

Table 1. Analysis regarding eco-efficiency and eco-effectiveness

Topic-group	Article	Eco-efficiency	Eco-effectiveness
Product development methods	Brusa et al. (2024)	☒	☒
	Evrard et al. (2021)	☒	☐
	Favi et al. (2021)	☒	☐
	Filippatos et al. (2024)	☒	☐
	Fontana et al. (2024)	☒	☒
	Hildenbrand et al. (2021)	☒	☐
	Joustra et al. (2022)	☒	☐
	Jugend et al. (2020)	☒	☐
	Lindkvist Haziri and Sundin (2020)	☒	☒
	Meldrum (2023)	☒	☐
	Peralta et al. (2020)	☒	☒
	Riesener et al. (2023)	☒	☒
	Rio et al. (2020)	☒	☐
	Rocha et al. (2023)	☐	☒
	Rotondo et al. (2025)	☒	☐
	Sedini et al. (2024)	☒	☒
	Shevchenko et al. (2024)	☒	☒
	Siwiec et al. (2023)	☒	☐
	Tellez Nitzling et al. (2024)	☒	☒
	Vicente and Camacho (2024)	☒	☒
Assessment tools	Aguiar and Jugend (2022)	☒	☒
	Aher et al. (2023)	☒	☐
	Boix Rodríguez and Favi (2024)	☒	☐
	Cappelletti and Germani (2024)	☒	☐
	Fang et al. (2024)	☒	☐
	Karkasinas et al. (2025)	☒	☒
	Ko et al. (2024)	☒	☒
	König et al. (2025)	☒	☐
	Palsodkar et al. (2024)	☒	☒
	Pluhnau et al. (2023)	☒	☐
	Ruiz-Pastor et al. (2022)	☒	☒
	Saidani et al. (2020)	☒	☐
	Saidani and Kim (2021)	☒	☐
Design rules	Azua Lahidalga et al. (2024)	☒	☐
	Fröhlich (2024)	☒	☒
	Hakola et al. (2024)	☒	☐
	Hoveling et al. (2024)	☒	☒
	Joustra et al. (2021)	☒	☐
	Mesa (2023a)	☒	☒
	Sangwongwanich et al. (2024)	☒	☐
	Stölzle et al. (2023)	☒	☒
	Toxopeus et al. (2018)	☒	☐
	van Doorselaer (2022)	☒	☒
	Willskytt and Brambila-Macias (2020)	☒	☐
Barriers/drivers	Bakker et al. (2010)	☐	☒
	Boorsma et al. (2022)	☒	☒
	Chouinard et al. (2019)	☒	☒
	Da Silva et al. (2024)	☒	☐
	Dorrego-Viera et al. (2025)	☐	☒

	Horn et al. (2023)	☒	☒
	Kane et al. (2018)	☒	☒
	Nekin et al. (2024)	☒	□
	Pauw et al. (2013)	□	☒
	Ries et al. (2023)	☒	☒
Material selection	Desing et al. (2021)	☒	☒
	Mardina et al. (2025)	☒	☒
	Mesa (2023b)	☒	☒
	Papile and Del Curto (2024)	□	☒
Business models	Cappelletti et al. (2024)	☒	□
	Pruhs et al. (2024)	☒	☒
	Wastling et al. (2018)	☒	☒

Legend: ☒: approach addressed; □: approach not addressed