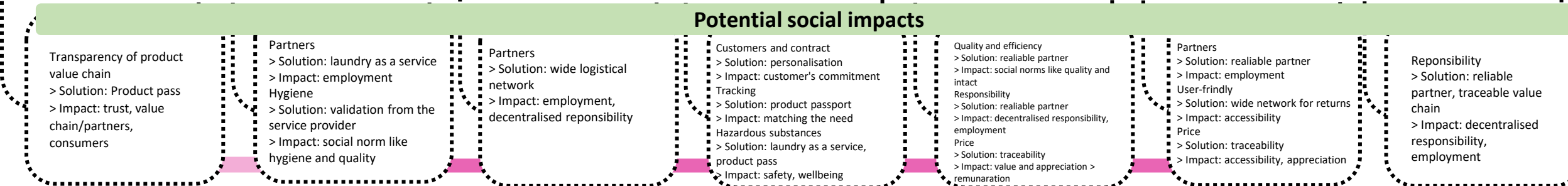
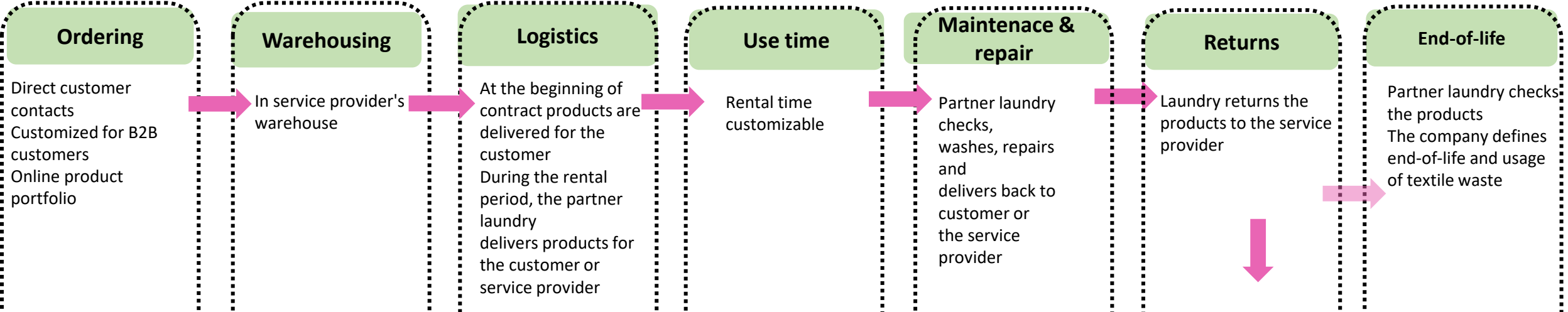
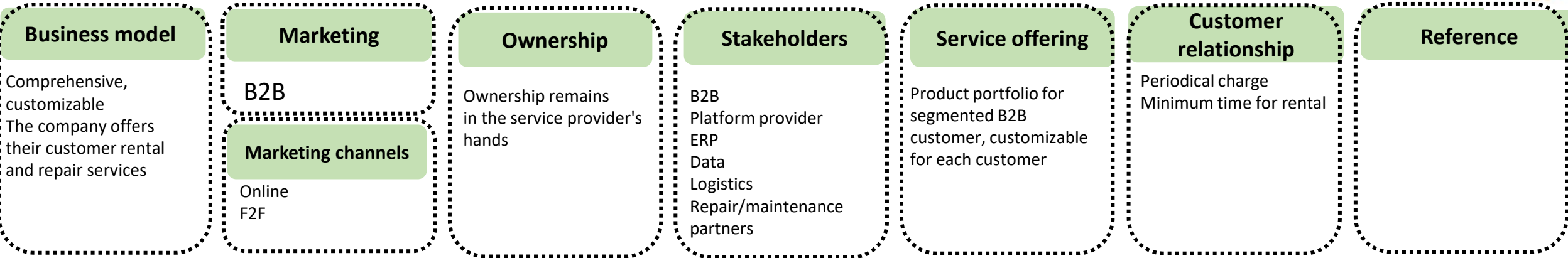




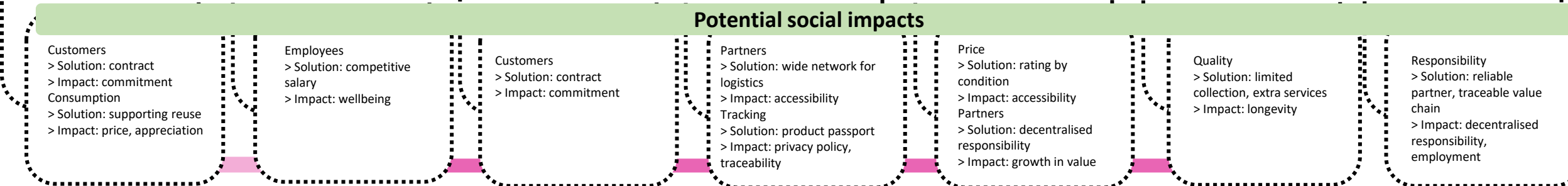
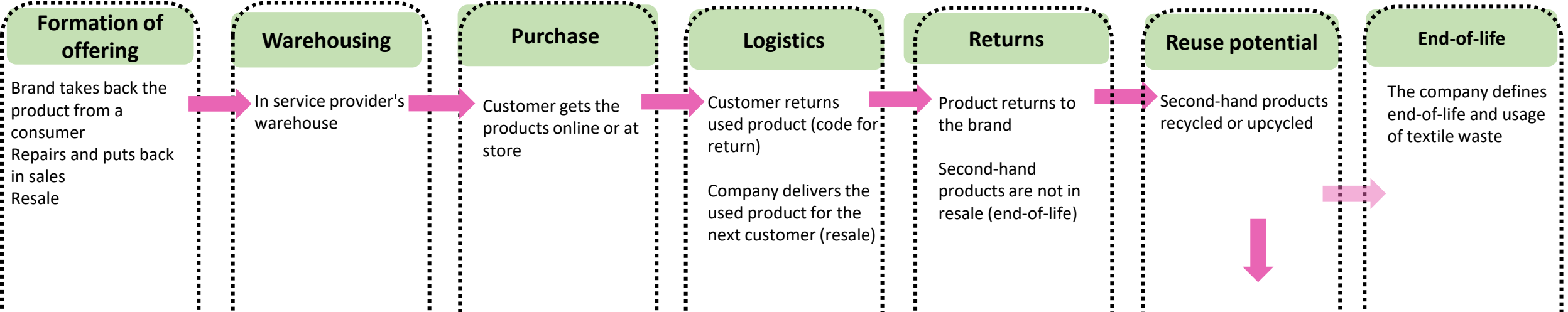
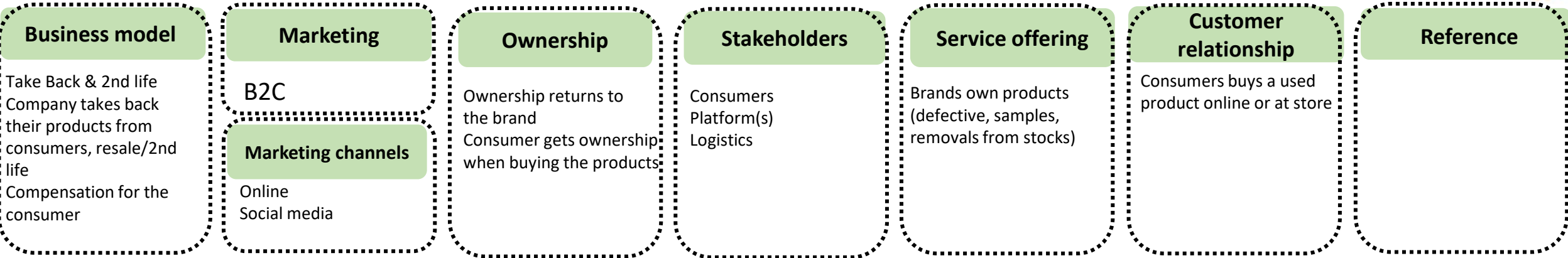
# Evaluation of potential social impacts of hypothetical novel business models

- UNEP Guidelines for social life cycle assessment of products and organisations (2020) as a methodological background. No systemic evaluation made, however.
- Reflecting the framework also towards the Global Reporting Initiative (GRI) social standards (GRI:401-419), which are often used in sustainability reporting.
- Results based on literature, company workshops and interviews.
- Scope: Operational environment Finland and extentented to Europe, the hypothetical market however is Finland. Scope does not include the impacts on traditional production countries. Evaluation of use phase and end-of-life, not of production phase.

# Product as a service – comprehensive solution for companies



# Reuse – take back





# Social responsibility in business

- Read the table from left to right.
- The column on the left tells the name of each variable.
- The company or other actor can implement the variables on four separate stages (ok, good, very good, excellent).
- The stages are cumulative, each level must materialize for the actor to move onto the next stage.
- The company or other actor can at the same time be on different stages at different variables.



# Social responsibility stages in circular business of textiles

	IMPLEMENTATION OF VARIABLES			
NAME OF THE VARIABLE	OK	GOOD	VERY GOOD	EXCELLENT
<b>Code of Conduct</b>	Code of conduct in effect	CoC followed	Implementation evaluated (possibly via 3rd party)	Results reported publicly
<b>Internal feedback</b>	Grievance mechanism	Measuring and monitoring	Interference with problems	Changes in company policies and operation
<b>External feedback</b>	Grievance mechanism	Reaction to feedback	Procedure	Changes in company policies and operation
<b>Remuneration</b>	Employees with employment contract	Living wage	Equal pay	Employment of locals
<b>Stakeholders</b>	Transparent and public value chain	Established partnerships	Partners involved in development work	Economically viable business ecosystem
<b>Product as a service</b>	The product is sustainable, comfortable and safe	Repairable and refurbishable	Sustainable material	Closed loop system
<b>Reusable product</b>	The product is sustainable, comfortable and safe	Remains its value (even repaired)	Recyclable material	Closed loop system
<b>Accessibility in reuse</b>	Promise of product durability	Platform supporting reuse	Product used up	Valuable material returns to the company
<b>Transparency of product data</b>	Internal trackability of products	Link to up-to-date product data within the product	Product data includes scope 3	Product data during use-phase collected
<b>Business model</b>	Test	Pilot	Established part of business	Decreases the production of new products
<b>Sustainability communications</b>	Communication on the current situation	Communication on the development	Communication on the future	Communication on the results and reaching the targets set

# Literature review references



Borg, D., Mont, O., Schoonover, H. 2020. Consumer Acceptance and Value in Use-Oriented Product-Service Systems: Lessons from Swedish Consumer Goods Companies. *Sustainability*. 2020; 12(19):8079. <https://www.mdpi.com/2071-1050/12/19/8079/htm>

Johnson, E. 2020. Dressing up the environmental potential for product-service systems: A comparative life cycle assessment on consumption in rental clothing vs. linear business models. *IIIEE Theses*. 2020; 16. <https://lup.lub.lu.se/luur/download?func=downloadFile&recordId=9025941&fileId=9025943>

Gray, S., Druckman, A., Sadhukhan, J., Keith, J. 2022. Reducing the Environmental Impact of Clothing: An Exploration of the Potential of Alternative Business Models. *Sustainability, Basel*. 2022; 14(10): 6292. DOI:10.3390/su14106292

Levänen, J., Uusitalo, V., Härrä, A., Kareinen, E., Linnanen, L. 2021. Innovative recycling or extended use? Comparing the global warming potential of different ownership and end-of-life scenarios for textiles. *Environmental Research Letters*. 2021; 16(5). DOI 10.1088/1748-9326/abfac3

Zamani, B., Sandin, G., Peters, G. 2017. Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion? *Journal of Cleaner Production*. 2017; 162: 1368-1375. <https://dx.doi.org/10.1016/j.jclepro.2017.06.128>

Laukkanen, M., Tura, N. 2020. The Potential of Sharing Economy Business Models for Sustainable Value Creation. *Journal of Cleaner Production*, 2020; 253: 120004. <https://doi.org/10.1016/j.jclepro.2020.120004>

Hultberg, E., Pal, R. 2021. Lessons on business model scalability for circular economy in the fashion retail value chain: Towards a conceptual model. *Sustainable Production and Consumption*. 2021; 28: 686-698. <https://doi.org/10.1016/j.spc.2021.06.033>

Rossi, E., Bertassini, A., dos Santos Ferreira, C., do Amaral, W., Ometto, A. 2020. Circular economy indicators for organizations considering sustainability and business models: Plastic, textile and electro-electronic cases. *Journal of Cleaner Production*. 2020; 247: 119137. <https://doi-org.ezproxy.turkuamk.fi/10.1016/j.jclepro.2019.119137>

Daňo, F., Drábik, P., Hanuláková, E. 2020. Circular Business Models in Textiles and Apparel Sector in Slovakia. *Central European Business Review; Prague*. 2020; 9(1): 1-19. DOI:10.18267/j.cebr.226

Conscieme, L., Manshoven, S., Gillabel, J., Grossi, F., Mortensen, L. 2022. A framework of circular business models for fashion and textiles: the role of business-model, technical, and social innovation. *Sustainability: Science, Practice and Policy*. 2022; 18(1). <https://doi.org/10.1080/15487733.2022.2083792>

Sandin, G., Roos, S., Spak, B., Zamani, B., Peters, G. 2019. Environmental assessment of Swedish clothing consumption - six garments, sustainable futures. *Mistra Future Fashion*; 2019;05. ISBN:978-91-89049-05-5

Elander, M., Watson, D., Gylling, A. 2017. Evaluation of business models for increased reuse, collective use and prolonged life time of textiles. *Mistra Future Fashion*; 2017;4. ISBN: 978-91-88695-03-1



- Gonçalves, A., Silva, C. 2021. Looking for Sustainability Scoring in Apparel: A Review on Environmental Footprint, Social Impacts and Transparency. *Energies*; Basel. 2021; 14(11): 3032. DOI:10.3390/en14113032
- Bianchini, A., Guarnieri, P., Rossi, J. 2022. A Framework to Assess Social Indicators in a Circular Economy Perspective. *Sustainability*; Basel. 2022; 14(13):7970. DOI:10.3390/su14137970
- Repp, L., Hekkert, M., Kirchherr, J. 2021. Circular economy-induced global employment shifts in apparel value chains: Job reduction in apparel production activities, job growth in reuse and recycling activities. *Resources, conservation and recycling*. 2021: 171. <https://doi.org/10.1016/j.resconrec.2021.105621>
- Scrapellini, S. 2021. Social impacts of a circular business model: An approach from a sustainability accounting and reporting perspective. *Corporate Social Responsibility and Environmental Management*. 2021; 29(3): 646-656. <https://doi.org/10.1002/csr.2226>
- Wang, S., Su, D., Wu, Y. 2022. Environmental and social life cycle assessments of an industrial LED lighting product. *Environmental Impact Assessment Review*, 2022; 95: 106804. <https://doi.org/10.1016/j.eiar.2022.106804>
- Lenzo, P., Traverso, M., Salomone, R., Ioppolo, G. 2017. Social Life Cycle Assessment in the Textile Sector: An Italian Case Study. *Sustainability*, Basel. 2017; 9(11): 2092. DOI:10.3390/su9112092
- Sumter, D., Bakker, C., Balkenende, R. 2018. The Role of Product Design in Creating Circular Business Models: A Case Study on the Lease and Refurbishment of Baby Strollers. *Sustainability*, Basel. 2018; 10(7): 2415. DOI:10.3390/su10072415
- Chong-Wen, C., Johnson, M. 2020. Improving Circular Economy Business Models: Opportunities for Business and Innovation: A new framework for businesses to create a truly circular economy. *Technology Review, London*. 2020; 64(1): 48-58. DOI:10.1595/205651320x15710564137538
- Howard, M., Hopkinson, P., Miemczyk, J. The regenerative supply chain: a framework for developing circular economy indicators. *International journal of production research*. 2019; 57(23): 7300-7318. <https://doi-org.ezproxy.turkuamk.fi/10.1080/00207543.2018.1524166>
- Vezzoli, C., Kohtala, C., Srinivasan, A. *Product-Service System Design for Sustainability*, 1st ed.; Greenleaf Publishing Limited: Sheffield, UK. 2014. ISBN 978-1-909493-69-8.
- Mishra, J.L., Hopkinson, P.G., Tidridge, G. 2018. Value creation from circular economy-led closed loop supply chains: a case study of fast-moving consumer goods. *Production Planning & Control*. 2018; 9(6): 509-521. ISSN 0953-7287
- Silva, S., Santos, A., Duarte, P., Vlačić, B. 2021. The role of social embarrassment, sustainability, familiarity and perception of hygiene in second-hand clothing purchase experience. *International Journal of Retail & Distribution Management*. 2021; 49(6). ISSN: 0959-0552
- Trzepacz, S., Bekkevold, D., Asscherickx, L., Peeters, K., van Duijn, H., Akerboom, M. 2023. LCA-based assessment of the management of European used textiles. *EuRIC Textiles Report*. [https://euric.org/images/Position-papers/lca-based-assessment-of-the-management-of-european-used-textiles\\_corrected.pdf](https://euric.org/images/Position-papers/lca-based-assessment-of-the-management-of-european-used-textiles_corrected.pdf).
- Suarez-Visbal, L., Carreón, J., Corona, B., Worrell, E.. The Social Impacts of Circular Strategies in the Apparel Value Chain; a Comparative Study Between Three Countries. *Circular Economy and Sustainability*. 2023; 3: 757-790. <https://doi.org/10.1007/s43615-022-00203-8>