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Circular Economy in Tourism and Hospitality – a Nordic Perspective

Abstract: *Circular economy (CE) has been identified as a way to overcome current challenges like climate change and overconsumption of resources. This study focuses on the communication of actions towards CE in three Nordic hotel chains. The data analysed comprises webpages, annual reports and sustainability reports published by the hotel chains on the Internet. The findings indicate that the hotel chains have not yet fully embraced CE, instead the focus is on taking individual actions such as minimising waste and reducing the use of plastics. To fully live up to the requirements of CE, hotels should collaborate with industry partners to create innovative solutions, e.g. for recycling, retaining ecosystems, sharing assets and dematerialising. The public sector has an important role in supporting these efforts.*

Keywords: Circular Economy, Sustainability, Hotels

1 Introduction

Climate change and loss of biodiversity along with pollution and overconsumption of resources have become major global issues during the past decades. One solution offered to cope with these challenges is transitioning towards the Circular Economy (CE). Compared to the currently dominating linear production models threatening the ecosystems and overusing raw materials, CE is an economic system where input and waste are minimised.

There is still a lack of research about CE in tourism and hospitality (Martinez-Cabrera & Lopez-Del-Pino, 2021). Most of the CE studies are from heavy industries with huge material flows, e.g. manufacturing and construction industries (Julião et al., 2019; Rodriguez et al., 2020; Vargas-Sánchez, 2018). During the past two to three years, there has been a slowly growing number of studies about CE in tourism and hospitality, mainly about food waste (e.g. Gretzel et al., 2019), but much of the research is comprised of literature studies with a scant focus on and applicability to business cases (Julião et al., 2019). Two exceptions are the studies by Rodrigues-Anton and Alonso-Almeida (2019), and Sorin and Sivarajah (2021) analysing CE in hotel chains. More studies are likely to be published in the coming years as circularity gains more prominence as an economic model.

The European Union (EU) and individual governments heavily promote CE, and more companies are about to start embracing the concept in their strategies and operations. It has been highlighted that there should be more examples of how tourism companies adopt CE (Jones & Wynn, 2019; Rodriguez et al., 2020; Vargas-Sánchez, 2018). This study responds to that call. Hence, the aim of this study is to gain an understanding of the focus areas of CE in the hotel industry in the

Nordic countries. The data collected and analysed in this study comprises documents such as annual and Corporate Social Responsibility (CSR) reports and company websites. Three hotel chains in the Nordic countries were chosen for this study, two (Scandic and Nordic Choice hotels) of them having hotels in most Nordic countries, whereas Sokos Hotels is mainly a Finnish chain, with a couple of hotels in Estonia and Russia. Even though tourism is often seen as a service industry, some sectors have extensive material flows within the hospitality sector, hotels among them. There is a growing interest in CE to address them (Manniche et al., 2021) as CE is seen as a solution for balancing environmental conservation with economic growth (Julião et al., 2019).

2 Literature Review

2.1 Defining CE

Research about CE is conducted in different fields, resulting in quite a few definitions of CE in academic articles. Clearly, there is a lack of shared understanding of the terminology of CE. CE is sometimes used synonymously to sustainability, but it can also be perceived as merely recycling products and materials (Aminoff & Kovacs, 2019).

According to the European Commission (2015), CE can be defined as an economy “where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised” (p.2), thus also often being referred to as “closed-loop” economy (Rodríguez et al., 2020). Larsson (2018) defines CE as “an economic system where production and distribution are organised to use and re-use the same resources over and over again” (p.12). According to Sitra (2021b), “the CE is an economic model that aims to optimise the system as a whole and tackle the root causes of biodiversity loss, climate change and depletion of natural resources” (p.6).

The Ellen MacArthur Foundation (EMF) – founded in 2010 to accelerate the transition to CE – is the most highly respected authority in CE. Its definition has since gained ground, and it is currently the most recognised definition of CE (see, e.g. Morseletto, 2020; Rodríguez et al., 2020). EMF states that CE can be seen as “a continuous positive development cycle that preserves and enhances natural capital, optimises resource yields, and minimises system risks by managing finite stocks and renewable flows” (Ellen MacArthur Foundation, 2015).

2.2 Background of the CE

Humans are heating up the planet and extracting resources beyond its capacity (Dasgupta, 2021; Intergovernmental Panel on Climate Change [IPCC], 2021). The current resource- and carbon-intensive linear economy, the so called “take-make-waste” or “cradle-to-grave” economy, is an unsustainable economic system (Circle Economy, 2021). Many countries, organisations and businesses around the world are now looking for an alternative. CE seems to allow us to combine economic growth and employment while taking care of the most distressing threats to our existence, and to focus on the targets of the Paris

Agreement: limiting warming of the planet below the 2-degree mark (Circle Economy, 2021; Sitra, 2021a).

In recent years, there have been many global decision-makers, activists and high-profile thought leaders who have given their voice to the urgent challenges pressuring our planet. The most powerful voices have been prominent persons like the Swedish environmental activist Greta Thunberg with her urgent messages in global platforms about the climate crisis, the world-renowned naturalist and film-maker David Attenborough (2020) with his memoir “Life on our Planet”, Bill Gates (2021) with his book on how to combat climate change with technological innovations, and Partha Dasgupta (2021) with his Dasgupta Review about the connection between the economy, nature and loss of biodiversity. The latest IPCC (2021) report also stresses the responsibility of humans in decreasing the temperature on the planet and demands immediate actions. CE is a sustainable development strategy that many see as a key to changing the future of our planet for the better. However, less than 10 % of the world economy is circular now, leaving a 90 % circularity gap (Circle Economic, 2021).

The currently dominating linear economy relies on cheap and easily accessible resources (Boluk et al., 2019; European Commission, 2017; Manniche et al., 2017; Vargas-Sánchez, 2018). In the future, resources will not be so readily available, and their prices will soar. The world is facing an unparalleled global crisis due to the shortcomings of the current linear model. There is an urgent need to transform the way production, design and consumption presently take place (Circle Economy, 2021).

Governments around the world are offering economic stimulus programmes in the wake of COVID-19, and those could be used for circular investments. The EU Recovery plan for Europe – the largest stimulus package ever in the EU – allocates funds to digitalisation and green investments, both positively contributing to CE if planned well (European Commission, 2021b). The EU is promoting CE also with its Green Deal (European Commission, 2021a) and Circular Economic Action Plan (European Commission, 2020), which pave the way for EU carbon-neutrality by 2050. Individual countries have expressed an interest in embracing CE. For example, Finland has vowed to make CE its economic system by 2035 (Ministry of the Environment, 2021), the same year as the country aims to be totally carbon neutral. In Finland, over one-third of the population is familiar with the term CE, which is the highest rate of all Nordic countries. The population is also more positive towards reducing their consumption than the other Nordic populations (SB Insight, 2019).

The EU Circular Economy Action Plan (European Commission, 2020) includes initiatives for the entire life cycle of products, encompassing product design, promoting CE processes, fostering sustainable consumption, and aiming to ensure that the resources used are kept in the EU economy for as long as possible. The new EU Circular Economy Action Plan is a prerequisite to achieving the EU's 2050 climate neutrality target and to stopping biodiversity loss. CE could potentially be a “4.5 trillion-dollar business opportunity” (WBCSD, 2017). Sitra

(2016) states that the potential value of CE in Finland could be around 3 billion euro by 2030, whereas the Ellen MacArthur Foundation (2015) studies indicate that the total value of the global CE could be 1.8 billion euro annually by 2030. Improvements in EU resource productivity can lead to significant reductions in GHG emissions and increases in regional employment (Rizos et al., 2017). The European Commission has estimated that jobs directly associated with CE are already 3.9 million (IISD, 2020).

2.3 *CE Models and Frameworks*

As a concept gaining acknowledgement since the late 1970s, CE was originally discussed in terms of the 3R principles of Reduction, Re-use and Recycle. Later, the CE framework expanded to the 6Rs of Reuse, Recycle, Redesign, Remanufacture, Reduce and Recover (Manniche et al., 2017; Vargas-Sánchez, 2018). In CE, the same resources are used and re-used repeatedly (Larsson, 2018). Further Rs of CE added lately are Repurposing, Rethinking, Repair, Rehabilitation, Regeneration, Refurbishment, which all stress the importance of closing the production loops (Vargas-Sánchez, 2018). Products need to be designed to be used for longer, resold, repaired, recycled, and upcycled into new products. In CE, there is no waste, all the energy used is renewable, prices reflect the total production costs, and the economy is focused on collaboration and links between different stakeholders (SB Insight, 2019).

The “business action framework” CE model by Ellen MacArthur Foundation calls for ReSOLVE (table 1): Regenerate (e.g. shift to renewable energy and materials), Share (share assets, e.g. rooms, cars, appliances), Optimise (e.g. increase efficiency, eliminate waste), Loop (e.g. remanufacture products, recycle materials), Virtualise (e.g. travel, books, music etc.) and Exchange (e.g. replace old non-renewable with advanced materials, apply new technologies) (Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015). The ReSOLVE framework helps companies to identify key actions for their work towards circularity.

2.4 *CE Models in Tourism and Hospitality*

It is possible to reach climate targets only if we change the way we produce and consume products and services (Circle Economy, 2021; Ellen MacArthur Foundation, 2019), including tourism. Tourism contributes to the emissions heating up our planet, with its around 5 % contribution of the global greenhouse gas (GHG) emissions due to transport-related activities only (UNWTO, 2021). As the tourism industry faces concerns over its big environmental footprint, sustainability and CE initiatives are much called for. Tourism is one of the world's largest industries: Prior to the pandemic, tourism accounted for around 10 % of the global workforce and GDP (WTTC, 2021). Tourism is an industry that engages a large part of the worldwide population, and it has opportunities to spread awareness of CE to the general public.

Tab. 1: The ReSOLVE framework

Action	Examples
Regenerate	Shift to renewable energy and material Reclaim, retain and restore the health of ecosystems Return recovered biological resources to the biosphere
Share	Share assets Re-use, second-hand Prolong life through maintenance, design for durability, upgradability etc.
Optimise	Increase performance/efficiency of the product Remove waste in production and supply chain Leverage big data, automation, remote sensing and steering
Loop	Remanufacture products or components Recycle materials Digest anaerobically Extract biochemicals from organic waste
Virtualise	Dematerialise directly (e. g. books, CDs, DVDs, travel) Dematerialise indirectly (e. g. online shopping)
Exchange	Replace old with advanced non-renewable materials Apply new technologies Choose new product/service

Source: Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015

Consumers are increasingly demanding more responsible alternatives, and support for sustainable business is growing in both developed and developing economies (Close, 2021). The popularity of online searches relating to sustainable goods has increased by 71 % globally since 2016 (EIU, 2021). For many companies, CE initiatives are seen as part of their overall sustainability and CSR activities. CE offers opportunities for cost savings, reputational improvements and competitive advantage (Vargas-Sánchez, 2018).

Most of the CE examples come from the heavy industry. Tourism as a service industry has been regarded as less interesting from a CE perspective as material flows are limited. However, sectors within tourism and hospitality have substantial material flows, such as hotels with their demand for textile, furniture, and food. In the future, with the expected changes in consumer behaviour and EU legislation, there will be more pressure on the hospitality industry to embark on CE as well. So far, in tourism and hospitality, CE efforts have concentrated on waste, water and energy management (Manniche et al., 2017).

In recent years, many tourism companies have started communicating their work towards the UN Sustainable Development Goals (UNSDGs) in their CSR reports. CE relates to all UNSDGs, but particularly to UNSDG #12, “Responsible Consumption and Production” (SB Insight, 2019). The tourism industry can play a major role in achieving the UNSDGs and encouraging the economic system’s transformation through promoting CE practices to its customers and suppliers (Schroeder et al., 2019).

In CE, waste from one company becomes valuable raw material for another business, and resources are valued instead of wasted. Their value even increases along the way in upcycling, signifying cradle-to-cradle design (Rizos et al., 2017). Food waste could become energy in the tourism context, as is already the case at the Crowne-Plaza Hotel in Copenhagen (Manniche et al., 2017). There are already inspiring examples of companies with CE oriented business models (e.g. avoiding food waste with ResQ: <https://www.resq-club.com/>) and Sitra – the Finnish Innovation Fund – publishes a list of innovative CE companies for information and benchmarking (Sitra, 2021c; Sitra, 2021d).

So far, many tourism players have focused on sustainability activities such as reducing negative impacts of their operations, but that is not enough in a CE system. There needs to be more recycling, enhancing the value of resources to have a positive environmental effect, upcycling, re-using, restoration and using renewable energy sources (Ellen MacArthur Foundation, 2015; Manniche et al., 2017; Rizos et al., 2017; Vargas-Sánchez, 2019). CE is an effective way to solve the contradiction between economic development and environmental protection (Vargas-Sánchez, 2018). It allows destinations and tourism companies to grow while reducing emissions and resource usage and turning to renewable energy systems and reduced food miles through local purchasing and urban farming, i.e. achieving a profitable low carbon economy. Transformation to CE requires cooperation with other companies and industries as well as forming long-term relationships within the supply chain (Manniche et al., 2017; Vargas-Sánchez, 2018). Further, as countries like Finland are aiming for a carbon-neutral future in the next few years, public authorities will have increased pressure, as expressed by Vargas-Sánchez (2019), resulting in more tourism and hospitality companies boosting the circularity of their businesses.

3 Methods

Organisations produce a huge number of documents and information about their activities such as annual reports, financial accounts and webpages. Many of these are prepared for external stakeholders to justify themselves in the public eye. Many of these documents are an important part of their CSR and marketing communications. The documents are also a valuable source of information for consumers who have become even more demanding and want to know more about the level of responsibility of the service providers they choose to use (EIU, 2021). Analysing this kind of secondary source material has a long tradition in qualitative research (Atkinson & Coffey, 2004). According to Saunders et al. (2009), secondary data is often analysed in combination with primary data, but it is possible to base a whole study on documents such as e-mails, websites and diaries. This research is a conceptual study of qualitative nature, where only secondary data is used.

This study relies on websites and various sustainability-related reports of the three largest Nordic hotel chains (table 2). The documents were found by searching the hotel chain name and the word “CE” in the search engine Google.

In the process, it was noted that the chosen hotel chains offer more news and examples of circularity in Finnish than in English on their websites. However, for this study with an international audience, only documents in English were used. The method adopted for this study follows the methodology of the study conducted by Rodriguez and Alonso-Almeida (2019) focusing on CE in four different hotel chains. In this study, the content of the documents was analysed during June–August 2021. Thereafter CE initiatives were identified and categorised into the ReSOLVE framework created by the Ellen MacArthur Foundation (2015). A review of the initiatives was conducted and, as the last step, a comparative analysis was made.

Tab. 2: Overview of data analysed

Company	Material	Reference
Scandic	Company website about sustainability	Scandic 2021a
Scandic	Annual and sustainability report	Scandic 2020
Scandic	Guidelines for sustainable procurement	Scandic 2018c
Scandic	Other sustainability policies and guidelines relating to CE	Environmental Policy: Scandic 2018b Code of Conduct: Scandic 2018a Whistleblowing Service: Scandic 2021b
Sokos Hotels	Company websites about sustainability	Sokos Hotels – Responsibility: Sokos Hotels 2021a S Group – Responsibility – The CE: S Ryhmä 2021c
Sokos Hotels	Green key programme	Sokos Hotels 2021b
Nordic Choice	Company website about sustainability	Nordic Choice Hotels 2021a
Nordic Choice	We Care annual report	Nordic Choice Hotels 2020b
Nordic Choice	Annual report	Nordic Choice Hotels 2020a
Nordic Choice	Whistleblowing	Nordic Choice Hotels 2021b

Source: Authors' work

Studying the communication about the CE actions of the largest hotel chains in the Nordic market offers perspectives into how major players in the tourism and hospitality industry have embraced CE. Scandic Hotels (2020) have altogether 280 hotels in the Nordic countries (except Iceland) as well as Germany and Poland, Sokos Hotels have 49 hotels in Finland, Estonia and Russia (S Ryhmä, 2021a), and Nordic Choice Hotels (2020a) under their different brands have a total of 205 hotels in the Nordic and Baltic countries.

4 Findings

The findings are divided into three parts: First, the overall efforts and commitments by the hotel chains towards a sustainable future are presented. Next, an analysis of the hotel chains' overall communication about CE is provided. Finally, a summary of the concrete actions towards CE communicated by the chosen hotel chains is presented according to the ReSOLVE framework developed by the Ellen MacArthur Foundation (2015).

4.1 Sustainability as a Starting Point for CE

Scandic Hotels is a forerunner when it comes to corporate social responsibility in the hotel sector. The work started already in 1993, and over the years, the chain has become well known for its sustainability efforts, especially regarding environmental sustainability. The CEO Jens Mathiesen states in the annual report of Scandic (2020, p. 5) that:

For us, sustainability is a natural part of our business and all of our operations are characterized by a sustainable approach. Our corporate customers and hotel guests are also making greater demands we need to live up to. I know that our focus on sustainability also motivates our team members and makes them feel proud, which is absolutely critical for us to be able to deliver good service. Scandic operates according to the UN Global Compact's ten principles for human rights, labor law, environment and anti-corruption.

The annual and sustainability report of Scandic (2020, p. 18) stresses as well that UN's Sustainable Development Goals are always in focus when their operations are developed. As the report claims:

We stand firmly behind the Paris Climate Agreement and the UN's Sustainable Development Goals (SDGs) and we constantly evaluate our ability and possibility to contribute to sustainable development. To this end, we formulate measurable goals related to the areas where the company, its employees and its stakeholders have the greatest potential to make an impact. The areas where we can have the most significant impact are reducing food waste, promoting diversity and inclusion and ensuring that our hotel operations have the lowest possible climate impact.

In 2017, Scandic decided to focus on four main areas in their work for sustainability: 1) CO₂ emissions, 2) diversity and inclusion, 3) health, and 4) waste. In 2020, 96.9 percent of Scandic's waste was recycled, which is an increase of 0.2 % compared to 2019. From a CE perspective, waste is the most relevant issue (Scandic 2020).

Scandic offers several documents on its sustainability section of the website, e. g. Environmental Policy (Scandic, 2018b) and Code of Conduct (2018a). Scandic (2021b) and Nordic Choice Hotels (2021b) have also developed a "Whistle-blower service", meaning that anyone can anonymously report about suspect behaviour, including that relating to CE issues. That way the hotels can find out about behaviour that is not in accordance with its guidelines and tackle the issues without delay.

Also, Sokos Hotels strive to be a forerunner in sustainability issues and have for years focused on developing the operations in a sustainable way (Sokos Hotels, 2021b). Sokos Hotels is one of the brands under the S Group (S Ryhmä, 2021a) network of companies in the retail and service sectors. The chain has been recognised as Finland's most responsible hotel brand by the Europe-wide Sustainable Brand Index (2021) survey for nine consecutive years. Food waste has been one of the issues that have improved.

Sokos Hotels are committed to following the Green Key sustainability programme (see <https://www.greenkey.global/>), which is an international certification developed especially for the hotel industry. The Green Key organisation will audit the actions taken for sustainability. Thus, the hotels receiving the certificate are obliged to follow the guidelines. The Green Key programme (Sokos Hotels, 2021a) comprises several activities such as communication, water and energy use, food and green areas. In 2021, many individual hotels under the Sokos Hotels brand have also joined the Sustainable Travel Finland label, aiming to show the sustainability commitment to their customers and other stakeholders (S Ryhmä, 2021c).

Nordic Choice Hotels have developed a programme called “We Care” for the efforts towards sustainability. The programme identifies five main focuses for responsibility: 1) sustainable hotel operations, 2) food revolution, 3) diversity, 4) local social responsibility and 5) ethical trade (Nordic Choice Hotels, 2021a). For Nordic Choice Hotels, fighting climate change is a key issue. The hotel chain has also removed all unnecessary plastics from their hotels by the end of 2019 (Nordic Choice Hotels, 2020b). Their main vision regarding sustainability is summarised as follows on the responsible section of their website (Nordic Choice Hotels, 2021a):

We have high goals and a broad commitment. Therefore, we measure our success based on 3 different areas: People, Planet and Profit. We would love to be evaluated on all three levels. Completely transparent. So you can sleep with a clear conscience.

Nordic Choice Hotels (2020b) offer detailed explanations about their activities and targets regarding the “We Care” programme. They have created concepts that will have a lower environmental impact on the guest experience, e.g. Sweet Dreams Stay, which means that guests actively forego room cleaning, and the hotel donates the money to UNICEF. The hotel chain also informs customers about food waste and nudges guests toward more responsible behaviour. There are also detailed descriptions of the UNSDGs that the hotel chain is working towards achieving. In the “We Care” report (Nordic Choice Hotels, 2020b), there is no mention of CE, though.

4.2 CE – Main Message

All hotel chains analysed communicate extensively about their work related to sustainability and responsibility. However, CE is less discussed, at least in their communication material.

In the report “Scandic’s guidelines to sustainable procurement” (Scandic Hotels, 2018c, further revised 2021) prepared for internal and external stakeholders, Scandic defines CE and the actions taken towards it. Scandic (2018c) identifies the ReSOLVE framework presented in table 1 as a key framework for procurement. In the guidelines, Scandic (2018c) discusses sustainable business operations from different angles such as what chemical substances should be avoided to what metals are acceptable. From a CE perspective, the need to procure the

right type of plastics, electronic devices and textiles (recyclable) are discussed in detail. The aim is that all processes of Scandic should be implemented without waste. One main strategy for this is to rent as many products as possible.

Nordic Choice Hotels do not mention the concept of CE in the material studied. However, the “We Care” reports include clear targets for managing waste and minimising energy use and the report discusses why the targets are important and what is done to reach the goals. It is also reported how well the company reached those targets, with inspiring examples from individual hotels. Some of the focus areas of their work towards sustainability are directly related to CE. For instance, the company (Nordic Choice Hotels, 2021a) argues on its sustainability section of the website that

Of all the food that is produced in the world, 33 % ends up as waste. Reducing food waste is something that all our hotels work on. Our hotel restaurants conducted tests and managed to determine that smaller plates lead to less food waste. By decreasing the plates by a few centimeters and putting up a sign with a prompt to finish the food, food waste was reduced by 20 %.

Sokos Hotels is not communicating their activities focusing on sustainable issues with the CE terminology either. The most relevant CE activity discussed is waste management. On the S Group sustainability website (S Ryhmä, 2021c), there is a section devoted to CE. It mainly deals with the plastics and energy policies of the network of companies, including hotels.

The Green Key programme followed by all Sokos Hotels provides clear guidelines for waste, water and energy management, and sustainable mobility. It encourages hotels to minimise the amount of waste, for instance, through recycling and by finding alternative ways of using replaced products and materials. Renewed products can be sold or given to charity or re-used by other companies in the production process (Sokos Hotels 2021c). It is required that hotels with the certificate do not use disposable items. On the Sokos Hotels (2021a) website section explaining the Green Key programme, there are a few concrete actions and suggestions mentioned regarding these issues. All waste from electrical devices must also be recycled and a special bin is required for gathering this kind of waste. However, all that is said about energy, water and waste on the Sokos Hotels (2021b) responsibility website section is this statement:

We reduce our energy consumption in accordance with S Group's ambitious goals and invest in the production of renewable energy. Finland's clean water is a valued natural resource and quenches the thirst of our customers. We use water responsibly and closely monitor our own water usage. Improved recycling and reduced use of plastics are everyday goals for us.

4.3 Communication of CE Activities by the Hotel Chains

In the final part of the analysis, the concrete CE activities mentioned by the chosen hotel chains were applied to the ReSOLVE framework developed by Ellen MacArthur Foundation (2015, table 1). The framework could be adopted by tourism businesses as it is not as manufacturing centered as many of the

other CE models. It was also adopted by Scandic (2018) in its report about sustainable procurement.

Table 3 summarises the communication of the concrete CE activities by the chosen hotel chains. The activities were coded under the corresponding parts of the framework model. The first column of the table introduces the name of the action, the second column the recommended activities under the Ellen MacArthur Foundation (2015) framework, and the third column the concrete activities the chosen hotel chains have undertaken so far.

All chains communicate their efforts towards CE at least to some extent. Most attention was given to food waste, perhaps not surprisingly, as the potential savings from reduced raw material use at hotel restaurants can be great. There were also many examples of recycling textiles and furniture mentioned by the hotel chains.

Based on the analysis in this part, it can be concluded that all hotel chains in focus in this study have started to act towards CE. Still, most of the issues communicated to stakeholders are issues also discussed in the context of sustainable development and sustainable hotel operations. Circular business models are still not fully developed, as CE also calls for new innovations within the supply chains.

5 Discussion

It has been argued that hotel chains often focus on sustainability issues in general or just attempt to reduce negative impacts and emissions instead of adopting a more holistic CE business model (Manniche et al., 2017). In CE, more must be done than just reductions. Especially collaboration with suppliers to find new innovative ways of using recycled products is crucial.

Although all three hotel chains in this study have long-running sustainability programmes, and they are all known for their focus on issues related to responsibility, such as diversity and accessibility, none of them seems to have embraced CE entirely yet. Their CSR reports and websites do not go beyond a few isolated mentions of the word CE or examples of circularity without using the actual term CE. However, there have been a few attempts to introduce more circular thinking in the hospitality business recently, e.g. in the form of waste reductions (Scandic; Sokos Hotels), renewable energy initiatives (Nordic Choice Hotels; Sokos Hotels), replacing single use items and re-using containers, ending the use of unnecessary plastics (Nordic Choice Hotels), purchasing guidelines (Scandic, Nordic Choice Hotels, Sokos Hotels), re-use of textiles by other companies and recycling furniture (Sokos Hotels).

More transparency and more information about CE related actions would make it easier to analyse the actual level of circularity. Another issue to note is that not all circularity related news is translated to English on Sokos Hotels website. The hotel chains should understand that CE is of growing interest also to the general public and to their foreign customers, too, as consumers are becoming more

Tab. 3: Communication of CE activities by the hotel chains

Action	Recommended activities	Examples of activities taken by the hotels
Regenerate	Shift to renewable energy and material Reclaim, retain and restore health of ecosystems Return recovered biological resources to the biosphere	Scandic: Prefer energy from sustainable renewable sources that is not impacting biological diversity Sokos Hotels: Offering chargers for electric cars in their garages Nordic Choice Hotels: using renewable energy whenever possible → 80 % of hotels have signed green/renewable electricity contracts
Share	Share assets (e. g. cars, rooms, appliances) Re-use, second hand Prolong life through maintenance, design for durability, upgradability etc.	Nordic Choice Hotels, Scandic: Offering hotel rooms at greatly reduced rates for remote workers and students for reduced rates during the pandemic Sokos Hotels: Re-dressing furniture
Optimise	Increase performance/efficiency of product Remove waste in production and supply chain Leverage big data, automation, remote sensing and steering	Scandic, Sokos Hotels, Nordic Choice Hotels: Avoiding food waste, sorting (bio)waste, offering and highlighting local and organic products Nordic Choice Hotels: Reducing transport, deliveries and chemicals Scandic, Nordic Choice Hotels: Imposing environmental demands on suppliers (Scandic: purchasing guidelines; Nordic Choice: Sustainable Trading focus + started stakeholder dialogues regarding CO ₂ emissions)
Loop	Remanufacture products or components Recycle materials Digest anaerobically Extract biochemicals from organic waste	Scandic: Electronic devices bought from suppliers offering takeback and recycling Sokos Hotels: Recycling and re-using materials such as bedlinen and furniture Nordic Choice Hotels: Clear targets for recycling (99 % target for waste-sorting)
Virtualise	Dematerialise directly (e. g. books, music, travel) Dematerialise indirectly (e. g. on-line shopping)	Scandic, Sokos Hotels, Nordic Choice Hotels: hotel information in electronic form (e. g. on TV screens instead of booklets), marketing information and booking options on websites
Exchange	Replace old with advanced non-renewable materials Apply new technologies Choose new product/service (e. g. multimodal transport)	Scandic, Sokos Hotels, Nordic Choice Hotels: Removing plastics from hotel rooms Scandic: Electric cars; energy efficient shower-heads Nordic Choice Hotels: Detailed requirements for new hotel buildings, fixed fixtures and equipment; Example: replacing incandescent and halogen light bulbs with LED bulbs

Source: Based on the ReSOLVE framework by Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015

aware of the need to embrace CE solutions. Thus, it would make sense to communicate about CE actions more openly, also in English.

One example of how the CE principles could be communicated to the public is to highlight what happens to all the textiles used by hotels. The production process of textiles not only rely on huge amounts of water and chemicals, but also cause pollution and emissions (European Environment Agency, 2021). The starting point for Scandic is to rent products such as textiles when possible (Scandic, 2018c). Typical textiles being rented are sheets, towels and carpets. For instance, the Nordic Choice Hotel chain has recycled duvets and produced nightshirts for hotel guests with re-used textiles. Thus, the hotel chain works together with companies in the supply chain renting textiles, like the Lindström group (see <https://lindstromgroup.com/>), to find solutions for how the material can be re-used.

Sokos Hotels (2021c) have taken some concrete activities towards circularity with a partner: When one of their larger hotels in Helsinki got renovated, its beds, blankets, pillows, curtains and night tables got to continue their lives with the help of a Finnish company named Freshrent which recycled or cleaned and renovated the old materials. Some of the items were good enough to be sold to private homes, smaller hotels and houses for construction workers.

Examples like the above ought to become more common in the future when hotels start to take more concrete actions towards circularity. It will also be interesting to see when the first hotel run with the principles of CE will open in the Nordic countries – the QO hotel in Amsterdam is an example in the Netherlands, a country which is a forerunner in CE. QO Hotel was built up to 33 % with material from a demolished skyscraper, and the carpets in the hotel are from recycled fishing nets (Enidat 2020).

6 Conclusion

The main reason for intensified discussions about CE is that our current economic system is unsustainable with its ever-increasing use of natural resources and overconsumption. Tourism and the hospitality industry must be involved in finding solutions for challenges such as climate change and loss of biodiversity, plastic waste and air pollution, transport and emissions. There is an urgent need for all companies and their supply chains to leave the linear economy behind and embrace the circular one.

This study indicates that the CE actions of the selected Nordic hotels are still rather sporadic and ad hoc, lacking a holistic approach to CE. In order to start embracing circularity, hotel chains should adopt circular business models such as products and materials as a service, sharing platforms and circular partnerships, which would increase the overall circularity of products and materials. Communication of sustainability, CSR and CE activities is still a work in progress. However, all studied hotels are already involved in sustainability certification programmes, with Scandic Hotels and Nordic Choice Hotels revealing their progress with the UNSDGs. However, it would be essential to take a more holistic approach towards circularity and explore its potential together with their partners in the supply chain, destination management companies and

other stakeholders. CE is not something that a company can embark upon on its own, it needs heavy support from the public sector and other stakeholders as well.

The COVID-19 pandemic has highlighted all the risks linked to the current system, impacting lives and jobs, supply chains and entire economies. With its inherent resource extraction and waste production problems, our current system results in environmental degradation, loss of biodiversity, climate change, and pollution. The global pandemic offers an opportunity to invest in a transformative COVID-19 recovery strategy and in more sustainable circular systems, which would allow economic, social and environmental healing and recovery both in the short term and in the longer term (Ellen MacArthur Foundation, 2020). The public sector plays a pivotal role in regulation, incentives and infrastructural development for CE. In market economies, companies must realise that actively looking for solutions linked to more sustainable outcomes can be a competitive advantage as a growing number of consumers look for responsible ways of consumption and travel.

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