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Selecting a cruise port of call location using the fuzzy-AHP method: A case study in East Asia

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HIGHLIGHTS

- This study identifies why cruise lines select specific ports for their itineraries.
- Key determinants are the tourist attractions located near a port.
- Secondary determinants include access and responsiveness to cruise tourists wants.
- Singapore and Hong Kong are attractive Asian locations for cruise lines.

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ABSTRACT

Increasing income levels and greater leisure time give people the opportunity to pursue new types of tourism ventures. As one of the fastest growing areas in the leisure travel industry, the cruise industry is increasing rapidly. Due to the benefits that cruise tourism brings to each port of call and the hinterland, it is necessary to be able to analyze the factors that affect cruise lines' port selections. The main objective of this paper is to identify the main factors motivating cruise lines to select specific ports of call and to provide information to port operators that will enable them both to improve their management strategies and to attract more cruise ships, thereby contributing to the revenues of the port and regional economy.

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1. Introduction

The modern cruise industry emerged in the late 1960s and early 1970s (Rodrigue & Notteboom, 2009). Although the cruise industry is still relatively young (Hur & Adler, 2013), it has become a significant part of the tourism industry, with an enduring and stable passenger growth rate at around 7.6% per year from 1980 to 2011, and it has proved to be an economic catalyst for each destination (Chase & McKee, 2003; Dwyer & Forsyth, 1996, 1998; Manning, 2006; Vina & Ford, 1998). The potential for the cruise market is strong, and even the financial crisis of 2008–2009 did not affect the demand for cruises, with a 13% global growth rate. Residents in the U.S. account for 67% of the industry's global passengers, and the contribution of the cruise industry to the economy of the U.S. is positive. The North American cruise industry generated 329,943 jobs in retail, restaurant, and lodging operations and contributed $15.2 billion in wages to the economy in 2010. The gross output of the cruise industry with respect to the U.S. economy in 2010 was $37.85 billion, a 7.8% increase over the previous year (CLIA, 2010).

Responding to lifestyle trends, cruise liners have expanded services to cruise passengers, giving them not only the opportunity to relax onboard but also to participate in onshore activities and services available at their destinations (Gulliksen, 2008). According to research by the CLIA (2011a), 82% of North American cruise passengers are likely to seek cruises to long-distance destinations such as Asia. Asia is a fast-emerging market, and many cruise lines are very keen to expand into this region (Tan, 2011). With the growth in the Asian market, the ports in this region are under pressure to improve the quality of their services and maintain competitiveness in terms of passenger terminal developments and associated tourism infrastructure (McCarthy, 2003). In order to more accurately determine the thinking and needs of cruise lines and passengers, this paper aims to identify the factors that

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influence their port selection and provide some suggestions for the ports in East Asia to attract more cruise ships and thereby contribute to port revenues as well as the regional economy.

This paper is divided into four parts. Following the introduction, the second section provides a literature review on the factors for cruise port selection and the cruise market in East Asia. The third section reviews the proposed methodology and presents the findings by using factor analysis and the fuzzy-AHP method. The final section of the paper provides suggestions, conclusions, and future research opportunities with respect to this study.

2. Literature review

2.1. Factors for cruise port selection

This section aims to identify the crucial factors that influence the selection of cruise ports. The literature review unveiled many studies investigating cruise port selection factors from the perspective of expert (supply-side), such as the port's point of view, cruise companies and other participants (travel agent or others).

Bull (1996) discussed the market structure of the short ocean cruise industry and implied economies of scale and found that pricing and product differentiation were key variables for selecting a cruise destination to the cruise companies. Manning (2006) gave some guidelines about how a cruise ship could successfully select a port of call as a destination. The main influencing factors included the key natural and cultural assets of the port, port facilities, location access to other destinations and the home port, security, infrastructure (vehicles, well-trained multilingual guides and coordinators, etc.), provisioning (local supply of food, drink, and clean water), port costs (dockage fees, etc.), and marketing (the variety of itineraries available for passenger selecting). Robert (1998) found that there are two types of statements about a cruise port. The first type concerns the site (harbor attributes, port and cruise ship services and the amenities of the city or town). The second type concerns the situation (sea connections, land/air connections, and regional attractions). Lekakou, Pallis, and Vaggelas (2009) identified the criteria by which cruise companies select a cruise port from the port's point of view. These criteria are also divided into site (natural port characteristics, port efficiency, port management, port infrastructure, port services to passengers, port services to cruise ships, cost of port services, city amenities, political conditions and regulation framework) and situation characteristics (provisions for intermodal transportation, attractive tourist areas, proximity of markets for cruise passengers). Gui and Russo (2011) summarized some of these dimensions in their assessment of the competitiveness of cruise ports. These dimensions included regional dimensions, services a port can offered to cruise lines, the cruise passenger segments that can be served, the stage of the destination life cycle that has been reached, and how the destination is marketed by industry operators. Demirel and Yucenur (2011) solved the cruise port selection problem with extended VIKOR and ANP methodologies under fuzzy environment; the attributes included strategy conditions (proximity of tourist places, proximity of tourism markets, expansion possibilities), technical conditions (meteorological characteristics, water depth, dock convenience, wave effects, and status of coast line), economic conditions (investment costs, operating costs, and advertising costs), and social conditions (means of transport and educational status).

Cruise ports of call should provide local and regional land-based attractions, such as cultural and nature attractions, shore excursions, traditional native activities, and so on for passengers to experience and enjoy. These experiences should not be available onboard (Greenwood & Barron, 2005; Robert, 1998). Marti (1991) determined that cruise passengers prefer to stay longer at ports and indeed to limit the number of ports they will visit. Lee and Ramdeen (2013) used the regression model and proved that cruise itineraries have a significant effect on cruise ship occupancy rates. Marti (1990) agreed that itineraries were the most important factor affecting cruise port selection and supported the finding that geography contributed positively to the cruise port selection process. Greenwood and Barron (2005) presented the main issues and challenges faced when developing itineraries as well as some influences that might shape cruise itinerary planning, which included diversification and attractions at ports of call, distance (between home port to port of call and between originating market to home port), port attributes (port agents, destination infrastructure, port facilities, security, safety, environmental policies, provisions and cleanliness), cruise length, cost factors (fuel consumption and port taxes) and climate. Johnson (2006) argued that destinations should enhance the flexibility of cruise operations and display political will and tourism product development in order to offer pleasurable coastal ecotourism experiences for cruise passengers.

Lee (2002) provided some direction for dedicated cruise terminal development by highlighting that port-related facilities (berthing facilities, fueling and water supply facilities, loading and unloading facilities and sea rescue security systems), tourist facilities (accommodation, shopping, and entertainment), IT facilities, and customs, immigration, and quarantine (CIQ) facilities are crucial factors. Talley (2009, chap. 2) confirmed that cruise ports should provide cruise vessels with basic supplies (water, food, and fuel), waste handling and repair services, passenger shore facilities (shops and foreign exchange bureaus), and tourism information offices. Mak, Sheehey, and Toriki (2010) presented a case study regarding the current liberalization problems in the American cruise industry. The study implied that, in the hybrid and combination cruise industry, relative laws, policies, etc. should be initiated as a cooperative exercise between government and stakeholders so that the regulations could be more efficient and reflect the overall needs of operators and passengers. Tan (2011) indicated that in order for cruise tourism to grow in Asia, how the respective governments and authorities treat the cruise industry is important. Passenger shipping legislation and taxation are key factors for cruise lines, as are maritime law and policy, relaxed visa requirements, reasonable head tax and port charges, and expedited clearance procedures at ports.

Through previous studies, the potential factors that influence the selection of ports can be summarized. To avoid counting some of the factors twice and ignoring other factors, we performed an in-depth-interview with those making decisions at ports of call to confirm whether the summarized factors are appropriate. Finally, via suggestions from these individuals, 14 factors were identified. These are defined in Appendix A.

2.2. The cruise market in East Asia

Existing research regarding the cruise industry and cruise tourism has focused mainly on the major cruise regions in North America and Europe.[3] To date, limited research has been conducted on the Asian region. This paper will fill this gap and select the ports in the Asian region that will attract more visiting cruise passengers. In the past, the Asian region has received only minor attention as a cruise destination; however, with cruise passengers' increasing desire for ecologically and culturally sensitive travel products (Chon, 2010), exotic East Asia is now starting to make its presence

[3] The top ten major cruise regions for 2012 are ranked as Alaska, the Caribbean, the Mediterranean, European rivers, the Panama Canal, Europe, South America, Hawaii, the South Pacific and the Baltics (CLIA, 2012).

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