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Research Paper

The analysis of low-cost airlines' entrepreneurial behaviour through the lens of corporate foresight

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Abstract: During the last decade, low-cost airlines have dominated the European air transport market. The low-cost airline industry is expected to grow at a compound annual growth rate (CAGR) of more than thirteen percent from 2022 to 2027. In this study, we conducted a comparative case study analysis to analyse and compare the entrepreneurial behaviour of two of the most prominent players in the airline industry (Ryanair and Wizz Air). For example, our first research framework was used to examine how Ryanair and Wizz Air applied entrepreneurial behaviours (innovativeness, proactiveness, and risk-taking) to respond to changes due to Brexit and the Covid-19 pandemic. According to the results from the study's first framework and second framework (the process of foresight), Wizz Air responded more innovatively and proactively to the changes caused by Brexit and the Covid-19 pandemic. Lastly, this study found that in comparison with Ryanair, Wizz Air was able to adapt its business model more efficiently to changes in its external environment.

Keywords: low-cost airlines; entrepreneurial behaviour; corporate foresight

1. Introduction

Globally, the airline industry's deregulation has facilitated the growth and development of this field of business (Sabaitytė et al., 2020). In Europe, for example, the Single European Transport Area aims to facilitate the free movement of goods and passengers (Stecenko & Parkhimovich, 2020). Furthermore, Stecenko and Parkhimovich (2020) explain that this policy mainly focuses on passenger transportation, including bus, train, ship, and aircraft transportation. According to the Eurostat (2022), 87.5% of travel is by car, 7.4% is by coach and bus, and 5.4 % is by train. In addition, the Eurostat (2022) estimates that fourteen percent of travel in the region is by aircraft.

This study focuses on the European airline industry since this industry has played a crucial role in the socio-economic development of Europe (Kuz & Miskinis, 2021). For example, the European Commission (2023) estimates that the aviation sector will contribute approximately 110 million euros to Europe's GDP and will provide roughly 5.5 million jobs in 2024. In addition, Chiambaretto and Combe (2023) and Kuz and Miskinis (2021) explain that the airline industry is crucial to the globalisation of the region and the world since it promotes global trade and tourism. European commercial airlines account for approximately nineteen percent of the worldwide market, while Asian-Pacific airlines account for approximately thirty-four percent (Wulf et al., 2022).

The airline industry has a variety of strategies that can be adopted. For example, the airline may decide to become a low-cost carrier (LCC) or a full-service carrier (FSC), or the airline may adopt a hybrid model (Magdalina & Bouzaima, 2021). This study will focus on Wizz Air and Ryanair because they have adopted the LCC business model. As part of this study, we will assess how entrepreneurial behaviour affects LCC's business model in the light of changes in the external business environment and corporate foresight. The primary reason for

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examining foresight is that integrating foresight into business is an emerging characteristic of changing generations (Gáspár & Laurén, 2013). Given this, using Bishop and Hines's (2012) framework, we will evaluate whether airlines have utilised foresight and how they have used it.

2. Literature review

2.1. Business models and strategies

LCC airlines have become more prevalent in the European market in recent decades thanks to their affordable fares and growing appeal (Rodríguez-García et al., 2020; Sabaitytė et al., 2020). This business strategy is defined by cost-reduction maximisation (Baláž, 2021). If we looking back at the development history of air travel, we see that LCCs emerged during the financial crisis of 2008-2009. Airlines may adopt the full-service carriers (FSC) business model as an alternative to the LCC business model (Fu, 2023). The FSC business model is often called the 'traditional business model'. Airlines that have implemented this business model focus on offering higher-quality amenities and services to their customers than LCCs (Lim & Lee, 2019). In addition, Corbo (2017) explains that FSCs operate at all levels: national, regional, and international. Figure 1 below illustrates the changes in the average daily number of flights in Europe for 2019 and 2022.

No.	Aircraft operator	Average daily flights	% 2022	% 2019
1.	Ryanair Group	2,813	+11%	+21%
2.	easyJet Group	1,477	+11%	-12%
3.	Turkish Airlines	1,443	+16%	+8%
4.	Lufthansa Airlines	1,134	+7%	-24%
5.	Air France Group	991	+4%	-17%
6.	Wizz Air Group	810	+21%	+37%
7.	KLM Group	796	+13%	-7%
8.	British Airways Group	789	+23%	-13%
9.	SAS Group	614	+16%	-24%
10.	Vueling	594	+10%	-1%

Figure 1. Changes in average daily flights by aircraft operators in 2019 and 2022 (%).
Source: Eurocontrol (2024)

Figure 1 describes the changes in the frequency of daily flights offered by airlines in 2019 and 2022. As listed in Figure 1, Ryanair Group, EasyJet Group, Wizz Air Group, and Vueling, according to Akgüç et al. (2018), may be recognised as LCCs. On the other hand, Lufthansa Airlines, Air France Group, KLM Group, British Airways Group, and SAS Group are FSCs. Figure 1 illustrates that, for many airlines, there was a reduction in the number of daily flights available in 2019 as compared to the number in 2022. This was the result of the Covid-19 pandemic, which began in 2019. After the Covid-19 pandemic, the average daily flight rate increased in 2022, which indicates a 'back-to-normal' period. However, it is visible that the rate of LCCs is often higher than that of FSCs in both years. This may show that some LCCs had higher growth rates than FSCs in the airline industry.

Sengur and Sengur (2017) explain that airlines that have adopted the LCC business model usually focus on short-haul routes, have low fares, offer direct sales of tickets, and their costs are lower than those of FSCs since they have gotten rid of some services or outsourced them. For example, FSCs provide their consumers with various pre-flight and on-board services. The service offerings may differ based on the travel classes the consumers have

purchased (Koklic et al., 2017). The Table 1 below shows the various principles of the LCC model.

In Europe, demands for air travel may be affected by economic and non-economic factors such as the price of the tickets, the development of tourism, and the needs of travellers (Stecenko & Parkhimovich, 2020). The study conducted by Kluge et al. (2017) found that factors such as a country's GDP, geographical location, education level, and income level will impact the population's demand for air travel. Secilmis and Koc (2016) explain that price factors such as lower airfares have positively affected the demand for air travel. Changes in the airline industry that affect the demand for air travel have compelled airlines to be innovative in their product offerings. Additionally, airlines have had to be more entrepreneurial (Dyer et al., 2008).

Table 1. Principles of the LCC model. *Source: Graham & Vowles (2006)*

"High-capacity seating"	"No freight"
"Minimum legal crew"	"Advantageous rates from airport operators"
"Cabin service only at additional cost"	"Online booking to eradicate travel agent commission"
"Fast turn-rounds"	"Sophisticated websites with extensive information on destinations"
"On-board air stairs instead of airport air bridges"	"One-size and type fleets (although some low-cost carriers have compromised on this point)."
"Operating procedures to minimize take-off thrust and braking on landing, congruent with runway length"	"Point-to-point traffic only"

2.2. Entrepreneurial behaviour

Being entrepreneurial involves creating a new business, identifying opportunities, and taking calculated risks (Robinson & Shumar, 2014; Dyer et al., 2008). However, Li et al. (2020) argue that entrepreneurial behaviour is not only limited to creating new business ventures but also conceptualises the entrepreneurial activities related to the businesses' strategic renewals or organisational changes. Though scholars believe that entrepreneurial behaviour consists of the establishment of new organisations, it also includes the inventive modification of existing organisations based on the circumstances of each organisation (Jong et al., 2015; Li & Jia, 2015). Other scholars suggest that entrepreneurial behaviour comprises activities that could include promoting new business activities or fields within or outside organisations or forming strategic partnerships for new ventures (Middleton, 2011; Fernández-Laviada et al., 2020).

Hashimoto and Nasiff (2014) describe characteristics of entrepreneurial behaviour based on an entrepreneur's orientation, including innovativeness, risk-taking ability, and being proactive towards opportunities. Taking risks, being proactive, and being innovative are three characteristics of entrepreneurial behaviour that Prakash et al. (2015) contend are indicative of the entrepreneurial intensity of an organisation. Additionally, Barba-Sánchez and Atienza-Sahuquillo (2012) explain that entrepreneurial intensity motivates entrepreneurs' proactive or reactive actions in response to the external business environment.

2.3. Foresight

The airline industry has recently faced many challenges because of Brexit, the Covid-19 pandemic, the war in Ukraine, and the energy crisis (International Air Transport Association, 2018; Wulf et al., 2022). Blanchard (2023) explains that, amidst increased risks and uncertainty emanating from these events, stakeholders in this industry have used forecasting and foresight to determine 'possible futures' and to make decisions.

Foresight is essential because this process allows an organisation to determine how the future might emerge (Conway & Voros, 2003). Within an organisation, foresight can be adapted to detecting changes in the environment, as well as to feeding and guiding strategy, and helping select new markets (Conway & Voros, 2003). Corporate foresight has become a crucial capability for some organisations, which thereby enables them to predict and assess

future trends and the possible future. Given this, Marinković et al. (2022) argue that corporate foresight has helped organisations to remain competitive in a dynamic environment.

Foresight within organisations is essential as it improves the organisation's decision-making and strengthens its entrepreneurial behaviour (World Economic Forum, 2023). A study by Rhisiart and Jones-Evans (2016) assessed the impact of foresight on entrepreneurship. A study by Hajizadeh and Valliere (2022) examines the relationship between foresight and entrepreneurship and argues that there is a relationship between opportunity identification and foresight.

There is a dearth of studies that illustrates how organisations have utilised corporate foresight (Marinković et al., 2022; Rohrbeck & Kum, 2018). To address this research gap, through using Bishop and Hines' forecasting framework, this study will assess whether and how Wizz Air and Ryanair used corporate foresight. This study is relevant because it will demonstrate how two airlines responded to environmental changes using their future skills (innovation, proactiveness, and risk-taking).

3. Research aims and questions

This study will focus on how LCCs have adapted their business models in order to respond to changes in their external environment. Furthermore, as part of the forecasting process, this study will analyse and discuss how the airlines applied the different components of entrepreneurial behaviour (risk-taking, innovativeness, and proactiveness) to respond to changes in the external environment induced by the Covid-19 pandemic and Brexit.

The Covid-19 pandemic occurred in 2019. It was identified as a global public health emergency when the pandemic occurred (Quaglia & Verdun, 2023). However, as the pandemic progressed, it began to cause a global socio-economic crisis, which disrupted global supply chains. Many businesses shut down due to lockdowns, which resulted in high unemployment rates in the EU and the rest of the world (Quaglia & Verdun, 2023). In the airline industry, for example, Nižetić (2020) found that the number of daily flights had decreased by roughly eighty-eight percent.

A second event discussed in this study is Brexit, which began in 2016. Brexit had many implications for the UK, but the airline industry has been adversely affected by this event since many regulations between the UK and EU were affected (Brezonakova et al., 2021).

In order to identify and analyse the impact of the forces of change on the business environment of the examined two airlines and to generate and analyse potential responses to the Covid-19 pandemic and Brexit, foresight was required (Gavetti & Menon, 2016; Peter & Jarratt, 2015). Thus, to analyse the foresight processes of these airlines, we will utilise the forecast framework, which will be further discussed in the results section of this study.

This study has identified the following research questions:

1. In light of corporate foresight and changes in the external business environment, how does entrepreneurial behaviour affect the LCC business model?
2. In comparison with the framework foresight model, which measures can be identified in the two case studies?
3. What kind of future skills can be identified within the two case studies?

4. Methodology

4.1. Research design

Research design is a plan that outlines how the researcher will answer the study's research questions (Akhtar, 2016). A research design specifies how the data will be collected, what type of data will be collected, and how the data will be analysed (Akhtar, 2016). The information and data to analyse the forecasting process were obtained from Ryanair and Wizz Air's annual reports in the period from 2018 to 2023. As part of this study, we will analyse the foresight process at Ryanair and Wizz Air using the framework forecasting.

This study aimed to assess how entrepreneurial behaviour affects the LCC business model in light of corporate foresight and changes in the external business environment. In

order to accomplish the objective of this study we used two frameworks: the first research framework (see Figure 2) examines how the external business environment affects entrepreneurial behaviour, which in turn influences the LCC business model used by airlines. In the second research framework (see Figure 3), we utilised the framework created by Bishop and Hines (2012). This framework was used to show how the airlines under scrutiny used foresight and future skills. Future skills, according to NextSkills (2020), are capabilities that allow people and organisations to resolve problems in a dynamic business environment. In this study, innovativeness, proactiveness, and risk-taking were the three future skills examined.

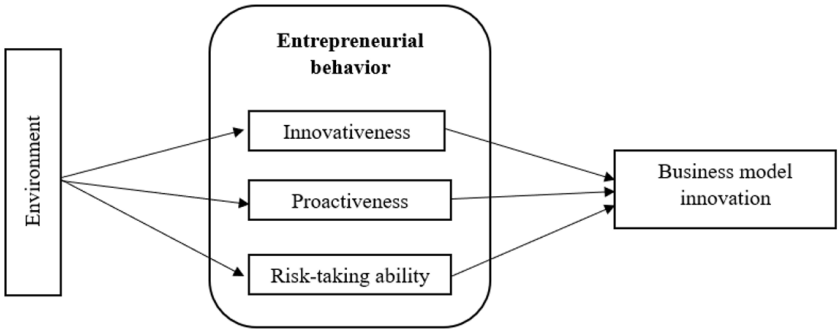

Figure 2. First research framework. *Source: Authors' own*

As Desyllas et al. (2022) and Marichova (2019) explain, the external business environment plays an essential role in determining the business model in the market. Henry et al. (2018) suggested that, as a means of responding to changes in the external environment, enterprises should become more innovative, as innovation is a crucial approach to solving problems. According to García-Granero et al. (2015), in order to strengthen creative capability, enterprises should develop their risk-taking abilities. Risk-taking refers to the level of risk managers are willing to commit to using large amounts of resources, which may also result in costly failures (Kreiser & Davis, 2010). As Rauch et al. (2009) further explain, risk-taking may include taking big challenges, borrowing large amounts of resources, or investing resources into opportunities where the outcomes are uncertain.

To cope with the uncertainty and changes in the external environment, Menguc et al. (2010) and Sebora and Theerapatvong (2010) suggested that enterprises should become more proactive, as proactiveness may help enterprises adapt their business processes and products to future demands. Zhao and Smallbone (2019) explained that an entrepreneur's ability to actively scan the external environment to identify new opportunities and innovate at the organisational level reflects their proactiveness. Additionally, Zhao and Smallbone (2019) explain that for seizing opportunities in the market enterprises should become more proactive, thereby enhancing their innovativeness.

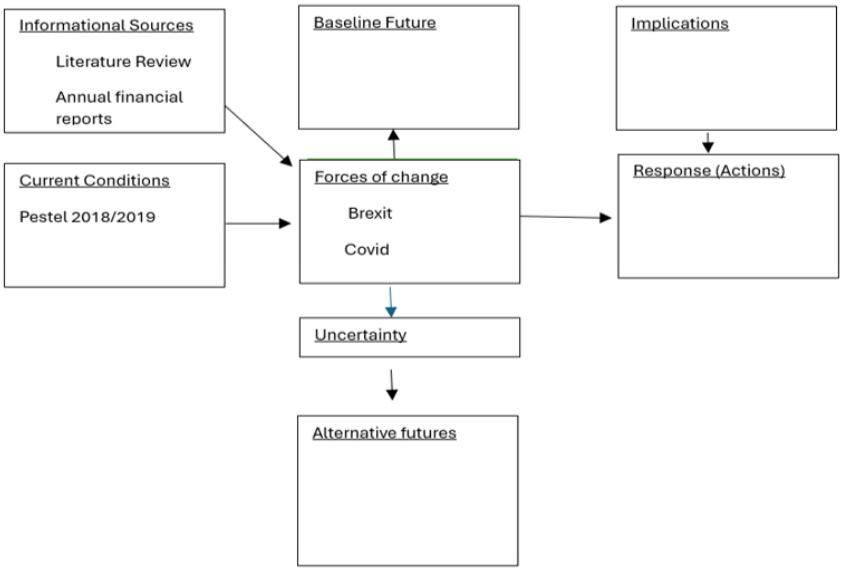

Figure 3. Second research framework: Framework forecasting. *Source: Bishop & Hines (2012)*

In an organisation, innovativeness, proactiveness and risk-taking play a vital role in identifying opportunities and responding to changes in the external environment (Menguc et al., 2010; Sebora & Theerapatvong, 2010). Thus, based on the above literature, the proposed research framework of this study will examine how the external business environment affects entrepreneurial behaviour, which influences airlines' LCC business model.

The second research framework this study will use is forecasting, which was first introduced by Bishop and Hines (2012). Hines and Bishop (2013) explain that this framework can be used as an approach in order to conduct forecasts. Furthermore, Hines and Bishop (2013) explain that this framework may be used to illustrate the different components of a foresight project and illustrate the relationship between the different components. Lastly, Hines and Bishop (2013) believe that this framework may be used when researchers and practitioners want to illustrate a general outline of the future. This study has adopted this framework to describe the two airlines' foresight process.

As research design, the framework forecasting approach requires users to specify where their information was obtained. In addition, it requests that the user should identify forces of change. In this case, the Covid-19 pandemic and Brexit were the forces of change. Lastly, framework forecasting requires the user to analyse the possible responses and implications of the baseline and alternative futures.

4.2. Data collection and method of data analysis

To analyse the foresight process for both Ryanair and Wizz Air, this study retrieved information primarily from the annual reports of the two airlines. When Brexit occurred, for example, this study focused on the airlines' 2018 and 2019 annual reports to analyse their foresight process. In order to examine the Covid-19 pandemic situation, we primarily focused on the airlines' annual reports for 2019, 2020, and 2021.

In order to illustrate the similarities, differences, and patterns between the two airlines, this study used a comparative case study (Goodrick, 2014). This study compares Ryanair's and Wizz Air's foresight processes and future skills usage. In addition, as part of the comparative case study, Tables 2 and 3 assess how the airlines employed the components of entrepreneurial behaviour (proactiveness, risk-taking, and innovativeness) to respond to the changes resulting from the Covid-19 pandemic and Brexit.

In the following section, we will discuss the results obtained from examining how entrepreneurial behaviour affects the LCC business model of both Wizz Air and Ryanair in light of corporate foresight and changes in their external business environment.

5. Results

The results section of this study is divided into two parts. In the first part, we will discuss some of the challenges these airlines experienced. Additionally, we will examine how Ryanair and Wizz Air responded to the changes caused by Brexit and the Covid-19 pandemic by using the components of entrepreneurial behaviour. The second part of the results will discuss the foresight process utilised by these two airlines.

5.1. Entrepreneurial behaviour

The case of Ryanair

In Europe, Ryanair remains one of the most popular LCCs, attracting large numbers of passengers (Efthymiou & Christidis, 2023). Efthymiou and Christidis (2023) explained that this airline has grown significantly within its original region of operation and maintains a high market share. Among the factors that have helped this airline be successful is its business model, which emphasises profit maximisation and cost reduction (Ahmed et al., 2019). To reduce its costs, Ryanair has eliminated services like complimentary in-flight refreshments, accessible check-in facilities, and expensive meals on board (Ahmed et al., 2019).

As a result of adopting the LCC business model, this airline has grown rapidly in the past few years. While this airline has gained many benefits from adopting this business model, it has also encountered some challenges. For example, as a result of the cost reduction measures the airline has imposed on its employees, disputes have arisen, which led to dissatisfaction among the employees (Rodríguez-García et al., 2020). Additionally, wage disputes have led to industrial relations problems, such as strikes at this airline (Farrell & Davies, 2018). Lastly, in Spain, the airline was sanctioned for violating the right of its employees to strike and for not complying with occupational risk prevention laws (Martín, 2018). These challenges have led researchers such as Martín (2018) to question the effectiveness of the LCC business model.

Besides facing internal challenges, Ryanair has faced external challenges such as Brexit. In addition to creating uncertainty, this institutional change (Brexit) could negatively affect international trade and the EU-UK regulatory agreements (Dobruszkes, 2019). As Brezonakova et al. (2021) explained, there is still much uncertainty regarding Brexit as the negotiations between the EU and the UK are still ongoing, so the impact of Brexit on the aviation industry is unknown. The second external challenge Ryanair faced was the Covid19 pandemic. Ryanair suffered its most significant losses ever due to the travel restrictions and lockdowns imposed globally in 2021 (Makortoff, 2021). As a result, the airline lost approximately seven hundred million pounds in 2021 (Makortoff, 2021). Despite the challenges Ryanair faced both internally and externally and the criticism the airline has endured, it has remained committed to its LCC business model (Ryanair, 2018).

Table 2. Impacts of external environment on business model through entrepreneurial behaviour – Ryanair's examples. *Source: Authors' own*

	Components of entrepreneurial behaviour		
Change of environment	Innovativeness	Proactiveness	Risk-taking ability
Brexit	Continuing to gain access to both the domestic and international network from Eastern Europe → reducing high operational costs resulting from Brexit, responding to increasing demands in low-priced airfare as well and serving charter flights from Poland to the Mediterranean region	Relocating most activities to the Eastern Europe; Establishing an independent subsidiary in Poland	Employment instability, violation of labour law, decrease in reputational capital; Reduction of networks in UK
Establishing an independent subsidiary in Poland	—	Suspension of operations; Employment layoff	—

Table 2 describes the ways the airline adapted to several external environmental changes. Furthermore, Table 3 illustrates how the airlines used the components of entrepreneurial behaviour (innovativeness, risk-taking, and proactiveness) to respond to changes in the external environment that occurred because of the Covid-19 pandemic and Brexit. In the case of Brexit, the airline opted to minimise its operational costs in the UK by relocating most of its aircraft and staff to Poland in order to cope with the potential risks of Brexit. Moreover, the airline took this occasion to extend its European airline network from Poland. This was because of the increasing demands for travelling and low airfares in the European region. In response to the Covid-19 pandemic, the airline suspended its operations and laid off some of its employees.

The case of Wizz Air

In Europe, LCCs have become an integral component of the region's transport market (Mrňa & Badánik, 2021). Among the leading LCCs in the area, Wizz Air, Ryanair, and easyJet remain the most popular (Zhang et al., 2021). According to Czudar et al. (2007), Wizz Air is the leading LCC in Central and Eastern Europe (CEE). A key characteristic that has helped Wizz Air maintain its market share in the region is its innovativeness (Czudar et al., 2007). Wizz Air, for example, provides its passengers with priority boarding services, travel insurance,

and loyalty programs such as the WIZZ Air loyalty program for an additional fee (Czudar et al., 2007).

Tomová and Ramajová (2014) argue that, compared to Wizz Air, Ryanair is the purest low-cost airline because it does not offer additional services, loyalty programs, or promotions. The other significant difference between Wizz Air and Ryanair is that Ryanair receives funding from the UK government, while Wizz Air does not (Albers & Rundshagen, 2020). According to Albers and Rundshagen (2020), Wizz Air is at a disadvantage in financial resources compared to Ryanair, as it does not receive additional funding from the Hungarian government. Table 3 illustrates how changes in the external environment triggered Wizz Air's entrepreneurial behaviour. Table 3 shows how Wizz Air responded to market changes by implementing the three elements of entrepreneurial behaviour (innovativeness, proactiveness, and risk-taking ability).

Table 3. Impacts of external environment on business model through entrepreneurial behaviour – Wizz Air's examples. *Source: Authors' own*

	Components of entrepreneurial behaviour		
Change of environment	Innovativeness	Proactiveness	Risk-taking ability
Brexit	Accessing the domestic market and widening destinations to and from the UK	Opening new division in the UK -> Preparing for Brexit	High operational cost
Covid-19 pandemic	Linking Abu Dhabi with European countries and the UAE	Creating joint venture in Abu Dhabi → Preparing for the post-Covid-19 pandemic period	New market differentiation, resource re-allocation
	Gaining support from the government and citizens, as well as other stakeholders	Acquired a freighter called "Hungary Air Cargo" to act on behalf of the Hungarian government	Low profitability, a transition from ultra to hybrid low-cost model

Table 3 indicates how Wizz Air responded to the changes in its external environment. This was assessed using the components of entrepreneurial behaviour, including innovativeness, risk-taking, and proactiveness. In addition, Table 3 illustrates how Wizz Air can adapt to sudden environmental changes and prepare for the possible future.

Events such as the Covid-19 pandemic and Brexit substantially changed the airline's operational model. These events illustrated the entrepreneurial behaviour of Wizz Air. Compared to Ryanair (see Table 3), Wizz Air was more adaptive, which led to fruitful results. For example, in 2020, during the Covid-19 pandemic, Wizz Air became the largest airline in Europe, while Luton Airport remained its seventh-largest airport (Jimenez & Suau-Sanchez, 2020). The expansion of Wizz Air included a joint venture in Abu Dhabi and the creation of a separate division in the UK (Jimenez & Suau-Sanchez, 2020). As a result of this expansion, Wizz Air announced their plan to recruit 4,600 pilots and crew members until 2030 whilst also expanding their network.

Table 4 illustrates how the airline responded during uncertain times resulting from Brexit and the Covid-19 pandemic. Additionally, Table 5 summarises some of the airline's strategies for maintaining its regional operation and development. For example, to cope with uncertainty and future supply chain disruptions, the airline decided to change its business model. Moreover, the airline chose to announce recruitment and acquire an air-freight transporter. These actions illustrate the airline's entrepreneurial behaviour.

Comparative analysis

Tables 2 and 3 illustrate how Ryanair and Wizz Air responded to changes in their business environment. These two events (Brexit and the Covid-19 pandemic) prompted different entrepreneurial behaviours in these airlines.

Wizz Air and Ryanair forecasted how these two events would affect their business activities and operations in countries. The airlines could see the base future of the airline industry. From this point, both airlines could form a favourable future at the organisational level. In the case of Brexit and the Covid-19 pandemic, uncertainty emerged for both Wizz Air

and Ryanair. This is because these events escalate or deescalate based on the circumstances at the time. Airlines took responsive actions after assessing the possible consequences of the external changes. Moreover, they foresaw opportunities emerging from the uncertainty of the two events.

However, the measures taken by both airlines were different. In the case of Brexit, Wizz Air chose to form a new division acting as a legal entity on its behalf in the UK. Innovativeness here is that Wizz Air is expected to maintain regular activity in the UK and seized most regional airway networks. Wizz Air seemed to have a more extraordinary risk-taking ability as they legally established new entities in the UK to ensure shareholders' interests and smooth business operations, and they also extended their network.

On the other hand, Ryanair chose to relocate most of its operational activities to Eastern Europe. Ryanair thought about reducing operational costs and administrative burdens and extending the airway network in the Eastern European region to compensate for its loss in the UK market share. In comparison to Wizz Air, limited signs of innovativeness could be detected in the case of Ryanair. In economic terms, Wizz Air outperformed other airlines in the LLC group when these two events occurred (Chiambaretto & Combe, 2023). Váradi (2021) explained that when the pandemic caused losses for other airlines, Wizz Air capitalised on the chaos and expanded its operations. This illustrates the importance of preparedness and corporate foresight.

5.2. Process of foresight

To analyse the two airlines' foresight process, this study used the framework forecast introduced by Bishop and Hines (2012). The following section will discuss the different components of the framework forecast and how the airlines applied the foresight process in light of the framework forecast.

Ryanair's process of foresight

The UK's decision to pursue Brexit had several implications for Ryanair. For example, for the protection of its EU airline license, EU Regulation No. 1008/2008 requires the majority of shares to be owned and controlled by EU citizens. Following Brexit, EU citizens no longer owned most shares, as the UK was no longer part of the EU. Brexit also adversely affected the UK's investments, consumer confidence, and demand for UK-bound flights.

In the case of the Covid-19 pandemic, international travel restrictions and lockdowns were implemented. Additionally, in some countries, Ryanair had restricted access to their aircrafts. Lastly, the pandemic also caused a significant decline in business and leisure travel.

According to the airline's baseline future, flights would operate without interruption for nine months following Brexit. Additionally, the airline explained that in its baseline future shareholders from the UK will be treated as non-EU shareholders due to ownership regulations. Lastly, the baseline future included cutting capacity in the UK market and moving most operations to low-cost destinations.

As part of its baseline future during the Covid 19 pandemic, the board expected Europe to lift travel restrictions in 2020 and 2021. Additionally, for 2021, the airline anticipated that its operations would increase from 40% in July to 80% in September. Lastly, Ryanair predicted that its operations in 2022 would return to 83% of pre-Covid-19 pandemic levels.

Alternative futures may be derived from the baseline future (Hines and Bishop, 2013). The alternative future may be identified when the organisation analyses all the plausible futures in the light of the expected future (Hines and Bishop, 2013).

According to Ryanair (2020), alternative futures were considered downside scenarios. During Brexit, the airline identified the following future in light of "Hard Brexit": the airline will restrict all non-EU voting rights. Additionally, as a result of currency exchange risks and rising operating costs, Ryanair may reduce its UK capacity while expanding to low-cost destinations. The report explained that it identified the following 'downside scenarios' as its alternative futures for the Covid-19 pandemic: a decrease in yield, additional grounding periods, adverse variations in fuel prices, and unfavourable foreign exchange rate movements (Ryanair, 2020; Ryanair, 2021).

In response to the UK's decision to pursue Brexit, the airline applied for the UK Air Operator Certificate ("UK AOC"). The airline applied for this license to ensure they could still

operate in the UK (Powley, 2018). Additionally, applying for a UK license was crucial because much of their revenue comes from the UK market. Lastly, due to regulatory changes ensuing from Brexit, the airline advocated that the UK should stay in the EU's open skies agreement. Furthermore, the airline advocated for the UK to remain in the EU since a large part of its revenue came from the UK-Europe route.

Table 4. Ryanair's foresight process. *Source: Authors' own*

Force of changes	Implications	Baseline future	Alternative future	Responses
Brexit	Changes occurred to the airline's share ownership (Ryanair, 2018)	During the nine months following Brexit, flights will continue without interruption; UK shareholders will be treated as non-EU (Ryanair, 2018); The risk of currency exchange as well as an increase in operational cost (Ryanair, 2018)	"Hard Brexit" (Ryanair, 2018)	Company applied for a UK Air Operator Certificate ("UK AOC") before the end of 2018 (Ryanair, 2018); Advocated that UK should remain in the EU open skies agreement (Ryanair, 2021); Cutting capacity in the UK market and switching most operations to a more low-cost destination (Ryanair, 2021)
Covid-19 pandemic	Travel restrictions and lockdowns; Restricted access to aircraft in some countries (Ryanair, 2021); Unprecedented decline in business and leisure travel (Ryanair, 2021)	Travel restrictions lifted across Europe and business operations returned to normal (Ryanair, 2021)	More travel restrictions are being imposed as a result of the pandemic (Ryanair, 2021); Additional downside scenarios (Ryanair, 2022)	On July 1, 2020, the airline continued to fly and operate along a significant number of its networks (Ryanair, 2021)

Wizz Air's process of foresight

The UK's exit from the EU had several implications for the airline industry. In the case of Wizz Air, the following can be said: the UK's decision to leave the EU impacted Wizz Air's operating license in the EU (Freeman, 2020). To acquire and retain an operating license in the EU, airlines must be majority-owned and controlled by citizens of the EU (Freeman, 2020). As a result of the UK's decision to leave the EU, 80 percent of the airline's shares were suddenly owned and controlled by non-EU citizens (Freeman, 2020).

According to Wizz Air's 2018 and 2019 annual reports, its baseline futures indicated that the airline would continue to operate its regular route (network) to and from the UK during Brexit. In the case of the Covid-19 pandemic, Wizz Air's annual report for 2020 and 2021 showed that the airline's base future predicted a gradual increase in business operations until such operations returned to normal. In addition, as part of Wizz Air's baseline future, the airline will operate several charter flights and offer cargo and repatriation services. This baseline future was significant as some of the consequences of the Covid-19 pandemic included limited access to aircrafts in some countries and the grounding of several aircrafts.

Wizz Air's annual report for 2018 and 2019 reported that during Brexit the following factors were part of the company's alternative future: a significant increase in jet fuel prices and the strengthening of the US dollar, which may weaken the British Pound to the Euro, which would then negatively impact the airline's revenues and crew costs. Furthermore, the alternative future indicated that there were risks that would also impact the company's operations: cyber risk and regulatory risk, and these risks would also affect product development, fleet development, operations, and human resources. Lastly, the alternative future included a further expansion of the airline in the CEE market.

Similarly to Brexit, the alternative future indicated that the following risks would affect Wizz Air's operations during the Covid-19 pandemic: cyber and regulatory risks. Additionally, Wizz Air stated that these risks could affect their product development, fleet development, operations, and human resources.

In response, in 2020 Wizz Air established its new base in Abu Dhabi (Wizz Air, 2021). By expanding in the United Arab Emirates, the airline will be able to acquire new markets in the Indian subcontinent, the Middle East, and Africa (Wizz Air, 2021).

Table 5. Wizz Air's foresight process. *Source: Authors' own*

Force of changes	Implications	Baseline future	Alternative future	Responses
Brexit	The EU's ownership and control regulations mandate that a majority of an airline's shareholders must be EU citizens (Wizz Air, 2018; Freeman, 2020)	Ensure they continue operating the same network to and from the UK (Wizz Air, 2018)	1. Currency risk and an increase in price for fuel and operating costs (Wizz Air, 2018) 2. The second alternative future includes risks which may affect the airline's operation (Wizz Air, 2018) 3. Focus on expanding in the CEE market (Wizz Air, 2018)	First, Wizz Air established a new legal entity in the UK (Wizz Air UK) Subsequently, they also obtained a license to continue operating in the UK (Wizz Air, 2019) Establish the ownership and control contingency plan (Wizz Air, 2019).
Covid-19 pandemic	Travel restrictions and lockdowns (Wizz Air, 2020)	Business operations would gradually increase; Medical equipment and vaccines were to be transported to countries (Wizz Air, 2021); The UAE needs low-cost airlines (Wizz Air, 2021)	1. Grounding of all aircrafts and Black Swan events (Wizz Air, 2021). 2. The second alternative future includes risks which may affect the airline's operation (Wizz Air, 2021)	Operating cargo and charter flights for medical equipment and medication (Wizz Air, 2021) The airline established its new base in Abu Dhabi (Wizz Air, 2021)

6. Discussion

Based on the study's findings, the application of corporate foresight to the business processes and operations of both airlines may lead to a higher degree of entrepreneurial behaviour. Blanchard (2023) argued that organisations may use foresight to determine possible futures. Furthermore, Fergnani (2023) explains that airlines' decisions should be based on historical data and the potential future. In order to examine how Wizz Air and Ryanair determined their plausible futures during the Covid-19 pandemic and Brexit, we analysed both airlines' annual reports. In addition, through examining both airlines' annual reports we were able to identify and examine how the airlines responded to changes caused by the Covid-19 pandemic and Brexit.

It was observed that Brexit significantly affected shareholder ownership and control (Wizz Air, 2018; Ryanair, 2018). For example, following the UK's exit from the EU, UK shareholders were no longer considered EU citizens (Wizz Air, 2018; Ryanair, 2018). This posed a significant risk for both airlines, as a large proportion of their shareholders were now categorised as non-EU citizens. As a result of shareholder ownership and control, there was a possibility that the airlines could lose their European operating license. This is because EU Regulation No. 1008/2008 mandates that the majority of shares must be owned and controlled by EU citizens (Wizz Air, 2018; Ryanair, 2018). The responses by Ryanair and Wizz Air to Brexit were similar: both airlines applied for UK licenses to keep operating. Among the differences between Ryanair's and Wizz Air's response to Brexit was Ryanair's repeated encouragement of the UK to remain in the European skies agreement (Ryanair, 2018). In addition, Ryanair continued to reduce its capacity in the UK and moved its operations to low-cost destinations (Ryanair, 2018). In the case of Wizz Air, the board of directors was proactive in establishing a new identity called 'Wizz Air UK' to maintain a strong presence in the UK (Wizz Air, 2019).

In light of the Covid-19 pandemic, both airlines acknowledged the uncertainty the pandemic caused in their business operations. In the airlines' reports for 2020 and 2021, the unprecedented pandemic resulted in global travel restrictions, social distancing, and reduced travel (Ryanair, 2020; Wizz Air, 2020). In addition, for both airlines, the pandemic negatively

impacted their financial performance and business operations (Ryanair, 2020; Wizz Air, 2020). The response to the pandemic from both airlines differed significantly. For example, Wizz Air provided air cargo services and charter flights to transport medications and equipment to countries that needed them. In addition, Wizz Air established a new venture in Abu Dhabi called 'Wizz Air Abu Dhabi' (Wizz Air, 2020). Meanwhile, Ryanair, in response to the pandemic, as shown in Table 2, suspended many of its operations and laid off a large number of its staff (Ryanair, 2020).

In order to illustrate the similarities, differences and patterns between the two airlines, this study used a comparative case study (Goodrick, 2014). Through a comparative case study, this study compared the foresight processes and entrepreneurial behaviour of Ryanair and Wizz Air. This study found that the process of foresight was applied more efficiently by Wizz Air than by Ryanair, as shown in Tables 4 and 5. Moreover, Wizz Air applied the different components of entrepreneurial behaviour more efficiently than Ryanair, as Tables 2 and 3 show.

7. Conclusions

The purpose of this study was to contribute to the advancement of corporate foresight through an analysis of the processes of foresight at Ryanair and Wizz Air. This study highlighted the significance of applying corporate foresight to define and determine the airline's business model. Additionally, this study illustrated how foresight can be used to detect changes in the external environment and how entrepreneurial behaviour can be used to respond to events such as Brexit and the Covid-19 pandemic. In the following section, we will explain the study's findings in accordance with the research questions.

In light of corporate foresight and changes in the external business environment, how does entrepreneurial behaviour affect the LCC business model?

This study demonstrated how, through forecasting the possible futures, the airlines could use the components of entrepreneurial behaviour to respond to changes in their external environment and adapt their LCC business model. As shown in Tables 3 and 4, the airlines used the different components of entrepreneurial behaviour to respond more efficiently to Brexit and the Covid 19 pandemic. Furthermore, Tables 3 and 4 illustrate Wizz Air's ability to adapt its business model to changes in its external environment and it did so more efficiently than Ryanair. Wizz Air, for example, gained market share during the pandemic and expanded into the UAE, while Ryanair suffered its most significant financial loss during the pandemic.

In comparison with the framework foresight model, which measures can be identified in the two case studies?

The findings showed that foresight and scenario planning were used in both cases. In framework forecasting, Wizz Air and Ryanair identified Brexit and the Covid-19 pandemic as forces of change. The airlines then assessed how the forces of change affected their external environments and other factors, such as regulations, policies, and daily operations. Both Wizz Air and Ryanair present these considerations in their annual reports. From this point, Wizz Air and Ryanair formed a baseline (most probable) future and alternative futures. Following the creation of the baseline future and the evaluation of possible impacts resulting from the alternative future, the airlines responded to the 'forces of change.'

What kind of future skills can be identified concerning the two case studies?

Future skills are capabilities that allow people and organisations to resolve problems in a dynamic business environment (NextSkills, 2020). The future skills identified in this study are innovativeness, proactiveness, and risk-taking. In addition, Tables 3 and 4 illustrated how both airlines used these future skills to respond to changes that occurred as a result of Brexit and the Covid-19 pandemic. Entrepreneurial behaviour helps companies scan the external environment and exploit possible opportunities. As observed with respect to both cases, Wizz Air is more developed in applying foresight and has a high level of entrepreneurial behaviour. Wizz Air showed that they could detect opportunities even in a severe event. The research

results indicate that Wizz Air implemented more activities that could help the company enhance its presence and increase its development rate in the future.

In conclusion, the application of corporate foresight is very critical to firms. This concept contributes to a company's development by allowing it to scan possible futures and factors which drive them. However, for bracing for opportunities in a foresighted future or moving towards a plausible future, a company must also possess a high level of entrepreneurial behaviour. Future skills are essential for developing a stronger sense of strategic foresight. These skills are also associated with entrepreneurial behaviour, which could enhance lucrative business activities and create value.

One of the main limitations of this study is that it analysed only two airlines (Wizz Air and Ryanair) and excluded other LCCs operating in the EU. Secondly, this study is a conceptual paper. The inclusion of empirical data would have added to the richness of this study. Lastly, this study focused only on airlines in the EU. Assessing other regions would have enabled the paper to compare its findings with the data of airlines from other regions.

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