



**EFFECTS OF COVID-19 PANDEMIC OVER THE FINANCIAL RATIOS
AND KEY AUDIT MATTERS IN THE CONTEXT OF IFRS AIRLINES**

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DEPARTMENT OF MANAGEMENT

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ABSTRACT

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This thesis focuses on the effect of COVID-19 pandemic over the liquidity, solvency, and profitability ratios in terms of financial situation and financial performance of selected airlines and over the key audit matters of those airlines. In this regard, it considers airlines adopting International Financial Reporting Standards and International Standards on Auditing. It also analyses the general perspectives on international auditing in the airline industry.

In the context of financial ratios, it considers (1) pre-COVID-19 period to observe the general trend of liquidity, solvency, and profitability ratios in the pre-COVID-19 period in the airline industry, (2) during COVID-19 period to observe the change in liquidity, solvency, and profitability ratios due to the effect of COVID-19 in the airline industry and (3) post-COVID-19 period to observe the change in liquidity, solvency, and profitability ratios due to the recovery from COVID-19 in the airline industry. In this regard, results reveal that liquidity, solvency, and profitability ratios were negatively affected not only by COVID-19 due to loans borrowed, but also by the capitalization of operating lease liabilities in accordance with IFRS 16 that entered into force right before COVID-19. The sharp decline in net sales is a particular indicator to clearly state the negative effect of COVID-19 over the airline industry due to the cease of flight operations.

In the context of general perspectives on international auditing, it observes the globally adopted standards on auditing, audit firms, auditor types, auditor rotation, and audit opinion in the airline industry in terms of pre-COVID-19, during COVID-19 and post-COVID-19 periods. The auditors of most airlines adopt International Standards on Auditing. Financial statements of most airlines are audited by international audit firms and particularly by Big-4 audit firms. Auditor rotation is in effect. Single auditor is essential except for the requirement of joint auditor in France. Audit opinions are mostly unqualified opinion. In the analysis, research indicates that one airline got a disclaimer of opinion due to COVID-19.

In the context of key audit matters, it considers (1) pre-COVID-19 period, (2) during COVID-19 period to observe the change in key audit matters due to the uncertainty effect of COVID-19 in the airline industry and (3) post-COVID-19 period to observe the differentiation in key audit matters due to recovery from COVID-19. Research reveals that frequently observed key audit matters in the airline industry refer to revenue recognition, aircraft assets and other property, plant, and equipment, lease accounting, and hedge accounting. The ranking of these matters varied from one period to another due to uncertainty experienced in COVID-19 period. The specific key audit matter for the case of COVID-19 is the questioning of going-concern assumption in airlines in terms of financial health and survival.

Further research is to analyze the effect of the conflict between Russia and Ukraine over the liquidity, solvency, and profitability of affected airlines due to the cease of flight operations from and to Russia, and even China.

Keywords: IFRS, COVID-19, Financial Ratios, International Auditing, Key Audit Matters, Airline Industry

ÖZET

COVID-19 PANDEMİSİNİN UFRS UYGULAYAN HAVAYOLLARININ FİNANSAL ORANLARI VE KİLİT DENETİM KONULARI ÜZERİNDEKİ ETKİLERİ

DANSIK, UMUTCAN
İŞLETME YÖNETİMİ YÜKSEK LİSANS TEZİ

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Bu tez, COVID-19 salgınının, finansal durum ve finansal performans açısından, seçilmiş havayollarının likidite, borç ödeme gücü ve karlılık oranları ile bu havayollarının kilit denetim konuları üzerindeki etkisine odaklanmaktadır. Bu bağlamda, Uluslararası Finansal Raporlama Standartları ve Uluslararası Denetim Standartları'nı benimseyen havayollarını dikkate almaktadır. Ayrıca, havayolu sektöründeki uluslararası denetime ilişkin genel perspektifleri de analiz etmektedir.

Finansal oranlar bağlamında, (1) COVID-19 öncesi dönemde havayolu sektörünün likidite, borç ödeme gücü ve karlılık oranlarındaki genel eğilim, (2) COVID-19 döneminde havayolu sektöründe COVID-19'un etkisi nedeniyle likidite, borç ödeme gücü ve karlılık oranlarındaki değişim ve (3) COVID-19 sonrası dönemde havayolu sektöründeki COVID-19'dan toparlanma nedeniyle likidite, ödeme gücü ve karlılık oranlarındaki değişim gözlemlenmiştir. Bu bağlamda, sonuçlar likidite, borç ödeme gücü ve karlılık oranlarının sadece ödünç alınan krediler nedeniyle COVID-19'dan değil, aynı zamanda COVID-19'dan hemen önce yürürlüğe giren IFRS 16'ya uygun olarak faaliyet kiralama yükümlülüklerinin aktifleştirilmesinden de olumsuz etkilendiğini ortaya koymaktadır. Net satışlardaki keskin düşüş, uçuş operasyonlarının durması nedeniyle COVID-19'un havayolu sektörü üzerindeki olumsuz etkisini açıkça belirten özel bir göstergedir.

Uluslararası denetime ilişkin genel bakış açıları bağlamında, bu tezde COVID-19 öncesi, COVID-19 ve COVID-19 sonrası dönemler açısından havayolu sektöründeki denetim, küresel olarak benimsenen denetim standartları, denetim firmaları, denetçi türleri, denetçi rotasyonu ve denetim görüşü açısından gözlemlenmiştir. Çoğu havayolunun denetçileri Uluslararası Denetim Standartlarını benimsemiştir. Çoğu havayolunun finansal tabloları uluslararası denetim firmaları ve özellikle 4 büyükler olarak adlandırılan denetim firmaları tarafından denetlenmiştir. Denetçi rotasyonu yürürlükteyir. Fransa'daki müşterek denetçi gerekliliği dışında tek denetçi esastır. Denetim görüşleri çoğunlukla olumlu görüştür. Yapılan araştırmada bir havayolu şirketinin denetim raporuna COVID-19 nedeniyle denetçi tarafından “görüş bildirmekten kaçınma” görüşünün verildiği görülmüştür.

Kilit denetim konuları bağlamında, (1) COVID-19 öncesi dönem, (2) COVID-19 döneminde havayolu sektöründe COVID-19'un belirsizlik etkisi nedeniyle kilit denetim konularındaki değişim ve (3) COVID-19 sonrası dönemde COVID-19'dan kurtulma nedeniyle kilit denetim konularındaki farklılaşma gözlemlenmiştir. Araştırma, havayolu sektöründe sıklıkla görülen kilit denetim konularının hasılatın muhasebeleştirilmesi, uçak varlıkları ve diğer maddi duran varlıklar, kiralama işlemleri ve riskten korunma muhasebesi olduğunu ortaya koymuştur. Bu konuların sıralaması COVID-19 döneminde yaşanan belirsizlik nedeniyle bir dönemden diğerine değişmiştir. COVID-19 vakasına özel bir kilit denetim konusu, havayollarının finansal sağlığı ve devamlılığı açısından işletmenin sürekliliği varsayımının sorgulanması olmuştur.

Sonraki çalışmalarda, Rusya'dan ve Rusya'ya ve hatta Çin'e uçuş operasyonlarının durdurulmasına neden olan Rusya ve Ukrayna arasındaki çatışmanın etkilenen havayollarının likiditesi, borç ödeme gücü ve karlılığı üzerindeki etkisi analiz edilebilir.

Anahtar Kelimeler: UFRS, COVID-19, Finansal Oranlar, Uluslararası Denetim, Kilit Denetim Konuları, Havayolu Şirketleri

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LIST OF ABBREVIATIONS

ASPE of China	Accounting Standards for Business Enterprises of China
BS	Balance Sheet
CL	Current Liabilities
EAA	European Economic Area
EBIT	Earnings Before Interest, and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortisation
EU	European Union
FRC of Taiwan	Financial Reporting Council of Taiwan
FRC of UK	Financial Reporting Council of United Kingdom
HK FRS	Hong Kong Financial Reporting Standards
IAASB	International Auditing and Assurance Standards Board
IAG	International Airlines Group
IATA	International Air Transport Association
IE	Interest Expense
IFRS	International Financial Reporting Standards
Ind AS	Indian Accounting Standards
ISA	International Standards on Auditing
Japan GAAP	Japan Generally Accepted Accounting Principles
KAMs	Key Audit Matters
K-IFRS	Korean International Financial Reporting Standards
LSE	London Stock Exchange
MERS	Middle East Respiratory Syndrome
NCL	Non-Current Liabilities
NI	Net Income
NZSE	New Zealand Stock Exchange
PCAOB	Public Company Accounting Oversight Board
PPE	Property, Plant, and Equipment

ROA	Return on Assets
ROE	Return on Equity
ROIC	Return on Capital Invested
RPK	Revenue Passenger Kilometers
SARS	Severe Acute Respiratory Syndrome
SFRS	Singapore Financial Reporting Standards
SFRS(I)	Singapore Financial Reporting Standards (International)
TE	Total Equity
Thai FRS	Thai Financial Reporting Standards
TA	Total Assets
TL	Total Liabilities
UK	United Kingdom
US	United States
US GAAP	United States Generally Accepted Accounting Principles
Vietnamese AS	Vietnamese Accounting Standards

INTRODUCTION

There are several external factors that affect the functioning of the aviation industry. Without the environmental screening¹ of these factors, it looks like that it is impossible to run an enterprise from the airline industry effectively, and efficiently (Brown and Kline 2020). These external factors (also called exogenous shocks by Brown and Kline 2020; Dube et al. (2021), endogenously driven factors by Renold et al. (2023), environmental shocks by Linden (2021), external challenges by Dube et al. (2021), external business threats by Dube et al. (2021), and exogenous impacts by Renold et al. (2023)) of the aviation industry include (a) climate change, (b) trade disputes, (c) diseases and pandemics, and (d) geopolitical conflicts (Zhang et al. 2024). The vulnerability of the industry to unexpected shocks have been verified by these factors.

Within the framework of these external factors, the operations of airline industry have been negatively affected due to diseases and pandemics such as SARS epidemic of the East Asia in 2003 (Renold et al. 2023), Avian influenza H5N1 in 2006, Swine influenza H1N1 in 2009, MERS in 2013, and COVID-19 in 2020 (Miani et al. 2021; Dube et al. 2021).

In addition to diseases and pandemics, the oil crisis that took place in 1973, the Iran-Iraq War that took place in the early 80s, the Gulf Crisis that took place in the early 90s, the Asian Financial Crisis that took place in 1997, the 9/11 terrorist attacks that took place in 2001, and the financial crisis that took place in 1998, 1999, and 2008 as well as natural shocks such as Eyjafjallajökull (the volcano in northern Europe) or the Indonesian volcano ash clouds have dramatically affected the airline industry (Linden (2021); Dube et al. (2021); Renold et al. (2023)). Recently, Russia-Ukraine and Israeli Palestinian conflicts have disrupted flight operations (Zhang et al. 2024).

¹to monitor the firm's external environment to gather information for its next round of strategic decision-making

The common denominator of these external challenges is the fact of increase in the level of uncertainty to effectively and efficiently manage enterprises from the airline industry (Gudmundsson and Merkert 2020).

In the context of the effects of infectious diseases and pandemics in the airline industry, SARS had dramatic impact as a reduction on annual RPK of Asia-Pacific airlines by 8% (Miani et al. 2021). However, the impact of COVID-19 has been much more severe than SARS by March 2020 with 54.7% reduction in RPKs compared to the findings of 2019 in the global context.

Within this framework, this thesis contributes to the accounting literature in terms of the effects of COVID-19 pandemic over the financial ratios and KAMs in the context of IFRS airlines within the framework of the increased uncertainty under the conditions of pandemic.

CHAPTER I

AIRLINE INDUSTRY, FINANCIAL REPORTING & AUDITING

1.1. AIRLINE INDUSTRY

The airline industry includes several businesses. It not only includes airfreight operations in the context of passenger flight and air cargo services but also substantially contributes to economic growth through aircraft manufacturing, tourism, employment, prosperity, supply chain management, innovation, cooperation, and global trade (Çelik 2017: 83-87; Tay et al. 2020).

Even if it makes significant contribution to the economic growth, the airline industry is one of the industries that face with public health threats such as SARS, which not only influence profitability but also the sustainability of the airline industry (Tay et al. 2020). Therefore, the occurrence of the COVID-19 pandemic has been also a serious threat to the airline industry like SARS whose effect should not be ignored. Due to COVID-19 pandemic,

(1) the airline industry started to operate in low capacity as of October 28, 2020, compared to 2019. For instance, departure/ arrival traffic in Norway, Turkey, France, Germany, and Italy declined 39%, 52%, 55%, 62%, and 64%, respectively (Dube et al. 2021).

(2) revenue generation in the airline industry was negatively affected. For instance, the expected revenue in Europe was realized as low as 88% in April 2020, and as of June 2020, the expected revenue in Europe was realized less than 20% of the expected revenue (Dube et al. 2021).

(3) airlines considered restructuring and resizing to prevent cash burns (Dube et al. 2021). In this context, job layoffs, and retiring of old and large aircraft were taken into account to increase operational efficiency in the most cost-effective way to reduce cash burns. For instance, British Airways retired its 31 Boeing B747-400 models in mid-July 2020, four years earlier than the planned retirement date of 2024.

(4) mass grounding of aircraft occurred (Dube et al. 2021). It was mostly observed from March 2020 to June 2020. To find space to park aircrafts at the airports became difficult. Such mass grounding led to increased parking fees, mandatory maintenance expenses, and significant loss of airline revenues.

(5) several rescue packages were announced to the aviation industry by the governments at the amount of US\$123,1 billion in the global context (Dube et al. 2021). These packages include loans, equity financing, ticket taxes, corporate taxes, fuel taxes, and soon. However, US\$67 billion out of the US\$123.1 billion, in other words, 55% of government aid consisted of loans leading to additional debt in the industry. Therefore, the industry's huge debt structure increased.

Despite all these difficulties experienced during COVID-19 pandemic, Renold et al. (2023) forecasted that operating profit is expected to recover in the post-COVID-19 period. In this context, it uses pre-COVID-19 and during COVID-19 data from 1995 to 2020 in the context of yearly patterns to forecast the recovery of the airline industry from 2021 to 2025. Within the framework of the amount of uncertainty based on the development of passenger demand that affects the airline operating strategy on capacity and the course of the COVID-19 pandemic, Renold et al. (2023) predict that post-COVID-19 period is expected to follow the years of the pre-COVID-19 period in the context of recovery of the operating profit.

On the other hand, airline industry is globally one of the most lease-oriented industries due to its fleet assets (Öztürk 2022a). In such context, it should be noted that a new leasing standard in the IFRS (IFRS 16) and US GAAP (ASC 842) context was entered into force in 2019 (Arzova and Şahin 2020) right before the COVID-19. Since the focus of this thesis is IFRS, IFRS adopting airlines started to early adopt the standard in 2018 such as Air France – KLM and Easy Jet and others started to adopt the standard in 2019. Therefore, the accountants of IFRS airlines have started to include all leased assets except for short-term leases and leases of low-value assets regardless of whether they are finance leased or operating leased assets in the statements of financial position (balance sheet) along with their lease liabilities to reflect the airline's fair debt and equity structure (Afsari 2022).

Unavoidably, the COVID-19 period and the period of the adoption IFRS 16 match with each other. Therefore, these facts should be considered when financially analyzing the airline industry.

1.2. FINANCIAL REPORTING & AUDITING OF AIRLINES

In the context of financial reporting, most airlines other than those operating in the US prepare their financial statements and notes in accordance with IFRS. Financial reporting based on IFRS consists of the common denominator in preparing and presenting financial statements in the airline industry because airlines usually are listed in organized stock exchanges (Öztürk 2022b). Therefore, IFRS adoption is required in terms of the accounting regulation in airlines' country of incorporation.

The regulatory authority of the airline industry IATA also supports financial reporting based on IFRS and prepares certain guidelines on financial reporting in the airline industry related to IAS 16 Property, Plant, and Equipment, IFRS 8 Operating Segments, IFRS 9 Hedge Accounting (IATA 2009; 2016a; 2016b; 2016c), IFRS 9 Financial Instruments, IFRS 15 Revenue from Contracts with Customers, and IFRS 16 Leases (IATA 2022a; 2022b; 2022c).

In the context of auditing, airlines other than those operating in the US are inclined to have their audit of financial statements in compliance with ISAs that have been prepared and issued by IAASB. Because most of the airlines are listed in certain stock exchanges, independent audit is required for them.

1.2.1. Objectives of the Thesis

There are mainly three objectives of this thesis: (1) It examines the effects of COVID-19 pandemic over the liquidity, solvency and profitability ratios of the IFRS airlines to determine how COVID-19 affected such ratios of the airlines in the IFRS context during COVID-19 and post-COVID-19 periods in comparison with pre-COVID-19 period; (2) it analyses the general perspectives on international auditing in the context of IFRS airlines during COVID-19 and post-COVID-19 periods in comparison with pre-COVID-19 period, and (3) it analyses KAMs of the airline industry in the context of ISAs during COVID-19 and post-COVID-19 periods in comparison with pre-COVID-19 period.

1.2.2. Significance of the Thesis

This thesis is important because it provides insights about the effects of a pandemic over the financial ratios, and KAMs of IFRS airlines within the framework of increased uncertainty. In addition, it provides insights about the general perspectives on international auditing regarding the IFRS airlines in the global context.

1.2.3. Limitations of the Thesis

The sample of the research includes airlines globally. However, the number of IFRS airlines are limited in financial ratio analysis due to the use of both semiannual and annual financial statements in such research because not all IFRS airlines prepare and declare semiannual financial statements. On the other hand, the analysis of KAMs include airlines whose annual financial statements are based on IFRS and whose audit is based on ISAs.

1.2.4. Assumptions of the Thesis

This research uses IFRS financial statements and notes that are subject to independent audit. Thus, it is assumed that reliable financial information is provided by the airlines' financial statements and notes.

CHAPTER II

LITERATURE REVIEW ON THE ACCOUNTING AND AUDITING PERSPECTIVES OF AIRLINES RELATED TO COVID-19

This chapter is divided into three subsections regarding the literature review on the accounting and auditing perspectives related to COVID-19 in the airline industry: (1) Literature Review on the effect of COVID-19 pandemic over the financial ratios of airlines, (2) Literature Review on the general perspectives in international auditing of airlines during pre-COVID-19 pandemic, and (3) Literature Review on the effect of COVID-19 pandemic over the KAMs of airlines.

2.1. LITERATURE REVIEW ON THE EFFECT OF COVID-19 PANDEMIC OVER THE FINANCIAL RATIOS OF AIRLINES

There are several prior research on the effect of COVID-19 pandemic over the financial ratios of certain industries and entities listed in worldwide stock exchanges such as the case of pharmaceutical industry in Turkey by Çalış et al. (2021), the case of transportation companies listed in transportation index of the Borsa Istanbul in Turkey by Alnıpak ve Kale (2021), the case of lodging and food-beverage companies in Turkey by Karadeniz et al. (2022), the case of listed industries operating in Turkey by Kılıç Karamahmutoğlu (2022a), the case of deposit banks operating in Turkey by Gülcemal ve Doğan (2022), the case of construction companies operating in Ankara, Turkey by Derya Baskan et al. (2022), the case of textile sector listed in Borsa Istanbul in Turkey by Temel and Çakır (2022), the case of 23 football clubs in five national leagues (Italy-Seria A, England-Premier League, Portugal-Liga Nos, Denmark-Superliga, Turkey-Super League) affiliated to the Union of European Football Associations by Karadeniz and İskenderoğlu (2022), the case of transportation and tourism companies listed in Borsa Istanbul, Turkey by Kılıç Karamahmutoğlu (2022b), the case of travel agency and tour operators in Turkey by Öcek et al. (2023), the case of 105 companies from

food, tourism, beverages, telecommunication, transportation, restaurant, and hotel subsectors listed in Indonesia Stock Exchange by Surya and Suhendah (2023). Some of research includes transportation sector but does not purely focus on the airline industry.

In the context of the effect of COVID-19 pandemic over the financial ratios of the airline industry, there are also several research papers. The papers of Çalış et al. (2021), Erduru (2021), Beyazgül et al. (2022), Temel (2022), and Akçay and Asker (2024) analyse the effect of COVID-19 pandemic over the financial ratios of the airline industry in the context of the balance sheet and income statement of the enterprises that carry out passenger transportation activities by air that were obtained from the sector balance sheets published by the Central Bank of the Republic of Turkey or in the context of listed airlines operating in Turkey. While Kiracı and Asker (2021) analyse the effect of COVID-19 in terms of trend analysis regarding operating revenue of airlines operating in the US, and Mintah and Gulko (2023) analyse the effect of COVID-19 pandemic over the financial ratios of the airline industry in the context of airlines operating in the United Kingdom, Agrawal et al. (2023) analyse the case of Virgin Australia airlines in the same context. However, scope of these papers is narrow and does not represent the whole airline industry regarding what happened to the airline industry financially in the global context during the COVID-19 pandemic.

On the other hand, the papers of Aman and Altass (2021), Karadeniz and Aydın (2023) analyse the effect of COVID-19 pandemic over the financial ratios of the airline industry in the global context. Therefore, scope of their papers is broad and represent the whole airline industry regarding what happened to the airline industry financially in the global context during the COVID-19 pandemic.

The research of Aman and Altas (2021) calculates the financial ratios or indicators such as the average operating profit, EBIT, net profit, revenues and ROIC to compare the results of pre-COVID-19 period from 2004 to 2019 with the results of post-COVID-19 values by using the data related to the industry economic performance published by the IATA. It analyses the data in the North American, Latin American, Middle Eastern, European, Asia-Pacific, and global context. The paper determines that the airline industry significantly decreased its Net Profit, its EBIT, its revenues, and its ROIC in the regional and global context due to COVID-19.

Following the research of Aman and Altass (2021), the research of Karadeniz and Aydın (2023) establishes a sample of airlines in the global context and this sample

is made up of 64 airlines from Europe, North and South America, and Asia-Pacific. It analyses the annual balance sheets and statements of profit or loss (income statement) of these airlines for the period of 2016-2021 to observe the financial position and performance of airline industry in general and the effect of COVID-19 on the financial ratios of the airline industry in particular.

This research is a broad one in analyzing the effects of COVID-19 over the airline industry in the global context but with some reservations. The followings consist of those reservations:

(1) Even if the research of Karadeniz and Aydın (2023) states that there are 2 airlines from Turkey, 19 airlines from the United States, 30 airlines from Asia-Pacific in their research, the classification of those airlines is not accurate at some point. For instance, some of airlines below belongs to other countries such as Canada, Brazil, Chile, rather than the US (Table 1). Therefore, the sample of the US do not represent the US. Rather it represents the American continent including its north and south. In addition, the Mainfreight company has operations in Germany but, its headquarters (base) is in New Zealand rather than Germany.

(2) Even if the research of Karadeniz and Aydın (2023) states that all the balance sheets and income statements are based on IFRS in their research, this is not the case. In this context, considering the prior research of Öztürk (2022a), it should be noted that

(a) airlines operating in the US prepare their balance sheets and income statements in accordance with US GAAP (Table 2),

Table 1: Declared and accurate country of airlines from Karadeniz and Aydın (2023)

Airlines	Declared Country	Accurate Country
Air Canada	USA	Canada
Azul SA	USA	Brazil
Chorus Aviation	USA	Canada
Controladora Vuela ADR	USA	Mexico
Copa Holdings	USA	Panama
Exchange Income	USA	Canada
Gol Linhas Aeres Inteligentes	USA	Brazil
LATAM Airlines Group	USA	Chile
Mainfreight	Germany	New Zealand

(b) airlines operating in the American continent other than the US adopt IFRS with or without modifications (Table 2),

- (c) airlines operating in the EU adopt IFRS as issued by EU (Table 3),
- (d) airlines operating in the EEA (Norway) adopt IFRS as endorsed by EU (Table 3),
- (e) one of the airlines from China (China Express Airlines) adopt ASBE of China since it is only listed in Shenzhen Stock Exchange (domestic stock exchange in China) (Table 4),
- (f) Cathay Pacific Airlines adopt HK FRS that are identical to IFRS (Table 4),
- (g) airlines from Korea (Korean Air, Hanjin Kal, and Asia Airlines) adopt K-IFRS as a jurisdictional version of IFRS (Table 5),
- (h) airlines from India (Indigo and Spice Jet) adopt Ind AS that are national standards of India, but they are not IFRS (Table 5).
- (i) One of the airlines from Japan (Ano holdings) adopted Japan GAAP. However, the other airline from Japan (Japan Airlines) adopted Japan GAAP from 2016 to 2020 and switched from Japan GAAP to IFRS in 2020 (Table 5).
- (j) airline from Singapore (Singapore Airlines) adopted SFRS in 2016 and 2017. It switched from SFRS to SFRS(I) in 2018 (Table 5). SFRS(I) is identical to IFRS.
- (k) airlines from Thailand (Asia Aviation, Bangkok Airways PLC, and Thai Airways International) adopt Thai FRS (Table 5) but these standards are not timely in compliance with IFRS because they are adopted with a one-year delay (IASB 2024). Öztürk (2022a) assumes that they are national standards in Thailand due to this fact.
- (l) airlines from Taiwan (China Airlines, and Eva Airways) adopt IFRS as issued by the FRC of Taiwan with some modifications (Table 4).
- (m) airline from Vietnam (Vietnam Airlines) adopt Vietnamese AS but they are not IFRS and are the national standards of Vietnam (Table 5).
- (n) airlines whose financial reporting framework is shown as “unclear” in Table 4 and Table 5 don’t report their annual reports in their websites. Even if Karadeniz and Aydın (2023) founded out the financial statements from other sources such as from other investment websites, it looks like that it is impossible to verify the financial reporting framework adopted by those airlines.

As a result, it is possible to state that (a) the results obtained for the case of US are misleading within the framework of the first reservation but it represents the results of the American continent as a mixture of US GAAP and IFRS reporting that do not holistically still match with each other, and (b) IFRS do not holistically constitute the common denominator in the reporting of the financial statements in the regions of

Asia-Pacific and China & Northern Asia in terms of second reservation. There are still certain differences between US GAAP, IFRS and other national accounting standards.

(3) The research sample of Karadeniz and Aydın (2023) does not represent well the African and Middle East region in the airline industry. This region is represented by one airline (Jazeera Airlines) (Table 3). From the Asia-Pacific region, it was possible to include Qantas from Australia, and Air New Zealand from New Zealand. Airlines from Turkey should have been included in European region. Geographical representation is important to better reflect the industry in the regional and global context.

(4) Some of the financial statements of airlines year-end date is different from others. Most of the airlines have 31 December as the year-end date but some of them has a different date other than 31 December such as the year-end date for Singapore Airlines is 31 March. Year-end dates don't match with each other.

In the context of financial ratio analysis, Karadeniz and Aydın (2023) calculates (a) liquidity ratios such as (current ratio, quick ratio, and cash ratio), (b) solvency ratios such as (total liabilities/total assets), (total equity / total liabilities), (current liabilities / total liabilities), and (non-current liabilities / total liabilities), (c) activity ratios such as (inventory turnover, receivable turnover, tangible assets turnover, equity turnover, total assets turnover), and (d) profitability ratios such as (ROE, ROA, and net profit / net sales).

Considering the research of Karadeniz and Aydın (2023), this thesis adopts a different perspective. (1) It establishes a sample of airlines whose financial statements follow IFRS as the common denominator of the research. (2) For a sensitive financial ratio analysis, it considers the semiannual and annual financial statements of those airlines from 2016 to 2022 for the liquidity analysis, and from 2017 to 2022 for the solvency and profitability analysis. (3) It also considers the effect of new and significant IFRS accounting standards that were entered into force within this period on the financial statements of airlines such as IFRS 15 Revenue from Customer Contracts, and IFRS 16 Leases. These three items make this section of this thesis different from the research of Karadeniz and Aydın (2023).

Table 2: Airlines from the Americas and their financial reporting framework from 2016-2021

Airlines	Country	2016	2017	2018	2019	2020	2021
Air Canada	Canada	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Alaska Air Group	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Allegiant Travel Co.	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
American Airlines	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Azul SA	Brazil	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Chorus Aviation	Canada	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Controladora Vuela	Mexico	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Copa Holdings	Panama	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Delta Airlines	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Exchange Income	Canada	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Gol Linhas Aereas	Brazil	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Hawaiian Holdings	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Jetblue Airways	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
LATAM Airlines	Chile	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
MESA Air Group Inc	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Skywest	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Southwest Airlines	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
Spirit Airlines	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
United Airlines	USA	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP

Table 3: Airlines from Europe, Africa and Middle East and their financial reporting framework from 2016-2021

Airlines	Country	2016	2017	2018	2019	2020	2021
<i>European Union</i>							
Lufthansa	Germany	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Finnair	Finland	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Air France	France	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Easy Jet	UK	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Jet 2 Plc	UK	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Int. Airlines Group	UK	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Wizz Air	Jersey	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Ryanair	Ireland	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
SAS	Sweden	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Aegean Airlines	Greece	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
<i>European Economic Area</i>							
Norwegian Air	Norway	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
<i>Other European Countries</i>							
Aeroflot	Russia	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Pegasus Airways	Turkey	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Turkish Airlines	Turkey	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
<i>Africa & Middle East</i>							
Jazeera Airways	Kuwait	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS

Table 4: Airlines from China and Northern Asia and their financial reporting framework from 2016-2021

Airlines	Country	2016	2017	2018	2019	2020	2021
China Eastern Airlines	China	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Air China	China	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
China Southern Airlines	China	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
China Express Airlines	China	ASBE of China	ASBE of China	ASBE of China	ASBE of China	ASBE of China	ASBE of China
Cathay Pacific Airlines	China	HK FRS	HK FRS	HK FRS	HK FRS	HK FRS	HK FRS
Juneyao Airlines	China	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Shandong Airlines	China	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Spring Airlines	China	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
China Airlines	Taiwan	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Eva Airways	Taiwan	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Soonest Express	Taiwan	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear

Table 5: Airlines from Asia-Pacific and their financial reporting framework from 2016-2021

Airlines	Country	2016	2017	2018	2019	2020	2021
Inter Globe Aviation (Indigo)	India	Ind AS	Ind AS	Ind AS	Ind AS	Ind AS	Ind AS
Spice Jet	India	Ind AS	Ind AS	Ind AS	Ind AS	Ind AS	Ind AS
Korean Air	Korea	Unclear	K-IFRS	K-IFRS	K-IFRS	K-IFRS	K-IFRS
Asiana Airlines	Korea	K-IFRS	K-IFRS	K-IFRS	K-IFRS	K-IFRS	K-IFRS
Air Busan	Korea	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Hanjin Kal	Korea	Unclear	K-IFRS	K-IFRS	K-IFRS	K-IFRS	K-IFRS
Jeju Air	Korea	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Jin Air	Korea	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
T'way Air	Korea	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Ana Holdings	Japan	Japan GAAP	Japan GAAP	Japan GAAP	Japan GAAP	Japan GAAP	Japan GAAP
Japan Airlines	Japan	Japan GAAP	Japan GAAP	Japan GAAP	Japan GAAP	IFRS	IFRS
Star Flyer	Japan	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Air Asia Berhad	Malaysia	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Mainfreight	New Zealand	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
Singapore Airlines	Singapore	SFRS	SFRS	SFRS (I)	SFRS (I)	SFRS (I)	SFRS (I)
Asia Aviation	Thailand	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS
Bangkok Airways PLC	Thailand	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS
Thai Airways Int.	Thailand	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS	Thai FRS
Vietnam Airlines	Vietnam	Vietnamese AS	Vietnamese AS	Vietnamese AS	Vietnamese AS	Vietnamese AS	Vietnamese AS

2.2. LITERATURE REVIEW ON THE GENERAL PERSPECTIVES IN INTERNATIONAL AUDITING IN THE AIRLINE INDUSTRY

To the best of our knowledge, there are two researches on the general perspectives in international auditing regarding the airline industry. These are the researches of Özçelik (2020) and Öztürk (2022c). They consist of the basis of further research related to international auditing in general. Both Özçelik (2020) and Öztürk (2022c) analyse the pre-COVID-19 period in terms of some observations related to international auditing regarding the airline industry.

The research of Özçelik (2020) is the first paper published in terms of international auditing in the airline industry regarding Turkish accounting literature. By developing a research sample which includes 40 airlines from Europe, Asia, Australia, and Africa, this paper analyses the global composition of audit companies in the airline industry for the years 2017, and 2018.

In the context of the global composition of audit companies in the airline industry for the years 2017, and 2018, Özçelik (2020) states that the audit reports of around 93% of the airlines were audited by the Big-4 audit companies (Deloitte, KPMG, E&Y, and PWC).

Table 6: Composition of Audit Firms in the Airline Industry

Audit Companies	Number of Audit Companies (N=40)	Percentage of Audit Companies
KPMG	12	30%
PWC	9	22.5%
Deloitte	9	22.5%
E&Y	7	17.5%
Big-4	37	92.5%
Non-Big 4	3	7.5%

Following Özçelik (2020), Öztürk (2022c) published the second paper on some observations related to international auditing regarding the airline industry. This paper has been cited by Mashayekhi et al. (2024) as one of the papers reviewing the audit reporting practices in a specific industry in terms of international literature of accounting. Different from the paper of Özçelik (2020), this paper is made up of two samples. The first sample includes 57, and the second sample includes 45 airlines. Both samples cover airlines not only from Europe, Africa, Asia-Pacific, and China &

Northern Asia, but also includes airlines from the Americas which cover Canada, and Southern American countries, compared to Özçelik (2020).

Using the first sample, this paper, particularly, analyses (a) the global composition of audit companies in the airline industry for the year 2018, (b) the global composition of types of auditors (single or joint auditor) in the airline industry for the year 2018, and (c) the global composition of audit opinions in the airline industry for the year 2018. (b) and (c) are two components of research that do not exist within the scope of Özçelik (2020).

(a) In the context of the global composition of audit companies in the airline industry for the years 2018, Öztürk (2022c) states that the audit reports of 93% of the airlines were audited by the Big-4 audit companies (Table 7). This finding is in line with the prior research of Özçelik (2020). However, E&Y ranks the second rather than fourth, PWC ranks the third rather than second, and Deloitte ranks the fourth rather than third in the research of Öztürk (2022c) compared to Özçelik (2020) because the sample size of Öztürk (2022c) is larger than the sample size of the Özçelik (2020). Therefore, it represents a geographical allocation of airlines as well as auditors better than Özçelik (2020).

Table 7: Composition of Audit Firms in the Airline Industry

Audit Companies	Number of Audit Companies (N=59)	Percentage of Audit Companies
KPMG	17	29%
E&Y	15	25%
PWC	13	22%
Deloitte	10	17%
BDO	2	3%
SGV	1	2%
National Audit Office	1	2%
Big-4	55	93%
Non-Big 4	4	7%

(b) In the context of the global composition of types of auditors (single or joint auditor) in the airline industry for the year 2018, Öztürk (2022c) states that 96% of audit reports were signed by single auditors. However, the audit reports of Air France – KLM and Air Mauritius were signed by joint-auditors. Joint auditor is required in France but voluntary in Mauritius.

(c) In the context of the global composition of audit opinions in the airline industry for the year 2018, Öztürk (2022c) declares that audit reports of airlines issued *unqualified audit opinions* for the year 2018 regarding ISA 700 *Forming an Opinion and Reporting on Financial Statements*, and ISA 705 *Modifications to the Opinion in the Independent Auditor's Report* (IAASB 2015a; 2015b). In addition, we assume that audit reports of airlines for the year 2017 are also *unqualified audit opinions* because all the airlines declared KAMs in the research of Özçelik (2020).

Considering the research of Özçelik (2020) and Öztürk (2022c), this thesis extends the general perspectives in international auditing regarding the airline industry into the analysis of 2019 (pre-COVID-19 period), 2020 and 2021 (during COVID-19 periods) and 2022 (post-COVID-19 period), in the context of (a) the adoption of ISAs in the airline industry, (b) audit firms and auditor rotation in the airline industry, (c) auditor type (single or joint auditor) in the airline industry and (d) audit opinions in the airline industry. While analyzing audit opinions during the COVID-19 period in terms of ISA 705, it questions whether there are *qualified audit opinion* considering the prior research of Uludağ (2022) or *disclaimer of opinion* due to COVID-19.

2.3. LITERATURE REVIEW ON THE EFFECT OF COVID-19 PANDEMIC OVER THE KAMs IN THE AIRLINE INDUSTRY

According to ISA 701 *Communicating Key Audit Matters in the Independent Auditor's Report*, KAMs are the matter that were of most significance in the audit of the financial statements of the current period considering the auditor's professional judgment (IAASB 2015c). Reporting of KAMs is required for listed entities.

The communication of KAMs in the audit reports is based on three reasons (IAASB 2015c): (1) to increase the communicative value of the auditor's report by improving transparency about the performed audit that was performed; (2) to provide additional information to the users of the financial statements to assist them in understanding those matters that were of most significance in the audit of the financial statements of the current period, within the framework of the auditor's professional judgment; and (3) to assist the users of financial statements in understanding the entity and areas of significant management judgment in the audited financial statements.

There are several prior research on KAMs in the accounting literature globally considering certain industries and entities listed in worldwide stock exchanges. Since the thesis focuses on the KAMs during the COVID-19 pandemic, prior literature

considers also such research globally. Some of the authors analyse the KAMs during the COVID-19 period in terms of auditing in Turkey such as Çelikay (2022), Coşkun (2022), Daloğlu (2022) and Özbay (2022) regarding the listed entities in Borsa Istanbul, Gürdal and Özçelik (2023) regarding the manufacturing companies listed in Borsa Istanbul, Sabuncu (2023) regarding the companies listed in transportation index of Borsa Istanbul, Rainsbury et al. (2023) regarding listed entities in the NZSE, and Alharasis et al. (2024) regarding listed entities in Jordan. Some of research includes transportation sector but does not purely focus on the airline industry.

To the best our knowledge, there are two research on KAMs in international auditing regarding the airline industry. These are the research of Özçelik (2020), and Öztürk (2022c) as mentioned in section 2.2.

In the context of global composition of KAMs in the airline industry for the years 2017, and 2018, the following rankings were determined by the research of Özçelik (2020) in terms of primary KAMs in the airline industry (Table 8).

Table 8: Composition of KAMs in the Airline Industry

Key Audit Matters	% within the year 2017	% within the year 2018
Revenue recognition	28% under IAS 18	28% under IFRS 15
Lease accounting	18% under IAS 17	18% under IAS 17
Property, Plant and Equipment	15%	16%
Derivative Inst. & Hedge Acc.	10%	8%
Intangible Assets	9%	8%
Deferred Tax Assets	5%	6%
Litigation & Contingent Liabilities	4%	3%
Others	12%	13%

In addition to the primary KAMs in the airline industry, Özçelik (2020) also analyses the composition of “other” KAMs for the years 2017 and 2018 (Table 9).

Table 9: Composition of “Other” KAMs in the Airline Industry

Key Audit Matters	Number for 2017	Number for 2018
Going-concern	2	3
Employee Benefits	2	2
Retirement Obligations	2	2

Assets held for sale	1	-
Aircraft purchases	2	3
Subsidiaries	2	2
EU 261 Provision	1	1
Brexit	-	1
Loans	-	1
Others	1	1

Following Özçelik (2020), considering ISA 701 *Communicating Key Audit Matters in the Independent Auditor's Report*, Öztürk (2022c) particularly, analyses (a) the patterns of elements of describing KAMs in the audit reports of airlines for the year 2018, (b) the patterns of diversified elements of describing KAMs in the auditor context for the year 2018 and (c) the content analysis of KAMs in the audit reports of airlines for the year 2018. While (a) and (b) are two components of research that do not exist within the scope of Özçelik (2020), (c) is partially in line with Özçelik (2020) because Öztürk (2022c) makes a sub-topical analysis of KAMs as well rather than just making a topical analysis in the general context.

Elements of describing KAMs in the audit reports has 4 elements in terms of ISA 701 (IAASB 2015c): (1) Aspects of the auditor's response or approach that were most relevant to the matter or specific to the assessed risk of material misstatement (*Element A*); (2) A brief overview of procedures performed (*Element B*); (3) An indication of the outcome of the auditor's procedures (*Element C*); or (4) Key observations with respect to the matter (*Element D*). However, some combination of these elements when describing KAMs in the audit reports is also accepted.

One of the best examples of elements of describing KAMs in the audit reports belongs to the audit report of Kenya Airways for the year 2019 in the airline industry (Table 10).

In this example (Kenya Airways 2019), the *key audit matter* column (*left column*) refers to the *element A*, and the *right column* titled as “*How Our Audit Addressed the Key Audit Matter*” refers to the *element B*. The auditor declares the outcome of the auditor's procedures using the sentence starting with “*Based on the procedures completed...*”. This refers to *Element C*. Key observations with respect to the matter such as “*Group's and Company's aircraft and related equipment amounted to KShs 77,087 million and KShs 77,007 million as at 31 December 2019 respectively; constituting 39% and 38% of the total assets of the Group and the Company respectively.*” refers to *element D*.

Table 10: Describing KAMs in the Audit Report of Kenya Airways for 2019

Key Audit Matter	How Our Audit Addressed the Key Audit Matter
Impairment of aircraft and related equipment As disclosed in note 16 of the consolidated and company financial statements as at 31 December 2019, the Group's and Company's aircraft and related equipment amounted to KShs 77,087 million and KShs 77,007 million as at 31 December 2019 respectively; constituting 39% and 38% of the total assets of the Group and the Company respectively. As required by IAS 36: <i>Impairment of assets</i>, the Directors conduct annual impairment tests to assess the recoverability of the carrying value of its aircraft and related equipment. The determination of impairment is based on the Directors' assumptions and significant judgement is made and thus may be subject to bias. Accordingly, impairment of aircraft and related equipment is considered as a key audit matter. Further details on the process used to assess the indicators of impairment in aircraft and related equipment are set out on note 4(a).	Our procedures to address the risk relating to impairment of aircrafts and related equipment included: • Assessing the competence, capabilities and objectivity of the Group's and Company's professional valuers, and verified their qualifications and experience; • Discussing the scope of their work and reviewed their terms of engagement to determine that there were no matters that affected their independence and objectivity or imposed scope limitations upon them; • Assessing the valuation methodology and assumptions used by the independent professional valuers to estimate the fair value of the aircraft and related equipment; and • Checking the accuracy and completeness of the input data provided by management to the independent professional valuers, to support evidence, such as flight statistics, maintenance schedules and the total number of aircraft and related equipment. Based on procedures completed, we concluded that the methodology and assumptions used by the Directors in assessment of impairment were appropriate. In addition, the disclosures pertaining to the impairment of aircraft and related equipment were found to be appropriate in the financial statements.

Source: Annual Report of Kenya Airways for the year 2019

(a) In the context of the patterns of elements of describing KAMs in the audit reports of airlines for the year 2018, Öztürk (2022c) determines that *element A* and *element B* were declared by all audit reports of airlines, but *element C* and *element D*

were not observed in all audit reports. In such context, 24% of audit reports include *element C* versus 82% of audit reports include *element D*.

(b) In the context of the patterns of diversified elements of describing KAMs in the auditor context for the year 2018, Öztürk (2022c) states that *element D* is observed in the audit reports of most airlines versus *element C* is observed in the audit reports of least airlines.

(c) In the context of the content analysis of KAMs in the audit reports of airlines for the year 2018, the following rankings were determined by the research of Öztürk (2022c) in terms of primary KAMs in the airline industry (Table 11).

Table 11: Comparative Composition of KAMs in the Airline Industry

Key Audit Matters	% within the year 2017	% within the year 2018	% within the year 2018
	Özçelik (2020)	Özçelik (2020)	Öztürk (2022c)
Revenue recognition	28% under IAS 18	28% under IFRS 15	32% under IFRS 15
Lease accounting	18% under IAS 17	18% under IAS 17	21% under IAS 17
Property, Plant and Equipment	15%	16%	10%
Derivative Instruments and Hedge Accounting	10%	8%	7%
Intangible Assets	9%	8%	Rare
Deferred Tax Assets	5%	6%	Rare
Litigation and Contingent Liabilities	4%	3%	Rare
Others	12%	13%	Rare or very Rare

The other KAMs declared by Özçelik (2020) usually matches with the rare and very rare KAMs declared by Öztürk (2022c) (Table 12).

Table 12: Comparative Composition of Other KAMs in the Airline Industry

Key Audit Matters	Number for the year 2017	Number for the year 2018	Position of KAMs for the year 2018
	Özçelik (2020)	Özçelik (2020)	Öztürk (2022c)
Going-concern	2	3	Very Rare
Employee Benefits	2	2	Rare
Retirement Obligations	2	2	Very Rare
Assets held for sale	1	-	-
Aircraft purchases	2	3	Rare
Subsidiaries	2	2	Very Rare
EU 261 Provision	1	1	Very Rare
Brexit	-	1	-
Loans	-	1	Very Rare
Others	1	1	Rare or very Rare

According to the sub-topical analysis of KAMs, Öztürk (2022c) declares the following details for (a) revenue recognition, (b) lease accounting, (c) property, plant and equipment (also called aircraft assets and other PPE items), and (d) hedge accounting (Table 13) in line with the key issues related to airlines of Lavi (2016).

Table 13: Sub-topical Analysis of KAMs

<i>Revenue Recognition</i>	<i>% of Observations</i>
Passenger & Cargo Revenue	45%
Complex IT Systems	21%
Customer Loyalty Programmes	19%
Breakage Revenue	15%
<i>Lease Accounting</i>	<i>% of Observations</i>
Aircraft Maintenance Provisions	62%
Classification of Leases	17%
Aircraft Maintenance Deposits	10%
Early Adoption of and Expected Effect of IFRS 16	11%
<i>PPE items (Aircraft Assets & Other PPE items)</i>	<i>% of Observations</i>
Residual values	35%
Useful lives	31%
Impairment	35%
<i>Hedge Accounting</i>	<i>% of Observations</i>
Fuel price risk	40%
Foreign currency risk	35%
Interest rate risk	25%

Considering the research of Özçelik (2020), and Öztürk (2022c), this thesis extends the research to 2019 (pre-COVID-19 period), 2020 and 2021 (during COVID-

19 periods) and 2022 (post-COVID-19 period) to analyze the variation related to KAMs.



CHAPTER III

DATA & RESEARCH METHODOLOGY

Chapter 3 organizes the data and methodology of this thesis under the following sub-headings: (1) Research methodology; (2) Research Design; (3) Research Sample; (4) Research Instrument; and (5) Procedure for Data Collection.

3.1. RESEARCH METHODOLOGY

The thesis uses a quantitative research method: (1) The data for liquidity, solvency, and profitability analysis of the airlines' financial statements is hand-collected from the semiannual and annual financial statements of the airlines and selected financial ratios have been calculated on spreadsheets to analyze the average trend of these ratios under the 2016, 2017, 2018, and 2019 (pre-COVID-19), 2020-2021 (during COVID-19), and 2022 (post-COVID-19) cases; and (2) The data related to international auditing in the airline industry related to adopted auditing standards, audit firms, auditor types, auditor rotation, audit opinions, and presentation and declaration of KAMs from 2019-2022 is also hand-collected and uses the frequency distribution method to analyse the observations from 2019-2022 in comparison with data that was collected in 2018 by (Öztürk 2022c).

3.2. RESEARCH DESIGN

Research design of this thesis is in the form of a quantitative interpretive study where the financial ratios related to the pre-COVID-19, during the COVID-19, and post-COVID-19 are calculated as well as data related to the general perspectives on international auditing and KAMs from 2019-2022 are collected. All the information gathered are quantified and interpreted.

3.3. RESEARCH SAMPLE

For this research, an initial sample which represents the airline industry globally has been established by 55 airlines for the year 2019 (Table 14). However, following this initial sample, three sub-samples have been developed (a) for the purpose of financial ratio analysis, (b) for the purpose of general perspectives related to international auditing in the airline industry, and (c) for the purpose of observations related to presentation and declaration of KAMs in the airline industry.

Table 14: Listed and Non-Listed Airlines Adopting IFRS

Americas	Aeroflot
GOL Linhas Aereas	Turkish Airlines
Azul Brazilian Airlines	Pegasus Airlines
Air Transat	Africa
Air Canada	Royal Jordanian
Cargojet Airways	Kenya Airways
LATAM Airlines Group	Jazeera Airways
Aeromexico	Air Mauritius
Volaris	Qatar Airways
COPA Airlines	Emirates
Europe	Air Arabia
Croatia Airlines	Abu Dhabi Aviation
Finnair	Asia-Pacific
Air France – KLM	Regional Express
Lufthansa Group	Alliance Airlines
Aegean Group	Qantas
Aer Lingus	Korean Air
Ryanair	Asiana Airlines
Wizz Air	Air Asia X
TAP Group	Air New Zealand
SAS - SAS Group	Cebu Pacific Air
International Airlines Group	Singapore Airlines
Virgin Atlantic Group	Sri Lankan Airlines
Air Partner	Air Asia X Berhad
Easy Jet	China & North Asia
British Airways	Cathay Pacific Airlines
Fast Jet	Air China Group
Icelandair	China Southern Airlines
Norwegian Air	China Eastern Airlines
El Al	China Airlines

Even though 55 airlines issue annual financial statements and notes for the year 2019, not all of them issue interim financial statements and notes. Since the research

focuses on both interim and annual financial statements, the best available combination of financial statements is the financial statements of airlines whose semiannual and annual financial statements are available for the purpose of financial ratio analysis.

On the other hand, the combination of semiannual and annual financial statements is not enough for research purposes because the reporting dates of the interim and annual financial statements and notes are not globally the same. The matching of the annual accounting period should also be considered for comparative research. Therefore, the **first sub-sample** includes 21 airlines (N= 21) whose semiannual and annual financial statements are available on their investor relations websites, whose accounting period starts on January 1 and ends on December 31 and that do not distort the ratio analysis unless otherwise indicated (Table 15).

Table 15: Airlines of the financial ratio analysis (N=21)

Americas	Africa
GOL Linhas Aereas	Jazeera Airways
Azul Brazilian Airlines	Air Arabia
Cargojet Airways	Asia-Pacific
LATAM Airlines Group	Cebu Pacific Air
COPA Airlines	Air Asia X Berhad
Europe	China & North Asia
Finnair	Cathay Pacific Airlines
Air France – KLM	Air China Group
Aegean Group	China Southern Airlines
Icelandair	China Eastern Airlines
Norwegian Air	
International Airlines Group	
Lufthansa Group	
Turkish Airlines	

The **second sub-sample** includes airlines whose annual financial statements are available on their investor relations websites (N₂₀₁₉= 55 airlines; N₂₀₂₀=54 airlines; N₂₀₂₁=53 airlines; and N₂₀₂₂=52 airlines) (Figure 1). It does not consider whether they declare KAMs or not as a constraint because the second sub-sample aims to gather data related to general aspects of international auditing in the airline industry from 2019-2022 in comparison with 2017 and 2018.

In 2020, the number of airlines declined from 55 to 54 airlines because an airline from Asia-Pacific (Air Asia X) changed its reporting date of its annual financial statements. Therefore, it did not report its financial statements in 2020.

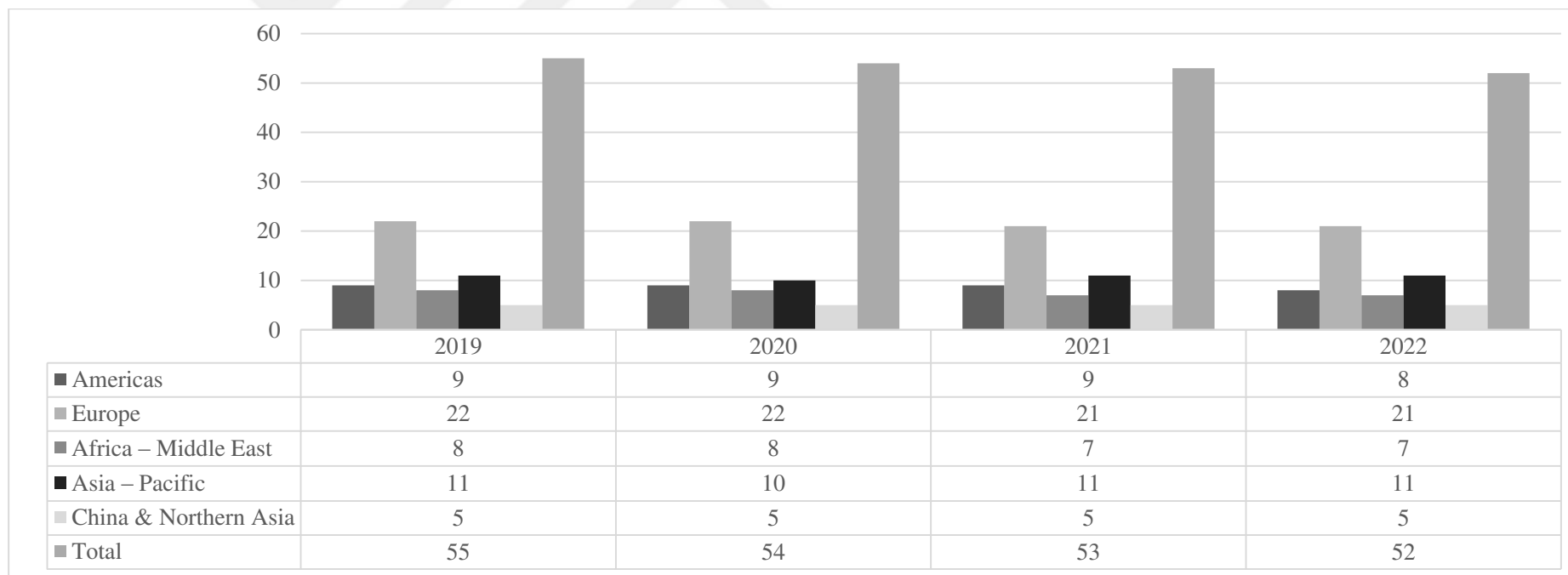
In 2021, the number of airlines declined from 54 to 53 airlines because (1) an airline from Europe (Air Partner) turned out to be a non-listed airline; (2) an airline from Asia-Pacific (Air Asia X) declared its first IFRS financial statements under the new annual reporting date; and (3) an airline from Africa (Air Mauritius) did not report its IFRS financial statements for 2021.

In 2022, the number of airlines declined from 53 to 52 airlines because an airline from the Americas (Aeromexico) turned out to be a non-listed airline.

It should be noted such minor changes on the sample does not have major effect over the results obtained related to the observations on the general aspects of the international auditing in the airline industry.



Figure 1: Number of airlines from 2019 to 2022 for the general perspectives on international auditing



The **third sub-sample** includes airlines whose annual financial statements are available on their investor relations websites, but it considers airlines that declare their KAMs in their audit reports as a constraint because the third sub-sample aims to gather data related to specific aspect of international auditing in the airline industry from 2019-2022 in comparison with 2017 and 2018 (Figure 2).

In 2019, the number of airlines declaring their KAMs in their audit reports is ($N_{KAM2019} = 42$). In the Americas, the regulation on the declaration on KAMs did not enter into force in Canada in 2019 (Öztürk 2022c) versus an airline from Mexico (Volaris) changed its audit regulation from ISAs to PCAOB auditing standards in 2019 compared to 2018 (Figure 2).

On the other hand, a European airline (British Airways) issued its KAMs in its audit report in 2018; however, it started not to issue KAMs starting from 2019. The rationale behind this case is based on the establishment of IAG. IAG was established in 2011 as a merger of British Airways and Iberia, and British Airways turned out to be a major subsidiary of the IAG. Following the merger, British Airways delisted from LSE in 2011 and the IAG started to be listed as a holding airline company in LSE. Because ISAs adopted in the UK and Ireland do not require the issuance of KAMs in the audit reports of non-listed entities, British Airways gave up from reporting KAMs starting from 2019 and non-listed Virgin Atlantic, and Aer Lingus continue not to report KAMs following 2018. In addition, the regulatory authority for standards on auditing in Sri Lanka and Israel has not yet adopted the regulation of KAMs following 2018.

In 2020, the number of airlines declaring their KAMs in their audit reports is ($N_{KAM2020} = 44$). In the Americas, the Canadian regulation on the declaration of KAMs in the audit reports of listed entities entered into force. Therefore, 3 airlines from Canada (Air Canada, Air Transat, and Cargojet Airways) and an airline from Portugal (TAP Portugal) issued their first KAMs in their reports. However, an airline from Asia-Pacific (Air Asia X) changed its reporting date of its annual financial statements. Therefore, it did not report its audit report along with its financial statements in 2020 (Figure 2).

In 2021, the number of airlines declaring their KAMs in their audit reports is ($N_{KAM2021} = 43$). In the Americas, an airline from Mexico (Volaris) that switched from ISAs to PCAOB auditing standards in 2019, switched again from PCAOB auditing standards to ISAs in 2021. In Europe, Air Partner turned out to be a non-listed airline,

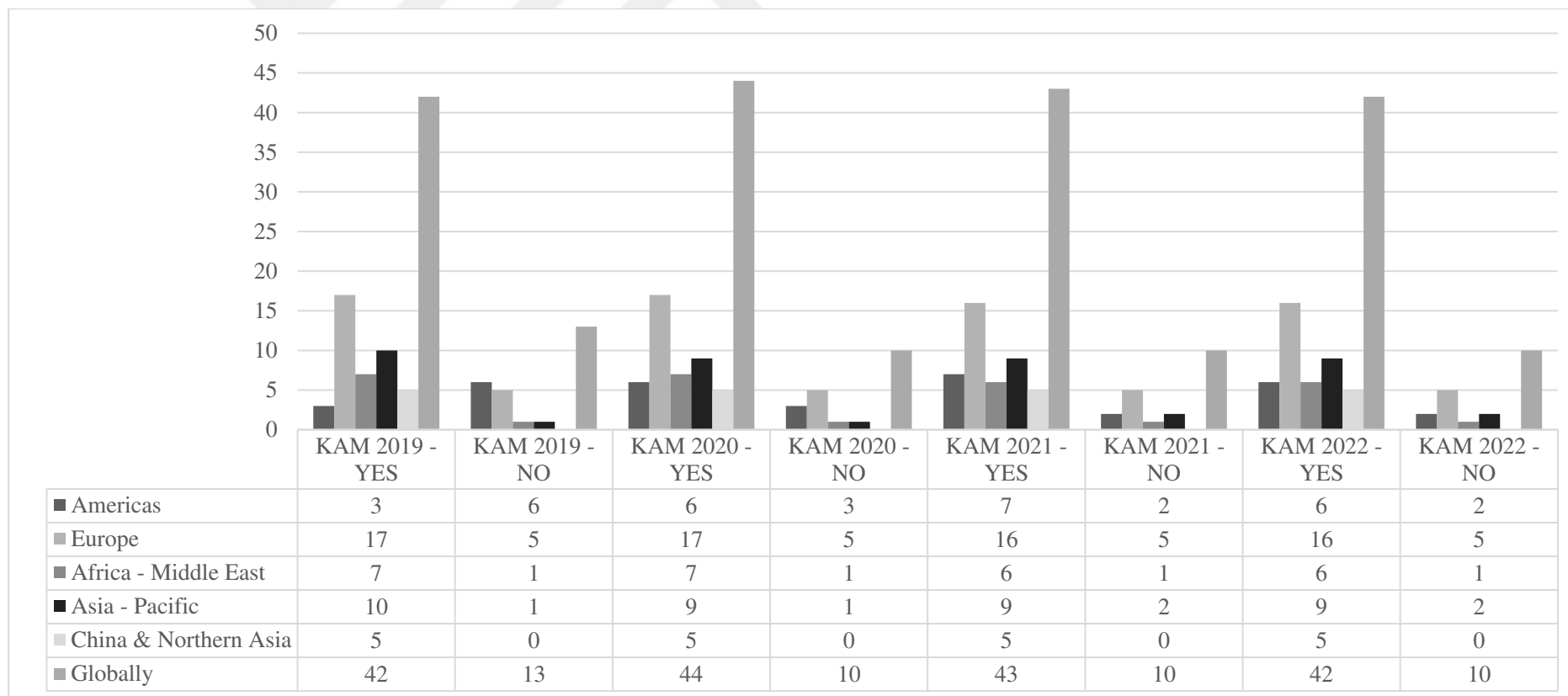
its auditor report along with its financial statements was not available. In Africa, Air Mauritius did not issue its auditor report along with its financial statements. In Asia-Pacific, Air Asia X reported its first audit report along with its financial statements in 2021 following the change of its annual accounting period without KAMs due to disclaimer of opinion (Figure 2).

In 2022, the number of airlines declaring their KAMs in their audit reports is ($N_{KAM2022} = 42$). In the Americas, Aeromexico turned to be a non-listed airline and did not publicly issue its financial statements.

Due to the changes that took place in the number of airlines whose audit reports include the declaration of KAMs, the following samples have been designed from 2019-2022 to observe the reporting of KAMs in the airline industry globally (Figure 2).

It should be noted such minor changes on the sample from 2019-2022 does not have major effect over the results obtained related to the observations on the KAMs in the airline industry.

Figure 2. Number of airlines declaring their KAMs in the regional and global context for the years 2019, 2020, 2021, and 2022



3.4. RESEARCH INSTRUMENT

To analyze the data on financial ratio analysis related to the effect of COVID-19 in the airline industry, to analyze the data on the general aspects of international auditing in the airline industry from 2019-2022 and to analyze the data on KAMs in the airline industry from 2019-2022, three research instruments were used during the research process:

(1) For the purpose of collecting data on financial ratio analysis regarding the effect of COVID-19 on the airline industry, a checklist was prepared to find out the results of the following 3 hypothesis:

- a. **1H1:** Liquidity ratios of the airline industry on average have been adversely affected by COVID-19
- b. **1H2:** Solvency ratios of the airline industry on average have been adversely affected by COVID-19
- c. **1H3:** Profitability ratios of the airline industry on average have been adversely affected by COVID-19

(2) For the purpose of collecting data on general aspects of international auditing in the audit reports of the airlines for the years 2019, 2020, 2021, and 2022, a checklist was prepared to find out the results of the following five hypotheses.

- a. **2H1:** The audit reports of airlines indicate that ISAs are usually adopted in the airline industry from 2019-2022 in line with 2017 and 2018 (Özçelik 2020; Öztürk 2022c).
- b. **2H2:** The audit reports of airlines indicate that the financial statements are usually audited by international audit firms from 2019-2022 in line with 2017 and 2018 (Özçelik 2020; Öztürk 2022c).
- c. **2H3:** The audit reports of airlines indicate that the financial statements are usually audited by Big-4 audit firms from 2019-2022 in line with 2017 and 2018 (Özçelik 2020; Öztürk 2022c).
- d. **2H4:** The audit reports of airlines indicate that auditor rotation is observed in the airline industry from 2019-2022 following the research of Öztürk (2022c).
- e. **2H5:** The audit reports of airlines indicate that financial statements are usually audited by single auditor from 2019-2022 in line with 2018 (Öztürk 2022c).

f. 2H6: The audit reports of airlines indicate that audit opinions are usually based on unqualified opinion (unmodified, clean) in the airline industry from 2019-2022 in line with 2017 and 2018 (Özçelik 2020; Öztürk 2022c).

(3) For the purpose of collecting data on KAMs reported in the audit reports of the airlines for the years 2019, 2020, 2021, and 2022, a checklist was prepared to find out the results of the following five hypotheses.

a. 3H1: Elements of describing KAMs reported in audit reports of the airlines are consistent with prior research of Öztürk (2022c)

b. 3H2: KAMs reported in audit reports of the airlines are consistent with prior research of Özçelik (2020) and Öztürk (2022c)

3.5. PROCEDURE FOR DATA COLLECTION

The semiannual and annual financial statements of airlines that were issued on the investor relations websites of the airlines, have been downloaded into the personal computer of the author. In this context, annual financial statements were audited but semiannual financial statements were usually unaudited.

To collect the data for financial ratio analysis, semiannual and annual financial statements, particularly, balance sheets and income statements have been used. To collect data for the analysis of the general aspects of international auditing and KAMs in the airline industry, audit reports of annual financial statements have been used.

CHAPTER IV

FINDINGS ON THE EFFECT OF COVID-19 PANDEMIC OVER THE FINANCIAL RATIOS IN THE AIRLINE INDUSTRY

This section of the thesis analyses the change in liquidity, solvency, and profitability ratios in terms of pre-COVID-19, during the COVID-19, and post-COVID-19 cases of the airline industry.

4.1. COMPARATIVE ANALYSIS OF LIQUIDITY RATIOS

Liquidity analysis includes the analysis of the following ratios: current ratio, quick and cash ratio in the airline industry. To analyse the liquidity of airlines from the ending of the year 2016 to the ending of the year 2022, it should be noted that there are some external factors that affect the airlines' financial position such as (a) transition from the former standard of leases IAS 17 to the new leases standard IFRS 16, (b) COVID-19 pandemic due to loans borrowed. In the context of these factors, transition from IAS 17 to IFRS 16 is a significant cornerstone in liquidity management of airlines because operating lease liabilities of operating leased assets that were not capitalized on the statement of financial position in accordance with IAS 17 turned out to be on balance sheet in accordance with IFRS 16 starting from the beginning of the year 2019.

In the context of current ratio (current assets / current liabilities), this sector-specific ratio has been 0.83 on average as an indicator of cash burn (Duke et al. 2021) with no significant change from the ending of the year 2016 to the ending of the year 2018, because IAS 17 was still in force and there was no COVID-19 pandemic (Figure 3). Operating leased assets and lease liabilities were off-BS. In this context, off-BS ratios related to off-BS aircrafts are shown in Table 16. In 2018, airlines within the sample of this research other than Air-France – KLM did not early adopt IFRS 16 (Öztürk 2022a). Therefore, early adoption of IFRS 16 by Air-France-KLM did not make significant change on the sector-specific current ratio in 2018.

On the other hand, all other airlines adopted IFRS 16 starting from 2019, and they capitalized their operating lease liabilities (short-term and long-term) along with their operating leased assets. Therefore, airlines' current assets remained constant with no effect due to IFRS 16, but their current liabilities increased due to the inclusion of short-term portion of operating lease liabilities into current liabilities section of the balance sheet. From the beginning of the year 2019 to the ending of the year 2022, this sector-specific ratio has been 0.73 on average with significant downward change because IFRS 16 has been in force since 2019 (Figure 3). In addition to the effect of IFRS 16, airlines borrowed loans during the COVID-19 period as part of government aid (Duke et al. 2021). In such context, it should be noted that airlines' meeting ability of their current liabilities with their current assets has been particularly affected by the reflection of their lease intensity to the balance sheet due to IFRS 16 and increase in borrowings. If there were no such effect of IFRS 16, the effect of COVID-19 on current ratio could have been comfortably questioned. The effect of IFRS 16 comes first.

In the context of quick ratio, $((\text{cash} + \text{marketable securities} + \text{trade receivables}) / \text{total current liabilities})$, this sector-specific ratio has been 0.66 on average with no significant change as an indicator of cash burn (Duke et al. 2021) from the ending of the year 2016 to the ending of the year 2018 but from the beginning of the year 2019 to the ending of the year 2022, this sector-specific ratio has been 0.60 on average with significant downward change due to the transition from IAS 17 to IFRS 16 and loans borrowed.

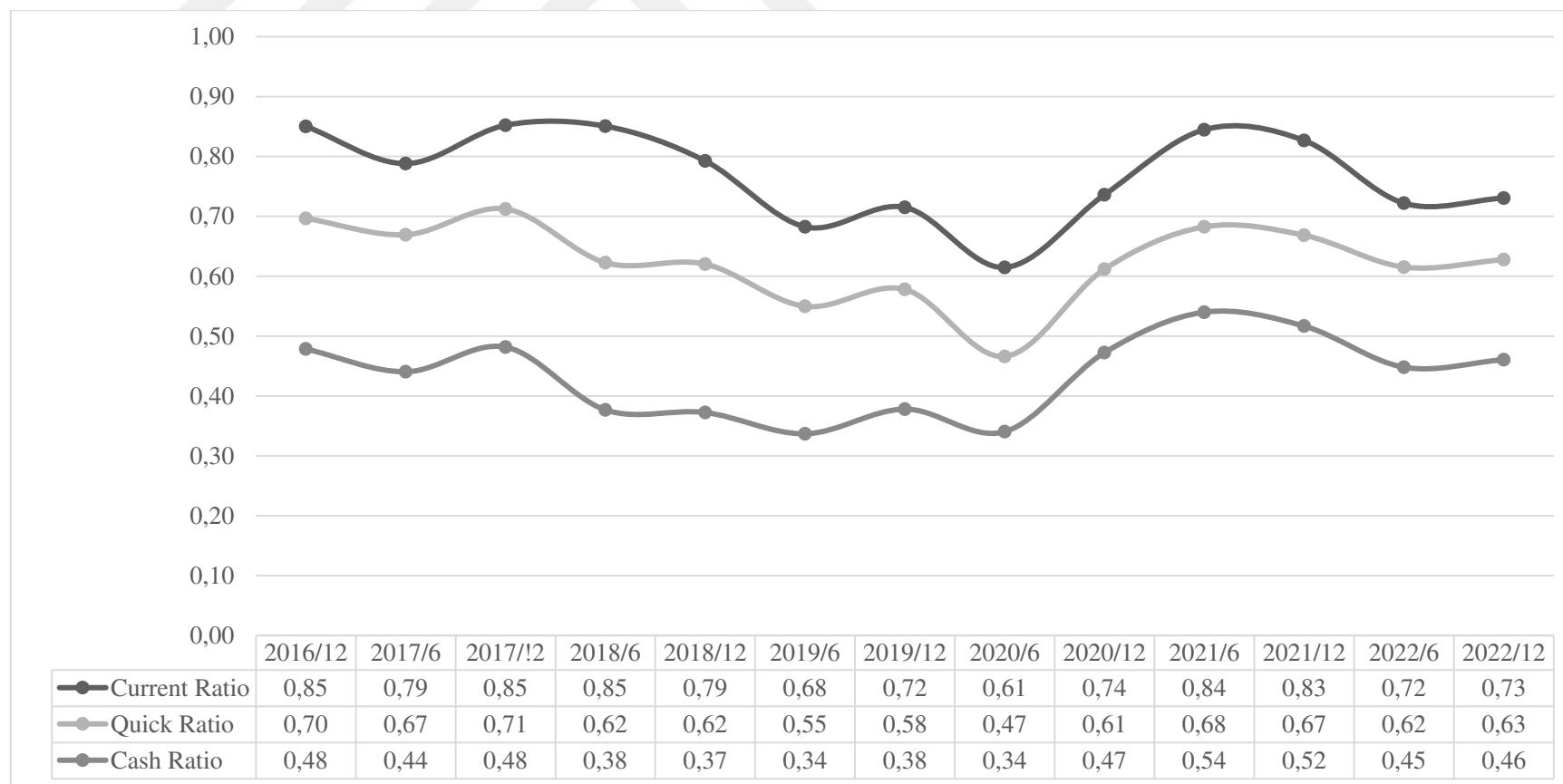
In the context of cash ratio $((\text{cash} + \text{marketable securities}) / \text{total current liabilities})$, this sector-specific ratio has been 0.43 on average with no significant change from the ending of the year 2016 to the ending of the year 2018 but it turned to be 0.44 on average from the beginning of the year 2019 to the ending of the year 2022 with no significant upward change (Figure 3).

Overall, the hypothesis of 1H1 holds. In addition, the increasing effect of the current, quick, and cash ratio observed in 2021 and 2022 may be explained by the restarting of flight operations of airlines and their cash generation due to the recovery from COVID-19 pandemic.

Table 16: Number of aircrafts and off-BS ratios of some of IFRS airlines within the sample

Airline Company	Country	Finance Lease	Operating Lease	Finance Lease + Owned	Owned	Total	Off-BS Ratio
GOL Linhas Aereas (2019)	Brazil	11	126	-	-	137	92%
Azul Airlines (2019)	Brazil	19	147	-	-	166	88%
LATAM Airlines (2019)	Chili	-	110	227	-	337	33%
COPA Airlines (2019)	Panama	-	29	-	73	102	28%
Cathay Pacific Airlines (2019)	Hong Kong	42	78	-	116	236	33%
Air China Group (2019)	China	207	206	-	286	699	29%
China Southern Airlines (2019)	China	257	320		285	862	37%
China Eastern Airlines (2019)	China	263	200	-	260	723	28%
Norwegian Air (2019)	Norway	-	91	-	65	156	58%
Finnair - Finnair Group (2018)	Finland	8	31	-	42	81	38%
Air France - KLM Group (2018)	France	93	243	-	212	548	44%
Aegean Group (2018)	Greece	4	57	-	-	61	93%
IAG (2019)	Spain	108	293	-	197	598	49%
Lufthansa Group (2018)	Germany	67	48	-	648	763	6%
Turkish Airlines (2019)	Turkey	219	87	-	44	350	25%
Cebu Pacific Air (2018)	Philippines	-	22	71	-	93	24%

Figure 3: Airlines' average liquidity ratios from 2016 to 2022



4.2. COMPARATIVE ANALYSIS OF SOLVENCY RATIOS

Solvency analysis includes the analysis of the following ratios: (total equity / total assets), (total liabilities / total assets), (total current liabilities / total assets), (total non-current liabilities / total assets), and debt/equity ratio.

To analyse the solvency of airlines from the ending of the year 2016 to the ending of the year 2022, external factors that were mentioned in the liquidity analysis are also valid. In the context of these factors, solvency ratios verify that transition from IAS 17 to IFRS 16 and loans borrowed during the COVID-19 pandemic have significant effect in solvency management of airlines.

In the context of (total equity / total assets), this sector-specific ratio has been 0.27 on average with no significant change from the ending of the year 2016 to the ending of the year 2018 (Figure 4). However, this ratio turned out to be 0.06 on average following the adoption of IFRS 16 and the effect of loans borrowed during COVID-19.

Adversely, in the context of (total liabilities / total assets), this sector-specific ratio has been 0.73 on average with no significant change from the ending of the year 2016 to the ending of the year 2018 (Figure 4). However, this ratio turned out to be 0.94 on average having upward shift following the adoption of IFRS 16 and the effect of loans borrowed during COVID-19.

In line with the upward change in (total liabilities / total assets), (total current liabilities / total assets), (total non-current liabilities / total assets) ratios have also increased (Figure 5). The ratio of (total current liabilities / total assets) ratio has been 0.34 on average with no significant change from the ending of the year 2016 to the ending of the year 2018. However, this ratio turned out to be 0.37 on average following the adoption of IFRS 16 and short-term loans or current portion of long-term loans borrowed during COVID-19. In addition, the ratio of (total non-current liabilities / total assets) ratio has been 0.40 on average with no significant change from the ending of the year 2016 to the ending of the year 2018. However, this ratio turned out to be 0.57 on average following the adoption of IFRS 16 and long-term loans borrowed during COVID-19.

Such a change in solvency can be also verified by (total liabilities / total equity), (total current liabilities / total equity), and (total non-current liabilities / total equity) ratios (Figure 6) within the framework of 17 airlines (N=17) rather than 21 airlines (except for Azul, Aeroflot, and Air Asia X Berhad) to prevent distortion.

The ratio of (total liabilities / total equity) ratio has been 3.69 on average with no significant change from the ending of the year 2016 to the ending of the year 2018. However, this ratio turned out to be 4.69 on average following the adoption of IFRS 16 and loans borrowed during COVID-19. In addition, the ratio of (total current liabilities / total equity) has been 1.68 on average with no significant change from the ending of the year 2016 to the ending of the year 2018 versus it turned out to be 1.91 on average following the adoption of IFRS 16, short-term loans or short-term portion of long-term loans borrowed. Moreover, the ratio of (total non-current liabilities / total equity) ratio has been 2.01 on average with no significant change from the ending of the year 2016 to the ending of the year 2018. However, this ratio turned out to be 2.91 on average following the adoption of IFRS 16, and long-term loans borrowed.

In the context of the solvency of airlines, it should be noted that airlines have affected by the reflection of their lease intensity to the balance sheet due to IFRS 16 as well as COVID-19. Overall, the hypothesis of 1H2 holds. Even if airlines recover from COVID-19, the effect of lease liabilities will continue following the year 2021.

Figure 4: Airlines' average debt and equity balance from 2016 to 2022

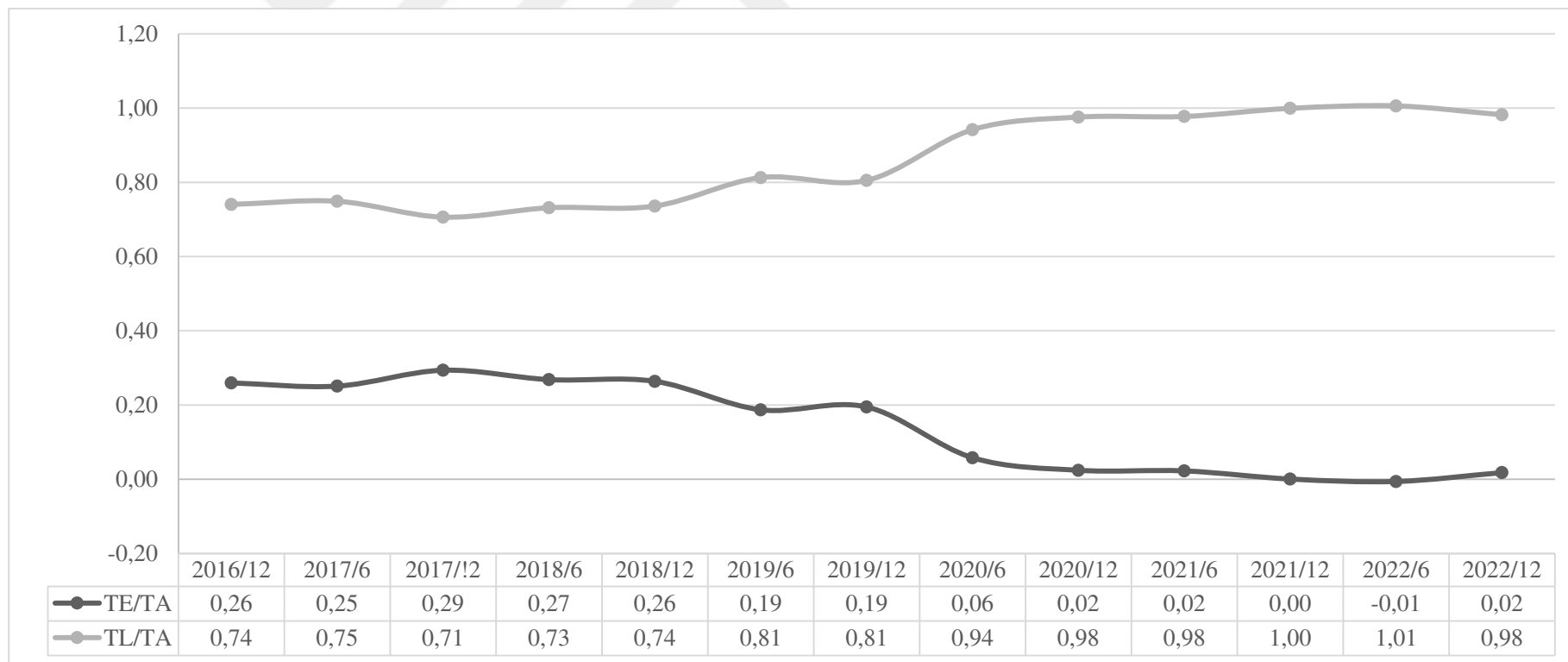


Figure 5: Airlines' average debt along with short-term and long-term from 2016 to 2022

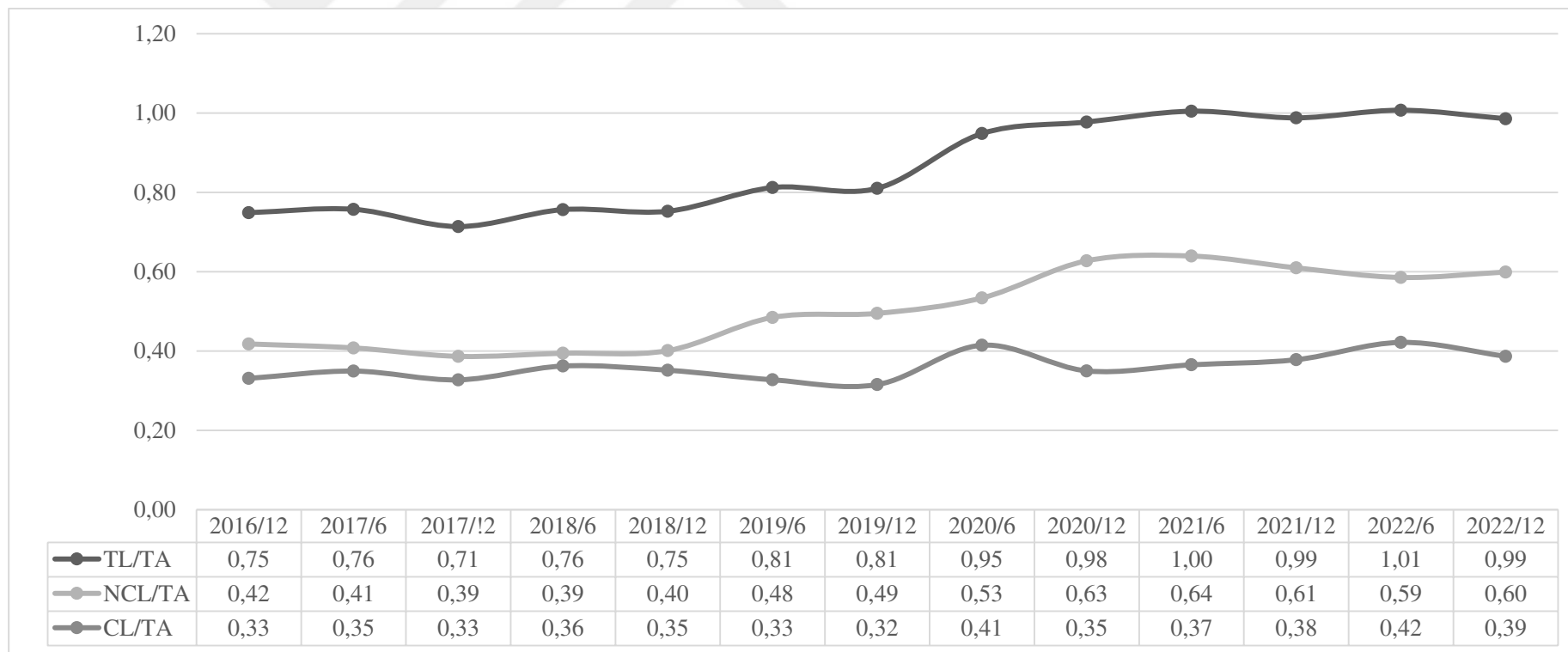
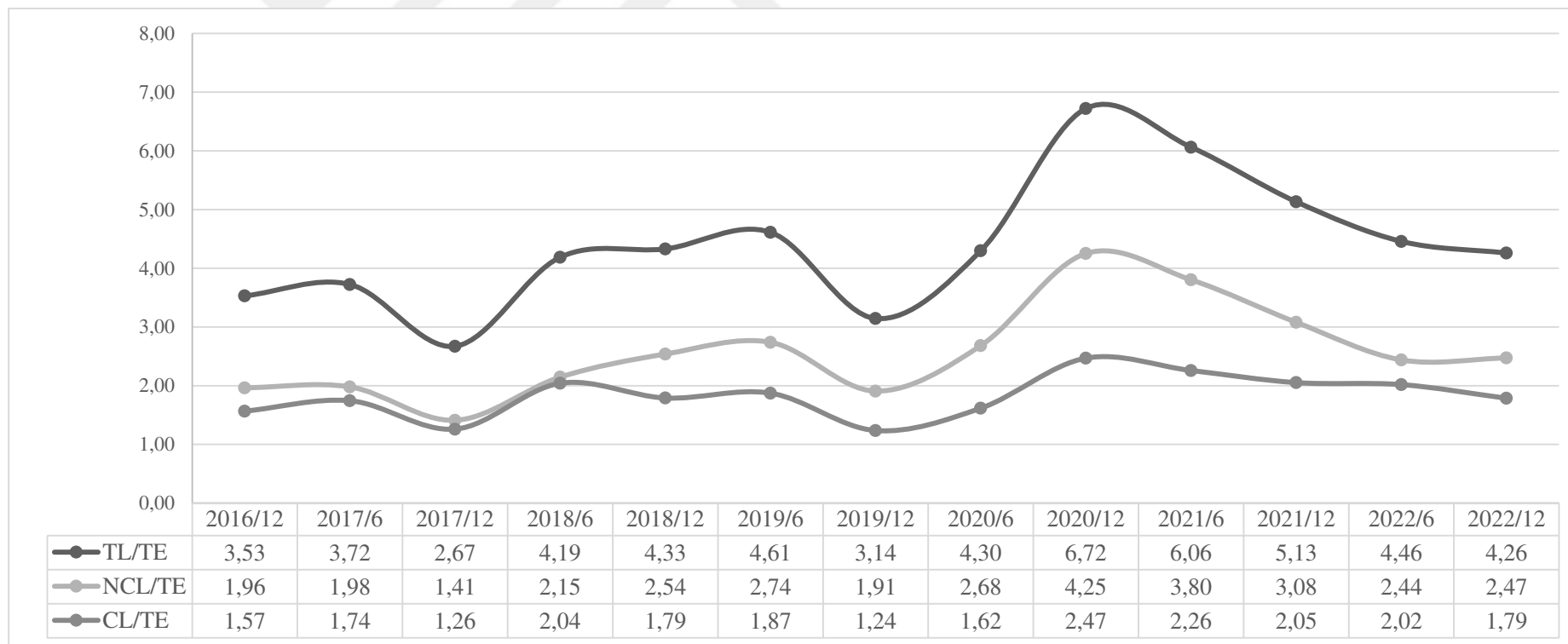


Figure 6: Airlines' average debt to equity along with short-term and long-term from 2016 to 2022



4.3. COMPARATIVE ANALYSIS OF PROFITABILITY RATIOS

Profitability analysis includes the analysis of the following ratios: asset turnover ratio ((EBITDA) / net sales), (EBITDA / IE), (net income / net sales), ROA, and ROE.

To analyse the profitability of airlines from the ending of the year 2016 to the ending of the year 2022, it should be noted that there are some external factors that affect the airlines' financial performance such as (a) transition from the former standard of revenue recognition IAS 18 to the new standard on revenue recognition IFRS 15, (b) transition from the former standard of leases IAS 17 to the new leases standard IFRS 16, and (c) COVID-19 pandemic. In the context of these factors, COVID-19 pandemic and transition from IAS 17 to IFRS 16 are the two significant cornerstones in profitability management of airlines because (1) airlines' operating revenue generating abilities declined and even ceased in the COVID-19 period as well as (2) operating lease liabilities of operating leased assets that were not capitalized on the balance sheet in accordance with IAS 17 turned out to be on-BS in accordance with IFRS 16 starting from the beginning of the year 2019. Therefore, additional depreciation expenses and interest expenses have been recognized on the income statement since 2019 (Marşap and Yanık 2019). Profitability analysis should consider these factors from 2016 to 2022. On the other hand, Öztürk (2022b) determined that transition from IAS 18 to IFRS 15 has minor effect on the airlines' recording of revenue generating abilities from their operations. IFRS 15 is in force since 2018.

In terms of the profitability, asset turnover ratio was 0.38 on average in 2017 (Figure 7). From 2018 to 2022, the average asset turnover ratio declined to 0.25 with significant decline in sales revenue of the airlines. Such a change does not based on the transition from IAS 18 to IFRS 15. Instead, it is based on COVID-19 pandemic because operations of the airlines declined and stopped in times of COVID-19. They generated less revenue compared to prior periods. In 2021, airlines started to recover from COVID-19. In COVID-19 period, airlines revenue generating ability by using their total assets significantly declined and this is one aspect of the profitability analysis. Decline in revenue is the major effect of the COVID-19.

In line with the asset turnover ratio, (EBITDA / net sales) ratio also verifies the sharp decline in the recognition of revenue (Figure 8). Therefore, some airlines experienced loss at the level of EBITDA level particularly in the COVID-19 period.

Then, they started to recover by the end of the 2021. Operations have started and airlines started to generate revenue from their operations.

EBITDA / IE declares the interest coverage ability of the firms. The interest coverage ability of airlines was around 7.39 times from 2017 to 2018 on average (Figure 9). Such coverage ability started to decline following the adoption of IFRS 16 and the loans borrowed during COVID-19. It turned out to be 1.59 on average from 2019 to 2022. Following the adoption of IFRS 16, additional interest expenses due to the capitulation of operating lease liabilities have been recognized on the income statement. This is one aspect of the decline in interest coverage ratio of airlines. In addition, loans borrowed created interest expenses as well. However, sales revenue of airlines declined dramatically due to COVID-19 pandemic. Therefore, interest coverage ratio turned out to be negative in COVID-19 pandemic due to decline of sales revenue as well as increase in interest expenses.

Net income is the last profit or loss item on the statement of profit or loss. Therefore, it includes the effect of sales revenue, operating expenses, depreciation and amortization expenses, interest expenses and taxes. The (net income / net sales) ratio was 0,04 on average from 2017 to 2018 (Figure 10). It turned out to be -0,33 on average from 2019 and 2022 due to the declining and recovering effect of the net sales revenue due to COVID-19 as well as the increasing effect of the depreciation expenses following the adoption of IFRS 16 and interest expenses following the adoption of IFRS 16 and loans borrowed have been observed in managing net income. Therefore, some airlines experienced loss due to these factors in 2020, and 2021.

Net income is important to calculate ROA and ROE. The ROA ratio (net income / average total assets) declares that it has been 0.02 on average from 2017 to 2019 (Figure 11) as well as the ROE ratio (net income / average total equity) declares that it has been 0.08 on average from 2017 to 2019 (Figure 12). However, ROA turned out to be -0.06 on average from 2019 to 2022 as well as ROE turned out to be -0.32 on average from 2019 to 2022 because of the decline in sales revenue due to COVID-19 and recognition of additional depreciation and interest expenses starting from 2019 within the framework of 14 airlines (N=14) to prevent distortion. As a result, airlines experienced loss. Therefore, the domino effect has been observed in such context.

Overall, the hypothesis of 1H3 holds. Recovery of the profitability is expected starting from 2022 in line with the operating profit expectation of Renold et al. (2023).

Figure 7: Airlines' average asset turnover ratio from 2017 to 2022

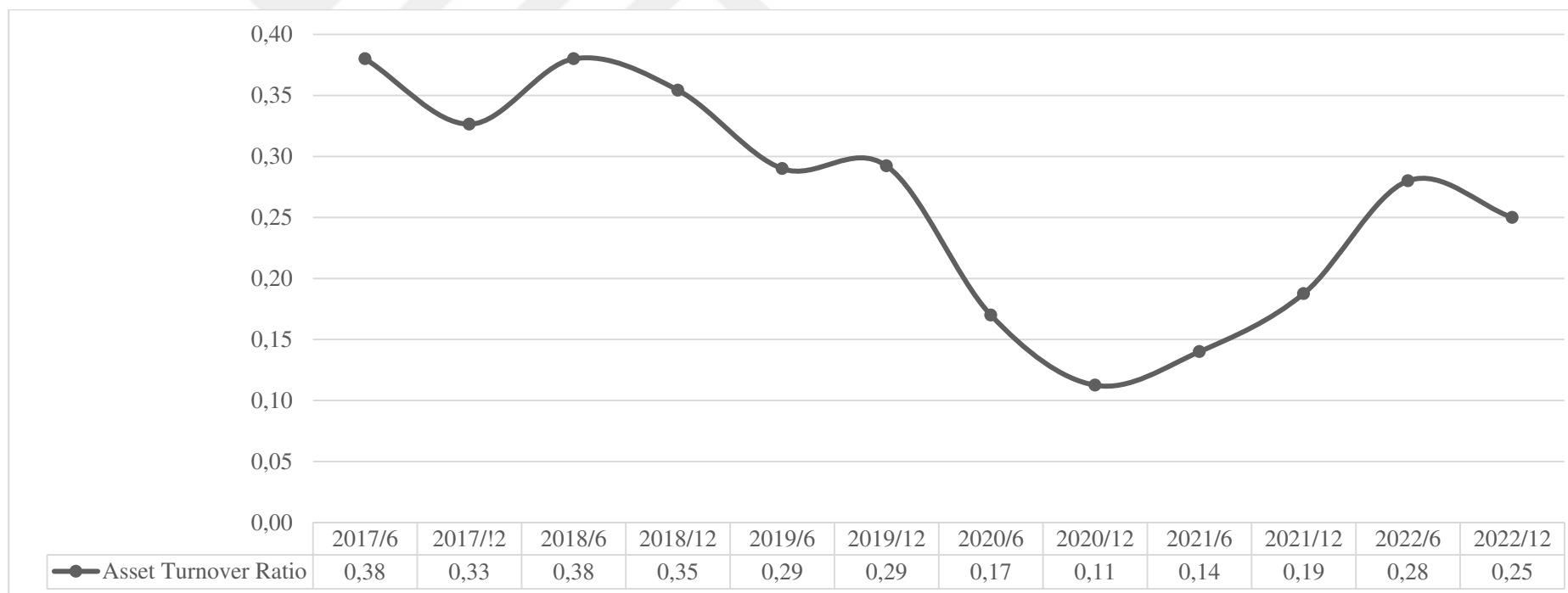


Figure 8: Airlines' average EBITDA / net sales ratio from 2017 to 2022

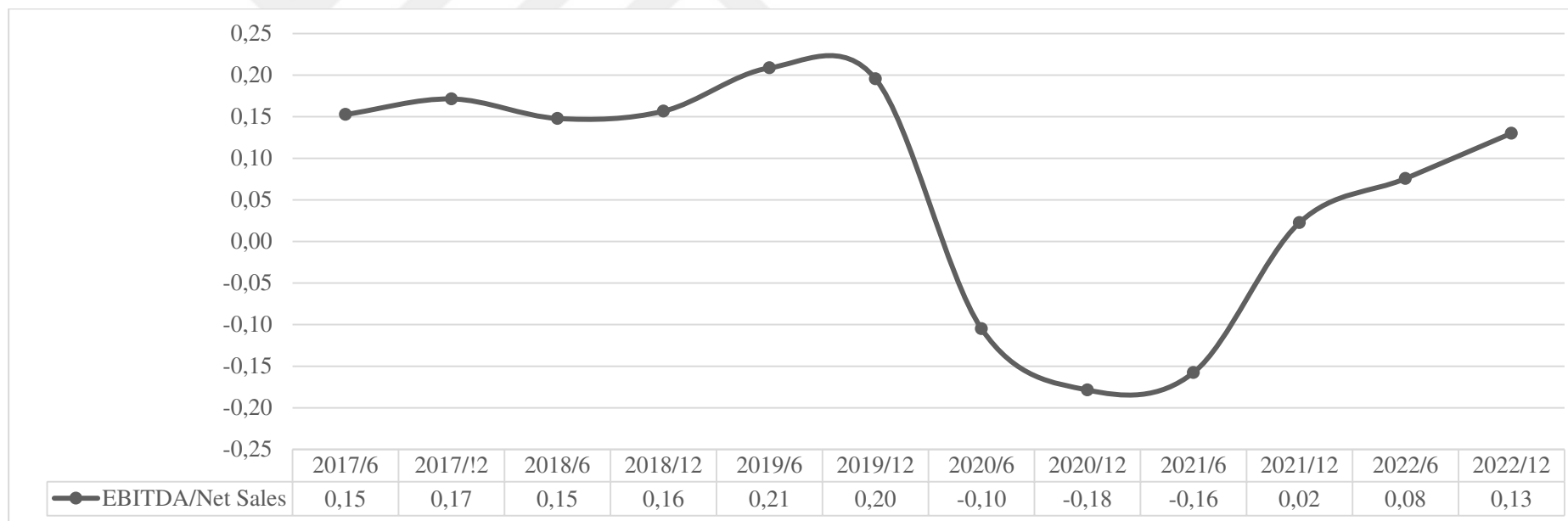


Figure 9: Airlines' average interest coverage ratio from 2017 to 2022

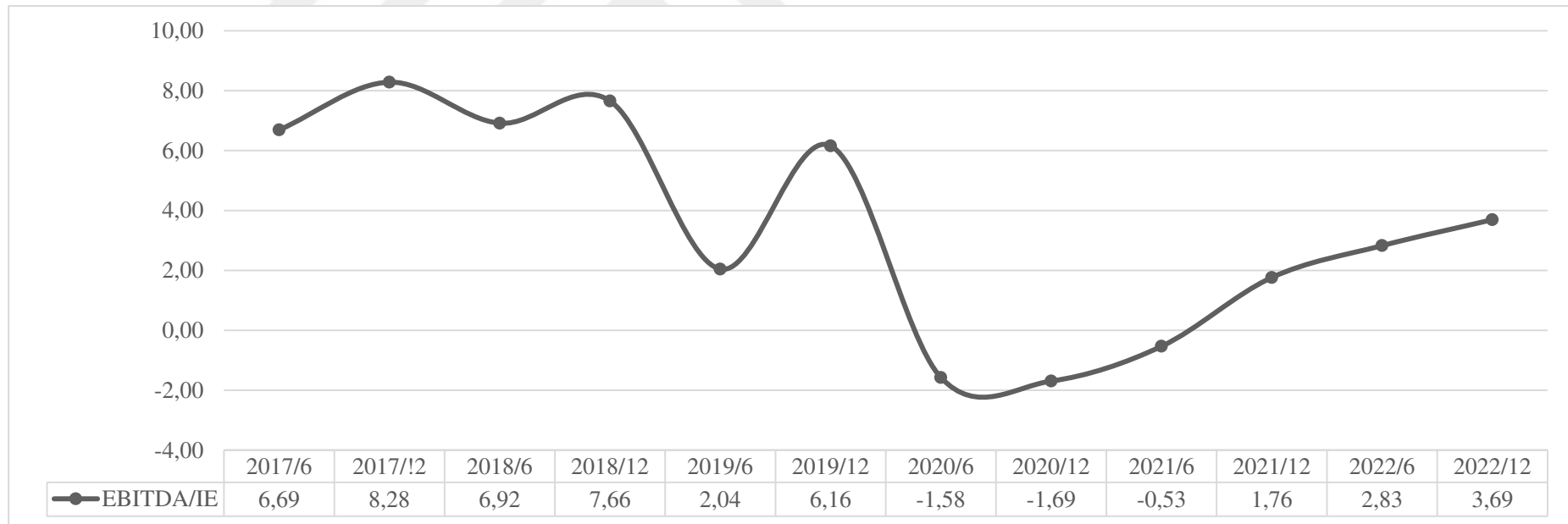


Figure 10. Airlines' average net income / net sales ratio from 2017 to 2022

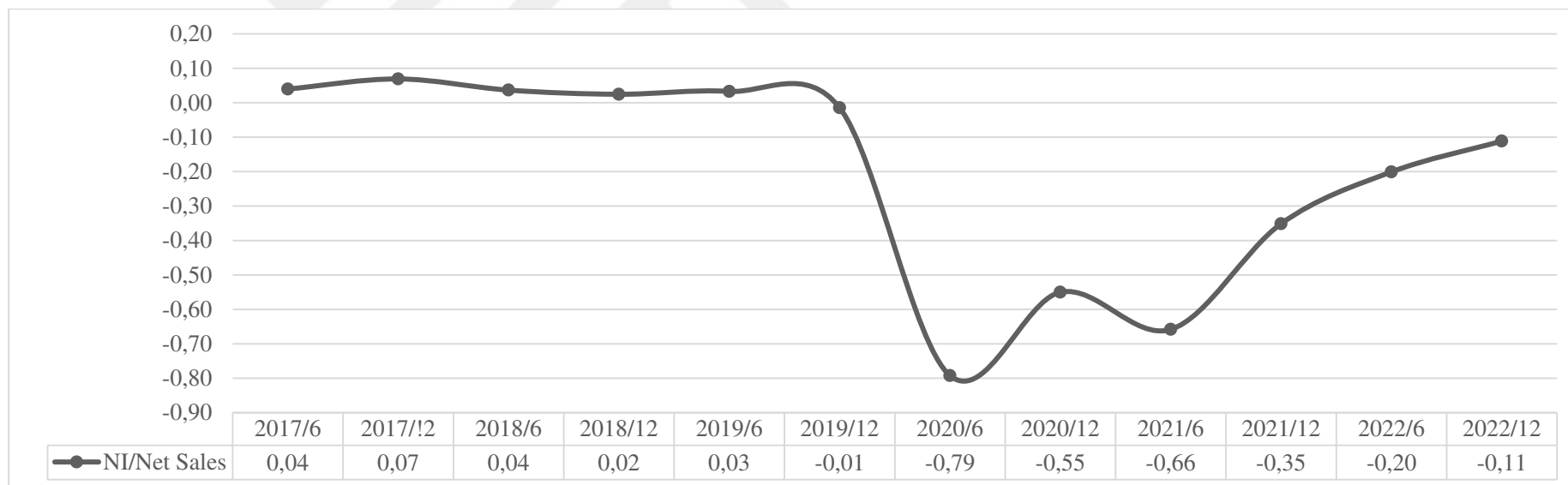


Figure 11: Airlines' average ROA ratio from 2017 to 2022

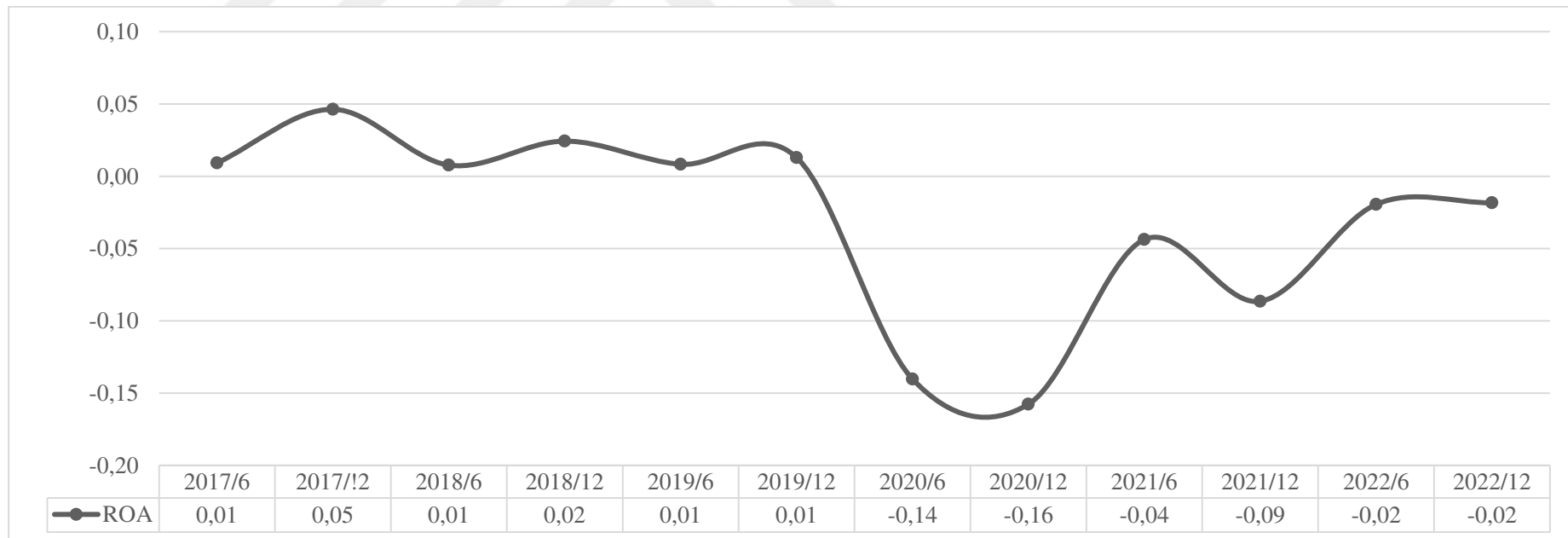
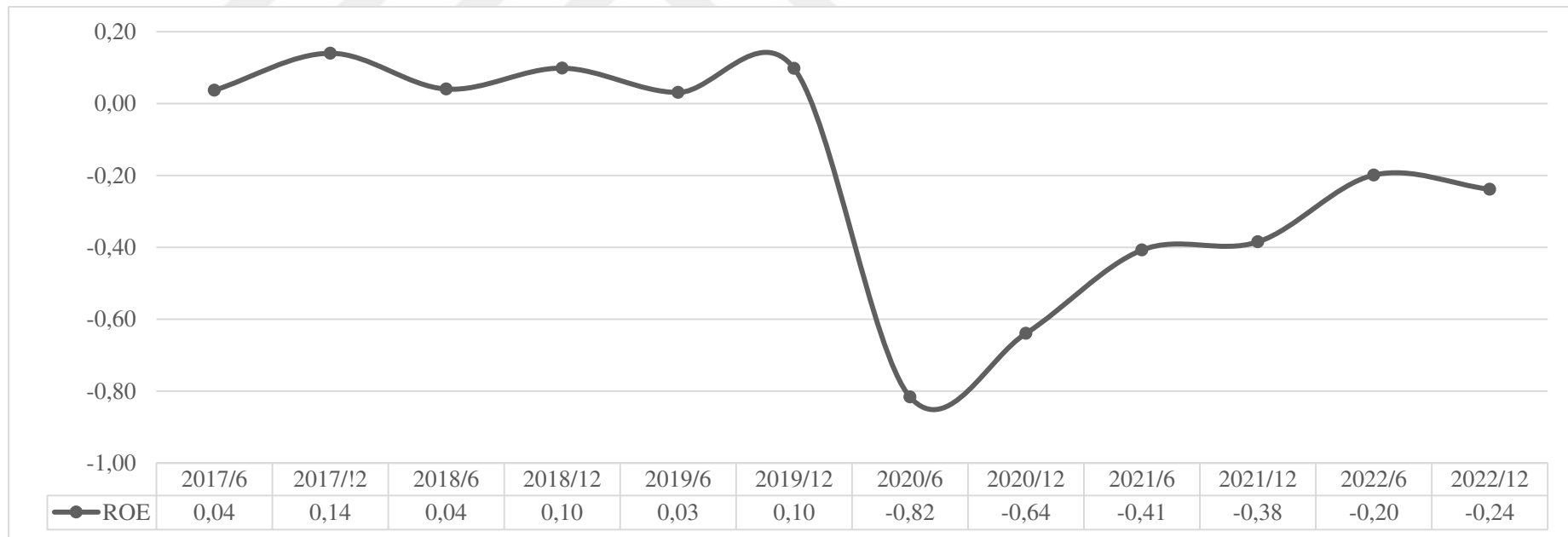


Figure 12: Airlines' average ROE ratio from 2017 to 2022



CHAPTER V

FINDINGS RELATED TO GENERAL PERSPECTIVES ON INTERNATIONAL AUDITING IN THE AIRLINE INDUSTRY

This section of the thesis focuses on five aspects of international auditing in the airline industry following the research of Öztürk (2022c): (1) auditing standards, (2) audit firms and audit rotation, (3) types of auditors, and (4) audit opinions in the audit reports of airlines.

5.1. AUDITING STANDARDS IN THE AUDIT REPORTS OF AIRLINES

In the context of auditing standards used by audit firms in the auditing process of the airline industry, the following results have been obtained in comparison with the prior research of Öztürk (2022c).

(1) The declaration of KAMs in audit reports prepared in Canada has started in 2020 (Öztürk 2022c). This research verifies that reporting of KAMs exists in the 2020, 2021, and 2022 audit reports of airlines from Canada (Table 17).

(2) In Mexico, it is interesting to note that Volaris Airlines declared its 2018 audit report in accordance with ISAs (Öztürk 2022c) but the airline's standards on auditing turned out to be PCAOB auditing standards of the US in 2019 and 2020 (Table 17). The firm switched its standards on auditing to ISAs in 2021 and 2022.

(3) Copa Airlines continue to adopt PCAOB auditing standards in 2019-2022 in line with 2018 (Table 17).

(4) As of 2022, the declaration of KAMs in the audit reports of airlines from Brazil, Canada, and Mexico indicates that auditing standards of these countries either explicitly or implicitly conform with ISAs and are up to date (Table 17). However, auditing standards of Chile still does not report KAMs in 2019-2022 in line with 2018.

(5) As of 2022, the declaration of KAMs in the audit reports of airlines from China & Northern Asia as well as Africa & Middle indicates that auditing

standards of these countries either explicitly or implicitly conform with ISAs and are up to date (Table 18; Table 19). They are in line with 2018.

(6) In the Asia Pacific, other than Sri Lanka, auditing standards of these countries either explicitly or implicitly conform with ISAs due to the declaration of KAMs and are up to date (Table 20). Sri Lanka has not yet adopted the KAMs since 2018.

(7) In Europe, all airlines except for Aer Lingus, Virgin Atlantic Group, British Airways, Fast Jet, and El Al declare their KAMs in their audit reports as of 2022. Auditing standards of these countries either explicitly or implicitly conform with ISAs and are up to date (Table 21).

(8) Aer Lingus, Virgin Atlantic Group, British Airways, Fast Jet, and El Al airlines have specific reasons not to report KAMs. Aer Lingus and Virgin Atlantic Group are still non-listed airlines in line with 2018. However, British Airways, and Fast Jet declared their KAMs in their 2018 audit reports, but they did not declare them in 2019-2022 because Fast Jet delisted in 2020, and British Airways delisted in 2007. The reporting of KAMs is not required for delisted entities in the UK and Ireland in accordance with ISA 701 (FRC 2022). On the other hand, Israel accounting authority still has not yet adopted the declaration of KAMs since 2018 (Öztürk 2022c).

(9) Overall, the hypothesis 2H1 holds.

Table 17: Auditing Standards in the Americas

Airline Company	Country	Auditing Standards			
		2019	2020	2021	2022
GOL Linhas Aereas	Brazil	Brazilian and International Standards on Auditing			
Azul Brazilian Airlines	Brazil				
Air Transat	Canada	Canadian Generally Accepted Auditing Standards			
Air Canada	Canada				
Cargojet Airways	Canada				
LATAM Airlines Group	Chili	Chilean Generally Accepted Auditing Standards			
Aeromexico	Mexico	International Standards on Auditing			
Volaris	Mexico	PCAOB auditing standards		International Standards on Auditing	
COPA Airlines	Panama	PCAOB auditing standards			

Table 18: Auditing Standards in China & Northern Asia

Airline Company	Country	2019	2020	2021	2022
Cathay Pacific Airlines	Hong Kong	Hong Kong Standards on Auditing			
Air China Group	China				
China Southern Airlines	China	International Standards on Auditing			
China Eastern Airlines	China				
China Airlines	Chinese Taipei	Generally Accepted Auditing Standards in Republic of China			

Table 19: Auditing Standards in Africa & Middle East

Airline Company	Country	2019	2020	2021	2022
Royal Jordanian	Jordan	International Standards on Auditing	International Standards on Auditing	International Standards on Auditing	International Standards on Auditing
Kenya Airways	Kenya				
Jazeera Airways	Kuwait				
Air Mauritius	Mauritius	International Standards on Auditing			
Qatar Airways	Qatar	International Standards on Auditing	International Standards on Auditing	International Standards on Auditing	International Standards on Auditing
Emirates	United Arab Emirates				
Air Arabia	United Arab Emirates				
Abu Dhabi Aviation	United Arab Emirates				

Table 20: Auditing Standards in Asia-Pacific

Airline Company	Country	2019	2020	2021	2022
Regional Express	Australia	Australian Auditing Standards			
Alliance Airlines	Australia				
Qantas	Australia				
Korean Air	Korea	Korean Standards on Auditing			
Asiana Airlines	Korea				
Air Asia X	Malaysia	Approved standards on auditing in Malaysia and International Standards on Auditing			
Air Asia X Berhad	Malaysia				
Air New Zealand	New Zealand	Auditor-General's Auditing Standards, which incorporate the Professional and Ethical Standards, and the International Standards on Auditing (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board.			
Cebu Pacific Air	Philippines	Philippine Standards on Auditing			
Singapore Airlines	Singapore	Singapore Standards on Auditing			
Sri Lankan Airlines	Sri Lanka	Sri Lanka Auditing Standards (SLAuSs)			

Table 21: Auditing Standards in Europe

Airline Company	Country	2019	2020	2021	2022
Croatia Airlines	Croatia	International Standards on Auditing			
Finnair - Finnair Group	Finland	Good auditing practice in Finland			
Air France - KLM Group	France	Professional standards applicable in France			
Lufthansa Group	Germany	§ 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as “EU Audit Regulation”) in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW) as well as supplementary compliance with the ISAs			
Aegean Group	Greece	International Standards on Auditing			
Aer Lingus	Ireland	International Standards on Auditing (Ireland)			
Ryanair	Ireland				
Wizz Air	Jersey	International Standards on Auditing (United Kingdom)			
TAP Group	Portugal	International Standards on Auditing			
SAS - SAS Group	Sweden	International Standards on Auditing and generally accepted auditing standards in Sweden.			
International Airlines Group	Spain	Prevailing legislation regulating the audit of accounts in Spain.			
Virgin Atlantic Group	UK	International Standards on Auditing (UK)			
Easy Jet	UK				
British Airways	UK				
Fast Jet	UK				
Air Partner	UK	International Standards on Auditing (UK)			
Icelandair	Iceland	International Standards on Auditing			
Norwegian Air	Norway	International Standards on Auditing			
El Al	Israel	Generally accepted Israeli auditing standards, including standards set in the Auditors' Regulations (Auditor's Mode of Performance), 1973.			
Aeroflot	Russia	International Standards on Auditing			
Turkish Airlines	Turkey	Turkish Auditing Standards			

5.2. AUDIT FIRMS AND AUDITOR ROTATION IN THE AUDIT REPORTS OF AIRLINES

In the context of classification of audit firms in the airline industry, the research of Öztürk (2022c) indicates that approximately 97% of the financial statements of airlines were audited by international audit firms in year 2018. But 93% of these firms include Big 4 audit firms. The proportion of these Big 4 audit firms within the 93% refers to 29% of by KPMG, 25% by E&Y, 22% by PWC, and 17% by Deloitte. However, these percentages which belong to the year 2018 are not absolute due to auditor rotation mechanism. Therefore, it is subject to change from one period to another.

To observe the variation of the preliminary results stated above for further years, this research reveals the following results:

(1) In 2019, approximately 96% of the financial statements of airlines were audited by international audit firms (Figure 13). But 93% of these international firms include Big 4 audit firms. The proportion of these Big 4 audit firms within the 93% refers to 27% by KPMG, E&Y, and PWC, and 19% by Deloitte.

(2) In 2020, approximately 96% of the financial statements of airlines were audited by international audit firms (Figure 14). But 92% of these international firms include Big 4 audit firms. The proportion of these Big 4 audit firms within the 92% refers to 29% by KPMG, and E&Y, 27% by PWC, and 16% by Deloitte.

(3) In 2021, approximately 96% of the financial statements of airlines were audited by international audit firms (Figure 15). But 92% of these international firms include Big 4 audit firms. The proportion of these Big 4 audit firms within the 93% refers to 35% by KPMG, 27% by PWC, 21% by E&Y, and 17% by Deloitte.

(4) In 2022, approximately 94% of the financial statements of airlines were audited by international audit firms (Figure 16) and 94% of these international firms include Big 4 audit firms (Figure 16). The proportion of these Big 4 audit firms within the 94% refers to 32% by PWC, 30% by KPMG, 23% by E&Y, and 15% by Deloitte.

The results indicate that the international audit firms in general, and Big-4 audit firms in particular, continue to dominate the auditing process in the airline industry in line with the 2018 results of Özçelik (2020) and Öztürk (2022c). Therefore, hypothesis 2H2 and 2H3 hold.

Figure 13: Composition of Audit Firms in the Airline Industry for the year 2019

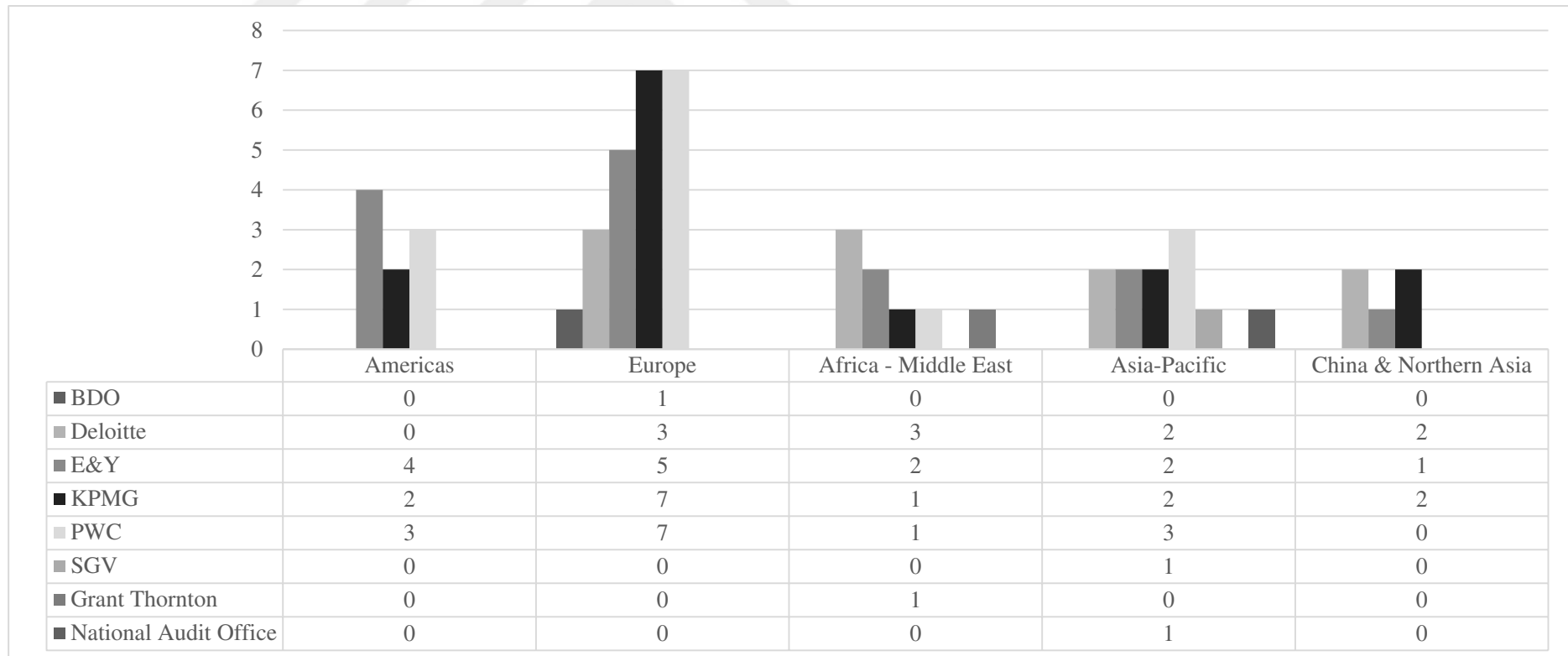


Figure 14: Composition of Audit Firms in the Airline Industry for the year 2020

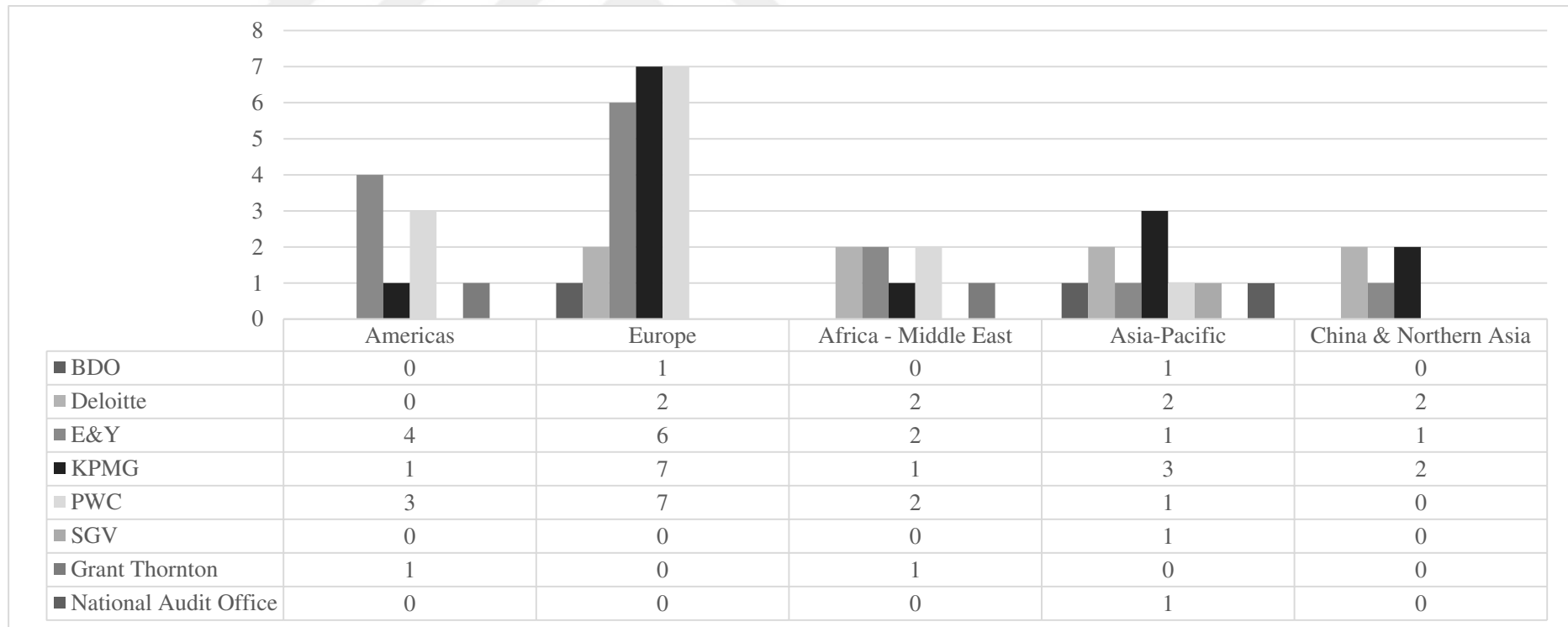


Figure 15: Composition of Audit Firms in the Airline Industry for the year 2021

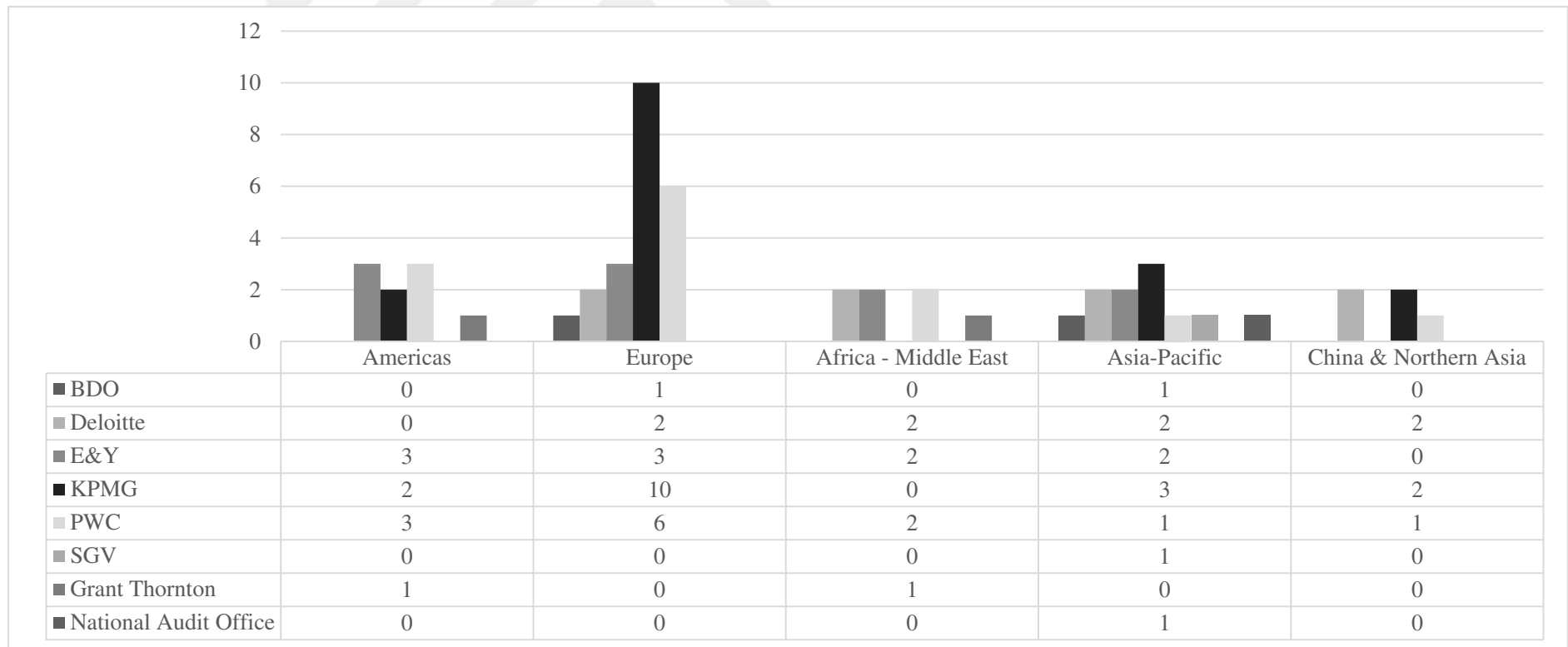
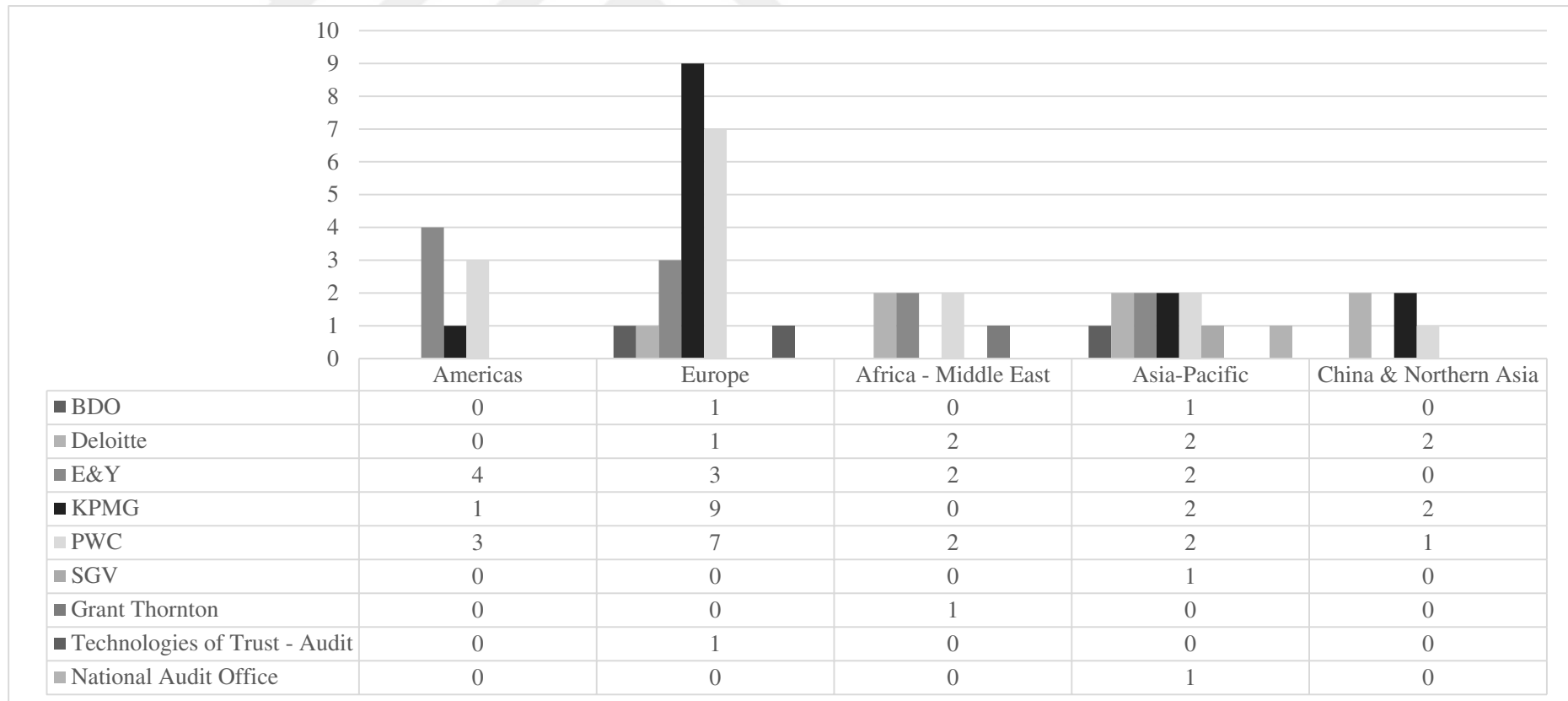


Figure 16: Composition of Audit Firms in the Airline Industry for the year 2022



However, it should be noted that the rankings of the Big-4 audit firm vary from one year to another due to rotation mechanism in auditing process (Table 22, Table 23, Table 24, Table 25, Table 26, and Table 27). In every continent of the world, the auditor of some airlines has changed frequently such as Gol Azul Airlines and Korean Air or after a constant period of time (e.g. more than one year period of time) such as Volaris Airlines, China Eastern Airlines, Finnair, Air France – KLM, Aer Lingus, Ryanair, International Airlines Group, British Airways, Norwegian, Aeroflot, Turkish Airlines, Kenya Airways, Air Mauritius, Air Arabia, Abu Dhabi Aviation, Regional Airlines, and Asiana Airlines. Therefore, hypothesis 2H4 holds.

Table 22: Rankings of Big-4 Audit Firms

Rankings	2017	2018	2019	2020	2021	2022
	Özçelik (2020)	Öztürk (2022c)				
1	KPMG	KPMG	KPMG, E&Y, PWC	KPMG	KPMG	PWC
2	PWC	E&Y	Deloitte	E&Y	PWC	KPMG
3	Deloitte	PWC		PWC	E&Y	E&Y
4	E&Y	Deloitte		Deloitte	Deloitte	Deloitte

5.3. TYPES OF AUDITORS IN THE AUDIT REPORTS OF AIRLINES

In the context of types of auditors in the airline industry, the research of Öztürk (2022c) indicates that Air France – KLM audited its 2018 financial statements by two auditors under the joint-audit system as a requirement of independent audit in France. However, Air Mauritius also audited its financial statements jointly on a voluntary basis for the same period. To analyse the variation of the preliminary results stated above for further years, this research reveals the following results:

(1) Except for Air France – KLM, the financial statements of all airlines continue to be audited by one auditor. Therefore, financial statements of Air Mauritius also preferred the auditing of its financial statements by one auditor following the period of 2018. Overall, the hypothesis 2H5 holds.

(2) The requirement of joint-audit exists for the case of Air France – KLM following the period of 2018. However, the joint-auditor of Air France – KLM has changed from *KPMG – Deloitte* to *KPMG – PWC* in 2022 (Table 25).

Table 23: Auditor Rotation in the Airline Industry of the Americas

Airline Company	Country	2018	2019		2020	2021	2022
GOL Linhas Aereas	Brazil	<i>E&Y</i>	<i>KPMG</i>	<i>KPMG</i>	<i>Grant Thornton</i>	<i>Grant Thornton</i>	<i>E&Y</i>
Azul Brazilian Airlines	Brazil	E&Y	E&Y		E&Y	E&Y	E&Y
Air Transat	Canada	E&Y	E&Y		E&Y	E&Y	E&Y
Air Canada	Canada	PWC	PWC		PWC	PWC	PWC
Cargojet Airways	Canada	PWC	PWC		PWC	PWC	PWC
LATAM Airlines Group	Chili	PWC	PWC		PWC	PWC	PWC
Aeromexico	Mexico	KPMG	KPMG		KPMG	KPMG	
Volaris	Mexico	E&Y	E&Y		<i>E&Y</i>	<i>KPMG</i>	KPMG
COPA Airlines	Panama	E&Y	E&Y		E&Y	E&Y	E&Y

Table 24: Auditor Rotation in the Airline Industry of China & Northern Asia

Airline Company	Country	2018	2019	2020	2021	2022
Cathay Pacific Airlines	Hong Kong	KPMG	KPMG	KPMG	KPMG	KPMG
Air China Group	China	Deloitte	Deloitte	Deloitte	Deloitte	Deloitte
China Southern Airlines	China	KPMG	KPMG	KPMG	KPMG	KPMG
China Eastern Airlines	China	E&Y	E&Y	<i>E&Y</i>	<i>PWC</i>	PWC
China Airlines	Chinese Taipei	Deloitte	Deloitte	Deloitte	Deloitte	Deloitte

Table 25: Auditor Rotation in the Airline Industry of Europe

Airline Company	Country	2018	2019	2020	2021	2022
Croatia Airlines	Croatia	KPMG	KPMG	KPMG	KPMG	KPMG
Finnair - Finnair Group	Finland	PWC	<i>PWC</i>	<i>KPMG</i>	KPMG	KPMG
Air France - KLM Group	France	KPMG & Deloitte	KPMG & Deloitte	KPMG & Deloitte	<i>KPMG & Deloitte</i>	<i>KPMG & PWC</i>
Lufthansa Group	Germany	PWC	<i>PWC</i>	<i>E&Y</i>	E&Y	E&Y
Aegean Group	Greece	E&Y	E&Y	E&Y	E&Y	E&Y
Aer Lingus	Ireland	E&Y	E&Y	<i>E&Y</i>	<i>KPMG</i>	KPMG
Ryanair	Ireland	KPMG	KPMG	KPMG	<i>KPMG</i>	<i>PWC</i>
Wizz Air	Jersey	PWC	PWC	PWC	PWC	PWC
TAP Group	Portugal	PWC	PWC	PWC	PWC	PWC
SAS - SAS Group	Sweden	KPMG	KPMG	KPMG	KPMG	KPMG
International Airlines Group	Spain	E&Y	E&Y	<i>E&Y</i>	<i>KPMG</i>	KPMG
Virgin Atlantic Group	UK	KPMG	KPMG	KPMG	KPMG	KPMG
Air Partner	UK	PWC	PWC	PWC		
Easy Jet	UK	PWC	PWC	PWC	PWC	PWC
British Airways	UK	E&Y	E&Y	<i>E&Y</i>	<i>KPMG</i>	KPMG
Fast Jet	UK	BDO	BDO	BDO	BDO	BDO
Icelandair	Iceland	KPMG	KPMG	KPMG	KPMG	KPMG
Norwegian Air	Norway	Deloitte	<i>Deloitte</i>	<i>PWC</i>	PWC	PWC
El Al	Israel	Deloitte	Deloitte	Deloitte	Deloitte	Deloitte
Aeroflot	Russia	PWC	PWC	PWC	<i>PWC</i>	<i>Technologies of Trust - Audit</i>
Turkish Airlines	Turkey	KPMG	<i>KPMG</i>	<i>PWC</i>	PWC	PWC
Pegasus Airlines	Turkey	E&Y	E&Y	E&Y	E&Y	E&Y

Table 26: Auditor Rotation in the Airline Industry of Africa & Middle East

Airline Company	Country	2018	2019	2020	2021	2022
Royal Jordanian	Jordan	E&Y	E&Y	E&Y	E&Y	E&Y
Kenya Airways	Kenya	Deloitte	<i>Deloitte</i>	<i>PWC</i>	PWC	PWC
Jazeera Airways	Kuwait	Deloitte	Deloitte	Deloitte	Deloitte	Deloitte
Air Mauritius	Mauritius	<i>E&Y & KPMG</i>	<i>KPMG</i>	KPMG		
Qatar Airways	Qatar	E&Y	E&Y	E&Y	E&Y	E&Y
Emirates	United Arab Emirates	PWC	PWC	PWC	PWC	PWC
Air Arabia	United Arab Emirates	<i>KPMG</i>	<i>Grant Thornton</i>	Grant Thornton	Grant Thornton	Grant Thornton
Abu Dhabi Aviation	United Arab Emirates	<i>KPMG</i>	<i>Deloitte</i>	Deloitte	Deloitte	Deloitte

Table 27: Auditor Rotation in the Airline Industry of Asia-Pacific

Airline Company	Country	2018	2019	2020	2021	2022
Regional Express	Australia	Deloitte	<i>Deloitte</i>	<i>BDO</i>	BDO	BDO
Alliance Airlines	Australia	PWC	PWC	PWC	PWC	PWC
Qantas	Australia	KPMG	KPMG	KPMG	KPMG	KPMG
Korean Air	Korea	<i>Deloitte</i>	<i>PWC</i> <i>PWC</i>	<i>Deloitte</i>	Deloitte	Deloitte
Asiana Airlines	Korea	PWC	<i>PWC</i>	<i>KPMG</i>	<i>KPMG</i>	<i>PWC</i>
Air Asia X	Malaysia	E&Y	E&Y		E&Y	E&Y
Air New Zealand	New Zealand	Deloitte	Deloitte	Deloitte	Deloitte	Deloitte
Cebu Pacific Air	Philippines	SGV	SGV	SGV	SGV	SGV
Singapore Airlines	Singapore	KPMG	KPMG	KPMG	KPMG	KPMG
Sri Lankan Airlines	Sri Lanka	National Audit Office	National Audit Office	National Audit Office	National Audit Office	National Audit Office
Air Asia X Berhad	Malaysia	E&Y	E&Y	E&Y	E&Y	E&Y

5.4. AUDIT OPINIONS IN THE AUDIT REPORTS OF AIRLINES

In the context of audit opinions in the airline industry, the preliminary research of Öztürk (2022c) indicates that auditors declared *unqualified opinions* for the year 2018. However, this is not always the case. To analyse the variation of the preliminary results stated above for further years, this research reveals the following results:

(1) Except for the cases stated in (2), (3), (4) and (5), the auditors of all airlines declared unqualified audit opinion in 2019, 2020, 2021, and 2022. Therefore, the hypothesis 2H6 holds.

(2) In 2019, the auditor declared an *adverse opinion* for the financial statements of Fast Jet from Europe. The reason behind this case was declared in the audit report as follows:

“As disclosed in the Basis of preparation paragraph in Note 1 to the consolidated financial statements, the subsidiary Fastjet Zimbabwe Limited for the year ended 31 December operated in an environment where the legislated exchange rate related to its Zimbabwean dollar transactions did not reflect the economic substance of their value. This is contrary to the requirements of IAS 21 and the effect of this non-compliance is material to these financial statements.” (Fast Jet 2019)

(3) In 2020, the auditors declared *qualified opinions* for Qatar Airways from Africa & Middle East and for Fast Jet from Europe. The reasons behind these cases were declared in the audit reports as follows:

(a) Qatar Airways:

“Included in the consolidated statement of financial position under “investment securities” is an investment in International Consolidated Airlines Group S.A. (IAG), amounting to QR 12.41 billion with a corresponding fair value reserve amounting to QR 3.91 billion as at 31 March 2021 representing investment in 25.1% ordinary shares of IAG. As disclosed in Note 35, the Group nominated 2 individuals who were elected to the Board of Directors of IAG at the general assembly held on 8 September 2020. However, the Group has continued to account for this investment as fair value though other comprehensive income (FVOCI) as the management has concluded that both the Group and IAG operate under strict competitive and anti-trust regulatory environment, which restricts the Group’s ability to exercise significant influence over the IAG in accordance with IAS 28. In this regard, we were unable to obtain sufficient, appropriate audit evidence with respect to management’s conclusion, and hence, are unable to determine whether any adjustments to the classification, measurement and

disclosure of such investment are required in the consolidated financial statements.”
(Qatar Airways 2021)

(b) Fast Jet: The *adverse opinion* given to Fast Jet in 2019 turned out to be *qualified opinion* in 2020 due to the same reason.

“As explained in note 1 to the consolidated financial statements, for the year ended 31 December 2019, the subsidiary Fastjet Zimbabwe Limited operated in an environment where the legislated exchange rate related to its Zimbabwean dollar transactions did not reflect the economic substance of their value. This is contrary to the requirements of applicable accounting standards and the effect of this non-compliance was considered to be both material and pervasive. Our audit opinion on the Group financial statements for the year ended 31 December 2019 was modified accordingly. Our opinion on the current period’s financial statements is also modified because of the effect of this matter on the current year opening balances and the comparability of the current period’s figures and the corresponding figures.” (Fast Jet 2020)

(4) In 2021, the auditors declared *qualified opinions* for Qatar Airways and Fast Jet and another auditor declared a *disclaimer of opinion* for Air Asia X Berhad. The reasons behind these cases were declared in the audit reports as follows:

(a) Qatar Airways: The same reason from prior year keeps its existence.
“Included in the consolidated statement of financial position under “investment securities” is an investment in International Consolidated Airlines Group S.A. (IAG), amounting to QR 8.51 billion (2021: QR 12.41 billion) with a corresponding fair value reserve amounting to QR 7.81 (2021: QR 3.91 billion) representing investment in 25.1% ordinary shares of IAG. As disclosed in Note 35, the Group nominated 2 individuals who were elected to the Board of Directors of IAG at the general assembly held on 8 September 2020. However, the Group has continued to account for this investment as fair value through other comprehensive income (FVOCI) as the management has concluded that both the Group and IAG operate under strict competitive and anti-trust regulatory environment, which restricts the Group’s ability to exercise significant influence over the IAG in accordance with IAS 28. In this regard, we were unable to obtain sufficient, appropriate audit evidence with respect to management’s conclusion, and hence, are unable to determine whether any adjustments to the classification, measurement and disclosure of such investment are required in the consolidated financial statements.” (Qatar Airways 2022)

(b) Fast Jet: The *adverse opinion* given to Fast Jet in 2019 turned out to be *qualified opinion* in 2020 as well as in 2021 due to the same reason.

“As explained in note 1 to the consolidated financial statements, for the year ended 31 December 2019, the subsidiary Fastjet Zimbabwe Limited operated in an environment where the legislated exchange rate related to its Zimbabwean dollar transactions did not reflect the economic substance of their value. This is contrary to the requirements of applicable accounting standards and the effect of this non-compliance was considered to be both material and pervasive. Our audit opinion on the Group financial statements for the year ended 31 December 2019 was modified accordingly. Our opinion on the current period’s financial statements is also modified because of the effect of this matter on the prior year opening balances and the comparability of the current period’s figures and the corresponding figures. (Fast Jet 2021)”

(c) Air Asia X Berhad: *Disclaimer of opinion* is because of the several uncertainties caused by the COVID-19 pandemic.

“As disclosed in Note 2.1 and 46 to the financial statements, the global economy and in particular, the commercial airline industry, faces uncertainty over the expected timing of the recovery from the COVID-19 pandemic. The travel and border restrictions implemented by countries around the world have led to a significant fall in demand for international air travel which have impacted the Group’s and the Company’s financial position, financial performance and cash flows. The Group and the Company have reported a net loss of RM33.72 and RM33.79 billion respectively for the financial period ended 30 June 2021 and current liabilities exceeded current assets by RM34.21 billion and RM34.30 billion respectively. In addition, the Group and the Company also reported a shareholders’ deficit of RM33.58 billion and RM33.66 billion respectively.

As a result of the pandemic, the Group and the Company have grounded most of the fleet since March 2020 and have deferred payment to creditors. Consequently, the Group and the Company have triggered events of default for various contracts and have made a provision for termination claims of RM25.16 billion in respect of these contracts as disclosed in Note 3(iv) and 10 to the financial statements.

These events or conditions indicate existence of material uncertainties that may cast significant doubt on the Group’s and the Company’s ability to continue as going concern.

Nevertheless, the financial statements of the Group and of the Company have been prepared on a going concern basis, the validity of which is highly dependent on the successful implementation of the following management’s plans in responding to the conditions above.

1. Implementation of proposed debt restructuring exercise

- *The Group and the Company have grounded most of the fleet since March 2020 and has deferred payment to creditors. Consequently, the Group and the Company have triggered events of default for various contracts. On 6 October 2020, the Group and the Company announced a proposed debt restructuring exercise amounting to RM64.15 billion which involves a proposed debt settlement and waiver for the debts owing to the creditors pursuant to Section 366 of the Companies Act 2016 as further described in Note 46 to the financial statements.*

- *In conjunction with the proposed debt restructuring exercise, the scheme creditors submitted a proof of debt (including termination claims) amounted to RM65.14 billion. The scheme creditors are creditors of the Group and the Company whose debts are to be dealt with under the proposed debt restructuring exercise.*

- *Based on the relevant provisions in the applicable law of the relevant contracts, creditors are required to take action to mitigate their losses and to reduce their termination claims including offsetting against any deposits and prepayments wherever applicable. Accordingly, management had engaged an expert to assist in determining the provisional scheme amounts and applied significant judgement in assessing and estimating the provisional scheme amounts totaling to RM33.65 billion as further disclosed in Note 3 (iv) and Note 10 to the financial statements.*

- *On 18 October 2021, the Group and the Company have announced that the Court Convened Meeting of creditors (“CCM”) will be held on 12 November 2021. The Group and the Company require at least 75% of each class of scheme creditors in the CCM to vote favorably for the proposed debt restructuring exercise.*

- *There is material uncertainty on the outcome of the CCM as the scheme creditors decisions are not within the Group’s and the Company’s control.*

2. Implementation of the proposed fundraising exercise

- *As disclosed in Note 46 to the financial statements, on the premise that the debt restructuring is successful, the Group and the Company intend to raise funds of a minimum of RM150 million up to a maximum of RM500 million as approved conditionally by the shareholders in an Extraordinary General Meeting held on 1 June 2021.*

- *In addition to the material uncertainty on the outcome of the CCM as disclosed above, there is also material uncertainty on the whether the Group and the Company would be able to raise the minimum funds required as the Group and the*

Company are still in the midst of securing the underwriter(s) for the rights issue of RM100 million and the Special Purpose Vehicle as defined in Note 46 to the financial statements has not signed the share subscription agreement of RM50 million as of to-date.

3. Implementation of the revised business plan

- As disclosed in Note 46 to the financial statements, on the premise that the proposed debt restructuring exercise and proposed fundraising exercise are successfully implemented, the Group's and the Company's plan to return to profitability entails implementing a revised business plan that involves operating a leaner and more sustainable cost structure. This will involve negotiating and signing of new agreements with relevant vendors, including amongst others, aircraft manufacturer, lessors and aircraft maintenance service providers. The ability of the Group and the Company to return to profitability is dependent on the successful negotiation and continue support from all relevant vendors. The Group and the Company are currently in negotiation with the relevant vendors and have yet to finalise any arrangement as of the date of this report. Therefore, there is material uncertainty on the outcome of the negotiation with the relevant vendors.

4. Recovery of COVID-19 pandemic

- As disclosed in Note 2.1 and 46 to the financial statements, the global economy, in particular the commercial airline industry, faces uncertainty over the expected timing of recovery from the COVID-19 pandemic. As at the date of this report, the Group's and the Company's fleet remains grounded apart from a limited number of cargo and charter flights and the Group and the Company will not be able to restart scheduled operations until there is an easing of travel restrictions and a gradual reopening of international borders. There is a material uncertainty on the timing of recovery of international travel.

In view of the multiple uncertainties described above, we are unable to form an opinion on the financial statements due to the potential interaction of the uncertainties and their possible cumulative effects on the financial statements. (Air Asia X Berhad 2021)

(5) In 2022, the auditor declared a *qualified opinion* for Qatar Airways. The same reason from two prior years keeps its existence as follows:

"Included in the consolidated statement of financial position under "investment securities" is an investment in International Consolidated Airlines Group S.A. (IAG),

amounting to QR 8.50 billion (2022: QR 8.51 billion) with a corresponding fair value reserve amounting to QR 7.82 (2022: QR 7.81 billion) representing investment in 25.1% ordinary shares of IAG. As disclosed in Note 35, the Group nominated 2 individuals who were elected to the Board of Directors of IAG at the general assembly held on 8 September 2020. However, the Group has continued to account for this investment as fair value through other comprehensive income (FVOCI) as the management has concluded that both the Group and IAG operate under strict competitive and anti-trust regulatory environment, which restricts the Group's ability to exercise significant influence over the IAG in accordance with IAS 28. In this regard, we were unable to obtain sufficient, appropriate audit evidence with respect to management's conclusion, and hence, are unable to determine whether any adjustments to the classification, measurement and disclosure of such investment are required in the consolidated financial statements.” (Qatar Airways 2023)

Within this framework, analysis indicates that one airline company (Air Asia X Berhad) received a *disclaimer of opinion* due to COVID-19. Adverse and qualified audit opinions are not particularly related to COVID-19.

CHAPTER VI

FINDINGS RELATED TO KAMs IN THE AIRLINE INDUSTRY

This section of the thesis focuses on two aspects of KAMs in the airline industry following the research of Öztürk (2022c): (1) analysis of the elements of describing KAMs, and (2) content analysis of KAMs in the audit reports of airlines.

6.1. PATTERNS OF THE ELEMENTS OF DESCRIBING KAMs IN THE AUDIT REPORT OF AIRLINES

This section of the thesis analyses the patterns of the elements of describing KAMs and the patterns of the diversified elements of describing KAMs in the airline industry from 2019 to 2022 and observes the variation since 2018.

6.1.1. The Case of 2019

In terms of patterns of the elements of describing KAMs in the audit reports of airlines in 2019, all the audit reports include *element A* and *element B* in the global context (Figure 17). However, all the audit reports do not globally include *element C* and *element D*. In this regard, 24% of audit reports declare *element C* and 82% of audit reports declare *element D*. This finding makes *element D* as the third frequently observed element of describing KAMs in the audit reports of airlines and *element C* as the fourth. Findings which belong to the year 2019 in terms *element A*, *element B*, *element C*, and *D* are consistent with the findings of Öztürk (2022c). No major change has been observed from 2018 to 2019.

In terms of the diversity observed in the patterns of the elements of describing KAMs in the audit reports of airlines in 2019, *element C* and *D* are mostly observed in the audit reports of Big-4 audit firms (Figure 18). This is also in line with the prior research of Öztürk (2022c).

In terms of element C, PWC reports this element at 30% of its audit reports in 2019 (56% of its audit reports in 2018) and other Big-4 audit firms report this

element even less than 30%: KPMG at 25% (15% in 2018) and Deloitte at 25% (12.50% in 2018); E&Y 13% (30% in 2018).

In terms of *element D*, PWC reports this element at 100% of its audit reports (100% of its audit reports in 2018) versus E&Y at 88% (80% in 2018) and Deloitte at 88% (88% in 2018); and KPMG at 75% (69% in 2018).



Figure 17: Patterns of elements of describing KAMs in the auditor context in 2019

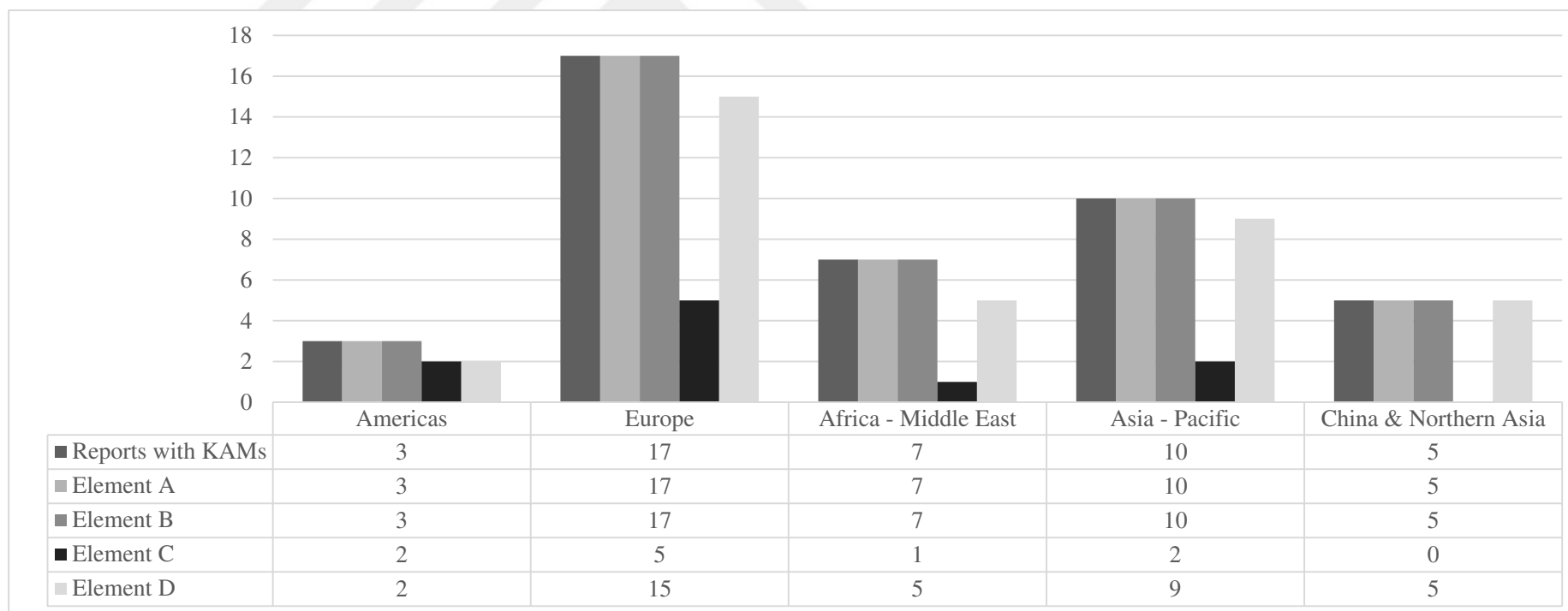
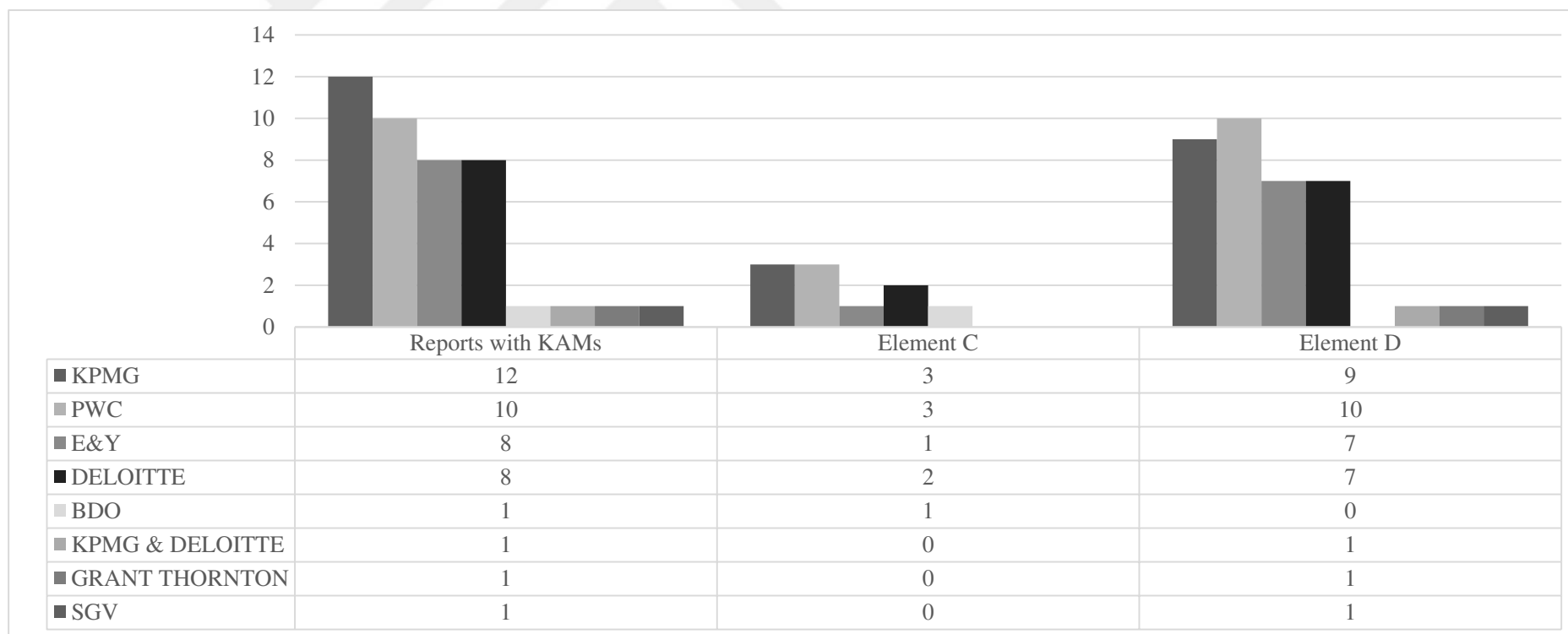


Figure 18: Patterns of diversified elements of describing KAMs in the auditor context 2019



6.1.2. The Case of 2020

In terms of patterns of the elements of describing KAMs in the audit reports of airlines in 2020, all the audit reports include *element A* and *element B* in the global context. However, all the audit reports do not globally include *element C* and *element D*. In this regard, 23% of audit reports declare *element C* and 91% of audit reports declare *element D* (Figure 19). This finding makes *element D* as the third frequently observed element of describing KAMs in the audit reports of airlines and *element C* as the fourth. Findings which belong to the year 2020 in terms *element A*, *element B*, and *C* are consistent with the findings of 2019 which have been provided in section 6.1.1. No major change has been observed in such context from 2019 to 2020. However, the declaration of *element D* increased from 2019 to 2020 because (1) three Canadian airlines reported their KAMs for the first time using *element A*, *B*, and *D*, and (2) some existing European and African airlines (TAP Portugal, Turkish Airlines, Jazeera Airways), declared their KAMs using the *element D* as well in 2019.

In terms of the diversity observed in the patterns of the elements of describing KAMs in the audit reports of airlines in 2020, *element C* and *D* are mostly observed in the audit reports of Big-4 audit firms (Figure 20). This is in line with the prior year observations.

In terms of *element C*, PWC reports this element at 33% of its audit reports in 2020 (30% of its audit reports in 2019) and other Big-4 audit firms report this element even less than 33%: E&Y 22% (13% in 2019); KPMG at 17% (25% in 2019); Deloitte at 17% (25% in 2019).

In terms of *element D*, PWC reports this element at 100% of its audit reports (100% of its audit reports in 2019) versus E&Y at 89% (88% in 2019); Deloitte at 83% (88% in 2019); and KPMG at 83% (75% in 2019).

Figure 19: Patterns of elements of describing KAMs in the auditor context in 2020

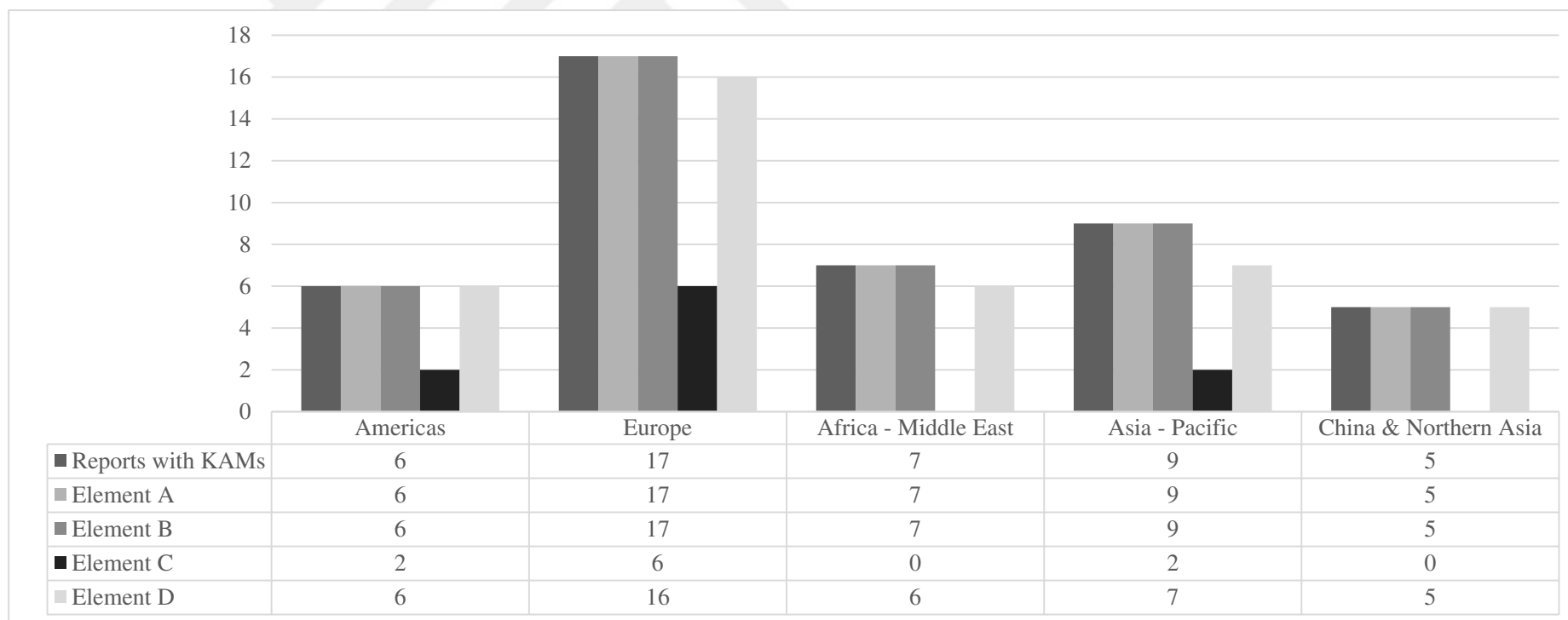
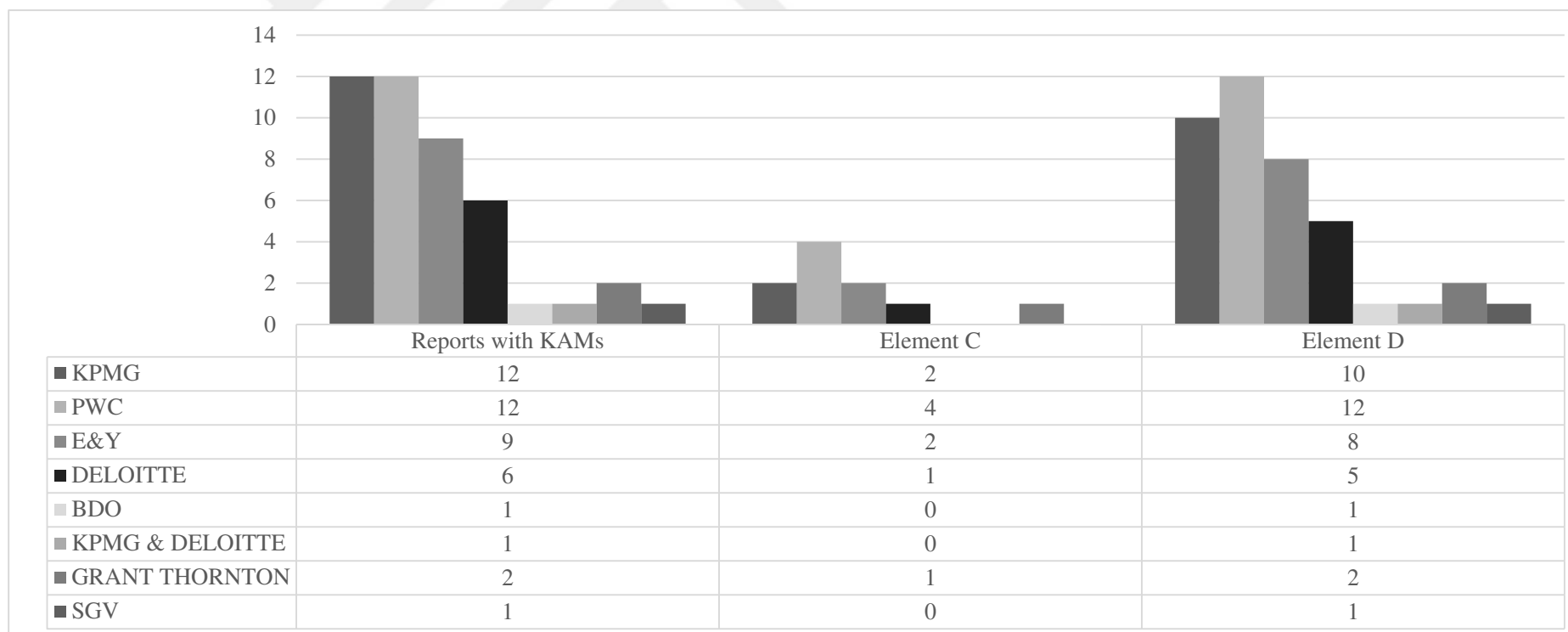


Figure 20: Patterns of diversified elements of describing KAMs in the auditor context in 2020



6.1.3. The Case of 2021

In terms of patterns of the elements of describing KAMs in the audit reports of airlines in 2021, all the audit reports include *element A* and *element B* in the global context. However, all the audit reports do not globally include *element C* and *element D*. In this regard, 21% of audit reports declare *element C* and 86% of audit reports declare *element D* (Figure 21). This finding makes *element D* as the third frequently observed element of describing KAMs in the audit reports of airlines and *element C* as the fourth. Findings which belong to the year 2021 in terms *element A*, *element B*, and *C* are consistent with the findings of 2020 which have been provided in section 6.1.2. No major change has been observed in such context from 2020 to 2021. However, the declaration of *element D* decreased from 2020 to 2021 because (1) Aeroflot did not declare this element within its KAMs; (2) Fast Jet had a qualified audit report in 2021 leading to no-reporting of KAMs; and (3) Air Partner and Air Mauritius were excluded from the sample due to unavailability of 2021 financial statements.

In terms of the diversity observed in the patterns of the elements of describing KAMs in the audit reports of airlines in 2021, *element C* and *D* are mostly observed in the audit reports of Big-4 audit firms (Figure 22). This is in line with the prior year observations.

In terms of *element C*, PWC reports this element at 42% of its audit reports in 2020 (33% of its audit reports in 2020) and other Big-4 audit firms report this element even less than 42%: E&Y 29% (22% in 2020); Deloitte at 17% (17% in 2020); and KPMG at 15% (17% in 2020).

In terms of *element D*, PWC reports this element at 83% of its audit reports (100% of its audit reports in 2020) versus E&Y at 86% (89% in 2020) and Deloitte at 83% (83% in 2020); and KPMG at 77% (83% in 2020).

Figure 21: Patterns of elements of describing KAMs in the auditor context in 2021

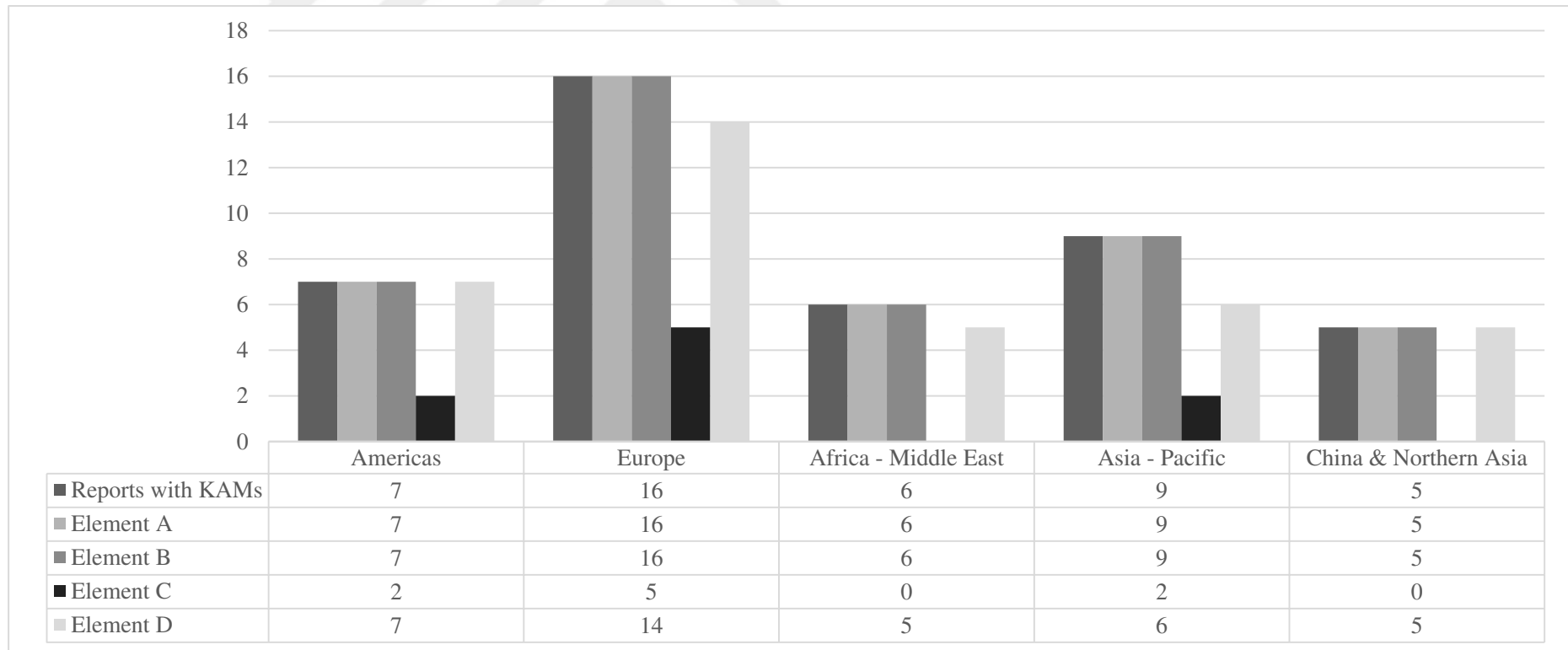
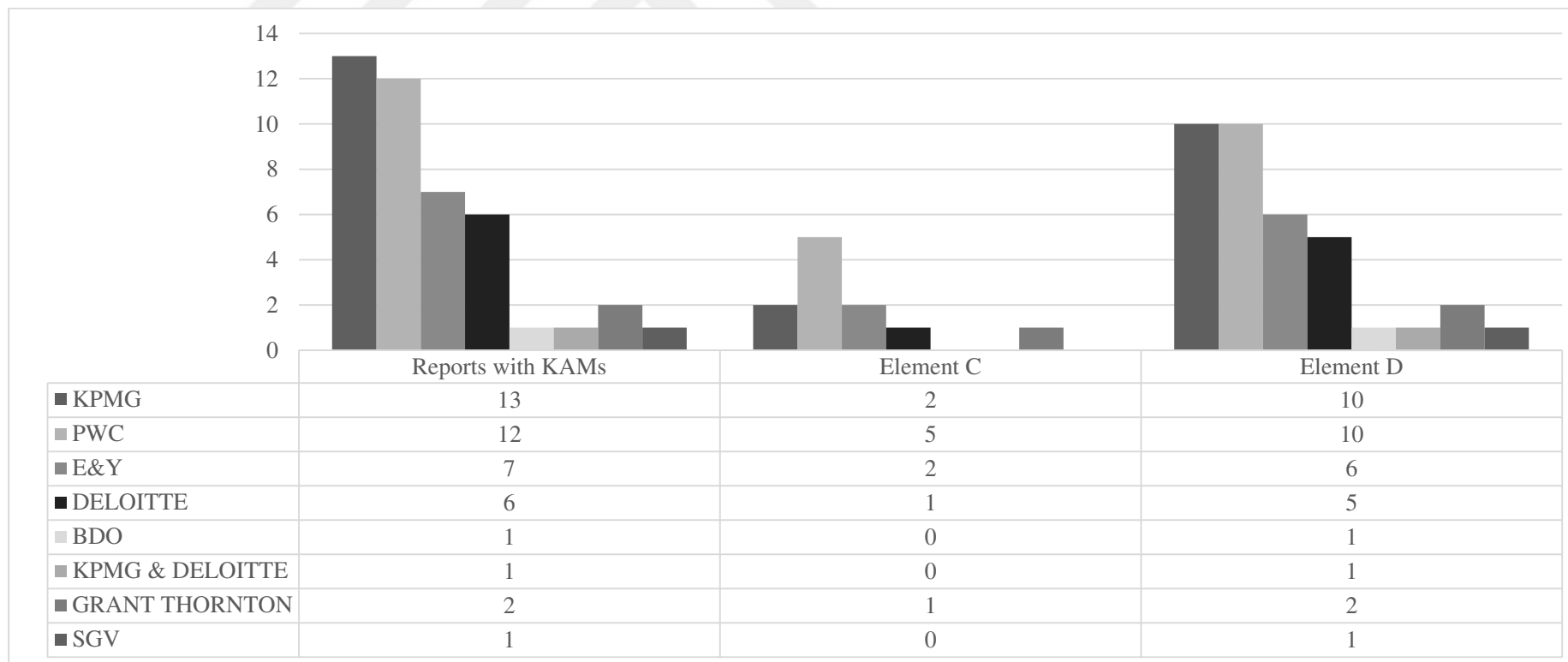


Figure 22: Patterns of diversified elements of describing KAMs in the auditor context in 2021



6.1.4. The Case of 2022

In terms of patterns of the elements of describing KAMs in the audit reports of airlines in 2022, all the audit reports include *element A* and *element B* in the global context. However, all the audit reports do not globally include *element C* and *element D*. In this regard, 19% of audit reports declare *element C* and 83% of audit reports declare *element D* (Figure 23). This finding makes *element D* as the third frequently observed element of describing KAMs in the audit reports of airlines and *element C* as the fourth. Findings which belong to the year 2022 in terms *element A*, *element B*, and *C* are consistent with the findings of 2021 which have been provided in section 6.1.3. No major change has been observed in such context from 2021 to 2022. However, the declaration of *element D* decreased from 2020 to 2021 because (1) Aeromexico was excluded from the sample due to unavailability of 2022 financial statements and (2) some airlines from the Americas, Asia-Pacific, and Africa either declared this element within its KAMs compared to 2021 or did not declare them in 2022.

In terms of the diversity observed in the patterns of the elements of describing KAMs in the audit reports of airlines in 2022, *element C* and *D* are mostly observed in the audit reports of Big-4 audit firms (Figure 24). This is in line with the prior year observations.

In terms of element C, PWC reports this element at 31% of its audit reports in 2020 (42% of its audit reports in 2021) and other Big-4 audit firms report this element even less than 31%: E&Y 25% (29% in 2021); Deloitte at 17% (17% in 2021); and KPMG at 10% (15% in 2021).

In terms of *element D*, PWC reports this element at 92% of its audit reports (83% of its audit reports in 2021) versus E&Y at 88% (86% in 2021) and Deloitte at 83% (83% in 2021); and KPMG at 70% (77% in 2021).

Figure 23: Patterns of elements of describing KAMs in the auditor context in 2022

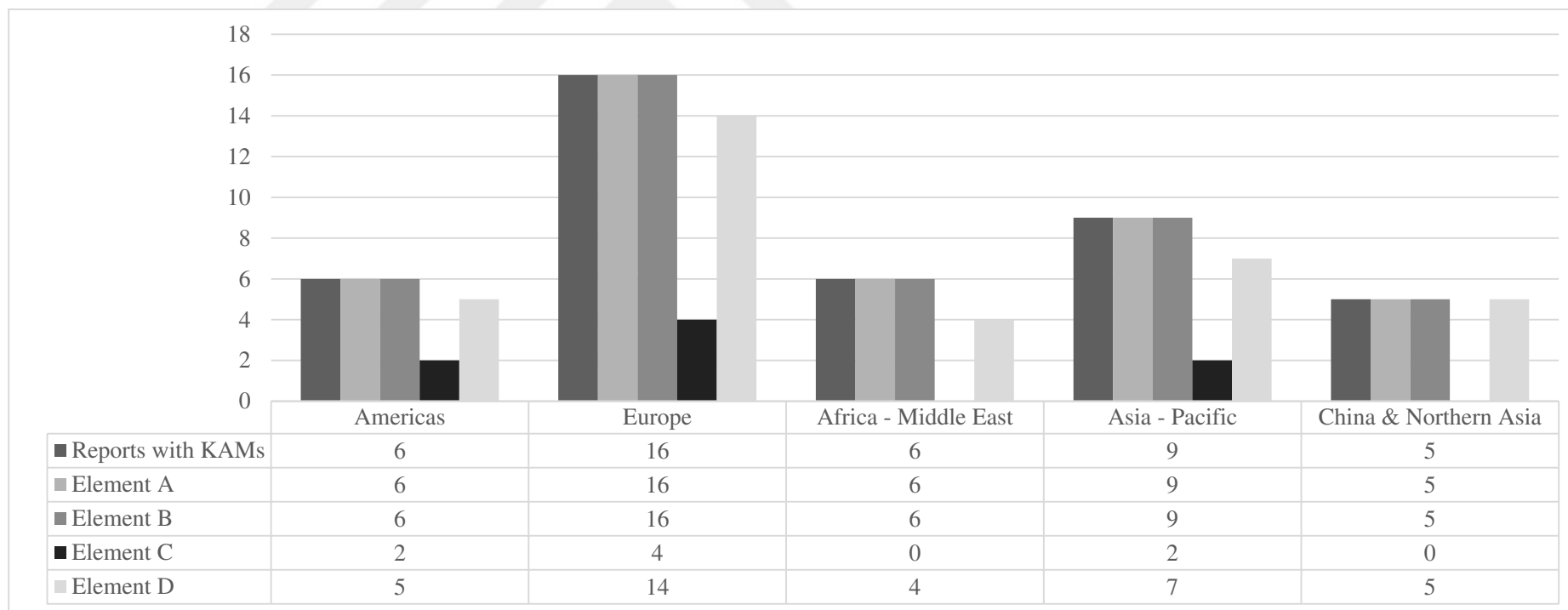
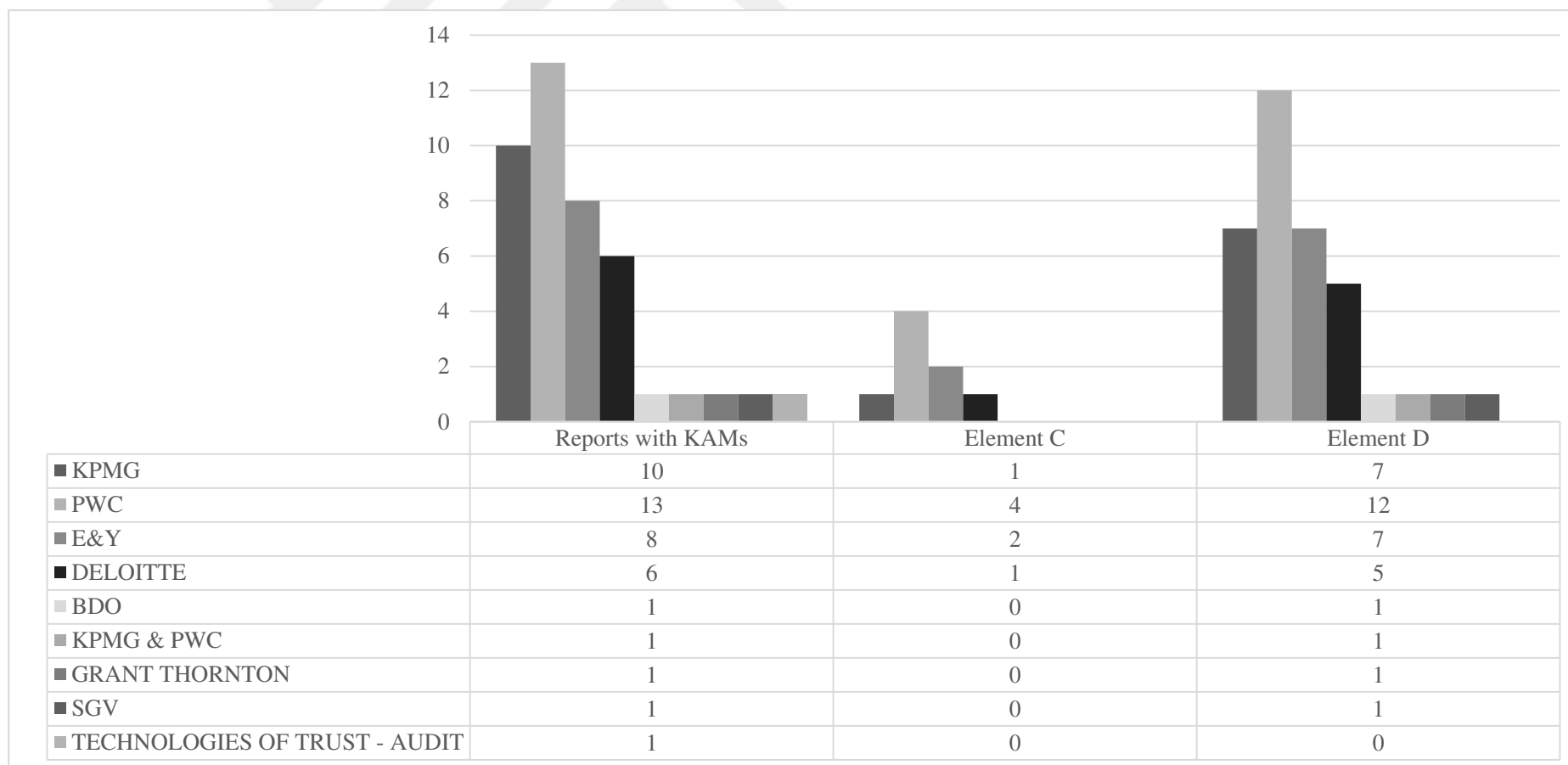


Figure 24: Patterns of diversified elements of describing KAMs in the auditor context in 2022



6.1.5. Overall Analysis

In line with the prior research of Öztürk (2022c), the audit reports of airlines indicate that *element A*, and *B* are used by all national and international audit firms adopting ISAs from 2019 to 2022. However, *element C*, and *D* are usually adopted by international audit firms and particularly by Big-4 audit firms.

Even though the rankings of Big-4 audit firms vary from one year to another in terms of the declaration of *element C*, and *D* in the audit reports of airlines from 2018 to 2022 (Table 28, Table 29), PWC ranks first in such rankings since 2018. However, the rankings of Big-4 audit firms other than PWC have changed in terms of *element C*, and *D* following the PWC.

Table 28: Rankings of Big-4 audit firms in terms of element C

	2018	2019	2020	2021	2022
	Öztürk (2022c)				
1	PWC	PWC	PWC	PWC	PWC
2	E&Y	KPMG, Deloitte	E&Y	E&Y	E&Y
3	KPMG	E&Y	KPMG, Deloitte	Deloitte	Deloitte
4	Deloitte			KPMG	KPMG

Table 29: Rankings of Big-4 audit firms in terms of element D

	2018	2019	2020	2021	2022
	Öztürk (2022c)				
1	PWC	PWC	PWC	PWC	PWC
2	Deloitte	E&Y, Deloitte	E&Y	E&Y	E&Y
3	E&Y	KPMG	KPMG, Deloitte	Deloitte	Deloitte
4	KPMG			KPMG	KPMG

There may be several reasons behind the variation of the rankings of Big-4 audit firms: (1) The number of an airline customer of an audit firm decreases and the number of an airline customer of another audit firm increases due to auditor rotation; (2) Using all of the elements of describing KAMs should not be expected from the auditors because the ISA 701 does not require the use of all the elements; instead it provides flexibility in the preparation of audit report and states that a combination of them can also be used (IAASB 2015c); and (3) In line with the prior research of Öztürk (2022c), the importance given to the adoption of *element C*, and *D* vary globally and

regionally even if one of the Big-4 audit firm is the common denominator. For instance, (1) KPMG of the Finnair (Europe) and KPMG of Volaris (Americas) do not report *element C* in its audit report in 2022, but KPMG of the Singapore Airlines (Asia-Pacific) does; (2) KPMG of the Finnair (Europe) reports *element D* in its audit report in 2022 but KPMG of the Qantas (Asia-Pacific) and KPMG of Volaris (Americas) does not. There is still no harmonization within the same Big-4 audit firm.

6.2. CONTENT ANALYSIS OF KAMs IN THE AUDIT REPORTS OF AIRLINES

This section of the thesis analyses the patterns of KAMs in the airline industry considering the prior research of Öztürk (2022c) and the periods following the research of Öztürk (2022c) which include the year of 2019 (pre-COVID-19 period), 2020-2021 (during the COVID-19 period), and 2022 (post-COVID period).

6.2.1. Content Analysis of KAMs in Audit Reports of Airlines in General

In this section of the thesis, the research provides information about the frequently observed KAMs in the airline industry from 2019 to 2022 in general.

KAMs for the year 2019 reflects the accounting period just before COVID-19 pandemic as it was in the case of 2018 of Öztürk (2022c). Research reveals the following findings related to the content of KAMs in the airline industry for the year 2019 within the framework of 126 observations. In such context, there are respectively four most frequently observed KAMs in the airline industry for the year 2019 (Figure 25): (1) revenue recognition; (2) lease accounting; (3) aircraft assets and other property, plant and equipment (PPE) items; and (4) hedge accounting. This consist of 71% of observations and refers to the industry-specific KAMs. The frequency content and rankings of KAMs are consistent with the case of 2018 of Öztürk (2022c). No change occurred in the content and rankings of KAMs from 2018 to 2019. The remaining 29% of KAMs refers to the rare and very rare KAMs observed in the airline industry.

However, different from 2018 and 2019, the year 2020 was the first year of COVID-19 outbreak. Therefore, KAMs for the year 2020 reflects the accounting period that was under the effect of the COVID-19 pandemic. Research reveals the following findings related to the content of KAMs in the airline industry for the year 2020 within the framework of 144 observations. In such context, there are respectively

six most frequently observed KAMs in the airline industry for the year 2020 (Figure 26): (1) aircraft assets and other PPE items; (2) revenue recognition; (3) lease accounting; (4) impairment of goodwill and intangible assets, (5) hedge accounting and (6) going-concern (COVID-19 specific). This consist of 79% of observations and refers to both industry-specific and COVID-19 specific KAMs. The remaining 31% of KAMs refers to the rare and very rare KAMs observed in the airline industry.

Following the first year of COVID-19 outbreak, the year 2021 was also the second accounting period on the COVID-19 pandemic but towards recovery from COVID-19. Therefore, KAMs for the year 2021 reflects the accounting period that was under the effect of the recovery from COVID-19 pandemic. Research reveals the following findings related to the content of KAMs in the airline industry for the year 2021 within the framework of 130 observations. In such context, there are respectively six most frequently observed KAMs in the airline industry for the year 2021 (Figure 27): (1) revenue recognition; (2) aircraft assets and other PPE items; (3) lease accounting; (4) impairment of goodwill and intangible assets; (5) going-concern (COVID-19 specific); and (6) hedge accounting. This consist of 80 % of observations and refers to the industry-specific KAMs and KAMs specific to COVID-19. The remaining 20% of KAMs refers to the rare and very rare KAMs observed in the airline industry.

Following the years of COVID-19 outbreak, KAMs for the year 2022 reflects the post-COVID accounting period. Research reveals the following findings related to the content of KAMs in the airline industry for the year 2022 within the framework of 122 observations. In such context, there are respectively four most frequently observed KAMs in the airline industry for the year 2022 (Figure 28): (1) revenue recognition; (2) aircraft assets and other PPE items; (3) lease accounting; and (4) hedge accounting. This consist of 69 % of observations and refers to the industry-specific KAMs. The remaining 31% of KAMs refers to the rare and very rare KAMs observed in the airline industry.

Figure 25: Frequent, Rare and Very Rare KAMs in the airline industry in 2019

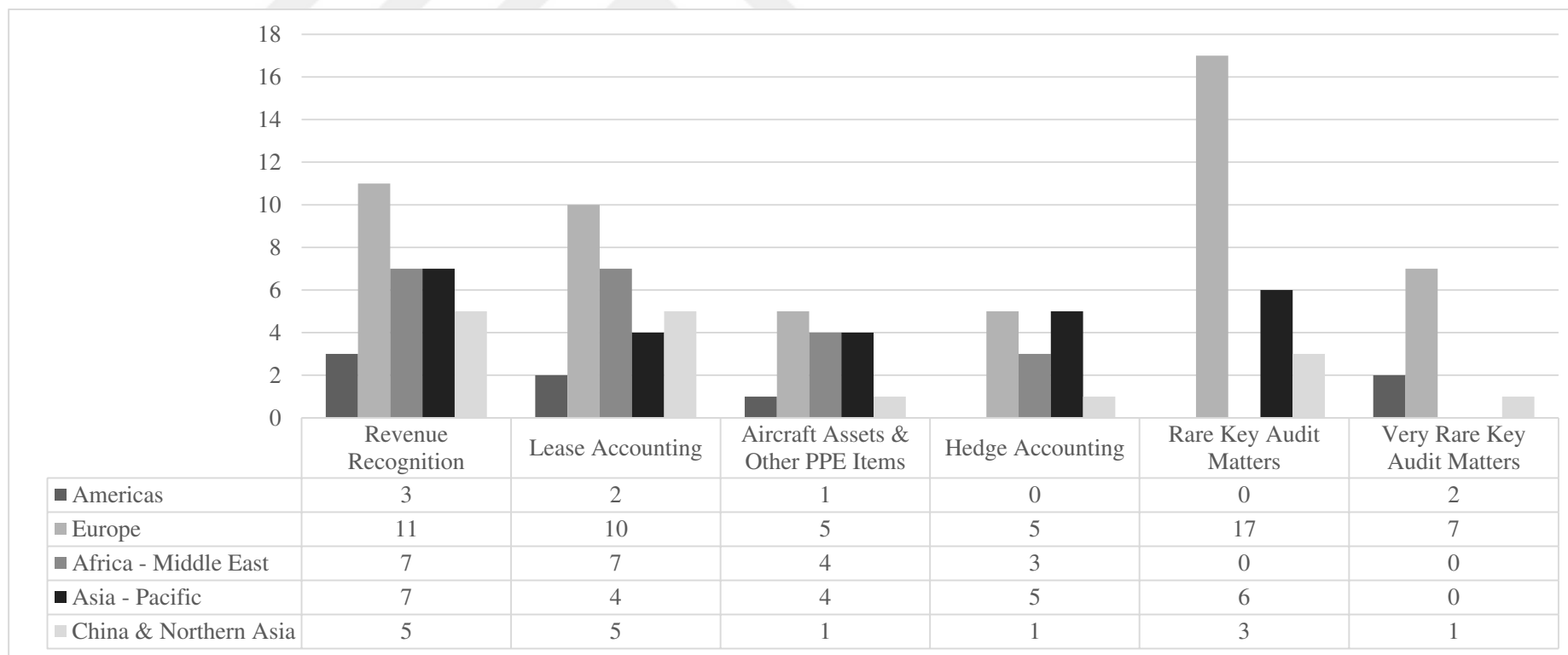


Figure 26: Frequent, Rare and Very Rare KAMs in the airline industry in 2020

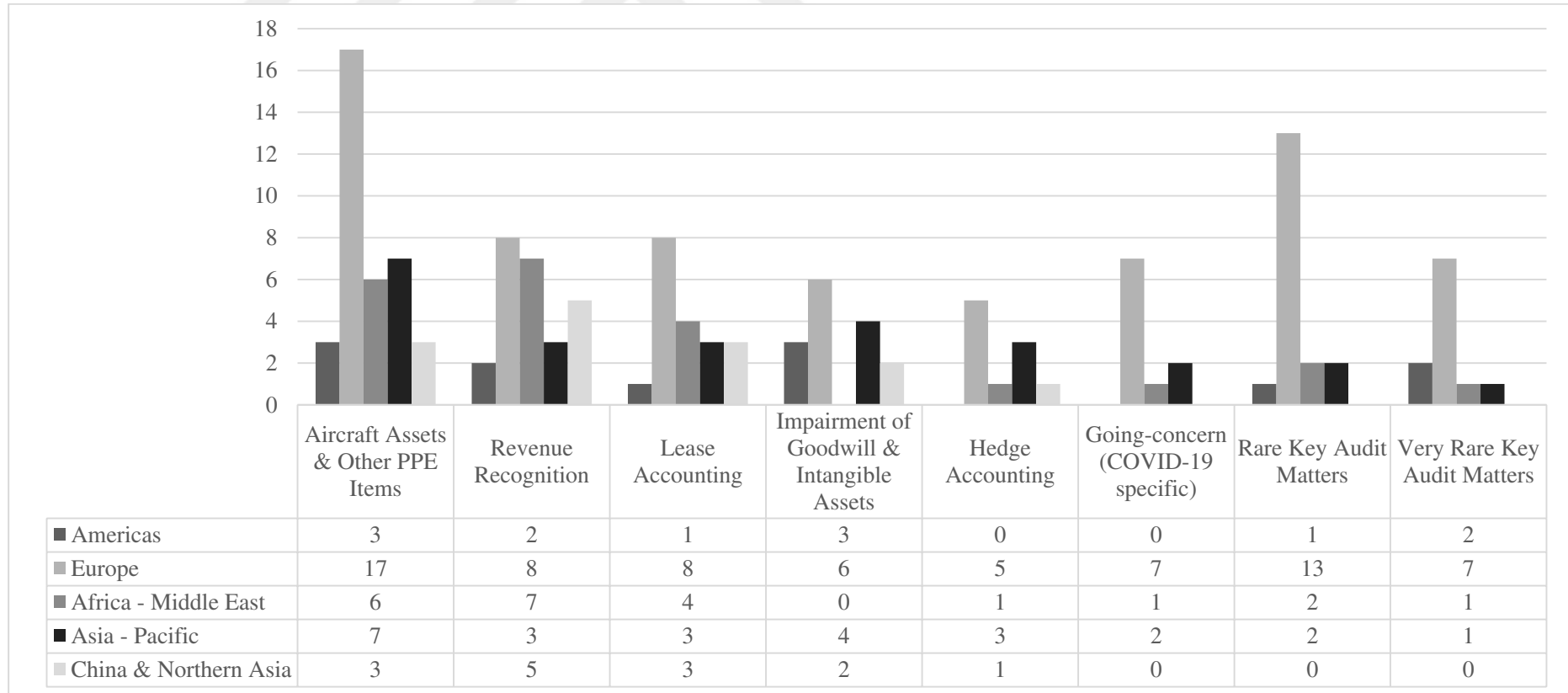


Figure 27: Frequent, Rare and Very Rare KAMs in the airline industry in 2021

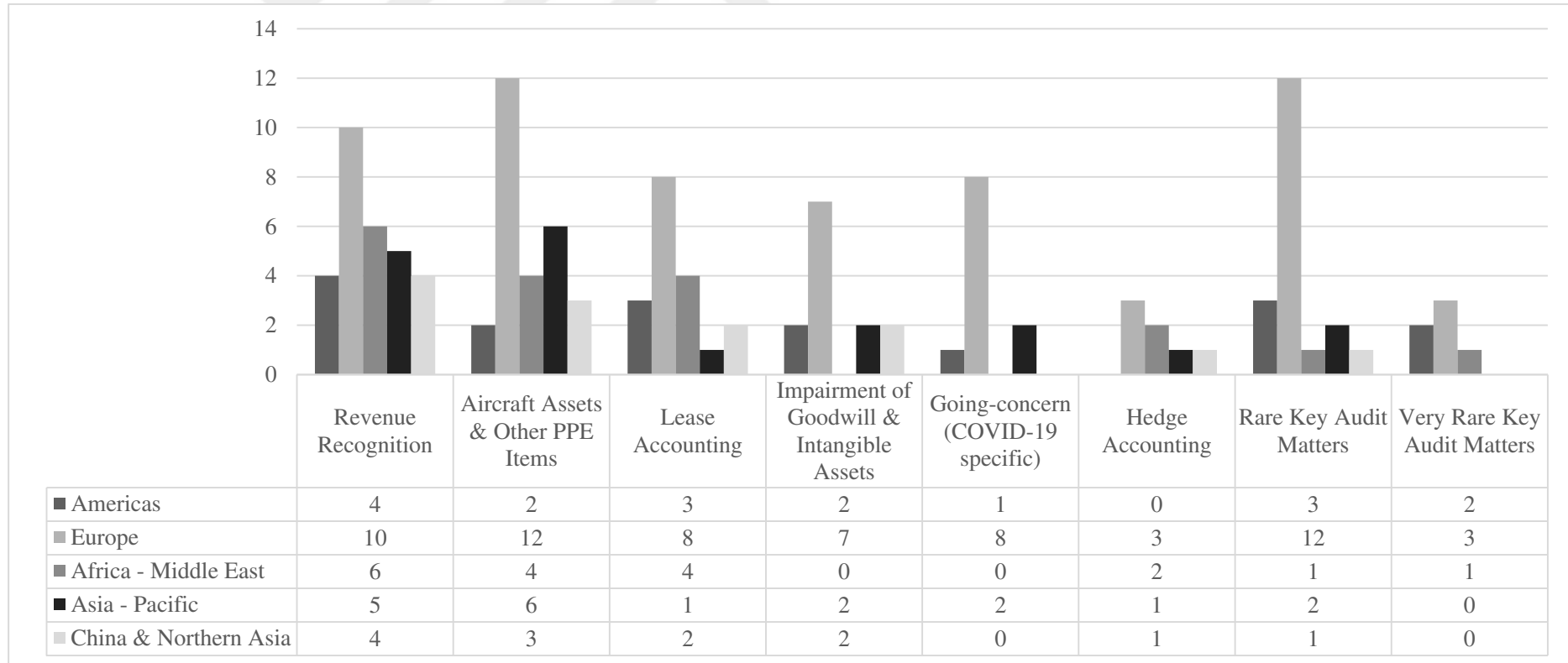
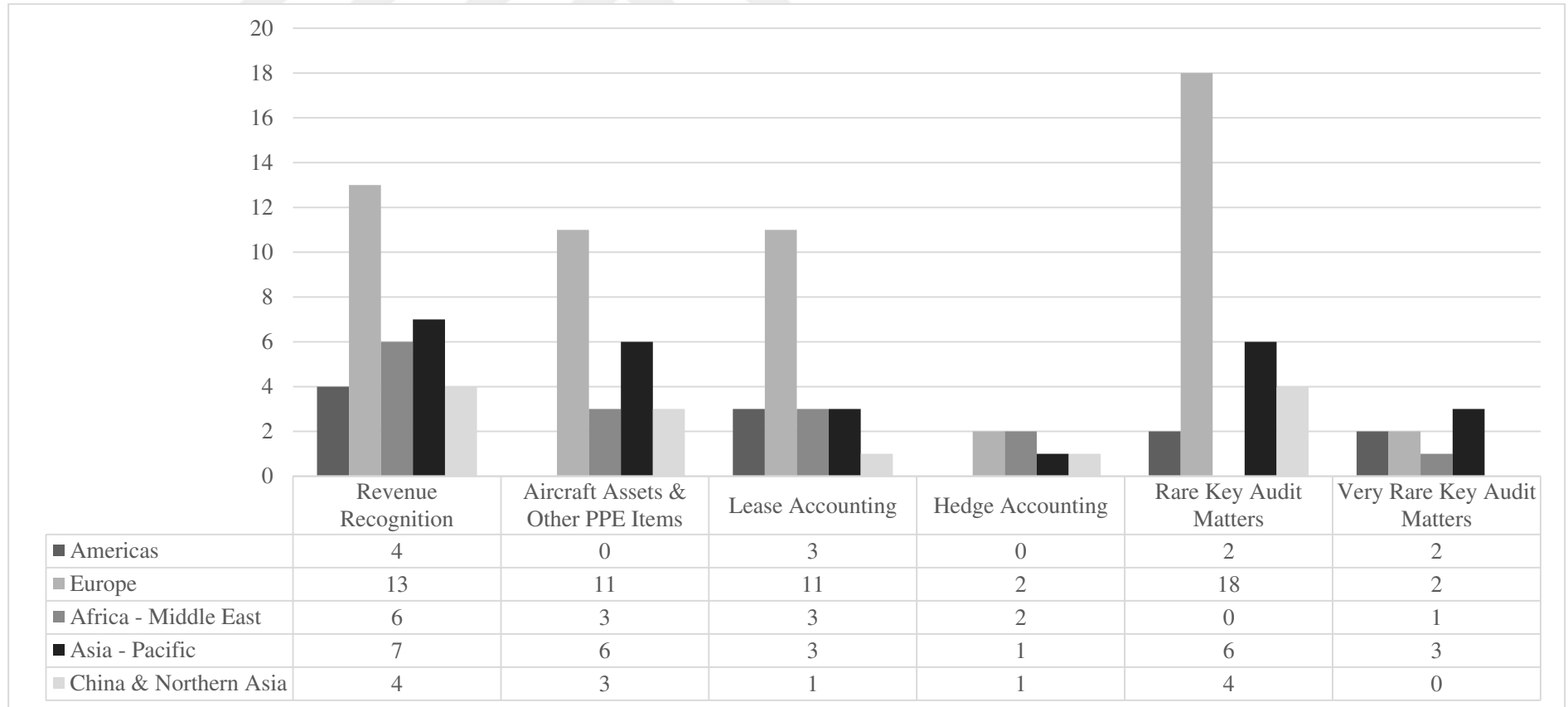


Figure 28: Frequent, Rare and Very Rare KAMs in the airline industry in 2022



Within the framework of these observations, the research reveals the following rankings comparatively since 2018 in terms of frequently observed KAMs in the airline industry from 2019 to 2022 (Table 30).

Table 30: Rankings of Frequently Observed KAMs in the airline industry

Year	2018	2019	2020	2021	2022
Period	Pre-COVID-19	Pre-COVID-19	COVID-19	COVID-19	Post-COVID-19
	Öztürk (2022c)				
1	Revenue recognition	Revenue recognition	Aircraft assets & other PPE items	Revenue recognition	Revenue recognition
2	Lease accounting	Lease accounting	Revenue recognition	Aircraft assets & other PPE items	Aircraft assets & other PPE items
3	Aircraft assets & other PPE items	Aircraft assets & other PPE items	Lease accounting	Lease accounting	Lease accounting
4	Hedge accounting	Hedge accounting	Impairment of Goodwill & Intangible Assets	Impairment of Goodwill & Intangible Assets	Hedge accounting
5			Hedge accounting	Going-concern (COVID-19)	
6			Going-concern (COVID-19)	Hedge accounting	

To understand the rationale behind such rankings of frequently observed KAMs in the airline industry from 2018 to 2022, these KAMs of the airline industry are analyzed below on a sub-topical basis.

6.2.2. Sub-Topical Content Analysis of KAMs in Audit Reports of Airlines

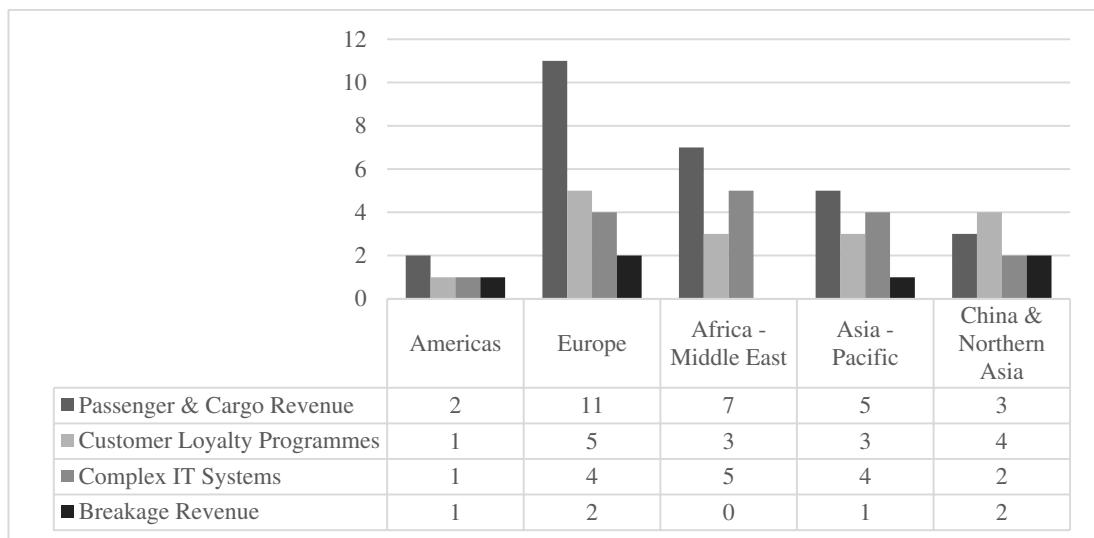
This section of the thesis analyses the KAMs in terms of their sub-topical content. Therefore, details of KAMs are analyzed.

6.2.2.1. KAMs related to Revenue Recognition

KAMs related to revenue recognition consist of 26% of total observations in year 2019. This makes the revenue recognition as the most frequently observed KAM in 2019 as it was in the case of 2018. It should be noted that the year 2018 is the first year of adoption of the new revenue standard IFRS 15 (Öztürk 2022a). Following 2018, the year 2019 consists of the second year of the adoption of the new revenue standard. Therefore, auditors strongly evaluated the accurate adoption and recognition of the new revenue recognition process in 2019 as it was in 2018. In line with the research of Öztürk (2022c), the composition of revenue recognition is divided into four sub-categories: (1) revenue recognition for passenger and cargo services; (2) customer loyalty programs; (3) complex IT systems; and (4) breakage revenue.

Within the framework of the 66 observations of KAMs related to the composition of revenue recognition (Figure 29), (a) 42% of observations are related to the accurate determination and recognition of revenue for passenger and cargo services; (b) 24% of observations belongs to the accurate determination and recognition of passenger revenue using complex IT systems as well as accurate recognition of customer loyalty programs such as accurate recognition of frequent flyer programs in the airline industry; and (c) 9% belongs to the recognition of breakage revenue.

Figure 29: Classification of revenue recognition as a KAM by airlines in 2019

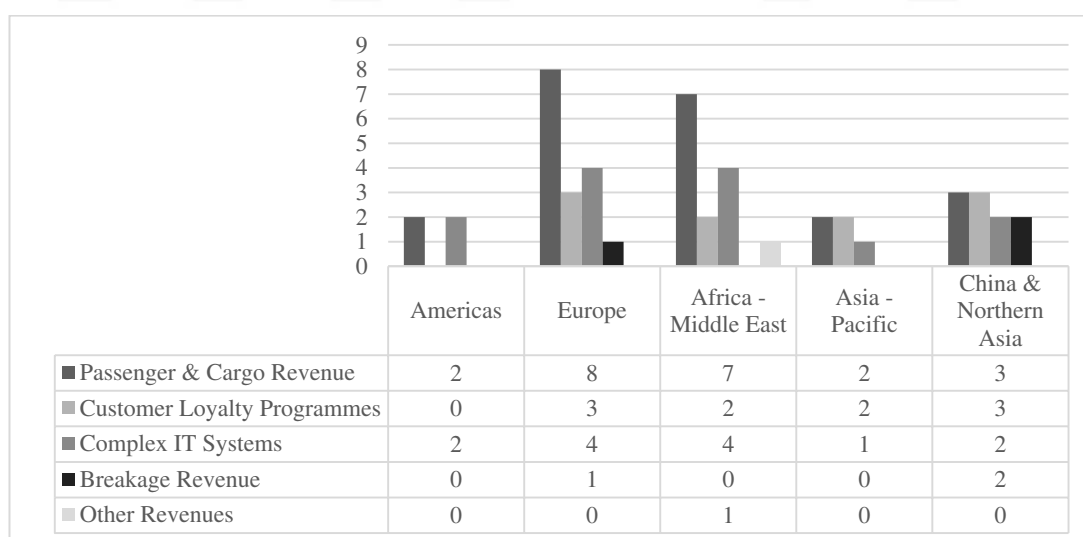


Compared to the years 2018, and 2019, KAMs related to revenue recognition ranks second rather than first in 2020 and consist of 17% of total observations. The

rationale behind such change is based on the fact of COVID-19 outbreak. COVID-19 outbreak made aircraft assets and other PPE items as a KAM more important than revenue recognition for auditors due to uncertainty in determining whether there is an impairment. But revenue recognition as a KAM is still important for auditors in 2020 for the accurate determination and recognition of revenue under the conditions of pandemic. The composition of revenue recognition is divided into five sub-categories rather than four categories in 2020: (1) revenue recognition for passenger and cargo services; (2) customer loyalty programs; (3) complex IT systems; (4) breakage revenue and (5) other revenue.

Within the framework of the 41 observations of KAMs related to revenue recognition (Figure 30), (a) 45% of observations are related to the accurate determination and recognition of passenger and cargo services; (b) 27% of observations belongs to the accurate determination and recognition of passenger revenue using complex IT systems; (c) 20% of observations is related to the accurate recognition of customer loyalty programs; and (d) 6% belongs to the recognition of breakage revenue.

Figure 30: Classification of revenue recognition as a KAM by airlines in 2020

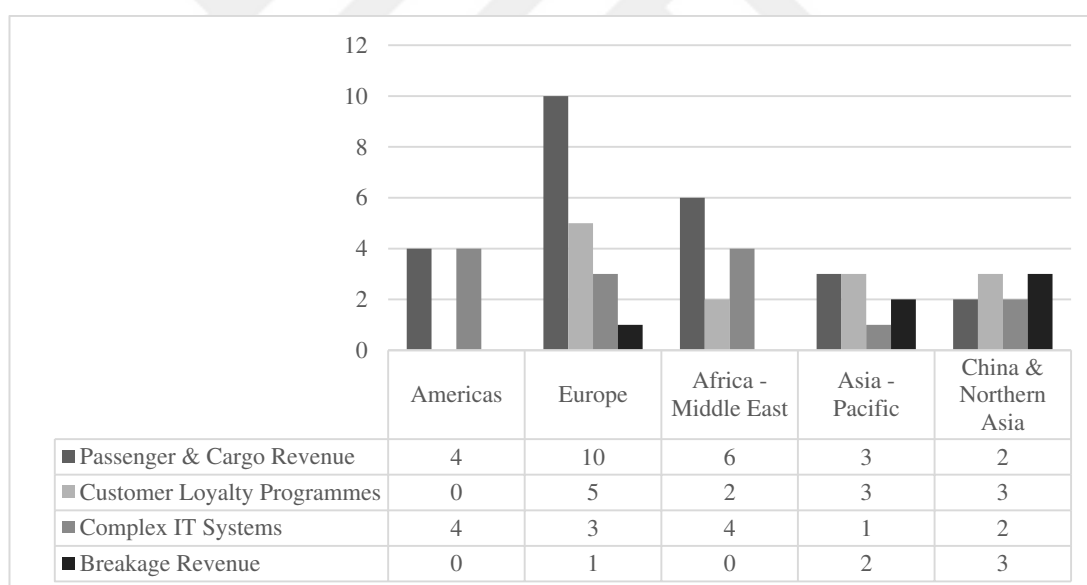


Compared to the year 2020, KAMs related to revenue recognition ranks first rather than second in 2021 and consist of 22% of total observations. The rationale behind such change is based on the fact of the recovery from COVID-19 outbreak. Due to the recovery from COVID-19 outbreak, the uncertainties experienced in aircraft assets and other PPE items as a KAM became less uncertain than it was in the case of

2020. Therefore, auditors gave primary consideration to revenue recognition as a KAM in 2021 but kept aircraft assets and other PPE items as a KAM significant for auditors under the conditions of the recovery from COVID-19. The composition of revenue recognition is divided into four sub-categories in 2021: (1) revenue recognition for passenger and cargo services; (2) customer loyalty programs; (3) complex IT systems; and (4) breakage revenue.

Within the framework of the 58 observations of KAMs related to revenue recognition (Figure 31), (a) 43% of observations are related to the accurate determination and recognition of passenger and cargo services; (b) 24% of observations belongs to the accurate determination and recognition of passenger revenue using complex IT systems; (c) 22% of observations is related to the accurate recognition of customer loyalty programs; and (d) 10% belongs to the recognition of breakage revenue.

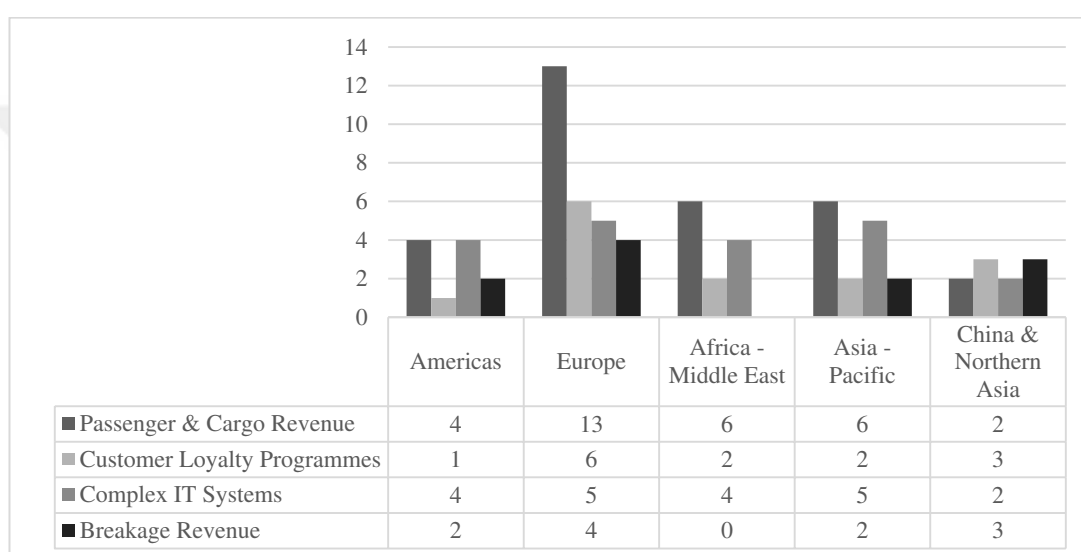
Figure 31: Classification of revenue recognition as a KAM by airlines in 2021



Following 2020, and 2021, KAMs related to revenue recognition continue ranking first in 2022 and consists of 28% of total observations. Auditors still places the process of revenue recognition more important than other KAMs in the airline industry. The composition of revenue recognition is divided into four sub- categories in 2022: (1) revenue recognition for passenger and cargo services; (2) customer loyalty programs; (3) complex IT systems; and (4) breakage revenue.

Within the framework of the 76 observations of KAMs related to revenue recognition (Figure 32), (a) 41% of observations are related to the accurate determination and recognition of passenger and cargo services; (b) 26% of observations belongs to the accurate determination and recognition of passenger revenue using complex IT systems; (c) 18% of observations is related to the accurate recognition of customer loyalty programs; and (d) 14% belongs to the recognition of breakage revenue.

Figure 32: Classification of revenue recognition as a KAM by airlines in 2022



In line with the findings of the year 2018, the composition of the revenue recognition as a KAM from 2019 to 2022 usually ranks as follows (Table 31): (1) revenue recognition for passenger and cargo services; (2) complex IT systems; (3) customer loyalty programs; and (4) breakage revenue. If not explicitly stated, revenue recognition for passenger and cargo services may include the analysis of breakage revenue as well.

Table 31: Change in the Composition of Revenue Recognition

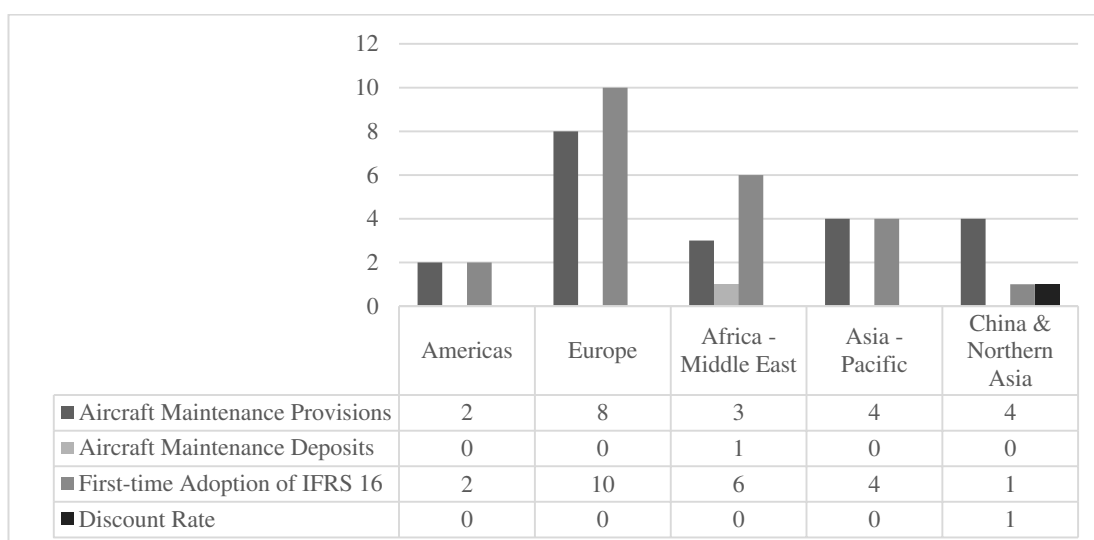
	2018	2019	2020	2021	2022
	Öztürk (2022c)				
Passenger & Cargo Revenue	45%	42%	45%	43%	41%
Customer Loyalty Programmes	19%	24%	20%	22%	18%
Complex IT Systems	21%	24%	27%	24%	26%
Breakage Revenue	15%	9%	6%	10%	14%

6.2.2.2. KAMs related to Lease Accounting

In line with the year 2018, lease accounting is the second most frequently observed KAM in 2019 and consists of 22% of total observations. It should be noted that the former standard on leases IAS 17 was in force in 2018 but the new lease standard IFRS 16 entered into force in 2019. Therefore, the year 2019 is the first year of the adoption of IFRS 16. Because airline industry as a lessee is a lease intensive industry, auditors attach importance the accurate recognition of lease transactions at all times. Compared to the year 2018, lease classification is not a subcategory anymore because all leases are capitalized by lessee regardless of the type of the leases. Therefore, auditors do not check whether the lease classification either operating or finance is correct anymore. Therefore, the composition of lease accounting is divided into four sub-categories in 2019 other than lease classification: (1) aircraft maintenance provisions; (2) aircraft maintenance deposits; (3) first-time adoption; and (4) discount rate.

Within the framework of the 46 observations of KAMs related to lease accounting (Figure 33), essentially (a) 50% of observations are related to the first-time adoption of the IFRS 16; and (b) 46% of observations belongs to the accurate determination and recognition of aircraft maintenance provisions.

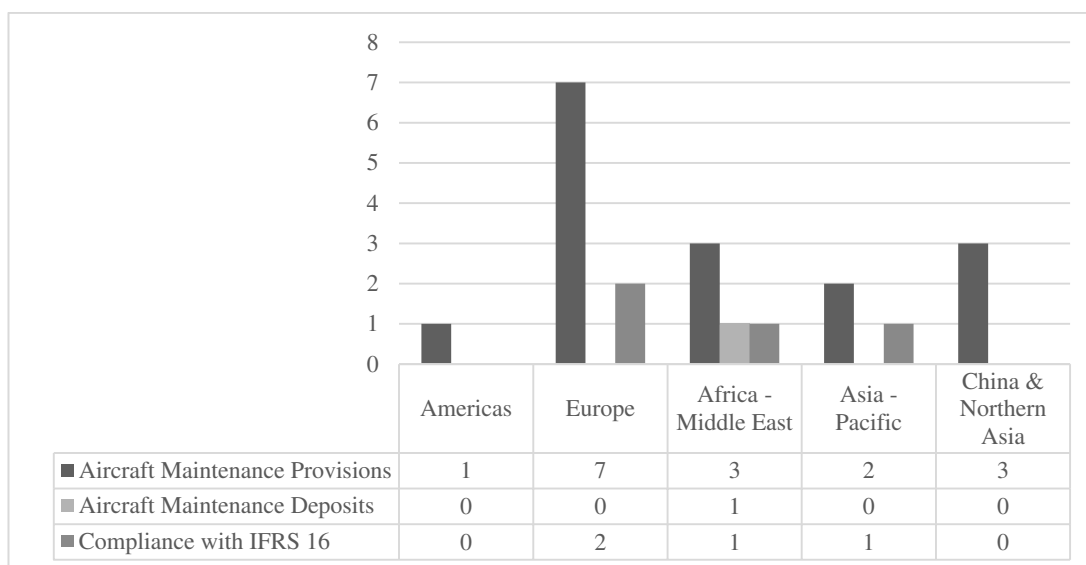
Figure 33: Classification of lease accounting as a KAM by airlines in 2019



Compared to the years 2018, and 2019, KAMs related to lease accounting ranks third rather than second in 2020 and consist of 13% of total observations. The rationale behind such change is based on the fact of COVID-19 outbreak. COVID-19 outbreak made aircraft assets and other PPE items as well as revenue recognition as KAMs more important than lease accounting for auditors depending on the uncertainties experienced due to COVID-19. Even if IFRS 16 requires the capitalization of all leases and it is the second year of the standard's adoption, accountants and auditors are familiar with the concept of aircraft maintenance provisions, and the concept of capitalization through the capitalization of finance leases in accordance with IAS 17. Therefore, priority was given to the uncertainties experienced in aircraft assets and other PPE items as well as revenue recognition as KAMs in 2020 due to COVID-19 outbreak. The composition of lease accounting is divided into three sub-categories rather than four in 2020: (1) aircraft maintenance provisions; (2) aircraft maintenance deposits; and (3) compliance with IFRS 16.

Within the framework of the 21 observations of KAMs related to lease accounting (Figure 34), (a) 76% of observations belongs to the accurate determination and recognition of aircraft maintenance provisions; (b) 19% of observations are related to the compliance with IFRS 16; and (c) 5% of observations belong to the accurate determination of aircraft maintenance deposits.

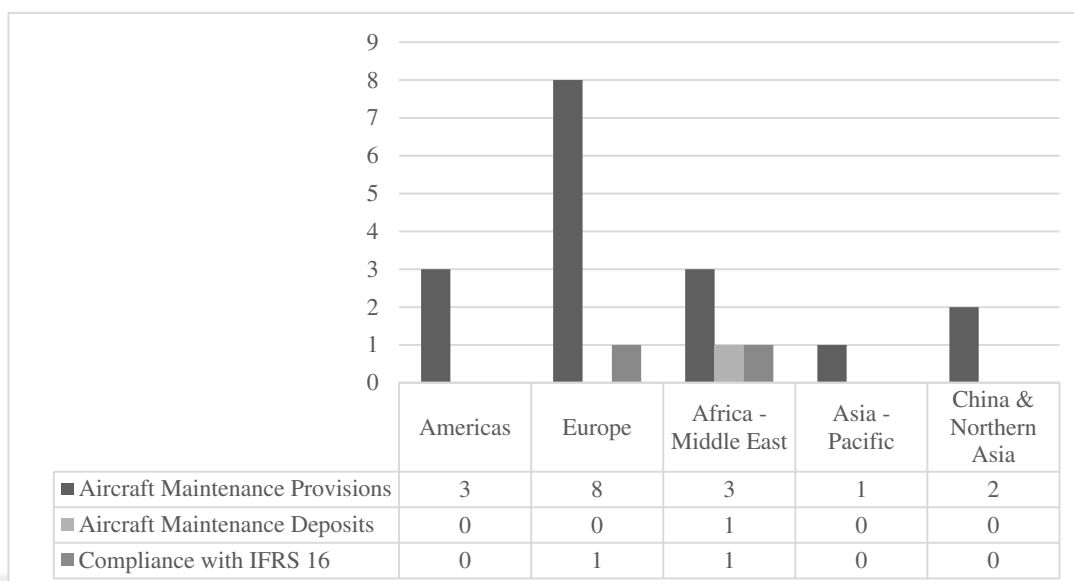
Figure 34: Classification of lease accounting as a KAM by airlines in 2020



In line with year 2020, KAMs related to lease accounting still ranks third in 2021, and consists of 14% of total observations because aircraft assets and other PPE items as well as revenue recognition as KAMs are still more important than lease accounting for auditors depending on the uncertainties during the recovery phase of the COVID-19 outbreak. The composition of lease accounting is divided into three sub-categories in 2021 in line with 2020: (1) aircraft maintenance provisions; (2) aircraft maintenance deposits; and (3) compliance with IFRS 16.

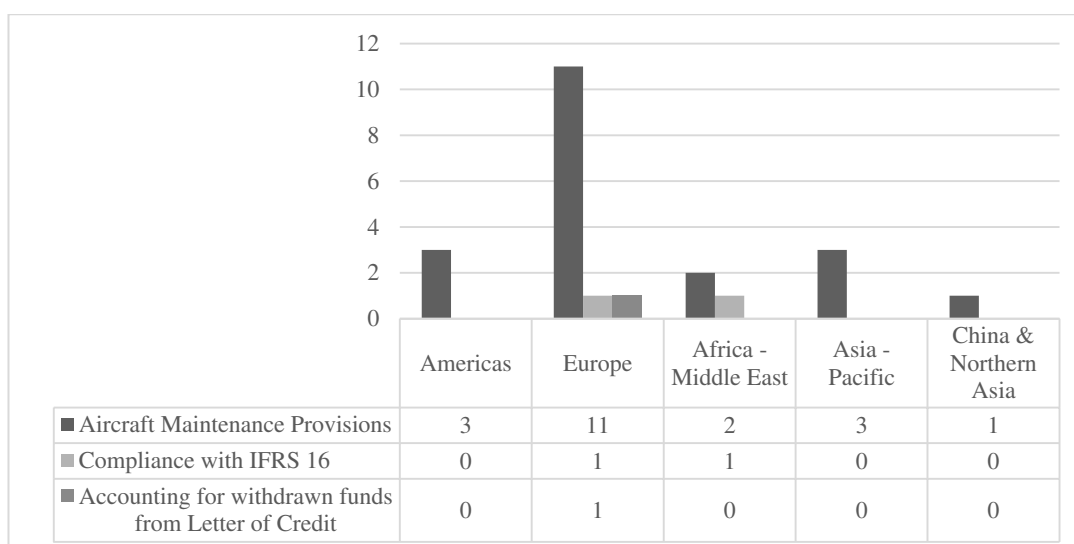
Within the framework of the 21 observations of KAMs related to lease accounting (Figure 35), (a) 85% of observations belongs to the accurate determination and recognition of aircraft maintenance provisions; (b) 10% of observations are related to the compliance with IFRS 16; and (c) 5% of observations belongs to the accurate determination of aircraft maintenance deposits.

Figure 35: Classification of lease accounting as a KAM by airlines in 2021



Following the recovery period from COVID-19 outbreak, KAMs related to lease accounting still ranks third in 2022 and consists of 17% of total observations. Revenue recognition and aircraft assets are still primarily important. The composition of lease accounting is divided into three sub-categories in 2022: (1) aircraft maintenance provisions; (2) accounting for withdrawn funds from letter of credit due to leases; and (3) compliance with IFRS 16.

Figure 36: Classification of lease accounting as a KAM by airlines in 2022



Within the framework of the 21 observations of KAMs related to lease accounting (Figure 36), essentially (a) 87% of observations belongs to the accurate

determination and recognition of aircraft maintenance provisions; and (b) 9% of observations are related to the compliance with IFRS 16.

In line with the year 2018, accurate determination and recognition of aircraft maintenance provisions is the significant KAM item of lease accounting from 2019 to 2022 (Table 32). Aircraft maintenance provisions are followed by either first-time adoption of or compliance with IFRS 16.

Table 32: Change in the Composition of Lease Accounting

	2018	2019	2020	2021	2022
	Öztürk (2022c)				
Aircraft Maintenance Provisions	62%	46%	76%	85%	87%
Aircraft Maintenance Deposits	10%	2%	5%	5%	%
Lease Classification	17%	-	-	-	-
Early Adoption of IFRS 16	7%	-	-	-	-
Expected Impact of IFRS 16	4%	-	-	-	-
First-time Adoption of IFRS 16	-	50%	-	-	-
Compliance with IFRS 16	-	-	19%	10%	9%
Discount Rate	-	2%	-	-	-
Accounting for withdrawn funds from letter of credit	-	-	-	-	4%

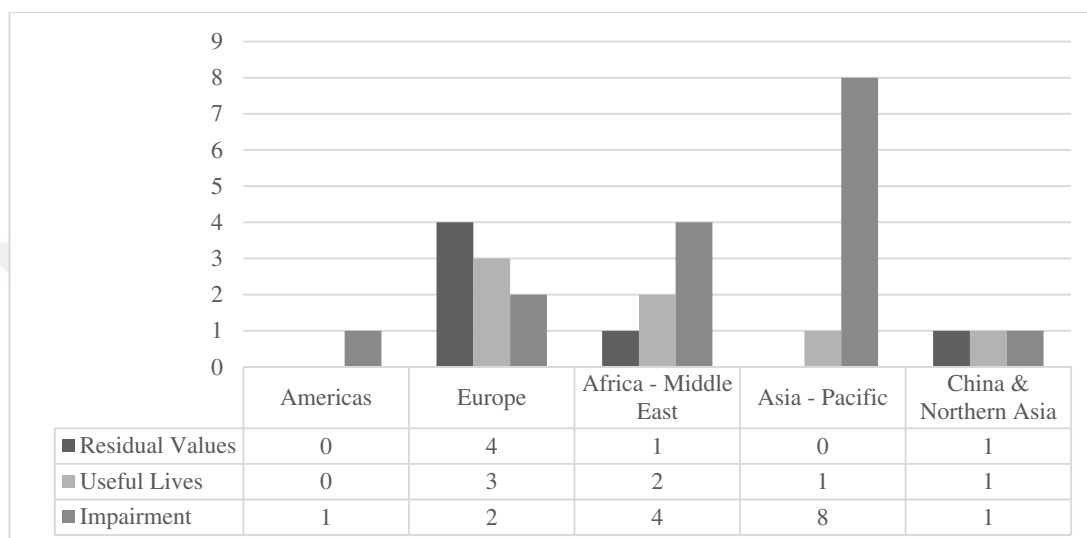
6.2.2.3. KAMs related to Aircraft Assets and Other PPE Items

In line with the year 2018, KAMs related to aircraft assets and other PPE items rank third in 2019 and consists of 12% of total observations. Since the uncertainties particularly related to the determination of impairment in accordance with IAS 36 Impairment of Assets did not exist in 2019, priority was given revenue recognition due to second year's adoption of IFRS 15, and first-year's adoption of IFRS 16 in the audit process. The composition of aircraft assets and other PPE items is usually divided into three sub-categories: (1) residual values; (2) useful lives; and (3) impairment.

Within the framework of the 29 observations of KAMs related to aircraft assets and other PPE items (Figure 37), (a) 55% of observations are related to the recoverability of aircraft assets and other PPE items; (b) 24% of observations belongs to the accurate determination of useful lives; and (c) 21% of observations are related to the accurate determination of residual values.

The percentage increase of the observations related to the recoverability of aircraft assets and other PPE items consists of the first signals of COVID-19 outbreak due to the uncertainties experienced in the audit process, because some airlines from Asia-Pacific published their 31.12.2019 financial statements in 2020 as a date equivalent to December 31, 2019.

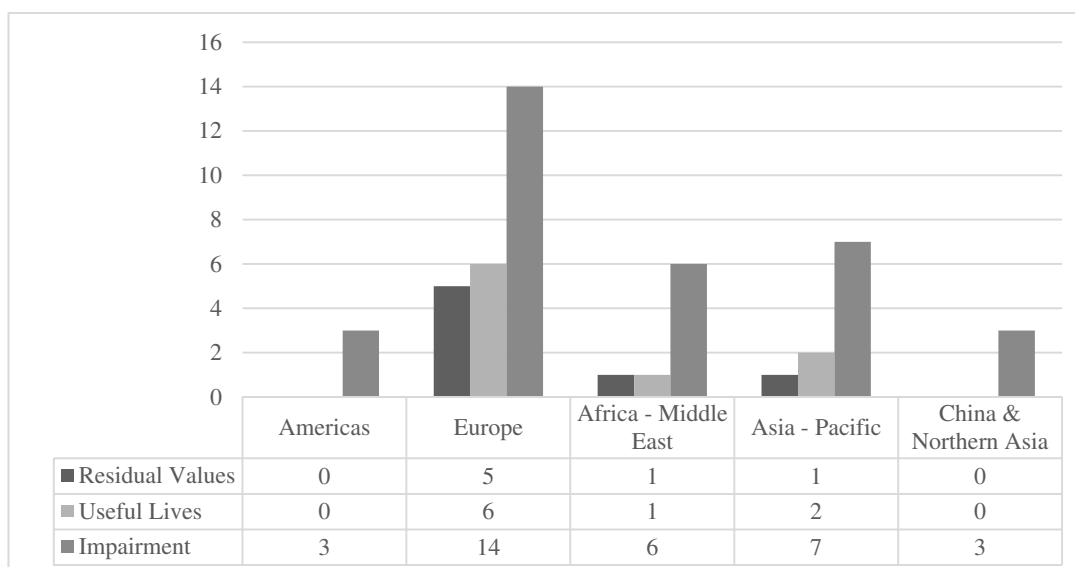
Figure 37: Classification of PPE items as a KAM by airlines in 2019



Compared to 2018, and 2019, KAMs related to aircraft assets and other PPE items ranks first rather than third in 2020 and consists of 25% of total observations in 2020. The uncertainty related to the determination of the recoverability of aircraft assets and other PPE items maximized due to the uncertainty experienced in COVID-19 outbreak during the audit process.

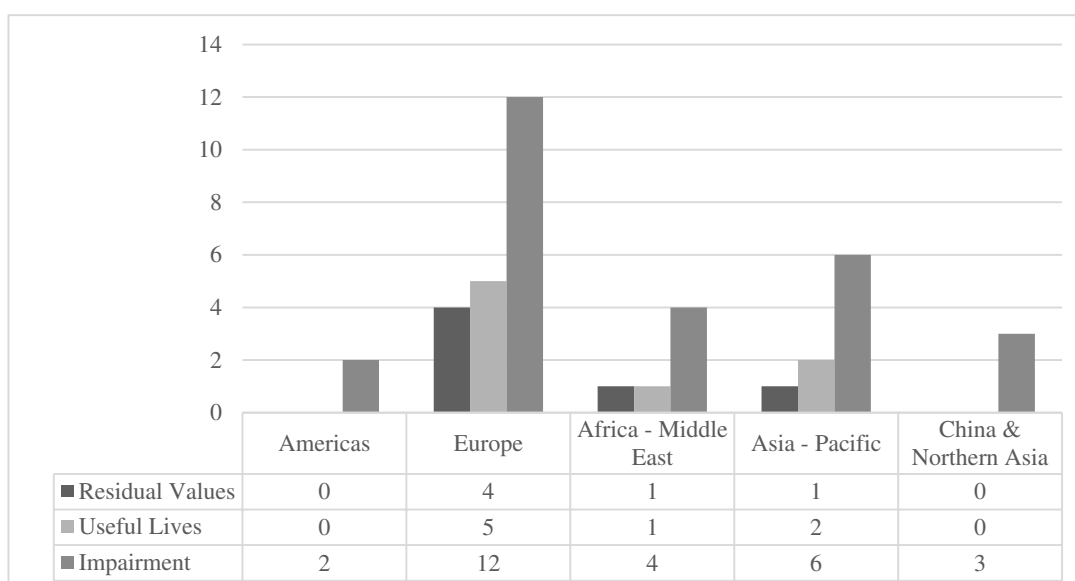
Within the framework of the 49 observations of KAMs related to aircraft assets and other PPE items (Figure 38), (a) 67% of observations are related to the recoverability of aircraft assets and other PPE items; (b) 18% of observations belongs to the accurate determination of useful lives; and (c) 14% of observations are related to the accurate determination of residual values.

Figure 38: Classification of PPE items as a KAM in the airline industry in 2020



Compared to 2020, KAMs related to aircraft assets and other PPE items rank second rather than first and consists of 21% of total observations in 2021. Even though revenue recognition ranks first, and aircraft assets and other PPE items ranks second in 2021, there is 1% difference between them as observations of KAMs. Therefore, the uncertainty experienced in revenue recognition as well as in the recoverability of aircraft assets and other PPE items is still significant in the recovery phase of the COVID-19 outbreak while audit process takes place.

Figure 39: Classification of PPE items as a KAM in the airline industry in 2021

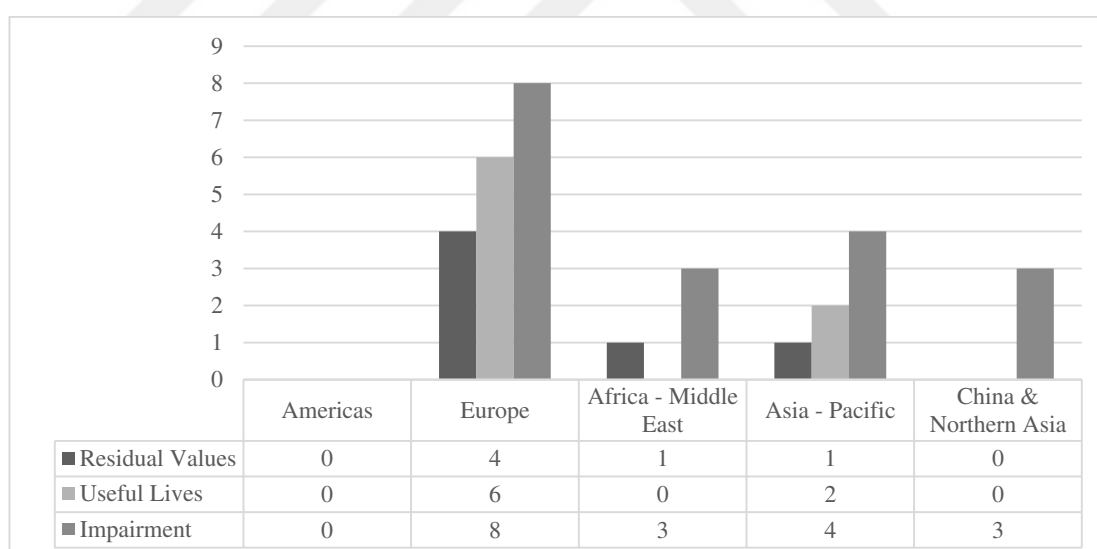


Within the framework of the 49 observations of KAMs related to aircraft assets and other PPE items (Figure 39), (a) 66% of observations are related to the recoverability of aircraft assets and other PPE items; (b) 20% of observations belongs to the accurate determination of useful lives; and (c) 15% of observations are related to the accurate determination of residual values.

Following 2020, and 2021, KAMs related to aircraft assets and other PPE items continue to rank second in 2022 and consists of 19% of total observations. Following the recovery from COVID-19, the uncertainties of impairment and of the determination of the recoverability of such assets declined.

Within the framework of the 32 observations of KAMs related to aircraft assets and other PPE items (Figure 40), (a) 56% of observations are related to the recoverability of aircraft assets and other PPE items; (b) 25% of observations belongs to the accurate determination of useful lives; and (c) 19% of observations are related to the accurate determination of residual values.

Figure 40: Classification of PPE items as a KAM in the airline industry in 2022



In the year 2018, the composition of the aircraft assets and other PPE items as a KAM indicates a balanced structure around 30% (Table 33). From 2019 to 2021, residual values and useful lives reveal a downward trend versus impairment indicates an upward trend due to uncertainties experienced during the COVID-19 period. In 2022, residual values and useful lives reveal an upward trend versus impairment indicates a downward trend following the COVID-19 outbreak.

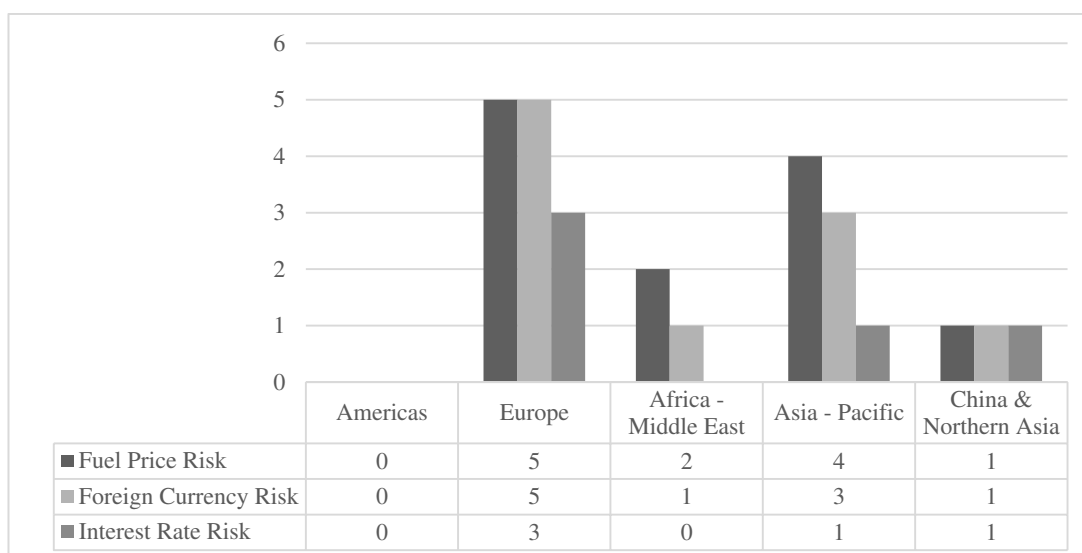
Table 33: Change in the Composition of Aircraft Assets and Other PPE Items

	2018	2019	2020	2021	2022
	Öztürk (2022c)				
Residual Values	35%	21%	14%	15%	19%
Useful Lives	31%	24%	18%	20%	25%
Impairment	53%	55%	67%	66%	56%

6.2.2.4. KAMs related to Hedge Accounting

In line with the year 2018, KAMs related to hedge accounting ranks fourth in 2019 and consists of 11% of total observations. Airlines try to avoid from certain risks while they operate through hedge accounting. The composition of hedge accounting is usually divided into three sub-categories: (1) fuel price risk; (2) foreign currency risk; and (3) interest rate risk.

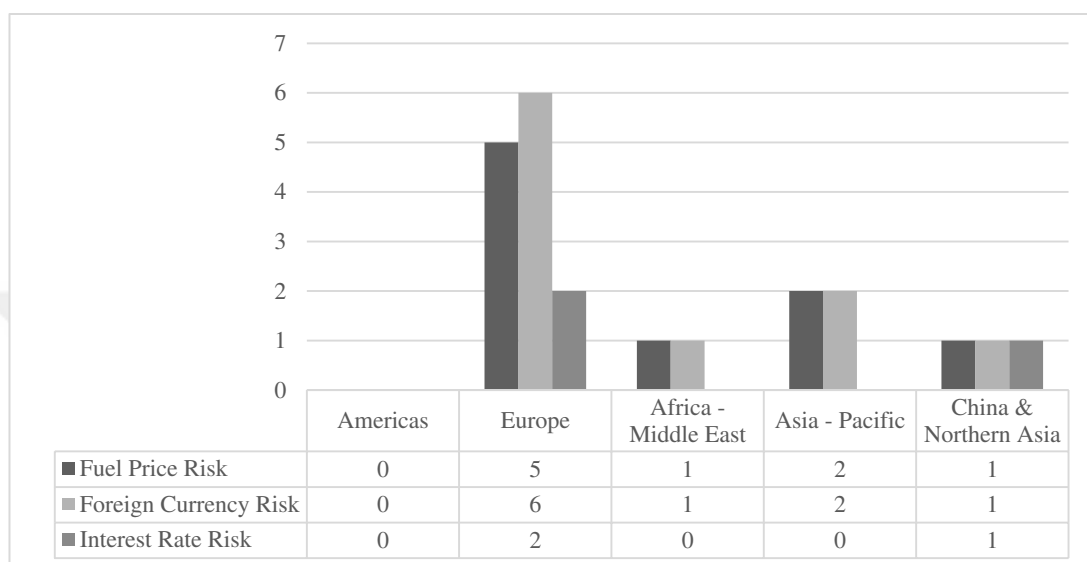
Within the framework of the 27 observations of KAMs related to hedge accounting (Figure 41), 44 % of observations are related to the fuel price risk; 37% of observations belongs to the foreign currency risk; and 19% of observations are related to the interest rate risk.

Figure 41: Classification of hedge accounting as a KAM by airlines in 2019

Compared to 2018, and 2019, hedge accounting ranks fifth in the COVID-19 outbreak because airlines ceased their operations and risks that require hedging minimized. The significance of hedge accounting in the audit process declined and KAMs related to hedge accounting consists of 7% of total observations.

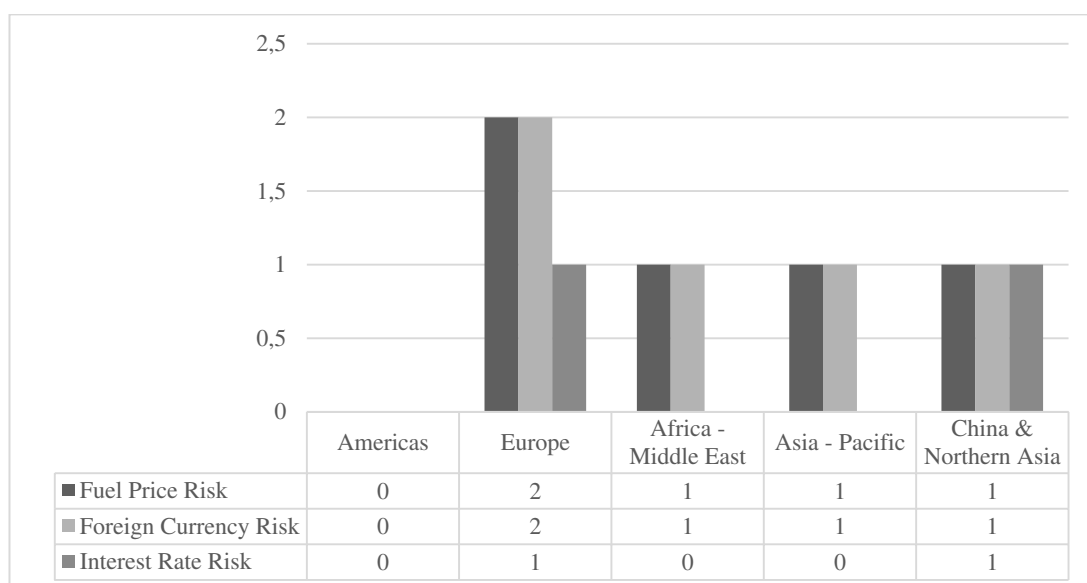
Within the framework of the 22 observations of KAMs related to hedge accounting (Figure 42), (a) 45% of observations belongs to the foreign currency risk; (b) 41 % of observations are related to the fuel price risk; and (c) 14% of observations are related to the interest rate risk.

Figure 42: Classification of hedge accounting as a KAM by airlines in 2020



Following fifth rank in 2020, KAMs related to hedge accounting ranks sixth in 2021 and consists of 5% of total observations. Due to COVID-19, airlines ceased their operations and risks that require hedging still minimized.

Figure 43: Classification of hedge accounting as a KAM by airlines in 2021

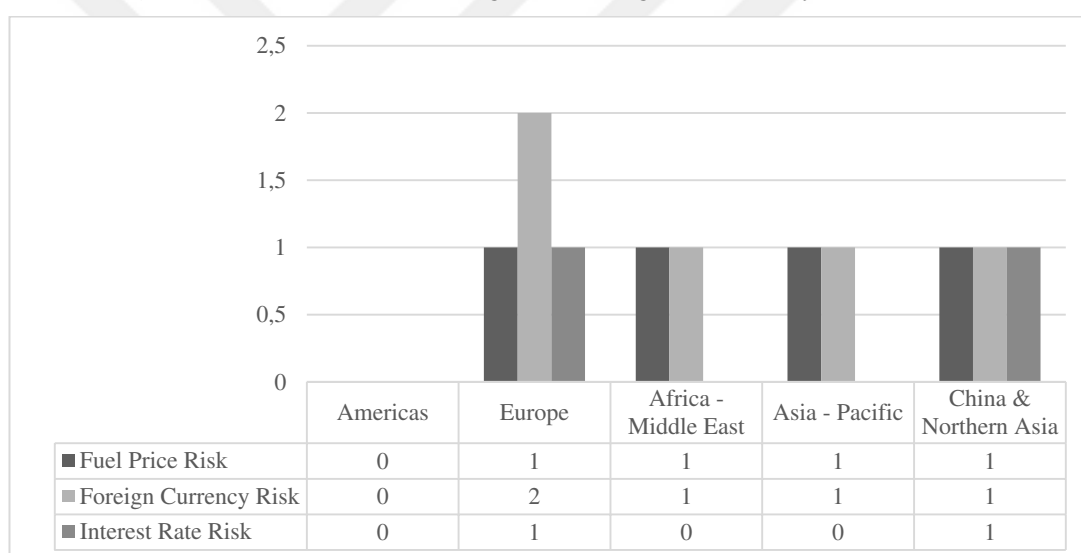


Within the framework of the 12 observations of KAMs related to hedge accounting (Figure 43), (a) 42% of observations belongs to the foreign currency risk as well as the fuel price risk; and (b) 17% of observations are related to the interest rate risk.

Following the COVID-19 outbreak, KAMs related to hedge accounting ranks fourth frequently observed KAM in 2022 and consists of 5% of total observations. Airlines fully started their operations and risks that require hedging again exist.

Within the framework of the 11 observations of KAMs related to hedge accounting (Figure 44), 45% of observations belongs to the foreign currency risk, 36% of observations are related to fuel price risk; and 18% of observations are related to the interest rate risk.

Figure 44: Classification of hedge accounting as a KAM by airlines in 2022



In terms of the change in the composition of hedge accounting, research reveals that there are no major changes in the risks that airlines face with (Table 34).

Table 34: Change in the Composition of Hedge Accounting

	2018	2019	2020	2021	2022
	Öztürk (2022c)				
Foreign currency risk	35%	37%	45%	42%	45%
Fuel price risk	40%	44%	41%	42%	36%
Interest rate risk	25%	19%	14%	17%	18%

6.2.2.5. KAM related to Impairment of Goodwill & Intangible Assets

KAM related to the impairment of goodwill and intangible assets was classified in rare KAMs in the airline industry in 2018 and 2019. However, the uncertainties on how to determine the impairment of such assets made these assets frequently observed KAM in the COVID-19 outbreak. KAM related to the impairment of goodwill and intangible assets consist of 10% of total observations and ranks as fourth frequently observed KAM in 2020 and 2021. In 2022, the uncertainty decreased, and it turned out to be again a rare KAM.

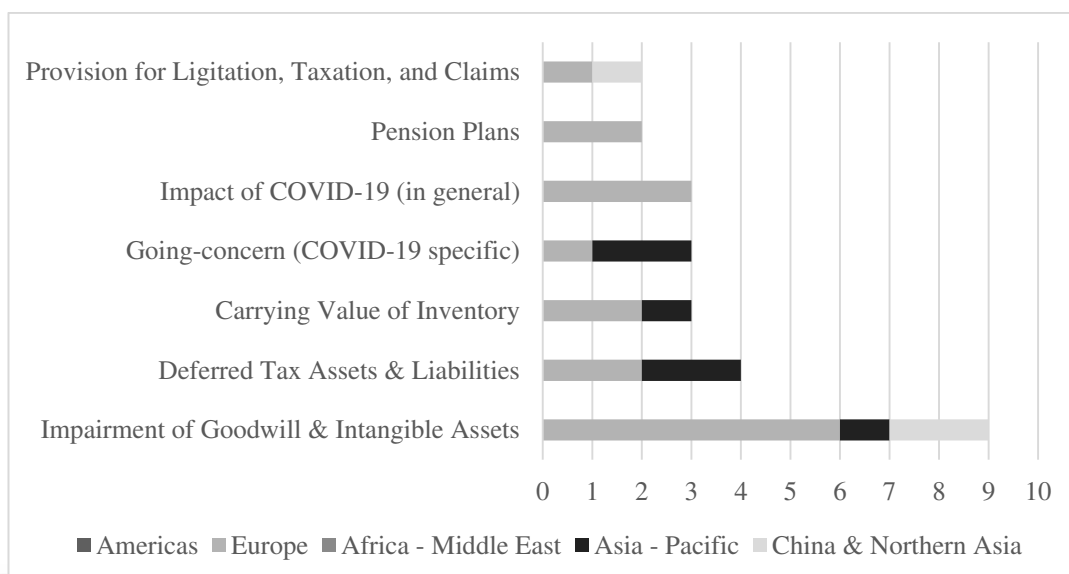
6.2.2.6. KAM related to Going-concern specific to COVID-19

In 2019, going-concern (COVID-19) was a rare KAM in the airline industry reflecting the Asia-Pacific effect from 2020. However, in 2020, and 2021 it became the sixth frequently observed KAM and respectively refers to 7% and 8% of total observations. Following the COVID-19, it turned out to be rare. As a KAM, auditors had doubt about the financial health and survival of airlines. Therefore, they analyzed the precautions taken by the airlines' management to make sure whether airlines met the going-concern assumption of accounting.

6.2.2.7. Rare KAMs in the Airline Industry

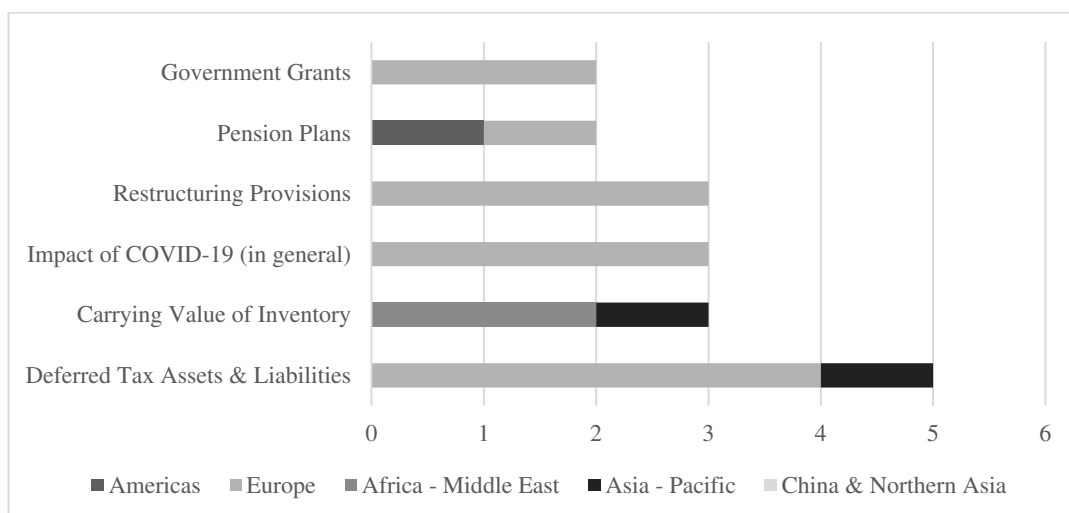
In 2019, 21% of total observations refers to the rare KAMs in the airline industry (Figure 45). These KAMs are industry-specific such as provision for litigation, taxation, and claims, impairment of goodwill and intangible assets; entity-specific such as deferred tax assets and liabilities, carrying value of inventory, and pension plans; COVID-specific such as impact of COVID-19 (in general), and going concern (COVID-19 specific).

Figure 45: Rare KAMs in the airline industry in 2019



In 2020, 13% of total observations refers to the rare KAMs in the airline industry (Figure 46). Compared to 2018, and 2019, these KAMs are entity-specific such as deferred tax assets and liabilities, carrying value of inventory, restructuring provisions, government grants and pension plans; and COVID-specific such as impact of COVID-19 (in general).

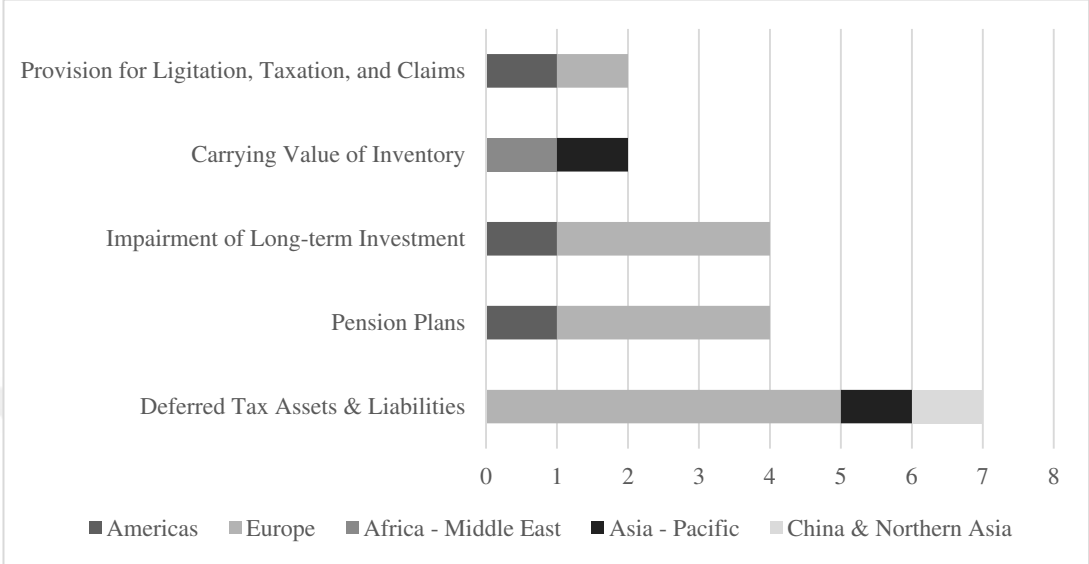
Figure 46: Rare KAMs in the airline industry in 2020



In 2021, 15% of total observations refers to the rare KAMs in the airline industry (Figure 47). Compared to 2020, these KAMs are as industry-specific such as provision for litigation, taxation and claims; entity-specific such as deferred tax assets

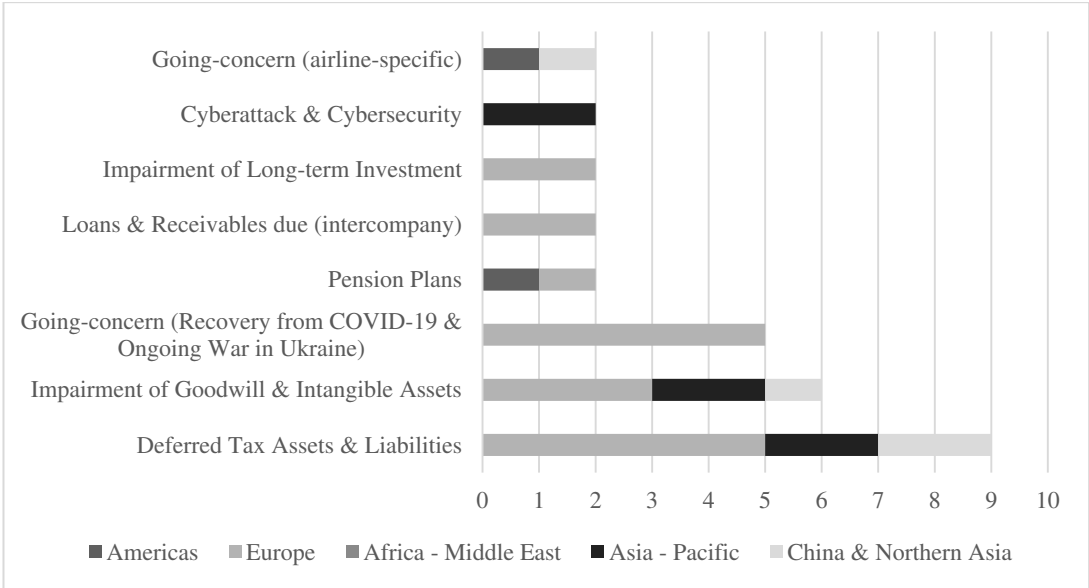
and liabilities, carrying value of inventory, impairment of long-term investment, and pension plans.

Figure 47: Rare KAMs in the airline industry in 2021



In 2022, 25% of total observations refers to the rare KAMs in the airline industry (Figure 48). These KAMs are classified as industry-specific such as impairment of goodwill and intangible assets; entity-specific such as deferred tax assets and liabilities, impairment of long-term investment, loans and receivables due (intercompany), cyberattack and cybersecurity, pension plans, going-concern (airline-specific), and going-concern (recovery from COVID-19 and ongoing war in Ukraine).

Figure 48: Rare KAMs in the airline industry in 2022



6.2.2.8. Very Rare KAMs in the Airline Industry

In 2019, 8% of total observations refers to the very rare KAMs in the airline industry. They are observed once and entity specific. They include acquisition accounting, recapitalization, French tax investigation, classification of investments, classification of exceptional and other items, cyberattack & cybersecurity, convertible bonds, restructuring provisions, government grants, and going-concern (airline-specific).

In 2020, 8% of total observations refers to the very rare KAMs in the airline industry. They are observed once. Except for the provision for litigation, taxation, and claims as an industry-specific observation, others are entity-specific and include defined employee benefit plans, accounting for short-term working allowances, valuation of investment properties, French tax investigation, classification of exceptional and other items, risk of material misstatement, convertible notes, stock warrant obligations, assets and liabilities held for sale, and going-concern (airline-specific).

In 2021, 5% of total observations refers to the very rare KAMs in the airline industry. They are observed once. Except for the impact of COVID-19 (in general) as a COVID-specific KAM, others are entity-specific and include valuation of investment properties, SAS Forward Business Transformation Plan, non-recurring expenses, stock warrant obligations, and going-concern (airline-specific).

In 2022, 7% of total observations refers to the very rare KAMs in the airline industry. They are observed once. They are entity-specific and include restructuring plan on going-concern, new financial reporting system, valuation of investment properties, SAS Forward Business Transformation Plan, stock warrant obligations, risk provision (tax dispute), accounting for joint-ventures, and carrying value of inventory.

6.3. Overall Analysis

Elements of describing KAMs are consistent with Öztürk (2022c) and KAMs reported are consistent with prior research of Özçelik (2020) and Öztürk (2022c). Similar results were obtained following 2018. KAMs are mostly related to the key issues of accounting in the airline industry as stated by Lavi (2016) except for the COVID-19 effect. Hypothesis 3H1 and 3H2 hold.

CONCLUSION

This thesis focuses on the effect of COVID-19 pandemic over the liquidity, solvency, and profitability ratios in terms of financial situation and financial performance of selected airlines and over the KAMs of those airlines. In this regard, it takes into account airlines adopting IFRSs and ISAs. It also analyses the general perspectives on international auditing in the airline industry.

In the context of ratio analysis to analyze the effect of COVID-19 pandemic over the liquidity, solvency and profitability ratios, the starting point of this research consists of the prior research of Karadeniz and Aydın (2023). This paper analyses the period from 2016 to 2021 including the COVID-19 period but with some reservations. In the general context of accounting and financial reporting, their results are not misleading, but they are not in the common denominator of certain financial reporting framework such as IFRS. Therefore, this research revisits the prior research of Karadeniz and Aydın (2023) by establishing a sample from IFRS airlines whose semiannual and annual financial statements are available, and whose year-end financial statements refers to December 31.

In the context of liquidity and solvency ratios, results reveal that these ratios have been negatively affected by the loans borrowed by airlines during COVID-19 period to rescue themselves as well as by the capitalization of operating lease liabilities in accordance with IFRS 16 that was entered into force in 2019. In this context, it should be noted that the follow-up of the adoption of a new IFRS may have significant effect over the ratio analysis as it is in the case of IFRS 16 because airline industry is one of the most lease-oriented industry (IASB 2016). Therefore, the change in liquidity and solvency ratios cannot be explained by the loans borrowed, only. Financial analyst should consider expected changes in the accounting policies of certain IFRS and their date of entering into force as it is in this case. Karadeniz and Aydın (2023) ignores this fact.

In the context of profitability ratios, results reveal that net sales significantly dropped due to the cease of flight operations. Therefore, asset turnover ratio declined.

In this context, it should be noted that net sales revenue is an indicator that the financial analyst should particularly consider in terms of the negative effect of COVID-19. Following the COVID-19, net sales started to recover due to the restart of flight operations. Over the decline in the interest coverage ability and overall profitability of airlines in the context of ROA, and ROE, not only the decline in net sales but also additional depreciation expenses and interest expenses due to the capitalization of operating lease liabilities in accordance with IFRS 16 and additional interest expenses due to loans borrowed have negative effect. To recover the profitability, net sales must primarily recover from COVID-19 through the restart of flight operations. Results reveal that profitability is expected to recover as expected by Renold et al. (2023).

In the context of general perspectives on international auditing, results reveal that the auditors of most airlines adopt ISAs. This indicates that ISAs have been widely adopted by many countries. Most airlines' financial statements are audited by international audit firms and particularly by Big-4 audit firms. Depending on country-specific auditor rotation mechanisms, it is possible to observe auditor rotation in the airline industry. Single auditor is essential except for the requirement of joint auditor in France. Audit opinions are mostly unqualified opinions but there are very rare qualified and adverse opinions which are not related to COVID-19. In the analysis, research indicates that one airline got a *disclaimer of opinion* due to COVID-19.

In the context of KAMs, results reveal that frequently observed KAMs in the airline industry refer to revenue recognition, aircraft assets and other property, plant, and equipment, lease accounting, and hedge accounting in line with the prior research of Özçelik (2020) and Öztürk (2022c). The ranking of KAMs varies from one period to another due to uncertainty experienced in COVID-19 period. The sub-topical analysis of KAMs also indicates that the significance of sub-topics varies depending on the circumstances such as COVID-19 as it is in the cases of (1) increased uncertainty of impairment of aircraft assets and other PPE items and (2) increased uncertainty of aircraft maintenance provisions of lease accounting. The specific KAM for the case of COVID-19 is the questioning of going-concern assumption in airlines in terms of financial health and survival.

Further research is to analyze the effect of the conflict between Russia and Ukraine over the liquidity, solvency, and profitability of affected airlines due to the cease of flight operations from and to Russia, and even China.



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