

Exploring Business Model Innovation for Sustainability through Affordance Theory

How Entrepreneurs engage with AI in Circular Economy practices

Simona Grande^{1,2},

¹Università di Torino, Italy; ²Universitetet i Agder, Norway

*simona.grande@unito.it

Extended abstract

The global movement towards sustainability has become a critical imperative for businesses worldwide, driven by an increased awareness of environmental challenges and social disparities. This shift demands a reevaluation of business practices, advocating for the adoption of strategies that ensure ecological preservation and promote social equity (Konietzko, Das & Bocken, 2023). Key scholars in this field, such as Geissdoerfer et al. (2017), have highlighted the essential role of sustainable practices in securing a company's future success by mitigating environmental damage and fostering long-term prosperity.

As key actors in this transition, entrepreneurs represent a disruptive force in a region's sustainable development, innovativeness and prosperity (Lüdeke-Freund, 2020). For sustainable entrepreneurs, the essence of their business success is intrinsically linked to generating positive outcomes for both the environment and society, thereby creating widespread value across diverse stakeholder groups and developing business models for sustainability (BMfS) (Freudenreich, Lüdeke-Freund, & Schaltegger, 2019).

Among other approaches, the circular economy emerges as a transformative model. The circular economy represents an advanced approach that reimagines and restructures how societies produce, consume, and manage resources, fundamentally challenging the traditional linear model of "take, make, dispose" (European Commission, 2020). By prioritizing the reduction of waste, the extension of product life cycles through design and innovation, and the regeneration of natural systems, the circular economy seeks not only

to sustain but to enhance environmental health. Stahel (2016) and the Ellen MacArthur Foundation (2012) have been pivotal in outlining these principles, advocating for a system where resources are reused, recycled, and recovered, maximizing their value and minimizing environmental impact, to enhance the health and sustainability of the planet and its inhabitants.

Integrating technology into circular economy models is emerging as a significant area of business model innovation for sustainability (BMfS), with Artificial Intelligence (AI) playing a pivotal role in enhancing efficiency and sustainability (Khan et al., 2021). AI's capabilities in improving resource management, optimizing product lifecycles, and fostering innovative business models are aligning with the principles of the circular economy (Sjodin et al., 2023). This convergence promises to open new avenues for more sustainable business practices, demonstrating the transformative potential of combining AI with circular economy strategies.

Leveraging affordance theory (Gibson, 1977), this study investigates how entrepreneurs perceive and engage with opportunities presented by AI technologies in developing circular practices.

The study's findings have the potential to significantly enhance the theoretical landscape of BMfS and BMIfS by integrating Affordance Theory. This framework emphasizes the dynamic interplay between environmental affordances and the inherent contradictions within sustainable entrepreneurship, enriching the discourse on navigating these complexities for innovative business practices.

Keywords

Business models for sustainability, circular economy, affordance theory, AI

References

Ellen MacArthur Foundation. (2012). **Circular Economy: Towards Economic and Business rationale for an accelerated transition.**

Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2019). A stakeholder theory perspective on business models—Value creation for sustainability. **Journal of Business Ethics**. <https://doi.org/10.1007/s10551-019-04112-z>

Geissdoerfer, M., Savaget, P., Bocken, N., & Hultink, E. J. (2017). The circular economy – a new sustainability paradigm?. **Journal of Cleaner Production**, 143, 757-768. <https://doi.org/10.1016/j.jclepro.2016.12.048>

Gibson, J.J. (1977). **The Theory of Affordances.** Erlbaum Associates, Hillsdale, NJ.

Khan, S. A. R., Zia-ul-haq, H. M., Umar, M., & Yu, Z. (2021). Digital technology and circular economy practices: a strategy to improve organizational performance. **Business Strategy & Development**, 4(4), 482-490. <https://doi.org/10.1002/bsd2.176>

Konietzko, J., Das, A., & Bocken, N. (2023). Towards regenerative business models: a necessary shift?. **Sustainable Production and Consumption**, 38, 372-388. <https://doi.org/10.1016/j.spc.2023.04.014>

Lüdeke-Freund, F. (2020). Sustainable entrepreneurship, innovation, and business models: integrative framework and propositions for future research. **Business Strategy and the Environment**, 29(2), 665-681.

Sjödin, D., Parida, V., & Kohtamäki, M. (2023). Artificial intelligence enabling circular business model innovation in digital servitization: conceptualizing dynamic capabilities, ai capacities, business models and effects. **Technological Forecasting and Social Change**, 197, 122903. <https://doi.org/10.1016/j.techfore.2023.122903>

Stahel, W. R. (2016). The circular economy. **Nature**, 531(7595), 435-438. <https://doi.org/10.1038/531435a>