Current Issues in Tourism

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/rcit20

Impacts of low-cost carriers' development in the Asia-Pacific region on tourism, economic development and social wellbeing: a systematic review

Huan Wang, Kan Wai Hong Tsui, Hanjun Wu, Xiaowen Fu & Tarryn Kille

To cite this article: Huan Wang, Kan Wai Hong Tsui, Hanjun Wu, Xiaowen Fu & Tarryn Kille (10 Oct 2024): Impacts of low-cost carriers' development in the Asia-Pacific region on tourism, economic development and social wellbeing: a systematic review, Current Issues in Tourism, DOI: 10.1080/13683500.2024.2413669

To link to this article: https://doi.org/10.1080/13683500.2024.2413669

CURRENT ISSUES IN TOURISM
https://doi.org/10.1080/13683500.2024.2413669

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

OPEN ACCESS Check for updates

Impacts of low-cost carriers' development in the Asia-Pacific region on tourism, economic development and social wellbeing: a systematic review

Huan Wang[a], Kan Wai Hong Tsui[a], Hanjun Wu[b], Xiaowen Fu[c] and Tarryn Kille[a]

[a]School of Business, University of Southern Queensland, Springfield, Australia; [b]School of Aviation, Massey University, Palmerston North, New Zealand; [c]Department of Industrial and System Engineering, The Hong Kong Polytechnic University, Hung Hom, Hong Kong

ABSTRACT

This review undertook a systematic examination of 82 journal articles, focused on identifying the impacts of low-cost carriers in the Asia-Pacific region on tourism, economic development and social wellbeing. The analysis determined that the development of low-cost carriers in the Asia-Pacific region has had 19 beneficial impacts on the tourism sector, economic activities and social welfare, as shown by increased tourism demand, the stimulation of regional economic growth, reduced airfares and improved affordability of air travel for lower-income to middle-income communities. Furthermore, this study proposed potential research directions and areas to guide future academic investigations and inform policy and decision-making with respect to the low-cost carriers' future development and operations.

ARTICLE HISTORY
Received 4 April 2024
Accepted 2 October 2024

KEYWORDS
Low-cost carriers; Asia-Pacific; tourism; economic development; wellbeing

1. Introduction

Since the deregulation of the aviation industry in the US and the subsequent rise of Southwest Airlines, the low-cost carriers (LCCs) have steadily gained a foothold across all continents and have played a major role in the extraordinary expansion of aviation (ICAO, 2023a). In recent years, the Asia-Pacific market has emerged as the largest and most dynamic aviation market globally, with its LCC sector leading the world in market share (ICAO, 2023b). Prior to the COVID-19 pandemic, the Asia-Pacific region accounted for 34.7 percent of global air traffic in terms of revenue passenger kilometers, solidifying its dominance in the global aviation industry (ICAO, 2023b). Additionally, the LCC market in this region was the largest globally in 2019, representing 35.1 percent of the total available seat kilometers within the Asia-Pacific aviation market (ICAO, 2023b). The significant market share of LCCs in the Asia-Pacific region has had a profound impact on passenger behaviours (Truong et al., 2020) and socio-economic sections (Ma et al., 2021) even before the pandemic. Understanding the reasons behind these shifts is vital for academic research, as it provides insights into the evolving dynamics of the aviation industry in one of the world's most rapidly growing regions.

More importantly, numerous studies of LCCs have focused on Europe (e.g. Alderighi et al., 2012; Costa & Almeida, 2018; Farmaki & Papatheodorou, 2015; Rey et al., 2011) and North America (e.g. Elwakil & Dresner, 2013; Mertens & Vowles, 2012; Whitelegg, 2005). In contrast, due to the late

CONTACT Huan Wang brook.wang@unisq.edu.au; u1157965@umail.usq.edu.au

emergence of LCCs in the Asia-Pacific region, similar studies that specifically examine LCCs' impacts on socioeconomic development and regional prosperity in Asia Pacific are scarce. For a better summarisation and understanding of the impacts of LCCs in Asia Pacific during pre- and post-COVID-19 pandemic, this paper presented a systematic review (Grant & Booth, 2009) to identify the LCCs' effects on the region's socioeconomic development and prosperity. This study aimed to contribute to the existing LCC literature and to offer insights for future research into LCCs in the Asia-Pacific region, particularly in the post-COVID-19 era.

Last but not least, although several literature reviews on LCC-related topics can be found, such as the review of LCC development (Tas, 2014), the relationship between LCCs and airports (Humphreys et al., 2006), and LCCs' service quality (Hasan et al., 2019), to the best of the authors' knowledge, research specifically aimed at summarising the relationship between LCCs and tourism and economic sectors remains limited. Existing literature reviews tend to focus broadly on the aviation industry's impact on tourism and economy, often addressing LCCs only as a secondary consideration (Spasojevic et al., 2018; Zhang et al., 2019). Moreover, there is a noticeable gap in the literature when it comes to critically examining and reviewing the specific impacts of LCC development on socioeconomic sectors in the Asia-Pacific region. This gap underscores the need for focused research that delves into the unique role of LCCs in shaping the region's economic and social landscapes.

Therefore, the objective of this study was to review the existing literature on how LCCs in the Asia-Pacific region impacted the region's socioeconomic development. More specifically, the following research question was addressed:

- *What are the key findings of previous studies on the impacts of Asia-Pacific LCCs on tourism, economic development and social wellbeing?*

This study comprehensively reviewed all the relevant academic journal articles, although government and industry reports, discussion papers, theses and dissertations, conference papers and other non-journal documents were excluded. Section 2 describes the methodology adopted. Section 3 presents the thematic analyses and discusses the results. Section 4 discusses the implications of the findings and provides future research directions. Section 5 summarises the key findings and the limitations of this review.

2. Methodology

2.1. Data collection

2.1.1. Search strategy

The process of conducting a comprehensive literature search of Asia-Pacific LCCs consisted of three distinct rounds (see Appendix A). First, a set of Boolean search strings was used to perform a broad-scale search for studies on Asia-Pacific LCCs across three electronic databases: Google Scholar, Scopus and Web of Science. The search terms included 'Asia Pacific', 'low cost airline', 'low cost carrier', 'low fare airline', 'no frills airline' and 'budget airline'. During this initial round of searching, it became evident that the geographical scope of the Asia-Pacific region was extensive. Relying solely on the keyword 'Asia Pacific' for retrieval could have overlooked many crucial studies relating to LCCs operating in the Asia-Pacific region. To ensure a thorough literature search of Asia-Pacific LCCs, it becomes imperative for us to conduct supplementary searches based on the countries and regions in the Asia-Pacific region. Second, a round of searching was undertaken by combining the aforementioned search strings related to LCCs with a list of 25 countries/territories and 8 regional areas (see Appendices B and C) in the Asia-Pacific region.

Furthermore, we observed that a substantial volume of literature about particular LCCs operating in the Asia-Pacific region could have been omitted during the initial two search rounds because relevant keywords had been omitted in the previous searches. To rectify this problem, a third retrieval

round was conducted, incorporating search strings corresponding to the 89 LCCs that are currently operating or had operated in the Asia-Pacific region, as well as LCC airports or airport terminals in the region (see Appendices D and E). It is important to note that a bibliographic snowballing method was concurrently used to manually include pertinent articles related to Asia-Pacific LCCs discovered in the reference lists of the retrieved papers. Additionally, all identified articles were restricted to those written in the English language, with no restrictions imposed on the publication years. The search process concluded with a cut-off date of 31 July 2023.

2.1.2. Selection and inclusion criteria

Following the three rounds of searching, 6013 documents were identified. We eliminated the duplicate documents, removing 3491 redundant articles and publications. Subsequently, the remaining 2522 documents underwent a meticulous review based on the following criteria and steps:

- *Step 1: Exclusion of non-peer reviewed publications*: Articles and publications falling outside the scope of academic journals, such as book chapters, conference papers, working papers, discussion papers, theses, dissertations, magazine articles and government reports, were excluded from further review. During this step, 590 articles were included.
- *Step 2: Inclusion of articles relevant to the topics of this study*: Only academic journals directly pertaining to the impacts of the development of LCCs in the Asia-Pacific region on tourism, economic development and social wellbeing were retained. This screening was carefully carried out by examining the titles and abstracts of the remaining academic articles. During this step, 239 articles were included.
- *Step 3: Inclusion of journal articles in the Australian Business Dean Council (ABDC) list*: Only academic journals listed in the ABDC list were included. This step was taken to ensure that peer-reviewed articles with high authority in academia were retained, thereby eliminating potential biases. During this step, 82 articles were included.

2.2. Descriptive analysis

As the first step, a descriptive analysis revealed the overall trends of the selected journal articles on the research topic of LCCs in the Asia-Pacific region. More specifically, this analytical method involved an examination of the overall trends of the characteristics of the selected journal articles, such as the year of publication and the geographical scope of the selected journal articles. This descriptive analysis allowed us to understand how the extant research on Asia-Pacific LCCs has evolved through the years.

2.3. Content and thematic analyses

Content and thematic analyses were also undertaken to identify LCCs' influence on the region's socioeconomic development and prosperity. Content analysis is a methodical and replicable approach used to condense extensive textual content into a concise set of categories, guided by explicit coding rules (Stemler, 2000). To bolster the content analysis in our study, all of the chosen journal articles were processed by VOSviewer software to construct co-occurrence network maps of the terms extracted from the bibliographic data (e.g. the keywords provided by the authors in the selected journal articles) and text data (e.g. the titles and abstracts of the selected journal articles) (Modak et al., 2019). For the purpose of this study, two co-occurrence maps were generated, which depict the various subtopics within the domain of Asia-Pacific LCCs. It is imperative to note that the dimensions of the circles and the prominence of the keywords within these two maps are indicative of the frequency with which these particular words or terms have been used in the selected journal articles. Larger circles and words or terms denote a higher prevalence of these keywords, suggesting

that they have garnered more scholarly attention compared with their counterparts (Liao et al., 2018). Furthermore, the distance between the circles and the associated keywords serves as a visual representation of the relatedness of their co-occurrence (Li et al., 2016). In addition, the colour of the circles in the two maps indicates the research activities pertaining to each keyword, specifically in relation to the average year of publication (Su et al., 2018).

To enhance the robustness of the content analysis, both deductive and inductive approaches were taken in our study, as recommended by Thayer et al. (2007). In the deductive analysis, pre-defined categories were used to select the journal articles for review. The combined results of the two approaches facilitated the review process to address the research question posited in the introduction.

3. Results

Section 3.1 presents descriptive analyses of the initial 590 journal articles pertaining to the topic of LCCs in the Asia-Pacific region to gain a broad picture of this area of research. Sections 3.2.1 and 3.2.2 present the content and thematic analyses of the selected 82 ABDC journal articles related to the topic of this study to gain deeper insights that focus on the LCC's impacts on regional socioeconomic development. Section 3.2.3 describes the results of inductive and deductive thematic analyses of the final pool of 82 articles in detail.

3.1. Descriptive analysis

Before 2003, few peer-reviewed academic articles addressed LCCs in the Asia-Pacific region. The period from 2003 to 2012 witnessed a notable shift, marked by the pioneering articles on this topic. This prompted a gradual increase in publications dedicated to LCCs in the Asia-Pacific region, as shown in Figure 1. It is pertinent to observe that during this period, annual publication counts generally remained below 21. Starting in 2012, a significant surge in scholarly output became evident, with the publication numbers escalating from 16 in 2012 to 52 in 2015. This trend underscores the growing academic interest in this area. Subsequently, from 2016 onwards, the annual publication figures varied greatly, fluctuating within the range of 43–56.

When we analysed the geographical dispersion of the literature (590 journal articles), India clearly emerged as the leading contributor to the topic of Asia-Pacific LCCs, as depicted in Figure 2. It had 98 academic articles focusing on LCC research, which corresponds to almost 17% of the 590 articles.

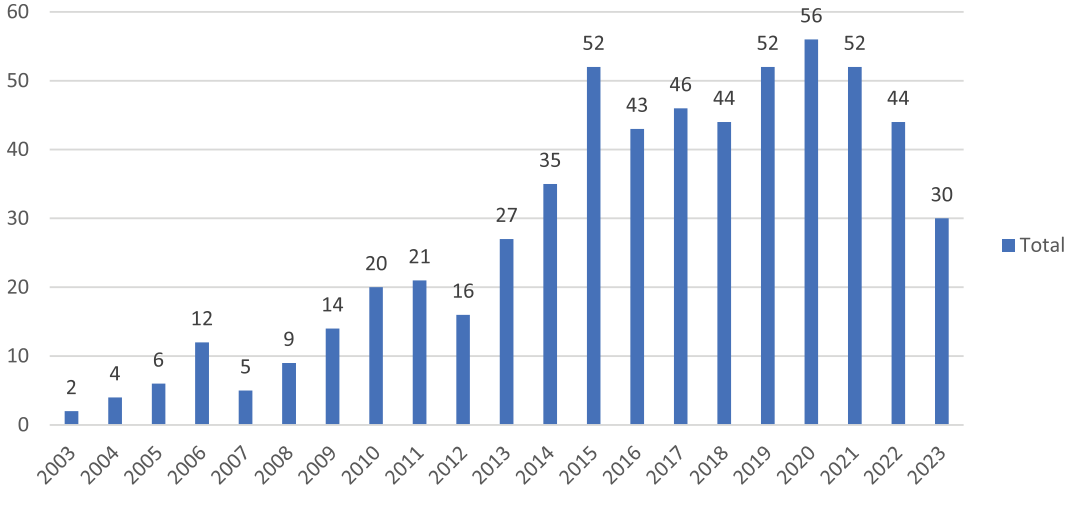


Figure 1. Distribution of the literature by year.

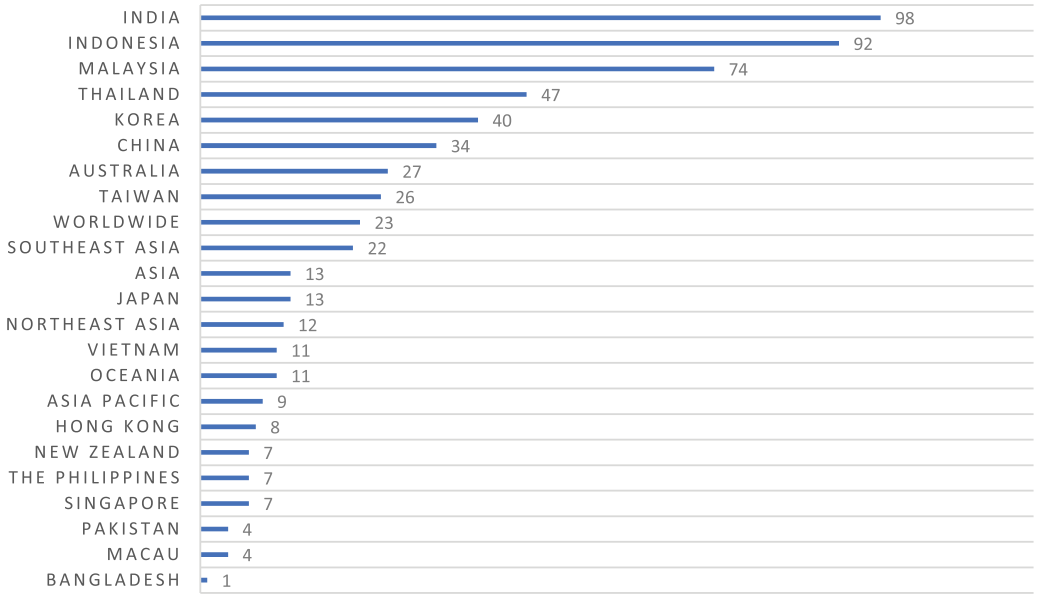


Figure 2. Distribution of the literature by country and area.

Following India, Indonesia registered its scholarly footprint with 92 articles, amounting to 16% of all the articles published during the study period. Malaysia, securing the third spot, had 74 articles, equivalent to approximately 13% of all the published articles. Other notable contributors were Thailand (8%), Korea (7%), mainland China (6%), Australia (6%) and Taiwan (4%), collectively comprising 32% of all the published articles. Significantly, 23 articles (4%) had a global research perspective, in which the Asia-Pacific region accounts for an important part.

3.2. Content and thematic analyses

3.2.1. Network analysis with VOSviewer

Figure 3 illustrates the co-occurrence of the keywords listed by the 82 ABDC journal articles that were relevant to the topics of this study. These keywords show the main ideas or focus of the articles. The VOSviewer tool was used to visualise and analyse the co-occurrence of keywords as a map (Gillani et al., 2022; McAllister et al., 2022). The software was run, for which the minimum number of occurrences was set at one, and 433 meaningful co-occurrence links were identified. The most commonly appearing keywords included the terms 'low-cost carriers', 'airline industry', 'airline competition', 'air transportation' and 'market entry'. At the same time, keywords that are closely related to tourism, economy and social wellbeing were also seen, such as 'tourism demand', 'tourism destinations', 'domestic tourism', 'regional tourism', and 'covid-19'. In the colour spectrum at the bottom, purple and blue represent keywords from publications before 2012, yellow represents keywords from the articles published after 2020, and green represents keywords from the articles published between 2012 and 2020, in which topics such as 'tourism demand', 'seasonality', 'competition economics', 'development' and 'airport-pairs demand' were frequently debated.

Figure 4 displays the co-occurrence of text in the titles and abstracts. The co-occurrence threshold was set at two occurrences. This resulted in a map of 472 meaningful and frequently used words related to the topic of this review article. Prominent terms included 'airport', 'passenger', 'efficiency', 'performance', 'strategic capability', 'liberalisation', 'destination', 'regulation' and 'financial performance'. The keywords that are related to the topics of this review were also identified, such as 'price war', 'domestic tourism', 'traveler', 'airfare', 'host economy', 'price war' and

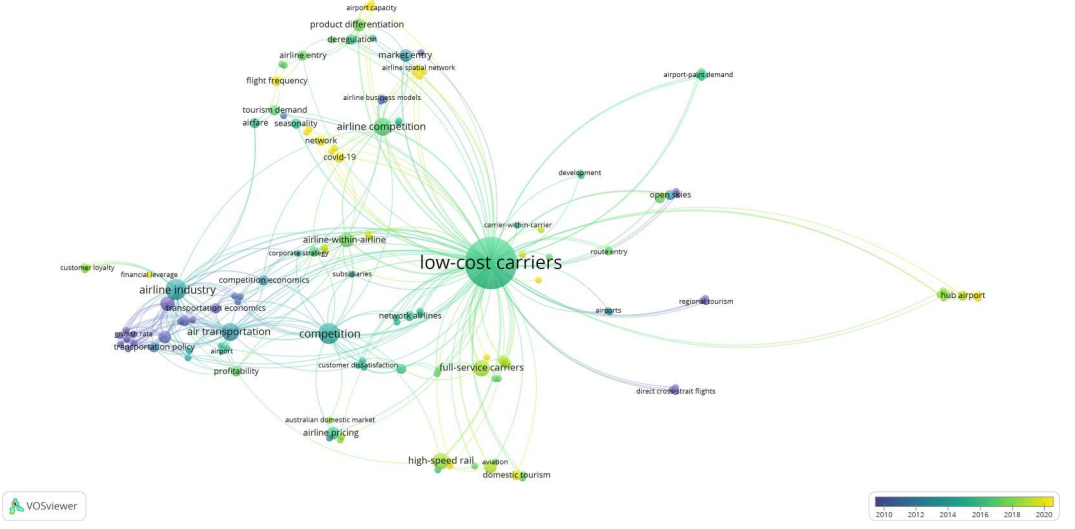


Figure 3. Co-occurrence of the keywords.

'total emission'. Before 2012, 'tourist', 'leisure traveler' and 'island' were frequently debated. As the years progressed, domestic tourism-related topics, regional connectivity and sustainability-related topics were gradually covered.

3.2.2. Word frequency queries

Figure 5 identifies the most frequently used words within the most relevant 82 ABDC journal articles, which were developed with NVivo software. The word cloud displays the words with a frequency of 50, with the top three most frequent terms highlighted in red. The size of the words corresponds to their frequency within the selected articles. In the text, the frequently used words directly relating to the topics of this review in tourism and socioeconomy, after excluding

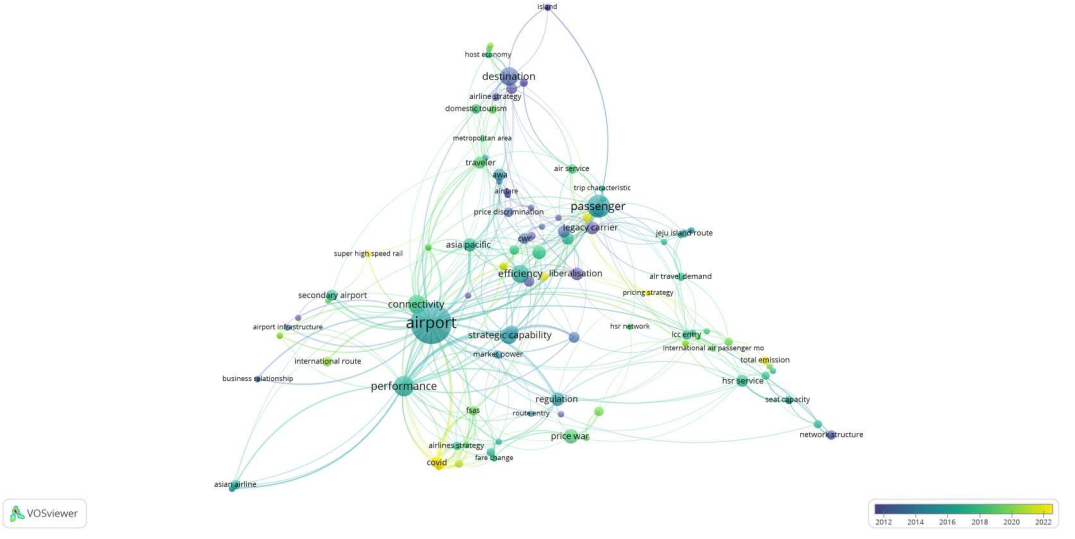


Figure 4. Co-occurrence of words listed in titles and abstracts.

Figure 5. Word cloud of the 100 most frequently used words.

stop words and irrelevant words, were 'route', 'tourism', 'demand', 'regional', 'development', 'growth', 'fares' and 'economic'.

3.2.3. Content and thematic analyses

This section shows the details of the content and thematic analyses of the final pool of 82 ABDC journal articles with high authority in academia. In total, 19 impacts of LCCs on tourism, economic development and social wellbeing were identified by prior studies resulting from the development of LCCs in the Asia-Pacific region (see Table 1).

3.2.3.1. Impacts on tourism. This category was studied by 42.7% of the selected articles and includes six impacts from the development and growth of LCCs in the Asia-Pacific region. The most widely discussed impacts include 'growth in passenger traffic' (25.6%), 'increased tourism demand' (15.9%) and 'recovery and development of destinations' (14.6%). Other impacts of LCCs include 'changes in travel patterns' (2.4%), 'impacts on hospitality' (1.2%) and 'impacts on retail'

Table 1. Impacts of LCCs on tourism, economic development and social wellbeing.

Categories	Impacts of LCCs	Publications with the indicators (%)	Number of publications
Impacts on tourism		42.7%	35
	Growth in passenger traffic	25.6%	21
	Increased tourism demand	15.9%	13
	Recovery and development of destinations	14.6%	12
	Changes in travel patterns	2.4%	2
	Impacts on hospitality	1.2%	1
	Impacts on retail	1.2%	1
Impacts on economy		8.5%	7
	Regional economic growth	7.3%	6
	Business opportunities and investments	2.4%	2
	Economic recovery	1.2%	1
	Reduced income gap	1.2%	1
	Tax revenue growth	1.2%	1
Benefits for social wellbeing		43.9%	36
	Reduced airfares	23.2%	19
	Improved regional air connectivity	9.8%	8
	More travel choices	8.5%	7
	Improved passenger travel	6.1%	5
	Increased employment	6.1%	5
	Improved social welfare	4.9%	4
	Reduced carbon emissions	2.4%	2
	Reduced poverty	1.2%	1

(1.2%). Studies have suggested that the rapid development of LCCs in the Asia-Pacific region has contributed to the growth of tourism. The most notable impact has been the remarkable increase in tourist flows and demand (e.g. Homsombat et al., 2011; Jiang & Li, 2016; Law et al., 2022; Morley, 2007; Taumoepeau et al., 2017), with the impact of LCCs on passenger growth and travel demand varying across different markets (see Appendix F). Increases in tourist flows caused by LCC services can come from inbound tourists (Taumoepeau et al., 2017), outbound tourists (Lu, 2017), bilateral tourists (Zhang & Zhang, 2016), tourists travelling regionally (e.g. Koo et al., 2010; Wong et al., 2019; Zhang et al., 2017), domestic tourists (e.g. Hooper, 2005; Jiang & Li, 2016; Law et al., 2022; Mizutani & Sakai, 2021; Tsui, 2017; Zhang & Lu, 2013), and international tourists (e.g. Bilotkach et al., 2019; Lu, 2017; Mizutani & Sakai, 2021; Zhang & Zhang, 2016).

Studies have also shown that LCCs helped tourism demand recovery after the SARS (Hooper, 2005) and COVID-19 outbreaks (Law et al., 2022). The entry of LCCs also stimulated tourism demand (e.g. Chung & Whang, 2011; Inoue et al., 2015; Kuok et al., 2023; Tsui, 2017), especially for low- and mid-income tourists (Zhang & Zhang, 2016). In addition, there has been growth in regional tourist destinations and island tourism caused by LCC services (e.g. Khan et al., 2018; Law et al., 2022; Taumoepeau et al., 2017; Tsui, 2017), as LCCs have started to serve more regional routes and attract more tourists to visit these destinations (Koo et al., 2010). Tourism destinations have also benefited from LCC services, as LCCs contributed to their tourism revenue by increasing tourist flows (Pratt & Schuckert, 2019). Additionally, cost savings from flying no-frills services have allowed tourists to spend more on tourism-related activities such as accommodation, hospitality and retail, etc. (Kuok et al., 2023; Pratt & Schuckert, 2019). Furthermore, LCCs have the ability to alter tourists' travel patterns. Research has indicated that, in Thailand, domestic tourists who travelled with LCCs tended to shorten their travel duration and length of stay, and adjusted their expenditure on accommodations (Law et al., 2022). Lastly, LCCs can establish connections between regional cities and capitals, which has fostered the growth of revenue in the hospitality and retail sectors (Law et al., 2022).

3.2.3.2. Impacts on the economy. This category was studied by 8.5% of the selected articles, including five distinct economic impacts of the development and growth of LCCs. The impacts of LCC services are **'**regional economic growth' (7.3%), **'**business opportunities and investment' (2.4%), 'economic recovery' (1.2%), 'reduced income gaps' (1.2%) and 'growth in tax' (1.2%). Studies have demonstrated that LCCs contributed significantly to the economic development of regional areas (Chang & Lee, 2008; Fu, Oum, et al., 2015) by stimulating spending by travellers who saved on their travel budget by flying with LCCs (Pratt & Schuckert, 2019). An example can be seen in Hong Kong where the estimated gross direct expenditures created by the introduction of new LCCs into the Hong Kong economy reached to HK$13.44 billion in 2016 (see Appendix G). Increased travel expenditures (e.g. by these budget travellers) not only contributed to the growth of the tourism sector but also facilitated tourism-related industries such as hospitality, retail and entertainment (Law et al., 2022; Pratt & Schuckert, 2019), which resulted in increased tourism income flowing into local infrastructure and businesses, as exemplified in the case of Hong Kong (Pratt & Schuckert, 2019). Furthermore, LCCs are seen as beneficial to the economic sustainability of island nations as more airline services are offered, including LCC services (Taumoepeau et al., 2017). In contrast, studies have shown that the growth of LCCs has reinforced the imbalanced spatial economic development in Southeast Asia, since LCCs in this region preferred to fly to primary airports with larger populations (Bowen, 2016). Research has also highlighted LCCs' roles in boosting tax revenue (see Appendix G), creating business and investment opportunities (see Appendix G), and narrowing the income gap (Law et al., 2022; Pratt & Schuckert, 2019). LCCs are also playing a supportive role in economic recovery during the post-COVID-19 era (Law et al., 2022).

3.2.3.3. Benefits to social wellbeing. This category was investigated by 43.9% of the selected articles and includes eight impacts of the development and growth of LCCs in the Asia-Pacific

region. Studies have indicated that the development of LCCs in the Asia-Pacific region has led to 'reduced airfares', with the price reduction ranging from 1.8% to 6.2% observed in the Chinese market (see Appendix H) (e.g. Barbot et al., 2008; Forsyth, 2003; Fu, Lei, et al., 2015; Mizutani & Sakai, 2021; Wang, Tsui, et al., 2017) (23.2%) and 'improved regional air connectivity' (9.8%), especially in peripheral cities (e.g. Bowen, 2016; Homsombat et al., 2011; Jiang et al., 2017; Ma et al., 2021). LCCs in the region also provided travellers with additional travel options for visiting destinations, apart from road transportation and high speed railway (HSR) (e.g. Chang & Lee, 2008; Forsyth et al., 2006; Loh et al., 2020; Ng et al., 2022; Wang, Xia, et al., 2017) (8.5%) and 'benefits for passenger travel' by shortening travel time through flying (e.g. Bowen, 2016; Chen et al., 2022; Su et al., 2020; Yang, 2016) (6.1%). In addition, a booming LCC sector in the region enhanced employment opportunities as it promoted tourism demand (see Appendix H) (e.g. Forsyth, 2003; Law et al., 2022; Pearson et al., 2015; Pratt & Schuckert, 2019; Zhang & Lu, 2013) (6.1%), brought about 'improvements in social welfare' (e.g. offering more affordable travel options to middle-income travellers) (e.g. Chen et al., 2022; Jain & Natarajan, 2015; Taumoepeau et al., 2017) (4.9%) and 'reducing poverty' (Law et al., 2022) (1.2%) in local and regional economies. Lastly, studies have indicated that LCC operations are more efficient in terms of addressing environmental concerns (2.4%) compared with FSCs (Yang & Baasandorj, 2017), and LCCs are considered to be more eco-friendly with their short-haul or shorter flight networks that generate fewer carbon emissions from their flight operations (Chen et al., 2022).

4. Discussion and future research agenda

According to the systematic review of 82 selected ABDC journal articles, several essential findings can be highlighted and discussed. Additionally, a future research agenda is suggested at the end of this section.

4.1. LCC, tourism and changes in travel patterns

Academics have explored the positive impacts of LCCs on the growth of domestic and international tourism in the Asia-Pacific region, as well as analysing how LCCs contributed to the development of new tourism markets in the regional areas (e.g. Chang & Lee, 2008; Forsyth et al., 2006; Han et al., 2020; Law et al., 2022; Tsui, 2017). This topic is similarly addressed in the broader literature that focuses on air transport and tourism (Spasojevic et al., 2018). By extending their low-cost routes and providing discounted fares, LCCs stimulated demand for tourism (e.g. Jain & Natarajan, 2015; Ma et al., 2021; Zhang et al., 2017), resulting in increased tourist volumes to both established and emerging destinations (Han et al., 2020; Zhang & Zhang, 2016). For example, LCCs have contributed to a substantial increase in inbound tourism to Jeju Island in South Korea, bringing an additional 30 million tourists annually (Khan et al., 2018). The rapid development of LCCs in the region has also contributed to the development of destinations, providing passengers and travellers with more travel options, especially in the Association of Southeast Asian (ASEAN) countries, such as Cambodia, Laos, Myanmar, Thailand and Vietnam (Forsyth et al., 2006; Law et al., 2022). In addition, the development of LCCs in the Asia-Pacific region has benefitted the growth of tourism-related industries, such as the hospitality and retail industries of tourism destinations (Law et al., 2022).

It should be noted that the positive influence of LCCs on tourism extends. This beneficial impact, characterised by the increased accessibility and affordability of travel, was also observed in diverse locations, including Dominica, Jamaica, Norway, Portugal, Spain, the Bahamas, Turkey and the US (e.g. Castillo-Manzano et al., 2011; Choo & Oum, 2013; Costa & Almeida, 2015; Sarilgan, 2016; Spasojevic et al., 2018; Warnock-Smith & Morrell, 2008). This pattern underscores the global nature of LCCs' contribution to the growth of tourism, demonstrating that these effects are not confined to a single region but are a widespread phenomenon across various continents. Additionally, in exploring the contributions of LCCs to the development of tourism, researchers in the EU have advanced their

studies to understand the relationship between LCCs and specialised tourism sectors, such as coastal destinations and real estate tourism (Vera Rebollo & Ivars Baidal, 2009). To better understand the impacts of LCCs on tourism in the Asia-Pacific region, more attention should be paid to the positive impacts of LCCs on special categories of tourism such as island tourism.

Furthermore, LCCs are seen as a means of facilitating the recovery of tourism in the Asia-Pacific countries after shock events. For example, LCCs helped the growth of tourism after the SARS and the COVID-19 pandemics in Thailand and Malaysia, respectively (Hooper, 2005; Law et al., 2022). Similarly, Viva Aerobus, the largest LCC in Mexico, also tried to boost passenger traffic and facilitate the recovery of tourism in the post-COVID-19 era through collaborating with the US LCC Allegiant Air (Willie & Jayawardena, 2022). A possible explanation for this distinct phenomenon is that, following shocks, tourism markets may experience a reduction in their demand and face challenges in sustaining growth. However, LCCs are likely to facilitate the recovery of these tourism markets by offering lower fares to tourists and travellers, thus stimulating tourism demand and supporting the sector's rebound (Hooper, 2005).

Interestingly, it has been observed that LCCs have changed the travel and consumption patterns of passengers and travellers. For example, domestic travellers flying with LCCs in Thailand reduced their length of stay (Law et al., 2022). In Australia, the emergence of LCCs encouraged travellers to switch from road transportation to air (Koo et al., 2010). Interestingly, inbound tourists to Hong Kong intended to spend the money saved from buying lower airfares offered by LCCs on other tourism-related items (Pratt & Schuckert, 2019). Potential factors contributing to these changes in the travel patterns of travellers could be attributed to the availability of lower fares and the reduced travel time offered by LCCs (Law et al., 2022; Pratt & Schuckert, 2019). The influence of LCCs on changes in travel patterns is also evident in other aviation markets. For example, traditional car travellers were increasingly inclined to utilise LCCs for intercity travel in Libya (Borhan et al., 2017). However, to gain a deeper understanding of the phenomenon, more attention should be paid to this aspect in the future.

4.2. LCCs and economic development

Researchers have agreed that LCCs have a positive impact on economic development in the Asia-Pacific region (e.g. Chang & Lee, 2008; Fu, Oum, et al., 2015; Law et al., 2022; Pratt & Schuckert, 2019). The impacts are attributed to how LCCs encouraged price-sensitive travellers to visit more destinations, thus boosting overall tourism expenditure and consumption in both major cities and regional destinations (e.g. Bowen, 2016; Fu, Oum, et al., 2015; Law et al., 2022; Pratt & Schuckert, 2019). As a result, increased revenue flows into the tourism-related sectors, such as the hospitality, retail and entertainment industries. In addition, LCCs are willing to invest in the construction of infrastructure and facilities (e.g. the direct investment of LCC entrants into airport facilities was seen in Hong Kong) to support their continued operations. They also hired local employees, who, in turn, contributed to the economic growth of the destinations they served (Pratt & Schuckert, 2019). Furthermore, the abovementioned effects of LCC services could create more business opportunities for other aviation operators (e.g. aircraft maintenance, aircraft catering, aircraft fuelling and ground handling) and other industries in local economies (e.g. retail and hospitality) (e.g. Law et al., 2022; Pratt & Schuckert, 2019; Zhang & Zhang, 2016). Additionally, the entry of LCCs improved the income of local people, leading to the narrowing of the income gap and an increase in tax revenue for local governments, which might support the long-term economic development of the cities and destinations (e.g. Chang & Lee, 2008; Law et al., 2022; Pratt & Schuckert, 2019; Taumoepeau et al., 2017; Zhang & Zhang, 2016). For instance, the entry of new LCCs to Hong Kong's aviation market generated an extra HK$1475.24 million in revenue for the local economy, along with an annual tax increase of HK$647.89 million for the Government of Hong Kong (Pratt & Schuckert, 2019).

However, LCCs may also contribute to the imbalanced spatial development of regional economies. For example, contrary to expectations that LCCs would shift traffic from major hubs to regional

airports, in ASEAN countries, there was only a slight decrease in the total capacity share of LCCs at major hub airports (e.g. Bangkok, Singapore, Jakarta, Kuala Lumpur, Ho Chi Minh City and Manila) from 1998 to 2013 (Bowen, 2016). This trend could be attributed to LCCs' preference for concentrating their capacity on trunk routes and major hubs (Bowen, 2016). Over the same period, the disproportional allocation of capacity by LCCs to major hubs and trunk routes resulted in a significant share of capacity for major cities in ASEAN, whereas peripheral cities had a relatively small share of capacity. This pattern might contribute to the sustained uneven distribution of capacity between major urban areas and regional areas within ASEAN nations (Bowen, 2016). A similar case can also be observed in Greece, where LCC services reinforced the imbalanced spatial development of the regional economies (Papatheodorou & Arvanitis, 2009). The majority of LCC services in Greece have year-round connections only to the major metropolitan Greek cities, such as Athens (the capital) and Thessaloniki (the second largest city), but not to smaller and remote destinations, which, in turn, created different opportunities for economic development in the major cities and the smaller and remote destinations in Greece (Papatheodorou & Arvanitis, 2009). The finding of the disproportional allocation of capacity by LCC services among the major cities and regional areas, and its economic implications, contrast somewhat with the popular belief that LCCs contributed positively to the economic development of smaller and regional areas (Dobruszkes et al., 2017; Zeigler et al., 2017). More attention should be given to addressing these divergent viewpoints in the Asia-Pacific region, supported by additional empirical evidence in forthcoming research.

It is important to emphasise that in Europe, the long-term partnership between LCCs and regional airports has proven to be mutually beneficial, fostering substantial investments from LCCs. This investment not only ensures a consistent flow of passenger traffic to regional areas but also supports the broader economic stability of these regions (Graham, 2013). Such enduring collaborations are particularly advantageous for peripheral areas in Europe's hinterland, where access to major transport hubs is limited (Graham & Shaw, 2008). Despite the clear economic benefits observed in Europe, there is a noticeable gap in the literature concerning the Asia-Pacific region. The question remains that can a sustainable LCC-airport relationship yield similar economic advantages for regional areas in this region? Given the rapid growth of aviation in Asia Pacific, exploring this potential could offer valuable insights and pave the way for strategic investments that bolster regional economies.

4.3. LCCs and social wellbeing

Because of reduced airfares and improved air connectivity offered by the growing numbers of LCCs in the Asia-Pacific region, air travel to different destinations has become more affordable and accessible (e.g. Bowen, 2016; Forsyth et al., 2006; Jain & Natarajan, 2015; Wang, Tsui, et al., 2017). Travellers now have more transport options for their domestic and international travel, with lower air ticket prices and shortened travel times (e.g. Ng et al., 2022; Pearson et al., 2015; Su et al., 2020). Additionally, LCCs are gradually expanding their reach to include a broader array of cities, ranging from the major urban areas to more distant and peripheral destinations, making air travel to these less connected places more accessible and affordable (e.g. Barbot et al., 2008; Bowen, 2016; Chen et al., 2022; Forsyth et al., 2006; Wang, Tsui, et al., 2017). Consequently, LCCs lead to an improvement in the residents' welfare and wellbeing in terms of improved air connectivity and affordable air travel (Pearson et al., 2015; Yang, 2016). For example, with the emergence of LCCs in Asian countries, middle-income travellers have found air travel more affordable (Taumoepeau et al., 2017). Moreover, LCCs have increased access to peripheral cities in Asia-Pacific countries, enabling residents in regional areas to utilise cheaper air travel services, such as the residents of Makassar, Surabaya and Batam in Indonesia, who could take advantage of the budget air services offered by Lion Air (Bowen, 2016). In China, the advent of LCCs in the aviation market has made visiting friends and relatives (VFR) travel more economical, benefiting VFR travellers by making their journeys more affordable (Fu, Lei, et al., 2015).

The improvements in social wellbeing offered by LCC services are not unique to the Asia-Pacific countries, and can also be observed in Africa, Europe, North America and South America (e.g. Bachwich & Wittman, 2017; Boonekamp et al., 2018; Oliveira, 2008; Samunderu, 2023). For example, US LCCs such as Allegiant Air, Spirit Airlines and Frontier Airlines offered airfares that were 21% lower than the average fares, which allowed more people to travel by cheaper and more direct flights (Bachwich & Wittman, 2017), together with additional and faster online channels for making purchases (Hunt & Truong, 2019). In the EU, LCCs such as Ryanair and EasyJet have satisfied the increased air travel demand from the population and made air travel more affordable to those with low incomes (Bachwich & Wittman, 2017; Dobruszkes, 2006), offering more affordable air services to those living in regional areas and cities as well as those in isolated island destinations, such as Malaga, Alicante, Faro and the Faroe Islands (Hunt & Truong, 2019; Jimenez & Suau-Sanchez, 2020).

Furthermore, LCC operations possibly have better environmental performance than FSCs and HSRs, with fewer carbon emissions (Chen et al., 2022; Yang & Baasandorj, 2017). For example, as the HSR network in China continues to expand, it is likely to generate more carbon emissions compared with the emissions produced by LCC operations even when the network of LCCs is expanding, especially when the connected HSR cities are far from the current HSR network's centre and the demand for HSR is relatively low (Chen et al., 2022). A possible reason for this is that LCCs have greater flexibility in adapting their flight frequencies to maintain high load factors, and their operations over shorter route distances and shorter flying times contribute to a reduction in overall carbon emissions and pollution (Chen et al., 2022). This flexibility gives LCCs a significant advantage in terms of carbon emissions, especially when they expand their networks to smaller cities that are far away and have weaker demand (Chen et al., 2022; Yang & Baasandorj, 2017). An example of this can be seen in the context of China's HSR network. As China's HSR network continues to expand, it will generate more carbon emissions compared with the emissions produced by the expanding LCC networks (Chen et al., 2022). Similar results have been found in other aviation markets, such as an examination of the carbon emissions of the European LCCs, involving airlines such as Ryanair, easyJet and Norwegian Air Shuttle (Budd & Suau-Sanchez, 2016). It was found that many LCCs operate fuel-efficient aircraft such as Airbus A319s and A320neos, which could reduce the overall production of carbon emissions. In particular, Airbus A320neos offers additional seat capacity while maintaining a lower level of carbon emissions (Budd & Suau-Sanchez, 2016). This may suggest that more efficient fleet planning may possibly lead to lower emissions and fuel costs per seat (Budd & Suau-Sanchez, 2016).

4.4. Future research agenda

In light of the discussion above, potential research areas can be further proposed to gain deeper insights into the impacts of LCCs in the Asia-Pacific region. Figure 6 provides a detailed depiction of six future research agendas.

4.4.1. Future research on LCCs and tourism

4.4.1.1. LCCs and tourism recovery in Asia Pacific during the post-COVID-19 era. As the aviation industry transitions into the post-COVID-19 era, certain ASEAN countries, such as Thailand and Malaysia, are striving to recover their tourism markets and their economies by promoting LCCs (e.g. Hooper, 2005; Law et al., 2022; Liao et al., 2022). However, empirical evidence supporting the effectiveness of LCCs in aiding the recovery of tourism and the economy in the Asia-Pacific region during the post-pandemic recovery period is limited. Therefore, it is crucial to deepen our understanding of how LCCs can contribute to revitalising tourism in the Asia-Pacific region after the pandemic. Clarifying the ways in which LCCs can help tourism recover in the post-COVID-19 era, and contrasting their roles before and after the pandemic, is essential. Additionally, assessing the

Figure 6. Future research agendas.

extent to which LCCs can facilitate this recovery is vital for shaping relevant tourism and aviation policies and strategies.

4.4.1.2. LCCs and behavioural changes of travellers in Asia Pacific. The rise of LCCs in the Asia-Pacific region has produced changes in travel patterns, including shifts in travellers' consumption habits, preferences for different transportation modes and hotel staying behaviours. However, empirical evidence to substantiate the claims regarding these changes in travel patterns is lacking. Consequently, further research is imperative to offer a comprehensive understanding of the factors driving the shifts in travel and consumption patterns induced by LCCs in the Asia-Pacific region. It is also crucial to evaluate the degree to which these patterns can be altered, given that LCCs have significant implications for the tourism economy and the operations of other transportation modes.

4.4.2. Future research on LCCs and economic development

4.4.2.1. Uneven capacity allocation of LCCs and economic development of peripheral cities. As Bowen (2016) noted in his research, from 1998 to 2013, LCCs in ASEAN countries predominantly focused on major markets such as Bangkok, Jakarta, Kuala Lumpur, Ho Chi Minh City and Manila. This focus contrasted sharply with other carriers and contributed to the uneven spatial development across ASEAN nations. Unlike their Asia-Pacific counterparts, European LCCs have historically targeted regional markets and peripheral cities, leading to a more balanced distribution of economic benefits (Bowen, 2016). However, it is important to note that Bowen's findings were primarily drawn from Shimbel Index analyses using OAG data. To comprehensively understand the economic impact of LCCs in these regions, further econometric analysis is needed. Such analysis would quantify the differences in how LCCs influence regional economic growth in the Asia-Pacific region compared to Europe, providing crucial empirical evidence that could clarify the distinct roles these carriers play in fostering economic development across their respective regions.

4.4.2.2. LCC-airport relationships and their economic implications in regional areas. In Hong Kong, the entry of LCCs has been linked to economic growth, driven by their investments and the resulting increase in passenger traffic (Pratt & Schuckert, 2019). While major hubs such as Hong Kong consistently benefit from robust traffic flows generated from LCCs, the situation differs in regional areas across the Asia-Pacific. These regions tend to be more dependent on the traffic that LCCs bring (Fu, Oum, et al., 2015). However, as Bowen (2016) observed, many peripheral cities in ASEAN countries have experienced a decline in air service accessibility, a factor that could potentially impede their economic development. To address this concern, further research is essential to investigate the dynamics between LCCs and regional airports in the Asia-Pacific. Understanding how this relationship influences LCCs' decisions to operate in these regions could provide valuable insights into how LCCs contribute to regional economic growth.

4.4.3. Future research on LCCs and social wellbeing

4.4.3.1. LCC entry and the accessibility of regional areas in Asia Pacific. Between 1998 and 2013, several secondary cities in Southeast Asia, including Banda Aceh in Indonesia, Dili in Timor-Leste, Luang Prabang in Laos and Rachgia in Vietnam, experienced a decline in air transportation accessibility (Bowen, 2016). This trend is particularly concerning as these cities are not only significant regional centres but also important tourism destinations that should ideally benefit from improved air connectivity. The uneven capacity allocation by private LCCs in the region may have played a role in this decline (Bowen, 2016). To address this issue, further research is needed to gain a more in-depth understanding of the capacity allocation strategies employed by LCCs in Southeast Asia. Such research could also explore ways to enhance the accessibility of these secondary destinations, thereby contributing to the social and economic wellbeing of the local populations.

4.4.3.2. Carbon emission research of Asia-Pacific LCCs. As green aviation becomes a more prevalent topic, the relationship between LCC operations and carbon emissions in the Asia-Pacific region deserves more attention from academia. Although some scholars have suggested that LCCs may outperform FSCs and even HSRs in terms of total carbon emissions, the research in this area remains limited. Furthermore, it is crucial to investigate the emission patterns of LCCs on a global scale and compare their emission efficiencies across different regions. This comprehensive analysis would provide valuable insights that could inform and refine aviation emission policies in the Asia-Pacific region. Consequently, there is a need for empirical evidence on how LCCs can contribute to an environmentally sustainable aviation industry, such as by using biofuels and other sustainable aviation technologies. Researchers should further discuss the relationship between LCCs and sustainable economic growth, providing empirical evidence to support effective policymaking in the region.

5. Conclusion

This study systematically reviewed the impacts of the growth of LCCs in the Asia-Pacific region on tourism, economic development and social wellbeing. The review started by reviewing 590 journal articles related to LCCs in the Asia-Pacific region, giving us a broader view of the subject. It is interesting to note that India's LCC sector is the most researched, with a large number of journal articles focusing on passenger-related topics. A closer look at the selected 82 ABDC journal articles directly related to our study's aims and objectives, which revealed key areas of interest such as 'competition economics', 'profitability', 'airfare', 'COVID-19', 'tourism demand', 'air travel', 'passenger traffic', 'domestic tourism', 'network', 'ticket price' and 'airline pricing', etc. A further in-depth review of 82 ABDC-ranked journal articles allowed us to identify 19 different impacts of Asia-Pacific LCCs on tourism, economic growth and social wellbeing, such as the increased demand for tourism, regional economic development, reduced airfares, and the improved affordability of air travel for lower-income to middle-income communities. The findings from this review add

valuable knowledge to offer insights to policymakers, aviation regulators and operators (airlines and airports) to make informed decisions for the future development and operations of LCCs in the region. The review also highlights six new directions for future research on LCCs' impacts on tourism recovery and traveller behavirour changes, regional economic growth and social wellbeing improvement.

We acknowledged three limitations of this systematic review that are important to note. Firstly, this study exclusively examined English-language journal articles, suggesting that we might have missed other valuable research conducted in other languages regarding the development of LCCs in the Asia-Pacific region. Secondly, this study limited its analysis to LCCs' impacts on tourism, economic development and social wellbeing, without considering other important areas such as LCCs' impacts on regional aviation or how airline competition affects LCCs' networks and route planning. Thirdly, this study provided only a qualitative summary of the effects of LCCs on socioeconomic factors. To quantify their impacts on tourism, economic development and social wellbeing, a future meta-regression analysis is essential. Additionally, to gain a more comprehensive understanding, future research should broaden its scope to include these aspects, alongside the six areas of future research we have proposed.

Disclosure statement

No potential conflict of interest was reported by the author(s).

References

Alderighi, M., Cento, A., Nijkamp, P., & Rietveld, P. (2012). Competition in the European aviation market: The entry of low-cost airlines. *Journal of Transport Geography*, *24*, 223–233. https://doi.org/10.1016/j.jtrangeo.2012.02.008

Bachwich, A. R., & Wittman, M. D. (2017). The emergence and effects of the ultra-low cost carrier (ULCC) business model in the U.S. airline industry. *Journal of Air Transport Management*, *62*, 155–164. https://doi.org/10.1016/j.jairtraman.2017.03.012

Barbot, C., Costa, Á, & Sochirca, E. (2008). Airlines performance in the new market context: A comparative productivity and efficiency analysis. *Journal of Air Transport Management*, *14*(5), 270–274. https://doi.org/10.1016/j.jairtraman.2008.05.003

Bilotkach, V., Kawata, K., Kim, T. S., Park, J., Purwandono, P., & Yoshida, Y. (2019). Quantifying the impact of low-cost carriers on international air passenger movements to and from major airports in Asia. *International Journal of Industrial Organization*, *62*, 28–57. https://doi.org/10.1016/j.ijindorg.2018.03.012

Boonekamp, T., Zuidberg, J., & Burghouwt, G. (2018). Determinants of air travel demand: The role of low-cost carriers, ethnic links and aviation-dependent employment. *Transportation Research Part A: Policy and Practice*, *112*, 18–28. https://doi.org/10.1016/j.tra.2018.01.004

Borhan, M. N., Ibrahim, A. N. H., Miskeen, M. A. A., Rahmat, R. A. O. K., & Alhodairi, A. M. (2017). Predicting car drivers' intention to use low cost airlines for intercity travel in Libya. *Journal of Air Transport Management*, *65*, 88–98. https://doi.org/10.1016/j.jairtraman.2017.09.004

Bowen, J. T. (2016). "Now everyone can fly"? Scheduled airline services to secondary cities in Southeast Asia. *Journal of Air Transport Management*, *53*, 94–104. https://doi.org/10.1016/j.jairtraman.2016.01.007

Budd, T., & Suau-Sanchez, P. (2016). Assessing the fuel burn and CO2 impacts of the introduction of next generation aircraft: A study of a major European low-cost carrier. *Research in Transportation Business & Management*, *21*, 68–75. https://doi.org/10.1016/j.rtbm.2016.09.004

Castillo-Manzano, J. I., López-Valpuesta, L., & González-Laxe, F. (2011). The effects of the LCC boom on the urban tourism fabric: The viewpoint of tourism managers. *Tourism Management*, *32*(5), 1085–1095. https://doi.org/10.1016/j.tourman.2010.09.008

Chang, Y.-C., Hsu, C.-J., Williams, G., & Pan, M.-L. (2008). Low cost carriers' destination selection using a Delphi method. *Tourism Management*, *29*(5), 898–908. https://doi.org/10.1016/j.tourman.2007.11.004

Chang, Y.-C., & Lee, N. (2008). Are low-cost carriers a bargain?: Comparison of low-cost and full-service carriers in Southeast Asia. *Transportation Research Record: Journal of the Transportation Research Board*, *2052*(1), 21–27. https://doi.org/10.3141/2052-03

Chen, Ruowei. (2017). Competitive responses of an established airline to the entry of a low-cost carrier into its hub airports. *Journal of Air Transport Management*, *64*, 113–120. http://dx.doi.org/10.1016/j.jairtraman.2016.07.015

Chen, Y., Yang, H., Wang, K., & Guo, L. (2022). Intercity network expansion by low-cost carrier or high-speed rail, from the environmental perspective. *Journal of Air Transport Management*, *104*, 102267. https://doi.org/10.1016/j.jairtraman.2022.102267

Choo, Y. Y., & Oum, T. H. (2013). Impacts of low cost carrier services on efficiency of the major U.S. airports. *Journal of Air Transport Management*, *33*, 60–67. https://doi.org/10.1016/j.jairtraman.2013.06.010

Chung, J. Y., & Whang, T. (2011). The impact of low cost carriers on Korean island tourism. *Journal of Transport Geography*, *19*(6), 1335–1340. https://doi.org/10.1016/j.jtrangeo.2011.07.004

Costa, V., & Almeida, C. (2015). Low-cost carriers, local economy and tourism development at four Portuguese airports. A model of cost–benefit analysis. *Journal of Spatial and Organizational Dynamics*, *3*(4), 245–261.

Costa, V., & Almeida, C. (2018). Low cost carriers and tourism destinations development: Case study of Oporto, Portugal. *Tourism & Management Studies*, *14*(2), 7–15. https://doi.org/10.18089/tms.2018.14201

Dobruszkes, F. (2006). An analysis of European low-cost airlines and their networks. *Journal of Transport Geography*, *14*(4), 249–264. https://doi.org/10.1016/j.jtrangeo.2005.08.005

Dobruszkes, F., Givoni, M., & Vowles, T. (2017). Hello major airports, goodbye regional airports? Recent changes in European and US low-cost airline airport choice. *Journal of Air Transport Management*, *59*, 50–62. https://doi.org/10.1016/j.jairtraman.2016.11.005

Elwakil, O. S., & Dresner, M. (2013). Low-cost carriers and Canadian traffic generation at US border airports. *Journal of Air Transport Management*, *33*, 68–72. https://doi.org/10.1016/j.jairtraman.2013.06.011

Farmaki, A., & Papatheodorou, A. (2015). Stakeholder perceptions of the role of low-cost carriers in insular tourism destinations: The case of Cyprus. *Tourism Planning & Development*, *12*(4), 412–432. https://doi.org/10.1080/21568316.2015.1013566

Forsyth, P. (2003). Low-cost carriers in Australia: Experiences and impacts. *Journal of Air Transport Management*, *9*(5), 277–284. https://doi.org/10.1016/S0969-6997(03)00035-8

Forsyth, P., King, J., & Lyn Rodolfo, C. (2006). Open skies in ASEAN. *Journal of Air Transport Management*, *12*(3), 143–152. https://doi.org/10.1016/j.jairtraman.2005.11.004

Fu, X., Lei, Z., Wang, K., & Yan, J. (2015). Low cost carrier competition and route entry in an emerging but regulated aviation market – The case of China. *Transportation Research Part A: Policy and Practice*, *79*, 3–16. https://doi.org/10.1016/j.tra.2015.03.020

Fu, X., Oum, T. H., Chen, R., & Lei, Z. (2015). Dominant carrier performance and international liberalization – The case of Northeast Asia. *Transport Policy*, *43*, 61–75. https://doi.org/10.1016/j.tranpol.2015.05.010

Gillani, S. M., Senin, A. B. A., Bode, J., & Gillani, S. M. (2022). Bibliometric analysis of digital entrepreneurial education and student intention; Reviewed and analyzed by VOSViewer from google scholar. *International Journal of Interactive Mobile Technologies (iJIM)*, *16*(13), 48–65. https://doi.org/10.3991/ijim.v16i13.30619

Graham, A. (2013). Understanding the low cost carrier and airport relationship: A critical analysis of the salient issues. *Tourism Management*, *36*, 66–76. https://doi.org/10.1016/j.tourman.2012.11.011

Graham, B., & Shaw, J. (2008). Low-cost airlines in Europe: Reconciling liberalization and sustainability. *Geoforum*, *39*(3), 1439–1451. https://doi.org/10.1016/j.geoforum.2007.12.006

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, *26*(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Han, H., Koo, B., & Hyun, S. S. (2020). Image congruity as a tool for traveler retention: A comparative analysis on South Korean full-service and low-cost airlines. *Journal of Travel & Tourism Marketing*, *37*(3), 347–360. https://doi.org/10.1080/10548408.2020.1757564

Hasan, M., Khan, M., & Farooqi, R. (2019). Service quality and customer satisfaction in low cost airlines: A critical review of extant literature. *Pacific Business Review International*, *11*(9), 77–92.

Homsombat, W., Lei, Z., & Fu, X. (2011). Development status and prospects for aviation hubs—A comparative study of the major airports in South-East Asia. *The Singapore Economic Review*, *56*(04), 573–591. https://doi.org/10.1142/S0217590811004420

Hooper, P. (2005). The environment for Southeast Asia's new and evolving airlines. *Journal of Air Transport Management*, *11*(5), 335–347. https://doi.org/10.1016/j.jairtraman.2005.07.004

Humphreys, I., Ison, S., & Francis, G. (2006). A review of the airport-low cost airline relationship. *Review of Network Economics*, *5*(4), 413–420. https://doi.org/10.2202/1446-9022.1105

Hunt, J., & Truong, D. (2019). Low-fare flights across the atlantic: Impact of low-cost, long-haul trans-atlantic flights on passenger choice of carrier. *Journal of Air Transport Management*, *75*, 170–184. https://doi.org/10.1016/j.jairtraman.2018.12.005

ICAO. (2023a). *Low cost carriers (LCCs)*. https://apastyle.apa.org/style-grammar-guidelines/references/examples/webpage-website-references#6

ICAO. (2023b). *The world of air transport in 2019*. https://www.icao.int/annual-report-2019/Pages/the-world-of-air-transport-in-2019.aspx

Inoue, G., Ono, M., Uehara, K., & Isono, F. (2015). Stated-preference analysis to estimate the domestic transport demand following the future entry of LCCs and the inauguration of the linear chuo shinkansen in Japan. *Journal of Air Transport Management*, *47*, 199–217. https://doi.org/10.1016/j.jairtraman.2015.06.004

Jain, R. K., & Natarajan, R. (2015). A DEA study of airlines in India. *Asia Pacific Management Review*, *20*(4), 285–292. https://doi.org/10.1016/j.apmrv.2015.03.004

Jiang, C., & Li, X. (2016). Low cost carrier and high-speed rail: A macroeconomic comparison between Japan and Western Europe. *Research in Transportation Business & Management*, *21*, 3–10. https://doi.org/10.1016/j.rtbm.2016.05.006

Jiang, Y., Yao, B., Wang, L., Feng, T., & Kong, L. (2017). Evolution trends of the network structure of spring airlines in China: A temporal and spatial analysis. *Journal of Air Transport Management*, *60*, 18–30. https://doi.org/10.1016/j.jairtraman.2016.12.009

Jimenez, E., & Suau-Sanchez, P. (2020). Reinterpreting the role of primary and secondary airports in low-cost carrier expansion in Europe. *Journal of Transport Geography*, *88*, 102847. https://doi.org/10.1016/j.jtrangeo.2020.102847

Khan, N. T., Kim, Y. H., & Kim, Y. B. (2018). The dynamic impact of low-cost carriers on full-service carriers and the tourism industry of South Korea: A competitive analysis using the lotka–volterra model. *Asia Pacific Journal of Tourism Research*, *23*(7), 656–666. https://doi.org/10.1080/10941665.2018.1486862

Koo, T. T. R., Wu, C.-L., & Dwyer, L. (2010). Transport and regional dispersal of tourists: Is travel modal substitution a source of conflict between low-fare air services and regional dispersal? *Journal of Travel Research*, *49*(1), 106–120. https://doi.org/10.1177/0047287509336468

Kuok, R. U. K., Koo, T. T. R., & Lim, C. (2023). Interaction effects of air services on tourism demand. *Annals of Tourism Research*, *101*, 103582. https://doi.org/10.1016/j.annals.2023.103582

Law, C. C. H., Prompitak, K., & Wongwattanakit, C. (2022). Effects of low-cost airlines on domestic tourism economy in Thailand. *Journal of Environmental Management & Tourism*, *13*(4), 935–948. https://doi.org/10.14505/iemt.v13.4(60).03

Li, H., An, H., Wang, Y., Huang, J., & Gao, X. (2016). Evolutionary features of academic articles co-keyword network and keywords co-occurrence network: Based on two-mode affiliation network. *Physica A: Statistical Mechanics and its Applications*, *450*, 657–669. https://doi.org/10.1016/j.physa.2016.01.017

Liao, H., Tang, M., Luo, L., Li, C., Chiclana, F., & Zeng, X.-J. (2018). A bibliometric analysis and visualization of medical big data research. *Sustainability*, *10*(1), 166. https://doi.org/10.3390/su10010166

Liao, M., Wu, C., & Yan, H. (2022). Recovery of Chinese low-cost carriers after the outbreak of COVID-19 pandemic. *Journal of Air Transport Management*, *105*, 102282. https://doi.org/10.1016/j.jairtraman.2022.102282

Loh, H. S., Yuen, K. F., Wang, X., Surucu-Balci, E., Balci, G., & Zhou, Q. (2020). Airport selection criteria of low-cost carriers: A fuzzy analytical hierarchy process. *Journal of Air Transport Management*, *83*, 101759. https://doi.org/10.1016/j.jairtraman.2019.101759

Lu, J.-L. (2017). Segmentation of passengers using full-service and low-cost carriers – Evidence from Taiwan. *Journal of Air Transport Management*, *62*, 204–216. https://doi.org/10.1016/j.jairtraman.2017.05.002

Ma, W., Zhang, A., Zhang, Y., & Xu, S. (2021). The growing influence of low-cost carriers in Northeast Asia and its implications for a regional single aviation market. *Journal of Air Transport Management*, *91*, 101994. https://doi.org/10.1016/j.jairtraman.2020.101994

McAllister, J. T., Lennertz, L., & Atencio Mojica, Z. (2022). Mapping a discipline: A guide to using VOSViewer for bibliometric and visual analysis. *Science & Technology Libraries*, *41*(3), 319–348. https://doi.org/10.1080/0194262X.2021.1991547

Mertens, D. P., & Vowles, T. M. (2012). "Southwest effect" – Decisions and effects of low cost carriers. *Journal of Behavioral and Applied Management*, *14*(1), 53. https://doi.org/10.21818/001c.17905

Mizutani, J., & Sakai, H. (2021). Which is a stronger competitor, high speed rail, or low cost carrier, to full service carrier? – Effects of HSR network extension and LCC entry on FSC's airfare in Japan. *Journal of Air Transport Management*, *90*, 101965. https://doi.org/10.1016/j.jairtraman.2020.101965

Modak, N. M., Merigó, J. M., Weber, R., Manzor, F., & Ortúzar, J. d. D. (2019). Fifty years of transportation research journals: A bibliometric overview. *Transportation Research Part A: Policy and Practice*, *120*, 188–223. https://doi.org/10.1016/j.tra.2018.11.015

Morley, C. L. (2007). Research note: Implications for regional destinations of new airline strategies. *Tourism Economics*, *13*(3), 475–480. https://doi.org/10.5367/000000007781497791

Ng, K. T., Fu, X., Hanaoka, S., & Oum, T. H. (2022). Japanese aviation market performance during the COVID-19 pandemic - Analyzing airline yield and competition in the domestic market. *Transport Policy*, *116*, 237–247. https://doi.org/10.1016/j.tranpol.2021.12.006

Oliveira, A. V. M. (2008). An empirical model of low-cost carrier entry. *Transportation Research Part A: Policy and Practice*, *42*(4), 673–695. https://doi.org/10.1016/j.tra.2008.01.025

Papatheodorou, A., & Arvanitis, P. (2009). Spatial evolution of airport traffic and air transport liberalisation: The case of Greece. *Journal of Transport Geography*, *17*(5), 402–412. https://doi.org/10.1016/j.jtrangeo.2008.08.004

Pearson, J., O'Connell, J. F., Pitfield, D. E., & Ryley, T. (2015). Competition between Asian network airlines and low-cost carriers: Strategic analysis. *Transportation Research Record: Journal of the Transportation Research Board*, *2501*(1), 56–65. https://doi.org/10.3141/2501-08

Pratt, S., & Schuckert, M. (2019). Economic impact of low-cost carrier in a saturated transport market: Net benefits or zero-sum game? *Tourism Economics*, *25*(2), 149–170. https://doi.org/10.1177/1354816618793771

Rey, B., Myro, R. L., & Galera, A. (2011). Effect of low-cost airlines on tourism in Spain. A dynamic panel data model. *Journal of Air Transport Management*, *17*(3), 163–167. https://doi.org/10.1016/j.jairtraman.2010.12.004

Samunderu, E. (2023). Emergence of the low-cost carrier model in Africa. In E. Samunderu (Ed.), *African air transport management: Strategic analysis of African aviation market* (pp. 77–111). Springer International Publishing.

Sarilgan, A. E. (2016). Impact of low cost carriers on turkish tourism industry. *International Journal of Academic Research in Business and Social Sciences*, *6*(4), 176–188. https://doi.org/10.6007/IJARBSS/v6-i4/2088

Spasojevic, B., Lohmann, G., & Scott, N. (2018). Air transport and tourism – A systematic literature review (2000–2014). *Current Issues in Tourism*, *21*(9), 975–997. https://doi.org/10.1080/13683500.2017.1334762

Stemler, S. (2000). An overview of content analysis. *Practical Assessment, Research, and Evaluation*, *7*(1), 17. https://doi.org/10.7275/z6fm-2e34

Su, M., Luan, W., Fu, X., Yang, Z., & Zhang, R. (2020). The competition effects of low-cost carriers and high-speed rail on the Chinese aviation market. *Transport Policy*, *95*, 37–46. https://doi.org/10.1016/j.tranpol.2020.05.025

Su, C., Peng, C., Agbodza, E., Bai, H. X., Huang, Y., Karakousis, G., Zhang, P. J., & Zhang, Z. (2018). Publication trend, resource utilization, and impact of the US national cancer database: A systematic review. *Medicine*, *97*(9), e9823. https://doi.org/10.1097/MD.0000000000009823

Tas, I. (2014). A holistic approach to the low-cost carriers. *Tourism Geographies*, *16*(4), 707–710. https://doi.org/10.1080/14616688.2014.932834

Taumoepeau, S., Towner, N., & Losekoot, E. (2017). Low-cost carriers in Oceania, Pacific: Challenges and opportunities. *Journal of Air Transport Management*, *65*, 40–42. https://doi.org/10.1016/j.jairtraman.2017.07.007

Thayer, A., Evans, M., McBride, A., Queen, M., & Spyridakis, J. (2007). Content analysis as a best practice in technical communication research. *Journal of Technical Writing and Communication*, *37*(3), 267–279. https://doi.org/10.2190/TW.37.3.c

Truong, D., Pan, J. Y., & Buaphiban, T. (2020). Low cost carriers in Southeast Asia: How does ticket price change the way passengers make their airline selection? *Journal of Air Transport Management*, *86*, 101836. https://doi.org/10.1016/j.jairtraman.2020.101836

Tsui, K. W. (2017). Does a low-cost carrier lead the domestic tourism demand and growth of New Zealand? *Tourism Management*, *60*, 390–403. https://doi.org/10.1016/j.tourman.2016.10.013

Vera Rebollo, J. F., & Ivars Baidal, J. A. (2009). Spread of low-cost carriers: Tourism and regional policy effects in Spain. *Regional Studies*, *43*(4), 559–570. https://doi.org/10.1080/00343400701874164

Wang, K., Tsui, K. W. H., Liang, L., & Fu, X. (2017). Entry patterns of low-cost carriers in Hong Kong and implications to the regional market. *Journal of Air Transport Management*, *64*, 101–112. https://doi.org/10.1016/j.jairtraman.2016.08.001

Wang, K., Xia, W., & Zhang, A. (2017). Should China further expand its high-speed rail network? Consider the low-cost carrier factor. *Transportation Research Part A: Policy and Practice*, *100*, 105–120. https://doi.org/10.1016/j.tra.2017.04.010

Wang, K., Zhang, A., & Zhang, Y. (2018). Key determinants of airline pricing and air travel demand in China and India: Policy, ownership, and LCC competition. *Transport Policy*, *63*, 80–89. https://doi.org/10.1016/j.tranpol.2017.12.018

Warnock-Smith, D., & Morrell, P. (2008). Air transport liberalisation and traffic growth in tourism-dependent economies: A case-history of some US-Caribbean markets. *Journal of Air Transport Management*, *14*(2), 82–91. https://doi.org/10.1016/j.jairtraman.2008.02.001

Whitelegg, D. (2005). Flying for peanuts: The rise of low-cost carriers in the airline industry. *The Journal of Transport History*, *26*(2), 125–129. https://doi.org/10.7227/TJTH.26.2.9

Willie, P. A., & Jayawardena, C. (2022). What innovations would assist the North American hospitality and tourism industry to recover? *Worldwide Hospitality and Tourism Themes*, *14*(6), 522–533. https://doi.org/10.1108/WHATT-05-2022-0061

Wong, W.-H., Zhang, A., Cheung, T. K.-Y., & Chu, J. (2019). Examination of low-cost carriers' development at secondary airports using a comprehensive world airport classification. *Journal of Air Transport Management*, *78*, 96–105. https://doi.org/10.1016/j.jairtraman.2019.01.007

Yang, C.-W. (2016). Entry effect of low-cost carriers on airport-pairs demand model using market concentration approach. *Journal of Air Transport Management*, *57*, 291–297. https://doi.org/10.1016/j.jairtraman.2016.09.001

Yang, A. S., & Baasandorj, S. (2017). Exploring CSR and financial performance of full-service and low-cost air carriers. *Finance Research Letters*, *23*, 291–299. https://doi.org/10.1016/j.frl.2017.05.005

Zeigler, P., Pagliari, R., Suau-Sanchez, P., Malighetti, P., & Redondi, R. (2017). Low-cost carrier entry at small European airports: Low-cost carrier effects on network connectivity and self-transfer potential. *Journal of Transport Geography*, *60*, 68–79. https://doi.org/10.1016/j.jtrangeo.2017.02.011

Zhang, Y., & Lu, Z. (2013). Low cost carriers in China and its contribution to passenger traffic flow. *Journal of China Tourism Research*, *9*(2), 207–217. https://doi.org/10.1080/19388160.2013.781972

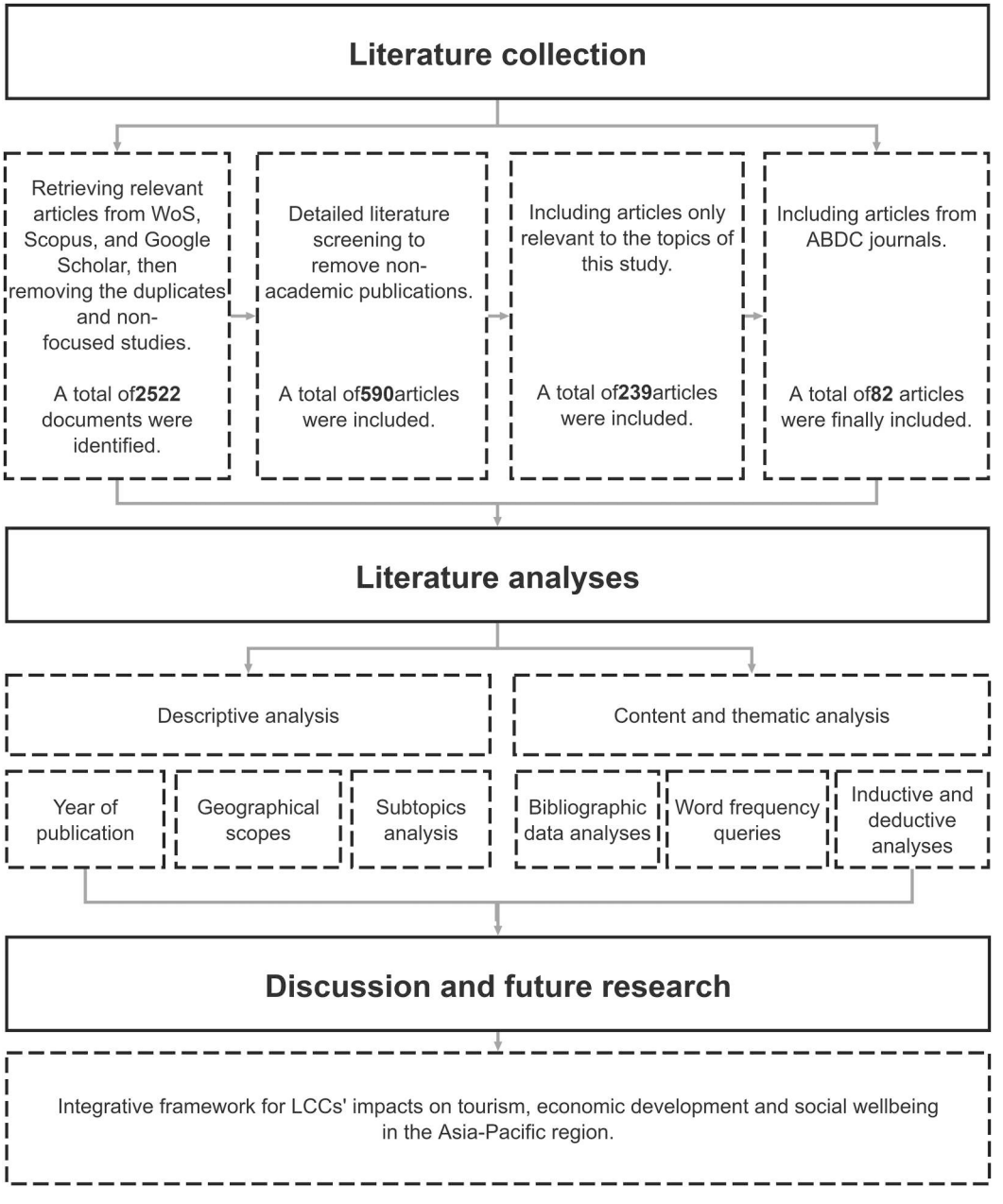
Zhang, A., Wan, Y., & Yang, H. (2019). Impacts of high-speed rail on airlines, airports and regional economies: A survey of recent research. *Transport Policy*, *81*, A1–A19. https://doi.org/10.1016/j.tranpol.2019.06.010

Zhang, Y., Wang, K., & Fu, X. (2017). Air transport services in regional Australia: Demand pattern, frequency choice and airport entry. *Transportation Research Part A: Policy and Practice*, *103*, 472–489. https://doi.org/10.1016/j.tra.2017.05.028

Zhang, Y., & Zhang, A. (2016). Determinants of air passenger flows in China and gravity model: Deregulation, LCCs, and high-speed rail. *Journal of Transport Economics and Policy (JTEP)*, *50*, 287–303. https://doi.org/10.2139/ssrn.2775501

Appendices

Appendix A. Study roadmap



Appendix B. Countries/territories in the Asia-Pacific region

Number	Countries/territories	Number	Countries/territories
1	Australia	2	Bangladesh
3	Brunei	4	Cambodia
5	China	6	Hong Kong
7	India	8	Indonesia
9	Japan	10	Korea
11	Laos	12	Macau
13	Malaysia	14	Maldives
15	Mongolia	16	Myanmar
17	Nepal	18	New Zealand
19	Pakistan	20	Singapore
21	Sri Lanka	22	Taiwan
23	Thailand	24	The Philippines
25	Vietnam		

Appendix C. Regional areas within the Asia-Pacific region

Number	Regional areas
1	Asia
2	Asia Pacific
3	Association of Southeast Asian Nations
4	Northeast Asia
5	Oceania
6	South Asia
7	South Pacific
8	Southeast Asia

Appendix D. The list of 89 low-cost carriers

Number	Airlines	Number	Airlines	Number	Airlines
1	9 Air	2	Aero K	3	Air Busan
4	Air India Express	5	Air Next	6	Air Premia
7	Air Sahara	8	Air Seoul	9	AirAsia
10	AirAsia Japan	11	AirAsia X	12	Airblue
13	AIX Connect	14	Akasa Air	15	Bamboo Air
16	Bhoja Air	17	Bonza	18	Cebgo
19	Cebu Pacific	20	China United Airlines	21	Citilink
22	Colorful Guizhou Airlines	23	Compass Airlines	24	Eastar Jet
25	Firefly	26	Fits Air	27	Fly Gangwon
28	Fly Jinnah	29	GMG Airlines	30	Go First
31	Greater Bay Airlines	32	HK Express	33	IndiGo
34	Indonesia AirAsia	35	JAL Express	36	Jeju Air
37	JetLite	38	Jetstar	39	Jetstar Asia Airways
40	Jetstar Japan	41	Jetstar Pacific Airlines	42	Jin Air
43	Kan Air	44	Kiwi Travel International Airlines	45	Lion Air
46	Lucky Air	47	Malindo Air	48	Mihin Lanka
49	MYAirline	50	New Gen Airways	51	Nok Air
52	NokScoot	53	Oasis Hong Kong Airlines	54	Pacific Airlines
55	Peach Aviation	56	Philippines AirAsia	57	Premier Airlines
58	Ruili Airlines	59	Scoot	60	Shaheen Air
61	Siam Air	62	Skymark Airlines	63	Solaseed Air
64	SpiceJet	65	Spring Airlines	66	Spring Airlines Japan
67	Super Air Jet	68	Thai AirAsia	69	Thai AirAsia X
70	Thai Lion Air	71	Thai Smile	72	Thai Summer Airways
73	Thai Vietjet Air	74	Tiger Airways Australia	75	TigerAir
76	Tigerair Philippines	77	Tigerair Taiwan	78	TransNusa

(*Continued*)

Continued.

Number	Airlines	Number	Airlines	Number	Airlines
79	T'way Air	80	V Air	81	Valuair
82	Vanilla Air	83	Vietjet Air	84	Virgin Blue
85	Viva Macau	86	West Air	87	Wings Air
88	Zest Air	89	Zipair Tokyo		

Appendix E. The nine low-cost carrier airports

Number	Airports
1	Don Mueang International Airport
2	Ibaraki Airport
3	Indira Gandhi International Airport Terminal 1
4	Kansai International Airport Terminal 2
5	Kuala Lumpur International Airport Terminal 2
6	Melbourne Airport Terminal 4
7	Naha International Airport
8	Narita International Airport Terminal 3
9	Soekarno-Hatta Airport Terminal 1

Appendix F. Impacts of LCCs on tourism

Impacts of LCCs on tourism	Reference	Market and time	Findings
Growth in passenger traffic	(Zhang & Zhang, 2016)	China (2001–2013)	The presence of an LCC would increase bilateral passenger flows by 25%.
	(Ma et al., 2021)	International routes between China, Japan and Korea (Jan 2009 – Jan 2019)	The LCC market share can significantly increase the total passenger traffic in the NEA intra-market by 2.5%.
	(Zhang & Lu, 2013)	China (2004–2010)	The presence of Spring Airlines on a route would increasepassenger volume by 23% on average.
	(Zhang et al., 2017)	Top 50 regional airports in Australia (2005–2013)	When LCC Share increases by 1%, LnTraffic (the natural logarithm of traffic volume) increases by an average of 1.141% or 1.567%.
Increased tourism demand	(Chang et al., 2008)	Mainland China – Taiwan Market (Jun 2006)	The expected derivational ratio of total demand when low-cost carriers enter is 27.5%.
	(Wang et al., 2018)	India (Jan 2012 – Dec 2015)	When LCC Share increases by 1%, LnPax (the natural logarithm of airline traffic) increases by an average of 0.166% or 0.188%.
	(Tsui, 2017)	New Zealand (Jun 2009 – Jul 2015)	The variable ln(LCC's ASK)it has a significant impact on the variable ln(Domestic guest nights)it or the LCC positively affected New Zealand's domestic tourism demand and growth with coefficients ranging from 0.0493 to 0.8305.
	(Chung & Whang, 2011)	South Korea (Jan 2000 – Dec 2009)	As LCCs started operations in July 2008, the number of monthly passengers in and out of Jeju tended to increase, on average, by 99,098 in Model 1 and by 78,243 in Model 2.

Appendix G. Impacts of LCCs on economy

Impacts of LCCs on economy	Reference	Market and time	Findings
Regional economic growth	(Pratt & Schuckert, 2019)	Hong Kong (2016)	The total expected revenue of the new LCC entrant was HK $5228 million.
	(Pratt & Schuckert, 2019)	Hong Kong (2016)	The estimated gross direct expenditures created by the introduction of the new LCC entrant into the Hong Kong economy were HK$13.44 billion.
Business opportunities and investments	(Pratt & Schuckert, 2019)	Hong Kong (2016)	New LCC entrants' investments/expenditures in the economy were HK$1397 million.
Tax revenue growth	(Pratt & Schuckert, 2019)	Hong Kong (2016)	The estimated taxes and fees generated by the new LCC entrant to the Hong Kong market were HK$647.89 million.

Appendix H. Impacts of LCCs on wellbeing

Impacts of LCCs on social wellbeing	Reference	Market and time	Findings
Reduced airfares	(Chen, 2017)	China (2006–2014)	4%—4.9% fare reduction by China Eastern in the same airport-pair market with Spring Airlines.
	(Chen, 2017)	China (2006–2014)	1.8% fare reduction in average fares of the whole Chinese domestic market after the entry of Spring Airlines.
	(Fu, Lei, et al., 2015)	China (Aug 2008 – Jul 2012)	3.4% fare reduction by China Eastern in the same airport-pair market with Spring Airlines.
	(Fu, Lei, et al., 2015)	China (Aug 2008 – Jul 2012)	5.1% fare reduction by Air China in the same airport-pair market with Spring Airlines.
	(Fu, Lei, et al., 2015)	China (Aug 2008 – Jul 2012)	6.2% fare reduction by Hainan Airlines in the same airport-pair market with Spring Airlines.
Increased employment	(Pratt & Schuckert, 2019)	Hong Kong (2016)	620 employees directly hired by the new LCC entering Hong Kong.
	(Pratt & Schuckert, 2019)	Hong Kong (2016)	8,000 estimated relevant jobs derived from the new LCC entrant.