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Air Travel Taxes in Airline Industry: A Systematic Literature Review

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ABSTRACT

Air travel taxes have been practised in numerous nations for decades, but are rarely mentioned in existing literature, although some researchers have explored indirect taxes from the airline industry's standpoint. This research is attempting to fill this gap in the literature using a systematic literature review to better understand airline travel taxes. In the absence of systematic air transport and taxation studies, this systematic literature study was employed to achieve a goal. The goal was to consolidate aviation tax information from countries that are implementing these taxes. The primary objective was to consolidate the knowledge and perspective of different scholars on air travel taxes to understand the purposes and types of taxes in the airline industry. The need for this research was to significantly influence social acceptance and to enhance the knowledge and understanding of the public regarding the airline industry and its related taxes. This study also strived to clarify issues of air passenger taxes by reviewing 18 out of 1,010 articles published from 2007 to 2019 that fit the inclusion criteria from online databases namely Web of Sciences, Scopus, Wiley, EBSCOhost, and Taylor & Francis. This study has identified two considerations in imposing air travel taxes: economic growth and sustainable development. In addition, five sub-themes were found, namely, revenue-raising, tourism strategies, fundraising initiatives, environmental, and pandemic. The findings explained the importance of air travel taxes and the purpose of tax imposition based on the selected articles. Nonetheless, further studies are needed by investigating air travel taxes studies in Asia Pacific regions.

Keywords: Taxation; tax; levy; aviation; air passenger; passenger carrier; air travel; air transport; airlines

INTRODUCTION

In the transportation sector, the airline industry is one of the largest contributors to the economic development of the entire sector from trade up to the social network. The role of the airline industry is not only in trading activities, but also in creating job opportunities by adding value to global businesses and the tourism sector. From the government's point of view, this industry has a unique fiscal regime that can quickly generate revenue. Therefore, this industry is not exempted from tax regimes, either directly or indirectly. As one of the mechanisms for using global taxes, the departure taxes, or specifically, air travel taxes, have become more prevalent in many countries in recent years. The United Kingdom was the first to introduce air passenger duty (APD) in 1994. However, it has become a controversial issue due to its negative influence on the tourism industry (Seetaram et al. 2018).

There has been a lot of debates regarding the possibility of imposing indirect taxes on airline services, and whether this would be a source of financial growth, or environmental concern (Borbely 2019; Zuidberg 2015). Nonetheless, any reason, or specific purpose for the imposition of taxes will always be questioned among experts. Numerous debates and arguments have discussed the effectiveness of these taxes because they have not reduced carbon emission, but rather have the potential to distort travel demands (Forsyth et al. 2014; Song et al. 2019). The implementation of taxes on the airline industry might influence a wide range of passenger behaviours and several adjustments by the airlines industry based on their response to taxation (Zuidberg 2015). In general, according to Zuidberg (2015), airlines will react differently to the introduction of an air travel tax depending on market conditions. Basically, they will adjust their networks in relation to the airport served or the level of services (frequency), and pass the tax to their passengers. Airline passengers will then react based on the taxes passed through to them by demanding a reduction, choosing to travel with another mode of transport, or they can choose to travel from another airport, or to another destination (Zuidberg 2015). Previous scholars have reported empirical studies on the different economical aspects and obtained mixed results, with either positive or negative impacts. According to Hofer et al. (2010); Seetaram et al. (2014) and (2018), the imposition of taxes in the aviation industry may indirectly raise fares, affecting some tourist destinations and even decreasing demand for airline services. Therefore, there seemed to be numerous questions regarding the rationale for imposing indirect taxes on airline services. Thus, it is necessary to understand the valid purposes and the factors behind the introduction of every indirect tax.

Examination of taxation in the airline industry is a difficult endeavour, as it involves the primary data set of fare values, without any decomposition of base rates, taxes, and any other fee or charge (White et al. 2019). Despite this

difficulty, several studies have looked at indirect taxes from the perspective of the airline industry. In 2007, Michael and Jon (2007) outlined the advantages and disadvantages of indirect taxes on international aviation, and they have identified several aviation taxes that were used as tax policy measures. Meanwhile, Zuidberg (2015) described the major effects of air travel taxes on airlines, airports, and passengers based on the environmental aspect. Recently, White et al. (2019) studied the effect of taxes on fare values, as well as discussed, the insights and challenges of taxation in the airline industry. Prior to this study, no other research has thoroughly tracked the taxes in the airline services over a period of time, and most of the previous studies have equally scant literature.

Thus, this paper aimed to fill the knowledge gap by exploring taxation issues, as previously discussed in the field of airline industry. An analysis was conducted to abstract the different perspectives in the airline industry on air travel taxes and to identify the purpose of these taxes. Consequently, this study could produce further insight into the reasons given to explain or justify both support and opposition towards taxation, which can guide the development of policies to enhance social acceptance among passengers towards air travel taxes. Since no systematic investigation of air transport and taxation studies have been previously conducted, this study sought to synthesise the existing qualitative and quantitative studies on the airline industry and taxation using a systematic literature review. The development of this paper was based on the main research questions: What are the main issues that have been discussed regarding taxes in the airline industry? and What are the purposes for imposing taxes in the airline industry? This study has specifically focused on two aspects: (i) to explore the types of taxes and the issues that have been discussed, and (ii) to identify the purposes of implementing taxes.

THE NEED FOR A SYSTEMATIC LITERATURE REVIEW

A systematic review is a comprehensive coverage of the objectives developed by each study being reviewed. In general, it is based on studies that used specific database searches to retrieve research results, with a well-defined, focused review of the primary research objective (Henry et al. 2018). A systematic review is also performed to obtain a detailed and clear analysis of the reviewed study to make it repeatable and up-to-date (Zawacki-Richter et al. 2020). A systematic review requires a protocol to extract raw studies and to report the synthesis based on publication standards, such as PRISMA, RAMESES, and ROSES. Therefore, this reviewing method is more comprehensive and rigorous to prevent bias. Xiao and Watson (2019) have documented the procedure for conducting a systematic review, and this paper has followed the approaches, as suggested. The PRISMA (Preferred Reporting Item for Systematic Reviews and Meta-Analysis) was used to guide this review process, and as a reporting standard.

Despite the abundance of studies on the airline industry, efforts to systematically review these studies have been lacking, specifically on taxation topics. Spasojevic et al. (2018) have reviewed articles on air transport, which however, have only focused on tourism and not on the taxation aspect. Moreover, their study did not provide details on the reporting guidelines, nor the use of any assessment standard like PRISMA. Consequently, future scholars could find it difficult to replicate and validate their study. This paper, is therefore, essential as a foundational guideline for constructing a relevant systematic review.

This study was focused on analysing and identifying the purposes and types of indirect taxes, specifically taxes related to air passengers in airline services. The research questions provided a direction for the construction of a relevant systematic review, with the primary focus on indirect taxes. More importantly, this study has identified several themes and factors for taxes being introduced based on the research topic. The need for this research was to significantly influence social acceptance, and to enhance the knowledge and understanding of the public regarding the airline industry and its related taxes.

To explore the existing literature on taxation in the airline industry, this analysis was organised as detailed in the following methodology section. This section discusses the PRISMA approach used in this study, followed by a section that details the systematic review of the scientific literature on taxes and airline services. The subsequent section presents the findings and discussion, and the final section concludes this paper with recommendations for future research.

METHODOLOGY

PRISMA

This review was reported according to the PRISMA guideline. PRISMA, or the Preferred Reporting Item for Systematic Reviews and Meta-Analysis, is a guideline for performing a systematic review. PRISMA provides an assessment standard that can be used as the foundation for reporting any type of research (Moher et al. 2009). Additionally, this guideline enables researchers to identify, specify, and evaluate relevant research fields, as well as

examine the articles published by previous studies. Generally, a systematic review is used by clinicians, or in medical studies. This method is also widely accepted and adopted by other fields, such as social sciences (Samah et al. 2019; Shaffril et al. 2018, 2019). Therefore, this study used PRISMA to strictly search related articles on taxation and airlines. This methodology was also used for identifying the types of taxes in the airline industry.

PICo

PICo was used by assisting authors to develop appropriate research questions for the review. Generally, according to Mohamed Shaffril et al. (2020), PICo can be referred to the Population, Interest and Context. Thus, based on the PICo framework, the authors have included three key factors in the review, namely air travel taxes (Population), the reason for the implementation of air travel taxes (Interest), and the years 2007 through 2019 (Context), which serve as the authors' guiding principles in formulating the research question.

DATA SOURCES

This systematic review relied heavily on the collected literature. Electronic databases are the predominant source for previous studies. Thus, this review searched two major databases, namely, the Web of Science (WOS) and Scopus for previous studies in this field. These two databases store journal articles covering various studies, including on the airline industry and taxation. These database collections, specifically WOS, also provide exhaustive indexing of the highest-quality and most influential publications in the world to researchers. However, none of the available databases, not even Web of Science and Scopus, offer a comprehensive collection of all necessary published materials on airline services and taxation. According to Xiao and Watson (2019), and Younger (2010), using more than one database (multiple) would increase the possibility of discovering the relevant articles. Therefore, as part of the search strategy of this study, additional databases, such as Wiley, EBSCOhost, and Taylor & Francis were included to expand the number of relevant articles. These databases are well-established, and contain journals related to taxes and airline services.

THE SYSTEMATIC REVIEW PROCESS

This systematic literature review included four major stages for selecting relevant articles: (1) identification; (2) screening; (3) eligibility; and (4) inclusion. The review process in this study is briefly described in the following sub-sections.

STAGE 1: LITERATURE IDENTIFICATION

In the first stage, the keywords to be used in this study were determined prior to searching for the relevant articles. This process involved identifying the keywords that can be used for searching articles in the selected databases based on keywords used in previous research, the thesaurus, encyclopaedia, suggested by each database, expert opinions, and possible related terms. According to Xiao and Watson (2019), these keywords should either be derived from the research questions, be separated into concept domains or extended based on synonyms, abbreviations, and related terms. Once all relevant keywords have been determined, the literature search began. To find scholarly articles that were pertinent to the airline industry and taxation, a set of keywords was typed into the search box of each database using the following terms: (“taxation” OR “tax” OR “levy”) AND (“aviation” OR “air passenger” OR “passenger carrier” OR “air travel” OR “air transport” OR “airlines”). As previously discussed, this study retrieved most of the relevant journals from WOS and Scopus. To enhance the search, a manual search was also conducted using similar keywords in additional databases, namely, Wiley, EBSCOhost, and Taylor & Francis, which resulted in 1,010 articles retrieved during this stage. Figure 1 shows a flow diagram of the methodology of this study.

STAGE 2: SCREENING (INCLUSION AND EXCLUSION CRITERIA)

The second important stage was the screening process, which consisted of the inclusion and exclusion criteria established by the authors. Generally, this process can be conducted by the database itself using the facilities in the system. The identification stage generated a total of 1,010 articles on the previously discussed issues regarding taxes and airline services. Therefore, the search was narrowed down by including or excluding several aspects. First, the timeline between 2007 to 2019 was selected on a related publication retrieved to be reviewed. Next, duplicated articles were removed because they might appear in another database. Subsequently, 40 articles were removed, leaving 970

articles. Another inclusion criterion was the types of documents, in which this study decided to focus only on journal articles. Thus, conference proceedings, books, chapters in books, and book series were removed from the dataset. In addition, only articles written in English and Malay (if any) were included; articles written in other languages were excluded. Most importantly, articles published in social sciences, business management and accounting, and economics and finance were selected to increase the number of articles that could meet the study objectives. Due to failure to meet the criteria established in this study, 704 articles were also removed. The inclusion and exclusion criteria of this study are listed in Table 1.

TABLE 1. The inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Timeline	Between 2007 and 2019	< 2007
Literature Type	Journal (research article)	Conference proceedings, books, chapters in books, book series
Language	English and Malay (if any)	Non-English
Subject Area	Social Sciences, Business Management and Accounting, And Economics and Finance	Other fields of study

STAGE 3: ELIGIBILITY

The next stage was eligibility, which involved assessing the quality of the remaining 266 articles in preparation of data extraction and synthesis. This stage involved three researchers (the authors), who meticulously examined the documents by carefully reading the titles, abstracts, and main contents to ensure that only papers with a vital link between taxation and airline services, or air transportation were selected to fulfil the objectives of this research. Subsequently, 248 articles were excluded and not considered for further analysis because they did not focus on the relevant research area. Thus, 18 of the remaining 266 articles qualified for further thematic analysis (see Figure 1 flow diagram of this study). Listed below are the articles that were removed from the list at least one of the following criteria:

1. the articles were not relevant to any of the search terms;
2. the articles did not meet any of the study objectives;
3. the articles did not relate to airlines services and taxation; and
4. the full text of the articles was not available.

STAGE 4: INCLUSION

The final 18 selected articles were used in the qualitative analysis. The full-text articles were assessed for in-depth reading to identify the trends and gaps in the study. Efforts were concentrated on specific studies to gather more information on airline services and taxation. An integrative review was performed during this phase to analyse and synthesise the research design. By reading and rereading the abstract and full-text articles, specific data were extracted based on the research questions. The thematic analysis was conducted to develop the appropriate themes and sub-themes for each article. The final 18 articles were carefully examined and divided into significant groups based on themes related to the types of taxes placed on the airline industry and the reason for being implemented. Then, the sub-themes were organised around the themes established by typology.

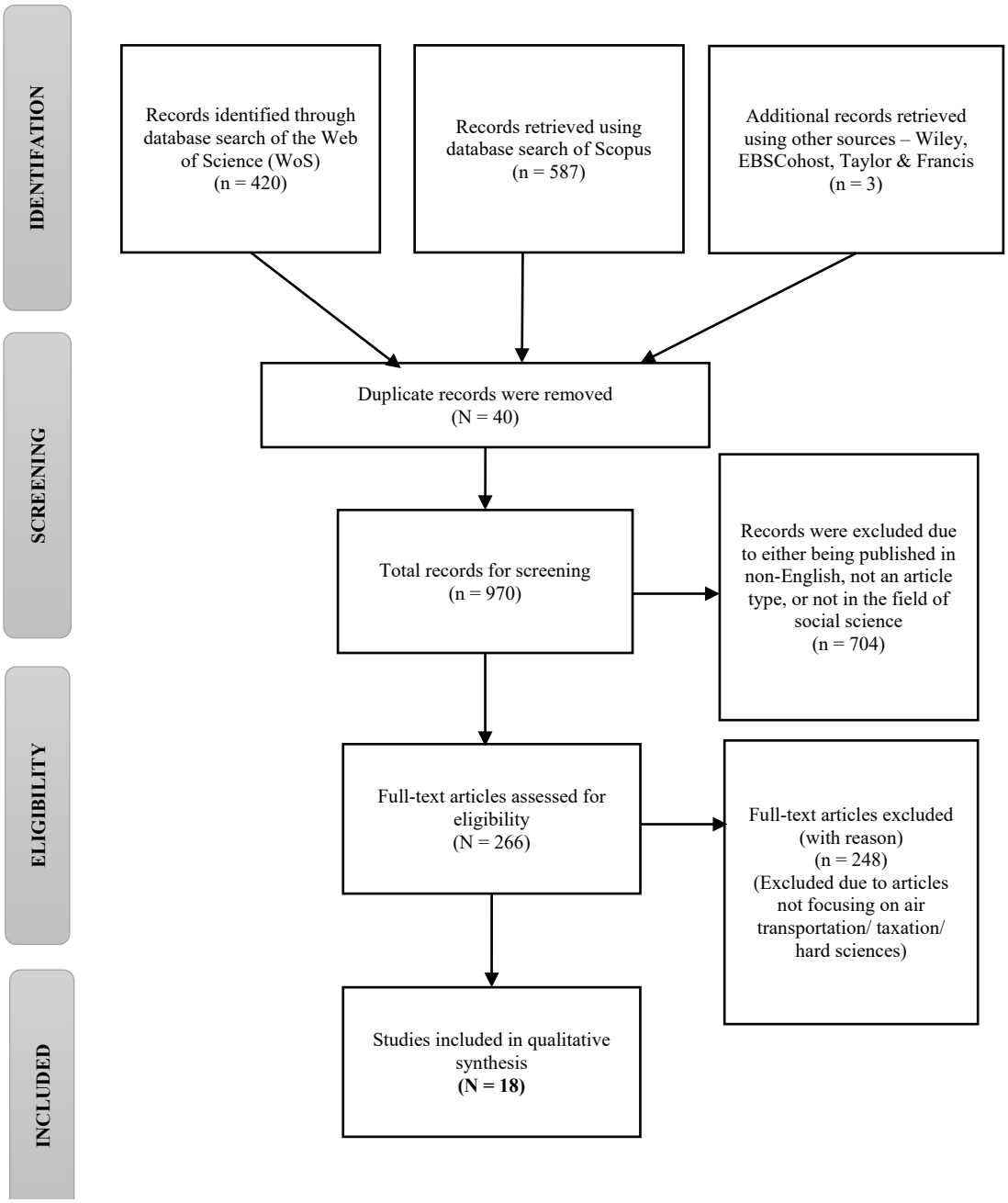

FIGURE 1. Flow diagram of this study

FINDINGS AND DISCUSSION

GENERAL FINDINGS

Using the systematic procedure and predetermined criteria discussed in the previous sections, this study reduced the initial list of 1,010 articles to 18 most pertinent articles for further extraction and analysis. The other articles were removed for reasons as listed in the eligibility section. Based on the selected academic articles (18 articles), this study was able to identify several criteria and features that were the most debated in seven years, from 2007 to 2019. The findings showed that the previous studies (n = 11) have investigated the impact of indirect taxes on passenger behaviour, especially in terms of demands for better airline services and tourism experience; estimated willingness-

to-pay taxes among travellers; and the competitive impact of taxes on the airline market (Borbely 2019; Falk & Hagsten 2019; Forsyth et al. 2014; Galindo et al. 2018; Ivaldi & Toru-Delibaşı 2018; Mayor & Tol 2007; Seetaram et al. 2014, 2018; Song et al. 2019; Sonnenschein & Smedby 2018; Van Cranenburgh et al. 2014).

Additionally, two studies explored and examined the impact of indirect taxes on airline fares and pricing strategies for low-cost airlines (Cui 2019; White et al. 2019). The accuracy (robustness) of air traffic emission tax policy in dealing with the impact of carbon emissions in the United States was also studied (Hofer et al. 2010). The remaining five articles were more focused on general discussions and understanding of aviation tax through various aspects, such as, through the perspective of the economy, the airline industry, and the environmental aspect (Keen & Strand 2007; Zuidberg 2015).

FOCUS OF STUDY (TAXES)

The main goal of this research was to thoroughly examine studies on indirect taxes in the airline industry. Therefore, the types of taxes, the purpose of their implementation, and study patterns were identified. Based on the findings of the selected articles, studies related to indirect taxes and the airline industry were mostly conducted in 2019 (Borbely 2019; Cui 2019; Falk & Hagsten 2019; Song et al. 2019; White et al. 2019). Meanwhile, the United Kingdom's Air Passenger Duty (APD) was the most popular topic among six articles (n = 6) (Álvarez-Albelo et al. 2017; Mayor & Tol 2007; Ryley et al. 2010; Seetaram et al. 2014; Song et al. 2019). The possibility of imposing this kind of tax is the main focus among scholars because the UK was the first country to introduce and apply an indirect tax on airline services in 1994. Even today, the APD in the UK is a topic of much controversy. Many scholars have debated its implementation because of the increasing tax rates and their impact on the tourism sector (Seetaram et al. 2014; Song et al. 2019).

In addition to APD, carbon taxes were also extensively examined by scholars, particularly in relation to the airline industry. A total of four studies (n = 4) have focused on the impact of the carbon tax (Cui 2019; Galindo et al. 2018; Hofer et al. 2010; Van Cranenburgh et al. 2014). Many researchers have started to pay attention to the effect of carbon emission from the development of the aviation industry on natural disasters or climate change. Therefore, carbon taxes are some of the hot topics closely related to the airline industry, in addition to air travel taxes. Air pollution from the airline industry is often seen as one of the reasons to apply carbon tax on airline services. Several measures have been proposed to reduce aircraft emissions to ensure the airline industry's long-term viability, for example, the European Union Emission Trading System (EU ETS) (Cui 2019).

The remaining studies have concentrated more on the impact and overview of indirect taxes implemented in certain countries, for example, German Aviation Tax and Flight Departure Tax in Germany and Austria (Borbely 2019; Falk & Hagsten 2019), taxation in the United States' aviation industry (White et al. 2019), France Air Ticket Solidarity Tax (Ivaldi & Toru-Delibaşı 2018), Air Ticket Tax in Sweden (Sonnenschein & Smedby 2018), and Passenger Movement Charge in Australia (Forsyth et al. 2014).

Apart from the year of publication and the types of taxes, which the majority of scholars have focused on, this systematic review has found several terms of indirect taxes used in the previous studies, such as the German Aviation Tax, Air Passenger Duty, Flight Departure Tax, Passenger Movement Charge, Air Ticket Levy, Air Travel tax, Air Ticket Solidarity Tax, and Carbon Taxes. The following Table 2 lists the findings extracted from the selected articles published between 2007 and 2019.

TABLE 2. Findings of selected articles published between 2007 and 2019

	Author(s)	Focus of Study	Findings
Publication Year: 2019			
1.	Borbely, Daniel (2019)	German Aviation Tax	The German Aviation Tax, which is frequently driven by environmental taxes, is imposed on travellers leaving German airports. The general consensus is that the primary motivation behind this aviation tax is revenue-raising.
2.	Cui, Qiang (2019)	Carbon Tax	Air transport generates 2% of man-made carbon emissions, according to the International Civil Aviation Organization (ICAO). "Let's say the airlines do not implement any preventative measure, in that case, the total greenhouse gas emissions from aviation will increase 400%–600% higher in 2050 compared to in 2010."
3.	Martin Falk & Eva Hagsten (2019)	Flight Departure Tax	Several measures have been contemplated as a result of heightened awareness of the unfavourable environmental impact of increased air travel. "Integration of aviation into the European trading scheme (ETS) in 2012 represents the first international (European) policy initiative to reduce emissions." The imposition of departure taxes on flights is widely accepted as a legitimate means of promoting environmental preservation.

	Author(s)	Focus of Study	Findings
4.	Song, Haiyan; Seetaram, Neelu; & Ye, Shun (2019)	Air Passenger Duty (APD)	The APD wants to encourage the UK airline industry to internalise its externalities, namely, carbon dioxide and other greenhouse gas emissions. "The APD is also levied on overseas visitors who cannot vote in the UK." Therefore, it can be used as a mechanism to raise public funds.
5.	White, Quinton; Agrawal, David R.; & Williams, Jonathan W. (2019)	Taxation in the US Aviation Industry	In 1993, carriers were responsible for collecting two taxes on domestic flights in the continental US, with both still collected today. "First, the US Ticket Tax is a percentage-based tax. Second, a Passenger Facility Charge (PFC) is added to a base fare at certain airports." PFCs are airport-specific fees imposed when passengers aboard an airplane. This revenue is treated as local funds and restricted for use on specific long-term capital projects.
Publication Year: 2018			
6.	Galindo, L. M., Caballero, K., & Beltran, A. (2018)	CO^2 aviation tax in Mexico	Examining the economic effects of policies that can make international travel a more sustainable activity is crucial given the urgency of addressing climate change issues and the importance of international tourism to the Mexican economy.
7.	Ivaldi, M., & Toru-Delibaşı, T. (2018)	Air ticket solidarity tax	One of the first industries to be affected by the spread of a pandemic is the air transport industry. Subsequently, this would have affected other related industries as well, such as tourism and trade. Thus, it is paramount to put money into improving health infrastructure and programmes in developing countries. One possible way to pay for these investments is to raise taxes. Since no one is willing to pay for the harms caused by a pandemic, public economics say that taxes are the best way to fix any market failure. This could be a valid reason for imposing the air ticket levy.
8.	Seetaram, N., Song, H., Ye, S., & Page, S. (2018)	Air Passenger Duty	Sustainable tourism is gaining popularity, and efforts are being made to reduce tourism-related air pollution. As a way to reduce the impact of air pollution, airlines are encouraging, or requiring passengers to pay extra for their carbon emissions.
9.	Sonnenschein, J., & Smedby, N. (2018)	Air ticket tax	Every air traveller paying for carbon emissions tax would face two climate impacts; it may discourage flying, or it generates climate-reduction revenue. Air ticket tax is a common way to reduce the numbers of travelling, as part of the incentive to travel less.
Publication Year: 2017			
10.	Álvarez-Albelo, C. D., Hernández-Martín, R., & Padrón-Fumero, N. (2017)	Air Passenger Duty	Strategic taxation for rent extraction can be another underlying reason for setting the APD. This duty can be justified as strategic taxations established by the countries of origin of tourists for extracting economic rents that tourism destinations would otherwise retain.
Publication Year: 2015			
11.	Joost Zuidberg (2015)	Air Travel Tax	Air travel taxes are often marketed as ways to reduce carbon emissions and improve the environment. Air travel taxes are also used to fund the government's general funds (in times of economic downturn). However, directly taxing emissions is a better policy to reduce carbon emissions in aviation.
Publication Year: 2014			
12.	Forsyth, P., Dwyer, L., Spurr, R., & Pham, T. (2014).	Passenger Movement Charge	A government can have several motivations to impose a tax on air passengers, which may include an environmental charge, providing funds for specific passenger related services, raising general government revenues, and funding specific non-transport initiatives (Keen & Strand, 2007). The PMC contains elements of each of the latter three objectives.
13.	Seetaram, N., Song, H., & Page, S. J. (2014)	Air Passenger Duty	APD has proven to be an effective revenue-raising mechanism for the British government. However, APD has had limited success in reducing travel and carbon emissions, despite its stated goal because travellers are willing to pay more to maintain demand.
14.	Van Cranenburgh, S., Chorus, C. G., & Van Wee, B. (2014)	Carbon Tax	To curb aviation CO^2 emissions, global aviation carbon taxes have been occasionally debated. It is widely believed that having the objective to stabilise aviation CO^2 emissions and meet the Intergovernmental Panel on Climate Change goals requires very high global aviation carbon taxes.
Publication Year: 2010			
15.	Hofer, C., Dresner, M. E., & Windle, R. J. (2010)	Carbon Emission Taxation	"Raise funds to combat global warming" is one of the stated goals of the government tax designed to reduce carbon emissions.

	Author(s)	Focus of Study	Findings
16.	Ryley, T., Davison, L., Bristow, A., & Pridmore, A. (2010)	Aviation Taxes in the United Kingdom	Aviation's contribution to climate change will grow in the coming decades. "Green taxes" were imposed to reduce flight demands and emissions, as well as promote a cleaner technology. The European Union Emission Trading Scheme (EU ETS) was introduced in 2005 to reduce greenhouse gas emissions.
Publication Year: 2007			
17.	Mayor, K., & Tol, R. S. (2007)	Air Passenger Duty	"Unsurprisingly, an emission tax would reduce emissions, even if domestic and foreign holidays are not substitutes. An emission tax can raise the same revenue as the boarding taxes under discussion." Thus, APD was an alternative plan to reduce emissions.
18.	Keen, M., & Strand, J. (2007)	Indirect Taxes on International Aviation	There is a renewed interest in the potential use of global taxes (taxes adopted by some countries on a coordinated basis) as a source of additional finance for development. The second source of interest is increased awareness, with the heightened concern of climate change, of the distinctly favourable tax treatment of aviation fuels relative to other fossil fuels.

THE PURPOSE OF TAX IMPOSITION BASED ON THE SELECTED ARTICLES

In general, every tax imposed on the airline industry, or the passengers has a specific purpose and policy set by international aviation institutions, or a government body. There are various assumptions and debates on the purpose of implementing aviation taxes. Some scholars have focused on environmental issues, for example, to reduce carbon emissions amid heightened concern over climate change due to the activities in the aviation industry (Álvarez-Albelo et al. 2017; Cui 2019; Falk & Hagsten 2019; Seetaram et al. 2018; Sonnenschein & Smedby 2018). Meanwhile, a common perception among scholars is that a tax is imposed to increase government revenues (Borbely 2019; Forsyth et al. 2014; Song et al. 2019; White et al. 2019). Although air travel activities are considered as contributors to carbon emission, Cui (2019) reported that approximately 2% of carbon emissions are generated by air transport based on the statistical data published by the International Civil Aviation Organization (ICAO). However, the demand for air travel will be expected to increase yearly. Thus, if carbon emissions are not addressed properly, they can lead to serious environmental damages. According to Kuramochi et al. (2018), aviation emissions are expected to increase by 140% between 2013 and 2050. Therefore, green taxes, or carbon taxes could be a good mechanism towards reducing greenhouse gas emissions and air travel activities (Galindo et al. 2018; Sonnenschein & Smedby 2018).

Seetaram et al. (2014) argued that the environmental issues claimed under the Air Passenger Duty (APD) in the UK are not enough to consider how perceived problems associated with tourism could be utilised to extend the tax despite its justification based on environmental reasons. However, according to Zuidberg (2015), to create social acceptance, the air travel tax is often seen, or labelled as an effort to reduce carbon emissions rather than for revenue purposes. Indeed, the main reason for air travel tax is a simple revenue-raising strategy to support the central government's general funds. According to Song et al. (2019), APD has the potential of becoming an effective mechanism for raising public funds from the airline industry. It could also encourage the UK aviation industry to mitigate the external effects of their rising carbon emissions. In terms of the passenger movement charge (PMC or departure tax) that the government of Australia has introduced, this tax was imposed on air passengers to provide funding for passenger-related services and to increase government revenue for funding certain non-transport initiatives in their country (Forsyth et al. 2014). According to Forsyth et al. (2014), the PMC is not regarded as an environmental charge. Thus, it is considered a revenue-raising measure, even though the charge will be imposed on passengers departing Australia, including departing international visitors and Australian residents.

This review has found that the general purpose of imposing air travel taxes on air passengers is to reduce carbon emissions and the number of travelling (Mayor & Tol 2007; Ryley et al. 2010; Seetaram et al. 2018; Song et al. 2019). The most common air travel tax is viewed as a simple way to combat the impact of the aviation industry. A study by Hofer et al. (2010) found that although the implementation of the carbon tax may disrupt the demands for flights, the amount of carbon emission is also expected to increase due to the substitution effect of passengers switching to another mode of transportation (bus or private cars). Their analysis showed that air travel and carbon emission will decrease in proportion to how much the price of emission increases because of a tax. However, carbon emissions from cars and other vehicles are also expected to increase, as more travellers would drive instead of fly. Meanwhile, Álvarez-Albelo et al. (2017) reported that the impact of the air travel tax on travel demands and greenhouse gas emissions has been marginal, and the tax seemed to have little effect on either. Consequently, the rationale for the air travel tax being implemented would be a conundrum. They argued that there is a question regarding the rationale and effectiveness of air travel taxes imposed on the aviation sector, whether to control carbon emissions, or to increase national income tax revenue. Hence, they proposed that air travel tax would be more appropriately labelled or viewed as a strategic taxation established by tourists' countries of origin to extract rents from tourism destination countries. This kind of

travel tax will allow the country of origin to earn an increased share of economic rents generated via tourism transactions (Álvarez-Albelo et al. 2017).

Apart from increasing government's income, or as a tool to protect the environment, Ivaldi and Toru-Delibaşı (2018) stated that air travel tax could also be seen as an additional fund to finance certain sectors (alternative funds), for example, the UNITAID[1]. The air-ticket solidarity levy was initiated by France with the intent of imposing a tax on business and economy class passengers, and then, redistributing the revenue to impoverished people to obtain treatment for diseases, such as HIV, malaria, and tuberculosis through the governing system of UNITAID. Since air transport is one of the industries heavily affected by the pandemic, investing in the improvement of health infrastructure is important and can be achieved through taxation. Considering that the spread of the Middle East Respiratory Syndrome (MERS), COVID-19, and Ebola have affected the airline industry, these could be the best reason to impose taxes to finance investments to solve market failure (Ivaldi & Toru-Delibaşı 2018).

The spread of disease outbreaks is one of the factors that can adversely affect and disrupt the activities of the airline industry. Ivaldi and Toru-Delibaşı (2018) reported that Korean Air Lines Co. and Asiana Airlines Inc. have cancelled 230 flights to and from Japan because of the spread of the MERS coronavirus through South Korea. These facts can prove that the airline industry is one of the first industries to be affected by a pandemic. It can also indirectly affect the activities of the tourism industry and world trade. Therefore, according to Ivaldi and Toru-Delibaşı (2018), it is important to invest in infrastructure and health programmes in developing countries. Thus, financing such investments would be appropriate through taxation, such as the solidarity tax on an airline ticket.

Based on the selected articles, this study has summarised that the purpose of tax implementation in the airline industry can be viewed from two perspectives: first, for national economic development; and second, for achieving sustainable development goals. Most scholars opined that air travel tax is used as a measure to reduce carbon emission (Cui 2019; Galindo et al. 2018; Hofer et al. 2010; Van Cranenburgh et al. 2014). Meanwhile, other scholars claimed that the protection of the environment is just an excuse to implement such taxes, instead, they are imposed to increase general government revenues (Zuidberg 2015). Meanwhile, in certain countries, taxes are levied on air passengers to fund specific passenger-related services, increase general government income, and fund specific non-transport-related activities (Forsyth et al. 2014).

However, air travel tax would be more accurate and rational, if it is seen as one of the tourism strategies (strategic taxation for rent extraction) to enable the countries of origin to earn benefits from tourism transactions, rather than just for revenue-raising (Álvarez-Albelo et al. 2017). Ivaldi and Toru-Delibaşı (2018) opined that the reason behind the air ticket levy, whereby they looked at innovative financing tax (funding initiative), was to mitigate the negative impacts of a pandemic on the social welfare of the people and the airline industry. The airline industry needs to strive to experience lower risks of pandemics. Therefore, investing in health infrastructure would be possible by imposing taxes on airline services. The following Table 3 lists the themes and sub-themes found using the thematic synthesis on 18 articles selected in the systematic review.

TABLE 3. Summary of the selected articles

Authors (Year)	Terms of Taxes	Economic Growth			Sustainable Development	
		Revenue-Raising	Tourism Strategic	Funding Initiatives	Environmental	Epidemic
Borbely (2019)	GAT	✓			✓	
Cui (2019)	CT				✓	
Falk & Hagsten (2019)	FDT				✓	
Song et al. (2019)	APD	✓	✓		✓	
White et al. (2019)	AT	✓				
Galindo et al. (2018)	CT				✓	
Ivaldi & Toru-Delibaşı (2018)	ATL/ ST			✓		✓
Seetaram et al. (2018)	APD				✓	
Sonnenschein & Smedby (2018)	ATT				✓	
Álvarez-Albelo et al. (2017)	APD	✓	✓		✓	
Zuidberg (2015)	ATT	✓			✓	
Forsyth et al. (2014)	PMC	✓		✓		
Seetaram et al. (2014)	APD	✓	✓		✓	
Van Cranenburgh et al. (2014)	CT				✓	
Hofer et al. (2010)	CT				✓	
Ryley et al. (2010)	AT	✓			✓	
Mayor & Tol (2007)	APD				✓	
Keen & Strand (2007)	IT	✓			✓	

GAT = *German Aviation Tax*
CT = *Carbon Tax*
FDT = *Flight Departure Tax*
APD = *Air Passenger Duty*
ATL = *Air Ticket Levy*
ST = *Solidarity Tax*
PMC = *Passenger Movement Charge*
ATT = *Air Travel Tax/ Air Ticket Tax*
AT = *Aviation Tax*
IT = *Indirect Tax*

CONCLUSION

This study has conducted a literature review of indirect taxes in the context of air passengers (airline services) by focusing on articles published between 2007 and 2019. The primary objective was to consolidate the knowledge and perspective of different scholars on air travel taxes to understand the purposes and types of taxes in the airline industry, specifically in certain countries. This study also aimed to look deeper into the purpose of air travel taxes being imposed on air passengers. The results obtained in this study based on the systematic literature review showed two factors for implementing air travel taxes: economic growth and sustainable development. These factors were categorised into five sub-themes: revenue-raising, tourism strategies, funding initiatives, environmental, and pandemic. This study also found that the most common topics discussed regarding the airline industry were the Air Passenger Duty and carbon emission. This systematic literature review encountered several limitations. First, the selected articles were searched in a few databases (Web of Science, Scopus, Wiley, EBSCOhost, and Taylor & Francis). Therefore, the number of articles that focused on the research topic was limited and appeared to be similar. Thus, future studies could be expanded to focus more on database searches and time periods to gather more valid research articles on air travel taxes and the airline industry. Secondly, based on the pattern from previous studies most scholars are focused on developed countries such as the United Kingdom, United States, Australia, etc, but studies from an Asia Pacific perspective have not been discussed. Therefore, future studies should consider these gaps by investigating air travel taxes studies in Asia Pacific regions.

NOTE

[1] UNITAID is a global health agency engaged in finding innovative solutions to prevent, diagnose, and treat diseases quicker, cheaply, and effectively in low- and middle-income countries (UNITAID 2021).

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