Mindful tourism: nothing left behind–creating a circular economy society for the tourism industry of Krabi, Thailand

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Abstract

Purpose – This research aims to demonstrate how the circular economy is employed to drive the sustainability of the tourism industry in Krabi, Thailand, through the concept of mindful consumption and service-dominant logic (hereafter S-D logic).

Design/methodology/approach – A seven-year longitudinal study (2013–2020) was conducted through four studies from different perspectives, including macro, meso and micro levels of development in Krabi province.

Findings – Krabi tourism stakeholders have collaborated to co-create green culture and behavior whereby the value network among stakeholders plays an important role in driving the circular economy in practice.

Research limitations/implications – This study provides an understanding of how the circular economy society has been co-created. However, further research should be conducted in other tourism cities by focusing on the key success factors that drive the circular economy.

Originality/value – The longitudinal study with multi-perspective micro, macro and meso levels of development in this study has shed the light on how the circular economy (CE) policy can be turned into practice.

Keywords Circular economy, Krabi tourism, Mindful tourism, Krabi declaration

Paper type Research paper

1. Introduction

The tourism industry in Thailand plays an important role as one of the economic pillars that drive the national economy due to its employability and the demand for domestic products and services. In 2017, the total tourism revenue was US$120bn, with an average growth of 10% per year. This amount of revenue accounts for 18.6% of the gross domestic product (GDP) (Tourism Authority of Thailand, 2019). Besides, it impacts the environment by increasing waste, pollution and sewage (Jones and Wynn, 2018; Falcone, 2019). The Rio de Janeiro Earth Summit 1992, with its Agenda 21, the Kyoto Protocol in 1997 (UNFCCC, 2005), and also the Paris Climate Change Agreement (Scott et al., 2016) were three global conferences that called for concern among all stakeholders about environmental impacts. The tourism sector is inevitably responsible for reducing these impacts. This study is to respond Postma et al.'s (2017) calling for future sustainable tourism. Tourism stakeholders for many destinations in Thailand, such as Koh Samui, Krabi and Koh Chang, have developed a sustainable tourism strategy to address environmental issues. Krabi province is one of the destinations in Thailand that focuses on developing the circular economy (hereafter CE). However, the CE tends to focus only on economic and environmental aspects (Fan and Fang, 2020), while sustainable tourism focused on the balancing of economic, environment and socio-cultural aspects (UNWTO, 2021).

The traditional economic model–the linear economy–has long been employed as a business model that focuses on the take-make-use-dispose model for profitability (Liakos et al., 2019). This linear

economy model is based on the traditional perspective of resources as static and infinite (Koskela-Huotari and Vargo, 2016); therefore, businesses tend to overlook the impacts of the utilization of natural resources. The concept of resourceness (Koskela-Huotari and Vargo, 2016) suggests that resources are dynamic and finite (Heshmati, 2015); therefore, businesses and related stakeholders have called for another business model to address these impacts. The CE is one of the solutions for reducing environmental impacts (Falcone, 2019). It is a closed-loop system that uses fewer resources but has high productivity (The Ellen MacArthur Foundation, 2015). To develop the CE, the institutional process (see also Koskela-Huotari and Vargo, 2016) needs to be addressed because individual and national efforts are not sufficient for implementing the CE (Lieder and Rashid, 2016).

Driving the CE remains a problem, as noted by Zhang and Dong (2015) who further showed that the understanding of the CE, the quality of staff, the supply of recycling resources and the pressure from tourism demand obstruct the development of sustainability. This is supported by Fan and Fang's (2020) work, which explored CE development in China and found that large cities (e.g. Beijing and Shanghai) tend to adopt the CE better than small cities. Urbinati et al. (2020) conducted a CE project within the European manufacturing industry. They found that consumers play an important role in driving the CE through the value network and value proposition when the benefits of the project are presented to consumers. Urbinati et al.'s (2020) value network and value proposition can be understood through the service-dominant logic of marketing (hereafter S-D logic), which Vargo and Lusch (2016) emphasized how individual can collaborate in value co-creation, value proposition and value networks, in order to provide benefit to other parties. Additionally, most studies are conducted with a company or a particular business (Urbinati et al., 2020; Liakos et al., 2019), but there is little interest in focusing on the CE in the tourism industry (Vargas-Sánchez, 2018).

To develop the CE for the Krabi tourism industry, mindful consumption (see also Sheth et al., 2011) is synthesized with the CE and S-D logic by focusing on developing a mindful mindset with tourism stakeholders in Krabi because the mindset is a fundamental aspect that drives behavior. By including all stakeholders in the co-creation of the CE society, this study sheds light on how the CE is employed to drive the sustainability of the tourism industry in Krabi, Thailand, through the concept of mindful consumption and S-D logic. All efforts and levels of the CE–micro, meso macro–are employed to understand the CE within the Krabi tourism industry. This is the first project to explore the CE within the tourism industry in Thailand. A seven-year longitudinal study (from 2013 to 2020) was conducted to demonstrate the CE development of the Krabi tourism industry. Figure 1 below depicts our proposed approach guided by the theoretical lens of the CE, S-D logic and mindful consumption.

The rest of the paper is organized as follows. The next section discusses the key theoretical concept, the CE. Section 3 outlines the methodology and data collection. A longitudinal study with tourism stakeholders in the Krabi tourism industry is discussed in this section. Section 4 presents the findings from the study, and section 5 concludes by providing a set of recommendations following the concepts of the CE and the collaboration network.

2. Literature review

All activities of human consumption are a major cause of environmental impacts and are related to greenhouse gas (GHG) emissions to the atmosphere. Arnould and Thompson (2005) discussed the full consumption cycle, including acquisition, possession, consumption and disposition. Within this realm, the consumer is an agent whose consumption is mostly related to the meaningful and symbolic nature of materiality (Askegaard, 2015). Human activities are influenced by socio-cultural aspect through their everyday of life. For example, consumers in Western culture tend to practice environmental behavior (e.g. waste separating, using eco-friendly products) (Barr, 2003). Knowledge and traditional strategies cannot manage the environmental impacts of consumer behavior (Fan and Fang, 2020) because it is required the balance between consumer behavior and

Figure 1 The concept of the study
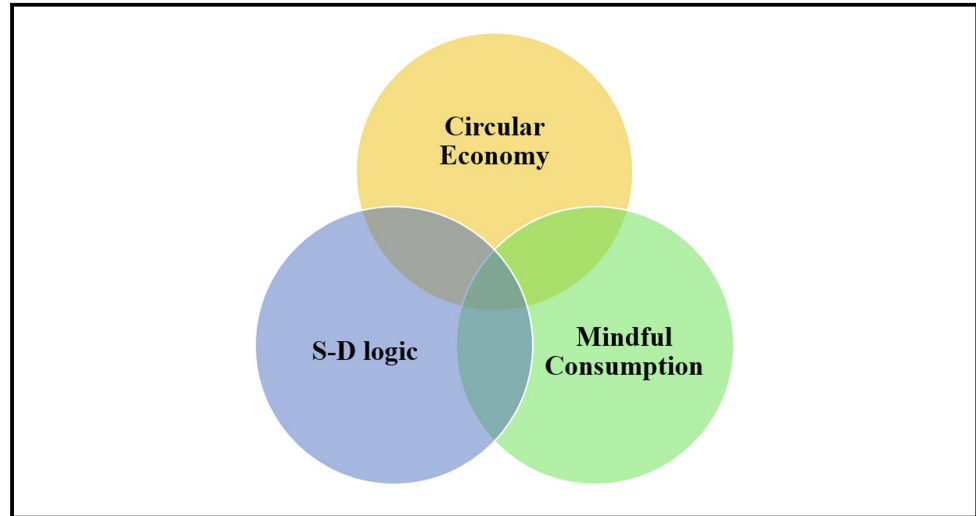
business actions to solve the problem. Therefore, a new business model–CE–is required to manage sustainability (The Ellen MacArthur Foundation, 2013) and plays an important role in mitigating the impacts on nature.

Liakos *et al.* (2019) discussed how Lieder and Rashid (2016) developed the CE framework to fill the gap indicated by The Ellen MacArthur Foundation (2015) by emphasizing the three pillars of CE– economic benefits, environmental impacts and resource scarcity. Recently, CE has been accepted by many stakeholders, including academics, practitioners and policymakers, to drive sustainability. Vargas-Sánchez (2018) mentioned the three pressures of employing the CE in management: law and regulation, consumer-driven and competitor-driven pressure. However, many businesses may misunderstand of the CE by focusing only on corporate social responsibility (CSR), in spite of the fact that the CSR is just a part of the CE.

Recently, Urbinati *et al.* (2020) demonstrated that CE is a new business model by employing the concept of consumption to explain the entire process by which consumption affects sustainability. Therefore, it not only employs the concepts of low carbon, eco-friendliness and the green economy but also requires a new business model to close the loop of production and consumption (Rodrìguez *et al.*, 2020). It does not involve a new concept in driving sustainability; instead, it is in line with the green economy and sustainability in its focus on recycling, waste management, natural resources and the environment through the concepts of the many R's (i.e. reuse, replace, recycle, reduce, redesign) (Winans *et al.*, 2017). However, the CE cannot absolutely rely on recycle because of its cost and energy consumption (Lemille, 2019). Girard and Nocca (2017) noted that the CE not only works through the concept of the green economy but is also a revolution of a new economy.

The CE is a paradigm shift in management, especially in the tourism industry (Vargas-Sánchez, 2018; Urbinati *et al.*, 2020), but it has been overlooked by tourism scholars (Rodrìguez *et al.*, 2020). It can be argued that many works in the climate change, carbon footprint, green tourism, eco-friendly tourism, and so on, are not included in the CE literature. Additionally, the main concept of the CE is related to human activities and consumption. It provides a gap for scholars to advance the knowledge with different concept. For example, the CE is in line with consumer culture theory (see also Askegaard, 2015) in its ability to apply to macro, meso and micro levels of consumption (Merli *et al.*, 2018). For the macro level, the CE can be operated at the level of the city, country or continent; at the micro-level, the CE can work with a firm, consumer or product (Urbinati *et al.*, 2020). At the meso level, the CE connects the collaboration network within a particular industry (e.g. Eco-Industrial Park in China; Liakos *et al.*, 2019) to co-develop cooperation and share

resources for developing sustainability. Urbinati et al. (2020) developed a new business model of the CE at the micro-level (company, consumer, product) by employing the value co-creation paradigm, which focuses on the value network and consumer value proposition (Vargo and Lusch, 2016). As suggested by S-D logic (Vargo and Lusch, 2016), both the value network and the value proposition play important roles in the CE through the fundamental concept of product design and collaboration in an eco-friendly society. However, value co-creation is viewed negatively as a cause of value co-destruction (Echeverri and Skålé, 2011) because value is required consumption to co-create value, and consumers are a cause of overconsumption and also environmental impacts (Sheth et al., 2011). Additionally, within the linear economy (take-make-waste), only one party; i.e. consumers, have to take responsibility for their consumption (Rodrìguez et al., 2020), in spite of the fact that all stakeholders should collaborate to mitigate its effects.

The CE involves the institutional process of resources that a consumer needs to embed at the micro-level (Koskela-Huotari and Vargo, 2016). As an individual effort, a company should engage with the value co-creation process through an institutional process. Within this process, the institutional arrangement–the cultural code or frame of reference for guiding actions (see also Koskela-Huotari and Vargo, 2016)–is co-created through participation, interaction and action. Urbinati et al. (2020) focus on the demand side from the firm perspective. Additionally, employee awareness of the CE is an important factor that drives the CE within a firm, in which the three pillars of the CE are interdependent (Liakos et al., 2019). Sukhdev et al. (2017) discussed the CE for an urban system and noted that a CE city should be designed by focusing on the built environment, energy, mobility and the food system. Hurlbert et al. (2020) presented a case study of the CE in several cities in Canada by focusing on energy, including coal, oil, gas, wind and solar energy.

The context of sustainability is a challenging issue within the tourism industry (Lim, 2016). Therefore, many scholars (e.g. Zhang and Dong, 2015; Girard and Nocca, 2017; Jones and Wynn, 2018) have employed the concept of the CE to respond to environmental issues within the tourism industry. Jones and Wynn (2018) developed the concept of the CE to explore how tourism stakeholders adopt the CE in their operations and management for sustainability. The concept has also been employed by many scholars to mitigate the environmental impacts of pollution, waste, natural resources and climate since the last decade (Lim, 2016; Jones and Wynn, 2018). The more tourism stakeholders focus on sustainability, the more necessary the concept of the CE becomes to the tourism industry (Girard and Nocca, 2017). This perspective is in line with Barr's (2003) study of Western environmental behavior, which requires mindful behavior. Mindful consumption (Sheth et al., 2011) is an alternative framework to drive a sustainable society through the mindful mindset of all stakeholders. It involves conceptual work by which an individual can control his or her desires, behavior and consumption, which requires a mindful mindset toward the self, the community and the environment to produce mindful behavior. However, mindful consumption does not only focus on overconsumption, but can also conduct in underconsumption society. For example, Pusaksrikit et al. (2013) employed the concept of mindful consumption to understand how members of underconsumption communities develop mindful behavior. They noted that willingness, training and practice play an important role in driving mindful consumption. Therefore, to develop the CE of the Krabi tourism industry, mindful consumption should be employed to drive the CE society through the collaboration of all stakeholders. The research question of this study is to explore: How do tourism stakeholders in Thailand develop the CE to drive sustainability?

3. The research method

To become a world tourism destination, Krabi province announced the Krabi Declaration to drive low-carbon tourism in 2013 (Krabi Province, 2013). Krabi tourism stakeholders commit to supporting eco-friendly tourism activities and services by targeting quality tourists to drive a sustainable tourism society. In 2018, Krabi province was awarded the title of a "Global Low Carbon Ecological Scenic Spot" in the Sustainable Cities and Human Settlements Awards 2018 from the United Nations at the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in Bangkok (TAT News, 2018). This declaration is not only an agreement to go green but

also drives green culture among Krabi tourism stakeholders. Therefore, Krabi province has been selected as a case study to demonstrate how the CE can be co-created through the concepts of mindful consumption and S-D logic by including all stakeholders.

Longitudinal research is an inquiry method to collect data over a period of time that focuses on the particular objectives of multiple projects (Creswell, 2014). It allows scholars to integrate qualitative and quantitative methods, including mixed methods, to achieve the research goals. Most studies of the CE (e.g. Hurlbert *et al.*, 2020; Liakos *et al.*, 2019) have been conducted through cross-sectional studies with either quantitative or qualitative research. Longitudinal inquiry of the CE provides the opportunity to observe and interpret particular practices over a period of time (Holland *et al.*, 2006) . Therefore, this type of inquiry can be used to increase our understanding of how the CE activities in Krabi tourism are co-created through the collaboration of Krabi tourism stakeholders and how Krabi tourism stakeholders contribute to the long-term processes of CE development in Krabi province (Pettigrew *et al.*, 2001).

Research design: To develop the theory of CE development, this paper employs a longitudinal embedded case design (Yin, 2017) that has been used for businesses by many scholars, such as Beverland and Lockshin's (2003) study of customers' desired value change within the business-to-business market and Bass *et al.*'s (2018) study of product innovation. Four studies were conducted since the 2013 announcement of the Krabi Declaration to provide holistic, rich, and in-depth data on the progress of the CE. All studies were developed consecutively through a call for research projects by Krabi tourism stakeholders.

Study I: Based on the Krabi Declaration, this study aimed to demonstrate the guidelines of the sustainable development of the tourism industry, including both the adaptation of the service industry toward changed market structures and the support of data for making decisions about policies for tourism management plans according to potential resources and the local community in Krabi province. Eight focus group interviews were conducted with 105 informants: 6 of these focus groups were conducted with tourism businesses and local communities in different areas of Krabi, and 2 focus groups were conducted with key tourism stakeholders, including the director of Tourism Authority of Thailand, the president of the Krabi Hotel Association, the president of the Krabi Tourism Business Association, the president of the Krabi Tourism Council, the president of the Lanta Tourism Business Association and a representative of Krabi tourism business. These focus group interviews employed unstructured and open-ended questions to obtain data and opinions from the participants (Creswell, 2014). This study provides an understanding of how sustainable tourism in Krabi province has been developed through the collaboration network of tourism stakeholders.

Study II: In contrast to study 1, this study focused on the management of a particular destination, Klongtom Saline Hot Spring, by employing the sustainable guidelines from study 1 to develop sustainability in the destination. This destination was developed without supported data or development plans; therefore, it damaged the natural resources and landscape of the Klongtom Saline Hot Spring. This study aimed to develop sustainable tourism for the Klongtom Saline Hot Spring, Krabi, and to demonstrate the guidelines for managing sustainable tourism in the Klongtom Saline Hot Spring. In total, 3 focus group interviews were conducted with 84 informants with participant observation, and in-depth interviews with 5 informants were employed to triangulate the data and to develop the guidelines (Stavros and Westberg, 2009). After synthesizing the data, the results show the roles of each stakeholder in developing a sustainable tourism destination, including the guidelines for developing facilities to meet tourists' needs and sustainable guidelines.

Study III: This study aimed to develop green tourism and guidelines for developing green tourism in Krabi province. Through the positioning of green tourism within the Krabi Declaration, Krabi Go Green, Krabi tourism stakeholders aim to persuade targeted markets from the EU, especially Scandinavian tourists. Barr (2003) noted that environmental behavior cannot be accomplished only by developing facilities or infrastructures; all stakeholders need to develop attitudes, codes of conduct and environmental concerns. This is in line with the concept of mindful consumption

(Sheth *et al.*, 2011): a mindful mindset needs to be developed to create mindful behavior. This project integrated the concepts of a livable city, green tourism businesses and green tourism brands. This study integrated the data from the government and household sectors and tourism businesses from 4 focus group interviews with 132 informants, one stakeholder meeting and interviews with 12 key stakeholders. Additionally, six low-carbon businesses were visited during the data collection process to understand the CE within the Krabi tourism industry.

Study IV: To reinforce the green culture among Krabi tourism stakeholders, in 2020, there was a call for a project to drive the strong brand image of Krabi Go Green in high-value destinations. To explore the digital technologies driving the CE among Krabi tourism stakeholders, 4 focus group interviews with 42 informants, observations, and in-depth interviews with 4 key stakeholders were conducted to understand CE development. Key tourism stakeholders, such as the director of the Tourism Authority of Thailand, the president of the Krabi Hotel Association, the president of the Krabi Tourism Council, the honorable presidents of tourism associations in the Krabi tourism industry, were key informants for this study. This study provides an understanding of the roles of digital technologies in CE development within the tourism industry.

Key Krabi tourism stakeholders, including stakeholders in the particular destination; e.g. local authority officers, local community enterprise members, tourism businesses, and so on, were selected purposively as informants of the study. The length of the focus group interviews were 3 h in average, while in-depth interviews were 30 min in average.

3.1 Data analysis

To demonstrate the process of the development of the CE, this paper synthesized all data sets to contribute to a model for developing the CE within the Krabi tourism industry. Key tourism stakeholders in Krabi province since 2013 were identified in this study. Data were coded and analyzed manually. A thematic analysis approach was employed to interpret the data (Attride-Stirling, 2001). Following Bass *et al.* (2018), interview and focus group data and each study's documentation were repeatedly read before assigning codes. To reduce error and ambiguity, the codes were reread and grouped into themes. Different perspectives were employed during data analysis. The first author has experience in sustainable tourism management, while the second author is in marketing and branding field. Both authors were involved in the interpretation by discussing codes and themes. An iterative process of interpretation (Thompson, 1997) was also conducted to reconsider themes to contribute to the reliability of the data analysis (Pusaksrikit *et al.*, 2013). The findings were discussed until both authors agreed with the findings. Additionally, Eisenhardt's (1989) cross-case analysis of four studies was conducted to demonstrate the relationship of multiple cases. In order to ensure the quality of results, the findings were circulated to stakeholders for confirming the results, and stakeholders agreed with the findings.

4. Results

This longitudinal study of the CE in Krabi province contributes to the understanding of different dimensions of the development process. Macro-, micro- and meso-level development are included in the study to demonstrate how the CE is co-created through different perspectives, as shown in Table 1.

Macro level of development: In 2013, Krabi province announced the Krabi Declaration 2013. Krabi tourism stakeholders in different areas and occupations collaborated to develop the declaration. The macro level is developed at the level of Krabi province to demonstrate the policy regarding the CE. From 2012 to 2013, one critical threat to the Krabi tourism industry was the influx of Chinese and Russian tourists to visit Krabi. Stakeholders had learned from Phuket about the impacts of tourism activities. This threat motivated Krabi tourism stakeholders to focus on sustainability and green tourism, which requires a destination management plan as a policy for tourism stakeholders. However, to develop a sustainable tourism policy, policymakers need to consider the potential and

Table 1	CE development in Krabi tourism industry			
Level of development	Participants	Action	Process	Co-creating the CE in practice
Macro	Krabi province Krabi Think Tank	Policymaker	Developing Green Culture and DNAs	■ Green Policy ■ Leadership
Meso	Associations in Krabi - Tourism Council - Hotel Association - Tourism Business Association - Community-based Tourism Association - Chamber of Commerce - Trash Hero	Turning Policy into Practice		■ Driving Green Policy to Practice ■ Collaboration Network of the CE
Micro	Tourism Business Tourism Community Destination	Practice	Green Behavior	■ Practice - Awareness - Reciprocity - Willingness ■ Green Behavior - Holistic Process - 5+5Rs - Staff Participation ■ Co-Creation of Green Culture - Learning - Habiting - Branding

context of destinations to mitigate impacts from the growth of the tourism industry. Currently, the continuing project of the CE at the macro level of development is the development of Krabi green tourism and high-value destinations to drive green tourism and the CE in action. However, to drive the CE in the Krabi tourism industry, green policy and leadership are required, as discussed below.

Green policy: With the strong commitment of sustainable tourism management, both public and private tourism stakeholders congruently developed a policy to drive a green economy. At the macro level of development (see also Urbinati et al. (2020), the former Krabi governor in 2013 initially developed a green tourism policy in collaboration with tourism stakeholders to co-create the Krabi Declaration. The mission of Krabi province specifies the need for "...preserving the biodiversity, and creating the security of natural resources and environment quality..." (Krabi Province, 2012, p. 87). This goal has been adopted by other Krabi governors since 2013 through the promotion of green tourism and the CE in the tourism industry. Green policy plays an important role in driving sustainability in Krabi province as a guideline for all tourism stakeholders to develop strategy and action plans.

Leadership: The leadership of the Krabi governor plays an important role in driving the green culture and sustainability of the Krabi tourism industry, as one of the key stakeholder actions (Urbinati et al., 2020; Lewandowski, 2016). It is the crucial aspect of business model for the CE to co-create the value network and also value proposition toward the CE. An example of leadership is mentioned below:

> ...Governer Prasit [the former Krabi Governer] led us to focus on sustainability of tourism industry. He told us to look forward 10 or 20 years...He worked with us [tourism businesses in Krabi] to co-create green culture of Krabi...
>
> A (Krabi Tourism Organization, Focus Group Interview)

The former Krabi Governer's action demonstrates how leadership can drive green culture and sustainability and also create the collaboration between public and private organizations in Krabi. Leadership involves not only policy development but also the way that tourism stakeholders trust and follow the policy. Krabi tourism stakeholders formed a leadership group of key persons in

tourism as a think tank. This think tank consists of the former and current president of the tourism council, the director of the Tourism Authority of Thailand, Krabi office, and successful tourism business owners who have long been dedicated to working to develop the Krabi tourism industry. This think tank works alongside the Krabi governor to drive all tourism stakeholders in Krabi province to follow the green policy. Furthermore, this study shows that leadership plays an important role in driving mindful consumption by leading all stakeholders to adopt the CE, as found in the sufficiency economy (Pusaksrikit *et al.*, 2013).

Meso level of development: As stated in the Krabi Declaration (Krabi Province, 2013), the Krabi tourism industry has positioned Krabi tourism as a green tourism destination by targeting Scandinavian and other quality tourists. This requires a balance between policymakers and practitioners to co-create a green society. This study focuses on the meso level of development by driving green policy to practice and co-create the green DNA (the behaviour, mindfulness and commitment of Krabi Tourism stakeholders toward green activities) of Krabi tourism through collaboration among tourism businesses.

Driving green policy to practice: Driving the CE of Krabi province requires policy and strategy to drive green tourism cities from the government sector, develop a green tourism community model for Krabi, manage green tourism businesses and persuade tourists to travel with responsibility toward natural resources, including the co-creation of green culture in Krabi. Because tourists are the starting point of infrastructure and facility development, which affects energy and natural resource consumption, Krabi province needs to co-create green culture to persuade all sectors to focus on eco-friendly activities and ways of life and reduce energy consumption. Monthly meetings between Krabi governors, including Krabi government officers and tourism stakeholders, play an important role in driving green policy to practice because Krabi governors track progress and performance in tourism management. Problems and limitations related to the policy are resolved by government officers. The following quote is an example of collaboration between public and private organizations in order to drive the CE.

> . . .both Krabi province and businesses need to work together. We are glad to obey Krabi Governer Policy, but we need to work together. They [Government officers] have a budget, and we are in the field. . .using us to drive the policy is win-win situation, and it is our culture to run green tourism in Krabi. . .

B (Krabi Tourism Stakeholder–hotel owner, Focus Group Interview)

As mentioned by B, a hotel owner, Krabi tourism stakeholders embed with the green culture of Krabi province because they have participated in developing the Krabi Declaration since 2013. Therefore, Krabi tourism stakeholders need to be included as one function in the Annual Krabi Strategic Plan. It was emphasized as the strategic direction of destination that Fan and Fang (2020) mentioned as a key success factor for driving the CE in China.

Collaboration Network of the CE: To commit to the CE, Krabi province aims to drive green culture through the collaboration of Krabi province and tourism stakeholders, i.e. the Tourism Authority of Thailand, Krabi Office, the Krabi Tourism Council, the Krabi Hotel Association and the Krabi Chamber of Commerce. The collaboration plays an important role as key partner in the business model for the CE (Lewandowski, 2016). These stakeholders have developed CE projects, such as eco-friendly hotels and waste to wealth. The Krabi Declaration called for reconstruction to update the current tourism situation. For example, Trash Hero is a group of tourists and activists in particular destinations, such as Koh Lanta, Ao Nang and Koh Phi, who remove rubbish from the beach and sea. Trash Hero has promoted innovative technology to enhance value from waste by recycling and producing innovative products, such as rubber slipper refillable water bottles. This group began with founding members at Koh Lipe before growing to a million members at a different destination. Green activities from different networks play an important role in co-creating green DNA among tourism stakeholders in Krabi. Additionally, since 2014, tourism businesses in Krabi have committed to the Zero Carbon Resort in cooperation with the Center for Appropriate Technology from Austria (GrAT) as one of the success cases for other businesses in co-creating

green culture. The following quote is an example of the collaboration network in Krabi tourism industry.

> . . .8 hotels in Krabi have joined the Zero Carbon Resort, and give us the best practices of running green tourism. We got supports from GrAT in planning and operating. All staffs and tourists were also key players in the project. . .

<div align="right">C (Krabi Tourism Organization, Focus Group Interview)</div>

As mentioned by C, Krabi Tourism Organization in Koh Lanta, one of the popular destinations in Krabi, the support and contribution from GrAT were key success factors to drive green culture of Krabi, because all staffs and also tourists participated with the low carbon resort from the beginning. The mindful mindset has been cultivated through their on-the-job activities. They realized the benefit of low carbon activities; i.e. sustainability and profitability.

Micro level of development: Individual tourism stakeholders in Krabi province, such as tourism businesses, the local community and destinations, have participated in developing the Krabi Declaration since 2013 and conducting green tourism practices to target quality tourists who require eco-friendly tourism activities. Koh Lanta is a potential destination for community-based tourism (CBT) with local ways of life and green activities. At this level, stakeholders develop an eco-friendly strategy and adapt the CE for matching the target market: Scandinavian tourists who need peaceful and green environments and would like to learn the local way of life. An additional case study was conducted at the Klongtom Saline Hot Spring, a sensitive and fragile area that could collapse from tourism activity. Evidence indicates that hot springs in the entire area of the destination (214,400 sq m) come from the same water source, and there are limited resources. The CE in this destination is developed by changing tourists' behavior through landscape design and tourist circulation management, including tourism activities and bathing culture. The findings from this study were employed by the Royal Thai Government to develop Klongtom Spa town. To extend our understanding of the micro-level of development, case studies of low-carbon hotels were also explored through interviews and observations that demonstrated how and why hotels in Krabi participated in green tourism. At the micro-level, the CE has been driven through practice, green behavior and the co-creation of green culture.

Practice: At the micro level of development, policies from Krabi province and Think Tank are transformed to operate by tourism stakeholders as found in Pusaksrikit *et al.'s* (2013) mindful consumption. Awareness, reciprocity and willingness are key components driving the CE practice in Krabi.

Awareness: Due to strong social capital, particularly trusts in the leader, tourism stakeholders in Krabi perceive the benefits of the CE and low-carbon tourism. Many successful case studies have been shared by different scholars to co-create awareness among stakeholders regarding the impacts of the tourism industry and the financial and brand image benefits of going green. Social networks such as Facebook and YouTube are the media for sharing the CE activities of the Krabi tourism industry. The following quote is an example of awareness in community-based tourism to drive the CE and green tourism.

> . . .when we began our group, there were only 10 people to join us. We have gradually communicated with our village members about how we can survive from the flux of tourists in Koh Lanta. We start from ourselves to change the way of services from long tail boat to gondola, and plant organic vegetables. At least, we can reduce gasoline consumption. . .Now, more than a hundred people participate with us. . .

<div align="right">D (Tung Yee Peng tourism community member, Focus Group Interview)</div>

As mentioned by a local community member who runs the community-based tourism, they realize the negative tourism impacts–social and environment; therefore, they collaborate within the community to focus on sustainability. To apply the CE to drive sustainability, Krabi tourism stakeholders need to create awareness and attitudes toward sustainability, as discussed by Sheth *et al.* (2011), to change attitudes and values toward the environment and sustainability among Thai tourism stakeholders.

Reciprocity: One key component that drives the CE in Krabi is the reciprocity among tourism stakeholders through shared information, knowledge and experience with CE in practice. In the culture of the Krabi tourism industry, tourism businesses and communities tend to share best practices and learn from successful cases. For example, the Tung Yee Peng tourism community is a successful CBT of Krabi in addition to other successful communities, such as Baan Nateen and Baan Tumsua, and so on, that drive the sustainability of CBT in Krabi. Additionally, the Pakasai Resort, Ao Nang, Krabi, one of the green hotels in Krabi, shares its strategy and tactics to drive low carbon hotels and the CE for other tourism businesses.

Willingness: As noted by Sheth *et al.* (2011), developing mindful behavior requires a mindful mindset to change attitudes toward environmental concerns. Learning from best practices, Krabi tourism stakeholders aim to participate in the CE and low-carbon programs, as demonstrated by conferences and seminars on environmental practices. For example, Ruanmai Restaurant has developed CE practices through green buildings, solar energy and water treatment, although the owner needs to invest a large amount of money.

> . . .I see the benefits from doing sustainability, then I begin with my business. I believe that from one business will expand to others. . ..

<div align="center">E (Restaurant Owner, In-Depth Interview)</div>

As mentioned by a restaurant owner, the willingness of tourism businesses play an important role to drive the CE. Additional example is found in the Tung Yee Peng tourism community that also produces biogas from food waste for consumption in households and obtains fertilizers for planting vegetables and flowers.

Green behavior: With a strong commitment to the CE project and sustainability, 19 tourism businesses in Krabi province have been awarded environmental recognition by both domestic and international standards, including 1 A Sean Green Hotel Standard, 14 Green Hotel Awards, and 4 Green Leaf Certificates. It is in line with Ton Yuan District (Pusaksrikit *et al.*, 2013) that all members need to sincerely participate in the program. Key success factors for green behavior consist of the holistic process, 5R + 5R, and staff participation, as discussed below.

Holistic process: Applying the CE in tourism businesses requires a holistic process that considers the entire process of serving tourists (e.g. energy consumption, temperature, materials, roof, building color, water system, sewage management). Pakasai Resort renovated in 2015 by planning a green hotel to reduce energy, electricity, and water and to utilize resources as much as possible. For example, treated water can be used for watering plants and lawns. The following quote is an example of driving green behavior through holistic process.

> . . .before operation, as a manager, you need to unfold all business process and find points which you can redesign, replace, or reuse, in order to reduce risks from the unexpected costs or problems. . .

<div align="center">F (Krabi Tourism Stakeholder – hotel owner, Focus Group Interview)</div>

At this level, tourism businesses and tourism communities need to focus on a holistic process to close resource consumption loops, as mentioned by Goni *et al.* (2020); tourism businesses should emphasize the CE from the design process to the recycling process. Goni *et al.* (2020) focused on values in terms of the belief system of individuals or organizations, while this study found that value co-creation (see also Vargo and Lusch, 2016; Koskela-Huotari and Vargo, 2016) can be applied to drive the CE through the collaboration of tourism stakeholders and their staff.

5+5R's: This study also demonstrates the concept of 5 + 5 R's to drive the green tourism community model and Krabi green tourism businesses. The first 5R's are reform, recheck, retreat, reserve and recreation as external management for serving tourists, while the latter 5R's from a tourism business perspective are remind, reduce, replace, reuse and redesign as

internal management for developing green facilities. The following quote is an example of 5 + 5 R's.

> . . .joined the zero carbon resort make me realize how to reduce energy and waste. I have to focus both external (serving tourists) and also internal (managing facilities). We do not only provide eco-friendly services, but also concern tourist experience and satisfaction. All of us need to collaborate in green tourism. . .

> G (Krabi Tourism Stakeholder – hotel manager, Focus Group Interview)

By driving green behavior, tourism businesses play an important role to provide green facilities. This is in line with Vargo and Lusch's (2016) findings of depicting the role of business as facilitator or service provider to support tourists during their leisure period.

Staff participation: The CE program in tourism businesses requires participation from all staff in the business. Tourism businesses in Krabi, such as Ao Nang Princeville Villa Resort and Spa, Pakasai Resort and Krabi Resort, let staff participate in the program to create pride, willingness and involvement. This is a benefit to a long-lasting program because all necessary data are recorded to monitor its effectiveness, and staff can understand the contribution of the CE to drive sustainability and the profitability of businesses.

Co-creation of green culture: One aspect that drives the CE in Krabi tourism industry is the co-creation of green culture through the process of learning, habiting and branding. These processes are demonstrated as follows.

Learning: In practice, through reciprocity, tourism businesses can learn from successful case studies and can develop an effective CE program. The learning process benefits tourism businesses by reducing the probability of failure. Tourism businesses in Krabi have learned success factors from other tourism businesses and adapted these factors to develop their own CE projects. G, a hotel manager mentioned that *". . .our hotel learned from the best practice. In Krabi, we share knowledge of green hotel and the CE activities. . ."*

Habiting: Through the process of green behavior, habiting emerges through daily jobs. All participants focus on environmental impacts until this becomes routine work. The following quote is an example of habiting.

> . . .I lead my staffs in our CE activities. We want to implant this mindset to our staffs and would like to see they work from their heart not company regulation. . .

> H (Krabi Tourism Stakeholder – hotel owner, Focus Group Interview)

From this example, a hotel owner does not only run the program as a policy, but also lead staffs to join with the good mindset. For example, one hotel in Krabi has conducted the program of changing from waste to wealth, in which all staff members play an important role in managing waste from guest rooms for the whole business. Revenue from selling waste is returned to all staff in different ways, such as low-interest loans and birthday gifts. Therefore, staffs can engage with and embody eco-friendly activities and the CE.

Branding tourism businesses or communities that recognize CE and green hotels can employ a strong brand image to persuade targeted tourists, especially Scandinavian and European tourists. For example, Aonang Princeville Villa and Resort has extended awards for green hotels from domestic and international agencies to share with targeted tourists through Facebook to persuade eco-friendly tourists to visit Krabi and hotels. The following quote is an example from informant to demonstrate about branding for co-creation of green culture.

> . . .our rewards or endorsements from different organizations are key success factor to attract quality tourists who focus on eco-friendly or green hotel. Our customers search online about those information. . .

> I (Krabi Tourism Stakeholder – hotel owner, Focus Group Interview)

This is one example of Krabi hotel businesses to employ green hotel as branding process. It does not only persuade tourists, but also urge other hotel businesses to run eco-friendly hotel.

5. Conclusion and discussion

This study sheds light on how the CE is employed to drive the sustainability of the tourism industry in Krabi, Thailand, through the concept of mindful consumption and S-D logic. This study responds to Vargas-Sánchez's (2018) call for CE research in the tourism industry, in which tourism businesses play an important role in adapting the CE in their operations. To drive sustainability, this study supports Sheth *et al.*'s (2011) mindful mindset that tourism stakeholders should create the CE mindset with all participants as a culture. The data in this study were analyzed through multi-perspective micro, macro and meso levels of development to demonstrate how the CE policy can be turned into practice. As noted by Koskela-Huotari and Vargo (2016), driving the CE requires an institutional process whereby all stakeholders need to participate in eco-friendly behavior. Think Tank in the Krabi tourism industry influenced tourism stakeholders to collaborate in the co-creation of green culture and the adaptation of the CE. The macro level of development is in line with the sustainable consumption and production system (Staniškis, 2012), which relates to the policy of the city for managing the economic system and sustainability issues. Additionally, Think Tank, a group of experienced tourism stakeholders in Krabi province, plays a crucial part in green policy by urging tourism stakeholders to comply with Krabi Go Green.

The findings allow us to integrate macro and micro levels of development by understanding the meso level. This study found that a value network among tourism stakeholders–businesses, communities, destinations and tourism associations–in Krabi (see also Lusch *et al.*, 2008) was formed through collaboration. All stakeholders need to balance policy and practice in sustainability and co-create a strong culture of sustainability and the CE. This involves a kind of social capital found in the peer-to-peer community, where a member of the community co-creates reciprocity and norms of voluntarism as collective social capital (Mathwick *et al.*, 2008). Successful tourism businesses and Think Tank have formed individual social capital–social trust (Mathwick *et al.*, 2008; Putnam, 1995)–through their actions toward the CE.

This study also found that digital technology plays an important role in driving CE, including the social network Facebook, to co-create awareness of the benefits of conducting eco-friendly behavior. Tourism stakeholders share knowledge, techniques, methods and experiences through Facebook. However, there are many digital technologies (Sukhdev *et al.*, 2017) that tourism stakeholders in Krabi can employ to drive the CE. Additionally, production technology should transform waste to innovate products and contribute monetary benefits to stakeholders. Therefore, tourism stakeholders can employ social networks as media to drive the CE in the tourism industry by co-creating experience, successful case studies and stories about the benefits of the project. The more they learn about the contribution of the CE, the more culture they can co-create, as discussed in this study with regard to "habiting." This is in line with Western attempts to live in harmony with sustainability and the environment (Barr, 2003).

This study provides implications for driving the CE in the tourism industry by emphasizing multiple levels of development (macro, meso and micro) to consider different perspectives in developing green society through the CE. It requires a holistic perspective from policy to practice, and collaboration among tourism stakeholders. However, the success of driving green culture requires goal congruence among stakeholders in both the private and public sectors. Like other studies, this study is limited by the unique and different characteristics of tourism cities. Therefore, further studies should be conducted in other tourism cities by considering the key success factors that drive green tourism or exploring the roles of stakeholders to drive green culture.

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