individuals and public and non-profit sector resources, thereby enabling collaborative efforts through the platform. The course offered a plethora of resources, ranging from virtual discussions (aimed at fostering networking and providing constructive criticism) to face-to-face presentations that aimed to enhance particular competencies.

From February 2021 to February 2022, our research team observed Update Deutschland's participation in a learning partnership, which is a type of engaged scholarship that was conceptualized during the experimental project discussions between Project Together and the German Chancellery in February 2021. (Hoffman, 2021). Apart from overseeing the project's progression in real-time and administering semi-structured interviews with all significant stakeholders, they also scrutinized documents (such as news articles) and online data (such as that obtained from the collaborative platform Slack). The results presented herein are derived from a total of 109 interviews and 650 hours of participant observation. The present study employs data gathered from 33 comprehensive interviews to propose a resolution to the inquiry of how social impact orchestration can engender impact and enhance the impact potential of additional stakeholders.

The analysis was carried out in two phases. Initially, an inductive methodology was employed to ascertain the various pathways through which Project Together exerted its influence. The activities undertaken by the organizers of Project Together have aroused our interest in several distinct manners. Project Together acknowledged the significance of lead users, such as municipalities, in identifying social issues, creating and expanding solutions, and coordinating endeavors with a distinct emphasis on a lead user, while also involving citizen innovators and other stakeholders. The identified path is one that promotes co-creation with key stakeholders for maximum impact. By employing a similar methodology, they have successfully identified an additional trio of pathways, namely: broadening the scope of current solutions, establishing alliances to tackle particular issues, and enhancing regional ecosystems.

To determine the most viable explanation for the enhanced impact potential of stakeholders and initiatives through Project Together, an additive method was employed, as outlined by Adewumi et al. (2021). To derive meaning from the data, they referred to the existing body of literature on social innovation to identify the procedures that have demonstrated efficacy when implemented in combination. According to recent publications in the field of social innovation, learning and scaling are fundamental strategies for achieving a positive social impact (Foroudi et al., 2021). According to Chen et al. (2021), collaborative efforts among individuals can facilitate the acquisition of knowledge pertaining to a social issue and convert various forms of ambiguity into a comprehensible comprehension through the mechanism of teaching. Despite the diverse range of terminologies utilized by scholars to explicate scaling, there is a consensus that it is an indispensable tool for advancing societal issues and achieving impact (Busch and Barkema, 2022). According to Seelos and Mair (2020), scaling refers to the process of disseminating innovation outcomes to a wider audience and/or enhancing their efficacy over time. Inquiries such as "In what ways did Project Together facilitate the advancement and refinement of initiatives' comprehension of the problem or solution?" were posed during the course of our data examination. In what particular manner did Project Together facilitate the enhancement of individuals' proficiency and comprehension? Similarly, an examination was conducted on how social impact orchestration contributed to the enhancement of solution delivery efficiency and effectiveness for Project Together. What measures did the company undertake to ensure wider adoption of its developed solutions among customers?

Findings

The researchers found that social impact orchestration forms four effect paths and showed how it expedited influence through these pathways, mostly by making the learning and scaling processes easier. A summary of the information is provided in Table 1.

Pathway A: new venture co-creation centered on a key user

The first way that Project Together had an impact during Update Deutschland was via collaborative creativity centered on a key user. Project Together facilitated the creation of novel undertakings for Update Deutschland, which centered on a public sector entity as the principal user and involved collaborative solution-building with individuals. This scenario is applicable to any party with an interest or involvement in the matter.

To address the difficulty many small cities have in finding qualified IT workers, Lokalprojekte enlisted the help of a municipal mayor as its primary user, along with locals. The growth of Lokalprojekte was supported by ProjectTogethers' orchestration, which lowered barriers to collaboration across different sectors.

Teaching through example. Project together understood the difficulties that recently formed projects like Lokalprojekte would encounter. The findings of Project Together's research indicate that citizen-led initiatives encounter difficulties in garnering recognition from public administrations due to their failure to consider the demands of the public sector in their proposed solutions. In order to mitigate these errors, ProjectTogether implemented a strategy to foster knowledge exchange between public sector personnel and primary users through two distinct channels. The first channel involved utilizing interactive formats to illuminate the unique challenges faced by stakeholders in their respective sectors. This experience resulted in individuals developing a heightened awareness of the importance of conforming to established protocols in order to increase the likelihood of their proposals being accepted by the government. Additionally, ProjectTogether provided instructional sessions aimed at enhancing skill sets. The participation of Lokalprojekte's founders in all early-stage UpdateDeutschland sessions, including pitch training, serves as a commendable exemplar.

Making a contribution towards the advancement of a particular field or industry. The objective of Project Together was to facilitate the establishment of partnerships between businesses and potential collaborators with the aim of fostering their growth and development. ProjectTogether curated a list of the 40-50 most promising initiatives, including Lokalprojekte, which was regularly updated. The list of items was disseminated by Project Together to potential scaling partners, accompanied by a caveat that these items may be of specific interest to them. Furthermore, ProjectTogether offered psychological assistance by regularly monitoring the advancement of the participants' chosen initiatives. According to a member of Lokalprojekte's team, the recognition received from an external source is significant as it indicates that their work is being acknowledged and valued by others outside of their team. This recognition serves as a testament to the importance of their work.

Table 1
Impact pathways and Orchestration: Focus and mechanism to catalyze impact.

		MECHANISM	
FOCUS	Learning	Scaling	
Lead user stakeholders	<ul style="list-style-type: none"> Organizing inputs on challenges of cross sectoral collaboration for all stakeholders Offering skill development opportunities 	<ul style="list-style-type: none"> Mediating contacts to scaling partners Providing emotional support Increasing solutions' visibility 	
Solution	<ul style="list-style-type: none"> Ensuring that initiatives get feedback from domain experts, mentors, or scaling partners 	<ul style="list-style-type: none"> Defining milestones for the solution development 	
Problem	<ul style="list-style-type: none"> Offering blueprint for pursuing an alliance Stimulating initiatives to develop a shared understanding of the social problem 	<ul style="list-style-type: none"> Mediating contacts to experts and decisionmakers Providing brand name and logo Showcasing work of successful ecosystems 	
Ecosystem	<ul style="list-style-type: none"> Providing on-demand support for local ecosystem leaders Regularly bringing together local ecosystem leaders 		

Table 1: Impact Pathways & Orchestration: Focus & Mechanism to catalyze impact
Source - Giallongo et al., (2023)

Pathway B: Increasing the potential effect of current solutions

ProjectTogether's social impact orchestration followed the second route by emphasizing pre-existing solutions. The reasoning for this route is that there is a plethora of potential solutions, but each one needs encouragement to become fully realized. Therefore, social impact orchestration increases the effect potential of a solution by making it possible for additional efforts to develop, enhance, and implement the solution.

Exemplification by way of. Two college students saw a need for a technological solution to the issue of young people's disinterest in political participation, so they created Mitwirk-o-mat.⁵ Citizens who are looking for ways to become involved in their communities may use this site to find volunteer and other civic engagement opportunities in their area. The instrument was successfully piloted by its creators in their very own backyard. The two students collaborated with a foundation and a volunteer coordinator in a large German city for UpdateDeutschland. Their input was crucial in shaping this preliminary solution into the finished product that was ultimately accepted by a number of different towns.

Helping others learn. The goal of Project Together was to facilitate communication between current efforts and subject matter experts, mentors, and scaling partners. As a result, initiatives were able to better grasp the issue they were attempting to address and identify the limitations of their existing approach. Initiatives were therefore free to modify and adjust their approaches.

Contributing to development. Working on the project jointly raised the products' visibility, which facilitated their spread. This was accomplished by providing each project "prime time" at the program's final event, where many influential people in the field of public administration could hear about the problems and their respective solutions. Project Together sped up the process of expanding the solution's reach by instituting checkpoints at key moments in the program's development. These, according to the Mitwirk-o-mat's scaling partner, are essential for the rapid advancement of the solution. Without a specific end date, a project may continue forever. Constraining time is challenging. Still, it's helpful. [...] They aligned our internal milestones with Update Germany's published benchmarks.

Pathway C: building coalitions around solving problems

ProjectTogehter's social impact orchestration aimed to form coalitions across separate but related efforts tackling the same social issue, which contributed to the third effect route. Initiatives may raise awareness of a social issue and/or generate pressure for possible remedies by forming partnerships.

Exemplification by way of. In response to the widespread issue of isolation in Germany, the coalition GemEinsamkeit formed as part of Update Deutschland's implementation programme. After agreeing to work together, members of GemEin samkeit formed a new nationwide network with the goal of fostering frequent communication and collaboration between civil society organizations, specialists, foundations, and politicians. Initiatives' access to ProjectTogether's orchestration of alliance organizing was critical. The SIO backed GemEinsamkeit's plans to connect the country.

Facilitating Education. ProjectTogether provided initiatives with a roadmap for forming and maintaining an alliance, therefore instructing coalitions in the art of collective action. During a public

appeal for problem-oriented projects, ProjectTogether's employees shared lessons learned from working with a newly formed alliance. As per ProjectTogether, a comprehensive comprehension of the societal issue is a crucial factor in the triumph of any collaborative alliance. According to a member of the alliance, the insights and strategic ideas gained from their interaction with the ProjectTogether team were highly beneficial in the establishment of the alliance.

The capacity to expand operations has been enabled. ProjectTogether facilitated their endeavors to enhance awareness of the issue among policymakers by establishing connections with notable political figures and experts in the relevant field. According to a member of the alliance, they are currently engaged in communication with the Ministry of Family Affairs, which was initially facilitated by ProjectTogether. The utilization of the UpdateGermany name and logo by coalitions through ProjectTogether facilitated the establishment of credibility with prospective partners. According to a coalition member, the collaboration can leverage the reputations of organizations such as UpdateDeutschland and ProjectTogether in Germany.

Pathway D: improve the health of regional ecosystems

The fourth impact route of ProjectTogether's social impact orchestration prioritized the enhancement of regional ecosystems that are committed to social innovation. ProjectTogether collaborated with regional administrations and non-governmental organizations to advance social innovation within their respective localities. ProjectTogether facilitated the development of leadership skills among participants by establishing objectives and enabling them to take charge within the social innovation project ecosystem they contributed to establishing.

The illustration(s) provided are deemed to be of practical value. The municipal administration of Hamburg has implemented the utilization of UpdateDeutschland as a means to evaluate its novel strategy for fostering innovation, with the ultimate goal of establishing the city as a preeminent hub for social innovation within Germany. ProjectTogether was launched through a close collaboration between the foundation of a philanthropist in the local area and the Hamburg chapter of a social entrepreneurship network in Germany. The implementation of community events and a novel funding guideline by the city's administration in Hamburg has elicited great enthusiasm among projects, owing to the open and participatory approach to social innovation.

Enabling the acquisition of novel information. ProjectTogether provided support to the leaders of the local ecosystem as and when required. ProjectTogether has facilitated the coordination of communal assemblies and provided direction on the appropriate methodology for engaging with OSI, such as the formulation of an open solicitation for addressing a concern, rather than issuing a tender. According to a Hamburg public administration official, ProjectTogether provided valuable assistance in organizing the process and guiding the team through it. The aforementioned statement elucidates how ProjectTogether apprised leaders within the ecosystem regarding strategies to alleviate the inherent risks associated with open innovation processes. Consequently, their presence was highly valued.

ProjectTogether frequently convened leaders from various regions across Germany's ecosystem, including government officials and representatives from nonprofit organizations. The presentations delivered by the delegates provided attendees with insights into the diverse approaches that various

sectors adopt in their open (social) innovation processes, thereby enabling them to gain a comprehensive perspective on the subject matter. A specific result of these discussions was the recognition by Hamburg municipal officials of the necessity to establish fresh financial standards in order to enhance the efficiency of projects.

Granting permission for expansion or growth. The emphasis of ProjectTogether on thriving local ecosystems during the course of the initiative not only enhanced credibility at the grassroots level but also established a model for other areas to follow. ProjectTogether frequently organized visits for municipal authorities from Hamburg as a means of disseminating information about their pioneering approach. The aforementioned development not only stimulated the participation of additional endeavors within Hamburg's ecosystem, but also generated attention from other municipalities and territories, including Munich and the Lower Saxony region.

Discussion

The UpdateDeutschland initiative, which is characterized by its openness and participatory nature in the realm of social innovation, has enabled us them to observe four distinct pathways that are forged through the orchestration of social impact, spanning from the ideation phase to the ultimate realization of the project. The identified type paths can be regarded as efficient type tactics for managing social influence. The present study contributes additional intricacy to the discourse surrounding the methods by which social impact orchestrators achieve outcomes. By segregating the paths, they were able to discern discrepancies in the extent to which they augment the potential impact of the stakeholders concerned. The findings of our study contribute to the discourse on the catalytic effect by showcasing how orchestration can enhance learning and scaling, thereby augmenting the potential for impact of various initiatives.

The present investigation constitutes a scholarly contribution to the ongoing discourse within the academic community and the relevant field. The present study contributes to the expanding literature on impact entrepreneurship (Markman et al., 2019) and collective social entrepreneurship (Mitzinneck & Besharov, 2019), which emphasize the importance of distributed agency and collaborative problem-solving in enhancing societal well-being. Our research demonstrates the significance of social impact orchestration in addressing such issues. The present study aims to shed light on the significance of learning in impact generation within the context of impact entrepreneurship. While the topic has been explored in the literature on social innovation (Henriques et al., 2022), it has yet to be thoroughly examined in the literature on impact entrepreneurship. The findings of our study provide a more nuanced understanding of the correlation between size and orchestration in addressing societal challenges, as reported by Busch and Barkema (2022). The routes they have discovered contain initial observations regarding the suitability of specific scaling modes in conjunction with particular orchestration methods, which could be valuable for future research. Option B, namely enhancing the quality and broadening the reach of an already existing solution, could be deemed as the most effective approach to optimize the potential for impact. Pathway C could be a viable option for those seeking to delve deeper and cater to the requirements of a broad audience. This approach involves forging alliances that concentrate on a specific subject matter. In conclusion, our contribution aims to initiate discussions regarding the definition of quantifiable results in the context of impact or collaborative

social entrepreneurship. The examined case study indicates that the orchestration of social impact has the potential to generate novel initiatives, improved problem-solving strategies, enhanced collaborations, and heightened ecosystem resilience. The Open Source Initiative (OSI) process emerged as an inadvertent outcome of social impact orchestration, thereby enhancing the potential for impact of the relevant stakeholders. The present study adds to the expanding corpus of scholarly works on orchestration within the domains of innovation and entrepreneurship. Prior research has examined the role of orchestration in promoting the attainment of targeted innovation outcomes by effectively managing the actions of a limited number of participants within a particular network, as evidenced by studies conducted by Franca et al. (2022) and Faccin et al. (2020).

This study contributes to the existing body of literature on orchestration by centering on an entrepreneurial individual whose primary drive is to orchestrate collective action towards addressing societal issues with a focus on social impact. According to our research, the process of leading social change is comparable to diligent labor rather than a heroic undertaking. The objective of this investigation was to establish the foundational basis for forthcoming inquiries and plausible remedial implementations.

Acknowledgement

The authors are thankful to the institutional authority for completion of the work.

Conflict of Interests

The authors affirm that they do not have any conflicting objectives.

Appendix

Additional Illustrative Examples for Impact Pathways.

Illustrative Examples	
Pathway A Fostering co-creation with lead users	<p>Sag's der Polizei. An executive from the police headquarters faced the problem of identifying new ways of how citizens can provide feedback to police services. The executive as the lead user got in touch with citizen innovators and they engaged in piloting an anonymous and online feedback tool.</p> <p>Meta. Meta offers digital anti-discrimination. Affected people can be counseled directly via mobile phone or PC, without having to wait for an appointment. With the support of the Federal Ministry for Economics and Technology, the team developed the anti-discrimination chatbot.</p>
Pathway B Amplifying the impact potential of solutions	<p>Silberdraht. Silberdraht is a telephone service for senior citizens that provides digital information on local offers, events and services. Silberdraht emerged during the first year of the Corona crisis and Silberdraht used UpdateDeutschland to further improve its solution. Most importantly, it established a cooperation between the City of Heidelberg, which was also supported by the Körber Foundation.</p> <p>Sofort Impfen. The initiative sought to connect people looking for Covid vaccination with doctors. Turning to UpdateDeutschland allowed the team to tap into new expertise regarding IT-Security and partner up with regional governments to support the diffusion of the solution.</p>
Pathway C forging alliances between initiatives	<p>UpdateAlter. The UpdateAlter alliance collectively works towards raising awareness for the problem of aging gracefully and integrating elderlies more actively into German society through amplifying the civil society organizations' voice.</p> <p>Faktenallianz („Fact Alliance“) This alliance seeks to address the societal problem of disinformation in the digital space and engages in activities to promote an informed society</p>
Pathway D strengthening local ecosystems	<p>Ecosystem Munich. The city of Munich actively mobilized for participation in UpdateDeutschland and took the open social innovation experiment as a chance to advance the local innovation ecosystem by bringing together stakeholders from all societal sectors. Especially by involving political decision makers, the public administration representatives from the City of Munich hoped to make sustainable progress in strengthening the ecosystem.</p> <p>Ecosystem Lower Saxony. The local ecosystem, consisting of members from the administration, state initiatives and private sector incubators, continued to network internally over the course of UpdateDeutschland and offered online formats to connect local initiatives and partners.</p>

References

1. Adewumi, M. T., Vo, N., Tritz, D., Beaman, J., & Vassar, M. (2021). An evaluation of the practice of transparency and reproducibility in addiction medicine literature. *Addictive Behaviors, 112*, 106560. <https://doi.org/10.1016/j.addbeh.2020.106560>
2. Baskaran, A., Chandran, V., & Ng, B.-K. (2019). Inclusive Entrepreneurship, Innovation and Sustainable Growth: Role of Business Incubators, Academia and Social Enterprises in Asia. *Science, Technology and Society, 24*(3), 385–400. <https://doi.org/10.1177/0971721819873178>
3. Busch, C., & Barkema, H. (2022). Align or perish: Social enterprise network orchestration in Sub-Saharan Africa. *Journal of Business Venturing, 37*(2), 106187. <https://doi.org/10.1016/j.jbusvent.2021.106187>
4. Chen, Y., & Techawitthayachinda, R. (2021). Developing deep learning in science classrooms: Tactics to manage epistemic uncertainty during whole-class discussion. *Journal of Research in Science Teaching, 58*(12), 21693. <https://doi.org/10.1002/tea.21693>
5. Faccin, K., Wegner, D., & Balestrin, A. (2020). How to orchestrate R&D networks? The role of orchestration subprocesses and collaborative practices over time. *Creativity and Innovation Management, 29*(1), 161–177. <https://doi.org/10.1111/caim.12355>
6. Foroudi, P., Akarsu, T. N., Marvi, R., & Balakrishnan, J. (2020). Intellectual evolution of social innovation: A bibliometric analysis and avenues for future research trends. *Industrial Marketing Management, 88*, 106–120. <https://doi.org/10.1016/j.indmarman.2020.03.026>
7. Galstyan, A., Markman, J. L., Shatalova, E. S., Chiechi, A., Korman, A. J., Patil, R., Klymyshyn, D., Tourtellotte, W. G., Israel, L. L., Braubach, O., Ljubimov, V. A., Mashouf, L. A., Ramesh, A., Grodzinski, Z. B., Penichet, M. L., Black, K. L., Holler, E., Sun, T., Ding, H., & Ljubimov, A. V. (2019). Blood–brain barrier permeable nano immunoconjugates induce local immune responses for glioma therapy. *Nature Communications, 10*(1). <https://doi.org/10.1038/s41467-019-11719-3>
8. Giallongo, S., Costa, F., Longhitano, L., Giallongo, C., Ferrigno, J., Tropea, E., Vicario, N., Li Volti, G., Parenti, R., Barbagallo, I., Bramanti, V., & Tibullo, D. (2023). The Pleiotropic Effects of Fumarate: From Mitochondrial Respiration to Epigenetic Rewiring and DNA Repair Mechanisms. *Metabolites, 13*(7), 880. <https://doi.org/10.3390/metabo13070880>
9. HENNINGER, P., BREM, A., GIONES, F., BICAN, P. M., & WIMSCHEIDER, C. (2019). EFFECTUATION VS. CAUSATION: CAN ESTABLISHED FIRMS USE START-UP DECISION-MAKING PRINCIPLES TO STAY INNOVATIVE? *International Journal of Innovation Management, 23*(10), 2050002. <https://doi.org/10.1142/s1363919620500024>
10. Henriques, F. M., & Suarez, M. C. (2022). Digitalization and collaborative dynamics integrating artistic, technological and co-creative resources: the case of Postmodern Jukebox. *International Journal of Entrepreneurial Behavior & Research, 28*(8), 2024–2048. <https://doi.org/10.1108/ijebr-01-2021-0074>
11. Jing, Y., Zhao, E. W., Goulet, M.-A., Bahari, M., Fell, E. M., Jin, S., Davoodi, A., Jónsson, E., Wu, M., Grey, C. P., Gordon, R. G., & Aziz, M. J. (2022). In situ electrochemical recombination of decomposed redox-active species in aqueous organic flow batteries. *Nature Chemistry, 14*(10), 1103–1109. <https://doi.org/10.1038/s41557-022-00967-4>

12. José Adalberto França, Lakemond, N., & Holmberg, G. (2022). *The coordination of technology development for complex products and systems innovations*. 37(13), 106–123. <https://doi.org/10.1108/jbim-07-2020-0327>
13. Koepke, A. S., Oncescu, A.-M., Henriques, J., Akata, Z., & Albanie, S. (2022). Audio Retrieval with Natural Language Queries: A Benchmark Study. *IEEE Transactions on Multimedia*, 1–1. <https://doi.org/10.1109/tmm.2022.3149712>
14. Logue, D., & Grimes, M. (2019). Platforms for the people: Enabling civic crowdfunding through the cultivation of institutional infrastructure. *Strategic Management Journal*. <https://doi.org/10.1002/smj.3110>
15. Markman, H. J., Hawkins, A. J., Stanley, S. M., Halford, W. K., & Rhoades, G. (2021). Helping couples achieve relationship success: A decade of progress in couple relationship education research and practice, 2010–2019. *Journal of Marital and Family Therapy*, 48(1), 251–282. <https://doi.org/10.1111/jmft.12565>
16. Mikwamba, K., Dessein, J., Kambewa, D., Messely, L., & Strong, R. (2020). Collaborative governance dynamics in innovation platforms: case of Malawi’s District Stakeholder Panel. *The Journal of Agricultural Education and Extension*, 27(2), 255–275. <https://doi.org/10.1080/1389224x.2020.1844767>
17. Mitzinneck, B. C., & Besharov, M. L. (2018). Managing Value Tensions in Collective Social Entrepreneurship: The Role of Temporal, Structural, and Collaborative Compromise. *Journal of Business Ethics*, 159(2), 381–400. <https://doi.org/10.1007/s10551-018-4048-2>
18. Montgomery, J., Ryan, M., Engler, R., Hoffman, D., McClenathan, B., Collins, L., ... & Cooper, L. T. (2021). Myocarditis following immunization with mRNA COVID-19 vaccines in members of the US military. *JAMA cardiology*, 6(10), 1202-1206.
19. Peters, G., Li, M., & Lenzen, M. (2021). The need to decelerate fast fashion in a hot climate - a global sustainability perspective on the garment industry. *Journal of Cleaner Production*, 295(1). <https://doi.org/10.1016/j.jclepro.2021.126390>
20. Reypens, L., Bacq, S., & Milanov, H. (2021). Beyond bricolage: Early-stage technology venture resource mobilization in resource-scarce contexts. *Journal of Business Venturing*, 36(4), 106110. <https://doi.org/10.1016/j.jbusvent.2021.106110>
21. Seelos, C., & Mair, J. (2020). *Social innovation: specifying pathways for impact*. <https://doi.org/10.4337/9781788971966.00052>
22. Touboulis, A., & McCarthy, L. (2019). Collective action in SCM: a call for activist research. *The International Journal of Logistics Management*, 31(1), 3–20. <https://doi.org/10.1108/ijlm-08-2019-0222>
23. Vedula, S., Dobliger, C., Pacheco, D., York, J., Bacq, S., Russo, M., & Dean, T. (2021). Entrepreneurship for the public good: a review, critique, and path forward for social and environmental entrepreneurship research. *Academy of Management Annals*, 16(1). <https://doi.org/10.5465/annals.2019.0143>