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STRATEGIC COMMUNICATION AND COMPETITIVE ADVANTAGE: ASSESSING CEO LETTERS OF GLOBAL AIRLINE ALLIANCES

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Abstract: For the last several decades, global airline alliances have ensured their market presence in the aviation industry. Scholars have focused on the effects of alliance affiliation for airlines and what the competitive advantages of alliances are. However, these issues have been discussed in relation to operational aspects. The quality of strategic communication can be an important factor in achieving a competitive advantage and realizing a differentiation strategy. This study assessed the differences in quality of strategic communication between the three leading alliance groups (oneworld, SkyTeam, and Star Alliance) and a non-alliance group. Comprehensive content analysis was implemented using the letters of chief executive officers (CEOs) of 46 airlines. We found that the non-alliance group has more ideal CEO letters than the alliance groups, and the main topics and quality of CEO letters of alliance group differed. This study provides a novel insight into the competitive advantage of global airline alliances.

Keywords: global marketing strategy, strategic communication, competitive advantage, global airline alliance, CEO letter, CEO letter effectiveness.

JEL Classification: D74, L1, M16, M31.

1 Introduction[1]

In general, there is a consensus that the aviation industry is vulnerable to external changes and stimulus, and its profitability is quite low (Kleymann and Seristö, 2004). As moves to strengthen competitiveness, airlines have participated in global airline alliances. A global airline alliance is "any cooperative arrangement among two or more global airlines to realize their strategic goals and improve their competitive advantages" (Seo and Itoh, 2020).

Through affiliation in global airline alliances, airlines enjoy various strategic and economic merits. Participating in an alliance is a defensive move for an airline (Kleymann and Seristö, 2004; Iatrou and Alamdari, 2005). Namely, global airlines avoid direct competition through an alliance and, conversely, have a close cooperative relationship with strong rivals. Also, intensive air transport networks become powerful strategic resources that allow alliance partners to feed traffic to each other (Kleymann and Seristö, 2004; Rajasekar and Fouts, 2009) so that the networks absorb a region's traffic volume (Kleymann and Seristö, 2004). Due to the characteristic that a global airline alliance is a loosely-coupled organization and most of the global airline alliances are formed in a horizontal manner (Oum, et al., 2004), the aforementioned strategic merits are changeable.

Sometimes, airlines have cooperative arrangements with non-allied airlines and even members of other global alliances. In the same alliance, airlines cooperate with their partners and, simultaneously, compete with them (Zou and Chen, 2017). However, unlike with mergers and acquisitions (M&As), airlines participating in global alliances can widen their global networks without a direct capital investment and while avoiding existing countries' restrictions and market barriers (Douglas and Tan, 2017).

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Acquiring rare resources and gaining complementary knowledge, i.e., the know-how of partners, are strategic merits of a global alliance affiliation (Ireland, et al., 2002).

On the other hand, airlines can reduce their input costs through participating in alliances and thus they enjoy increased economic benefits. For example, co-purchasing aircraft and fuel, sharing human resources, lounge facilities, fleet maintenance fees, marketing fees, and standardized computer reservation systems lead to cost-saving (Oum, et al., 2004).

Currently, the number of airlines participating in global alliances and the market presence of global airline alliances are increasing. Over the past several decades, issues related to global airline alliances have been addressed by scholars and practitioners in the aviation industry. In these previous studies, the core issues have been the effect of the global alliance affiliation of airlines and what the relative competitive advantages of current global airline alliances are. While there are several novel approaches, such as investigating competitive advantages derived from the passengers' side (e.g., Goh and Uncles, 2003; Weber and Sparks, 2004; Wang, 2014; Seo and Itoh, 2020), the relevant studies have still mainly focused on the operational issues of airlines.

The strategic communications of a firm offer a significant opportunity for achieving a competitive advantage and realizing a differentiation strategy (Kohut and Segars, 1992; Segars and Kohut, 2001; Chang, et al., 2003; Santema, et al., 2005; Dumitru, et al., 2015; Koehler and Hoffmann, 2018). Therefore, this study has examined the possibility of strategic communication acting as a source of global airline alliances' competitive advantage through assessing the number of topics, quality, and highlighted contents of 46 airlines' chief executive officer (CEO) letters.

This paper consists of five sections. Section 2 focuses on the theoretical background related to strategic communication as a source of competitive advantage and introduces this study's research questions. In Section 3, quantitative and qualitative content analyses are implemented using 46 airlines' CEO letters. In Section 4, based on results, discussions are carried out. In Section 5, a summary of this study is provided, and theoretical and practical contributions, limitations, and future research are discussed.

2 Theoretical Background

2.1 Strategic communications as competitive advantage

In prior studies, the main topics relating to global airline alliance issues have been the effect of global alliance affiliation and what the relative competitive advantages of global airline alliances are. The main topics can be classified into three categories: 1. economic effects, 2. traffic effects, and 3. other effects.

Morrish and Hamilton (2002) have argued that airlines should achieve a moderate benefit in general productivity and profit through an alliance affiliation. Oum, et al. (2004) sought to investigate the impact of strategic alliances on airline profitability. According to Iatrou and Alamdari (2005), participation in a global alliance is considered beneficial to an airline's revenue. Min and Joo (2016) have examined airlines' operating revenue as an important impact indicator of an alliance affiliation. Zou and Chen (2017) found that the profit margin of a global airline is positively associated with the number of their code-sharing alliance partners.

On the other hand, many scholars have focused on traffic effects. For example, changes to or relative competitive advantages derived from passenger volumes (Park and Zhang, 1998; Park and Zang, 2000; Iatrou and Alamdari, 2005; Min and Joo, 2016), revenue passenger kilometers (RPKs) (Rajasekar and Fouts, 2009; Min and Joo, 2016), load factor (Morrish and Hamilton, 2002; Iatrou and Alamdari, 2005; Lazzarini, 2007; Rajasekar and Fouts, 2009; Assaf and Josiassen, 2011; Min and Joo, 2016), and available seat kilometers (ASKs) (Lazzarini, 2007; Zou and Chen, 2017) have been discussed as the focal indicator.

In addition to these, even though there exist very few studies, other sides of the competitive advantages of global airline alliances have been paid attention to. For instance, the competitive advantages derived from the passengers' side were highlighted in Goh and Uncles (2003), Weber and Sparks (2004), Wang (2014), and Seo and Itoh (2020). Min and Joo (2016) have compared differences in perceived service ratings from passengers between an alliance group and a non-alliance group and between oneworld, SkyTeam, and Star Alliance. Also, Payán-Sánchez,

et al. (2019) shed light on the effect of alliance affiliation and the environmental performance of alliances. Seo (2020) has found that there are unique organizational values that are shared among members of each airline alliance which link to their relative competitive advantages.

Considering the research stream of competitive advantages of global airline alliances, it can be said that the relevant studies have still mainly focused on operational issues of airlines, and that, therefore, there is a research gap that can be bridged by introducing a novel approach.

The strategic communications of global airline alliances play a role as competitive advantages in themselves and simultaneously as tools for achieving other types of competitive advantages. Traditionally, a company's competitive advantage is defined as the capability of the company to create more economic value than its rivals (Peteraf and Barney, 2013). However, nowadays, a firm's business growth and survival do not depend only on its economic outputs but also on its invisible assets and strength. Thus, this study deals with competitive advantage in the sense of the set of comprehensive resources and relative strong points of a firm compared with its competitors. Also, as firms' competition has moved from firm versus firm-level competition to group versus group-level competition, and as an airline's operation affects all alliance members in the global alliance context, the concern with strategic communication should be extended to each group's collective strategic communication alliance-wide.

An airline's attempts to disclose its strategies in a transparent and impartial way can be recognized as part of its communication efforts (Koehler and Hoffmann, 2018), and these efforts allow the airline to earn trust and support from its stakeholders (Kohut and Segars, 1992; Segars and Kohut, 2001). Therefore, good strategic communication leads an airline to make long-lasting and mutually beneficial relationships with stakeholders. Also, communicating an airline's strategy to its stakeholders provides the airline with the chance to differentiate itself from its rivals in the same market (Judd and Tims, 1991; Kohut and Segars, 1992; Segars and Kohut, 2001; Santema, et al., 2005). According to Dumitru, et al. (2015), information related to an airline's selling points and strengths is the key factor in shaping the content of corporate strategic communications. For airlines, a customer focus and customer-oriented reporting have meaning as a differentiation strategy. Also, if stakeholders perceive an airline positively through strategic communication, the perceptions will be positively associated with the continuation and growth of its business and investor loyalty (Koehler and Hoffmann, 2018). Moreover, several studies found that there are positive correlations between companies' strategic communications and their financial performance (Pearce and David, 1987; Kohut and Segars, 1992; Seo and Itoh, 2019).

In this study, we focus on airlines' strategic communication as an important element of the collective competitive advantages of global airline alliances.

2.2 CEO letters to shareholders in strategic communications

Firms' strategic communications toward the internal and external world include disclosure and reporting endeavors such as annual and sustainability reporting, current integrated reporting, non-financial reporting, such as CEO letters to shareholders, and announcements of organizational mission, vision, objectives, and tactics.

In particular, the value and role of firms' CEO letters as strategic tools in communication with stakeholders are increasingly emerging. The disclosure of strategy by firms has evolved from merely reporting key financial outputs to the publication of nonfinancial storytelling as well as material related to the image and branding of firms (Koehler and Hoffmann, 2018). Among the various kinds of reporting, CEO letters are airline companies' representative strategic disclosures (Santema and van de Rijt, 2001; Santema, et al., 2005). CEO letters convey an airline's "strategic orientation" toward its stakeholders (Judd and Tims, 1991).

According to Amernic and Craig (2007), CEO letters provide a focal insight into airlines' strategy, policy, philosophy, and accountability; and well-founded CEO letters play a role as a means of strategic positioning toward the public. Kohut and Segars (1992) have pointed out that CEO letters in annual reporting

are a significant hint in examining the connections between the "organizational beliefs and strategic behavior" of firms. CEO letters are recognized widely as the most prominent and powerful section of reports and they have political and cultural value (Tregidga, et al., 2012).

In fact, many years firms have spent considerable budget, time, and effort on making non-financial reporting (Segars and Kohut, 2001). Also, investors carefully read CEO letters, and they recognize that CEO letters are very important part of annual reports when they make investment decisions toward firms (Kohut and Segars, 1992; Santema and van de Rijt, 2001; Santema, et al., 2005; Conaway and Wardrope, 2010; Makela and Laine, 2011; Costa, et al., 2013). CEO letters are carefully made and strategically utilized (Kim and Kim, 2017).

CEO letters are named in various ways. For example, "message from our CEO", "CEO's review", "top message from the president", "CEO's report", "chairman's message", "chairman's letter", "chairman's statement", "letter to shareholders", "letter from the president", "directors' report", "management message", "message from management", "message to our stakeholders", and "president's comment" are all used as synonyms of CEO letter. In general, CEO letters deal with the firm's major events, its ability to control the events, and financial results (Kohut and Segars, 1992; Courtright and Smudde, 2009) as the main topics of a fiscal year. Short and long-term strategies and objectives, business decisions, and firms' promising opportunities are also discussed (Kohut and Segars, 1992; Chang, et al., 2003; Courtright and Smudde, 2009; Kim and Kim, 2017). Sometimes, CEO letters are recognized as the means of expressing a CEO's individuality, so that a CEO letter's message includes the top-manager's ideology and characteristics (Amernic and Craig, 2004).

On the other hand, the contents and main points of CEO letters differ depending on the type of reporting. According to Makela and Laine (2011), CEO letters in annual reports highlighted firms' financial performance and growth, while CEO letters in sustainability reports focused on the topic of "well-being."

Readers of CEO letters are diverse, but it is firmly believed that they consist of the firms' important stakeholders such as employees and customers, investors, the public, and even supply chain and strategic alliance partners (Koehler and Hoffmann, 2018).

There are reasons why the CEO letter can be utilized as an indicator to examine the competitive advantages of global airline alliances. First, there are some implicit agreements regarding the structure of an ideal CEO letter (e.g., Judd and Tims, 1991; Kohut and Segars, 1992; Santema and van de Rijt, 2001; Chang, et al., 2003; Bournois and Point, 2006; Conaway and Wardrope, 2010; Dumitru, et al., 2015). Also, Segars and Kohut (2001) have developed a CEO letter effectiveness measure to assess the quality of CEO letters. Analyzing the emphasis in the CEO letters of a global airline alliance can be useful for clarifying the relative differentiation points between an alliance group and a non-alliance group, and also among the three leading global airline alliances.

2.3 Research questions

Based on previous discussions, this study set the following two research questions (RQ):

RQ1: Comparing airlines which do and do not belong to global alliances, are there differences in terms of component numbers, effectiveness, and contents of CEO letters?

RQ2: Comparing the three major global airline alliances, are there differences in terms of component numbers, effectiveness, and contents of CEO letters?

3 Methodology

3.1 Methods

We adopt content analysis as this study's method. According to Riffe, et al. (2014, p.19): "content analysis is the systematic and replicable examination of symbols of communication, which have been assigned numeric values according to valid measurement rules, and the analysis of relationships involving those values using statistical methods, to describe the communication, draw inferences about its meaning, or infer from the communication to its context, both of production and consumption".

The merit of content analysis is that scholars can avoid the bias arising from the process of identifying communication data, because this method is based on a nonreactive measurement technique and the communication data are separate from its production and consumption. Therefore, for many years, content analysis has been widely adopted by the strategic communication studies field (e.g., Pearce and David, 1987; Kemp and Dwyer, 2003; Lin, et al., 2018; Seo and Itoh, 2019).

3.2 Materials and data collection

First, in trying to collect only the most recent airline data, the authors collected CEO letters from June 18 to June 22, 2020. Table 1 shows the sources of data.

Table 1. Sources of sample *(Source:* Authors' own research)

Source	Airlines
Annual report	Finnair, LATAM, Qantas, SriLankan Airlines, China Eastern, Garuda Indonesia, Kenya Airways, KLM Royal Dutch Airlines, Vietnam Airlines, Aegean Airlines, Air Canada, Air China, Air India, Air New Zealand, ANA All Nippon Airways, EGYPTAIR, Ethiopian Airlines, EVA Air, Lufthansa, Singapore Airlines, South African Airways, TAP Air Portugal, Thai Airways International, Turkish Airlines, China Southern Airlines, Emirates Airline, Hawaiian Airlines, Oman Air, TUI Airways, Virgin Atlantic
Corporate social responsibility report	American Airlines, Croatia Airlines
Sustainability report	Cathay Pacific Airways, Korean Air, Asiana Airlines, Copa Airlines, TAP Air Portugal, Hainan Airlines, Delta Air Lines
Integrated report	Air France, SAS Scandinavian Airlines
Official web page	Japan Airlines, Alitalia, Middle East Airlines, Copa Airlines, Alaska Airlines, Emirates Airline
Not open to the public	British Airways, Iberia, Malaysia Airlines, Royal Air Maroc, S7 Airlines, Fiji Airways, Aerolíneas Argentinas, Aeroméxico, Air Europa, Saudia, TAROM, Xiamen Air, Austrian Airlines, Avianca, Brussels Airlines, LOT Polish Airlines, Shenzhen Airlines, Swiss International Air Lines, United Airlines, Etihad Airways, Philippine Airlines, Sichuan Airlines

Overall, 46 CEO letters, from 38 airlines belonging to the three global airline alliances and 8 CEO letters from airlines which do not participate in the three global alliances, were collected. As for the airlines in the non-alliance group, they are simultaneously ranked in the leading airline groups by financial and traffic performances in FlightGlobal's world airline rankings 2018. Table 2 shows descriptive data of the airline attributes.

Table 2. Descriptive data of airline attributes (*Source:* Authors' own research)

Categorization	Number of data
Airlines belonging to global alliances	38
oneworld	7
SkyTeam	12
Star Alliance	19
Non-alliance airlines	8
Total	46

3.3 Research design

To assess the strategic communication level of subject groups, we introduce an assessment framework for three aspects of the CEO letters. First, we conduct a quantitative assessment of CEO letters using frequency tests. Namely, this study examines whether subject groups have ideal CEO letters. This study adopts an assumption from Pearce and David (1987), a well-known work in the strategic communication research field, that a desirable strategic communication tool covers broad topics and has essential components.

Next, we conduct a qualitative assessment of CEO letters using frequency tests to clarify the emphasis of the three leading alliances' CEO letters. Finally, this study carries out a quality assessment of CEO letters based on the CEO letter effectiveness measurements developed by Segars and Kohut (2001). The measurements are anchored by seven-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). This study adopts 17 items belonging to four main categories; and these are credibility, efficacy, commitment, and responsibility for the work. Table 3 shows the measurements of CEO letter effectiveness. Based on the assessment of CEO letter effectiveness of subject groups, *t*-tests and one-way analysis of variance tests (ANOVA) were carried out.

For the first and second stages, CEO letters were coded according to the main topics based on previous studies (Judd and Tims, 1991; Kohut and Segars, 1992; Santema and van de Rijt, 2001; Chang, et al., 2003; Bournois and Point, 2006; Conaway and Wardrope, 2010; Dumitru, et al., 2015). After an overall intensive review, this study set 10 topics of CEO letters: "customer", "external environment", "governance", "infrastructure", "market", "product", "performance", "stakeholders", "strategy", and "social responsibility".

Table 4 indicates the main topics and definitions. To avoid coding bias by human judgment, this study carried out a text mining analysis to make a coding rule using highly mentioned words in the CEO letters. The coding rule includes some critical words to divide topics. The study's text mining analysis was carried out using KH-coder version 3, and this analysis consists of tokenization, removal of stop-words, and word stemming.

According to Liau and Tan (2014) (p. 1347), "tokenization is the process of breaking up a sequence of words into pieces called tokens. Tokenization aims to examine the words in a sentence and identify meaningful keywords". Tokens are characterized as words, numbers, or signs (Peji´c Bach, et al., 2019). The next step is deleting stop-words. Stop-words are the words that do not affect interpretations, for instance, punctuation (such as ".", and ","), pronouns (such as "I" "we" and "they"), articles (such as "a" and "the"), and prepositions (such as "from", "to", and "before") (Liau and Tan, 2014). This process aims to reduce noise and dimensionality in the text (Peji´c Bach, et al., 2019).

Word stemming is a process that transforms words into linguistic roots (Liau and Tan, 2014). For instance, "fly", "flies", "flying", "flew", and "flown" have the same linguistic root. The word stemming process bundles variant patterns of the word into the same category.

For the third stage, the two authors independently judged each CEO letter's effectiveness. To assess the agreement between authors, Cohen's (1960) kappa was calculated by IBM SPSS Statistics software. According to George & Mallery (2019), IBM SPSS Statistics is "one of the world's largest and most successful statistical software companies."

This study's first kappa coefficient was 0.098, which indicates a slight inter-rater agreement (Landis, et al., 1977). After that, the two authors discussed centering around fairly different opinions and reached improved agreements.

The final kappa coefficient was 0.386, which indicates a fair agreement (Landis, et al., 1977). In addition to this, the two authors' CEO letter effectiveness scores were summed and averaged for the one-way ANOVA tests.

Table 3. Measurements of CEO letter effectiveness (*Source:* Segars and Kohut, 2001, p.544).

Credibility
The image of the CEO as a sincere and accurate interpreter of corporate events:
CR1: The information conveyed by top-management is reliable
CR2: The strategic direction of top-management is focused
CR3: The strategic direction of top-management is realistic
CR4: The information conveyed by top-management is sincere
CR5: The information conveyed by top-management is accurate
Efficacy
The image of the CEO as a controlling force in organizational and environmental events.
EF1: The actions of top-management have impacted the outcomes of the organization.
EF2: Top-management understands the variables that affect the organization.
EF3: Top-management is in control of organizational activities.
EF4: Top-management is responsive to changing competitive conditions.
Commitment
The image of the CEO as a good steward to current and potential customers.
CO1: Top-management appreciates customers.
CO2: Top-management is committed to meeting customers' needs.
CO3: Top-management is actively generating new business.
CO4: Top-management is building cooperative relationships with business partners.
Responsibility
The image of the CEO as a "good citizen" in business relationships.
RE1: Top-management is concerned about emerging social and environmental issues.
RE2: Top-management fosters values and ethical standards for employees of the organization.
RE3: Top-management endeavors to create mutual benefit among business partners.
RE4: Top-management is concerned about employee well-being.
CEO – chief executive officer, CR – credibility, EF–efficacy, CO – commitment; RE – responsibility.

Table 4. Main topics of the CEO letter (*Source:* Authors' own research)

Topics	Definition and description
Customer (Judd and Tims, 1991; Chang, et al., 2003; Conaway and Wardrope, 2010)	The concern for customers. It includes the following words: customer, demand, experience, loyalty, need, passenger
External environment (Kohut and Segars, 1992; Conaway and Wardrope, 2010)	The concern for external factors to affect airlines' performance. It includes the following words: challenge, crisis, risk, trade
Governance (Conaway and Wardrope, 2010)	The concern for leadership and control by the CEO. It includes the following words: control, director, management
Infrastructure (Conaway and Wardrope, 2010)	The concern for airlines' infrastructure, technology investment. It includes the following words: aircraft, fleet, investment, seat, technology

Table 4. Main topics of the CEO letter, cont. (*Source:* Authors' own research)

Topics	Definition and description
Market (Kohut and Segars, 1992; Bournois and Point, 2006)	The concern for airlines' target markets. It includes the following words: area, aviation, country, industry, market, region, sector, tourism, world
Product (Kohut and Segars, 1992; Bournois and Point, 2006)	The concern for airlines' product mix. It includes the following words: service, operation, route, network, brand, cargo, operating, product, quality, program, destination, resource, opportunity, city, programme
Performance (Kohut and Segars, 1992; Bournois and Point, 2006; Conaway and Wardrope, 2010; Beauchamp and O'Connor, 2012; Dumitru, et al., 2015)	The concern for airlines' performance and growth, survival. It includes the following words: achievement, advantage, asset, benefit, capital, cash, capacity, cost, development, economy, efficiency, expansion, fuel, growth, increase, interest, loss, performance, profit, result, revenue, sale, success, traffic
Stakeholders (Dumitru, et al., 2015)	The concern for airlines' stakeholders. It includes the following words: airport, community, cooperation, employee, government, member, partner, partnership, people, shareholder, staff, stakeholder, team
Strategy (Kohut and Segars, 1992; Santema and van de Rijt, 2001; Bournois and Point, 2006; Conaway and Wardrope, 2010)	The concern for airlines' strategic plans and mission, vision, goal, operating philosophy. It includes the following words: culture, goal, history, objective, plan, policy, position, priority, safety, strategy, target, value
Social responsibility (Conaway and Wardrope, 2010; Beauchamp and O'Connor, 2012; Dumitru, et al., 2015)	The concern for social issues including the environment, ethics, contribution to the community. It includes the following words: carbon, community, environment, emission, reduction, responsibility, society, sustainability

4 Results

This study carried out a quantitative assessment of the CEO letters using frequency tests. As a result, the non-alliance group's component number of CEO letters was found to be more than the alliance groups' (9.5 > 8.625). Also, the component number of CEO letters of Star Alliance was the most numerous among alliances (9.157 > 8.66, 7.44). Table 5 indicates the average component numbers of subject groups.

Table 5. Averaged component numbers of each subject groups' CEO letters
(*Source:* Authors' own research)

Alliance	Non-alliance	oneworld	SkyTeam	Star Alliance
8.625	9.5	7.44	8.66	9.157

Next, this study conducted a qualitative assessment of the CEO letters using frequency tests. According to the analysis, the alliance group emphasizes "customer", while the non-alliance group emphasizes "customer", "infrastructure", "market", "performance", "product", "social responsibility", "stakeholder", and "strategy". On the other hand, oneworld members highlight "customer", and SkyTeam members highlight "customer", "performance", and "stakeholder". Star Alliance members emphasize "performance", "product", and "strategy". Tables 6 and 7 show the main topics in the CEO letters of the subject groups.

Table 6. Comparing alliance and non-alliance groups based on the frequency of the main topics in CEO letters
(Source: Authors' own research)

	Alliance			Non-alliance		
Topics	Frequency	Percentage	Rank	Frequency	Percentage	Rank
Customer	40	100	1	8	100	1
External environment	30	75	6	7	87.5	2
Governance	25	62.5	7	5	62.5	3
Infrastructure	34	85	5	8	100	1
Market	39	97.5	2	8	100	1
Performance	34	85	5	8	100	1
Product	39	97.5	2	8	100	1
Social responsibility	37	92.5	3	8	100	1
Stakeholder	34	85	5	8	100	1
Strategy	36	90	4	8	100	1

Table 7. Comparing the three leading alliances based on the frequency of the main topics in CEO letters
(Source: Authors' own research)

	oneworld			SkyTeam			Star Alliance		
Topics	Fre-quency	Percent-age	Rank	Fre-quency	Percent-age	Rank	Fre-quency	Percent-age	Rank
Customer	10	100	1	12	100	1	18	94.7	2
External environ-ment	5	50	4	8	66.6	4	16	84.2	4
Governance	1	10	5	8	66.6	4	13	68.4	5
Infrastructure	7	70	3	10	83.3	3	17	89.4	3
Market	8	80	2	11	91.6	2	18	94.7	2
Performance	7	70	3	12	100	1	19	100	1
Product	8	80	2	10	83.3	3	19	100	1
Social responsi-bility	8	80	2	10	83.3	3	17	89.4	3
Stakeholder	7	70	3	12	100	1	17	89.4	3
Strategy	7	70	3	11	91.6	2	19	100	1

Finally, this study carried out a quality assessment of CEO letters. (Tables 8 and 9 show the CEO letter effectiveness of the subject groups.) As a result, the non-alliance group's CEO letters were found to outperform the alliance's CEO letters based on EF2 ($6.29 > 5.33$, $t = -3.132$, $p = 0.01$), EF3 ($6.29 > 5.26$, $t = -3.425$, $p = 0.01$), and RE1 ($6.57 > 4.87$, $t = -2.936$, $p = 0.01$). Although there are only moderate differences, the CEO letter effectiveness score of the non-alliance group was higher than the alliance group. Specifically, the non-alliance group outperforms the alliance group on the other seven items, namely CR5, EF1, CO3, CO4, and RE2–RE4.

On the other hand, oneworld members' CEO letters outperform the others based on RE1 (6.57 > 5.15, 3.42, F = 4.793, p = 0.05). Overall, the CEO letter effectiveness score of oneworld was higher than others, and oneworld also scored highest on nine other items, namely CR1, CR2, CR3, CR4, EF2, EF4, CO1, CO4, and RE3. Star Alliance outperformed on six items (CR5, EF1, CO2, CO3, RE2, and RE4), while SkyTeam outperformed on only one item (EF3).

Table 8. Differences of CEO letter effectiveness item measures between alliance and non-alliance airlines (*Source:* Authors' own research)

Item	Mean		SD		SE		t-value	p-value
	Alliance	Non-alliance	Alliance	Non-alliance	Alliance	Non-alliance		
CR1	6.31	6.14	0.977	0.900	0.157	0.340	0.415	0.680
CR2	5.87	5.00	1.525	1.414	0.244	0.535	1.406	0.167
CR3	5.51	4.57	1.620	1.618	0.259	0.612	1.416	0.164
CR4	6.36	6.00	1.038	0.816	0.166	0.309	0.865	0.392
CR5	5.72	5.86	1.503	1.215	0.241	0.459	−0.231	0.818
EF1	5.67	6.29	1.722	0.488	0.276	0.184	−0.937	0.354
EF2	5.33	6.29	1.510	0.488	0.242	0.184	−3.132	0.004**
EF3	5.26	6.29	1.482	0.488	0.237	0.184	−3.425	0.002**
EF4	4.23	4.00	2.218	2.082	0.355	0.787	0.256	0.799
CO1	4.38	3.86	1.786	1.464	0.286	0.553	0.736	0.466
CO2	6.03	5.71	1.709	1.604	0.274	0.606	0.448	0.657
CO3	4.44	4.86	1.957	1.864	0.313	0.705	−0.528	0.600
CO4	4.03	4.86	2.006	2.673	0.321	1.010	−0.960	0.342
RE1	4.87	6.57	2.430	1.134	0.389	0.429	−2.936	0.009**
RE2	3.31	3.71	2.296	1.496	0.368	0.565	−0.449	0.655
RE3	3.28	3.86	1.589	2.035	0.254	0.769	−0.846	0.402
RE4	3.36	4.29	2.254	2.289	0.361	0.865	−1.000	0.323

*p < 0.05; **p < 0.01
CEO − chief executive officer, CR − Credibility, EF − efficacy, CO − commitment, RE − responsibility

Table 9. Differences of CEO letter effectiveness item measures among the three global alliance (*Source:* Authors' own research)

Item	Alliance	Mean	SD	SE	F/p
CR1	oneworld	6.57	0.535	0.202	0.576/0.567
	SkyTeam	6.42	1.443	0.417	
	Star Alliance	6.15	0.745	0.167	
CR2	oneworld	6.57	0.535	0.202	1.063/0.356
	SkyTeam	5.92	2.065	0.596	
	Star Alliance	5.60	1.353	0.303	

Table 9. Differences of CEO letter effectiveness item measures among the three global alliance, cont.
(*Source:* Authors' own research)

Item	Alliance	Mean	SD	SE	F/p
CR3	oneworld	6.14	0.690	0.261	0.795/0.459
	SkyTeam	5.58	2.353	0.679	
	Star Alliance	5.25	1.293	0.289	
CR4	oneworld	6.86	0.378	0.143	1.586/0.219
	SkyTeam	6.50	1.446	0.417	
	Star Alliance	6.10	0.852	0.191	
CR5	oneworld	5.71	1.799	0.680	0.011/0.989
	SkyTeam	5.67	2.015	0.582	
	Star Alliance	5.75	1.070	0.239	
EF1	oneworld	5.57	1.618	0.612	0.046/0.955
	SkyTeam	5.58	2.314	0.668	
	Star Alliance	5.75	1.410	0.315	
EF2	oneworld	5.86	1.345	0.508	0.703/0.502
	SkyTeam	5.00	1.954	0.564	
	Star Alliance	5.35	1.268	0.284	
EF3	oneworld	5.14	1.215	0.459	0.663/0.522
	SkyTeam	5.67	1.969	0.569	
	Star Alliance	5.05	1.234	0.276	
EF4	oneworld	5.14	1.864	0.705	0.155/0.857
	SkyTeam	3.83	2.038	0.588	
	Star Alliance	4.45	1.572	0.352	
CO1	oneworld	5.14	1.864	0.705	1.230/0.304
	SkyTeam	3.83	2.038	0.588	
	Star Alliance	4.45	1.572	0.352	
CO2	oneworld	6.14	1.215	0.459	1.964/0.155
	SkyTeam	5.25	2.454	0.708	
	Star Alliance	6.45	1.146	0.256	
CO3	oneworld	3.43	2.699	1.020	1.422/0.254
	SkyTeam	4.33	1.497	0.432	
	Star Alliance	4.85	1.872	0.418	
CO4	oneworld	4.29	2.563	0.969	0.098/0.907
	SkyTeam	4.08	2.466	0.712	
	Star Alliance	3.90	1.553	0.347	

Table 9. Differences of CEO letter effectiveness item measures among the three global alliance, cont.
(*Source:* Authors' own research)

Item	Alliance	Mean	SD	SE	F/p
RE1	oneworld	6.57	1.134	0.429	4.793/0.014*
	SkyTeam	3.42	2.466	0.712	
	Star Alliance	5.15	2.323	0.519	
RE2	Oneworld	3.29	2.430	0.918	0.275/0.761
	SkyTeam	2.92	2.644	0.763	
	Star Alliance	3.55	2.114	0.473	
RE3	oneworld	3.86	1.215	0.459	2.483/0.098
	SkyTeam	3.83	1.899	0.548	
	Star Alliance	2.75	1.372	0.307	
RE4	oneworld	2.71	2.360	0.892	0.992/0.381
	SkyTeam	2.92	2.151	0.621	
	Star Alliance	3.85	2.277	0.509	

*$p < 0.05$, **$p < 0.01$
CEO − chief executive officer, CR − Credibility; EF − efficacy, CO − commitment, RE − responsibility

5 Discussion

As the response to RQ1, this study found that non-alliance airlines have more ideal CEO letters based on component numbers and CEO letter effectiveness. Also, the non-alliance group more evenly emphasize a wider range of topics than the alliance group. These facts imply that, currently, the alliance group cannot surpass its rival group in terms of quality of strategic communication.

On the other hand, as the response to RQ2, we found that Star Alliance members have ideal CEO letters based on their component numbers. Overall, oneworld members' CEO letter effectiveness was the highest. Also, depending on the alliance, the emphasis of the CEO letters differed. These findings imply that, currently, each alliance has a differentiated strategic communication tool.

The manner of strategic communication of an alliance acts as its relative competitive advantage. Considering that airlines have similar business models and products, differentiation of strategies in the aviation industry has been limited to such things as a low-price airfare policy. These findings suggest that the strategic communication of an alliance can be utilized as a possible differentiation tool and as a means of strengthening its brand power.

Even though it was not our main concern, additionally, we found that subject groups have commonly highlighted "customer" as a significant component of CEO letters. This result might imply that the aviation industry is a high demand-driven industry. It is firmly believed that the most significant role of global airline alliances is to offer customer value to passengers (Kleymann and Seristö, 2004).

Currently, joining a global alliance has become a common strategic choice of airline firms for achieving a competitive advantage and enhancing passengers' satisfaction (Wang, 2014). Also, an airline's service quality is determined by its interactions with external stakeholders, and among external stakeholders, passengers play the most important role in airline service and the industry as a whole.

The recent emergence of the global alliance in the aviation industry has been affected by the change in demand of passengers pursuing seamless travel. This study's findings are evidence of the close relationship between passengers and global airline alliances.

6 Conclusion

This study has introduced a comprehensive framework for assessing strategic communication as a competitive advantage in itself, and also as a tool for generating other types of competitive advantage of global airline alliances. Although the difference was only moderate, we conclude that, currently, the strategic communication of global alliance groups does not surpass that of its rival group. Also, there exists some evidence from an analysis of CEO letters that global alliances differentiate their strategic communication. Collaterally, we found that "customer" is the most focal topic in the strategic communication of the aviation industry.

6.1 Theoretical contributions

As a theoretical contribution, we have suggested a novel paradigm and method for measuring the competitive advantages of global airline alliances through an assessment of their strategic communication. Therefore, it can also be said that we have tried to expand existing knowledge regarding this long-discussed topic in the research field.

6.2 Practical contributions

Our findings indicate that current global airline alliances could not achieve overwhelming competitive advantages on strategic communication quality. These results imply that global airline alliances have to make greater endeavors to increase strategic communication quality and realize their shared strategic objectives. As years go by, for the survival and growth of a company, and even of an alliance, the ability to create high-quality strategic communication will be required even more. In particular, as firms' competition has moved from firm versus firm-level competition to group versus the group-level competition, the importance of managing an alliance's collective strategic communication is increasing.

Next, we have described what each alliance group's emphasis in CEO letters is and what the components of an ideal CEO letter are in the aviation industry. Current global airline alliances and their members can refer to and utilize our contributions as a useful tool for monitoring their own and competitors' manner of strategic communication.

Finally, we found that many airlines, even nowadays, do not disclose their annual report and CEO letter in the aviation industry. There is no doubt that transparent information disclosure and high-quality strategic communication play an important role in satisfying the need of stakeholders to know, and in improving stakeholder's understanding of firms, so as to form a sustainable relationship between firms and stakeholders. Therefore, airlines and alliances should more actively manage their CEO letters than they have done before.

6.3 Limitations and future research

This study has some limitations that future research should examine. First, it mainly focused on the CEO letter as the key strategic communication tool of global airline alliances, as many previous studies have pointed out. However, there are various types of strategic communication vehicles such as corporate mission statements, information on official websites, managerial responses to customer word-of-mouth (WOM), and CEO interviews with the media. Moreover, this study considered only CEO letters in official reports as its sample. Due to the growth of social network services (SNS), airline CEOs communicate more actively with the public nowadays and communicate their messages through SNS. Future research should consequently consider and utilize various strategic communication tools and various types of CEO letters.

Finally, even if airlines and alliances devise ideal strategic communication tools, in other words, communications conveying clear strategic goals and well-established plans, the ability to realize them is another aspect of competitive advantage. Namely, the organization's mission, goals, and plans should be transmitted to employees, and employees should successfully implement them. These inner processes can be critical elements in producing superior performance of firms. Thus, future research should examine the relationships between attributes of strategic communication tools and the performance of airlines and alliances.

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