

# **CIRCULAR ECONOMY AND THE HOSPITALITY INDUSTRY**

AN EXAMINATION OF THE CIRCULAR ECONOMY AND ITS BARRIERS IN THE  
HOSPITALITY SECTOR IN THE NETHERLANDS AND INDONESIA

NINA BITTNER

Sustainable Entrepreneurship Project

M.Sc. Sustainable Entrepreneurship

Campus Fryslân, University of Groningen

Wirdumerdijk 34, 8911 CE, Leeuwarden


Tel: 058 205 5000

## DECLARATION OF OWN WORK

I, Nina Bittner, confirm that the work for the following term paper with the title:

*"Circular Economy And The Hospitality Sector - An Examination of the Circular Economy and its Barriers in the Hospitality Sector in the Netherlands and Indonesia "* was solely undertaken by myself and that no help was provided from other sources as those allowed. All sections of the paper that use quotes or describe an argument or concept developed by another author have been referenced, including all secondary literature used, to show that this material has been adopted to support my thesis.

Bissendorf, 07.06.2022



---

## **ABSTRACT**

Literature on the concept of the Circular Economy (CE) is heavily pioneered by the production and manufacturing sector and mainly looked at from a developed country's perspective. This research paper takes a new perspective by thoroughly researching the adoption of a CE and barriers to its implementation in the hospitality sector in the Netherlands and Indonesia through a comparative case study, in form of in-depth interviews. Findings suggest that businesses in the Netherlands are hindered in their transition to adopting circular economy business strategies (CEBS) by their self-imposed need of delivering quality service and insufficient access to confined information on actionable circular interventions. For Indonesia, the predominant barriers were the weak infrastructure, lack of regulatory enforcement and facilitation, and a lack of education and mindset. Ultimately, this paper contributes a developing country perspective to the current discussion and provides novel insights into the application of a CE in the hospitality industry. This research provides academics and practitioners a way to better analyze, understand and overcome the difficulties of adopting CEBS, especially in developing countries. Policymakers benefit from this study, by being able to grasp the barriers to CE necessary to formulate policies to galvanize a transition.

### **Keywords:**

Circular economy; hospitality sector; 9-R framework; circular economy business strategies (CEBS); barriers

## INTRODUCTION

The need for a new economic model is increasingly growing in the face of substantial increases in volatility throughout the global economy and proliferating signals of resource depletion (Ellen MacArthur Foundation, 2013). Businesses have begun to investigate ways to reuse goods or their components to recover more of their valuable material, energy, and labor inputs in the hunt for a significant increase in resource performance across the economy (Ellen MacArthur Foundation, 2013). One of the emerging solutions to tackle such excessive resource depletion and corresponding pollution of materials is the notion of a circular economy (CE), which aims to overcome the traditional make-dispose linear approach (Potting, Hekkert, Worrell, & Hanemaaijer, 2017; Merli, Preziosi, & Acampora, 2018).

In academia and practice, the concept is gaining increasing focus (Kirchherr, Reike, & Hekkert, 2017). CE can be defined as “a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops” (Geissdoerfer, Savaget, Bocken, & Hultink, 2017: 759). There are several business strategies to achieve such circularity, including the approach of reducing, reusing, recycling, and recovering among others, as framed in the 9R-Framework (Kirchherr et al., 2017).

Although the concept of CE is rising and the pressing externalities of waste pollution are ever-increasing, many companies are still resistant to changing their business strategies (Ellen MacArthur Foundation, 2017; Long, 2020). In line with such resistance, various academics identified barriers that restrain businesses to implement a circular economy business strategy (CEBS) on a cultural, market, regulatory, or technological basis (Kirchherr et al., 2018).

To date, the literature on CE is pioneered by the production and manufacturing sector, for it has heavy flows of material resources (Manniche, Topsø Larsen, Brandt Broegaard, & Holland, 2017). However, other sectors could benefit from the adoption of CE in its processes

in search of becoming more sustainable, such as the tourism and hospitality industry (Manniche et al., 2017; Vargas-Sánchez, 2018), due to the significant impact of touristic activity on solid waste generation (Martins & Cró, 2021).

Moreover, literature on the concept of CE falls short regarding contextual factors and input from developing countries (Halog & Anieke, 2021; Preston, Lehne, & Wellesley, 2019). Business research is often conducted from a Western perspective and therewith reproduces Anglo-Saxon values without regarding alternative views (Bell, Bryman, & Harley, 2018).

The shortcomings of the Western biased lens and the newness of the concept of CE in developing countries and the hospitality sector ask for a more detailed elaboration of the concept in a new context. This research answers the call for an “organizational perspective of adoption of CE principles by surveying different companies in emerging economies in order to provide insights into [...] barriers faced by these businesses” (Patwa et al., 2021: 732).

Therefore, this study employs a comparative case study and aims to close the gap regarding barriers to circularity by adding a comparison of hospitality businesses from developed and developing countries to the extant research stream. More specifically, this study will answer the research question: “How can the concept of a circular economy be applied to the hospitality sector, and what are the barriers to a full adoption of circular economy business strategies in the Netherlands and Indonesia?”

As the focal countries of the cross-country comparison, this study scrutinizes the two cases of the Netherlands and Indonesia. The comparison is particularly interesting, considering that both countries have a colonial history and maintain a diplomatic relationship through a trade and investment collaboration, aiming for economic flourishing (Tutuko et al., 2019). As the *Economic mission to the Republic of Indonesia* (2020) lays open, Indonesia and the Netherlands face several common challenges, one of which is the shift to a CE. The mission thus aims for extensive knowledge sharing, public-private partnerships, and new business-to-

business agreements. To facilitate such transition, it is necessary to gain an insight into contextually different barriers to CE, as context largely shapes operations in both countries (Friemel, 2008; Patwa et al., 2021).

In the following sections, I introduce the concepts of CE and corresponding business strategies, followed by an overview of barriers to implementation. Further, I explain my methodological choices in-depth. The results and discussion section serves to elaborate on my findings and reconcile the same with previous literature. Lastly, in the conclusion, I summarize the contributions of the paper, acknowledge its limitations, and touch on further lines of research.

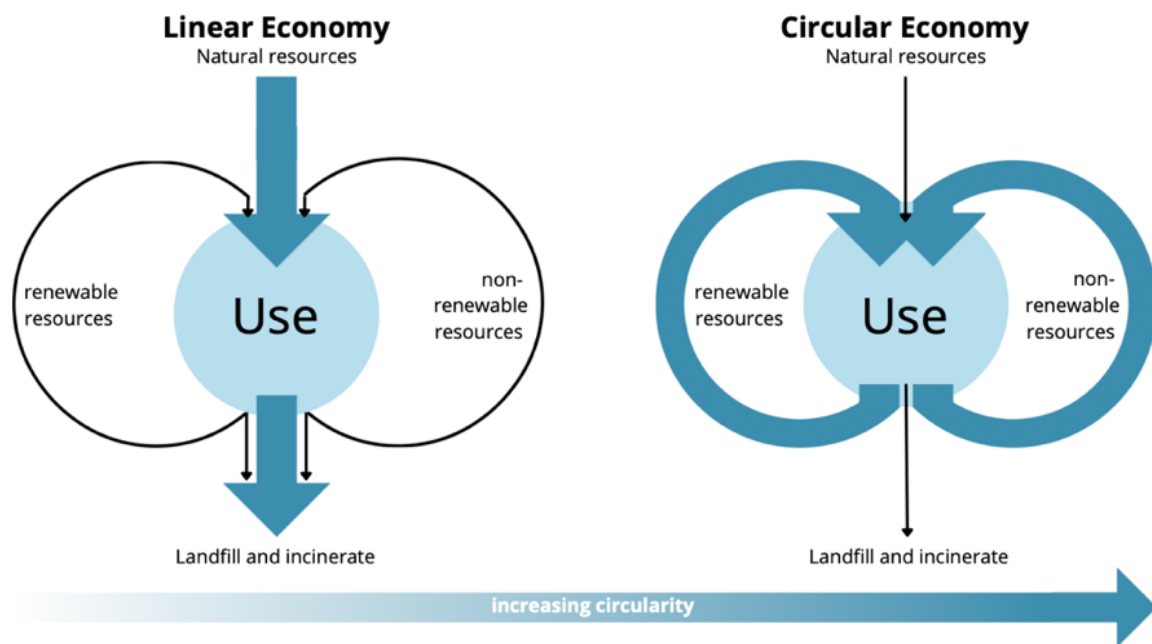
## **LITERATURE REVIEW**

### **Circular Economy**

The concept of CE is gaining attention at the academic and managerial level, though a clear and commonly accepted definition remains to be uncovered (Homrich, Galvão, Abadia, & Carvalho, 2018; Kirchherr et al., 2017). This paper leans on the definition of Homrich et al. (2018), as the semantic analysis carried out to identify a suiting definition was identified as most suiting. Ultimately, CE is defined as “[...] a strategy that emerges to oppose the traditional open-ended system, aiming to face the challenge of resource scarcity and waste disposal in a win-win approach with economic and value perspective” (Homrich et al., 2018: 534). Implementing such open-ended loop systems, which considerably regulate resource input and output (i.e., waste, emissions, and energy) require a long-lasting strategic design of business processes (Geissdoerfer et al., 2017). Ultimately, CE aims to minimize the use of natural resource inputs and decrease landfills and incineration by utilizing resources that have entered the economy at a previous stage (Figure 1).

Beyond its efforts to achieve zero net effects on the environment through closed-loop systems, the concept of CE has been criticized by academics for its narrow definition focusing

on environmental sustainability and material waste streams (Murray, Skene, & Haynes, 2017). An oversimplification and lack of including social elements are stated to weaken the conceptualization of the concept in its aim to achieve welfare-increasing sustainable growth (Inigo & Blok, 2019; Murray et al., 2017). Hence, the concept would largely benefit from the inclusion of social elements by including relationships with local communities (Eikelenboom, Long, & de Jong, 2021).



**Figure 1:** From Linear to Circular Economy (adapted from PBL, n.d.)

### **National efforts toward a circular economy transition in the Netherlands and Indonesia**

To date, the insights into developing countries (except China) and their performance regarding CE transition have not gained a lot of academic momentum. If at all researched, data is often presented in an aggregation of specific economic sectors (i.e., manufacturing, packaging, food and beverage, textile, construction, etc.) and does not provide room to effectively monitor the CE transition in other fields, such as the hospitality sector (Preston et al., 2019). In Indonesia, CE approaches are predominantly used in the five key sectors of food

and beverage, textile, construction and demolition, wholesale, and retail trade, and electrical and electronics equipment (UNDP, 2021). Although the concept of CE is not yet an official policy measure, it is anticipated to be included in the National Medium Term Development Plan 2025-2029 (UNDP, 2021).

The Netherlands is subject to comply with the new Circular Economy Action Plan (CEAP) and the National Agreement on Circular Economy (Government of the Netherlands, 2017). As such, the country is aiming to realize a full CE transition to reinforce the earning capacity of the Dutch Economy. Such official policies frame the urgency and compliance towards a CE transition and consequently foster SEM transition by setting expectations from the European Union (Government of the Netherlands, 2017). The Netherlands is likewise focusing its efforts in the resource-intensive sectors of electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, and foods (European Commission, 2020b). Additionally, there are EU initiatives and legislation, such as the EU Ecolabel or the EU green public procurement criteria, in place to foster the transition to CE (European Commission, 2020a).

### **Circular economy – Applied concepts in the hospitality sector**

The tourism and hospitality industry has not yet received much consideration in the development of the CE frameworks (Rodríguez, Florido, & Jacob, 2020). Instead, green and sustainable practices are considered to be the most broadly applied concepts in narrating sustainability efforts (Julião, Gaspar, Tjahjono, & Rocha, 2019). Contrary to the acceptance of not embracing CE as an applicable concept in the service industry, Vargas-Sánchez (2018) argues that the concept of circularity in hospitality will undoubtedly be used more extensively in future.



In the Netherlands, the sustainability efforts in the tourism industry are laid out in the *Perspective 2030*, a policy with a clear objective for creating a more sustainable industry (HNEE, 2022; NBTC Holland Marketing, 2019). This aim includes “to circularly handle raw materials, to prevent pollution and waste and to minimize CO<sub>2</sub> emissions” (NBTC Holland Marketing, 2019: 2). In quest of establishing sustainable governance by individual businesses, the *Green Key* program is mentioned to be the leading label (HNEE, 2022).

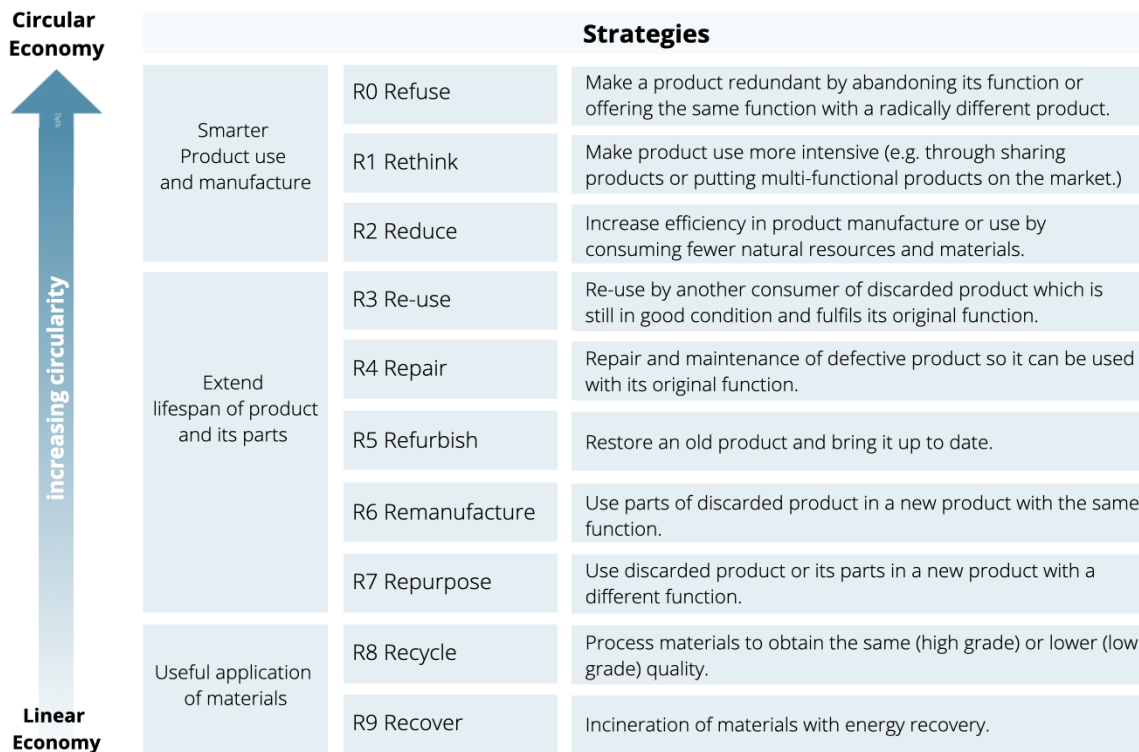
On the other hand, in Indonesia, the awareness of the concept of CE was identified to be comparably low (Gaffar, Rahayu, Wibowo, & Tjahjono, 2021). Alternatively, Indonesian-led hotels are more familiar with the term green hotel or zero waste hotel (Gaffar et al., 2021; Sujai & Juwana, 2021). Currently, there are several policies, applying particularly to the tourism industry (Teguh, 2021). The *Tourism Act, Law no.10/2009* recognizes the importance to regard the natural, economic, social, and cultural environment. The *National Development Plan 2005-2025* regards the importance of tourism to protect and conserve the environment holistically (Teguh, 2021). Lastly, a *Green Hotel Standard* has been introduced and focuses on energy conservation and efficiency measures, green product and service development, community empowerment, and effective waste management (Teguh, 2021).

### **The 9 R Framework and circular economy business strategies (CEBS)**

Originated in the sustainable development debate and inspired by Lansink’s Ladder of waste management (Lansink, 1979), one of the most prominent theories adopted to describe the principles of the circular economy is the 4R Framework entailing strategies to reduce, reuse, recycle, and recover materials (Kirchherr et al., 2018). More recently, the framework was extended to a 9R Framework (Figure 2), adding another five Rs, including refuse, rethink, repair, refurbish, remanufacture, and repurpose (Potting et al., 2017). As such the framework suggests three different stages of business strategies to enable a transition from a mere linear

economy to a circular economy. However, many businesses struggle to translate the CE idea and its corresponding strategies into their company operations (Khan, Daddi, & Iraldo, 2021).

Indonesia currently states alignment with 5 Rs, more specifically reduce, reuse, recycle, refurbish, and renew (UNDP, 2021). The Netherlands most recently employed the full range of the 9-R Framework to be the guiding strategies (PBL, n.d.).



**Figure 2:** Circular Economy Business Strategies (adapted from PBL, n.d.)

### Barriers to the implementation of CEBS

Implementing CEBS can be challenging and hindered by several barriers, especially in the context of SMEs (Eikelenboom & de Jong, 2021). Whilst the barriers for CE are rather well researched in developed countries, especially from a European perspective, the developing country perspective is weakly represented in literature (Patwa et al., 2021). The following section provides an overview of barriers for businesses to implement circularity, substantiated in literature by several authors.

### ***Cultural Barriers***

The cultural dimension refers to internal organizational shortcomings, in terms of awareness or willingness to engage with CE (Kirchherr et al., 2018). As such one of the prevailing barriers in the European context is a hesitant environmental company culture that is predominantly rooted in linear operating systems (Kirchherr et al., 2018; van Keulen & Kirchherr, 2021). Moreover, organizations frequently lack managers' awareness, understanding, and commitment to CE and thus fail to include it in the strategy, mission, vision, and values of the company (Geng & Doberstein, 2008a; Kirchherr et al., 2018; Pheifer, 2017; Rizos et al., 2016; van Keulen & Kirchherr, 2021). Often, support from the supply and demand networks is insufficient as suppliers are reluctant to implement circular strategies and consumers lack interest and awareness (Kirchherr et al., 2018; Ormazabal et al., 2018; Rizos et al., 2016). Lastly, a lack of information on CE poses another challenge, as many organizations have either never heard of the term or fail to understand the concept (Rizos et al., 2016). Employing a developing country perspective, the prevailing cultural barriers seem to focus on the capabilities and knowledge within businesses, such as lacking institutional capacity, weak cooperation between different sectors or actors, and an overall lack of skills needed to foster transition (Preston et al., 2019). Additionally, improper supply chain design and optimization were mentioned (Gedam, Raut, Lopes de Sousa Jabbour, Tanksale, & Narkhede, 2021). Halog and Anieke (2021) instance a skill gap in the workforce due to a lack of proper teachings. Comparable to the EU context, SEMs from developing countries are hindered in their transition to CE due to a lack of managers' support and involvement, the nonexistence of effective planning and management of CEBS, and the absence of functional systematic information systems (Mangla et al., 2018).

### ***Market Barriers***

The EU market barriers refer to the lack of economic viability for circular economy businesses (Kirchherr et al., 2018). Sustainability persists to be considered a trade-off between responsible business processes and economic gains (Long, 2020). Therefore, high upfront investment costs and virgin material costs are frequently considered a hindrance to the implementation of CEBS (de Jesus & Mendonça, 2018; Mont, Plepys, Whalen, & Nußholz, 2017; Rizos et al., 2016; Vermunt, Negro, Verweij, Kuppens, & Hekkert, 2019). Additionally, there are limited funding opportunities for CE businesses (Pheifer, 2017). Finally, the lack of support from public institutions often hinders the proactive development of CEBS (Ormazabal et al., 2018). In developing countries, the market barriers mainly focused on the lack of sufficient access to financial resources and the therewith connected lack of financial capabilities (Gedam et al., 2021; Preston et al., 2019). Moreover, resistance from incumbent firms leads to a slow transition (Preston et al., 2019). Lastly, developing countries are too subject to a lack of economic benefits, and high costs of investments (Gedam et al., 2021).

### ***Regulatory Barriers***

The EU regulatory barriers frame the lack of policies and governmental aid that supports businesses' CE transition (Kirchherr et al., 2018). Included in this dimension, obstructive laws and regulations, coupled with a lack of global consensus pose the strongest barrier (Kirchherr et al., 2018; Vermunt et al., 2019). Moreover, Vermunt et al., (2019) criticize a lack of coherent CE policies for SMEs, which is further supported by Rizos et al. (2016), who criticize the lack of government support and effective legislation. Additionally, the administrative burden laid upon businesses in the transition to CEBS is not to be underestimated (Rizos et al., 2016, 2015). Lastly, the government regulates against circular procurement possibilities and thus actively hinders the transition to a CE (van Keulen & Kirchherr, 2021). In developing countries, Preston et al. (2019) identified the main barriers to

the implementation of CEBS to be the weak infrastructure as well as feeble economic and structural conditions (Preston et al., 2019). Additionally, sustainable business activities are neither incentivized nor laid down by laws or regulations. The lack of preferential tax policies is another barrier (Preston et al., 2019). Lastly, environmental management certifications and systems are not as broadly implemented in the regulatory context (Mangla et al., 2018).

### ***Technological Barriers***

Finally, technological barriers in the EU reflect on the missing technological resources to execute a CE (Kirchherr et al., 2018). Limited circular design (Kirchherr et al., 2018; Mont et al., 2017; Pheifer, 2017) and the lack of standardized CE solutions are perceived to be an impediment to the CE transition (van Keulen & Kirchherr, 2021). Additionally, the small amount of successfully demonstrated large-scale projects and the difficulty to identifying meaningful data on impact can pose a barrier (Kirchherr et al., 2018). Furthermore, the lack of technical skills and technological know-how (de Jesus & Mendonça, 2018; Rizos et al., 2015) and the therewith connected incompetence to deliver high-quality remanufactured products are restrictive (Kirchherr et al., 2018). Developing countries were stated to not have sufficient access to technological advancement, to transition to a CE (Preston et al., 2019). Gedam et al. (2021) support this line of thinking by elaborating on a lack of technology and innovation for businesses from developing country contexts.

To summarize all findings based on literature, Table A1 (see Appendix) provides an overview of all separate concepts addressed in the previous sections.

## **METHODOLOGY**

To answer the research question of this paper, I chose a qualitative approach in form of a comparative case study. Comparative studies have the primary goal of analyzing phenomena manifestations in different contextual settings, such as systems, cultures, and markets, to

distinguish points of differentiation and similarities, (Esser & Vliegenthart, 2017; Hantrais, 1996; Shahrokh & Miri, 2019). The scope of the comparison for this paper is cross-national and compares insights from sustainability professionals in the hospitality industry from Indonesia and the Netherlands. Case studies were the most appropriate choice, as they are an effective way of exploring complex phenomena in-depth (Lapan, Quartaroli, & Riemer, 2012).

I gathered insights from a total of ten different hotels, five from each country (Table 1). In the application of theoretical replication, Yin (1994) suggests using two or three sets of three to four cases, to predict contrasting results efficiently. Since saturation could not be ensured after inquiring four cases each, I conducted one further interview for both settings. Additional to those cases, I conducted two interviews with experts in the field of CE in both countries (I10\* & N12\*), to enhance inputs with professional insights. Finally, the selection of five cases and one additional insight from one professional in CE for both countries proved to deliver sufficient insights to establish data saturation. A detailed overview of the different cases can be found in Appendix B.

Sampling methods followed a mixed purposeful strategy of case selection, as I sought out stratified purposeful cases. By applying a stratified purposeful sampling, I ensured the conformity of the cases to adhere to previously specified criteria, to facilitate comparison between cases (Patton, 1990). The chosen cases are conforming to the following criteria: (1) The hotel facility must be based and operate in Indonesia or the Netherlands, (2) must evidently employ a sustainability strategy, and (3) the interviewee must be in a managing position at the company. Cases were identified through a google search for sustainable hotels in the Netherlands and Indonesia as well as with the help of my network of professionals in the hospitality industry.

I chose semi-structured interviews as the best data collection method to gain insights into the different cases, as they proved to be an appropriate tool for gaining deep insights to

understand phenomena in-depth (Harrell & Bradley, 2009) and ensured cross-case comparability (Bell et al., 2018). I developed the interview questions and prepared the interview guide on basis of the understanding of CE in the hospitality sector and its barriers (see Appendix C1 & C2).

**Table 1:** Overview of Interviewees

<b>Interviewee</b>	<b>Position</b>	<b>Organization</b>	<b>Country</b>
N1	Founder	Camping Ground	Netherlands
I2	COO	Luxury Reserve	Indonesia
N3	Director	Hotel	Netherlands
N4	Operations support	Hotel	Netherlands
I5	Founder	Lodge	Indonesia
I6	Managing director & Founder	Eco-Hotel	Indonesia
I7	Founder	Eco Airbnb	Indonesia
I8	CEO	Eco Sanctuary	Indonesia
N9	Business Operations Manager	Hotel	Netherlands
I10*	Head of Programs	Circular Economy Forum	Indonesia
N11	Corporate Manager	Hotel	Netherlands
N12*	Recreation and tourism promoter	Circular Economy Association	Netherlands

Data collection, transcription, and coding took place in the period from 6<sup>th</sup> of April to 13<sup>th</sup> of May 2022, at a convenient time for the interviewees, and took place online via Google Meets. I employed an iterative process of developing first, second and aggregated codes (Appendix D) (Bryman & Bell, 2007), following an elaborative coding scheme by regarding old theories of CE, CEBS, and its barriers (Auerbach & Silverstein, 2003). I used ATLAS.ti as a computer-assisted qualitative data analysis software to develop the codes more efficiently and to enhance transparency (Bryman & Bell, 2007).

Further, I ensured quality of research by safeguarding credibility, transferability, dependability, and confirmability (Bryman & Bell, 2007), by (1) adopting an interview style that relied on best practices, pilot testing, and respondent validation of findings, (2) aiming for a thick description (Geertz, 1973; Lincoln & Guba, 1990), (3) providing an interview guide and an extensive methods section to ensure replicability under similar circumstances (Bryman & Bell, 2007) and (4) being aware of researcher bias and by refraining from leading questions, during the interview process (Bryman & Bell, 2007).

I ensured Interviewee informed consent by sending out a form of consent before the interview (Appendix E) (Berg & Lune, 2017; Lapan et al., 2012). Collected data sets were anonymized for confidentiality reasons and to obviate potential ethical concerns.

## **DISCUSSION & RESULTS**

In the following section I deliver insights into the application of a CE and CEBS in the hospitality sector. Further, I elaborate on the barriers for CEBS as identified through primary research and deliver valuable implications for the industry and policy makers.

### **Circular Economy in the Hospitality Sector**

#### ***Definition by the Industry***

Findings suggest that there is little to no consensus on a clear definition of a CE in the hospitality sector. Neither managers from the Netherlands nor from Indonesia can agree on an accepted definition of the concept. The predominant focus of the adoption of a CE on the manufacturing and production industry (European Commission, 2020b; UNDP, 2021) posed a challenge to translate the concept to the hospitality industry (I10\*, N12). Nevertheless, in line with Vargas-Sánchez (2018) the potential of adopting a CE in the hospitality sector was recognized, by professionals of both countries, as outlined best by I10\* stating that



*[...] specifically for the hospitality sector, it is expected [that] by applying this economy, there's an efficiency with the production process as well as a massive reduction of generated waste and pollution [...], and also pollution caused by the transportation, for example, or carbon released by hotels or restaurants [...].*

However, especially in Indonesia, the introduction of a new term for sustainability in the industry was answered with frustration and was criticized stating “we need to stop coming up with new names and actually start doing something about it“ (I8). Another Indonesian interviewee stated not to be familiar with the term CE and upon explanation claimed that “[...] there is no Circular Economy. Forget about that - far from that, very far” (I5). Accordingly, it can be confirmed, that the hospitality industry is not yet ready to adopt the alternative approach of a CE but rather retains the narrative of adopting green and sustainable business operations, as elaborated by Julião et al. (2019).

Despite the lack of a commonly applied definition, most interviewees stated the importance of the reusability of plastic products and the recyclability of organic and inorganic waste as part of the hotel operations. Additionally, circularity was presented in the light of a life cycle perspective by managers from both countries, focusing on the production, manufacturing, sale, purchasing, branding, packaging, consumption, and disposal of products (I2, N4, N11, N9). More than a state of the art, circularity in the hospitality sector was mentioned to be a “work in progress” (I6), that is continuously under development.

Extending from the view as a CE to solely decrease material waste, especially in Indonesia, one very frequently arising concept was the need for a circular flow of money and employment. “Keeping the money in the region” (I2) and aiming for “circularity of money at the local level” (I6) was stated to be highly important in terms of transitioning to a CE. As such, managers from the industry feed the criticism of previous literature by adding a socio-

ethical stance to the debate on CE in hospitality (Inigo & Blok, 2019; Murray et al., 2017). Lastly, several interviewees stressed the fact that circularity in the hospitality sector goes beyond the reduction of plastic waste, but also pays attention to the responsible use of water, energy, and waste (I6, I8, N12). This finding coincides with the understanding that the in- and output of resources in the hospitality sector, including waste, emissions, and energy need to be strategically designed to implement open-ended loop systems (Geissdoerfer et al., 2017).

### ***CEBS in the hospitality sector***

Looking at CEBS applied in both countries, it is evident that hospitality businesses did not comply with the strategies suggested in their national efforts (UNDP, 2021; PBL, n.d.). In neither country, remanufacturing, refurbishing, repairing, and recovering initiatives are evidently used in the hospitality sector, as no interviewee mentioned initiatives to that extent. Due to the conciseness of this paper, I abstained from further elaborating on the different CEBSs identified. A full overview of CEBS applied in the Netherlands and Indonesia enhanced with explanatory text can be found in Appendix F and G.

Looking at the adoption of CEBS in both countries, it becomes evident that the industry does not implement the full range of strategies. This may be reasoned by the difficulty to translate a concept mainly established to report on products, to the service industry (European Commission, 2020b; UNDP, 2021, Khan et al., 2021). The need to translate strategies designed for the product and manufacturing sector to the service sector does not only pose a challenge for the industry but likewise for managers ought to implement such strategies (N12, I10\*). Especially hotels in the Netherlands stressed that service quality is to be prioritized, in the hospitality industry, which at times requires a conscious balance between sustainable procurement choices and service standard (N4, N9, N11).

## **Barriers to Circular Economy Business Strategies**

### ***Cultural Barriers***

Interviewees from both countries stressed the mindset of management and employees to be a restricting factor in the transition to a CE. I6 stated that “utmost people in Bali do not have the most progressive mindset in terms of use of single-use plastic, or sustainability in general.” Similarly, in the Netherlands, often people are not inherently sustainably minded and thus work according to work policies but seldom live by the sustainability standards imposed in the work context. Regarding the mindset of management in Indonesia, a mind shift towards sustainability is mainly enforced by foreign business owners, and less often by local business owners (I5). In the Netherlands on the other hand, the mindset of management favors economic viability and quality service over the implementation of CEBS (N4, N9). The overruling issue in both countries may be the lack of awareness of what a CE in the service sector entails and how it can be implemented (I2, N3, N4, I10\*, N12\*). Lastly, many suppliers seemingly are reluctant to accept alternative ways of delivering their products without plastic (I2, I5, N3, N4).

Focusing solely on the Netherlands, a lack of knowledgeable employees was identified to be hindering the transition to a CE (N1, N4). Moreover, requirements from stakeholders often maintain a primarily neo-classical business approach and include a strategy to generate profits, instead of opting for the implementation of CEBS (N4). Supporting the findings from Rizos et al. (2016), another cultural barrier identified was the difficulty to locate and access valid information for circular businesses (N3). In contrast, two interviewees stated that the Dutch market offers an overwhelming number of circular initiatives, which impede the prioritization of CEBS (N1, N12). More precisely, N1 stated that “there are so many initiatives on the circular economy, [which makes it] more difficult to choose and to decide of what do I have to let wait” (N1). Lastly, adding novel insights, the daily responsibilities of a manager in

the hospitality sector were stated to be highly time-consuming, which ultimately leads to a lack of time to implement CEBS (N1).

From an Indonesian perspective, the lack of education and awareness in terms of plastic pollution and sustainability was identified to be one of the biggest hindrances and thus deviates slightly from previous findings. The lack of education leads Indonesian people to treat plastic packaging in the same manner as they previously used natural and biodegradable packaging (I2, I10\*). One interviewee experienced the carefree, almost habitual disposal of banana leaves as packaging being translated to plastic packaging, without the consequences being clear to a broad mass of people (I2). Lastly, the primary incentive for employment in Indonesia is the securing of sufficient income to sustain the family. Locals are often forced to live a very cost-conscious lifestyle, due to comparably low wages in the country (I5), leading to the search for employment with economic gains as the main incentive (I6, I5, I2).

Looking at the cultural barriers in both countries, large parts of previous research could be supported, such as the lack of manager's awareness, understanding, and commitment, a lack of consumer interest and awareness as well as a lack of information (Geng & Doberstein, 2008a; Kirchherr et al., 2017; Pheifer, 2017; Rizos et al., 2016; van Keulen & Kirchherr, 2021). Findings from this research amplify literature, by pointing out the lacking mindset of employees, next to its management and consumers. In the Indonesian context, especially the lack of education and habitual use of plastic packaging were found to be barriers to the further transition to a CE. By looking at the barrier of the lack of time and the generally low involvement with the concept one may assume a low priority of adopting CEBS to be responsible for the success of a CE in the hospitality sector.

### ***Market Barriers***

Looking at the shared market barriers, several interviewees from both countries stressed sustainable procurement difficulties. These were mainly reasoned by economies of scale, which seemingly lacks for circular products (N3, N4, I5, I6, I8, N9, N11). Up until now, the premium pricing for sustainable products still poses a hindrance for hospitality businesses to transition to a CE (N4, I6, I7, I8, N11, N12). An example was provided by N3, who instanced the procurement difficulty of organic butter in the Netherlands. The procurement of organic butter adequately portioned for consumption in hotels, was not possible in the Netherlands and thus needed to be imported from Denmark (N3). Further, one of the Dutch hotels mentioned the use of a procurement system that does not directly distinguish sustainable procurement options (N4). Lastly, high upfront costs were mentioned as a barrier by hotels of both countries. Accordingly, the investment in circular products is often deemed too high and economically not viable, in the short term (N1, I2, N4, I8, N9, I10\*, N12).

Looking at the Netherlands in particular, a prevailing trade-off thinking between sustainability, financial viability, and service quality is hindering the full implementation of CEBS (N4). Although the market is currently shifting towards increasingly valuing sustainable accommodations (N4, N9, N12\*), in some cases it remains difficult to offer satisfactory service that is offering quality up to standard (N4, N9, N11). N4 instanced the use of eco showerheads, which decreased the water pressure to an extent that was perceived as infringing the service quality. Correspondingly, a choice in favor of service quality and against circularity was made (N4, N9, N11). Another interesting insight was the perception of subsidies in the industry. One participant openly expressed her repugnance of subsidies, because they are not tailored to the convenience of managers in the industry (N1). Rather than offering financial benefits, they were perceived to constrain innovativeness and deemed time-consuming.

In Indonesia, the default plastic packaging of sold goods was instanced to be a weakness in the supply network (I6, I8). Especially in Indonesia, the convenience of purchasing plastic packaged goods was identified to hinder a transition to a CE (I2, I5, I10\*). Moreover, the Covid19 pandemic had a significant effect, because “[...] the hospitality industry as a whole has basically been demolished in the last couple of years. So, [...] survival has just been the major concern for all businesses” (I6). One participant stated that “there are no financial incentives provided by the government [and] there are no subsidies“ (I6), which is representative of the lack of support from the government and stands in line with the argument of lacking industry incentives for ‘greener’ activities (Gedam et al., 2021; Preston et al., 2019). Lastly, the location can come at a disadvantage, as remote locations challenge the ready access to circular products, despite businesses’ desire to purchase more sustainably (I7).

Comparing the findings of this research with previous literature, it becomes evident, that especially the lack of financial capabilities and the lack of perceived benefits for high investments could be confirmed (Gedam et al., 2021; Preston et al., 2019; Rizos et al., 2016). Additional to the current research stream, the price premium for circular products was frequently criticized by the industry. Especially in Indonesia, the lack of financial incentives coupled with the previously stated cost-conscious lifestyle leads to a strong favor of conveniently plastic packaged goods.

### ***Regulatory Barriers***

Looking at the regulatory environment, the Netherlands and Indonesia share the barriers of lacking enforcement of rules and regulations, as well as the lack of governmental support for waste disposal. More so than a lack of coherent CE policies (Rizos et al., 2016; Vermunt et al., 2019), the enforcement of the same was criticized (N4, I6, I7, I10\*). That line of thinking is strongly supported by I10\*, who states that "it is the failure of the law enforcement to enforce

existing regulations. Because I believe existing regulation is already good, but just it is not enforced correctly." Governmental support was mainly stated to lack in terms of organized waste disposal (N3, I5, I6, I7). Although in the Netherlands the waste disposal system is more advanced than in Indonesia, N3 stated a need for an improved arrangement.

In the Netherlands, the bureaucratic environment was frequently mentioned as a barrier to taking further steps to a CE transition and stands in line with Rizos et al. (2016) who remarked the administrative burden to be a barrier. As such, the bureaucratic effort was stated to be very time-consuming, untransparent, and nerve-wracking (N4, N11). Moreover, hospitality services are often tied to strict operational regulations that hinder for instance the reuse of unused food and rather accelerate food waste (N9).

Zooming into Indonesia, it becomes evident, that the regulatory environment offers companies neither support nor incentives to change for the better (I2, I6, I7, I8, I10\*). Moreover, in Indonesia, most interviewees decried the waste disposal system heavily (I5, I6, I7, I8, I10\*). The privatization of waste disposal services restrains a great majority of local businesses to engage in proper waste treatment (I2, I5, I6, I7, I8). Most businesses need to contract NGOs or private companies to treat their waste, which is not economically viable. With regards to defining the concept of CE legally, I10\* brings forward, that "particularly for the hospitality businesses, [they] still have trouble in defining the legal framework." And lastly, though most pressing as stated by I10\*, is the weak infrastructure and its maintenance in Indonesia. Thus, the political will to embellish the infrastructure and to dedicate manpower to maintain the same is lacking, as Indonesia is still diligently "catching up, particularly with [their] European partners" (I10\*).

Overall, regulatory barriers were found to impede Indonesian businesses more strongly than Dutch businesses. This can mainly be explained by the economic and structural conditions prevailing in Indonesia (Preston et al., 2019). The insufficient design of waste disposal services

is most likely to be connected to the lack of environmental laws and regulations (Preston et al., 2019). The lack of implementation of environmental management systems, environmental laws and regulations, and preferential tax policies (Preston et al., 2019 & Mangla et al., 2018) is thus to be ascribed to the lack of political will and manpower as identified in the interviews.

### ***Technological Barriers***

Interestingly, with regards to technological barriers, the respondents had surprisingly little to contribute. N3 mentioned difficulties with sustainability assessments, due to a lack of knowledge of the technology applied. Moreover, N11 elaborated on the currently used property management system (PMS) not being up to standard and thus impeding a circular transition, by precluding the check-in and check-out to be designed completely digital. Most other interviewees of both countries, challenging previous literature, perceived technology to be more of a facilitator. Accordingly, technological advances, such as innovative transportation systems or more powerful solar panels have only helped but never restricted the businesses (I7, I8, N9). One frequent mention however has been the use of experts in the field to secure enough knowledge and input to make informed buying decisions (N1, N3, N4, I5, I6, I7). I10\* added that slow technological advancements come at a disadvantage, especially when compared to EU partners. As such, the weak infrastructure identified as a regulatory constraint is heavily influencing the technological backlog, which confirms the lack of access to technology and innovation (Gedam et al., 2021; Preston et al., 2019).

Ultimately, technological barriers were not identified as persistent as extant literature suggests. This can be traced back to the difficulty of adopting the concept of CE to the service industry (Manniche et al., 2017). Rather than producing a product, that requires high-level technological skills, the service industry is primarily contracting or purchasing already existing technologies, such as solar power or wastewater treatment systems. Thus, participants



perceived technical knowledge and the use of CE technology to impede their transition less than implied in previous literature.

Concludingly, it can be said, that many barriers previously identified to be prevailing for SEMs from a developed and developing country perspective could be supported. Indonesia is primarily challenged by a lack of infrastructure combined with a government focus on CE that is inadequate, as well as a lack of understanding and mentality among local people, personnel, management, and government. Furthermore, in Indonesia, a lack of education plays a crucial influence. On the other hand, accommodations in the Netherlands have consistently stated that providing great service is more important than implementing CEBS. Furthermore, there is a scarcity of knowledge on effective circular interventions. While overall comprehension and awareness are higher in the Netherlands, there is little sense of urgency in the larger society, prompting individuals to act. The findings for both social-economic settings are illustrated and summarized in Appendix H.

### **Implications for the Industry - Overcoming Barriers to the implementation of CEBS**

In the process of identifying barriers to the adoption of CEBS, interviewees unanimously mentioned best practices to overcome barriers. The implications for the industry are therefore largely stemming from interviewee input, but likewise, equip the industry with hands-on tangible examples of how to overcome the existing barriers.

#### ***Educating people***

Educating employees, customers, and local communities sets up current and future generations to better understand the necessity to rethink our economy and to notice the benefits that can be drawn from implementing CEBS. Best practice examples from the accommodations interviewed are the set-up of meetings to educate people about the importance of sustainability

and plastic pollution, for instance through Green Key trainings (N3), or monthly meetings to communicate the sustainability mission and give insights of other programs and businesses that are run outside the accommodation (I6). Another innovative approach was to teach employees how to dive, for them to understand the downside of plastic pollution and its effects on the natural environment (I2). Customers are best educated by sharing the mission, vision, and purpose of the hotel as well as the “bigger social enterprise” (I6). Educating customers to create less waste was exemplified by banning sunscreen and offering a small bag with reef-friendly sunscreen (I2), and by addressing the shame of customers who create lots of waste to reduce it (N1), through workshop-based awareness campaigns. Finally, educating locals in Indonesia is mainly taking place by disseminating the message that

*[...] this is your Indonesia, if you want it to stay pristine and beautiful and want jobs in the hospitality industry, you want people to keep coming back to keep it clean, you have to know how to look after it. Because if not, it will be spoiled and no people will come.*  
(I2)

### ***Empowering people***

Empowering guests, employees, and local communities helps to overcome barriers to the implementation of CEBS since it catalyzes morale to change for the better. To empower guests, N1 used workshops to inspire people to adopt a more circular lifestyle through a demonstration of good practices to reduce plastics. To empower employees, N1 elaborated that it is indispensable to create a company culture that embraces making mistakes and further stresses that it is necessary to build a culture in which “innovation is more important than making mistakes, [because] innovating without any mistakes is not possible” (N1). I2 illustrated a case where one of their employees wanted to resign with the aim to introduce their

local community to the act of recycling. However, instead of authorizing the layoff, the employee was offered an active role to protect the island and reduce waste in the local village (I2). Lastly, empowering local communities is vital, given the fact that empowerment is a catalyzer for betterment. Empowering local economies to provide and work with accommodation businesses in Indonesia takes many facets, such as visiting schools to educate children about recycling (I5), teaching locals how to grow fruits, vegetables, to act as sustainable suppliers and to keep the economic activities as local as possible (I2, I5).

### ***Implementing circular logistic strategies***

Whilst education and empowerment will urge people to increase awareness and understanding of the concept of CE, implementing logistic strategies for circularity can help overcome barriers that are connected to the reluctance of suppliers to change self-directed. Two distinct approaches were mentioned, with the aim to minimize waste outputs of suppliers. I2 introduced a rotating pallet system to transport products to the reserve and back, in which the pallets are reused and aimed at minimizing transporting waste. Similarly, I5 intended to use reusable containers for laundry drop-off and pick up at a local washing store, to reduce the plastic that is usually used to deliver clean laundry in Indonesia.

### ***Networking for circularity***

Networking and partnering with other players in the industry or sustainable and circular brands were stated to hold several benefits. It provides ways to share investments and create win-win solutions without being dependent on governmental subsidies (N1). Generating an industry-wide network, “showing by doing and also supporting others, [...] to show [others] really future proof, sustainable concepts”, was mentioned to be favorable to overcome barriers (N4). Furthermore, expert help was mentioned by all interviewees. Especially in connection to

the technological barriers, barely any interviewee mentioned the lack of technological knowledge, yet almost all stated to have received help from experts in the field, such as engineers (N1), subsidiary consultants (N3), asset management firms (N4), and eco-technology or sustainability consultants (I6).

### **Implications for policy makers – Setting a framework that facilitates CE transition**

With an extended look at the regulatory environment, new policies could strongly facilitate the transition for hospitality businesses. As a reply to the overly bureaucratic efforts connected to the implementation of CEBS and subsidies in the field, the public should search for ways to ease such processes. Furthermore, increased incentives nudging for change should be implemented, for instance, preferential tax systems for a CE in the hospitality sector. Facilitating a translation of the concept of CE for the service sector, beyond the key sectors pioneering the conceptualization can set groundwork to be able to holistically work towards a CE. Waiting for the market to shift may result in a lengthy process with many laggards not accepting CEBS to be valid alternatives to the current status quo. Thus, environmental management systems, environmental laws and regulations for the industry can foster the transition.

However, since the lack of execution of existing policy frameworks mentioned to be predominant in Indonesia, governmental players are required to invest more will- and manpower to enforce existing laws. Finally, laws and regulations governing the hospitality industry should be reconsidered to allow for instance the reuse of unused foods or bulk products in bathrooms. Whilst current regulations and governmental frameworks for the hospitality sector are designed to ensure quality service delivery, a rethinking of current policies may be necessary to facilitate businesses to transition to a CE.

## **Limitations and Future Research**

As with any research, this research does not go without its limitations and provides recommendations for future research. Firstly, this research only focused on already sustainable hospitality businesses and did not regard the input of traditional businesses. Although this choice was taken to ensure an understanding of the term and its implications, it is recommended to collect further data from hospitality businesses less aware of the need for a sustainable transition. Secondly, as this research did not include official governmental or organizational documents as primary input and thus did not triangulate input. Nevertheless, insights of two professionals in the field of CE were included as alternative participants to enhance reliability. Hence, it is recommended to review the same topic from an alternative angle, may it be of qualitative or quantitative nature. Thirdly, all interviews were conducted in English, even though several interviewees, including the interviewer, do not hold English as their mother tongue. Future research could therefore collectively be conducted by a group of researchers running case studies in their native language. Lastly, this research only touches upon general ways to overcome barriers for CEBS and lacks to define tangible actions to foster a transition for businesses. Thus, future research could investigate how the concept of CE can best be translated to the service and/or hospitality industry. As such, the transition to CE in the service sector could be further accelerated, and actionable interventions be identified.

## **CONCLUSION**

This qualitative research aimed to apply the concept of CE and identify barriers to CEBS, and potential ways to address the same, in the context of hospitality businesses in the Netherlands and Indonesia. After reconciling the findings with extant literature, the application of a CE in the hospitality and service sector was identified to be challenging. Yet, I contribute valuable insights into the sphere enhancing existing theories.

Despite the unanimous understanding of the importance to reduce and recycle plastics, and introduce resource-conscious initiatives, a common definition for CE in the hospitality sector remains to be uncovered. After thoroughly reviewing the insights I came to the conclusion that a perfect fit of the concept of CE for the hospitality sector is not yet a given. Primary interviews with the industry delivered interesting insights into the difficulty of applying the concept of CE to the delivery of services. The hospitality sector finds different ways of adopting sustainable approaches. However, education, awareness, and motivation for sustainability are particularly important and especially this social aspect is simply not properly considered in the concept. Rather than focusing on minimizing waste streams, hospitality businesses search for holistically applicable concepts that include communities, cultures, environment, employees, and customers and go beyond environmental sustainability.

The study largely supports previously identified barriers to the implementation of CEBS and I uncovered additional barriers. Indonesia is challenged most by a weak infrastructure coupled with a feeble focus on CE by the government. Additionally, the lack of awareness and mindset on all levels (i.e., local communities, staff, management, or government) impedes a transition to a CE in the hospitality sector. Moreover, a lack of education plays a highly important role in Indonesia. While businesses attempt to educate their employees where possible, a systemic lack of education reproduces old habits that contribute to the false disposal of waste materials. On the other hand, accommodations from the Netherlands repeatedly expressed their need of delivering quality service as one of the main goals of their business, as they are dependent on the customer's judgment for sustaining their business. Developing products cannot be equated to delivering a service. Additionally, the access to information on actionable circular interventions is deficient. While the general understanding and awareness are generally higher in the Netherlands, there is no perceived urgency in the broader society, nudging people to act immediately.

I found the most challenging part of this study to be the translation of a CE to the tourism industry which was largely confirmed by the primary interviews. Further research on the application of CE in the hospitality sector is thus indispensable. Nonetheless, despite the debatable fit of the idea of CE for the hospitality industry, this research is an invitation for the sector to explore further ways to inspire and learn from each other in the pursuit of decreasing resource throughput.

## REFERENCES

- Auerbach, C., & Silverstein, L. B. 2003. *Qualitative data: An introduction to coding and analysis*, vol. 21. NYU press.
- Bell, E., Bryman, A., & Harley, B. 2018. *Business research methods*. Oxford university press.
- Berg, B. L., & Lune, H. 2017. *Qualitative research methods for the social sciences* (Ninth edition). Boston: Pearson.
- Bryman, Alan., & Bell, E. 2007. *Business research methods*. Oxford; New York: Oxford University Press.
- de Jesus, A., & Mendonça, S. 2018. Lost in Transition? Drivers and Barriers in the Eco-innovation Road to the Circular Economy. *Ecological Economics*, 145: 75–89.
- Economic mission to the Republic of Indonesia*. 2020. : 89. The Hague: Netherlands Enterprise Agency.
- Eikelenboom, M., & de Jong, G. 2021. The Impact of Managers and Network Interactions on the Integration of Circularity in Business Strategy. *Organization & Environment*, 108602662199463.
- Eikelenboom, M., & de Jong, G. 2021. The Impact of Managers and Network Interactions on the Integration of Circularity in Business Strategy. *Organization & Environment*, 108602662199463.

- Ellen MacArthur Foundation. 2013. *Towards the Circular Economy—Economic and business rationale for an accelerated transition.*
- Ellen MacArthur Foundation. 2017. *The new plastics economy.* Ellen MacArthur Foundation.
- Esser, F., & Vliegthart, R. 2017. Comparative Research Methods. In J. Matthes, C. S. Davis, & R. F. Potter (Eds.), *The International Encyclopedia of Communication Research Methods* (1st ed.): 1–22. Wiley.
- European Commission. 2020a. *Circular economy action plan.*  
[https://ec.europa.eu/environment/strategy/circular-economy-action-plan\\_en](https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en).
- European Commission. 2020b. *A new circular economy action plan for a clearer and more competitive Europe.*, 20.
- Friemel, T. N. 2008. Why context matters. *Why Context Matters*: 9–13. Springer.
- Gaffar, V., Rahayu, A., Wibowo, L. A., & Tjahjono, B. 2021. The Adoption of Circular Economy Principles in the Hotel Industry. *GATR Journal of Business and Economics Review*, 6(1): 92–97.
- Gedam, V. V., Raut, R. D., Lopes de Sousa Jabbour, A. B., Tanksale, A. N., & Narkhede, B. E. 2021. Circular economy practices in a developing economy: Barriers to be defeated. *Journal of Cleaner Production*, 311: 127670.
- Geertz, C. 1973. *Thick Description: Toward an Interpretive Theory of Culture 1973.*
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. 2017. The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143: 757–768.
- Geng, Y., & Doberstein, B. 2008a. Developing the circular economy in China: Challenges and opportunities for achieving “leapfrog development.” *International Journal of Sustainable Development & World Ecology*, 15(3): 231–239.
- Government of the Netherlands. 2017. *Letter of intent to develop transition agendas for the Circular Economy together.* Government of the Netherlands.



- Halog, A., & Anieke, S. 2021. A Review of Circular Economy Studies in Developed Countries and Its Potential Adoption in Developing Countries. *Circular Economy and Sustainability*, 1(1): 209–230.
- Hantrais, L. 1996. Comparative Research Methods, social research UPDATE 13. *University Of*.
- Harrell, M. C., & Bradley, M. A. 2009. *Data collection methods. Semi-structured interviews and focus groups*. Rand National Defense Research Inst santa monica ca.
- HNEE. 2022. *European SME Going Green 2030 Report Review and analysis of policies, strategies and instruments for boosting sustainable tourism in Europe*: 312–322. Centre for Sustainable Tourism of the Eberswalde University for Sustainable Development.
- Homrich, A. S., Galvão, G., Abadia, L. G., & Carvalho, M. M. 2018. The circular economy umbrella: Trends and gaps on integrating pathways. *Journal of Cleaner Production*, 175: 525–543.
- Inigo, E. A., & Blok, V. 2019. Strengthening the socio-ethical foundations of the circular economy: Lessons from responsible research and innovation. *Journal of Cleaner Production*, 233: 280–291.
- Julião, J., Gaspar, M., Tjahjono, B., & Rocha, S. 2019. Exploring Circular Economy in the Hospitality Industry. In J. Machado, F. Soares, & G. Veiga (Eds.), *Innovation, Engineering and Entrepreneurship*, vol. 505: 953–960. Cham: Springer International Publishing.
- Khan, O., Daddi, T., & Iraldo, F. 2021. Sensing, seizing, and reconfiguring: Key capabilities and organizational routines for circular economy implementation. *Journal of Cleaner Production*, 287: 125565.

- Kirchherr, J., Piscicelli, L., Bour, R., Kostense-Smit, E., Muller, J., et al. 2018. Barriers to the Circular Economy: Evidence From the European Union (EU). *Ecological Economics*, 150: 264–272.
- Kirchherr, J., Reike, D., & Hekkert, M. 2017. Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, 127: 221–232.
- Lansink, A. 1979. Lansink's Ladder.
- Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. 2012. *Qualitative research: An introduction to methods and designs*. Jossey-Bass/Wiley.
- Lazarevic, D., & Valve, H. 2017. Narrating expectations for the circular economy: Towards a common and contested European transition. *Energy Research & Social Science*, 31: 60–69.
- Lincoln, Y. S., & Guba, E. G. 1990. Judging the quality of case study reports. *International Journal of Qualitative Studies in Education*, 3(1): 53–59.
- Long, T. B. 2020. Sustainable Business Strategies. In W. Leal Filho, A. M. Azul, L. Brandli, A. Lange Salvia, & T. Wall (Eds.), *Decent Work and Economic Growth*: 1–11. Cham: Springer International Publishing.
- Mangla, S. K., Luthra, S., Mishra, N., Singh, A., Rana, N. P., et al. 2018. Barriers to effective circular supply chain management in a developing country context. *Production Planning & Control*, 29(6): 551–569.
- Manniche, J., Topsø Larsen, K., Brandt Broegaard, R., & Holland, E. 2017. *Destination: A circular tourism economy: A handbook for transitioning toward a circular economy within the tourism and hospitality sectors in the South Baltic Region*.
- Martins, A. M., & Cró, S. 2021. The Impact of Tourism on Solid Waste Generation and Management Cost in Madeira Island for the Period 1996–2018. *Sustainability*, 13(9): 5238.

- Merli, R., Preziosi, M., & Acampora, A. 2018. How do scholars approach the circular economy? A systematic literature review. *Journal of Cleaner Production*, 178: 703–722.
- Mont, O., Plepys, A., Whalen, K., & Nußholz, J. L. 2017. *Business model innovation for a Circular Economy: Drivers and barriers for the Swedish industry—the voice of REES companies*.
- Murray, A., Skene, K., & Haynes, K. 2017. The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics*, 140(3): 369–380.
- NBTC Holland Marketing. 2019. *Perspective-destination-nl-2030-en.pdf*. NBTC Holland Marketing. <https://www.nbtc.nl/en/site/download/perspective-destination-nl-2030-en.htm?disposition=inline>.
- Ormazabal, M., Prieto-Sandoval, V., Puga-Leal, R., & Jaca, C. 2018. Circular Economy in Spanish SMEs: Challenges and opportunities. *Journal of Cleaner Production*, 185: 157–167.
- Patton, M. Q. 1990. *Qualitative evaluation and research methods*. SAGE Publications, inc.
- Patwa, N., Sivarajah, U., Seetharaman, A., Sarkar, S., Maiti, K., et al. 2021. Towards a circular economy: An emerging economies context. *Journal of Business Research*, 122: 725–735.
- PBL. n.d. *Why a circular economy? PBL Netherlands Environmental Assessment Agency, The Hague*. <https://themasites.pbl.nl/circulaire-economie/>, February 14, 2022.
- Pheifer, A. G. 2017. *Barriers & enablers to circular business models*. LE Brielle: ValueC.
- Potting, J., Hekkert, M., Worrell, E., & Hanemaaijer, A. 2017. *Circular Economy: Measuring Innovation in the Product Chain*, 46.
- Preston, F., Lehne, J., & Wellesley, L. 2019. *An Inclusive Circular Economy*, 82.

- Rizos, V., Behrens, A., Kafyeke, T., Hirschnitz-Garbers, M., & Ioannou, A. 2015. *The Circular Economy: Barriers and Opportunities for SMEs*, 25.
- Rizos, V., Behrens, A., van der Gaast, W., Hofman, E., Ioannou, A., et al. 2016. Implementation of Circular Economy Business Models by Small and Medium-Sized Enterprises (SMEs): Barriers and Enablers. *Sustainability*, 8(11): 1212.
- Rodríguez, C., Florido, C., & Jacob, M. 2020. Circular Economy Contributions to the Tourism Sector: A Critical Literature Review. *Sustainability*, 12(11): 4338.
- Shahrokh, Z. D., & Miri, S. M. 2019. *A Short Introduction to Comparative Research*.
- Sujai, S., & Juwana, I. 2021. *Waste management planning toward zero waste in Hotel XYZ Bandung with circular economy principles (case study: Room service facility's solid waste)*, 940(1): 012052. Presented at the IOP Conference Series: Earth and Environmental Science, IOP Publishing.
- Teguh, D. F. 2021. *Sustainability and Tourism Product Development*, 31.
- Tutuko, P., Bonifacius, N., Yuniawan, D., Safrilia, A., Junianto, M. R., et al. 2019. Tracing the City Pattern of Netherlands and Indonesia using Depth Calculation and Connectivity. *Journal of Physics: Conference Series*, 1167: 012012.
- UNDP. 2021. *The Economic, Social, and Environmental benefits of a Circular Economy in Indonesia*.
- van Keulen, M., & Kirchherr, J. 2021. The implementation of the Circular Economy: Barriers and enablers in the coffee value chain. *Journal of Cleaner Production*, 281: 125033.
- Vargas-Sánchez, A. 2018. The unavoidable disruption of the circular economy in tourism. *Worldwide Hospitality and Tourism Themes*.
- Vermunt, D. A., Negro, S. O., Verweij, P. A., Kuppens, D. V., & Hekkert, M. P. 2019. Exploring barriers to implementing different circular business models. *Journal of Cleaner Production*, 222: 891–902.

Yin, R. 1994. *Case Study Research: Design and Methods* SAGE Publications Inc.

Draft version

## Appendix A

Table A1 - Overview of Literature concepts

Concept in Literature	The Netherlands		Indonesia	
Integration of CE in national policy	New circular economy action plan (CEAP) National Agreement on Circular Economy EU Ecolabel EU green public procurement (GPP) criteria	(European Commission, 2020b; Lazarevic & Valve, 2017)	National Medium Term Development Plan 2025-2029	(UNDP, 2021)
Used national framework	9-R Framework Reduce, reuse, recycle, recover, refuse, rethink, repair, refurbish, remanufacture, and repurpose	(Potting et al., 2017)	5-R Framework Reduce, Reuse, Recycle, Refurbish, and Renew	(UNDP, 2021)
Integration of CE in hospitality sector	Predominantly used concepts: Green Key Programme	(HNEE, 2022)	Predominantly used concepts: Zero Waste Hotel, Green Hotel	(Gaffar et al., 2021; Sujai & Juwana, 2021)
Policy in the tourism industry	Perspective 2030	(NBTC Holland Marketing, 2019)	Tourism Act, Law no.10/2009 National Development Plan 2005-2025 Green Hotel Standard	(Gaffar et al., 2021; Sujai & Juwana, 2021; Teguh, 2021)
Barriers for CE implementation	<b>Cultural Barriers</b> Awareness or willingness to engage with CE (Kirchherr et al., 2018).			
	<b>Netherlands</b>		<b>Indonesia</b>	
	<ul style="list-style-type: none"> <li>Lack of support from supply and demand networks</li> <li>Lack of information</li> <li>Company environmental culture</li> <li>Lack of manager's awareness, understanding, and commitment</li> </ul>	(Geng & Doberstein, 2008a; Kirchherr et al., 2018; Ormazabal et al., 2018; Pheifer, 2017; Rizos et al., 2015; van Keulen & Kirchherr, 2021)	<ul style="list-style-type: none"> <li>Institutional capacity</li> <li>Cooperation between different sectors/actors</li> <li>Lack of skills</li> <li>lack of supply chain (SC) design and optimization</li> <li>skill gap of employees</li> <li>lack of managers' support and involvement</li> <li>lack of effective planning and management of CE</li> <li>lack of systematic information systems</li> </ul>	(Gedam et al., 2021; Halog & Anieke, 2021; Mangla et al., 2018; Preston et al., 2019)

Draft version

		Market Barriers			
		Lack of economic viability for circular economy businesses (Kirchherr et al., 2018)			
Concept in Literature	Netherlands	Indonesia			
Barrier for CE implementation (continued)	<ul style="list-style-type: none"> <li>Market</li> <li>Low virgin material prices</li> <li>High upfront investment costs</li> <li>Limited funding for circular business models</li> <li>Lack of support from public institutions</li> </ul>	(Kirchherr et al., 2018; Mont et al., 2017; Rizos et al., 2015)	<ul style="list-style-type: none"> <li>Market</li> <li>Access to finance</li> <li>Resistance from incumbent firms</li> <li>lack of economic benefits and high cost of investment</li> <li>Lack of financial capability</li> </ul>	(Gedam et al., 2021; Preston et al., 2019)	
			Regulatory Barriers		
			Lack of policies and governmental aid that supports businesses' CE transition (Kirchherr et al., 2018)		
			Netherlands	Indonesia	
		<ul style="list-style-type: none"> <li>Obstructing laws and regulations</li> <li>Lack of global consensus</li> <li>Limited circular procurement</li> <li>administrative burden</li> <li>Lack of government support and effective legislation</li> <li>Lack of coherent CE policy</li> </ul>	(de Jesus & Mendonça, 2018; Geng & Doberstein, 2008b; Kirchherr et al., 2018; Pheifer, 2017; van Keulen & Kirchherr, 2021)	<ul style="list-style-type: none"> <li>Weak infrastructure</li> <li>Economic and structural conditions</li> <li>lack of industry incentives for 'greener' activities</li> <li>lack of implementation of environmental management certifications and systems</li> <li>lack of environmental laws and regulations</li> <li>lack of preferential tax policies</li> </ul>	(Mangla et al., 2018; Preston et al., 2019)
			Technological Barriers		
		Missing technological resources to execute CE (Kirchherr et al., 2018)			
		Netherlands	Indonesia		
	<ul style="list-style-type: none"> <li>Limited circular design</li> <li>Too few large-scale demonstration projects</li> <li>Lack of data, e.g., on impacts</li> <li>Ability to deliver high quality remanufactured products</li> <li>Lack of technical and technological know-how</li> <li>Lack of standardization of CE solutions</li> </ul>	(de Jesus & Mendonça, 2018, 2018; Kirchherr et al., 2018; Mont et al., 2017; Pheifer, 2017; Rizos et al., 2016)	<ul style="list-style-type: none"> <li>Access to technology</li> <li>Lack of technology and innovation</li> </ul>	(Gedam et al., 2021; Preston et al., 2019)	

Draft version

**Appendix B***Table B1 – Detailed overview of cases*

Interviewee	Position	Business	Country	Time of Interview	Area	Short description
N1	Founder	Camping Ground	Netherlands	54:11	Heeg	"[The Camping ground] continues to innovate its products, services, and service in an authentic way so that it is a connecting factor between man and nature and where its adventurous guests continue to experience experiences, which they will think back to afterwards with warm feelings. "The camping ground features a lot of sustainable, green initiatives on the campsite. The camping ground aims to establish a circular boutique hotel for its guests by 2026. Moreover, the hotel is part of MCL Nederland and Circular Friesland.
I2	C.O.O	Luxury Reserve	Indonesia	1:14:13	Bawah Island	"At the center of a pristine nature reserve, we embrace an Earth First philosophy where guests have an authentic experience and feel restored in a faraway paradise. [The luxury reserve] will change you." The Earth First ideology is expressed by a circular approach: above, below, and beyond, which represents flora and fauna, the undersea world, and local communities. The luxury reserve developed its facilities with a 'minimal impact approach' and its connected Foundation formed to assist maintain and expand biodiversity on the island through marine conservation projects, actively preserves the environment, and empowers local communities.
N3	Director	Hotel	Netherlands	46:07	The Hague	"[The Hotel] wishes to distinguish itself by profiling itself as the heartiest and most sustainable hotel in The Hague." The hotel provides an environmentally friendly stay for its guests. As a result, the rooms are built to be environmentally friendly, the building has an energy rating of A, utilizes only green energy, and has triple glazing, as well as all contemporary energy-saving measures. Furthermore, a biological breakfast, drinks, salads, coffee, tea, and shower items are all made with organic and/or Fairtrade products at Hotel Court Garden. Finally, the hotel holds various environmental certifications, including Green Key, Ecolabel, and others.
N4	Operations Support	Hotel	Netherlands	56:05	Amsterdam	The hotel was created with the environment in mind. The hotel was constructed using zero-waste Cradle-to-Cradle concepts and sustainable building materials. Furthermore, for long-term heating and cooling, the building is maintained with an advanced thermal energy storage system. Solar panels provide energy, and there are numerous nesting boxes on the roof top. Showerheads, toilets, taps, and faucets all use less water. Many sustainable processes, such as waste sorting and the usage of environmentally friendly items, are also in place.
I5	Founder	Lodge	Indonesia	32:53	Selong Belanak, Lombok	The hotel is located on the lovely island of Lombok's south coast, perfectly positioned for those who wish to spend their time enjoying all that Selong Belanak has to offer, as well as those who want to explore the gorgeous Lombok coastline. The hotel participates in numerous circular projects, such as beach cleanups, employee education, without having a direct aim to be sustainable.
I6	Managing Director & Founder	Eco-Hotel	Indonesia	38:36	Ubud, Bali	The Eco-Hotel is located in the heart of Ubud and reimagines sustainable living for the eco-conscious guest. Where the relationship to the land, the environment, and the community is the true luxury. The Eco-Hotel mixes traditional architecture with minimalist and natural modern components to experience low-impact living in the midst of Bali's natural splendor. Earth-bag buildings, solar energy, rainwater collection, wastewater gardens, recycled, upcycled, or sustainably obtained timber, and other eco-technologies are used at the Eco-Hotel.



## Draft version

Interviewee	Position	Business	Country	Time of Interview	Area	Short description
I7	Founder	Eco Airbnb	Indonesia	36:30	Kecamatan Banjar, Bali	The Eco Airbnb cabin was designed with sustainability in mind. The lodging was built under the careful supervision of the owner, who recognizes the importance of using sustainable building materials and local resources. The Eco Airbnb Cabin is a three-bedroom luxury cabin in the Munduk Mountains of Bali. It is privately owned and operated, with its own manager and butler, cleaning staff, and concierge service. The view from the cabin spans the valley to the sea, with breathtaking sunsets.
I8	CEO	Eco Sanctuary	Indonesia	27:03	Gianyar, Bali	The Eco Sanctuary complies fully with the environmental and social principles of the Green Globe and Earth Check, two of the world's most severe hotel and resort accreditation standards. Their objective is to promote low-impact eco-tourism across Bali and Indonesia by using the Eco Sanctuary as an example. They like Bali and its warm-hearted people, and they love showing visitors the magnificence of the Island of the Gods.
N9	Business Operations Manager	Hotel	Netherlands	43:17	Leeuwarden	The hotel understands the value of sustainability and caring for people and the environment. Every choice made at the hotel and restaurant is guided by four fundamental principles: quality, sustainability, innovation, and feeling of place. The hotel has several initiatives in place, including the reuse of water and energy, the reuse of towels, the use of ecological and local goods, sustainable furniture and linen, the application of the Dutch Cuisine concept, and the possession of a Golden Green Key accreditation.
I10*	Head of Programs	Circular Economy Forum	Indonesia	52:46	Jakarta	The Circular Economy Forum brings together stakeholders to discuss obstacles and provide solutions and suggestions for implementing the Circular Economy movement in Indonesia. They want to be Indonesia's national Circular Economy platform, where individuals can interact to receive the knowledge, they need to transition to a more circular lifestyle, as well as share their contributions and posting about forthcoming events related to sustainability and circularity.
N11	Corporate Manager	Hotel	Netherlands	34:48	Amsterdam	The Hotel' goal is to provide its visitors with "a sensation of joy." As a result, the ideas of sustainability are firmly embedded in the business. The hotel participates in a range of activities to achieve its goals in social responsibility, energy and water use, and trash reduction. The Hotel is Europe's first zero-emission hotel, with the Golden Green Key eco-label, energy-efficient LED lighting, rain showers, War Child sponsorship, and an expanded CSR statement in line with the Green Key Certification.
N12	Recreation and tourism promoter	Circular Economy Association	Netherlands	55:10	Province of Friesland	The Circular Economy Association accelerates the transition to a circular economy and investigates cross-sectoral prospects. Their ultimate goal is a healthy economy with activities in which both people and environment may thrive. Circular Friesland, commissioned by the government, collaborates closely with TAF and YNbusiness the Circular Pilot on the Circular Hospitality sector action plan. On three separate levels, 'businesses, destinations, and visitors/residents', they are striving towards a circular hospitality industry based on real goals and activities through stimulating, connecting, informing, and motivating.

## **Appendix C1 – Interview guide**

1. Could you explain to me, what you understand under the term circular economy?
2. In what ways are you using a circularity approach in your business?
3. What are internal, cultural barriers holding you back in adopting a circular business strategy?
4. How is the market restricting you in becoming more circular in your business strategy?
5. How are you restricted by the regulatory environment in transitioning to a circular business strategy?
6. What technological barriers are you facing in implementing CEBS?
7. Considering all the barriers you indicated before, which one of them is the biggest barrier holding you back from adopting a circular business strategy?

## **Appendix C2 - Adapted Interview Question Guide for Circular Engine & ICEF**

1. How would you define the concept of a circular economy applied to the hospitality sector?
2. How can hospitality businesses implement circular economy business strategies (CEBS) in their operations?
3. What are internal, cultural barriers that could potentially hold back the hospitality industry to adopt a CEBS?
4. What are market restrictions that could hinder hospitality businesses to become more circular?
5. How is the regulatory environment impeding hospitality businesses to adopt a CEBS?
6. What technological barriers can you think of, that are challenging hospitality businesses to implement CEBS?
7. Considering all the barriers you indicated before, which one do you think is the biggest barrier holding hospitality businesses back from adopting a CEBS?

## Appendix D

Table D1– Coding scheme

Exemplary Quote		1st order code	2nd order code	aggregate dimension
we need to stop coming up with new names and actually start doing something about it	I8	Circularity as an alternative to sustainability	circularity in hospitality	The circular economy in the hospitality industry
But specifically for the hospitality sector, it is expected by applying this economy, there's an efficiency with the production process as well as massive reduction of generated waste and pollution, whether it is organic waste, or inorganic, and also pollution caused by the transportation, for example, or carbon released by hotels or restaurants, and so on and so forth.	I10*	Circularity in the hospitality sector		
Okay, so I, I'm sure you already know, the nine R's. And then we have the framework. And then we have the five priority sectors. There's the food and beverages, there's the construction and building, there's the electronic waste, there's the retails or plastic packaging, and then there's textiles. And for each of the sectors, actually, some of the nine R's are applicable towards the sector	I10*	9-R Framework	CE Frameworks	
So for Indonesia, circular economy is actually a tool to implement a low carbon development and adopts three principles, which I believe is very similar to the Ellen MacArthur Foundation definition	I10*	circular economy in indonesia		
I think, because the economy in Indonesia still heavily emphasize on waste management; And also, if it's on the upstream level, it is heavily emphasized on the goods, like production and manufacturing.	I10*	predominant focus on production & manufacturing		
What do I get in the end? That's what I tried to tell entrepreneurs and then on the seven pillars, looking at your own company, what can I do for these steps?	N12*	Seven Pillars of circular economy		
So, eliminating any single use plastic in the villas. So, in terms of soap, shampoo and conditioner, we serve that in dispensing bottles. And we refill them. And so, there's no single use plastics, or even the canvas small bottles that are used in a lot of hotels.	I6	Minimization of plastic use	CEBS	
And when we were designing the new hotel, obviously, or maybe not even obviously, but this was for us was a very big theme. So we wanted to be as "no-waste" as possible.	N9			

Exemplary Quote		1st order code	2nd order code	aggregate dimension
And then there's the aspect of recycling; recycling compost or an organic and I think in this case is kind of obvious, for example, for hotels or tourism destinations, but there's a particular interesting example of, safaris, or zoos, urban forests.	I10*	Recycling of waste materials		
And, you know, we're trying to keep down the amount of waste that we're producing in general.	I7			
but also, then you have the organic waste which is easier to deal with. You can turn orange waste and lemons and all these things into cleaning products – and they are amazing cleaning products.	I2	Repurpose waste materials		
And we have a pond, water goes through, it goes through the whole micro provider goes into ponds where the plants eat, the organic sector then pumped up and then it's dispersed. And then it's naturally after it's been treated, it naturally seeps through the bedrock and through the land and gets returned to the ocean. But with that same water that we then water the plants with, that wastewater is being treated because it's full of nutrients.	I2	Reuse of materials		
So, also within future proof buildings, I see that the ordered the points that we find important. So, the first point that you find important is energy efficiency. Second point, location and accessibility. Three, climate adaption. Building certification, four. Circular use of materials is point five. Carbon emission reduction is point six. Flexible building design, seven. Technological innovations, eight; and natural disaster resilience is nine.	N4	Sustainable buildings		
So, I collected some seeds from last year and we made it on the campsite on some places just to have a little help [for] the insects.	N1	Sustainable initiatives		
So, we also have certain rules for them or what we tell them what we want or not. And also for our housekeeping they may not use every kind of cleaning detergents. We always check every year on the detergents they use, so that it's good for the environment.	N3	Adopting sustainable strategy		
You have to train all your new people. But we already put a lot into procedures anyway, but it's a lot of training and also a way of life and some adapt to it's easier than others.	N3	Education for betterment		
So the grassroots approach, I think, is going to be more effective than the regulatory approach anyway, just because it is eventually going to have to come from the Balinese and and just allowing themselves to be educated on it and being willing to pass that education down.	I7	grassroot entrepreneurs	education of people	Overcoming barriers for circular business strategies

Exemplary Quote		1st order code	2nd order code	aggregate dimension
I have seen an improvement and a change over the last few years. And definitely a bigger openness to it, with my team in particular.	I7	Mindset shift		
So, that this is the little thing that helps building a culture in that innovation is more important than making mistakes. Innovating without any mistakes is not possible.	N1	Creating an organizational culture that allows mistakes	empowerment of people	
And I suppose it's interesting in the holiday time, you're more than general open for new information, new experiences during your day. It's the day thing you go in, you're not trying to get some more information about it.	N12*	Customer involvement		
And rather than leaving us, we said: why don't you work with our foundation? So, he is working for the Anambas, working for the betterment.	I2	Empowerment of employees and locals		
We are a member of MCL Nederland. Yeah, a member of Circular Friesland. We go to these congresses, I really do like, from Paul Pohlmann	N1	Sources of circular initiatives and solutions	Networking for circularity	
So now we are looking into the fact like: hey, we have more hotels here. We have bars, restaurants, while the restaurants, what if we can find a way to cooperate together.	N11	Networking and partnerships for circularity		
So in my initial research process, I was aiming to partner with brands that hit certain benchmarks	I7	partnering with sustainable brands		
Yeah, it's a little bit like eating less meat. And maybe this is a ridiculous comparison. But they say when you really truly want to eat less meat, you just need to eat differently. So, don't try to just replace meat, but just eat differently.	N9	alternative approaches	nudging for circularity	
Sustainability should be in the core of their business.	N9	intrinsic motivation for circularity		
And we always try to go into the conversation with the delivery if they can make a change because for example if I look at my linen it's very difficult because they have to park their car on the corner of the street and they need to make sure all my linen will be come into my hotel clean and dry.	N11	circular logistic strategies		
[...] having sustainability consultants I think is a huge, huge help in overcoming the technological barrier.	I6	Overcoming barriers with expert help		
So, one of the first things was sourcing locally and sourcing sustainably, we are a marine reserve.	I2	Sustainable and local sourcing		

Exemplary Quote		1st order code	2nd order code	aggregate dimension
So, these are things which are not really outlined and I couldn't find it online as well. It's quite difficult material. I think this information there's a lot of information which is hidden or not visible for people.	N3	Access to information as a barrier	cultural barriers	Barriers for circular business strategies
So yeah, just from that simple case, aware the situation is seeking circular training, the participants are protesting that. So yeah, changing the behavior of consumers is also a challenge.	I10*	Customer mindset		
They just do it the cheapest way, you know, doesn't matter if it's sustainable or not, you know, the government doesn't help either. People, they just try to do it as cheap as they can.	I5	Economic environment as a barrier		
When you tell them they say: Oh, yes, yes. But when you're working, then you see oh, it's still a "no", because they are still not aware. Should I do this? Should I do that? When you talk about it, they will say yes, of course. And but it's not a second nature yet.	N3	Employee mindset as a barrier		
So the first is the awareness, the understanding of what is a circular economy in the services sector, we still need to build that understanding, that awareness, which we still not yet have that.	I10*	lack of awareness		
It's a long way off long, long way. [...] I was gonna say I actually believe that even Europe is a long way off. It shocks me when I go back to Europe and I see how much plastic is thrown at the side of the road. And how many people humans around the world are inherently bad guardians of the environment.	I2	Lack of collective action against plastic		
in a cultural sense, they would dispose of trash by dumping it in the ocean. Because as a culture, they simply didn't have the resources or the education to understand the massive environmental impact that that would have	I7	Lack of education		
But I also know that the person responsible for that outlet is not so much involved in sustainability. So it very much depends on the person, I would say.	N9	Mindset of management		
One of the biggest problems for the recreatie sector is [...] we have so, many things to do, every day.	N1	Time as a barrier	market barriers	
I'm trying to make them do it different, but it's just not working. It's working for one day, is working for one week, two weeks, three weeks, and then they come back to the same thing.	I5	Convenience of purchasing products		
And that's basically because of economies of scale. They're not produced at a large scale. So, obviously they will be more expensive than the other commercial products.	I6	Economies of scale as a barrier		

Exemplary Quote	1st order code	2nd order code	aggregate dimension
I think a huge term that's used now is greenwashing. A lot of companies are doing that. Are you really sustainable or are you putting out there that are sustainable with actually you're not you know? And I think that we have the intention to be really sustainable also take that extra mile, even if it's if it's all increased financial costs.	N4	Greenwashing as an industry wide problem	
I think that Indonesia is making strides forward in their environmental policies	17	Improved policy	
[...] and this relates to the first point, the lack of capital. So this actually this not only applicable to the industry sector, but also to the local government sector, as well.	I10*	Lack of financial investments	
You know, we call them OTAs, it's online travel agents. So, there's really no OTA that is dedicated to sustainability. So, it's hard for customers to discriminate and work their way through this mess of greenwashing	18	Lack of sustainable OTAs	
I think it's our location, and how remote we are given where all of the environmentally friendly brands and products are based	17	Location as a barrier	
And we found out that where tourism booms in Indonesia, the waste pollution also booms, so to speak.	I10*	Overtourism	
And also if the government have subsidies on things, the tourism sector doesn't really fit in.	N12*	Subsidies as a barrier	
It cannot influence the guest satisfaction because that's the most important in adults. If the guest satisfaction is negatively impacted by our sustainable choices, then we will never do it.	N4	Success of sustainable business strategy	
Sometimes it's not possible to buy circular or to buy sustainable and then you just need to make the best choice out of the bad choices.	N9	Supply network as a barrier	
I mean, by far the pandemic. Just, you know, the hospitality industry as a whole has basically been demolished in the last couple of years. So, you know, survival has just been the major concern for all businesses, including us.	16	The influence of Covid19 on the industry	
So, they made it very difficult. They gave us a hard time. And that's the ruling by governmental that's making things very hard and difficult for companies.	N11	Bureaucracy as a barrier	regulatory barriers
So, yeah, there's no enabling environment, no enabling framework or policy frameworks to support it	18	Government as a barrier	
So having a more innovative or advanced infrastructure will very much advance in this transition.	I10*	insufficient infrastructure	
So having a more innovative or advanced infrastructure will very much advance in this transition.	I10*	Lack of recycling and rubbish collection opportunities	

Exemplary Quote		1st order code	2nd order code	aggregate dimension
And there is no recycling and then whoever is recycling is private.	15	Privatization of waste disposal and recycling		
Particularly for the hospitality businesses, because even though we have already launched the analysis of five party sectors, those five party sectors are goods, and we still have trouble in defining the legal framework.	I10*	Restraining legal framework		
There are so many rules which don't fit a company like a restaurant or a hotel.	N12*	Rules and regulations as a barrier		
So, we missed out that one. And that's the kind of knowledge that actually they should have known or I should have known. It's a requirements from the government. But it's not so easy to learn or to see or to adapt.	N3	Lack of technological knowledge	technological barriers	
We work with a PMS system, that's basically the computer program that you use to check in and check out our guests. So for instance, the registration, we want to do it digitally. But then the PMS process is not running smoothly at the moments and because of the PMS system, because of the supplier, basically.	N9	technological constraints		



## Appendix E

### Research Informed Consent



university of  
 groningen

campus fryslân

centre for sustainable entrepreneurship

#### TITLE OF STUDY

Barriers to circular economy business strategies in the hospitality sector – Insights from Indonesia and the Netherlands

#### PRIMARY RESEARCHERS

Nina Bittner (n.bittner@student.rug.nl)

#### **Why am I being asked to review this form?**

You are being asked to take part in a research study. This form is provided to read and understand why you might or might not want to participate in the research. Your participation is voluntary.

#### **What is the purpose of the study?**

The purpose of this study is to better understand the barriers that hospitality businesses face when it comes to adopting a circular economy business strategy regarding plastic.

I want to better understand whether there are contextual differences between developing and developed countries, more specifically between Indonesia and the Netherlands.

I am especially interested in hearing your personal perspective on what is restricting your hotel from implementing a circular economy business strategy.

#### **What is the goal of this interview?**

The research conducted within the framework of this interview is of exploratory nature. The goal of this interview is therefore to gain insights into the understanding of the circular economy in different contexts and the barriers to adopting a strategy to transition to a circular economy. The interview is semi-structured to receive as much input from your side as possible. Accordingly, the questions sent beforehand are an interview guide, but are not ultimately binding.

#### **What will happen before the interview?**

You are allowed to withdraw from the study without justification and without negative consequences until the day of the interview. I will review this form before the beginning of the interview.

#### **What will happen during the interview?**

- You will be asked multiple questions in the interview;
- The interview will be recorded;
- You have the right to decline to answer particular questions.

#### **What will happen after the interview?**

- The recordings of the interview will be transcribed and analyzed by the researcher
- Upon request, I will send you the transcription, which is allowing you to correct, review and approve it;
- This reviewed transcription will be integrated to the final thesis;
- Quotes from the transcription will be used as verbatim in the thesis;
- On request, you will have access to the final thesis and the transcription;
- For confidentiality purposes, you have the right to ask to be anonymous.

CONTACT INFORMATION

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise that you do not feel you can discuss with the Primary Researcher directly.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

CONSENT

I have read and understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Researchers' Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Appendix F**

### **Elaboration on the implementation of CEBS – Examples from the hospitality industry**

In terms of recycling, the hotels from the Netherlands took the forefront and instanced the use of refundable bottle schemes and the use of promotional and building materials from recycled materials. Great examples were the purchasing of recycled marketing flags (N1) and bed headboards (N3), both made from old PET bottles. The Indonesian hotels are seemingly less involved in recycling, as they are required to contract privatized NGO facilities to get their waste recycled (I5, I6, I7, I8). Moreover, the use of recyclable water gallons was stated to be one initiative aiming at further reducing the use of one-time-use water bottles (I6). Moreover, recycling organic or inorganic materials was stated to be important, but challenging for Indonesian companies, best illustrated by I10\* who elaborated that “there's the aspect of recycling; recycling compost or an organic and I think in this case is kind of obvious, for example, for hotels or tourism destinations [...]”.

Repurposing efforts were evident in both country contexts. Similarities were found in the way the repurposed organic waste was handled. Whilst a Dutch Hotel mentioned their efforts to produce jam and veggie stock (N4), an Indonesian Hotel instanced the repurposing of organic waste (i.e., lemons and oranges) for cleaning products (I2).

In terms of reusing, Dutch interviewees instanced the reuse of unfinished toilet roles (N3) and nudging guests to reuse towels with the aim to reduce resources such as staff, cleaning products, and water (N4). “Hotels for Trees” was one of the initiatives mentioned to facilitate and nudge customers to reuse their towels. As such, for every time the customer proactively chooses to not get new towels, a tree gets planted (N4, N9). Moreover, the reuse of paper to print was mentioned (N11). The reuse of water was especially important in the Indonesian context. As such, wastewater is reused for watering plants, and rainwater is captured and treated to serve as drinking water for guests (I2, I6, I8).

All interviewees unanimously mentioned their effort to reduce plastic and waste, where possible. Examples were the use of bigger containers for toiletries or cleaning products . While some Indonesian accommodations stressed the difficulty of purchasing plastic-free products for their operations, others laid out that “in terms of soap, shampoo, and conditioner, [they] serve that in dispensing bottles” (I7). To reduce energy throughput, Dutch Hotels referred to the use of LED lighting (N9, N11), and Indonesian hotels most frequently mentioned the use of solar power (I7, I8, I10\*, I6, I2).

Rethinking business operations in the Dutch hospitality sector was mainly expressed by using unused areas of the accommodation for regenerative initiatives (i.e., birdhouses, insect hotels, a natural pool, etc.) or planting local plants to regenerate the biodiversity (N1, N4, I8). Additionally, two interviewees participated in a linen rental program from Blycolin (N11, N9). In Indonesia, the use of the garden area was used for self-supply of fruits and vegetables in form of a permaculture garden (I2, I6, I8).

Likewise coherent was the mentioned effort of eliminating single-use plastics in their business operations. However, the extent to which these efforts were successful deviated between the different hotels. Whilst one Indonesian hotel was able to provide a direct example of using refillable dispensing bottles for shampoo (I6), several Dutch hotels continued to face issues to implement circular solutions, due to different issues, such as procurement difficulties or hygiene concerns. Lastly, hotels in the Netherlands aim to refuse the use of polluting cleaning materials actively, by ruling out the detergents directly or indirectly, by nudging their customers to refuse cleaning activities (N3, N4, N9).

## Appendix G

Table G1 - CEBS applied in the hospitality sector in the Netherlands and Indonesia

Strategy	Netherlands	Indonesia
<b>R0 Refuse</b>	<ul style="list-style-type: none"> <li>Eliminating of all single use plastics (N1, N4, N9, N12*)</li> <li>Refusing polluting cleaning materials (N3, N4, N9)</li> </ul>	<ul style="list-style-type: none"> <li>Eliminating of all single use plastics (I6, I7)</li> <li>Using refillable dispensing bottles for shampoo (I6)</li> </ul>
<b>R1 Rethink</b>	<ul style="list-style-type: none"> <li>Using unused areas of the hotels for regenerative actions (i.e., bird houses, insect hotel, etc.) (N4)</li> <li>Using garden area to plant Vlas to regenerate biodiversity (N2)</li> <li>Linen rental through Blycolin (N11, N9)</li> </ul>	<ul style="list-style-type: none"> <li>Self-supply of fruits and vegetables through a permaculture garden (I2, I6, I8).</li> <li>Regenerative initiatives (natural pool) (I8)</li> </ul>
<b>R2 Reduce</b>	<ul style="list-style-type: none"> <li>Minimization of plastics (N1, N3, N4, N9, N11, N12*)</li> <li>Reduction of waste (N1, N3, N4, N9, N11, N12*)</li> <li>Use of bigger containers as toiletries for clients (N3)</li> <li>Using eco shower heads (N9)</li> <li>Using LED lights (N9, N11)</li> </ul>	<ul style="list-style-type: none"> <li>Minimization of plastics (I2, I5, I6, I7, I8, I10*)</li> <li>Reduction of waste (N1, N3, N4, N9, N11, N12*)</li> <li>Using jerry cans for cleaning products to reduce waste (I5)</li> <li>Using of solar energy (I7, I8, I10*, I6, I2)</li> </ul>
<b>R3 Re-use</b>	<ul style="list-style-type: none"> <li>Reusing unfinished toilet roles for next customer (N3)</li> <li>Nudging guests to reuse towels (“hotels for trees”) (N4, N9)</li> <li>Reuse paper to print (N11)</li> </ul>	<ul style="list-style-type: none"> <li>Reusing of wastewater for gardening (I6, I8)</li> <li>Cleaning rainwater through desalination to make drinking water (I2)</li> </ul>
<b>R4 Repair</b>	--	--
<b>R5 Refurbish</b>	--	--
<b>R6 Remanufacture</b>	--	--
<b>R7 Repurpose</b>	<ul style="list-style-type: none"> <li>Using organic waste (i.e., fruits and vegetables) to make jam or stock (N4)</li> </ul>	<ul style="list-style-type: none"> <li>Using organic waste (i.e., lemons &amp; oranges) to make cleaning products (I2)</li> </ul>
<b>R8 Recycle</b>	<ul style="list-style-type: none"> <li>Buying refundable water bottles</li> <li>Buying promotional and building material made from recycled plastic (N1, N3)</li> </ul>	<ul style="list-style-type: none"> <li>Buying refundable gallons (I6)</li> <li>Collaborating with NGOs to facilitate recycling (I5, I6, I7, I8)</li> <li>Recycling of organic &amp; in-organic waste (I10*)</li> </ul>
<b>R9 Recover</b>	--	--

## Appendix H

Table H1 - Barriers to the adoption of CEBS in Indonesia and the Netherlands

	Netherlands	Indonesia	Shared
<b>Cultural Barriers</b>	<ul style="list-style-type: none"> <li>• Lack of knowledgeable employees (N1, N4)</li> <li>• Requirements from shareholders (N4)</li> <li>• Difficulty to locate and access information for circular businesses (N3)</li> <li>• Overwhelming number of circular initiatives (N1, N12)</li> <li>• Lack of time to implement CEBS (N1)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of education (I2, I10*).</li> <li>• Habit and mindset of locals (I2)</li> <li>• Cost conscious lifestyle (I5)</li> <li>• Economic gain as primary incentive for employment (I6, I5, I2)</li> </ul>	<ul style="list-style-type: none"> <li>• Mindset of management * employees (I6, I5, N4, N9)</li> <li>• Lack of awareness (I2, N3, N4, I10*, N12*)</li> <li>• Supplier mindset (I2, I5, N3, N4)</li> </ul>
<b>Market Barriers</b>	<ul style="list-style-type: none"> <li>• Financial trade-off thinking (N4)</li> <li>• Lack of market shift (N4, N9, N11)</li> <li>• Quality service is more important than sustainability (N4, N9, N11)</li> <li>• Subsidies hinder innovation (N1)</li> </ul>	<ul style="list-style-type: none"> <li>• Default plastic packaged goods (I6, I8)</li> <li>• Convenience of purchasing plastic packed goods (I2, I5, I10*)</li> <li>• The influence of the Covid19 pandemic on the industry (I6)</li> <li>• lack of governmental financial support (I6, I10*)</li> <li>• Unfavorable location (I7)</li> </ul>	<ul style="list-style-type: none"> <li>• Economies of scale (N3, N4, I5, I6, I8, N9, N11)</li> <li>• Premium pricing for sustainable products (N4, I6, I7, I8, N11, N12)</li> <li>• Accessibility of products (N3, N4, I5, I6, I8)</li> <li>• high upfront costs (N1, I2, N4, I8, N9, I10*, N12)</li> </ul>
<b>Regulatory Barriers</b>	<ul style="list-style-type: none"> <li>• Bureaucratic environment as barrier (N4, N11)</li> <li>• Strict operational regulations (N9)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of incentives to change (I2, I6, I7, I8, I10*)</li> <li>• Lack of governmental financial support</li> <li>• Privatization of waste disposal and recycling (I2, I5, I6, I7, I8).</li> <li>• Weak infrastructure &amp; maintenance (I10*)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of enforcement of rules &amp; regulations (I10*)</li> <li>• Lack of governmental support for waste disposal (N3, I5, I6, I7)</li> </ul>
<b>Technological Barriers</b>	<ul style="list-style-type: none"> <li>• lack of technological knowledge (N3)</li> <li>• standard of used procurement systems (N11)</li> </ul>	<ul style="list-style-type: none"> <li>• Slow technological advancements (I10*)</li> </ul>	--