



The evolution of triadic relationships in a tourism supply chain through coopetition

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ABSTRACT

The analysis of tourism supply chains has traditionally focused on the two-party relationships between vertical suppliers. However, since a full supply chain is composed of horizontal, vertical and diagonal suppliers, there is a gap in literature regarding the dynamics of how these triadic relationships operate within a tourism supply chain. Using a multiple case study design involving four tour operators in Macau, this paper explores the interplay of relationships among horizontal, vertical and diagonal suppliers. We capture the evolutionary dynamics of how cooperative relationships are formed between horizontal suppliers, the subsequent impact on both vertical and diagonal suppliers, and the resulting overall changes in the structure of the tourism supply chain. This paper contributes to tourism supply chain literature through a cooperative lens by analyzing the triadic relational links among horizontal, vertical and diagonal suppliers.

1. Introduction

A tourism supply chain consists of an integrative network of horizontal, vertical and diagonal suppliers that seeks to provide a full package of tourism products or services for purchase by tourists (Maggioni, Marcoz, & Mauri, 2014). Relationships among suppliers within the horizontal supply chain are different from those within the vertical supply chain. Coopetition, or simultaneous competition and cooperation between firms, has become increasingly popular at the horizontal supply chain level within the tourism industry (Damayanti, Scott, & Ruhanen, 2017). At its very core, the concept of coopetition has been extensively used to understand the relationships among rival firms within an industry (Wu & Choi, 2005). However, the dynamics of coopetition within the contemporary tourism industry remain unclear because the traditional tourism supply chain has involved either vertical supplier-supplier (dyadic) relationships or a network of stakeholders in which different levels of suppliers are not separately distinguished (Czernek & Czakon, 2016). In other words, most prior studies of cooperative relationships have focused on relationships between heterogeneous organizations in different sectors, with resources and capabilities that are non-redundant in nature (Zhang, Song, & Huang, 2009).

In general, suppliers at different levels appear to have different

relationships and strategic responses (Kim, Choi, Yan, & Dooley, 2011). Competitive relationships are more common in the horizontal supply chain because suppliers are rivals for the same products or services, whereas they are collaborators in the vertical supply chain by cooperating in the production process. Therefore, it is necessary to understand how cooperative relationships have developed between horizontal suppliers and their relationships with other levels of suppliers in the tourism supply chain.

Although some research has focused on cooperative relationships among the horizontal suppliers in the tourism industry (Huang, 2006), their impact on the overall vertical supply chain is not well understood. In view of this, this paper explores how evolving coopetition at the horizontal level has affected the development of relationships among suppliers at other levels, and it analyses the consequences for the overall structure of the tourism supply chain. This paper provides three contributions to the literature of tourism supply chain. First, it advances the tourism supply chain literature through the identification of distinctive relationships forged among various participants at different levels. Second, it utilizes the lens of coopetition to understand how the overall supply network has evolved in response to the changes in relationships among horizontal suppliers. Third, it highlights the significant contributions of tour operators toward the development and evolution of a

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cooperative tourism supply chain network.

This paper is organized into the following sections. Following the introduction, part two on the theoretical background discusses the suppliers' relationships in the tourism supply chain and considers the importance of cooperative relationships in the horizontal supply chain. Part three on methodology presents and justifies our case study approach. Part four presents the main case study findings. Finally, part five section highlights the contributions, managerial implications and directions for future research.

2. Theoretical background

2.1. Suppliers' relationships in the tourism supply chain

The operation of tourism industry relies on a network of participants embedded in a bounded location to provide products or services to both local and non-local consumers for various purposes, such as business, entertainment, heritage and food (UNWTO, 2018). This network includes suppliers, intermediaries, distributors, competitors, government departments, and other entities that complement the tour operators' abilities to better fulfill tourists' needs (Porter, 1985). Research on tourism supply chain has been interwoven with the study of the tourism value chain (Song, Liu, & Chen, 2012), tourism industry chain (Araon-Correa, Martin-Tapia, & Torre-Ruiz, 2015) or tourism network (Romero & Tejada, 2011).

A tourism supply chain is defined as a network of private and public organizations involved in various tourism activities, ranging from supply of complex heterogeneous tourism products or services at a specific destination. Individual firms or organizations embedded within the network of the tourism industry can be perceived as nodes connected together under different relationships (Romero & Tejada, 2011). This network of organizations can be arranged in different tiers based on their primary functions and the activities supplied in the tourism supply chain (Zhang et al., 2009). So far, there is still no systemic way of defining the scope of tiers or levels of tourism suppliers.

According to Zhang et al. (2009), the tourism supply chain can be classified into two dimensions. Horizontal relationships are developed between homogenous players with overlapping capabilities while vertical relationships are developed between heterogeneous players at different sectors in the supply chain, with capabilities that do not intersect in the tourism industry. The coordination of the tourism supply chain can occur in various forms; they may integrate full or partial business activities arranged by individual organizations either horizontally or vertically. Beyond Zhang, Song and Hong (2009)'s classification, some researchers who study the network of tourism activities define one more relation – diagonal relationships developed between organizations in tourism industry with organizations from different industries or public institutions (Zehrer & Raich, 2010).

The line of supply chain research is grounded in the management of productive activity, in which tourism products or services are rooted in the participation and the interaction of diverse operators. These operators include both private and public organizations serving their own goals in the tourism industry (Tran, Jeeva, & Pourabedin, 2016). Based on the configuration of inputs from different resources, it is important to understand how to operationalize inter-organizational relationships since the success of tourism relies on the interdependence of diverse organizations (Selin & Beason, 1991).

Existing studies on supplier relationships in different tourism sectors focus on airlines (Alamdari, 2002), hotels (Shi & Liao, 2013), information technology (Frew, 2000), travel agencies (Medina-Muñoz & García-Falcón, 2000), shopping (Reisinger & Turner, 2002), tour operators (Klemm & Parkinson, 2001), and resorts (Karamustafa, 2000). These supplier relationships can be either competitive or cooperative. Many commentators suggest that tour operators often play a significant role in coordinating different levels of suppliers in the supply chain because they directly interact with the tourists (Bastakis, Buhalis, &

Butler, 2004). Such research emphasizes on the inter-organizational relationships built between different sectors at the vertical supply chain.

Thus far, there is a missing piece in the body of research about the link between horizontal supplier relationships and the traditional tourism supply chain – typically analyzed by a vertical supplier dyad (Véronneau, Roy, & Beaulieu, 2015). Traditionally, the tourism supply chain covers the dyadic relationships in which organizations develop two-party relationships with one another. Since the supply chain consists of a network of organizations, coordinating the dyadic (two-party) relationships among organizations in different sectors within the tourism supply chain is an important issue. For this reason, initiating the move from dyadic to triadic (three-party) relationships by including the horizontal supplier–supplier relationships is a crucial milestone to understand the complex system of the tourism supply chain (March 1997).

However, the dyadic relationships of vertical suppliers may not be the same as those at the horizontal level. Research on the tourism supply chain demonstrates that dyadic relationships found in the horizontal supplier–supplier level are more likely to be competitive as these organizations provide the same or similar tourism products or services to tourists (Baloglu & Mangalolu, 2001). In contrast, vertical suppliers tend to be more collaborative in nature as they need to integrate within different fields of tourism products, services or activities. Hence, there is a need to incorporate a co-competition viewpoint to understand how the triadic vertical supplier and horizontal supplier–supplier relationships have evolved at different levels in the tourism supply chain.

2.2. Co-competition and its application in tourism supply chain

The concept of co-competition was originally developed by Brandenburger and Nalebuff (1996) to describe the co-existence of two opposing forces of competition and cooperation in inter-organizational settings with the purpose of value creation through the conceptual lens of resource-based view, transaction cost theory and network theory. First, firms may seek to collaborate with their competitors for gaining access to some rare, valuable and hard to imitate resources (Doz & Hamel, 1998). This motive appears to be more salient when the focal firm can fill up the complementary resource gaps at least partially by learning from the collaborating rivals in the alliance (Dussauge, Garrette, & Mitchell, 2000).

Second, while collaborating with competitors can overcome resource asymmetries in developing new products and services, the protection of idiosyncratic knowledge assets often posits a major governance challenge in cooperative alliances (Gnyawali & Park, 2009). As informed by the transaction cost theory, alliance partners tend to behave opportunistically by making unauthorized access to alliance-specific resources (Oxley & Sampson, 2004). It is only through the accumulation of trust and development of greater familiarities among alliance members embedded in a long-lasting collaborative relationship that the hazards of opportunism can be mitigated (Lado, Boyd, & Hanlon, 1997).

Third, drawing on the insights of network theory, firms can choose to engage in collaborative ties with multiple competitors in different industry sectors for improving existing products and services or expanding their offerings (Ritala, 2012). The configurations of network linkages and structural positions among firms influence their competitive behavior (Gnyawali & Madhavan, 2001). Some firms that are better-positioned in the networks can swiftly access and utilize the network-based resources for gaining competitive advantage vis-a-vis other competitors (Dhanaraj & Parkhe, 2006). The conflicting-yet-complementary logic of co-competition can appear at different forms in the tourism supply chain as well (Kylänen & Rusko, 2011) when tourism actors are involved in a competing and at the same time cooperating dynamic (Fong, Wong, & Hong, 2018). On one hand, Della Corte and Aria (2016) state that by forming co-competition in the supply chain, tourism participants aim to achieve a balance between competition and cooperation for enhancing their overall competitiveness in tourist destinations. On the other hand, Bengtsson, Eriksson, and

Wincent (2010) argue that cooptation is manifest as a paradoxical relationship between two polar choices. The cooptation paradox can either be balanced or unbalanced along the two continua (Bengtsson, Raza-Ullah, & Vanyushyn, 2016). Modelling on a dynamic cooptation setting, Damayanti et al. (2017) indicate that horizontal and vertical suppliers within an informal tourism economy may emphasize competitive or cooperative activities at different times. Through analyzing the dynamic relationships between multiple stakeholders, Fong et al. (2018) identify five cooptative processes in which the tourism actors engage differently according to the relative intensity of the two continua.

Although cooptation is two-dimensional in nature, conceptually, competition and cooperation are not mutually exclusive. However, when scholars study inter-organizational relationships in the tourism supply chain, the competitive relationships and cooperative relationships tend to be studied individually. A large body of literature only concentrates on the formalization of relationships based on the collaboration of inter-organizations, which characterize the links between different tourism sectors (Graci, 2013).

The cooperative relationships formed among both businesses (Lemetyinen & Go, 2009) and public organizations (Morrison, Lynch, & Johns, 2004) have become a prerequisite to cope with an increasingly complex and dynamic tourism context (Jamal & Getz, 1995). Cooperative relationships not only help organizational actors to achieve better economic performance and sustainable tourism development; they also provide a better way to understand the governance of public-private organizations in developing tourism destinations (Deery, O'Mahony, & Moors, 2012). Nevertheless, it is also important for a firm to understand its competitive relationships with its rivals (Tsai, Su, & Chen, 2011). In this regard, some prior studies on hotels and tour operators have discussed the nature of competitive relationships among organizations at the vertical level of the supply chain (Bastakis et al., 2004) by focusing on the competitive interaction of pricing strategies and the influence of relative power in negotiations.

According to Chim-Miki and Batista-Canino (2017)'s review of cooptation in tourism, research on the cooptation perspective is very limited (Bouncken, Gast, Kraus, & Bogers, 2015), and some scholars have only begun to use the concept of cooptation to analyze the development of tourism destinations in the last decade. The tourism destination is a unit of analysis for the study of a network of tourism stakeholders with different competitive and cooperative relationships. Individual organizations interact and compete within a tourism network to fight for their own interests, while simultaneously collaborating to attain the common goal of increased joint benefits at a tourism destination (Wang & Krakover, 2008).

Cooptative relationships can exist at horizontal, vertical and diagonal levels of a supply chain. In terms of cooptative relational contents, the most common approach adopted for analyzing cooptation within the tourism supply chain has been used to study cooptative relationships between airline and airport (Tinoco & Sherman, 2014), or hotel and agency (Guo, Zheng, Ling, & Yang, 2014). Furthermore, the majority of prior research on cooptation within inter-organizational networks at tourism destinations has not distinguished cooptation among horizontal suppliers from cooptation among vertical suppliers (Kylänen & Mariani, 2012; Mariani & Kylänen, 2014).

In conclusion, previous papers have omitted any analysis of how cooptative relationships among horizontal suppliers can serve to integrate the vertical and diagonal levels within the supply chain. Given the gap in the literature identified above, a better understanding of the cooptative supply relationships among different levels (horizontal, vertical and diagonal) of organizations and the productivity of tourism activities that constitute a specific destination is necessary. Accordingly, this paper seeks to achieve the following objective: To explore how cooptative relationships among horizontal suppliers have evolved and how this evolution has changed the relationships developed at other levels, which may, in turn, have influenced the overall structure of the

tourism supply chain.

3. Methods

Case study approach was chosen as our principal method of investigation (Eisenhardt, 1989) to "extend existing theory and build new theoretical explanations for observed phenomena" (Bruton, Khavul, & Chavez, 2011, p. 723). The main purpose is to capture the inter-organizational dynamics and relational interactions among different constituents in a tourist destination, the use of case study approach gains an advantage over alternative methods by obtaining the contextual richness of an organizational phenomenon in the research setting (Siggelkow, 2007), especially when the boundary between the phenomenon and research context becomes indistinguishable (Yin, 2009). Moreover, case study is an inductive process for theory building "via recursive cycling among the case data, emerging theory, and later, extant literature" (Eisenhardt & Graebner, 2007, p. 25). It is especially appropriate in our study of evolution of cooptative relationships in a network of the tourism supply chain in Macau, where complex and recurrent patterns of purposeful and intentional responses took place between the focal tour operators and their suppliers (Damayanti et al., 2017).

In order to analyze how the cooptative relationships had evolved in a tourism supply chain, we adopted a longitudinal case research design (Pettigrew, 1990) for tracking the change of dyadic to triadic relationships among horizontal, vertical and diagonal suppliers over time in the tourism context in Macau.

3.1. Research context

Macau is a Special Administrative Region (SAR) of China, a former Portuguese colony located on China's southern coast. The contextual background of Macau is appropriate for the study of the tourism supply chain, due to the changes in its institutional settings in recent years. Macau is the only city in China where casinos are legal. It is historically rich in both Eastern and Western cultures. Its uniqueness enables visitors to the city to enjoy historical and architectural treasures of both Portuguese colonial and Chinese heritage (Wong, McKercher, & Li, 2014). However, the constraints of a limited amount of land, the attributes of a micro-economy based on a small number of industrial sectors and the protectionism of monopoly in the gaming industry led to Macau's slow economic development in the 1990s. The significant contribution of tourism to Macau's ability to overcome its economic weakness began to be realized at the beginning of the 2000s. The Macao SAR Government's decision to end the monopolistic structure and reconstruct the management of its gaming and tourism industry not only excited the local community, but also marked a new era of tourism in East Asia. The liberalization of the gaming industry from the monopolistic control of a casino tycoon provided a turnaround in Macau tourism and made the destination an extremely competitive tourism-based city. A large part of Macau's economic income was dependent on global tourism, rather than the industrial sectors. More stories and detailed analysis are presented below.

3.2. Sampling

To explore the evolution of relationships developed among the horizontal suppliers and the impact thereof on the other supplier levels, we conducted a multiple case study with four tour operators which were renamed Dragon Travel, Phoenix Travel, Tiger Travel, and Lion Travel for reasons of anonymity and confidentiality for interviewees. Dragon and Phoenix started their businesses in the late 1990s, while Tiger and Lion began to operate in the late 2000s.¹ Our sample of four focal firms fell within the advised norm of between four and ten case organizations for multiple case study research (Eisenhardt, 1989). The choice of these four firms was based on theoretical sampling strategy rather than on

statistical considerations.

First, we compared competition and cooperation between different rival companies before and after the liberalization of the gaming industry in 2002. We then examined how the changes in relationships within the horizontal level affected the relationships formed among suppliers at other levels. The first two entrants (Dragon and Phoenix) provided empirical evidence regarding before 2002, while the latter two entrants (Tiger and Lion) provided additional evidence about the critical period following liberalization. Their business scope covered various tourism services to visitors in Macau, including food and beverage, transportation, shopping, leisure, and accommodation.

Second, since there were only nine tour operators that provided tour packages to Mainland Chinese tourists in the 90s, the first two tour operators were the major exemplary cases of Macau tour operators among them. The two late entrants were the most competitive contemporary firms. Albeit smaller in business size in the very beginning, their business scales had been gradually developed to that of a medium enterprise providing similar business operations of the former two throughout the decade. The two large and two small extreme cases, a “polar type” theoretical sampling approach (Graebner & Eisenhardt, 2004), allowed us to provide empirical evidence to show a contrasting pattern in the data and to eliminate alternative explanations related to the changes of cooperative relations among multiple firms (Yin, 2009).

Third, we were able to compare the four firms with different strategic choices of competitive, cooperative and cooperative relationships. Dragon, Lion and Tiger adopted cooptation and led to successful corporation development. While Phoenix refused to cooperate and suffered from a business downturn for several years in late 2010, their strategic change of building cooperative relationships with other rivals enabled the enterprise to go through a successful turnaround at the end. The successful and unsuccessful business activities that emerged, developed or changed in different time horizons in the four cases were triggered by development of different relationships that enabled them to add more longitudinal elements to the theory² (See Endnotes in the Appendix).

3.3. Data collection

To examine the evolution of cooperative relationships among suppliers, we decomposed the collection of process data into three successive phases according to the growth of tourism in Macau. The 1st phase occurred before the liberalization of the gaming industry in 2002. The 2nd phase covered the rapid growth of the tourism industry between 2002 and 2010. The 3rd phase followed 2010 with the transformation of the tourism industry stemming from the development of an inter-sector network tourism supply chain (Zehrer & Raich, 2010).

Interviews related to the first phase were conducted only with members of Dragon and Phoenix due to the early establishment of these two firms. We then continued the interviews in these two early-entrant firms and replicated the studies in Tiger and Dragon, the later-entrants, regarding both the second and third phases. To ensure a certain degree of comparability and an unobstructed flow of narration, the first and third authors conducted 188 semi-structured interviews from 106 interviewees between February 2002 and December 2015 in Macau. Sixty-two interviewees were male and forty-four were female. The average age of the interviewees at the time of each interview was 38 and 94% of them had been working in their companies for more than 3 years.

Seventy-five face-to-face formal interviews were conducted, while the remaining interviews were carried out by video conferencing through computer and telephone. In order to understand how different organizational participants got involved in the evolution of cooptation, we interviewed CEOs, general managers, senior managers, technical directors, senior executives, and consultants at the corporate level. We also interviewed managers, executives, supervisors, accountants, salespeople, bus drivers, and tour guides within various divisions. Our interviews included employees from various levels and positions covering all functions in the four firms. Three respondents from other public

institutions were also interviewed (see Appendix – Table 1).

The time for each interview ranged from 60 to 120 minutes. All interviews were conducted in Cantonese or Mandarin. They were tape-recorded, transcribed into English and then reviewed.

To compare changes in cooperative relationships, we used the same interview protocols throughout the three phases. We aimed to minimize our influence over responses, so a formal definition of rivalry was not mentioned to the interviewees (Kilduff, Elfenbein, & Staw, 2010). Instead, the emphasis was placed on asking interviewees to characterize the relationships between the various organizations within the industry. Respondents were asked to identify each main supplier for their firm and to determine what, how and with whom each of these supplier relationships were built (see Appendix – Table 2).

To increase the trustworthiness of responses, multiple sources of data were used (Lincoln & Guba, 1985). Throughout the decade, we collected both primary and secondary data concerning competition and the relationships developed within the network of suppliers, until saturation was reached (Corbin & Strauss, 2008) (see Appendix – Table 1).

3.4. Data analysis

Through the process of open coding, we re-examined data to develop the first-order categories. All 188 interviews and other related materials were transcribed and imported to NVivo8 for qualitative analysis. We worked through more than one thousand pages of transcripts to generate a total of 84 initial codes. Then we went on to analyze each episode line-by-line and to refine, extend and delete codes when appropriate (Corbin & Strauss, 2008). Using the iterative process to examine emerging patterns of data in the context of current literature (Eisenhardt, 1989), we were able to maximize the differences between codes, while minimizing the differences within codes.

We first classified respondents of the four firms according to their hierarchical position within their respective corporation, division and function. We grouped the three respondents from other institutions in a separate category. This approach allowed us to interpret narrative case descriptions and perspectives from different levels and firms. We then compared and contrasted interviewees’ understandings of our research topics of competition and cooperation within and between the various organizations, related to changes of network of supply chain in different stages. Moreover, we also classified different critical factors that triggered the changes of relationships before and after 2002 and compared changes throughout the three stages. We then used secondary data to cross-check the classifications of the initial concepts. Working through an inductive process, we examined all the primary and secondary data sources to draw similarities and differences.

In this study, the unit of analysis was the conditions of relationship, which was internally collected with different informants’ stories, events and tourism activities at different points of time. After comparing the three stages of evolution, seven, nine and five different relationship conditions were identified in stage 1, stage 2 and stage 3 respectively. The descriptive codes on different relationship conditions at different stages were summarized in Table 3 (Appendix).

In order to further summarize the core characteristics of relationship conditions in different stages, we went on to identify nine first-order categories, which included three in stage 1 (multi-sectors involvement, tour operators as focal nodes, and horizontal competition), four in stage 2 (drivers of cooperation, triadic relationships, relational change, and paradoxical relationship) and two in stage 3 (continuous expansion and configuration of supply network).

When forming the second-order themes, we linked different conditions with competitive and cooperative relationships together and then compared and defined different relationships formed at different stages to show the changes. After a series of exercises, we were able to comprehend 3 s-order themes as evolutionary processes of supply chain relationships – the processes of evolution followed an underlying framework of coordination of competition; the emergence of

competition and cooperation; and the expansion of cooperation.

Table 3 (Appendix) summarizes the descriptive codes for different relationship conditions, first-order categories and second-order themes at three stages of evolution. Table 4 (Appendix) provides examples of the data codes. Fig. 1 presents a conceptual model of the cooperative tourism supply chain.

4. Findings

In this context, there is no clear-cut figure for the exact number of years it takes for a cooperative tourism supply chain to evolve. The supply chain has evolved gradually over several decades both before and after the liberalization of the gaming industry in Macau. We have identified three stages based on the evolving relationships among tour operators and suppliers: competitive, cooperative, and cooperative (Tidström & Hagberg-Andersson, 2012). Each stage features different kinds of connections forged between various tourism actors and shows how the properties of the relationship structures affect the way tourism activities have developed.

Before 2002, the relationships among the tour operators appeared to be only competitive in nature in the first stage. Due to Macau's unique geographical location and small firm size, tour operators' strategic priority was to survive in the market. Seeing through the eyes of a rival,

competition among a small group of focal tour operators allowed them to succeed (Lamb, 1984). They undertook a focal role to integrate different tourism suppliers (Zhang et al., 2009) by forming a simple tourism supply network in Macau.

However, during the second phase from 2002 to 2010, competitive intensity had increased in the tourism market after the liberalization of the gaming industry, forcing most of the tour operators to collaborate with one another. Cooperation became a new strategic response among the rival tour operators (Wang & Krakover, 2008). The bilateral cooperative relationship among the major rivals increased the buyer-seller cooperation with other tourism suppliers (Wilhelm, 2011). In this stage, the focal tour operators assumed a broker role (Romero & Tejada, 2011), shaping the emergence of the tourism supply network structure (Ahuja, 2000). Competitive intensities kept on increasing in the tourism industry until 2010. Since then, cooperation among the tour operators continued to intensify, including those which refused to cooperate. The evolving triadic relationships developed among rival tour operators and other suppliers also increased the number of connectivity among all suppliers in the network (Gnyawali & Madhavan, 2001). Consequently, the tourism supply chain in Macau was enlarged (Pavlovich, 2003).

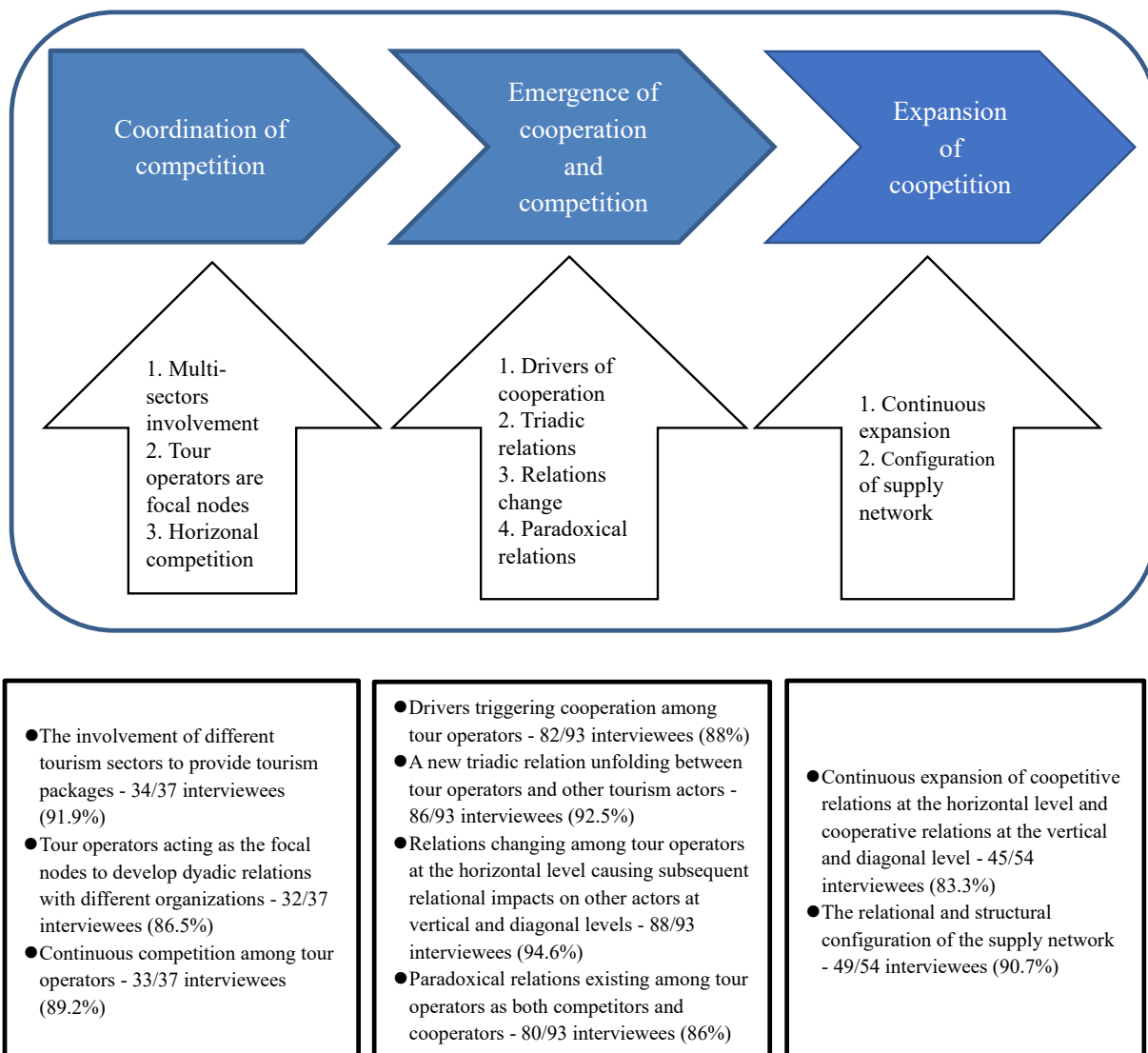


Fig. 1. Evolution of cooperative supply chain relations.

4.1. Stage 1 – coordination of competition

4.1.1. Involvement of multiple sectors

In the 1990s, given the underdeveloped internal infrastructure and related tourism facilities, as well as the narrow scope of international demand, only a small number of visitors were choosing Macau as their tour destination, and international firms were not prevalent. Although the tourism industry alone could not be considered as a large contributor to Macau's GDP growth at that time, a large number of related sectors in combination with the tourism industry made it one of the major economic pillars in Macau.

Due to the advantage of geographic location and its unique cultural heritage that mixes East and West, most visitors to Macau came from Mainland China. In the '90s, there were only a few tour operators, who were able to provide a full package tour; Dragon and Phoenix were two of them. The challenge of packaging tour activities and services required the collaboration of different organizations, thus creating a high degree of interdependence in the tourism industry.

From the operational viewpoint of Dragon and Phoenix, suppliers in the tourism supply chain could be classified into different levels according to cooperative or competitive relationships. The horizontal level contained organizations at the same level of production or in the same service sector (for example, between tour operators, between hotels, or between restaurants). The vertical level contained organizations operating in different tourism sectors (for example, between tour operators and hotels; between hotels and restaurants; and between tour operators and airlines). The diagonal level consisted of relationships established among organizations operating in different industries that were still related to tourism (for example, between tourism and finance; tourism and medicine; tourism and trade; and tourism and government sectors). [Table 5 \(Appendix\)](#) shows different participants linked to the tour operators according to the levels described above. Some participants are identified in the later stages.

Tourism in Macau relies on the involvement of a series of highly dependent business providers, including tour operators, travel agents, restaurants, hotels, souvenir shops, transportation companies, and so forth. Most of them are small-and-medium-sized companies owned by local residents. (Consultant, Phoenix).

When engaging in tourism and hospitality activities, tour operators did not merely rely on suppliers at the vertical level to provide cultural, entertainment, and economic value. On several occasions, unexpected incidents caused Dragon and Phoenix to build relationships with firms in other industries. These included clinics, telecom service providers, insurance companies, and governmental departments.

Clearly defining the tourism industry is challenging because tourism value does not depend on the linkage of corporations with similar economic interests in the tourism sector but a variety of other sectors. (Senior Manager 1, Lion).

A tourist with one of our tours was knocked down by a car last year. We tried to send the victim to a nearby hospital, but he refused. He insisted on going to a clinic instead because he believed medical expenses in Macau would be very high and that there would be no insurance coverage. This case reminds us of the importance of keeping good relations with some insurance companies and clinics. (Tour Guide 8, Phoenix).

4.1.2. Tour operators acting as the focal nodes

When analyzing their tourism activities, Dragon and Phoenix perceived themselves to be the focal subjects in a tourism network, perhaps due to their significant role in linking various fragmented sectors together from entities in both vertical and diagonal levels. They were wholesalers that linked producers and consumers in the business market. They coordinated products in bulk and packaged them from a

sales network. The two companies needed to coordinate a variety of tourism-related products or services from different suppliers and then sell them to consumers, such as hotel rooms, ferry seats, food, and beverages.

As the core participants, managing a high level of interdependence among suppliers in various sectors, Dragon and Phoenix had an enormous influence on the overall development of tourism activities. The two firms successfully developed two-party collaborative relationships with target source market operators located in Shenzhen and other cities in Guangdong province. Based on the contractual arrangement for each tour, tour operators in China selected Chinese visitors from other provinces who would then gather together and travel to Macau by the appropriate transportation. In order to follow the determined tour itineraries with the appointed tour guides, Dragon and Phoenix then collected all categories of tourism resources serving the Chinese visitors from diverse and geographically fragmented spots in Macau. This meant not only interlinking with multiple firms but also communicating and facilitating firms among different business sectors to provide a mix of packages for tourism marketing.

Basically, the tour operator performs technical, economic and holistic functions for the tourist. We are not net producers of economic resources to manifest expenditure on various elements. We have many roles in promotion, advertising, wholesaling, and accommodation that link different organizations in Macau and China. Underlying our scope of technical and holistic functions, we create a corresponding impact on the region's economic, social and cultural growth, particular to our tourism development. (Technical Director, Dragon).

The primary purpose of Dragon and Phoenix was to link multiple firms or organizations in arranging spatial and functional connections. They developed direct business relationships with many small and medium-size restaurants, hotels, and recreational stores located in the Macau Peninsula, Taipa, and Coloane. Due to various geographic and cultural elements provided by different suppliers, the two companies had to contact suppliers individually and then compare the offered prices to develop a final tourism plan. Normally, most of the cooperation was one-to-one relying on consumption by tourists.

We bring buyers and sellers together. We combine all business and non-business sectors from the supply side to provide goods and services. Primarily, we provide the right product at the right time to reduce production costs and meet tourists' needs. Although tourists only see us providing them with a seamless tourism product that bundles related firms together in the tourism value chain, these firms are independent units in different business sectors. The inseparability and dependence are created in one firm at a time and by coordinated by us. (CEO, Phoenix).

4.1.3. Continuous competition among tour operators

Before liberalization, the initial economic growth of Macau relied heavily on the gaming monopoly and other small business sectors. Restricted by its limited land size, uniformity of tourism products, and stagnant development, there were not many vocational activities or shopping centers available, which offered scope for only a small number of tour operators in Macau. In the late 90s, Dragon and Phoenix were able to achieve rapid vertical growth through the integration of several core tour activities, such as the development of tour bus teams, souvenir shops, and hotels, and, successfully became the two largest tour operators.

During Macau's early tourism development, these two companies saw no reason to collaborate with other tour operators. Although tourism is a customer-oriented practice that emphasizes service, quality, and tourist satisfaction, Dragon and Phoenix were able to dominate the tourist industry because of their significant roles and oligopolistic

position in the market. Tour operators competed through full capacity and cost-cutting measures to attract tourists. They provided similar travel packages and would focus on visiting a limited selection of famous landmarks, such as A-Ma Temple, the Ruins of St. Paul, and Hotel Lisboa. The rivals seldom interacted, exchanged information, or assisted each other. It was common for them to compete for the same end market, focusing on sales volume, high profit, and commissions.

Macau is a small town. Recreational and amusement activities are limited. Aside from gambling in the casinos, expenditures by tourists are very low. To win contracts, we [tour operators] are especially concerned with cost-cutting strategies. We offer prices similar to our competitors, so we need to look for different suppliers such as restaurants, night clubs, hotels, and retail stores that can offer us lower prices. (Supervisor, Dragon).

4.2. Stage 2 – emergence of cooperation and competition

4.2.1. Drivers of cooperation

The termination of the casino industry's monopoly in 2001 revitalized Macau's tourism industry. Macau's SAR government was determined to shape the small city into the world's most famous tourist destination. In early 2002, some well-known international casinos were invited to build and invest in Macau. MGM, Venetian, and Wynn from Las Vegas and Crown from Australia were some of the companies which were interested in investing in the new business environment.

The liberalization of the gaming industry provided global investors with almost unlimited business opportunities coming from the closer integration of gaming, tourism, and related sectors. From 2002 to 2010, several casinos opened flagship properties as part of a strategy for future development. For instance, Sands started their operations in 2004; Wynn in 2006; and Venetian and MGM both opened their flagship properties in 2007.

The new luxury casino resorts featured a variety of tailor-made hotels, international Michelin restaurants, large shopping malls with comprehensive high- and middle-end retail shops, and popular shows and entertainments with a mixture of local and foreign cultural elements. In line with an initiative of the Macau Government to position Macau as a world-class tourism destination, business investors from various industrial sectors were encouraged to consider more family-friendly projects and leisure entertainment options to attract visitors.

The number of visitors to Macau saw a remarkable increase from 6.9 million in 1998 to 18.7 million in 2005, and to 30.53 million in 2017 (DSEJ, 2018). The mega-casino resorts that were integrated with massive, themed shopping malls immediately created diversified and customer-oriented package tourism. The opening of many mega-casino resorts also had a positive impact on other tourism-related business sectors, causing investors to build numerous four to six-star hotels at various locations in Macau. Both high-end global brands and local brands opened a larger variety of tourism product shops selling souvenirs, jewelry, accessories, and food.

The provision of unique experiences and newly introduced tourism products for visitors not only triggered a dramatic economic growth. It also changed the formal business practice and operational relationship of the tourism suppliers. (Consultant 2, Dragon).

As witnesses of the development of new tourism era, Dragon and Phoenix saw growing signs of change in the preferences and behaviors of Chinese outbound market and Chinese shoppers, particularly among those wanting high quality and luxury tourism packages. These changes forced tour operators to upgrade their product variety and to specialize in niche markets.

Furthermore, owing to economic diversification after 2002, the government changed many obsolete tourism policies to make Macau a more attractive place to invest. Many multinational companies - several

tour operators among them - invested in Macau. Many tour operators were created through joint ventures or licensing, while others were wholly owned by international investors.

Affected by different environmental factors, survivors and non-survivors [tour operators] had been fading in and out of the market throughout the decade. (Manager 2, Phoenix).

During the peak investment period, more than 30 tour operators were present in the tourism market. However, because of hyper-competition, the early-entrants (e.g., Dragon and Phoenix) with large-scale operations, together with the late-entrants (e.g., Lion and Tiger) with small-scale operations, were gradually whittled down from more than 30 to less than 12 by late 2010. Most of the survivors provided similar tour packages to Mainland Chinese visitors in the tourism industry. Facing a highly competitive business environment, Dragon, Tiger, and Lion realized the urgency of strategic transformation from competition to cooptation. However, some tour operators, such as Phoenix, still refused to cooperate with their rivals.

Factors driving our cooperation include the changing policies, the emergence of vertically integrated MNCs; fierce competition among tour operators and changing perceptions of tourists after visiting Macau. (Consultant, Dragon).

Our cooperation was driven by three main issues. The first issue was the liberalization of the gaming industry. The second issue was the creation of many new tourism policies following liberalization. Last, there were too many competitors in the marketplace. (Technical Director, Tiger).

4.2.2. Triadic relationships

In the late 2000s, tour operators, in general, faced a continuously decreasing profit margin due to the limited scope for increasing package fees in the face of fierce competition and local inflation. Regardless of the size of tour operators, all of them felt increasing cost pressure when collaborating with suppliers in other sectors. First, the demand for hotel rooms continued to increase as the number of visitors reached a historical high. Hoteliers had more negotiating power than the tour operators and were in a better position to influence the price of rooms. In such a competitive market, tour operators tried to standardize their packages and follow a high volume-low cost-low profit margin strategy to offer their products. As a matter of policy, most of the branded hotels with good facilities would only choose to cooperate with larger tour operators, such as Dragon and Phoenix for better financial security and the ability to reach long-term agreements on buying accommodation in bulk. Small tour operators were likely to encounter more risk when formulating a cooperation scheme with smaller, less well-equipped and easily substitutable hotels.

Demand forecasting was a crucial factor affecting the cost of operation for the tour operators, because the service capacity of hotel rooms could not be available for future resale. The perishable nature of this aspect greatly influenced the tour operator's performance due to the difficulty of balancing supply and demand. Demand from Mainland visitors could vary by time of day, season, and even the business cycle, while there was an increasing supply in the service industry in Macau. As a rule of thumb, Dragon and Phoenix had to make reservations in advance and bear the risk of all losses if they could not correctly predict the right number of group visitors or if the visitors decided to withdraw from their tours. According to their experience, the pre-paid costs for hoteliers and other tickets for destinations or services were neither reimbursable nor refundable.

Survival in the tourism market became extremely difficult as the operating cost rose tremendously because of strong economic growth. After the development of gaming tourism, retail sales had increased five times from US\$0.57billion in 2000 to US\$2.79billion in 2010 in Macau. Owning a tour operator was highly capital-intensive because providing a

tour package involved payments for running tour coaches, hiring administrative coordinators, tour guides, and tour bus drivers, and advance payments for hotel room rentals, and for reservations in restaurants. Due to high business operational costs and decreasing bargaining power when engaging in price negotiation with other suppliers, Dragon decided to close its hotel and merely focused on its niche market, the tour operator business. In 2007, the general manager of Dragon intentionally introduced Tiger to several hoteliers to handle the problem of service perishability by renting out its unsold rooms. Since then, the two firms entered into a strategic alliance to pool their resources together.

Usually, we book a large number of rooms from the Grand Lapa, Sofitel Macau, At Ponte 16, Hotel Lisboa, Rio Hotel, and others. We must provide the full payment even if the guests do not arrive for their tour. Therefore, it is preferable to sell the vacant rooms to Tiger at a discount price to reduce losses. (Senior Executive, Dragon).

Many hotels had already had cooperative relationships with Dragon but had never formed a relationship with Tiger before. Through an introduction by Dragon and with an agreed-upon level of coverage and occupancy, the hoteliers sought to develop trust-based, collaborative relationships with Tiger. For the purpose of lowering its cost of production, Dragon acted as a broker connecting Tiger and a group of hotel suppliers to share unsold rooms. The hotels, together with Dragon and Tiger had thus developed a triangular sourcing arrangement. Specifically, the relationships between the hoteliers and Tiger increased their connection within the supply chain.

Normally, large hotels are not interested in working with us. Dragon is able to maximize its occupancy by re-allocating the spare rooms to us. In contrast, we depend on their channel to expand our supply network and have more access to other large hotels. (Supervisor 2, Tiger).

Tiger, benefiting from being linked to the hoteliers by Dragon's introduction and arrangement, then reciprocated by connecting Dragon with its restaurant partners, using similar arrangements to sell its pre-ordered food tickets at a discount to Dragon. This included several restaurants, with which Dragon previously had no relationship. This arrangement simultaneously helped Tiger to solve the problem of perishability while it also enabled Dragon to develop more linkages with restaurants. Thus, both Dragon and Tiger's enactment of cooperative relationships added more connections between different sectors in the tourism industry.

4.2.3. Changing relationships

The new cooperative relationship developed between Dragon and Tiger had transformed them into intermediaries among their suppliers and rivals. Following the strategic partnership between Dragon and Tiger, formed in 2007, Lion also began to collaborate formally and informally with Tiger during 2008. The two later-entrants agreed to share tour buses and tour guides during peak tourist seasons. Later, the collaboration extended to other tour activities.

After two years of strategic collaboration, the bilateral cooperative relation of the two firms changed into a triadic relation when Tiger referred Dragon to Lion in 2010. To upgrade company vehicles, Dragon planned to replace most of its used tour buses with a new low pollution "green" model. Simultaneously, Lion decided to enlarge its business scale by purchasing a few second-hand buses from the market. The general manager of Tiger played an intermediary role to help Lion and Dragon arrive at a transaction agreement for 8 s-hand tour buses.

Owing to Tiger's referral, Lion and Dragon developed a continuing cooperative relationship. This proliferation of cooperative relationships allowed for a higher frequency of resource exchanges and joint operations among the three, while they continued to compete individually for group visitors.

Well, thanks to the help of Tiger, Lion has become one of my business partners. Although a new relationship has formed, I still see Lion as my competitor. The same thing applies to Tiger; the game is still on. (CEO, Dragon).

Although tourism packages provided by the tour operators were similar to packages used in the previous relationship stage, the changing relationships between Dragon, Tiger, and Lion significantly altered interconnections among suppliers and other related organizations. When Tiger bridged the relationship between the two rivals, it also enabled the two firms to extend their business opportunities in connection with other suppliers and organizations.

4.2.4. Paradoxical relationships

From the perspective of cooperation, Dragon, Lion, and Tiger had pooled resources and undertaken joint activities to overcome their disadvantages. Since Macau had long been suffering from a labor shortage due to the competition for human resources in the gaming industry, the three companies were not able to employ enough professional tour guides and tour bus drivers.

They decided to allow their tour guides and bus drivers to work in shifts for all three companies, thus pooling human resources. Dragon also agreed to lease its tour buses to Tiger and Lion during their peak seasons. This practice greatly decreased the investment needed to run multiple tour buses for small scale tour operators while it also benefited Dragon by lowering operating costs.

Additionally, the three firms also allowed tourists from their partners' tour groups to purchase each other's souvenir products in return for contract-based permissions. This cooperative relation offered tour operators the opportunities to consider whether tourism products and services should be developed in-house or outsourced. The partnership also greatly optimized the trade-off between increasing operating cost and service quality in a just-in-time supply chain among the cooperators. Moreover, the three companies also collaborated to share market knowledge and work together on new product and service development. The cooperative relationships enabled them to overcome resource shortages and increase operational performance.

Hiring a good tour guide is not an easy task in Macau. Top tour guides can earn over Mop\$300,000 a month. At different times, we must face both over- and under-supply of human resources. That's why we hire some tour guides from Dragon to eliminate our deficiencies. (General Manager, Tiger).

We are the pioneering employees who interact with the tourists. Tourists from different provinces share unique cultures and have special requirements for our products and services. We [tour bus drivers] normally provide the information we have learned from the tour guides of other tour operators directly when they rent our buses. If not, it takes much longer to travel around if the tour guides don't have the correct information. (Bus Driver 1, Tiger).

Despite the closer relationships between the companies, it is evident that the tour operators still perceive one another as major opponents in the marketplace. From a competitive perspective, the four firms described in this case have competed on tour prices to win customers. Each company has sought to be the leading firm for branding and to develop superior capabilities, even though three of them have formed a triadic partnership and have a certain level of interdependence, as discussed above.

Fierce competition among the tour operators continued throughout the past decade. The sustainability of the four firms relied on the creation of well-developed distribution channels. Each of the tour operators played a major coordination role, in which they connected target source market suppliers in China with product and service provider bundles in Macau. Yet competition between them for the largest number of tour group visitors from China still remained one of their main priorities.

There were five main approaches to competition. First, the four firms could seek to offer a higher commission to the target source market tour operators that were mainly located in Shenzhen, who supplied them with group visitors from various provinces in China. Second, they could expand their networks to include new tour suppliers in different locations in China. Third, the four firms needed to continue with their integration of a diverse group of local suppliers to provide tour packages in Macau. Tour package providers prioritized the building of formal and informal business partnerships with hotels, casinos, restaurants, and entertainment providers by investing time, trust, commitment, information and knowledge exchange, communication, and problem-solving techniques.

We [tour operators] need to compete for tours. These include tour groups coming from Shandong, Gaungxi, and Fujian; wherever they come from, they are all gathered in Shenzhen and then are sold to us in groups, ranging from the previous price of Mop \$300 per person to Mop \$500 per person now. We offer different prices to our tour operators in China to gain this access. (Senior Executive, Lion).

We have four rounds of discussion and it takes us almost four months to negotiate with the resort manager to coordinate visitors. It is not easy. We know that other tour operators are doing the same thing ... it is so competitive. But we will gain first-mover advantage if we succeed. (CEO, Dragon).

We still compete on so many activities even though we are in a partnership with Dragon. We consider each other as rivals; we compete to sell products and services to the end-buyers and occasionally collaborate for buying products and services from another supplier. (General Manager, Tiger).

Fourth, the four firms also strived to promote their individual brands through the launching of their own marketing strategies. These involved providing tour products and services with more attractive and discounted prices, forming alliances with particular casinos, resorts, shows, and recreational companies to offer tailor-made tour packages, providing online after-sale services and offering free gifts and services to visitors to help spread favorable word-of-mouth recommendations.

Fifth, they also competed on the basis of developing superior capabilities, such as new mobile software applications that could be accessed and integrated with their partnering hotels, resorts, souvenir shops, and other suppliers. Due to shortening time horizons and time intervals in providing service, the focus of the four firms on developing these new capabilities was an attempt to achieve greater accuracy in sales forecasting and to enhance their competitiveness vis-à-vis other tour operators.

4.3. Stage 3 – expansion of cooperation

4.3.1. Continuous expansion

Since early 2000s, Dragon has built a strong network with many large-scale tour suppliers in Macau. In contrast, Tiger and Lion have become connected with several innovative, newly developed, small and medium-sized enterprises. Through operating joint tour activities, there has been a high frequency of information, resource, and knowledge exchange among the three firms.

Tiger and Lion have established business relationships with Dragon's business partners, such as the senior manager of Mandarin Oriental Macau and the general manager of Golden Dragon Hotel, who provided the two companies with attractive prices for hotel rooms. Through this informal contact with the general manager of Dragon, the two also fostered close partnerships with the director of the shopping mall located in the Venetian. Consequently, the tourists with Tiger and Lion have been receiving a special shopping discount of 30% for some duty-free cosmetic and skincare products for each purchase.

In return, Lion and Tiger introduced Dragon to new business

relationships with their suppliers, including four newly developed restaurants and six ticket providers for various spot destinations. In this situation, the intermediary roles played by the three tour operators deepened the triadic relationships with their suppliers and among themselves - the rivals.

Although Fantasy is quite a small new restaurant, we purchase the buffet tickets from it now because we receive a 15% discount per ticket. We [Dragon and Fantasy] got to know each other through the referral of Lion's senior manager in an informal talk. (General Manager, Dragon).

The cooperation between rivals also helped them to expand their networks to include other institutions related to the tourism industry. Since tourism policies have changed significantly over the course of the recent two decades, the government departments shaping Macau into a world-class tourist destination have become more important and have encouraged the creation of public tourism organizations.

Apart from maintaining close relationships with other business firms, developing relational ties with some non-business institutions has also been essential for the sustainability of these three firms. These public organizations have had specific functions in leading, administering, and governing the tour participants in Macau. The Macau Government Tourism Office (MGTO) has had the authority to develop tourism laws and regulations and to grant operational licenses. The Institute of Tourism Education (IFT) has been an educational organization that offers training and certification to tour guides. The Macau Government Association of Macau Tourist Agents, the Macau Travel Agency Association, and the Macau Tourist Guide Association have been sharing a platform for multi-stakeholder conversations by bringing together the different viewpoints of local authorities and business sectors. They have also provided tour operators with guidelines, information, and knowledge to increase tourist satisfaction. The interactions between the three tour operators have allowed them to learn about more organizations through the referrals of their rivals. The institutions mentioned above, however, have served as an important context for interactions by disseminating the most up-to-date information and knowledge about the tourism sector, including values, norms, laws, and regulations relating to industry growth.

Through informal meetings between our managers [Dragon and Lion], we formed a relationship with the MTAA [Macau Travel Agency Association]. Members from diverse tourism sectors are formally elected to the board of the MTAA to represent us and share our ideas. We have a strong incentive to keep in close contact with them because they provide important guidelines for running our business. (Senior Manager, Lion).

4.3.2. Configuration of the supply network

To remain viable in a fiercely competitive tourism market, an increasing number of tour operators have realized the benefits of cooperation among rivals. Phoenix grudgingly began to appreciate the importance of cooperative relationships after four consecutive years of losing revenue as a fully independent business. Subsequently, Phoenix entered a strategic partnership with its rivals in 2010. Within a few years, the interdependent relationships developed between the four tour operators and their participants have become more complex.

We suffered during a downturn that lasted for several years and we feel an urgent need to adopt a new strategy to turnaround our business situation. Through access to the network built by other companies, we can reach more suppliers. (CEO, Phoenix).

After 2010, the extensive cooperation and competition among these tour operators has persisted. Meanwhile, such relationships have also spurred connectivity with many of their rivals' suppliers on the vertical level and with other related organizations on the diagonal level.

We obtain benefits from being connected to Dragon by Tiger; the linkage of Dragon expands our supply network. Now, we have contacts with hotels, souvenir agencies and restaurants through the relationships of our competitors. Reciprocally, they also gain access to our suppliers by interacting with our employees. The relationship is mutually beneficial for all parties involved. (Senior Manager, Lion).

Macau already has such a well-established tourism network. Should I use the term well-developed or complex? In either way, we can now have access to each other's suppliers, and our network is expanding. Tour operators may form networks among ourselves to explore mutually beneficial partnerships. (Technical Director, Lion).

The referral of Dragon to Lion brings with it a secondary impact. We link them together, and they help to strengthen our relationships with their suppliers. Our rivals have now become our brokers. (Senior Manager, Tiger).

Table 6 (see Appendix) contains a summary of the changes in the relationships of the four firms studied. The changes in the tourism activities of the firms are examined through the lens of three stages of cooperative and competitive relationships. The tour operators do not have the data to clearly define the number of their suppliers at each stage of their relationships. However, the change from the competition in stage 1 to cooperation in the latter stages is best explained as a process used by the four firms to increase connections among suppliers.

Diverse connections have linked tour operators to other tourism actors through formal cooperative arrangements. These arrangements have resulted in a variety of wholesale deals as well as informal connections, allowing employees to exchange business information and knowledge about their suppliers. Consequently, the connectivity of tourism actors in multiple sectors has increased accordingly among the four firms.

5. Discussions and conclusion

This study explores the evolution of cooperative supply relationships among tour operators in Macau. It seeks to identify the composition of the supply chain, describe the relationships between organizations, and examine the transformation of relationships that lead to the formation of a tourism supply network (see Figs. 2–4).

Fig. 2 portrays the overall structural relationships among the tourism participants in Macau before 2001. The focal nodes depict the relationship between Dragon and Phoenix, formed at stage 1. The competitive relationship between the two focal nodes presents a horizontal competitive relation among tour operators. Cooperative relationships formed between tour operators and organizations from other sectors are considered to be cooperative relationships at the vertical or diagonal level. The overview of relationships between these tour operators and other participants, which appear so simple, can best illustrate how the

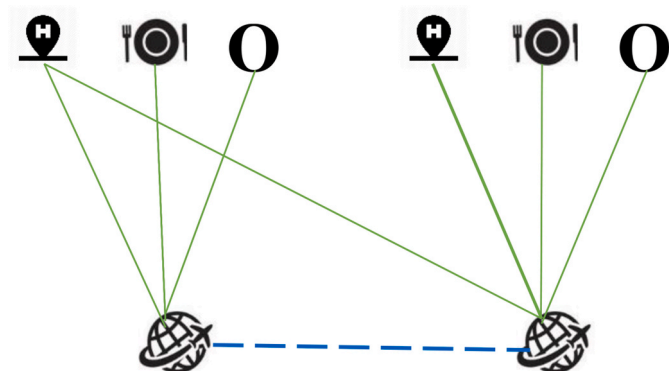


Fig. 2. Horizontal competition and cooperation with other levels.

travel experience was provided to visitors in Macau in the early stage of development.

As portrayed in the evolving relationships between Dragon and Tiger in stage 2, there was a coexistence of horizontally competitive and cooperative relationships of tour operators in the 2000s (Fig. 3a–c). The change from a pure competitive relationship to a competitive-cooperative relationship affected not only the rivals but also their relationships with other participants in the tourism supply chain.

Fig. 3a consists of Dragon and Tiger as the two focal nodes linked by a competitive relationship. While Dragon had developed a cooperative relationship with its supplier - the hotel at the vertical level - there was no relationship established between Tiger and Dragon's hotel partner. Fig. 3b shows a new cooperative relation that was formed between Dragon and Tiger, where Dragon acted as a broker, bridging Tiger and the hotel. Under such arrangements, the triadic relationship as depicted among Dragon, Tiger and the hotel can be observed.

Following the same logic, Tiger returned the favor and engaged in bilateral exchanges. In this way, both Dragon and Tiger acted in a broker role for each other, as shown in Fig. 3c. Accordingly, these cooperative relationships on both the vertical and diagonal levels increased substantially through the frequent interactions among the participants. Fig. 3a–c illustrate how a triadic relationship unfolded among the two tour operators by delineating the coexistence and evolution of their paradoxical cooperative relationships during the second stage.

In Fig. 4, the cooperative supply network expands over time. Due to increasing competitive pressures and new opportunities for brokerage in the supply network formation, the four firms induced new vertical and diagonal relationships among themselves. These relationships have accelerated the number of cooperative relationships among all tour participants in the network of supply chain, while the competitive relationships remained unchanged. Consequently, the new cooperative relationships and related structure have constituted the overall pattern for the entire tourism supply network in Macau. A few focal nodes with both cooperative and competitive relationships have become connected on both vertical and diagonal levels.

5.1. Theoretical contributions

Our study aims to make three contributions to the research on the tourism supply chain by articulating how cooperative relationships have evolved among suppliers at multiple (e.g. horizontal, vertical and diagonal) levels. First, we advance tourism supply chain literature through the identification of key components and patterns of relationships. While prior studies on the tourism supply chain have underscored the importance of vertical supplier dyad (two-party) without exploring the triadic relationships between horizontal suppliers and suppliers from other levels (Madhavan, Gnyawali, & He, 2004), we have been able to identify the nodes and the interconnected relationships that constitute the tourism supply chain (Grängsjö & Gummesson, 2006). Although vertical, horizontal, and diagonal levels have been conceptualized in some prior studies (Zhang et al., 2009), there has been no prior empirical research gauging the impact of those relationships in shaping the structure of the tourism supply chain (Huang, 2006). Our study breaks new ground in demonstrating the prominent role of tour operators (focal nodes) in coordinating various stakeholders in both private and public sectors within a tourism destination embedded in a network of horizontal, vertical, and diagonal supply relationships (Zehrer & Raich, 2010). By linking organizations in different sectors, they perform a crucial role in structuring the supply chain (Romero & Tejada, 2011). In particular, the brokering position of the rival tour operators increases the bilateral exchange between them and enacts a triadic relationship between different suppliers and actors, thus leading towards the formation of more new patterns of relationships in the tourism supply chain (Burt, 1980).

Second, this study contributes to the literature of tourism destination research by adopting the lens of cooperation to broaden the composition

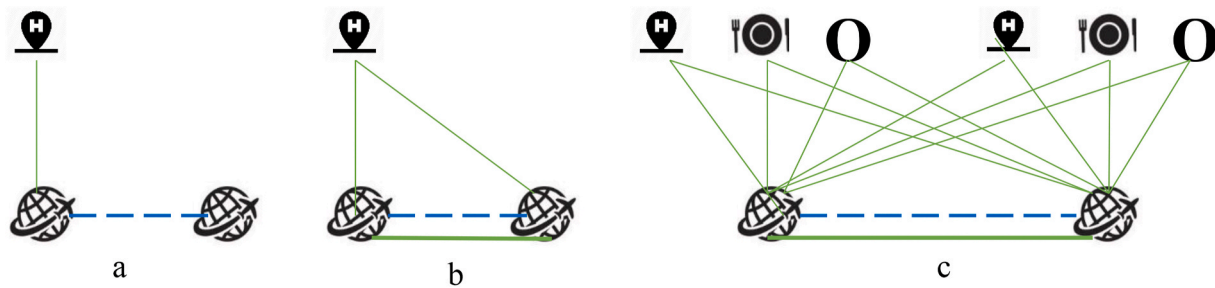


Fig. 3. (a) Two-party relations; (b) Triadic relations; (c) Horizontal competition and cooperation with other levels.

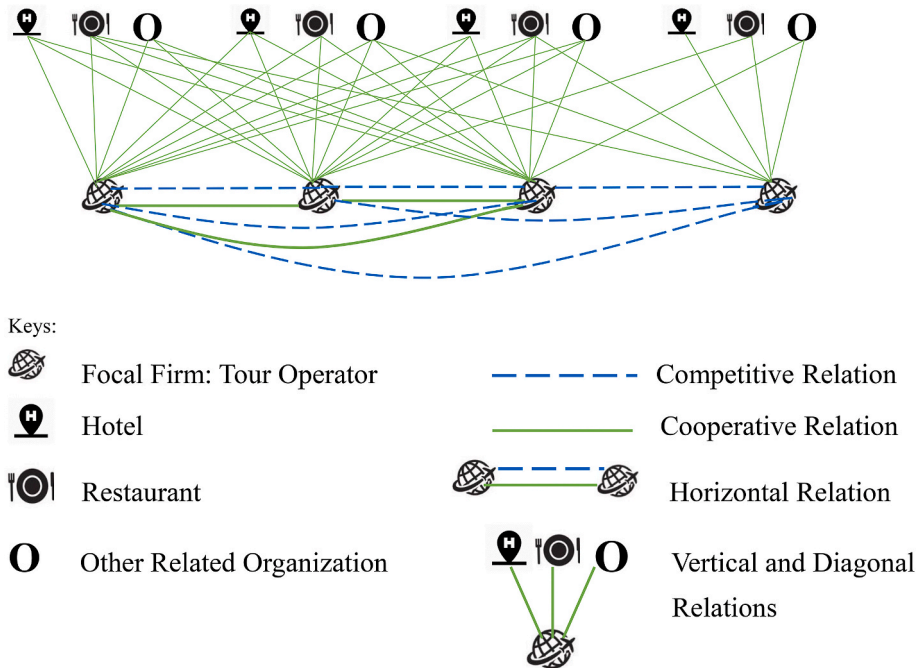


Fig. 4. Expansion of competition in the horizontal level and their effects on other levels.

of tourism supply chain characterized by a cluster of collaborative suppliers (Pathak, Wu, & Johnston, 2014; Tran et al., 2016). Through the study of their configuration on relational development, we are among the few researchers to formally conceptualize and provide some new insights into the evolutionary pattern of competition in supply relationships for the tourism supply chain (Guo et al., 2014). In particular, we incorporate a configuration approach to theorize the formation of cooperative relationships between horizontal rivals on a step-by-step basis. The configuration of cooperation in the horizontal level represents a building block to explain how a broad range of tourism activities in different tiers or levels of participants are being affected (Della Corte & Aria, 2016). While relationships developed between horizontal suppliers contain aspects of both competition and cooperation, relationships between the vertical and diagonal suppliers involve are more cooperative (Bengtsson & Kock, 2001). The formation of cooperative relationships between the rivals at the horizontal level demonstrates both market competition and cooperation, based on resource and capability development. Our findings indicate that changes in relationships among rivals create a subsequent impact on other participants to accelerate vertical and diagonal cooperation (Pathak et al., 2014). In this regard, the changing relationships among participants has a cascading effect on the formation of a cooperative supply network (Kylänen & Rusko, 2011). The competitive tensions faced by focal firms are the underlying drivers and motivators that lead to cooperation. Although competitors strike a balance between seemingly paradoxical

and opposite relationships (Fong et al., 2018), the transitional relationships in a horizontal base have gradually affected the density of relationships on both vertical and diagonal levels, which in turn, affect the structure of the tourism supply chain.

Third, this study reveals the intermediary role played by the tour operators, an issue that has been overlooked in prior literature (Song et al., 2012; Zhang et al., 2009). This study reveals how changes in the cooperative relationships among the tour operators may affect the operations among suppliers at different levels or tiers. Being the focal firms in the cooperative tourism network, tour operators can keep on changing the relationships with their business partners in order to maximize profit and ensure sustainability. The cooperative activities of the tour operators (see Appendix – Table 6), such as pooling resources, integrating knowledge, developing superior capabilities, and accessing distribution, have been affected because of the changing ties and relationships among the rivals. These firm level activities increased constantly among rivals when their relationships changed from sole competition to cooperation. The changing relationships between rival tour operators simultaneously increased the connectivity among different levels of tourism suppliers or actors due to the involvement of different participants together with the tour operators supplying tourism activities (see Figs. 2, 3a and 3b, 3c and 4). When the tour operators as focal nodes coordinate different firm level activities to satisfy the tourists in the supply network, they generate spillover effects to the other suppliers who are engaged in other value-adding activities. As a result, tour operators may have a reciprocal

influence on the firm level activities (between themselves and other suppliers in different levels) through the ties developed with other suppliers, subsequently affecting the operations of the tourism supply network.

5.2. Managerial implications

Some managerial implications can be derived from our study. First, a tourism supply chain can be developed by various private and public organizations. In order to provide a complete tour package solution, participants in the tourism supply chain must understand their own strategic needs and choose partners (suppliers) in a mindful fashion. This creates a strategic dilemma for actors in the tourism industry to engage in a cooperative relationship. As the findings illustrate, although a strategic alliance could offer strategic and operational benefits to an organization, such benefits could be temporary due to the risks in sacrificing long-term competitive advantages. Moreover, the process of partner selection requires a careful assessment of individual commitments and mutual benefits from both short-term and long-term perspectives. Given these uncertainties involved, finding good partners in a tourism supply chain is complex and challenging. The company should not merely rely on its partners or competitors. Instead it must continue to strive for innovation and to stay ahead of the competitive game in research and learning from the marketplace.

Second, coepetitive relationships in a supply network involves a chain of triadic coepetitive relationships among different organizations. The choice of an individual actor as a broker can trigger different responses from other participants, thus changing the inter-organizational relationships. This symbiotic relationship is critical to the success of service providers, as it helps to mitigate the problem of service perishability. Vacant hotel rooms, tables, and seats render sunk costs, while strategic alliance among vertical suppliers can help absorb the excessive demands. These complex network structure serves to benefit different suppliers through service bundling and the knowledge sharing and exchange among managers.

Third, there is a chain effect when altering the structure of a supply network, so a manager in an organization should clearly define the relationships they prefer in different time horizons, be it competitive, cooperative or coepetitive. These three relationships often flip-flop depending on different organizational situations encountered at different times. According to the changes over time in the environment, the relationships developed between different participants in the supply network may also be altered. Although competition may work well when the firms are large enough to control the market, managers should also realize the key advantages of collaboration. It could flourish in an industry with a just-in-time supply chain among participating operators. Doing so not only improves customer services, but also lowers operation costs. In addition, it helps build a repository of resources shared among tourism actors.

5.3. Limitations and future research

There are three limitations of this study. First, the data collected were from a single tourism destination, namely Macau. We recommend that future analysis should be conducted in other tourism contexts for further validation. More cases on how coepetitive relationships evolve as a result of environmental changes in the supply network should be analyzed. Case replications can deepen our understanding of the evolution of tourism supply chains. Researchers can use the findings from our cases as a springboard to develop more nuanced theoretical models.

Second, our main focus for the current research was on horizontal relationships among rivals within the tour operator industry. There are opportunities for future research on coepetitive horizontal relationships that are applicable to both vertical and diagonal groups in other sectors, such as hotels, food and transportation. By conducting follow-up studies in other tourism sectors, researchers could broaden our understanding of

the dynamics of coepetition.

Third, our research adopts a qualitative method through the collection of longitudinal data in multiple cases for theory development. In addition to using the qualitative method, researchers could design quantitative studies to operationalize and validate our nascent theory of the coepetitive supply network in tourism.

Impact statement

This paper provides three contributions to the literature of tourism supply chain. First, it advances the tourism supply chain literature through the identification of distinctive relationships forged among various participants at different levels. Second, it utilizes the lens of coepetition to understand how the overall supply network has evolved in response to the changes in relationships among horizontal suppliers. Third, it highlights the significant contributions of tour operators toward the development and evolution of a coepetitive tourism supply chain network. Importantly, this study captures the evolutionary dynamics of how coepetitive relationships are formed between horizontal suppliers, the subsequent impact on both vertical and diagonal suppliers, and the resulting overall changes in the structure of the tourism supply chain.

Author contributions

All authors contributed to the development of theoretical arguments and presented idea. Veronica Hoi In Fong implemented the data collection and performed data analysis with support from IpKin Anthony Wong. Jacky Fok Loi Hong further verified the analytical methods and provided feedback. All authors contributed to the results and Dr. Fong prepared the final manuscript which was further approved by Dr. Hong.

Declaration of competing interest

The authors declare that they have no competing financial interests or personal relationships that could influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tourman.2020.104274>.

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