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**Systems Thinking to Facilitate “Double Loop” Learning in Tourism Industry: A COVID-19 Response Strategy.**

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## **Systems Thinking to Facilitate “Double Loop” Learning in Tourism Industry: A COVID-19 Response Strategy.**

### **Abstract:**

It is evident there is an urgent need for tourism companies to build highly responsive learning systems to adapt to COVID-19 threats and beyond. As such, only learning tourism companies that promote inquiry, challenging current actions, and departing away from adopted assumptions will be able to survive. However, there is paucity of studies exploring effective learning methods in tourism companies to adapt to unpredictable crisis consequences. This study argues that systems thinking approach for service delivery design can operationalize double loop learning in tourism companies of finding alternative service offerings. An exploratory case study was conducted in a leading cruise group company in Vietnam. Results show that systems thinking activated double-loop learning by promoting three different drivers: systematic judges and acts, problem-based task force teams, and service innovation. This paper theorizes systems thinking with double-loop learning as an organizational means to help tourism companies survive during COVID-19 global tragedy, and to transform their service offerings. It also extends current understanding of tourism companies' organisational learning by incorporating double loop learning with structural design issues based on the lens of organic structures and introduces managers of tourism companies to the significance of organic structures for competitive advantage creation during crisis.

Keywords: COVID-19; systems thinking; double loop learning; response strategy; tourism industry.

### **Introduction**

The outbreak of COVID-19 pandemic in early 2020 has had a catastrophic impact on the tourism industry worldwide (Conde Nast Traveller, 2020; Gössling et al., 2020). The pandemic scale and its projected impact on global economy also means that it poses major threats towards attaining the UN's 17 Sustainable Development Goals (SDGs) (Filho et al., 2020; Nhamo et al., 2020). According to G20 (2019), tourism sector plays a major role in the attainment of four SDGs, namely, decent work and economic growth (SDG8), responsible consumption and production (SDG12), life below water-blue/ocean economy (SDG14), and partnerships (SDG17). As it remains fundamentally unclear when things will go back to normal, tourism companies will not survive an extended period of lack of liquidity (Hoque et al., 2020; Ranasinghe et al., 2020). Thus, aims towards those four SDGs face considerable setbacks due to COVID-19. It is, then, evident that COVID-19 will be transformative for the tourism industry if these SDGs are to be achieved (Nhamo et al., 2020). According to Quang et al. (2020), the COVID-19 crisis should be a catalyst for restructuring the tourism industry markets and offerings through continuous learning processes. Therefore, there is an urgent need for tourism companies to build highly responsive learning systems to fundamentally change their existing operations to adapt to threats and stressors of COVID-19 and beyond. Blackman and Ritchie (2008) explained that tourism companies faced with external crises, such as COVID-19, should adopt a learning method that allows for promoting inquiry, challenging current actions, and departing away from adopted assumptions. According to

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the authors, this type of learning, also known as double loop learning, is pivotal to achieving new insights that can stimulate innovative adaptation to crisis demands. Argyris and Schon (1996) defined "double loop" learning as that type of inquiry where existing business processes and operations are changed based on realities and identifying opportunities. Therefore, building double loop learning requires system-wide thinking to facilitate profound shifts in business offerings (Kraleva, 2011; Jaaron and Backhouse, 2017). However, if tourism companies are to successfully adopt double loop learning as their strategy to survive during COVID-19 and beyond, they need to create new operational models that will operationalize adaptation of their current offerings.

Although various earlier work discussed the adoption of learning approaches in tourism management literature (e.g., Bayraktaroglu and Kutanis, 2003; Bernsen et al., 2009; Božič and Cvelbar, 2016; Liu, 2018; Ali et al., 2020), there is a paucity of studies that have linked double loop learning with tourism industry performance and evolution capabilities. According to Ghaderi et al. (2014), the lack of empirical studies investigating double loop learning at different stages of tourism crisis management is due to the absence of integrative models of learning that can encourage system-wide knowledge creation. Much of the reasoning for the need for double loop learning during COVID-19 crisis and beyond emanates from the fact that current tourism management systems do not have effective tools to adapt to unpredictable crisis consequences (Khoshkhoo and Nadalipour, 2016). Second, responding to the vulnerability of the tourism industry (Kwok and Koh, 2020), double loop learning through a system approach provides tourism companies with opportunities to unfold new business opportunities (Jaaron and Backhouse, 2017). This was discerned by Stone and Nyaupane (2018) who found that systems thinking activates adaptive learning mechanisms in tourism businesses that can deliver more long-term sustainable solutions than the traditional "cause and effects" initiatives. A central tenet in systems thinking approach is its ability to provide an organizational structure that views the organization as a whole (Jackson et al., 2008, Jaaron and Backhouse, 2014). This guarantees interconnectedness of employees through open channels of interactions and social exchange, both within their teams and with other teams in other organizational parts (Seddon, 2008). Moreover, systems thinking approach is centered on the core element of dynamics of the organization that requires a great deal of coordination and power delegation to employees at all levels. According to Heslinga et al. (2017), it is systems thinking application in tourism companies that facilitates inter-functional coordination, decentralizes decision making, and, in turn, fuels operational adaptations necessary for quick response to environment volatility. Such realization warrants the need for this study.

Given the dearth of research on double loop learning and its connection with systems thinking application in tourism literature, this study aims to examine the impact of applying systems thinking approach for service operations design on operationalizing double loop learning in tourism companies amidst the COVID-19 crisis. This research inquiry uses a qualitative case study approach. The case study was conducted in a leading cruise group company in Vietnam. The company organizes private tours throughout the UNESCO's recognized World Heritage Ha Long Bay – Lan Ha Bay in Quang Ninh Province of Vietnam. The Vietnamese case was selected as the economic impact of the pandemic has been tremendous for tourism companies. In fact, Vietnamese tourism industry was the most affected industry in the country after the collapse of international travellers (Vietnam Tourism, 2020; Quang et al., 2020). The study contributes by theorizing systems thinking application with double loop learning in tourism management literature for the first time, thus, offering new insights on how transformation of tourism companies can be achieved

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for their survival and better sustainable performance. Therefore, this study provides a new dimension on how tourism companies should address shortfalls in their contribution to sustainable economic growth within the COVID-19 pandemic (i.e., the scope of SDG8). Also, the study provides a critical view on operational and employee's behavioural changes associated with double loop learning realization. In addition, this research explores the offerings of Seddon's (2003, 2008) systems thinking approach for operations design in the tourism industry context for the first time. Furthermore, the paper highlights the characteristics of an organic structure brought about by the systems thinking approach necessary for learning acquisition and sharing in tourism companies. The paper begins by providing the theoretical background, outlining the concepts of systems thinking including its associated organic structure, and the concept of "double loop" learning. Next, the case study methodology followed is explained with details about the case study company. Results are then reported based on data analysis from in-depth interviews and internal business documents. The paper is concluded by presenting a discussion of results and implications for theory and practice along with research limitations and suggestions for future research.

### **The Systems thinking and tourism companies**

Tourism companies are widely described as open, complex, and dynamic systems that are composed of interconnected parts dependent on each other to execute tourism operations (Van Mai and Bosch, 2010; Rodriguez-Giron and Vanneste, 2019). This would imply that tourism companies should be managed as a holistic entity to allow the necessary interaction between parts (Roxas et al, 2020). As posited by Gregory (2007), reductionist approach of separately managed standalone parts can inhibit dynamic ability of the organization and can harm organizational responsiveness to environment demands. Within this view, Comfort et al. (2001) asserted that interconnectedness of organizational parts activates team members' interactions and social exchange. This was supported by the work of Sollund (2006) who suggested that equipping workplace with cross-department coordination, power delegation, and free channel of communication provides tourism and hospitality companies with recovery ability during challenging events. This conceptualization gave rise to the concept of systems thinking in tourism literature (Ropret et al., 2014; Roxas et al., 2020).

Systems thinking is defined as a holistic approach to evaluate and analyze the interrelation of a system's integral parts. It allows an organization to connect its components and improve the service it delivers to clients (Jackson et al., 2008). Pham and Jaaron (2018) asserted that it is of importance to the leader of the organization to comprehend his or her organization as a system. However, since the term was coined, a reasonable number of researchers have attested its authentic elucidation in the tourism industry at a macro-level. For example, Mai and Smith (2015) investigated the links between systems thinking approach and tourism development in Vietnam to identify underlying system structures that can influence sustainability. Similarly, Stone and Nyaupane (2018), through a systems-thinking lens, studied whether wildlife tourism introduction in Botswana can lead to local community development outcomes. Peric and Djurkin (2014) developed an innovative community-based tourism business-model using systems thinking principles that aimed at serving local community needs. However, there is paucity of previous research in tourism literature that investigates the offerings of systems thinking at the organisational level.

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Seddon's (2003 & 2008) interpretation of systems thinking and its focus on the world of service industry generates an initiative and definition that is the most suitable view and approach for the execution of this research paper. Jaaron and Backhouse (2017) asserted that Seddon's (2003 & 2008) systems thinking approach has the best potential of ameliorating an organization through hard times. This approach offers the service industry the liberty to transfer from 'command and control' design to 'systems' design (Jackson et al., 2008; Seddon, 2008) as it gives better structure of analysis essential for an in-depth understanding of the organization. Table 1 conveys an intrinsic break-down of organic and mechanistic structures for a point of comparison analysis.

**Table 1** Principles of systems-thinking. *Source:* Seddon (2003).

<b>Comparative dimension</b>	<b>Command and control thinking (mechanistic)</b>	<b>Systems-thinking (organic)</b>
<i>Perspective</i>	Top-down, hierarchy	Outside-in, system
<i>Design of work</i>	Functional specialization	Demand, value and flow
<i>Decision making</i>	Separated from work	Integrated with work
<i>Measurement</i>	Output, targets, standards: related to budget	Capability, variation: related to purpose
<i>Attitude to customers</i>	Contractual	What matters?
<i>Attitude to suppliers</i>	Contractual	Co-operative
<i>Role of management</i>	Manage people and budgets	Act on the system
<i>Ethos</i>	Control	learning
<i>Change</i>	Reactive, projects	Adaptive, integral
<i>Motivation</i>	Extrinsic	Intrinsic

A service-delivery system grounded from the principles of systems-thinking is expressed into actions through the application of Seddon's (2003) three stages: check – plan – do. The stage "Check" provides an understanding of the system as it is and identifies what the purpose of the system is from the customers' point of view. This is usually done through a process of customers demand analysis. A flow chart is then prepared for each service operation to identify sources of waste that potentially blocking delivery of what the customers want. This stage usually shows managers and staff the failings of their system and provides an evidence for the need to alter their current operations. However, the stage "Plan" explores possible solutions to mitigate waste production to scout a better flow design of operation against customer demand. From "Check" stage, an improvement of the flow of work through service operation to mitigate wasteful activities from the customer's perspective is gained. Correspondingly, measures of performance for the newly designed operations to calculate the improvement once administered will occur; this process can commence value demands and reduce or prevent failure demand. The stage "Do" calls for the execution of the solutions provided by the experimentation done in the "Plan" stage, whereby the assessment of the newly designed service operations and improvements is monitored. A cautious observation of both employees' reaction and customer feedback to the implementation are reviewed continuously. The repetition of the process of redesigning and retesting the new service operation to ensure the maximum value from the expected service might be administered, as necessary.

Finally, after the “systems picture” and “logic picture” of the service organization is established in the “Check” step, the amelioration points of “Plan” and “Do” steps are initiated. Under the supervision of organizational sponsors and consultants, a reevaluation of the systems’ purpose, and the principles of the reconstruction with the aim of achieving its new purpose, from customer’s perspective, occur in “Plan” stage. “Do” stage is a straightforward action on the system, releases capacity, integrates and engrains new processes. The notion that “Check – Plan – Do” is a never-ending cycle to foster sustainable improvement must be considered.

### **Systems thinking and Organic Structure**

Jackson et al. (2008) and Jaaron and Backhouse (2014) asserted that systems thinking has the propensity of providing an organizational structure that views and analyzes the organization as a whole. The provision of this viewpoint generates a free flow of interactions and social exchange of employees as it caters an open channel of interconnection from within their teams and with other teams that comprises the organization (Seddon, 2008). This underlying idea of systems thinking was confirmed to spawn a development of an organically structured tourism company (Kraleva, 2011). Defined as a non-custom sort of working pattern, organic structure initiates a high degree of individual authority, as well as power, at the lower levels of the tourism company (Ramezan, 2011). Therefore, organic structure insinuates a great deal of employee decision making authority, fundamentally practiced in systems thinking organizations, to allow flexibility and initiate quick response to unpredictable external environment circumstances (Pham and Jaaron, 2018). This implies that team members can practice informality in approaching a colleague as personal relationships spawn a vital aspect for the learning organization life (Bhat et al., 2012). In fact, the presence of non-barrier working environment results in an easier communication between departments. This entails the smooth flow of information needed to solve a problem.

These virtues of the organic structures were found quite useful for enhancing intellectual capital of organizations, which is defined as knowledge capabilities that can be used by organizations to create competitive advantages (Ramezan, 2011). Zaragoza-Sáez et al. (2020), in their study of strategic management impact on hotel performance, reported that intellectual capital has three main components. First, human capital which reflects the ability of employees to generate tacit and/or explicit knowledge through learning. Second, structural capital which contains organisational elements that fuel coordination and integration culture within employees, teams, and organisational units. Third, relational capital which reflects the values of maintaining open relationships with the external environment. While tacit is the knowledge used to increase expertise and experience of employees which is harder to codify, explicit is the knowledge that can be codified and transferred between employees and teams (Nonaka and Takeuchi, 1995). However, Dias et al. (2020) emphasized that interpersonal interactions between tourism employees and external stakeholders provide a superior mechanism for achieving both tacit and explicit knowledge. Consequently, this confirms that such interactions enabled by organic structure is cornerstone for enabling a knowledge culture within an organisation (Ramezan, 2011),

### **Systems thinking: the advent of double loop learning**

An escalating economic crisis, disruption, and severe international travel reductions because of the COVID-19 pandemic generates the prevalence of the idea of learning organization in tourism companies (Su et al., 2021; Kaushal and Srivastava, 2021). Shipton et al., (2013) asserted that chaotic stressors and uncertain environments are inevitable: natural disasters, customer demand randomness, financial crisis, volatile customer tastes, and other unanticipated factors. Thus, to nourish viability and growth, tourism companies must develop a tremendously efficacious learning system to assimilate from stressors and uncertainty they encounter (Kaushal and Srivastava, 2021). This concept is relevant to Argyris' (1977) idea of the learning organization. He viewed this belief to be the "process of detecting and correcting error". It was later flourished by the work of Senge (1990) as he asserted learning organizations are "organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together". Senge (1990) contended that an essential component for building a learning organization is systems thinking of viewing the organization as a whole. In addition, the customers demand importance, which is a central tent in systems thinking, was present in Senge's (1990) definition. As such, customer demand aspect plays a major role in understanding external world events and found to be a significant element for aiming to be a learning organization.

Khoshkhoo and Nadalipour (2016) confirmed that customer needs and wants-orientation in tourism and travel companies provides an emphasis on customers' problems in the organization, which makes learning indispensable for worthwhile development. Consequently, further researchers examined Senge's (1990) conceptualization of learning organization in tourism context. For instance, Rao et al. (2018) emphasised that knowledge sharing between employees and customers in tourism companies can build organisational learning capabilities and service innovation. Similarly, Kraveva (2011) found that at times of uncertainty and constant change, tourism companies can only compete and survive if learning organisation concepts can be activated through changes to organisational design, culture, and leadership. Liu (2018), through his study of learning mechanisms in Taiwanese tourism companies, suggested that the creation of social capital where employees enjoy strong ties with each other and with the external business environment is a critical mechanism for enhancing absorptive capability and of turning new information into new opportunities. It can, thus, be discerned that some form of organic structure is needed for tourism organisations to learn and grow amidst instability and uncertainty (Sollund, 2006).

In unpredictable business environments, success comes to those who understand the realities quickly (Bagodi and Mahanty, 2013). Argyris and Schon (1996) generated the theory of double loop learning as a course of action to develop stronger knowledge. They addressed that single-loop learning encompasses the identification and rectification of an existing error. According to them, single-loop learning offers a straightforward problem analysis where the existing policies of decision-makers are not questioned. In contrast, double loop learning offers problem analysis and rectification of errors that are associated with a change in the rudimentary beliefs, boundaries, time horizon, goals, and values (Serman, 1994). Argyris and Schon (1996) asserted that efficient decision-makers must analyse and question the pre-existing variables and be primed for inquiry in a double loop learning environment. They advocate the usage of double loop learning to promote

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inquiry, to challenge current assumptions and actions, and to lead to the implementation of new theories. For this reason, this higher-level learning offers an opportunity for organizations to go beyond mere transactional problems to dramatic changes that can develop new ways of working (Jaaron and Backhouse, 2017).

In tourism context, Blackman and Ritchie (2008) also explained that double loop learning, through reflection and dialogue with stakeholders and information analysis, challenge existing mental models in tourism companies and develop better crisis management capabilities. Therefore, active involvement of employees in tourism companies is required to apply generated knowledge that can shape the new working systems during and after a crisis, such as COVID-19 (Kaushal and Srivastava, 2021). It is as posited by Pham et al. (2020), such practices of using adaptive behavior and feedback exchange may help hotel employees fit with their workplace and minimize mistakes at work. This will inevitably encourage tourism employees to adopt a holistic view of the company as they evaluate the new working systems and effects on various parts of the business and external environment (Mustelier-Puig et al., 2018; Roxas et al., 2020). According to Rodriguez-Giron and Vanneste (2019), this evaluation of the new working systems is only possible when channels of communication within tourism companies and with external environment allow involved people to act together on the systems. Thus, adoption of systems thinking principle in such environments becomes a necessity (Van Mai and Bosch, 2010; Mai and Smith, 2015). Furthermore, double loop learning provides tourism companies with a way to be more flexible to change using innovations that involve the modification of standard operating procedures based on new knowledge (Ghaderi et al., 2014). The result is the creation of an innovative working place that views stressors as opportunities to further improve (Jaaron and Backhouse, 2017).

The process of adapting double loop learning exhibits a relationship with the norms of a learning organization. This promotes a culture where the organization members are motivated to actively use adaptive behavior and operational processes to improve the system based on continuous interaction, feedback, and knowledge-sharing between employees (Ghaderi et al., 2014), thus, representing the features of organic structures and systems thinking. Organic structures, enabled through applying systems thinking principles, stimulate dragging various resources and expertise from all parts of an organization to deal with unpredictable scenarios (Jaaron and Backhouse, 2017). The value of systems thinking is in the process of organizations' growth, as seen through the practice of viewing the importance of linking organizational departments to nurture adaptability (Seddon, 2008). The connection of parts of a whole is seen as an integral portion of the success of an organization that leads to innovation (Ali et al., 2020). Therefore, systems thinking approach strategically strengthens the foundation of organizational adaptability that is necessary for creating learning opportunities leading to innovation (Jaaron and Backhouse, 2017).

## **Research Methodology**



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To explore the impact of applying systems thinking approach to service operations design to combat the devastating impact of the COVID-19 pandemic on tourism industry in Vietnam, a case study methodology was conducted to collect data via interviews, reports, and archival documents from a leading Vietnamese cruise group company. The reason for the choice of the case study methodology is based on the premise that qualitative research methods are more appropriate than quantitative ones in exploring tourism phenomenon intricacies (Jennings, 2010; Banki et al., 2016). A case study is particularly suitable for dealing with 'what', 'how' and 'why' questions that are focused on contemporary events in a natural sitting (Kyburz-Graber, 2004). Moreover, an exploratory case study is useful for studying a distinct phenomenon in real-life context using multiple sources of evidence (Yin, 2009). It is regarded by Benbasat et al. (1987) as an adequate research method for exploring a topic or an area where no previous research has been conducted, or where no previous theoretical propositions have been detected. Given the dearth of research on double loop learning and its connection with systems thinking application in tourism literature poses the case study methodology in this research as a novel method. Furthermore, case studies can help explain a complex issue in detail which quantitative data cannot do (Yin, 2009). In this study, the complex phenomenon is the application of systems thinking to tourism operations design and its impact on double loop learning capabilities. Also, case study research recognizes the inseparable nature between boundaries of phenomena and the context within which it occurs (Yin, 2003). Therefore, the intention of this research was to provide a preliminary attempt to explore the relationships between the implementation of the principles of systems thinking in a tourism service organization, and the building of its organic structure that can learn from shocks and disruptions, which further facilitates the operationalization of double loop learning capability in a tourism company.

#### *Case study selection and characterization*

This research inquiry took place from March to October 2020, when the COVID-19 pandemic had negatively and seriously affected every aspect of the tourism industries, globally and in Vietnam. The most severe effect has been on luxury cruise business, which serves 90 per cent of its customers from Europe and America, where the world's biggest and most complicated COVID-19 outbreak have occurred (Gössling et al., 2020). The chosen case study company was a leading cruise group organizing private tours throughout the UNESCO's recognized World Heritage Ha Long Bay – Lan Ha Bay. Its selection was in line with the work of Yin (2009), who suggested that when selecting a case, it is more appropriate to be of the extreme situation where the phenomenon of interest is 'transparently observable'. In this research, the case was selected since it adopted the principles of systems thinking as their strategy to quickly respond to the stressors of Covid-19 pandemic crisis. The company details, as well as those of the participants, are kept anonymous throughout this paper.

The Group has become one of the largest yacht groups in Ha Long - Cat Ba with 8 yachts offering 129 guest rooms. Every year, the number of tourists using the group's services reaches

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over 100,000 visitors. Having 6 brands in total, ranging from 3 to 5 star- luxury cruises, the company's business areas include ship construction, luxury cruise services, and tailor-made cruise services in Ha Long Bay and Lan Ha Bay in Vietnam. This 9-year-old private company, with 497 service employees, had no way but to quickly respond to the stressors of the COVID-19 pandemic to maintain its survival.

### ***Data collection and analysis***

In this qualitative exploratory study, the main sources of data were in-depth interviews with key informants and internal business documents. A total of 27 interviews were conducted which were all recorded and transcribed using Zoom meeting application. Interviewees were a mixture of eight front-line staff, five back-office staff, five team leaders, four middle managers, and five senior managers. The number of interviews was deemed appropriate as no significantly new information was achievable from extra interviews. This was in line with McCracken (1988), who found that in order to produce perceptive themes from in-depth interviews, eight interviewees are needed but subsequent to that number the returns become minimal for the effort required. The in-depth interviews were of the 'one-to-one' type in which only one participant was interviewed at a time. Each interview lasted for 40 minutes on average. Interviewees were asked questions such as: How was your organization able to survive during this crisis? Can you describe the changes made to the way you operate during the period of closure, quarantine, separation and social distances? How were you able to change your service offerings? Do you use the lessons learned from the COVID-19 pandemic to create totally new services? How? and Do you think your organization is an adaptive organization to stressors/ shocks? Why?

In addition to interviews, theoretical triangulation (Yin, 2009) was achieved through collecting other supplementary data such as organizational transformation project reports, service performance reports, brochures, and employee handbooks, itinerary sheet, menu, pricing information, promotion policies, travel agency policies, and special rates after COVID-19 period that provided a useful source of information.

The data analysis process from in-depth interviews was guided by the steps of Bryman and Bell's (2007) for conducting thematic analysis of interviews data. This inductive analysis strategy is based on notion of finding patterns in the data through a process of segmenting and categorizing qualitative data before final interpretation (Patton, 2002). It was chosen in this research as it offers a highly flexible approach through which detailed, yet rich account of data can be achieved (Braun and Clarke, 2006). Furthermore, it allows examining the perspectives of different interviewees in a study, highlighting similarities and differences, and generating novel insights (Nowell et al., 2017). However, one of the distinctive characters of thematic analysis process is providing a well-structured approach to handling large data that can contribute to producing clear and well-organized findings (Braun and Clarke, 2006). Bryman and Bell's (2007) steps followed in this study are illustrated below:

- Step 1: To sharpen understanding of the collected data, research questions and interviewees' transcripts were studied to shed light on general leading theoretical topics; also called coding schemes (Minichiello et al., 2008). A set of words or topics were then listed to represent a general meaning of what was recorded in the interviews, which was known as the coding framework of interviews' analysis (Attride-Stirling, 2001). The benefit of creating such a coding framework was the generation of a list of words which could be linked into common categories during analysis (Minichiello et al., 2008).
- Step 2: This step involved reading through the transcripts of interviews again and coding the content. The interviews transcripts were divided into meaningful fragments to facilitate dealing with data. Every text segment was then given a code from the developed coding framework that represented the meaning perceived (Attride-Stirling, 2001).
- Step 3: This step aimed to revise the divided transcripts to find codes with common basic themes. This was done by careful reading of the coded segments, thus enabling the identification of underlying structures and connections (Attride-Stirling, 2001).
- Step 4: The final step allowed authors to cluster basic themes around more central themes that were used later for interpretations.

Table 2 illustrates the coding framework and three central themes found. These emerging themes are further explained in the next section.

**Table 2** In-depth interview analysis: from codes to central themes.

<i>Variables</i>	<i>Codes</i>	<i>Issued discussed</i>	<i>Common Basic themes</i>	<i>Central themes</i>
Organic Systems-Thinking characteristics	<ul style="list-style-type: none"> <li>• Interrelationships</li> <li>• Dynamics</li> <li>• Wholeness</li> </ul>	<ul style="list-style-type: none"> <li>• Interconnectedness of employees: open channels of interactions, social exchange within and across the teams</li> <li>• Readiness/ adaptiveness to respond to stressors/ shocks</li> <li>• An organizational structure views the organization as a whole</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge sharing</li> <li>• Team-based</li> <li>• Case analysis</li> <li>• Organic structure</li> <li>• Act on systems whenever changes occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Systematic Judges and Acts</li> </ul>

Learning Organization	<ul style="list-style-type: none"> <li>• organizational learning</li> <li>• learning at work</li> <li>• learning climate</li> <li>• learning structure</li> </ul>	<ul style="list-style-type: none"> <li>• power delegation to employees at all levels</li> <li>• coordination</li> <li>• quick response to environment volatility</li> <li>• Inter-functional coordination,</li> <li>• Decentralized decision making by employees</li> </ul>	<ul style="list-style-type: none"> <li>• capturing learning opportunities from shocks and disruptions</li> <li>• problems based learning</li> <li>• expanding employees capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Problem-based Task Force Teams</li> </ul>
Double loop learning organization	<ul style="list-style-type: none"> <li>• New ways of working (Jaaron and Backhouse, 2017)</li> <li>• Mental models (Bagodi and Mahanty, 2013)</li> <li>• Systems, operational, and behavioral changes</li> </ul>	<ul style="list-style-type: none"> <li>• ability to find new customers</li> <li>• customer need analysis</li> <li>• management role is different</li> <li>• Employee empowerment</li> <li>• Correction of detected errors</li> <li>• Change procedures and policies if possible</li> </ul>	<ul style="list-style-type: none"> <li>• new customers, new demand, new problems, new strategy</li> <li>• leadership support</li> <li>• learning behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Innovative Changes</li> </ul>

## Research Results

### *Systematic Judges and Acts*

This theme refers to judges and acts on the system to produce an in-time response strategy for the company to survive amidst COVID-19 and beyond. As confirmed by a senior manager, “We are proud of being survived in such turbulent crisis as Covid -19...I think systems thinking principles works well here in our cruise group. Our organization is viewed as a whole structurally. We always act on systems whenever a change occurs”. A front-line staff reconfirmed, “We have found new markets to fill vacant cabins on boat. I think that is the most fruitful achievements of acting on systems”. A back-office interviewee explained, “When we face shocks like closure requests, we all think about how to make our company survival. We volunteered to have a work leave alternatively to help reduce operational cost for the company”. Also, a senior manager interviewee stated, “We can only have enough readiness and adaptiveness to respond to shocks when we keep learning and absorbing the shocks and turning them into opportunities to learn new things, fix the problems, improve the situation, and learn at a higher level.” Additionally, a number of measures were taken adaptively, such as minimizing the number of crews on cruise in Bays, encouraging staff to work from home, saving energy consumption on yachts as well as cutting off

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all the costs related to advertising or ineffective promotions. Interviewees believed that such actions on the systems helped the company reduce operational costs during this crisis.

Interviewees also learned collectively because of the problems that the whole company were faced with. Several multifunctional tasks were given to the employees on boat during the time of the pandemic. A front-line staff working on one of the boats explained, "We are only two people who helped each other become quickly familiar with covering all maintenance jobs that previously were made by 20 people...like cleaning, self-cooking, checking the engine operations, cabin clearing, pier management etc". This act on the whole system could contribute to saving costs and creating opportunities for self-cross-training for personnel.

A middle manager also explained, "...In a very short time we have experienced the two big shocks: the nearly two-month closure and the sudden reoperation in two days, thus it was compulsory for our organizational system to judge and act quickly and exactly to grasp the opportunities from the threats". Another middle manager stated, "The strict barriers between different departments have been replaced now by the soft ones of open communications, discussions and cooperation to quickly learn from each other and accomplish the tasks. Interviewees revealed that capturing these learning opportunities with its flexibility in an organically structured organization, the cruise company have judged the situation and acted in an appropriate way to unfold new business opportunities to survive.

#### ***Problem-based Task Force Teams***

This theme refers to the engagement and readiness to learn of problem-based Task Force Teams (TFTs) in the cruise firm and using systems-thinking principles to save the life of the company amid COVID-19. The interviewees shared that since the first day of closure, TFTs have been set up in the cruise case. A team leader explained further: "At first there is only one Task Force Team with the participants of four sales staffs, two financial officers, two crews, two other logistics employees, one middle manager, and a top manager. We all worked together without any hierarchies in the reduction stage for searching for survival solutions while actively interacting with our existing loyal customers. Team members had chance to share their knowledge about customer change in demands during the pandemic as well as to learn from each other ideas.... Since then whenever we have specific problems to solve, TFTs have immediately been established with job-related participants from relevant departments." As quoted from one interviewed sales and marketing staff: "...My proposal of new service offerings was the result of firstly, the open discussions among members of the TFT and with loyal customers we have, secondly the shortening hierarchical distance among levels of management and operations, thirdly the ability to continuously learning from team members, customers new demands, from the problem, from the system, and from stressors." This was further asserted by a front-line staff, "We have been empowered to make decision for the specific tasks and have sufficient support from leader if needed".

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As soon as the re-operation of cruise services was allowed, dozens of problem-based TFTs in both tangible and intangible forms were established and operated both online and offline smoothly to deal with specific tasks. A branch manager shared: "The problem-based TFTs have helped to develop and expand the employees' capacity via each time of problem solving... whenever the organization is exposed to a problem, a danger, or customer safety demands, employees from different departments and sections, from different levels of management could cooperate to give the best solution at the lowest cost." As exemplified by a front-line interviewee: "When we received an order from 22 Vietnamese visitors with various requests about discounts, safety measures, and tailored- make demands, we actively worked with a newly born TFT to identify the breakeven point for that cruise trip, then the TFT generated a plan that was shared with the customers for reflections and feedback. This provided opportunities to learn from case analysis and customer's requests for a matched negotiations and offerings." The problem-based learning project was successful with high levels of customer satisfaction and an acceptable profit for the company in the context of Covid-19 crisis.

### ***Innovative Changes***

The theme of innovative changes refers to service innovations that the cruise group company created from building an organic structure in operations and a double loop learning ability from the turbulent shocks. Problem-based TFTs indicated, "Inbound vouchers and domestic visitors are the two major sources of innovative income which can save the company life at the moment". Accordingly, a great deal of new promotional policies and activities were simultaneously taken to stimulate domestic demand. During this period, the company gradually reached the break-even point and then obtained an amount of profit. Added by a team leader interviewee: "Our current customers now are Vietnamese, who are totally new to us and to our luxury services. It urgently requests our company group to completely change our services as quickly as possible to satisfy the new demands received from local customers. For example, the menu, the decoration styles, entertaining activities on deck, prices, other services, etc... should be changed due to absolutely new customer's demands. To be survived, the organization structure was changed to be as organic and flexible as possible to set up new working structure".

Employees within their TFTs could test new ways of offering services. According to interviewees, this was the moment that their organization embraced the application of systems thinking approach for its service delivery design based on new customer demands. Interviewees explained that every TFT in the organization was encouraged to identify value demand, analyze failure demand, learn from errors, fix defects, seek new information, modify process and procedures, learn from knowledge sharing across TFTs, and eventually offer the exact services at the exact time the customers want.

The second significant service innovation was the creation of several brand new services by the cruise firm with the help of its TFTs. One of the best-selling services now is 3-year inbound

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vouchers. This kind of voucher offers international customers incentives, an expiry date of 3 years, and a variety of other beneficial customized-choices for customers when they use the vouchers after the pandemic. As revealed by an accountant interviewer, "We could collect immediately an amount of cash in advance for survival and even increase our revenue". Interviewees discussed that more innovative act in selling this creative type of vouchers was targeting local travel agents, who were willing to buy large numbers of these vouchers and transfer a lot of money into the cruise company's accounts at once. As it was reported, retail and wholesale vouchers have contributed roughly 40 percent to monthly revenues in May- September 2020. A senior manager highlighted, "From no customers during the period of March 5 – April 28, 2020; it took only few days for us to install the whole system to serve the totally new customers on May 1, 2020 with 80 percent of occupancy rate". This spectacular result was explained by a middle manager, "Only three things rescued us from the crisis are: in-time response, fostering the strength of the company as a whole, and learning from each other, travel agents, and also from our customers". Other interviewees explained further that an organization can only give a quick response to the shocks when it is really a dynamic one, otherwise, it will take time and opportunities fly away. Interviewees also suggested if the company followed the traditional management with hierarchical or separated structures, it could not have achieved such innovations. Concluded by a top leader interviewee: "We capture any learning opportunities both internally and externally; from inter-functional coordination of TFTs, from customer need analysis and even from shocks and disruptions.... we not only view stressors as problems to tackle but also view them as opportunities to improve continuously."

In addition, interviewees showed that the relationships with reserved customers were nurtured via phone, email, and social networks and the deposits from the booked orders persuaded to be kept until the pandemic crisis is over. This action not only improved customer relationships for future business but also kept the paid deposit for current operations. Finally, interviewees noted that to avoid dependence on such markets as the USA and Europe, the cruises have expanded cabin sales across multiple online travel agents' channels, attracting customers in many other regions of the world, for instance China and Asia. This renovation could help the cruise company extend its market in the future, which was considered as a lesson of back-up or contingency plans gained from the COVID-19 crisis.

## **Discussion**

The data analysis process showed that the systems thinking approach enabled structuring the organization organically and that in return operationalized double loop learning by promoting three different drivers. These drivers are presented in a conceptual framework as shown in Figure 1, and further explained through discussion of results.

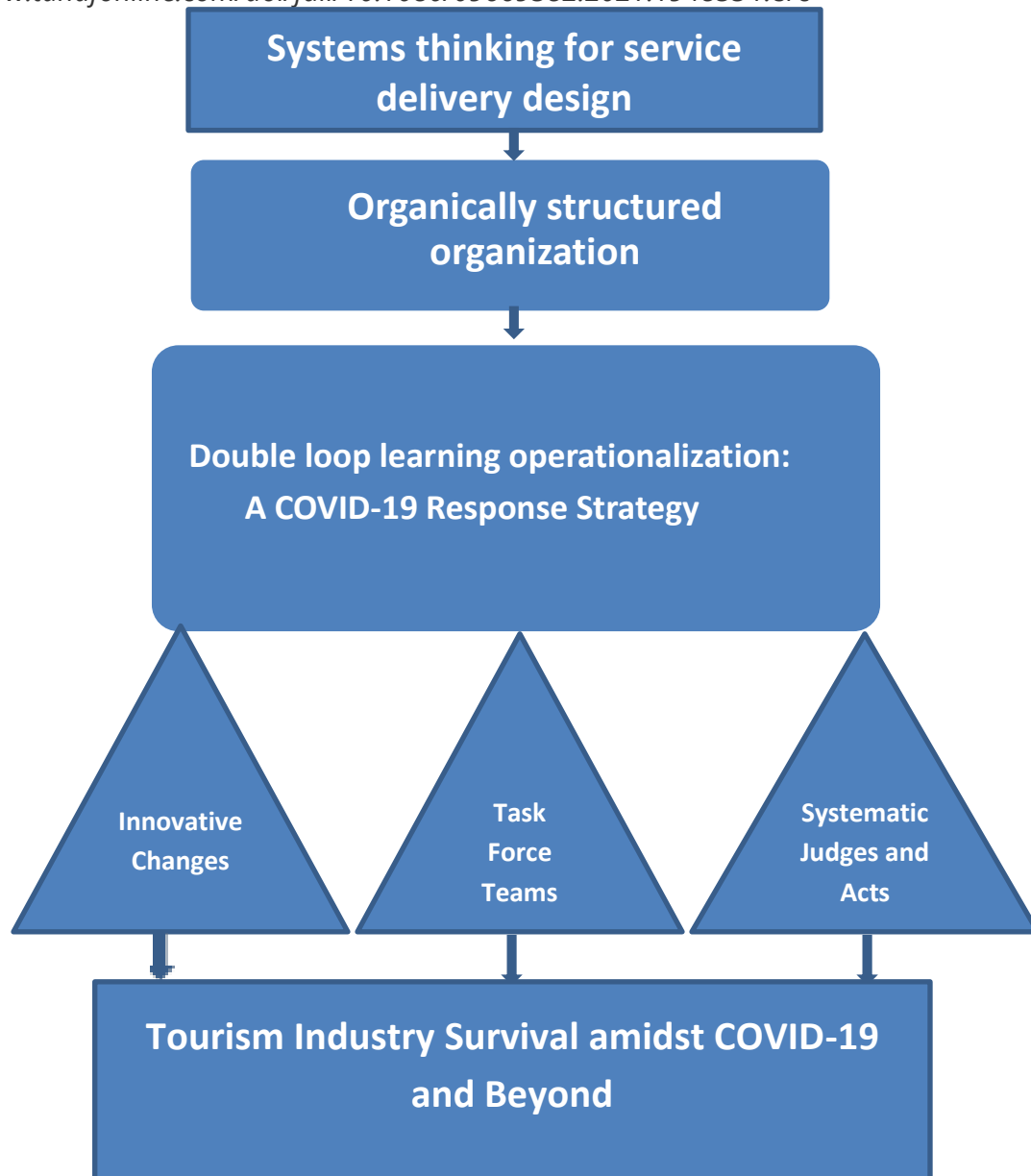


Figure 1 Three drivers for double loop learning: A COVID-19 response strategy.

The results suggest that the theme of systemic judges and acts has clarified the impact of systems thinking approach on the working structure of the firm in the struggle for existence during this crisis. It is elicited here that continuous capturing and analysis of external stressors brought about by COVID-19 and performed by the company employees added to the competencies of the individuals and better prepared the knowledge-base of the organisation (Shipton et al., 2013). As a result, employees were able to question current methods of doing the work, and to propose alternative methods for reducing operational costs necessary for business survival during crisis. Furthermore, it was evident in the results that the mechanistic top-down structure, which emphasise standardisation, the elimination of variation and managers' monitoring (Seddon, 2008),



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was not found at the case company. On the contrary, managers had an active role in supporting employees to give solutions to the newly emerging problems. This outcome from results acted as a catalyst for translating employees' learning into organisational learning and allowed employees to adapt to the stressors of random and unfamiliar situations through calling on their managers support and experience. According to Hannah and Lester (2009), changing the role of leaders from monitors to supporters enhance double loop learning; by maintaining a tendency of employees to critically criticise current business methods and share their findings with leaders. This was also in line with Jaaron and Backhouse (2017) who explained that supportive role of leaders within systems thinking workplace would be essential to activate latent learning capabilities of employees. Therefore, employees in the cruise company recognised that systems thinking taught them to learn about their system through shifting the decision making from a top-down approach to horizontal collaboration approach between employees. This theme, thus, suggests that systems thinking enabled employees to practice double loop learning through questioning and modifying existing methods of doing the work in their search for survival opportunities.

The results also asserted that the second theme of problem-based TFTs has led to knowledge sharing and learning emergence from stressors and disruptions. This was shared by Shipton et al. (2013), who linked learning-oriented behaviour of organisations during chaotic situations with information sharing across team members. The cruise company had to become an adaptive service organisation, also referred to as "organic structures" (Burns and Stalker, 1961). It was recognised in this theme that when employees were relocated to work on emerging disruptions within problem-based TFTs, it was possible to make organizational changes systematically with a continuous learning ability. Thus, results propose that members of TFTs were equally levelled, trusted, and enjoyed informal open communication channels when working on emerging disruptions. Consequently, employees naturally developed a sense of freedom and responsibility as they were encouraged to share and try new methods as they collectively learn. In fact, this virtue of TFTs supported by organic structure facilitated the development of knowledge culture at the cruise company. This was evident through facilitating transfer of tacit knowledge through interaction between members of various TFTs. According to Dias et al. (2020), continuous interaction of employees during execution of organisational improvement projects has the potential to improve intellectual capital necessary for learning in the organisation. These results are also in line with the findings of Ghaderi et al. (2014), who stated that social relationship at the workplace is an integral part for knowledge creation- a cornerstone for organisational learning. It was also consistent with the views of Ramezan (2011) who showed that high levels of employee interactions are essential for creating strength and powerfulness that could bring a great deal of innovative learning opportunities to the system. Another interesting outcome reported in the second theme is the focus on external environment in the learning process. Taking customer demands and environment changes into account ensured that problem-based TFTs would be able to expand their knowledge on what the cruise company still needs to learn about its stressors. This has also ensured that learning is directed to continuously adapting service offerings to match external safety requirements during the COVID-19 crisis. This was similar to what Liu (2018) advocated learning

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tourism companies to do; effectively including external factors while simultaneously improving internal systems.

Perhaps the theme of innovative changes is the strongest theme identified through data analysis. It showed that the most significant change for the company's survival was to divert attention towards domestic customers in the recovery process. The results suggest that having a free conversation with domestic customers allowed for the exploration of "what matters" to these customers during COVID-19 pandemic if they to use the tourism service. Understanding what customers want were seen by the cruise company as source of new creative ideas. Subsequently, it was then possible to translate these creative ideas into new service offerings. It is as Jaaron and Backhouse (2017) have explained, taking into consideration customer demands and wants is vital for creating a learning organisation that aspire to create innovative updates to its service systems. This is the context of double loop learning as described by Argyris and Schon (1996). The results also depict a culture where employees are expected by their managers to continuously monitor varying demand coming into the cruise company and collectively question current systems if a demand cannot be met with current arrangements. Arguably, this gave rise to a new mode of working where every unmet customer demand is treated as a unique opportunity that could potentially lead to a new innovative solution. This was congruent to the work of Rao et al (2018) who explained that interaction between tourism customers and employees can fuel knowledge exchange necessary for enabling service innovation capabilities. At a more subtle level, the results also reflected a working environment resembled by a non-routine type of work that required high degree of individual authority and power. This further confirmed achieving organic structure at the cruise company. However, this fundamental process of encouraging interaction with customers and the associated inter-employees sharing of knowledge ensured operationalising double loop learning and system adaptability during uncertain times (Khoshkhoo and Nadalipour (2016). As it was asserted through results, double loop learning enabled the cruise company to identify the targeted domestic customers and allowed demand-stimulating policies to work effectively. This was evident through monthly financial reports of the cruise company which showed that revenue has increased from the first date of receiving the domestic visitors, leading to a surprising five per cent monthly profit during the four successive months. Therefore, it can be discerned that the new working system was able to contribute to sustainable economic growth of the company within the COVID-19 pandemic.

### ***Theoretical and managerial implications***

The findings of this research have some significant contributions for practitioners and researchers. First, while most of the literature has focused on the adoption of learning approaches in tourism and hospitality management literature (e.g., Bernsen et al., 2009; Božič and Cvelbar, 2016; Liu, 2018; Ali et al., 2020; Kaushal and Srivastava, 2021), this work has extended current understanding of organisational learning in tourism companies by incorporating double loop learning with structural design issues based on the lens of organic structures. This is a novel conceptualisation of organisational learning in tourism literature that was not dealt with before.

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The study delves deeper into the relationship between double loop learning and tourism companies' evolution capabilities amidst COVID-19 crisis, offering new insights for the type of knowledge-based structure needed for the new generation of tourism industry. The results have made it clear that relocating employees to work within teams in organically structured environment facilitates the creation of "knowledge culture" (Ramezan, 2011) through effectively involving external stakeholders (i.e., customers), while concurrently redesigning internal tourism operations. As a consequence, our investigation in this study adds new evidence to tourism literature on the ability to increase tacit and explicit knowledge creation through structuring self-improving tourism operations. More specifically, this research has theorized systems thinking with double loop learning as an organizational means for tourism companies to survive during COVID-19 global tragedy that can accelerate the transformation of tourism companies. Thus, this work provides empirical evidence of the possibility of using the systems thinking approach to build highly responsive learning systems to fundamentally change tourism organizations' existing operations and offerings to adapt to threats and stressors such as the recent COVID-19 crisis. The findings hold that systems thinking approach could develop an organic structure organization, which would then, activate double loop learning for creating a survival strategy whenever exposed to shocks and disruptions of unprecedented situation. Therefore, this study provides a way for tourism companies to address shortfalls in their contribution to sustainable economic growth within the COVID-19 pandemic; as part of the scope of SDG8.

Based on the contributions highlighted above, this paper also enables us to draw some managerial implications. First, theorizing systems thinking operational design with double loop learning in this study is a starting point for tourism managers to identify new methods for re-designing their workplace to face uncertain stressors and turn them into organisational learning (Bhat et al., 2012). This would imply that tourism managers need to create internal Human Resources Management changes to integrate new cultural norms and practices as part of the performance management systems (Pham et al., 2020). Second, the results show that employees' engagement and readiness to learn within their teams is a cornerstone for enabling knowledge culture. This suggests that person-organization fit concept (Liu, 2018) should be considered by tourism managers as this may enhance employees' motivation and voluntary behaviour (Pham et al., 2020) to capture learning. Third, the principle of systems thinking design of continuous customer demand analysis was found to better prepare the knowledge-base of the tourism organization to facilitate innovative service changes. Thus, it is necessary for tourism managers to provide freedom for employees to have free conversations with tourists (i.e., customers) to explore complex problematic situations. Finally, the research results reported here could help tourism managers become aware of the significance of organic structures, brought about by systems thinking design, as drivers for competitive advantage creation during a crisis. Thus, building a decentralized organizational structure proves to be vital for tourism organisations during COVID-19 crisis and beyond.

## **Conclusions and future research directions**

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In response for calls by the tourism industry for survival strategies during COVID-19 pandemic (Gössling et al., 2020; Ranasinghe et al., 2020; Hoque et al., 2020), this exploratory study has attempted to examine the impact of applying systems thinking approach for service delivery design and enabling “double loop” learning in a leading cruise group company in the Vietnamese tourism sector. The results of the case study demonstrated an interesting dynamic of the cruise company service design based on systems thinking principles and provided a novel conceptualization of organizational learning in tourism companies. The work associated double loop learning capabilities in tourism companies with structural design changes facilitated by the application of systems thinking approach. Therefore, offering new insights on the significance of systems thinking application to knowledge-based structure realization in tourism companies necessary for survival opportunities creation during crisis. As such, the work also provides insights on how tourism companies can maintain sustainable performance and contribute to economic growth within the COVID-19 pandemic. However, despite the several new insights and contributions provides by this paper to tourism research, it has some limitations that can help inform future tourism research. First, the data collection process in this research occurred remotely over Zoom application, so physical observations of the new service delivery were limited due to COVID-19 restrictions. Thus, future research may consider studying the proposed relationships in this research using longitudinal research designs with on-site observations to broaden insights from this research. Second, even though characteristics of cruise ship services are unique (Radic et al., 2020), it would still be valuable to replicate this study in other tourism services such as hotels, resorts, theme parks, camps, and other tourist attractions to validate the results and potentially capture any other dimensions of adaptive capabilities resulting from the systems thinking design. Considering this, a new line of research would be to conduct quantitative studies to test propositions presented in this study, namely:

- P1: Systems thinking design constitutes a mechanism for operationalising double loop learning amidst adversity through enabling an organic structure for the tourism companies.
- P2: Double loop learning emanating from systems thinking design promotes systematic reforms in the tourism companies.
- P3: Double loop learning emanating from systems thinking design promotes creation of problem-based TFTs in tourism companies.
- P4: Double loop learning emanating from systems thinking design promotes service innovation in tourism companies.

Third, although data collected in this research came from various employees and managers at various levels, it was not possible to interview customers. Therefore, future studies may replicate this study while including the customer’s perspective. Finally, as the link between service operations design and double loop learning is an integral part of the workplace structure and employees’ empowerment (Jaaron and Backhouse, 2017), future research should look at the

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impact of human resources management theories as moderating conditions to double loop learning in tourism companies.

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