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Research article

The Circular Economy and Natural Capital in the Tourism and Hospitality Industry

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Abstract

There is growing interest in the role that the circular economy and natural capital might play in the transition to a more sustainable tourism and hospitality industry. While both concepts have attracted attention in the academic, professional and policy literature, few leading tourism and hospitality companies have publicly embraced the two concepts to inform their sustainability programmes. This paper is a narrative review that reports and reflects upon the existing literature, and offers two illustrative case examples of how hotel companies are publicly addressing these concepts. The paper concludes that the circular economy and the protection and enhancement of natural capital offer linked environmental and business benefits for the tourism and hospitality industry, but that, for a number of reasons, there is limited evidence that the two concepts have informed sustainability programmes within the sector. Further research could usefully build upon this study to examine, amongst other aspects, stakeholder involvement in pressuring companies to pursue circular economy and natural capital objectives, the role of digital technologies in supporting this transition, and the wider supply chain implications of such initiatives.

Keywords: Circular economy; natural capital; tourism and hospitality; case examples

1. INTRODUCTION

Tourism and hospitality is one of the largest global industries. It generates a wide range of economic and social benefits, but its overall impact on the environment is often viewed as less positive. In this context, Lim (2016, p. 161) concluded that ‘an ongoing challenge facing hospitality and tourism academics, policy makers, and industry practitioners is dealing with the complex issue of sustainability.’ Within the broader debate around sustainability, there is growing interest in the respective roles that the circular economy (CE) and natural capital (NC) might play in facilitating the transition to a more sustainable tourism and hospitality industry. In outlining ‘the need to apply circular economy principles to sustainable tourism’, the Economic Commission for Europe’s Committee on Environmental Policy (2022, webpage), for example, claimed that ‘tourism has therefore led to the overshooting of several planetary boundaries with its current linear model by contributing to climate change, pollution, and biodiversity loss, as well as impacting land and marine ecosystems.’ At the same time, Legrand (2021, webpage) argued that ‘nature and its ecosystem services are at the center of the hospitality business proposition: from food and beverage offers to guests’ enjoyment of natural landscape at a destination. Nature is not only a capital component available to businesses, but a source of solutions to mitigate and adapt to climate change and protect biodiversity while ensuring the well-being of staff and guests alike.’

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These two statements might be seen to reflect the importance of the concepts of the CE and NC within any discussions of sustainability relating to the tourism and hospitality industry. However, while both concepts have attracted attention in the academic, policy, and professional literature, by and large, they have not explicitly informed the sustainability programmes publicly pursued by the leading players in the industry. With this in mind, this paper looks to review, and reflect upon, the tourism and hospitality literature on the CE and NC, and to use two case examples to illustrate and analyse how two of the leading hotel companies are publicly addressing the CE and NC. As such, the paper looks to help to fill a gap in both the CE and the tourism and hospitality literature, in two ways. Firstly, it reviews both the recent academic *and* policy and professional literature, whereas the focus to date has been on the academic literature alone; and secondly, it offers some empirical insights into how two of the major players in the hospitality industry are addressing the CE and NC. To date there has been little or no published work on corporate approaches to the CE and NC within this sector.

Following this introduction, the following section briefly outlines the two core concepts – the CE and NC - that frame the ensuing discussion. In section 3, the methodology for conducting the review is set out, and in section 4 these concepts are reviewed in the context of the tourism and hospitality industry, drawing upon recent academic, professional and policy literature, and emergent themes are discussed. In section 5, two case examples that illustrate how these concepts have been pursued in practice are set out and analysed, and critical issues are identified. Finally, in section 6, some general conclusions are discussed, and possible future avenues of research are put forward.

2. THE CIRCULAR ECONOMY AND NATURAL CAPITAL CONCEPTS

For the Ellen McArthur Foundation (undated, webpage) the CE ‘decouples economic activity from the consumption of finite resources’, and is based on three principles: to ‘eliminate waste and pollution’, to ‘circulate products and materials’, and to ‘regenerate nature.’ Essentially, the CE concept is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible, thus extending their life cycle. The CE stands in marked contrast to the traditional linear economic model, in which raw materials are used in the manufacturing process until discarded with little or no thought for the environmental consequences of the waste generation process. Increasingly, digital technologies are seen as having a potentially central role to play in the widespread adoption of the CE.

The World Forum on NC (2017, webpage) defines NC as ‘the world’s stocks of natural assets which include geology, soil, air, water and all living things’ and these natural assets provide a wide range of services, often referred to as ecosystem services, which ultimately underpin human life and economic activity. While water, plants, and the natural resources used for building materials are perhaps the most obvious ecosystem services, climate regulation, natural flood defences, carbon storage, and the pollination of crops by insects are equally vital to human life on earth. The protection of NC is vital to continuing human and economic wellbeing, and poorly managed NC is a social and economic, as well as an ecological, liability.

3. METHODOLOGY

Researchers, practitioners and policy-makers are showing increasing interest in the CE and NC, and the overall aim here is to explore and review these concepts in the context of the tourism and hospitality industry. This is a narrative review (Dixon-Woods et al., 2006; Popay et al., 2007), an evidence-based summary regarding a particular, defined topic, without any pre-determined research questions. Other authors (e.g., Grant and Booth, 2009) have termed this a ‘qualitative evidence synthesis’ – a ‘method for integrating or comparing the findings from qualitative studies’ that ‘looks for themes or constructs that lie in or across individual qualitative studies’ (p. 94). The sources of information were varied, coming from a number of academic databases, including Web of Science, Science Direct, IEEE Xplore and Google Scholar, and Google was used to search for relevant industry and policy documents using appropriate key words and search strings.

The findings from relevant documents were analysed and integrated using a simple spreadsheet for ordering and cross-referencing the materials around the emergent themes relating to either the CE or NC. Six main themes emerged from this analysis, three relating specifically to the circular economy and three regarding natural capital in the tourism and hospitality industry. The material for the case examples was similarly recorded and ordered to reflect a focus on the CE in the first case and on NC in the second. From this case analysis, three critical issues surfaced which apply to both the CE and NC concepts and their operation in practice (Figure 1).

4. ACADEMIC, PROFESSIONAL AND POLICY LITERATURE

4.1 The Circular Economy in Tourism and Hospitality

Despite the growing interest in the CE in tourism and hospitality, Rodriguez et al. (2020) have pointed out that this is a relatively new field of research, and available sources are limited. However, from a review of current literature, three interconnected themes are in evidence: frameworks and models; drivers, enablers and barriers; and the CE in specific locations.

Firstly, as regards frameworks and models, Manniche et al. (2021) recognised that, despite being classed as part of the service sector of the economy, tourism relies on large quantities and flows of finite natural resources, and suggested that the concept of the CE offers great potential as an integrative framework for encouraging more sustainable tourism practices. Sorensen and Baerenholdt (2020) discussed how tourists' practices could encourage the development of CE in tourism, by applying a practice theory that emphasises changes in what tourists do rather than the tourism products and services themselves, whilst Rodriguez-Anton and Alonso-Almeida (2019), having identified a lack of research on circular tourism, looked to shed light on a number of CE activities (reduction, reuse, recycle, redesign, replace and rethink) developed in the tourism sector by means of a business case analysis. Their results revealed that the main activities adopted are reduction, recycle and reuse, but that CE principles and strategies were not being adopted to a high degree, even in the biggest hotel chains worldwide. Looking to the future, the authors emphasised the need to promote the CE in the hospitality industry, particularly in independent hotels.

Vargas-Sanchez (2018, p. 652) claimed that the concept of the CE will contribute to a more sustainable tourism industry, not least because it has a 'significant role to play in economic transformation and because of its multiplier effect on the whole economy and its capacity to encourage circular flows among its suppliers and customers', and because 'there is no viable alternative.' However, Vargas-Sanchez (2018) argued that some small and medium sized enterprises, where financial resources were often limited, would need public stimuli, and that effective co-ordination would be required to navigate the complex business and policy environments, at national, regional and local levels, to boost this transformation.

Within the policy and professional literature, Sorin and Einarsson (2020, pp. 5-6), writing under the banner of the CE360 Alliance, emphasised that 'the need for a new positive travel paradigm is pressing', and that the 'CE framework can provide such an innovative, resilient and sustainable tourism industry development paradigm.' At the same time, the authors suggested that 'travel and tourism has an important role to play in the CE transition, as the industry is deeply interlinked with, and dependent on, multiple key resource flows, asset and commodity value chains in society—including agriculture and food, built environment and transport industries', and that 'travel and tourism actors can act as enablers of circularity and benefit from shared circular value creation and value capture within relevant value chains.' They concluded that 'the CE offers a compelling concept and set of tools to guide an innovative, resilient and sustainable tourism industry development that is fit for the 21st century.'



Figure 1 Circular Economy and Natural Capital in Tourism and Hospitality: Emergent Themes (outer circle) and Critical Issues (inner circle).

Secondly, drivers, enablers and barriers are also considered by a number of authors. Sorin and Sivarajah (2021, p.265) acknowledged that although the concept of the CE was gaining momentum in corporate and political circles, 'its relevance and applicability to service dominated industries, such as tourism and hospitality is poorly researched.' In looking to help to fill this gap in the literature, the authors investigated Scandinavian hotel managers' understanding of the CE, its drivers and enablers, and its value creation potential, and put forward a 'CE applicability framework to test the concepts relevance to hotel operators.' Conditional to specific enabling levers, the research confirmed the applicability and value creation potential of the CE and offered some recommendations on value creation opportunities, deployment pathways and future research agendas. Aryal (2020) studied the potential application of the CE in the tourism industry, and the barriers to its implementation, in Nepal. This research revealed that financial and knowledge constraints hindered the adoption of circular tourism.

CEnTOUR (2020, p. 1), which aims to foster innovative circular solutions in the tourism sector by focusing on small and medium sized enterprises and their value chains, published a handbook, 'Managing the transition to CE for tourism providers', designed to provide key information on the CE and a set of practical activities to help companies set up a circular action plan. The handbook claims that by adopting circular economic strategies, small and medium sized enterprises can achieve a range of potential benefits, including reduced exposure to rising resource and energy prices, stimulating innovation, improved brand image, strengthening existing markets and opening up new markets, increased customer loyalty, additional revenue streams, and reducing raw materials, energy and water consumption. The handbook provides guidelines to enable companies to assess the drivers and barriers to transition to a CE and a circular actions catalogue.

The Economic Commission for Europe Committee on Environmental Policy (2022, p. 1) claimed that 'applying CE principles to sustainable tourism can help the tourism industry move from a linear to a circular economic model, by ensuring it remains an economic driver for the social foundations while not overshooting the environmental ceiling in which it depends.' The report argued that the tourism industry is highly fragmented and that it would be futile to try to transform tourism all at once, and that the accent should be on developing a strategy focused on a network of role model circular tourism destinations. Once such destinations and a best practice platform have been identified, a value chain and hotspot analysis per destination would be useful to identify suitable areas within each value chain

to start the transformation. Food and beverages and buildings and construction were explicitly suggested as priority areas for the integration of circular approaches in the tourism sector, due to their centrality in tourism experience, their related environmental impacts, and their potential to influence the transformation of the sector and position tourism as an agent of change.

Thirdly, a number of studies have examined tourism and the CE in a variety of specific tourism locations. Cornejo-Ortega and Dagostino (2020) explored the implementation of CE practices in Puerto Vallarta, a high-ranking tourism destination in Mexico, and looked to determine tourist companies' willingness to design a transition to the CE. The findings suggested that the viability of integrating a CE into the tourism industry in Puerto Vallarta was dependent, in the first instance, on the awareness and knowledge of owners within the tourism industry, and that both companies and government needed to communicate their initiatives more clearly to raise awareness among both tourists and the local population. Pongsakornrungrungsilp and Pongsakornrungrungsilp (2021) looked to demonstrate how the CE is employed to drive the sustainability of the tourism industry in Krabi, Thailand. Their work found that the Krabi tourism stakeholders had collaborated to co-create green culture and behaviour, which plays an important role in driving the CE.

Pamfilie et al. (2018) examined the influence of the implementation of integrated quality-environment-security systems on the economic performance of hotel establishments in Romania, from the perspective of industry managers, as a starting point for determining the applicability of the principles of CE in the tourism sector. The authors found that the focus of industry managers was more on reducing energy and water use, rather than on the wider issues of the CE.

4.2 Natural Capital in Tourism and Hospitality

There is some evidence in the academic literature of a growing interest in the role of NC in tourism and hospitality (Dong et al., 2019; Fitch et al., 2022), but Jones and Wynn (2019) have suggested that academic research on the role of NC in the tourism and hospitality industry lacks a coherent structure. That said, three interrelated themes can be identified: the measurement of NC, assessing the contribution that NC can make to tourism, and the impact of tourism development on NC. Firstly, some of the most prominent contributions to the policy literature have focused on measurement, and putting a value on NC. The UK's Office for National Statistics (2021), for example, reported on new methods for estimating the value of outdoor tourism in the UK. Its report detailed the total numbers of visits, the activities they took part in, and the amounts spent on those activities, and offered a breakdown of the visits and value by broad habitat types, providing national and regional breakdowns. The report estimated that nature contributed an estimated £12 billion to tourism and outdoor recreation in the UK in 2019, but between 2011 and 2019 only 8% of all estimated tourism and outdoor leisure spending in Great Britain was driven primarily by nature.

Secondly, Fitch et al. (2022) developed a transparent and repeatable method that is able to attribute the contribution of NC to the output of multiple tourism and leisure activities, and used national statistics from Great Britain to calculate the NC contribution to tourism spend by activity, at a national and regional scale. Their results revealed that Scotland and Wales were the regions with the highest NC contribution, and that ecosystems with the greatest contributions to terrestrial activities were from marine and enclosed farmland. van Zanten et al. (2018), writing under the banner of the Wolfs Company, the Yabi Consultancy and the Institute for Environmental Studies at the Vrije Universiteit Amsterdam, looked to determine the monetary value of the natural environment - the natural capital - for the tourism industry on Aruba, a small island in the Caribbean. Tourism accounts for 88% of the island's Gross Domestic Product and most tourists visit the island for its beaches and the marine environment. The authors emphasised that 'the perceived quality of the tourist experience and the return rate to the island depend on the quality of the natural environment' (van Zanten, 2018, p. 3). Looking to the future, they argued that the value of Aruba's NC for the tourism industry provides policy-makers with important insights that can be implemented in future governmental policy to monitor nature and tourism.

Thirdly, Baloch et al. (2022) argued that development for tourism infrastructure and land use often burdens NC through over-consumption, leading to soil erosion, augmented pollution, loss of natural habitats, and endangered species. More specifically, in a study of 'over-tourism' in Venice, Seraphim et al. (2018) suggested that economics and culture are inextricably linked to the conflict

between human and natural capital. Aazami and Shanazi's (2020) study of tourism in the Zariva wetland in western Iran revealed that NC had the greatest effect on people's livelihoods. Holden et al. (2022) offered directions for knowledge creation to develop nature-positive tourism that was decoupled from greenhouse gas emissions, and that sought the regeneration of NC and communal health and well-being. This direction includes rethinking the purposes and values of tourism by addressing equity and ethical issues.

5. CASE EXAMPLES

While the concepts of the CE and NC are attracting attention in the academic, professional and policy literature, by and large they have not explicitly informed the sustainability and corporate social responsibility strategies pursued by the leading companies within the tourism and hospitality industry. However, case examples of two of the world's leading hotel companies can provide some insights into how major hospitality companies have addressed the CE and NC. The first reports on how Hilton couched its approach to waste management within the concept of the CE, while the second focusses on Marriott International's adoption of the NC concept to frame its commitment to the environment. The material for these case examples was drawn from the most recent environmental, social and governance (ESG) reports posted on the Internet by the two companies.

5.1 Hilton

Hilton is a US multinational hospitality company that manages and franchises a broad portfolio of hotels and resorts, originally founded by Conrad Hilton in 1919. The company is one of the largest hospitality companies in the world, and its portfolio embraces over 6,000 properties including timeshares, and almost 1 million hotel rooms. There are 18 Hilton brands, and geographically almost 80% of the company's properties are in the US, with Europe and the Asia Pacific region accounting for a further 15%. As part of the company's approach to address its 'environmental impact' (Hilton, 2020, p. 17), the company outlined its approach to 'preventing waste and contributing to a CE', and suggested that 'waste prevention, recycling, and food upcycling and donation, are all key components of creating a greener hospitality industry' (Hilton, 2020, p.23). The company claimed that its 'waste reduction strategy seeks to decrease the overall amount of waste produced in our hotels, while taking steps to divert remaining waste from landfill through donation, recycling, composting, energy from waste incineration, and other opportunities', and 'as we look to the future, we are working with our partners, including waste haulers, suppliers and donation partners, to find innovative ways to continue that positive trend' (Hilton, 2020, p. 23).

The company also reported on its initiatives designed to ensure that food is not wasted, noting that the COVID-19 pandemic had made 'fighting food waste even more of a business and moral imperative'. More specifically, the company reported its commitment to cutting food waste by 50% by 2030, and that 'to achieve this ambitious target, we are driving a true culture shift in our hotels' (Hilton, 2020, p. 23). Further, Hilton outlined the deployment of a comprehensive food reduction programme in the Americas, Europe, the Middle East and Africa, and the piloting of this programme in the Asia Pacific region. This programme guides hotels through techniques for reducing food waste through each stage of food and beverage production processes, targeting the prevention of food waste before it arises, through menu planning, the recovery of otherwise wasted food for donation, and the recycling of food waste for other uses, such as animal feed and composting.

Three specific examples are employed to showcase the company's commitment to waste reduction and food upcycling strategies. The company reported opening Neural, a reduced waste café, in the Waldorf Astoria, at Los Cabos, in Mexico. This café focuses on providing produce from the local community, 'offering guests the opportunity to experience culture-rich traditions in a sustainable environment' (Hilton, 2022, p. 23). At two Hilton hotels in Bangkok, chefs have employed new ways to use fragile papayas, that would otherwise have gone to waste, to create papaya jam and sweet and sour mocktails. At the Westerly Public House, in the Tapestry Collection by Hilton in San Diego, the restaurant has a zero-waste kitchen, utilizing fresh-grown citrus from the courtyard in the food and beverage menu, and repurposing used espresso grounds as a garnish for cocktails.

The company also reported on reducing its use of single-use plastics and soap recycling under the CE umbrella. The company is committed to reducing unnecessary single use items, and is in the process of replacing all single-use toiletries with full-size amenity bottles across its global range of hotels, and expects all its hotels to be miniature free by the end of 2023. The company's digital key programme, which allows virtual check-in, has also helped to reduce plastic waste and many of its hotels are now using sustainable hydration solutions, such as reusable drinking vessels, refill stations, and closed loop bottling systems. Hilton claimed to operate the largest soap recycling programme in the hotel industry. Over 80% of its hotels participate in this programme and soap left in guest rooms is sanitised and sent to donation, thus diverting waste soap from landfill.

5.2 Marriott International

Marriott International is a US multinational company that operates, franchises and licenses hotels, timeshares and residential properties. The company, originally founded in 1927 by J. Willard Marriott and Alice Marriott, is the world's largest hotel chain by number of rooms, with 8,000 properties, containing some 1.4 million rooms spread across 130 countries. There are 30 Marriott International brands, and geographically 70% of the company's properties are in the US and Canada, with Europe and the Asia Pacific region accounting for a further 20%. Under the banner 'NC', Marriott International (2021, p. 21) emphasised its belief that 'protecting and enhancing the ecosystems where our properties are located supports the sustainability and increases the resiliency of the communities where we do business, so that they remain vibrant destinations', and reported that the company 'continue to focus on environmental challenges from deforestation to bycatch to reef degradation and more' and that it had 'invested in scalable, replicable projects to support the world's NC resources.' As part of its commitment to NC, in the Asia Pacific region, the company launched a 'Good Travel' programme, which allows 'guests the opportunity to create a positive impact in local communities' as regards environmental protection, community engagement, and maritime conservation (Marriott International, 2021, p.21).

More generally, the company reported on its contribution to 'Life on Land', and to 'Life under Water' (pp. 21-22). In addressing the former, the company recognised the vital role that trees can play in mitigating climate change, and reported on its continuing investment in reforestation, and its membership of the Evergreen Alliance. The company's Juma REDD+ project, part of its longstanding partnership with the Foundation for Amazon Sustainability and the Government of Amazonas, looks 'to curb deforestation and associated greenhouse gases' in a 7,000 square kilometre reserve in north western Brazil, and provides education, medical care, social empowerment, and a monthly stipend for local residents who voluntarily commit to protect the rainforest (p. 21). The company also recognises that mangroves play a critical role in protecting coastlines from severe storms and providing livelihoods to coastal communities, and that mangrove forests are important for conserving biodiversity, storing carbon, and serving as nurseries of the sea. More specifically, Marriott International reported on its work in planting mangrove trees along the coastline of Momi Bay in Fiji, and in mangrove clean-up programmes in Doha.

In focusing upon 'Life Below Water' (p. 22), the company acknowledged the role that coral reef systems play in protecting shorelines from damage and erosion, and in acting as breeding grounds and shelter for a wide range of marine organisms, which support local tourism economies. More specifically, the company reported that the Sheraton Maldives Full Moon Resort, in partnership with Reefscapers (a team of marine biologists and consultants), invited its guests to participate in coral-fragment plantation activity, and that the Ritz-Carlton in Okinawa invited guests to participate in coral planting and education programmes with a local fishing co-operative. At the same time, the company helped to conserve nesting beaches across the Caribbean and Latin America, and undertook projects to address the overexploitation of crabs in Thailand, and to protect sea turtles off the coast of Peru.

The company has also recognised that the spread and accumulation of sargassum alga has had a devastating economic, ecological and social impact on the hospitality and tourism industry across Latin America and the Caribbean, and reported partnering with the Ocean Foundation, a community foundation, to support a sargassum mitigation project. This pilot project aims to convert sargassum seaweed into organic compost, which can be used by local farmers, and is designed to remove the seaweed from the beaches, and sequester and store carbon in the soil. More generally, the company

reported on its 'Cleaning up Local Communities' (p.22) initiatives, designed to remove waste from cities and waterways in Belgium, Switzerland, the Netherlands and France.

5.3 Case Analysis

While the case examples provide some valuable insights into how the concepts of the CE and NC have informed the ESG reports and sustainability programmes posted by Hilton and Marriott International, a simple analysis of these cases raises some deeper issues. Here the authors follow Rowley's (2002, p. 24) recognition that while there are no 'cookbook procedures' for such analysis, she recommends it should 'address the most significant aspects of the case.' With this in mind, three sets of critical issues merit attention.

Firstly, while both hotel companies use a number of specific examples to illustrate their approach to the CE and to protecting NC, they have to be seen as examples, rather than universal practice. Further they may have been carefully selected, possibly even choreographed, to help to illustrate how the CE and NC can contribute to sustainable development in the hospitality industry. There is certainly no evidence within either of the ESG reports to suggest that either of the two companies' approaches to sustainability is comprehensively underpinned by a wholesale commitment to the CE and the protection of NC. This lack of comprehensive commitment is also reflected in that Hilton's vision of the CE is positioned largely in the context of waste management and waste reduction. Extending the focus of the company's approach to the CE to cover all the materials used in its hotel operations would require all companies in its supply chain to adopt CE principles, and such a scenario currently seems a long way off.

Secondly, case examples drawn from the ESG reports are almost exclusively descriptive, and offer no critical analysis of how the CE and NC inform those reports. There are, for example, no insights into how materiality - which looks to identify the societal and environmental issues that present risks or opportunities to a company while taking into consideration the issues of most concern to external stakeholders - has informed the hotel companies' focus on the CE and NC, of how the company both defines, and manages, such material issues, or of where the impact of such material issues is seen to lie. Here, the increased costs of moving towards more circular business models and looking to protect the NC on which many tourism and hospitality companies depend, would be a major issue for investors, for the company itself, and for customers. At the same time, the ESG reports provide no treatment of how what may be competing positions on the CE and NC amongst stakeholders might have been reconciled, or how they go about independently verifying their claims about the CE and NC in these reports.

Thirdly, and more widely, there are more fundamental and complex issues about the CE and NC and their relationship to sustainability and economic growth. While the CE and NC are generally seen to be compatible with a transition to a more sustainable economy and society, such compatibility in the tourism and hospitality industry is often couched within the idiom of growth, not least in that the CE and the protection of NC will be seen to accommodate continuing growth within the industry. More pointedly, as many of the illustrative examples in the case examples suggest, the tourism and hospitality industries may focus primarily on what Schendler and Toffell (2013, webpage) described as 'operational greening', which does not 'recognise the primacy of climate change.' While the issue of climate change is a global issue, driven by all sectors of the economy, the sheer size and geographical reach of the tourism and hospitality industry means it has the potential to exert a powerful influence on many of the production and consumption drivers of climate change.

6. CONCLUSIONS AND FUTURE RESEARCH

Claims have been made that a greater focus on the CE and the protection and enhancement of NC offer linked environmental and business benefits for the tourism and hospitality industry. From an environmental perspective, moving towards a circular business model offers a reduction in the depletion of finite natural resources, and an enhancement of biodiversity, as do initiatives and projects designed to protect NC. From a business perspective, the CE can be seen to reduce costs within the tourism and hospitality industry, for example, by reducing the cost of new raw materials, while protecting NC

enhances the natural resources on which the tourism industry ultimately depends. However, there are reservations about the impact a greater focus on the CE and NC will have on the most fundamental of sustainability challenges, namely climate change.

At present, there is an undoubted ambivalence about the concepts of CE and NC in the tourism and hospitality industry. On the one hand, the literature emphasises that the two concepts could contribute to putting the tourism and hospitality industry on a more sustainable footing. On the other hand, there is at best limited evidence that the two concepts have informed sustainability programmes within the sector. In part, this may reflect the industry's reluctance to make the substantial investment required to protect its NC resources and to adopt a circular, rather than a linear, economic model; in part it may reflect short-term thinking, attendant upon prioritising near-term corporate and shareholder returns over long-term plans; in part, it may reflect a lack of inspirational leadership within the industry; and in part, it may reflect the more general challenges of translating theory into practice.

At the same time, the concepts of the CE and NC have attracted criticism. In a review of the CE, Corvellec et al. (2021, p. 421) argued that the CE has 'unclear theoretical grounds', that 'its implementation faces structural obstacles', and that 'it is based on an ideological agenda dominated by technical and economic accounts, which brings uncertain contributions to sustainability and depoliticizes sustainable growth', and the authors conclude that 'the circular economy is far from being as promising as its advocates claim it to be.' In a similarly critical vein, Oliver (2018) argued that referring to nature as capital implies it is equivalent to other forms of capital, yet it is fundamentally different, and that generally people do not engage with technical terminology such as natural capital, so that using such terms is not a good way to convince people to adopt pro-environmental behaviour. Ultimately, any valuation of the potential of the CE and NC in contributing to greater sustainability in the tourism and hospitality industry must embrace such criticisms.

The authors recognise that the paper has a number of limitations, not least in that it is based on secondary sources and drawn exclusively from the Internet. Nevertheless, the authors believe that, as an exploratory review of the relationships between the tourism and hospitality industry and both the CE and NC, it provides a snapshot of some stakeholder views of that relationship and that it provides a platform for future research. This might profitably look to entail primary research on whether, and how, a range of stakeholders are becoming involved in putting pressure on companies within the tourism and hospitality industry to introduce the concepts of the CE and NC into their sustainability strategies. The role of digital technologies in supporting the transition to a CE, which has been researched in other industry environments (Wynn and Jones, 2022), could provide new perspectives for initiating such change in the tourism and hospitality sector. Researchers may also wish to explore if, and how, customers' perceptions of the sustainability credentials of companies, as reflected in their commitments to the CE and NC, influence their patronage behaviour. Elsewhere in the supply chain, there are also interesting opportunities to examine if, and how, a wide range of suppliers are embracing the principles of the CE, as part of their developing relationships with the major corporate players within the tourism and hospitality industry.

Finally, given the nature of the paper and the limitations outlined above, it would be presumptuous to draw definitive recommendations from it for policy development, but it might be seen to provide a mirror for policy makers and stakeholders within the industry to reflect on their thinking and proposed initiatives on the CE and NC. Here, such reflections might, for example, include the need for a holistic approach to the implementation of CE and NC initiatives, on the barriers to, and the enablers of, the successful implementation of such initiatives, and on how the CE and NC can be integrated into policies to promote a transition to a more sustainable tourism and hospitality industry. At the same time, leaders within the industry might reflect on how they can best encourage potential customers to choose locations and venues where CE and NC initiatives have been successfully introduced.

DECLARATIONS

Competing interests The author declares no competing interests.

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