Meta-informações das revisões bibliográficas (2021)

1. Referência completa do artigo

HAN, J.; HESHMATI, A.; RASHIDGHALAM, M. Circular Economy Business Models with a Focus on Servitization. **Sustainability**. v. 12, n. 21, p. 1-17, 2020.

2. Autores (um registro por autor)

Autor 1: Junghee Han

2.1. Tipo: Doutorando
2.2. Idade: NADA
2.3. Anos pesquisando no assunto: NADA
2.4. Instituição: Hongik University (Korea) - Universidade Hongik (Coreia do Sul)
2.5. Índice-h:
- Google Scholar = NADA
- Scopus = 4
- Researchgate = 12

2.6. Colegas da mesma instituição: Huydoo Jin
2.7. Quantidade de artigos já publicados:
- Google Scholar = NADA
- Scopus = 14 documentos (10 articles e 4 conference paper)
- Researchgate = 40 documentos (31 articles, 1 chapter, 8 conference paper)

2.8. Outros artigos significativos (mais citados) sobre outros temas
- No Scopus, dos 14 documentos, os 2 mais citados são:
  - "Platform business Eco-model evolution: Case study on Kakao Talk in Korea", (2015) com 29 citações;
  - "Exploitation of architectural knowledge and innovation", (2017) com 11 citações.

2.9. Outros artigos significativos (mais citados) neste tema: NADA
2.10. Co-autores recorrentes:
- Baseado no Scopus:
  - Almas Heshmati (Jönköping International Business School);
  - Heeyoung Jang (Korea Institute of Industrial Technology);
  - Okjoo Cho (Chonnam National University);
  - Sunghoon Chung (Hanyang University);
  - Huydoo Jin (Hongik University).

Autor 2: Almas Heshmati

2.11. Tipo: Professor de economia na Escola Internacional de Negócios (Internationella Handelshögskolan)
2.12. Idade: NADA
2.13. Anos pesquisando no assunto: NADA
2.14. Instituição: Jönköping University (Sweden) - Universidade de Jönköping (Suécia)

2.15. Índice-h:
- Google Scholar = 50
- Scopus = 24
- Researchgate = 27

2.16. Colegas da mesma instituição: Hans Westlund

2.17. Quantidade de artigos já publicados:
- Google Scholar = 457 documentos
- Scopus = 167 documentos (111 articles, 28 book chapter, 13 book, 9 editorial, 3 review, 2 conference paper);
- Researchgate = 213 documentos (169 articles, 35 book chapter, 7 book, 1 conference paper)

2.18. Outros artigos significativos (mais citados) sobre outros temas

- No Scopus, dos 167 documentos, os 3 mais citados são:
  - "Knowledge capital and performance heterogeneity: A firm-level innovation study", (2013) com 282 citações;
  - "On the relationship between innovation and performance: A sensitivity analysis", (2006) com 248 citações;
  - "DEA, DFA and SFA: A comparison", (1996) com 179 citações.

2.19. Outros artigos significativos (mais citados) neste tema:

- No Scopus, com "circular economy", o artigo mais citado é:
  - "A review of the circular economy in China: Moving from rhetoric to implementation", (2013), com 466 citações.

2.20. Co-autores recorrentes:

- Baseado no Scopus:
  - Subal C. Kumbhakar (Binghamton University);
  - Masoomeh Rashidghalam (University of Tabriz);
  - Esfandiar Maasoumi (Emory University);
  - Jeongdong Lee (Seoul National University).

<u>Autor 3: Masoomeh Rashidghalam</u>

2.21. Tipo: Doutoranda (Pesquisadora na Jönköping International Business School)

2.22. Idade: NADA

2.23. Anos pesquisando no assunto: NADA

2.24. Instituição: University of Tabriz (Iran) - Universidade de Tabriz (Irã)

2.25. Índice-h:
- Google Scholar = 6
- Scopus = 3
- Researchgate = 4

2.26. Colegas da mesma instituição: Ebrahim Babei

2.27. Quantidade de artigos já publicados:
- Google Scholar = 31 documentos
- Scopus = 11 documentos (6 articles, 5 book chapter);
- Researchgate = 28 documentos (9 articles, 16 book chapter, 3 book)

2.28. Outros artigos significativos (mais citados) sobre outros temas

- No Scopus, dos 11 documentos, o mais citado é:
  - "Measurement and Analysis of Urban Infrastructure and Its Effects on Urbanization in China", (2020) com 6 citações.

2.29. Outros artigos significativos (mais citados) neste tema:

- No Scopus, com “service”, o artigo mais citado é:
    - “Labour productivity in Kenyan manufacturing and service industries”, (2018) com 4 citações.

2.30. Co-autores recorrentes:

- Baseado no Scopus:
    - Almas Heshmati (Jönköping International Business School);
    - Shahrouz Abolhosseini (Petroleum University of Technology);
    - Jiyeon An (Sogang University);
    - Junghee Han (Hongik University).

3. Estrutura do abstract (contextualização, gap/lacuna, objetivo, metodologia, resultados e conclusão)
    - *Contextualização:* During the fourth industrial revolution, based on information and communication technology (ICT), service-led growth has been an increasingly important development area.
    - *Objetivo:* This paper focuses on service-led growth as an innovative business model in the circular economy and offers the ‘product as service model’.
    - *Gap/lacuna*: A business model needs to be flexibly adjustable for changes in the market in response to changes in technology, the economy, and the environment. For firms facing increasing scarcity of resources, the right business model for using resources is becoming crucial for their growth. In a circular economy, a new method of business modelling is essential.
    - *Metodologia*: This paper introduces the ‘product as a service model’ using a conceptualized and case study methodology.
    - *Resultados*: We illustrate this innovative circular business model through product servitization at the Hyundai Automotive Enterprise in Korea. This business model can be effective because of emerging new ‘smart connected products’ such as the ‘internet of things’ and ‘fifth generation’ network technologies.
    - *Conclusão*: Cost, convenience, and the circular economy for firms, consumers, and the environment are critical factors in this new business model.

4. Palavras-chaves e se foram citadas no abstract.
    - Keywords: business model; circular economy; circular business model; product as service model; green innovation.
        - Green innovation não foi citada, o restante sim (business model; circular economy; circular business model; product as service model).

5. Introdução e/ou revisão bibliográfica introdutória, afirmações / constatações (tipo) versus citações (essa lista pode ser longa, por isso coloquei em forma de tabela)

Afirmação / Constatação	Tipo (*1)	Referência (*2)
Recent decades of environmental degradation have gradually increased the pressure to change production and consumption behavior, especially in the business sector. A circular economy (CE) involves three main concerns: the environment, resources, and economic benefits [1]	G	[1] Lieder; Rashid (2016)

In an evolving circular economy, both firms and customers should strive to conserve the use of resources in production as much as possible while deriving the maximum value, and finally regenerating and retaking materials and components at the end of a product or service's life. These are the 3R principles of a circular economy—reduce, reuse, and recycle materials [2,3]	G	[2] Heshmati (2017) [3] Stahel; Reday-Mulvey (1981)
In most developed and developing countries, many studies have addressed the issues of sustainable development and growth. However, what is required is a new approach in which each country aims for new types of development. Resource conservation and enhancements that are linked to the provision of an adequate livelihood base and equitable access to resources are required for a circular economy. When it comes to the environment, all countries are linked and interdependent. Suppose one country pursues an energy policy intending to reduce its air pollution. It might be able to improve its pollution levels, but its economic growth rate might be lower than before, without a new circular business model. Similarly, if a country strengthens its agricultural development, this can also be linked with a worsened environment due to the degradation of land, water, and forests. For these reasons, a new business model is needed to embrace the principles of a circular economy	L	NADA
A few decades ago, many developed countries realized that they needed to find an alternative development strategy to replace their current behavior that burdened future generations because of a misplaced belief that there was a choice between the economy and the environment. Sustainable development is defined as a guiding principle in addressing the present generation's needs without undermining future generations' capacity to meet their own primary needs. Circular economy business models can help get a greater competitive edge in the future because, consistent with their objectives, they produce more value from each unit of resources than the conventional linear production and consumption models do. Further, a firm's growth also depends on innovations. Innovations and economics are developing and becoming closely inter-related to the environment.	G	NADA
However, most of the existing studies on innovations pay little attention to the relationship between innovations and the environment. In comparison, a circular economy is an industrial ecology that is regenerative or restorative by design and intention. Businesses are threatened by resource shortages,		NADA

population growth, migration, climate change, and urbanization, even though some regulations are addressing issues ranging from hazardous chemicals to initiatives related to zero-waste and recycling. All these put pressure on businesses to switch from their existing industrialized open loop make-use-dispose linear economic models to a more closed loop circular reduce-reuse-recycle approach.	C	
In general, concerns about the natural environment have driven consumers to mitigate the damages inflicted on the natural environment and producers to take advantage of the cost savings and new business opportunities that a circular economy provides. Several factors affect consumers' willingness to purchase reused, remanufactured, and recycled products. Warranty, discount, and money-back guarantee (return acceptance) are among such factors. Many studies indicate that recycled products are evaluated favorably by consumers if reliability, product quality, and service availability are guaranteed, and recycled products are price competitive.	G	NADA
Reproduced and reused products that can substitute for new products are generally claimed to not only provide material saving but can also save energy. These arguments are taken from studies that look at the differences in material extraction and production and manufacturing products. If the remanufactured product can be considered a substitute for a new product, then credit is usually claimed for the avoided resource use and emissions generated in association with the production of new products. Recycling of materials, their collection, transport, and the remanufacturing of used products is energy-intensive. In this case, the consumption of energy is considered to be less than the amount used to manufacture virgin products. It is worth mentioning that, in addition to energy, material saving is the main advantage of recycling, reusing, and, remanufacturing products.	G	NADA
Product disassembly is formally known as the systematic separation of components. It can be divided into several types, namely, destructive or non-destructive and partial (selective) or complete (full) component disassembly. Generally, the greatest savings come from the avoided new material extraction and production, but the gap between new manufacturing and remanufacturing may also be significant. Strategic issues that concern disassembly include lot sizing, process layout and material transfer, and levels of scheduling.	G	NADA
CE replaces the concept of the end-of-life of a product or service with renewable and restoration of energy,		NADA

and stops the utilization of poisonous chemicals that impede effluent reuse and a return to the ecosystem. A circular economy's aim is eliminating waste using improved designs for systems, products, materials, and circular business models.	C	
This paper discusses CE research and evaluates the information thus collected to help implement the goals of a sustainable business. It also assesses the outcomes concerning a comprehensive scope for CE, which covers its environmental impact, the current resource scarcity, and the economic benefits of using a CE model. This paper's goal is to provide theoretical and methodical foundations for a sustainable business model, which is in line with CE's aims. We seek a new conceptual framework for business models that emerge in CE. The paper also focuses on product servitization in the market as a pass-loop model.	C	NADA
Servitization refers to industries using their products to sell services. As part of servitization, companies offer additional services associated with reuse and recycling materials and components, such as maintenance to supplement their traditional products. It is a practical and necessary step in implementing the key principles of a circular economy	C	NADA
Over time, business models have changed [4–6]. CE perhaps emerged because of the concept of sharing economic, environmental, and sustainable technologies [7].	J	[4] Chesbrough; Rosenbloom (2002) [6] Zott; Amit; Massa (2011) [7] Sempels; Hoffmann (2013)
The relationship between industry and the environment is equally important for a business's performance and growth. Due to limited natural resources, ceaseless and exponential economic growth can have serious side effects on human health and the environment [8].	C	[8] Lacy; Rutqvist (2015)

(*1) Tipos de afirmação / constatação: G (geral), C (contexto), J (justifica o artigo / pesquisa), L (**explicita a lacuna**). A constatação da lacuna é muito importante. Mas é difícil diferenciar J de L.; (*2) Inserir somente autor(es) e ano. A referência completa encontra-se no próprio artigo

6. Casos citados e principais características dos casos

Para dar um exemplo sobre "the sharing platform model", página 9, os autores citaram: "Airbnb (home sharing), Uber, and Lyft (car sharing, ride-sharing), are starting businesses using this business model".

7. Questão da pesquisa, Foco (escopo) e Objetivos (geral primário e secundários)
   - Questão de pesquisa: NADA
   - Objetivo primário: This paper's goal is to provide theoretical and methodical foundations for a sustainable business model, which is in line with CE's aims. (PAGE 3)

- Objetivos secundários: We seek a new conceptual framework for business models that emerge in CE. The paper also focuses on product servitization in the market as a pass-loop model. (PAGES 3 and 4)

8. Caso seja uma survey sobre o assunto: qual o diferencial deste artigo (análise da revisão) com relação a outras revisões e/ou surveys? (segundo o autor, caso ele tenha citado). Avaliar cada um dos diferenciais separadamente, caso o autor tenha feito isso. Pode montar uma tabela se for o caso.

   Os autores são apresentaram o diferencial do artigo em comparação com outros trabalhos.

9. Metodologia
   9.1. Descrição Geral: Nome do(s) método(s); se é qualitativo, quantitativo ou combinação de ambos
   - Métodos: For implementing our research goal, we used two methodologies: conceptual and case analysis. This paper is a conceptual discussion based on an analysis of literature and case study. A case study is a beneficial way of verifying or expanding conventional theories or challenging a specified theory. (PAGE 3)
   - Características: Qualitative - Qualitative studies have flexibility in applications that are more reactive to the dynamics of social phenomena such as business activities as compared to quantitative techniques, which provide direct observable indicators. (PAGE 3)

   9.2. Fontes (referências) utilizadas sobre os métodos científicos adotados. Pode montar uma tabela: método x fonte.

Métodos	Fontes
Analysis of literature [9,10]	[9] Creswell, J.W. Qualitative Inquiry and Research Design: Choosing among Five Approaches, 2nd ed.; Sage: Thousand Oaks, CA, USA, 2007. [10] Patton, M.Q. Qualitative Research and Evaluation Methods, 3rd ed.; Sage: Thousand Oaks, CA, USA, 2002.
Case study [11]	[11] Yin, R.K. Case Study Research: Design and Methods (Applied Social Research Methods), 4th ed.; Sage: Thousand Oaks, CA, USA, 2008.

   9.3. Período de análise das referências (publicações desde que ano)
   NADA

   9.4. Tamanho da amostra analisada
   NADA

   9.5. Quantidade de referências citadas
   65 referências

9.6. Foram realizadas observações complementares?
NADA

9.7. Fontes da revisão (casos, periódicos específicos, e quais bases de dados). Quais as justificativas para escolher essas fontes.

- Utilizaram o Google Scholar; Scopus e Web of Science:
  - This paper considered published articles, including those in general journals and academic books and reports. In particular, it used Scopus, Google, and Web of Science, including books, magazines, and periodical journals; 'articles', 'editorials', and 'review' types of documents were also used. (PAGE 3)

9.8. Estratégia para construção da string de busca
NADA

9.9. String de busca
NADA

9.10. Filtros
NADA

9.11. Técnica / método de análise utilizada

- Analysis of literature: For studying current academic insights regarding the concept of a circular economy, this paper considered published articles, including those in general journals and academic books and reports. After classifying the abstracts, the articles relevant to the research topic were scanned. After reviewing the studies, the areas were limited to industrial ecology dealing with energy and material flow trends within and outside industrial systems. The paper also considered products in servitization as one of the business components in a circular economy due to the advent of the internet of things (IoT) and network technologies. (PAGE 3)
- Case study: We interviewed developers and two other researchers (in October and November, 2019) for collecting the data. In confidential cases, we collected the data via email. In addition to the web data, other objective data was also collected through a literature review and by reviewing periodicals from Hyundai Automotive. (PAGE 3)

9.12. Metodologia para definição de pesquisas futuras
NADA

10. Resultados

10.1. Quantidades resultantes antes e após cada filtro
NADA

10.2. Definições (resultantes da análise ou mesmo adotadas como premissas no início da publicação)

- Business model for a circular economy (BMCE):
    - BMCE can be looked at as a sub-category of a business model that fits in an economic system of restorative or closed material loops [56]. (PAGE 8)
    - According to Mentink [56], BMCE is not a closed material loop by itself; rather, it is a part of a business model that, together, close a material loop to be called circular. A circular business model is the reason behind the way a company generates, produces, and collects value inside closed loop materials. (PAGE 8)
    - Lacy and Ruqvist [8] and Lacy [58] propoe five business models for a circular economy:
        - Recovery and recycling model: This model can reduce environmental risks. The recovery and recycling model generates production and consumption by considering everything treated as waste which is recycled for other uses. (PAGE 8)
        - The product life extension model: The product life extension model seeks to recapture this potential circular value of a product. Firms can economically recapture value by improving products through upgrading, repairs, or remaking. This business model enables a firm to generate value by merely selling products for keeping them alive and relevant. (PAGE 9)
        - The sharing platform model: This business model is seen frequently because new entrepreneurs, such as Airbnb (home sharing), Uber, and Lyft (car sharing, ride-sharing), are starting businesses using this business model. (PAGE 9)
        - The product as a service model: This model can be called a lease model. It is attractive when manufacturers or retailers spend a lot of money and time to keep the products and services in the market. In other words, when the total cost of ownership and maintenance is high, and the products are less frequently used, firms try to come up with cost reduction strategies through alternative ways of using the products such as leasing. (PAGE 9)

10.3. Evolução da pesquisa / das publicações no assunto

NADA

10.4. Comunidades / “tribos” / “igrejas”/ áreas de conhecimento / disciplinas identificadas

NADA

10.5. Características de cada tribo (os atributos e/ou explicações são definidos pelo próprio artigo)

NADA

10.6. Principais “achados” (*findings*)

- According to existing research, the key principles of a BMCE are (PAGE 10):
    - First, circular business models should have eco-friendly regulations based on the reuse of products and resources and the use of the restorative capacity of scarce natural resources.

    - Second, the models can operate to minimize waste in the production process and system design by using adequate materials (for example, fewer composite materials); designing for facilitating recycling; and striving for easy solutions.
    - Third, the business model can operate to maximize the value proposition through its design. This should create not only intrinsic value but also added value by applying the product design for easy repairs to add to a product's life cycle and to strive towards recycling.
    - Fourth, the model can minimize and reduce energy use through technology innovations to maximize energy efficiency for producing products and services.
    - Fifth, manufacturers and customers should consider the 'total ecosystem' of a business and ensure that this is reflected in the business model for keeping the circular loop closed.
    - Finally, the model allows businesses to collaborate for operating a business model. Collaborative relations usually increase the degree of cooperation between the groups and their members [62]. Collaboration between manufacturers and customers includes knowledge exchange [61] and coordination of activities.

- One business model in a circular economy is the product as a service model. The circular economy is co-evolving with the internet of things (IoT) technology. This has resulted in internet-enabled communication between objects that gather and produce data from their use, context, and interactions with other objects and individuals [64]. (PAGE 10)

- Hyundai Automotive Enterprise (PAGE 11, 12):
    - Hyundai has developed a circular economy approach for various aspects of its business by establishing remanufacturing and service stations where more than 500 people are employed for offering services, tests, and recovering mechanical sub-assemblies.
    - The relatively low reuse costs make car repairs economical and attractive for customers. This kind of remanufacturing was made possible by changing the designs of the goods, keeping reuse and remanufacturing in mind at the outset.
    - To maximize product life extension and to extend its material use, Hyundai (see Figure 3) uses a new service model called the 'Blue Members' model by adopting IoT. When purchasing a new car, an owner automatically gets membership of Blue.
        - The customers who have Hyundai Motor's blue membership are aware that they will benefit significantly from the continuous use of components through the replacement of Hyundai Motor's parts. Hyundai Motor Company's blue membership system is currently the most highly preferred and reliable parts exchange system.
        - Over time, an owner receives information about the car's current engine condition, when to change the oil, and its tire condition.
        - Hyundai offers a service package by using advanced information technology. It informs customers when to replace parts and removes the inconvenience of identifying a service provider, a service needs evaluation, and replacement time.

    - If owners sell the cars in a second-hand car market, all the information is transformed to the new owners
- The product-service business model can be opened up as a consequence of IoT as well as telematics technology called the 'smart connected product'. The Blue Members model is an example of the servitization of products, because smart components improve a car's utilization capabilities and its value (PAGE 13).
- What we can understand from Hyundai is that, in the circular economy, using IoT and smart connected products can help solve some critical issues for prolonging a car's life (PAGE 13).

10.7. Outros tópicos que não foram tratados aqui (sugestão para nova meta-informação ou resultados significativos)
NADA

10.8. Proposições de pesquisas futuras (geral)

Os autores ressaltaram que "este documento não fornece informações suficientes para definir uma estratégia geral para o sucesso em diferentes setores em termos dos componentes do modelo de negócios de uma economia circular. Melhor acesso aos dados e pesquisas futuras ajudarão a superar essas limitações". Portanto, não é uma proposição, mas sim uma limitação do artigo que pode ser solucionada com pesquisas futuras.

10.9. Contribuições (para academia / prática / ambas?)

- This study contributes to servitization literature in various ways (PAGE 14):
    - First, it shows that servitization can be used for maximizing a product's life cycle in a circular economy, or that the servitization of a product can extend its life.
    - Second, according to the principles of a circular economy, products' history should be seen as a combination of trajectories rather than a linear path from design to the manufacture, consumption, and disposal phases. The suggested business model enables goods to get repaired, refurbished, and upgraded. This paper shows how the loops of the circular economy are employed by studying the Hyundai Automotive Enterprise.
    - From a circular economy's viewpoint, this paper argues that IoT's 'smart connected products' have a significant role in the path to multiple circular economy oriented service transitions.

11. Conclusões

11.1. Trabalhos futuros (que o autor se propõe, diferente das proposições futuras)
NADA

11.2. Limitações

- However, this paper also has some limitations that are attributed to data access (PAGE 14):
    - The current research emphasizes the consumer perspective. Ideally, it should be extended to a producer perspective, including even material extraction and production stages.

- It uses the results of a single case analysis even though a circular economy has a wider dimension.
- Further, this paper does not provide enough information for defining a general strategy for success in different industries in terms of the components of a circular economy's business model. Better access to data and future research will help overcome these limitations

12. SUA ANÁLISE

12.1. Pontos fortes

Acredito que o ponto forte do artigo é o estudo de caso na Hyundai Motor Company. De acordo com os autores, a Hyundai proporciona remanufatura e estações de serviço onde mais de 500 pessoas são empregadas para oferecer serviços, testes e recuperação de subconjuntos mecânicos. Com um sistema chamado "Blue Members", fornecido por meio de IoT, a empresa mantém o contato com os clientes e o sistema fornece informações sobre a condição atual do motor do carro, quando trocar o óleo e a condição dos pneus. Desse modo, o sistema informa os clientes quando substituir as peças e elimina a inconveniência de identificar um provedor de serviços, uma avaliação das necessidades de serviço e o tempo de substituição. Além disso, se os proprietários vendem os carros, todas as informações são transformadas para os novos proprietários.

Por fim, de acordo com os autores, o modelo Blue Members é um exemplo de servitização de produtos, porque os componentes inteligentes melhoram a capacidade de utilização de um carro e seu valor. E, de acordo com o estudo da Hyundai, o que se pode entender é que, na economia circular, o uso de IoT e produtos conectados inteligentes pode ajudar a resolver alguns problemas críticos para prolongar a vida útil de um carro.

12.2. Pontos fracos

- Ao meu ver, assim como o estudo na Hyundai é um ponto forte do artigo, é também um ponto fraco caso seja analisado criticamente:
  - Não informaram se a Hyundai oferece um sistema de logística reversa para devolução completa de carros, caso um novo cliente deseje trocar um modelo antigo por um novo;
  - Além disso, ao meu ver, o Blue Members é um caso de PSS orientado ao produto. Logo, é um caso simplório de servitização, dado que é um PSS mais orientado ao produto do que ao serviço.

- Além disso, o artigo não está completamente estruturado como um artigo científico:
  - Há diversos parágrafos na introdução sem referência bibliográfica, assim como na revisão da literatura;
  - Não há questão de pesquisa;
  - A metodologia não está totalmente detalhada (não há informações explícitas de como foi realizada a busca na literatura, tampouco a quantidade de trabalhos analisados para a construção da "Analysis of literature", assim denominada pelos autores).
  - Apresentaram os resultados com a Hyundai de forma muito genérica, não detalharam como realmente foram analisados e trabalhados esses resultados.

- Por fim, em relação ao conteúdo geral do artigo, dado o título "Circular Economy Business Models with a Focus on Servitization" eu esperava um maior detalhamento de um modelo de negócio circular focado em servitização, ou seja, esperava literalmente a proposição de modelo (com arquétipos e/ou componentes), não apenas um estudo de caso que simboliza este modelo de acordo com as informações da literatura. Os próprios autores ressaltaram isso na conclusão: "este documento não fornece informações suficientes para definir uma estratégia geral para o sucesso em diferentes setores em termos dos componentes do modelo de negócios de uma economia circular. Melhor acesso aos dados e pesquisas futuras ajudarão a superar essas limitações".

12.3. Sugestões para melhoria do artigo

- Dado os pontos fracos relacionados com a estruturação do artigo, minhas sugestões para melhoria são:
    - Evidenciação das referências bibliográficas utilizadas em todos os parágrafos faltantes da introdução e revisão da literatura;
    - Desenvolvimento de uma questão de pesquisa;
    - Detalhamento da "Analysis of literature" com descrição da string utilizada; período de busca; filtros utilizados, bem como a quantidade de artigos selecionados por etapa após cada filtro;
    - Maior detalhamento dos resultados do estudo de caso na Hyundai;
    - Apresentação de proposição de pesquisas futuras detalhadas.

13. Figuras ou tabelas importantes (caso você queira copiar e citar nos tópicos anteriores)

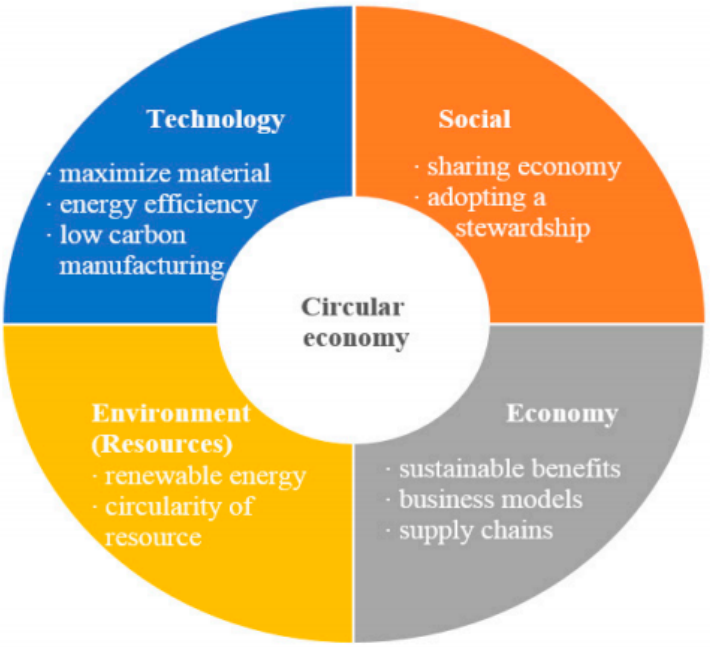

Figure 1. Conceptualization of a circular economy.

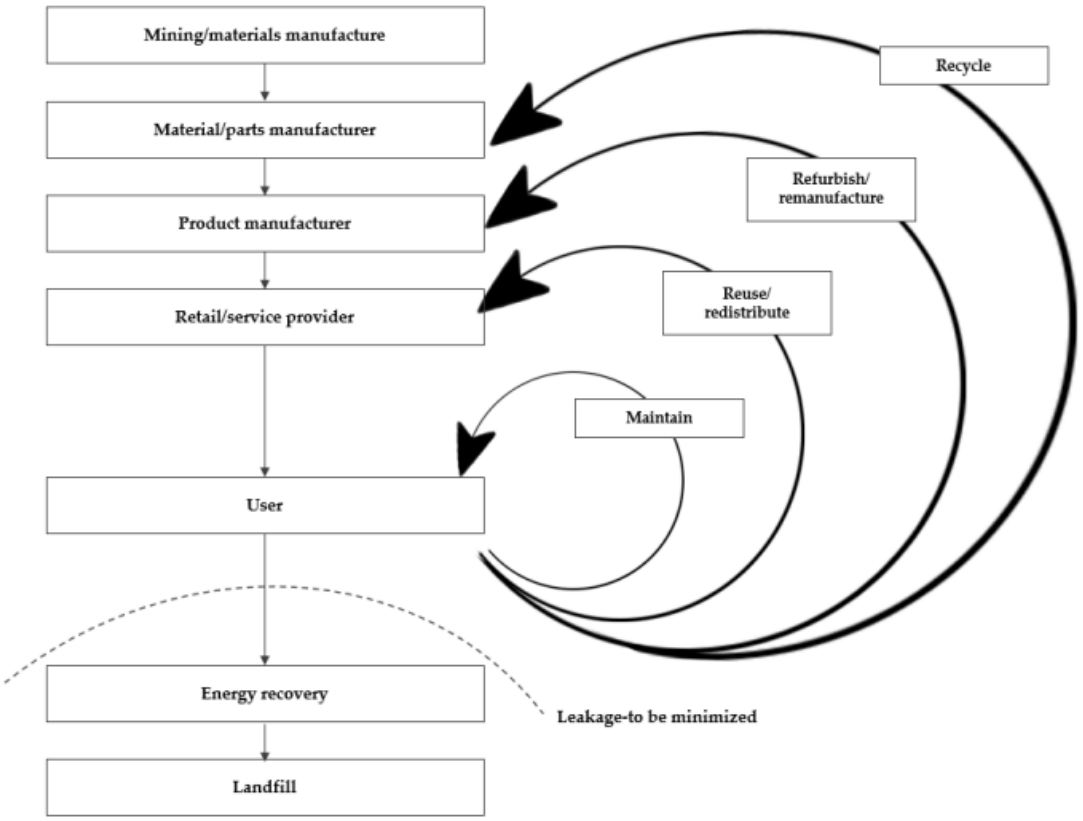

Figure 2. A circular economy (modified from Nguyen et al., 2014).