

## Original Article

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# The Impact of Diverse Corporate Cultures on the Future Performance of Airline Mergers and Acquisitions (M&A) - A Case of Two Major Airlines in Korea -

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## ABSTRACT

This research explores how different corporate cultures can influence the post-M&A performance of the airlines undergoing strategic M&A in Korea. The sample size of this research is 214 respondents that is strictly limited to the employees of airlines under M&A process, and CFA and SEM were employed for the statistical analysis. This research investigated that corporate cultures including group-oriented, development-oriented, and rationale-oriented will positively influence the post M&A performance of both efficiency and effectiveness through a mediation of collaboration during M&A process. In contrast, relations between group-oriented culture and interaction, interaction and effectiveness were not revealed positive influences. The findings of this research will provide valuable insights into the potential risks that can impede successful M&A within the M&A process, specially focusing on the conflicts between organizations stemming from different organizational cultures, which can have an adverse impact on M&A performance.

**Key Words** : Corporate Cultures(기업문화), Airline M&A(항공사 인수합병), Interdepartmental Integration(부서통합), Post M&A Performance(합병 후 실적), Business Sustainability(사업의 지속가능)

## I. INTRODUCTION

Over the past four decades, the airline industry has encountered dynamic air travel market environments, including the incidents of war,

terrorism, rise of fuel prices and a global financial crisis. Airlines themselves have continuously adapted to secure long-term business sustainability through strategic activities such as mergers and acquisitions (M&A) and organizational restructuring. In this context, Airline M&A can have a significant impact on business sustainability by reducing costs and increasing market share, thereby ensuring long-term viability through increased scale and resources. Additionally, successful M&A can create sustainability synergies by leveraging the respective strengths and strategies of the airlines involved. A new wave of M&A in the Asian Pacific airline industry occurred in 2001 when Japan Airlines and Japan Air System (Arai, 2004) merged as a strate-

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gic decision. In the following year, the consolidation of nine prominent national airlines in China resulted in the formation of three groups for strategic purposes. Similarly, between 2008 and 2010, four major airlines in the United States merged into two groups: Delta-Northwest Airlines and United-Continental Airlines. In Europe, Air France and KLM announced their merger, and subsequently, numerous M&A activities have taken place between airlines with various strategic reasons (A4A, 2022). Recently, many airlines have been taking these strategic actions to survive and sustain their businesses in dynamic market environments, using mergers and acquisitions as part of their strategic decisions.

Previous studies on airline M&A were conducted on the areas of cost effectiveness (Borenstein, 1990; Kim, 1993; Prager, 1998; Bilotkach, 2011; Kwoka, 2010) and the other study conducted by Caves (1984) and Brueckner (1991) carried out the economy of density by airline mergers. In addition, many studies conducted about the changes of airline alliance and airline size (Oum, 2001; Goh, 2006; Merkert, 2012). As presented in the literature, previous research related to Airline M&A have focused on cost, economies of scale, economy density, airline alliances, and airline sizes. However, to become a successful single body from two different companies through airline M&A, many internal and external elements within two airlines can influence the post M&A performance which importantly affect to their long-term business sustainability. Hofstede (1986) and Webster (2010) agree that corporate culture influences the behavior of individuals within firms, which can be related to the level of interaction and collaboration within organizations during M&A process. A scholar found that active interaction and collaboration during M&A process positively influence the product development performance for both efficiency

and effectiveness Chen (2006). Moreover, Klimas (2016) points out that the corporate culture may be important for the relationship of the interaction and collaboration within corporations, and another study insists that the corporate culture can influence the level of collaboration within corporations (Dagnino, 2017). In addition, a scholar has highlighted corporate cultural concepts as important factors influencing cooperative relationships between firms (Lascaux, 2020), and many scholars argue that cross functional coopetition can enhance a firm's performance (James, 2007; Luo, 2006; Nguyen, 2018; Strese, 2016). Also, Rijamampianina (2005) insists that understanding different cultures is important to have a high level of collaboration within firms. These findings indicate that different corporates may affect collaboration within firms.

Regrettably, many studies of airline mergers focused on financial related performances, rather than managing organizations which possibly create a risk or synergy for the base of long-term business sustainability by understanding the culture of each organization. Based on the previous literature, previous studies overlooked the importance of understanding each organizational culture for airline M&A, although different organizational cultures can directly influence the interdepartmental integration which may in turn influence the success of the M&A completion. To the best of the authors' knowledge and efforts to find such research, no study has employed a research model that prioritized the influence of the corporate cultures on airline M&A performance through mediators of interaction and collaboration in the aviation field. To address this research gap, the objective of this study is to predict the impact of various corporate cultures on post-M&A performance through the mediators of interaction and collaboration based on current M&A case in Korean airline industry.

In 2020, Korean air and Asiana airlines which are two major rival full-service airlines

in Korea officially announced their M&A plan to become one entity, and currently these two airlines are waiting for the final approvals from the competitor markets of US, EU, UK, and Japan. Over the past three decades, Korean Air and Asiana Airlines have been strong rivals in the Korean market. According to the Korea Civil Aviation (2020) and the annual reports of these two airlines (Hong, 2023) in 2019, Korean Air operated 166 fleets with 101,108 million ASKs, 82,273 million RTKs, and an average load factor of 82.4%, while Asiana Airlines operated 85 fleets with 56,332 million ASKs, 47,108 million RTKs, and an average load factor of 83.6%. In terms of market share, Korean Air held 22.9% for domestic routes and 22.2% for international routes, while Asiana Airlines held 19.3% for domestic routes and 15.3% for international routes. The objective of this paper is to explore how the different corporate cultures within two strong rival airlines over the past three decades can influence the post M&A performance, even prior to completion of the M&A process. The findings of this research will provide the meaningful insights and guidance to stakeholders involved in M&A projects, enabling them to navigate cultural differences for their sustainable business outcomes.

Based on an overall view of the literature, current relationship, and organizational cultures within these two airlines, the research questions for this study were posed. Firstly, as these two airlines have been powerful rivals for the past three decades, can these two airlines be successfully integrated with active interaction and collaboration despite their different corporate cultures? Secondly, can interaction and collaboration between Korean air and Asiana airlines positively influence the post M&A performance in terms of efficiency and effectiveness, ensuring their long-term business sustainability? Finally, which types of corporate culture will positively influence the post M&A

performance through the mediators of interaction and collaboration? This study examines how the different corporate culture between the two strong rival airlines will affect their future M&A performance through predictable risks that may arise during M&A process. It is expected to provide an important insight for the stakeholders associated with this M&A project and their business sustainability.

The structure of this research unfolds as follows: In Section 2, a review of pertinent literature covering M&A, various corporate culture types, interaction and collaboration, and future M&A performance encompassing both efficiency and effectiveness is presented. In Section 3, the research model is introduced, detailing the methodology encompassing survey design, data analysis, and its outcomes. In addition, this section includes descriptive statistics, CFA involving model FIT analysis, and SEM analysis. Furthermore, the results of each hypothesis are also delineated. Finally, in Section 4, a holistic discussion and conclusion are provided, outlining implications for both academia and management stemming from this research.

## II. LITERATURE REVIEW

### 2.1 Advantages of Mergers and Acquisition (M&A) in the Airline Industry

Mergers and acquisitions (M&A) are key corporate strategies and activities used to expand businesses and ensure long-term sustainability, achieving synergy, efficiency, and rapid growth compared to competitors. A study has shown that operational efficiency improves corporate performance by reducing costs, enhancing product quality, and increasing market share. Furthermore, in the US Horizontal Merger Guideline (2010), there is a focus on the potential for mergers to produce substantial efficiencies, ultimately boosting the merged company's capa-

bility and motivation to engage in competitive actions. This has the potential to result in reduced prices, elevated quality, and enhanced service or the introduction of new products, which benefits the economy. Research demonstrated that airline M&A contributes to gaining the efficiency by reducing the cost and the market power through a reduction in the number of competitors (Clougherty, 2002). Additionally, Merkert (2012) argued that airline M&A generates synergy and efficiency as a 'game changer' through network, fleet rationalization by eliminating overlapping services. In the manufacturing industry, research found that M&A provides corporations with opportunities to increase time efficiency in producing new products and enhance competitiveness (Haspeslagh, 1991). These studies support the notion that airline M&A contributes to increased efficiency, effectiveness, and financial performance of airlines through better alignment of airline schedules, air service routes, and well-coordinated products and prices.

## 2.2 Corporate Cultures and Interaction, Collaboration

Scholars insist that organization culture influences relationships within firms (Rijamampianina, 2005; Noorderhaven, 2002), and a study conducted by Schein (2010) argues that organizational culture influences individual behavior within organizations. Additionally, a scholar found that the organizational culture influences the level of collaboration between firms (Klimas, 2016), and Strese (2016) argues that corporate culture can be influenced by the type of leaderships. Based on these studies, recent research further assumes that different corporate cultures within firms may influence the level of interaction and collaboration. Taking this into consideration, this research theorizes that different corporate cultures directly influence the levels of interaction and collaboration within Korean air and

Asiana airlines during M&A process. In order to explore this research with the current M&A case of Korean Air and Asiana Airlines, we have adopted definitions for three types of corporate cultures: group-oriented culture, development-oriented culture, and rationale-oriented culture, as proposed by Ernesto (Knein, 2020).

### 2.2.1 Group-oriented culture

According to a study conducted by Deshpandé (2004), on consensus and a valuing of close interpersonal relationships, loyalty, tradition, and a sense of family within the company. Prior studies assert that elevated levels of trust, employee commitment, and loyalty to the company in a group-oriented culture are key drivers of firm effectiveness (Brettel, 2015; Iivari, 2007). Additionally, mutual trust influences the degree of information flow and knowledge exchange between organizations and strengthens interpersonal relationships among employees from different organizations (Brettel, 2015). Moreover, Kara (2011) argues that a group-oriented culture has characteristics to support a resolution when conflicts occur within teams. Given such a corporate culture, we expected that group-oriented culture will strongly motivate high levels of interaction and collaboration within different organizations. Thus, two hypotheses were derived below.

- H1: Group-oriented culture will have a significant effect on interaction within M&A airlines during M&A process.
- H2: Group-oriented culture will have a significant effect on collaboration within M&A airlines during M&A process.

### 2.2.2 Development-oriented culture

A development-oriented culture is closely associated with business growth and innovation (Quinn, 1991). A study conducted by Deshpandé

(1993) characterizes a development-oriented culture as an entrepreneurial mindset, creativity, and adaptability. According to the research by Slevin (1990) and Strese (2016), in an entrepreneurial culture, the creation of new products assumes a significant role due to the intense pressure to innovate and generate novel ideas ahead of market competitors. By reflection of this argument into the airline industry, the development of new products and services such as expanding or opening new routes and differentiating service quality to increase passenger satisfaction becomes significantly important for survival in highly competitive market. Applying these theories to the airline industry, the development of new products and services, such as expanding or opening new routes and differentiating service quality to increase passenger satisfaction, becomes significantly important for survival in a highly competitive market (Luo, 2006; Strese, 2016; Tsai, 2002). Furthermore, a development-oriented culture fosters high level of participation and teamwork across organizations (Cameron, 1985). Based on literature, this research anticipates that a development-oriented culture will strongly motivate a high level of interaction and collaboration within different organizations. Consequently, two hypotheses were derived below.

- H3: Development-oriented culture will have a significant effect on interaction within M&A airlines during M&A process.
- H4: Development-oriented culture will have a significant effect on influence collaboration within M&A airlines during M&A process.

### 2.2.3 Rationale-oriented culture

Research conducted by Iivari (2007) insists that a rational-oriented culture emphasizes productivity, efficiency, and goal achievement. Cameron (1985) argues that in such corporate

cultures, managers demonstrate a decisive leadership style and work towards achieving market superiority and a competitive advantage.

In addition, goals and an achievement environment in a rationale-oriented culture are bonding mechanisms in the organizations (Deshpandé, 1993). Moreover, a study conducted by Strese (2016) insists that closely working together between different organizations with aligned goals given by leaders are important to become a market leader. Furthermore, rationale-oriented cultures prioritize enhancing productivity and efficiency as a means to gain a competitive edge (Quinn, 1991). To obtain a higher level of efficiency in the organization, it is crucial that different organizations and their processes should be closely integrated and smoothly aligned across different teams and functions (Luo, 2006). Moreover, a greater level of internal processes may drive the efficiency of the organizations as one of functions in rationale-oriented culture. Based on the literature, this research anticipates that a rationale-oriented culture will strongly motivate a high level of interaction and collaboration within different organizations. Thus, two hypotheses were derived below.

- H5: Rationale-oriented culture will have a significant effect on interaction within M&A airlines during M&A process.
- H6: Rationale-oriented culture will have a significant effect on collaboration within M&A airlines during M&A process.

## 2.3 The Interdepartmental Integration and M&A Performance

Integration is commonly defined by scholars as a state of shared vision and mutual goal commitments, often categorized as interdepartmental interaction and collaboration (Souder, 1977). Kahn's research (1996) further classified inter-

departmental integration into two categories: interaction and collaboration, emphasizing the significance of departmental interaction. Additionally, a scholar argues that the level of collaboration in interdepartmental cooperation during stages of the project activities is crucial. This collaboration can be measured by factors such as communication frequency, exchanged information and advice, technical assistance, and work transfer within the organization (Olson, 2001). Thus, it can be inferred that interdepartmental integration in an inter-organizational setting is closely related to both interaction and collaboration (Middel, 2007; Millson, 2002).

The assessment of the M&A performance by the empirical research may vary by industry and its business strategy after the M&A process. For the Airline industry especially, the methods of M&A performance evaluation are more varied. This is a study conducted before airline M&A on how different corporate culture will affect future M&A performance, has adapted the definition of the performance (Olson, 1995; James, 2007) with the categorization into two dimensions of efficiency and effectiveness for the prediction of the M&A performance. An efficiency is linked to the availability in the market, scheduling, successful project completion, whether the project adheres to the planned timeline, senior management satisfaction with the project outcomes, business operation expansion, and improved performance against competitors as well as long-term outcomes (Olson, 1995; James, 2007). Effectiveness is associated with corporate margin, customer satisfaction, market share, and corporate image, encompassing short-term results. Thus, based on the literature review, four hypotheses were derived below:

H7: Interaction within M&A airlines will have a significant effect on future efficiency.

H8: Interaction within M&A airlines will have a significant effect on future effectiveness.

H9: Collaboration within M&A airlines will have a significant effect on future efficiency.

H10: Collaboration within M&A airlines will have a significant effect on future effectiveness.

### III. METHODOLOGY

#### 3.1 The Interdepartmental Integration and M&A Performance

The research model is designed to investigate the influence of different corporate cultures on post-M&A performance through activities of interdepartmental integration between Korean Air and Asiana Airlines which are currently awaiting final approvals for their mergers and acquisitions from competitor markets of US, EU, UK, and Japan. The research model comprises three main constructs: different types of corporate cultures, activities of interdepartmental integration during the M&A process, and post-M&A performance. SEM analysis is adopted to analyze the relationships among these constructs and assess the relations between variables. SEM enables the evaluation of both direct and indirect effects, allowing for an examination of the mediating role of interaction and collaboration in the relationship between corporate cultures and post-M&A performance.

Based on the research model shown in Fig. 1, 28 survey items were crafted for a quantitative approach (Saunders, 2009). This was achieved by revising and complementing items from previous studies spanning various industries related to corporate cultures including group oriented, development oriented, rationale oriented, interaction, collaboration future interdepartmental integration, and the performance of both future efficiency and effectiveness, as shown in Table 1.

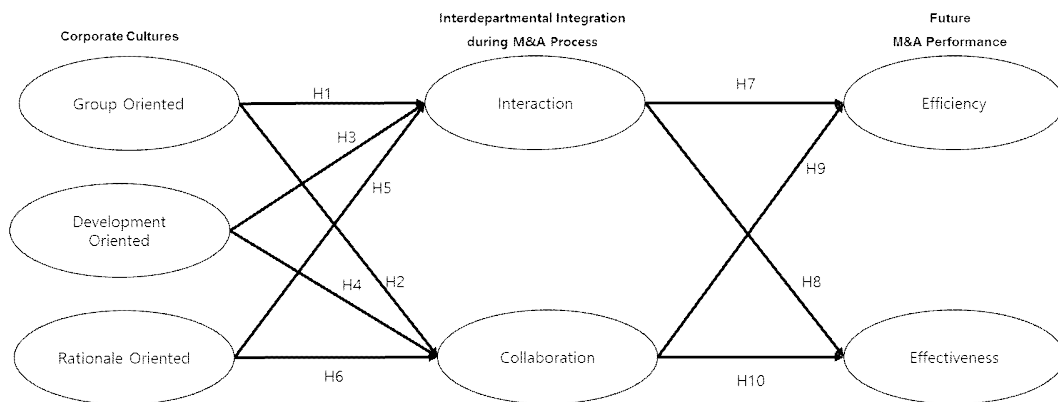


Fig. 1. The research model

Table 1. Questionnaire items

Constructs		Descriptions	Sources
Group oriented	GO1	It is like an extended family and people seem to share a lot of themselves.	Iivari, 2007
	GO2	Commitment to our organization runs high.	
	GO3	The glue that holds our organization together is loyalty and tradition.	
	GO4	Our organization emphasizes human resources.	
Development oriented	DO1	There is an emphasis on being first with products and services.	
	DO2	People are willing to stick their necks out and take risks.	
	DO3	The glue that holds our organization together is commitment to innovation and development.	
	DO4	Our organization emphasizes growth through acquiring new resources.	
Rationale oriented	RO1	Our organization is a very output-oriented place.	
	RO2	People are concerned with getting the job done and are not very personally involved.	
	RO3	An output and achievement orientation is commonly shared.	
	RO4	The glue that holds our organization together is an emphasis on tasks and goal accomplishment.	
Interaction	IA1	During M&A process between KE/OZ, the meetings between two parties will be conducted productively.	Kahn, 1996; Van, 1979
	IA2	During M&A process between KE/OZ, committees, and task force team between two parties will be well organized.	
	IA3	During M&A process between KE/OZ, communication of phone and email between two parties will be actively exchanged.	
	IA4	During M&A process between KE/OZ, standard documentations between two parties will be actively exchanged.	
Collaboration	CO1	During M&A process between KE/OZ, two parties will have mutual understanding for the common goals.	Kahn, 1996
	CO2	During M&A process between KE/OZ, two parties will be shared ideas, information and/or resources actively.	
	CO3	During M&A process between KE/OZ, two parties will be shared the same vision for the company.	
	CO4	During M&A process between KE/OZ, two parties will work together as a team for the common goal.	

Table 1. Continued

Future efficiency	EC1	M&A of KE/OZ will be successfully completed in planned schedule.	James, 2007; Olson, 1995
	EC2	M&A of KE/OZ will be successfully completed in budget.	
	EC3	After M&A of KE/OZ completion, new KE/OZ will extend their business operation.	
	EC4	After M&A of KE/OZ completion, new KE/OZ will have better performance by competitive products and service.	
Future effectiveness	ET1	After M&A of KE/OZ completion, new KE/OZ will reach out to the given revenue target.	
	ET2	After M&A of KE/OZ completion, new KE/OZ will reach out to the profit target.	
	ET3	After M&A of KE/OZ completion, customer satisfaction will be increased on new KE/OZ.	
	ET4	After M&A of KE/OZ completion, the airline image of new KE/OZ will be increased.	

All survey questionnaires were revised to fit the purpose of this research utilizing the 5-point Likert scale and translated into the Korean language with support from two professional translators to clearly articulate the questions for the survey participants. The process of this translation was carried out as per references to ensure that cultural and linguistic equivalency were applied to the scales (Ruvio, 2007). A convenience sampling method (Hair, 2006), which was based on the non-probabilistic and self-participation sampling method, was applied under the guidelines provided by Tarhini (2016). Five pilot tests were carried out by 15 volunteers, and an unspecified majority was used to modify the survey questionnaires.

### 3.2 Data Analysis and Results

The format of the main survey was constructed using a Google survey program. The survey link was strictly distributed within both Korean Air and Asiana Airlines to their current employees through a popular Korean social networking service (SNS) platform called 'Kakao Talk' for a limited duration of 21 days. During this three-week period, a total of 214 completed responses were collected, and no issues or failures were encountered, as the survey questions were designed to be completed without any

missing information. This research used SPSS version 25 for conducting various analyses, including descriptive statistics and internal reliability (Cronbach, 1951), and used AMOS 23 for conducting analyses of CFA, including convergent reliability, discriminant reliability, model fit analysis, and SEM path analysis, and to validate the hypotheses (Hair, 2011; Leontitsis, 2007). A correlation analysis was also carried out to assess the multi-collinearity of the independent variables among the factors and confirm that they were suitable for the SEM analysis (Yamamoto, 1999), which was conducted using AMOS version 23.

#### 3.2.1 Descriptive statistics

Table 2 presents the demographic profile of the 214 participants from both employees of Korean air and Asiana airlines, of which 65.9% were female and 34.1% were male. The participants of this research consisted of 47.7% employees from Korean Air and 52.3% from Asiana Airlines. In terms of service years, 20 years and above was the largest range of the group at 56.5%, and 16-20 years at 14%, 11-15 years at 13.6%, 6-10 years at 10.7% and below 5 service years were at 5.1%. In addition to the service area, the employees in frontline service, which are encountered in direct service points



Table 2. Demographic profile [N: 214]

Constructs		n	%
Gender	Male	73	34.1
	Female	141	65.9
Current company	Korean Air	102	47.7
	Asiana Airlines	112	52.3
Service years	Below 5 years	11	5.1
	6~10 Years below	23	10.7
	11~15 Years below	29	13.6
	16~20 Years below	30	14.0
	20 Years and up	121	56.5
Opinion for M&A decision	Agree	37	17.3
	Disagree	105	49.1
	Neutral	72	33.6
Service area	Crew (Cockpit & Cabin)	35	16.4
	Frontline Service (CS)	108	50.5
	Office Work (HQ)	38	17.8
	Sales & Marketing	7	3.3
	Engineer & Technician	26	12.1

of the customers were 50.5%, office workers including head office of the airlines were at 17.8%, crew members for both cockpit and cabin were at 16.4%, engineers and technicians were at 12.1% and sales and marketing were at 3.3%. The interesting information through the descriptive statistics revealed that nearly 50% of respondents as current employees of both airlines disagreed on a decision to merge Korean air and Asiana airlines, in contrast only 17.3% of respondents agreed.

### 3.2.2 Confirmatory factor analysis (CFA)

Before testing the hypotheses, a measurement model was validated through confirmatory factor analysis (CFA). During the screening process, it was found that five items from the development-oriented culture, group-oriented culture, and rationale-oriented culture constructs had standardized loading (SMC) values lower than the

recommended threshold of 0.4. These five items (DO2, DO3, GO2, RO1, RO2) were subsequently removed from the analysis, resulting in a total of 23 items being used for further analysis. The rest of 23 questionnaire items have produced the minimum satisfaction levels of SMC at 0.4 and above, which retains the reliability of each questionnaire. To satisfy other internal consistency concerns and maintain reliability, Cronbach's alpha analysis was also conducted (Hair, 2006). According to the results, all the questionnaires of 23 employed items for Cronbach alpha value exceeded the recommended level of 0.7 (Santos, 1999), as shown in Table 3.

To analyze correlations within given variables, average variance extracted (AVE) and composite reliability (CR) checks were carried out, as shown in Table 3. Generally, the acceptable level of AVE and CR are greater than 0.5 and

Table 3. Confirmatory factor analysis (CFA)

Indicators		S.E	Cronbach	SMC	AVE	CR
Group oriented culture	Our organization emphasizes human resources.	0.760	0.752	0.577	0.483	0.736
	The glue that holds our organization together is loyalty and tradition.	0.650		0.423		
	It is like an extended family and people seem to share a lot of themselves.	0.670		0.449		
Development oriented culture	Our organization emphasizes growth through acquiring new resources.	0.668	0.549	0.446	0.439	0.610
	There is an emphasis on being first with products and services.	0.657		0.432		
Rationale oriented culture	The glue that holds our organization together is an emphasis on tasks and goal accomplishment.	0.674	0.624	0.454	0.503	0.669
	An output and achievement orientation is commonly shared.	0.743		0.552		
Interaction	During M&A process between KE/OZ, standard documentations between two parties will be actively exchanged.	0.846	0.928	0.716	0.756	0.925
	During M&A process between KE/OZ, communication of phone and email between two parties will be actively exchanged.	0.917		0.841		
	During M&A process between KE/OZ, committees, and task force team between two parties will be well organized.	0.871		0.759		
	During M&A process between KE/OZ, the meetings between two parties will be conducted productively.	0.843		0.711		
Collaboration	During M&A process between KE/OZ, two parties will work together as a team for the common goal.	0.854	0.935	0.729	0.799	0.941
	During M&A process between KE/OZ, two parties will be shared the same vision for the company.	0.934		0.872		
	During M&A process between KE/OZ, two parties will be shared ideas, information and/or resources actively.	0.896		0.804		
	During M&A process between KE/OZ, two parties will have mutual understanding for the common goals.	0.890		0.792		
Future efficiency	After M&A of KE/OZ completion, new KE/OZ will have better performance by competitive products and service.	0.842	0.854	0.709	0.536	0.821
	After M&A of KE/OZ completion, new KE/OZ will extend their business operation.	0.733		0.537		
	M&A of KE/OZ will be successfully completed in budget.	0.706		0.499		
	M&A of KE/OZ will be successfully completed in planned schedule.	0.632		0.400		
Future effectiveness	After M&A of KE/OZ completion, the airline image of new KE/OZ will be increased.	0.716	0.904	0.513	0.691	0.898
	After M&A of KE/OZ completion, customer satisfaction will be increased on new KE/OZ.	0.760		0.578		
	After M&A of KE/OZ completion, new KE/OZ will reach out to the profit target.	0.905		0.820		
	After M&A of KE/OZ completion, new KE/OZ will reach out to the given revenue target.	0.925		0.856		

0.7 (Geldhof, 2014). However, this research additionally adopted the argument of Fornell and Larcker (1981) in order to accommodate some of the items which were calculated to be slightly under 0.5 of AVE and 0.7 of CR. According to the study conducted by Fornell and Larcker (1981), it is argued that a case of AVE is less than 0.5 but CR value is greater than 0.6, the convergent validity of the construct is still adequate. In addition, this research also adopted the argument of Helmstadter (1964) which insists that for the Cronbach alpha value, higher than 0.5 can be also acceptable, although Cronbach alpha generally accepts a greater level of 0.7 (Cronbach, 1951). Based on the literature above, the following CR and AVE value pairs were calculated: [0.736 (CR), 0.483 (AVE)] for group oriented culture, [0.610 (CR), 0.439 (AVE)] for development oriented culture,

[0.669 (CR), 0.503 (AVE)] for rationale oriented culture, [0.925 (CR), 0.756 (AVE)] for future interaction, [0.941 (CR), 0.799 (AVE)] for future collaboration, [0.821 (CR), 0.536 (AVE)] for future efficiency and [0.898 (CR), 0.691 (AVE)] for future effectiveness. The results of CR and AVE for all the variables in this research exceeded the minimum acceptable level of 0.5 for AVE and 0.7 for CR. Moreover, a discriminant validity check was conducted as shown in Table 4, where a correlation between factors had to be lower than the square root level of the AVE value (Cable, 2002). For the discriminant validity which presents correlations within factors reached at acceptable level.

### 3.2.3 Model fit indices

Fit indices of this model were computed as presented in Table 5. It was found that most of

Table 4. Discriminant validity

Constructs	A	B	C	D	E	F	G
Development oriented	1						
Group oriented	0.919	1					
Rationale oriented	0.896	0.854	1				
Interaction	0.462	0.604	0.412	1			
Collaboration	0.481	0.482	0.445	0.826	1		
Future efficiency	0.640	0.546	0.051	0.730	0.783	1	
Future effectiveness	0.387	0.448	0.487	0.518	0.609	0.935	1

Table 5. Model fit results

Division		Result	Recommendation or closer	Reference
Absolute fit index	CMIN/DF	1.849	$2 \leq \chi^2/df \leq 3$	Schermelleh, 2003
	RMR	0.060	$0.05 \leq SRMR \leq 0.10$	
	GFI	0.886	$0.90 \leq GFI \leq 0.95$	
	AGFI	0.830	$0.85 \leq AGFI \leq 0.90$	
	RMSEA	0.063	$0.05 \leq RMSEA \leq 0.08$	
Incremental fit index	NFI	0.914	$0.90 \leq NFI \leq 0.95$	
	CFI	0.958	$0.95 \leq CFI \leq 0.97$	

the items of the fit indices for this model were at acceptable levels or close to acceptable levels. Using CFA, the factors in the absolute fit index reached and exceeded the recommended thresholds with a result of  $\chi^2=342.135$ , CMIN/DF=1.849, RMR=0.060, GFI=0.886, AGFI=0.830, and RMSEA=0.063. The factors in the incremental fit index reached the acceptable levels, presenting NFI=0.914 and CFI=0.958. The results of the goodness of fit analysis via the CFA process were at the acceptable levels with a high level of accuracy. These results indicated that no problems existed in terms of satisfying the acceptance levels of the goodness of fit for CFA.

### 3.2.4 Structural equation modelling analysis

Table 6 presents the summary of the proposed research model with the results from the path analysis. The results in Fig. 2 show that group-oriented culture had significant effect on future collaboration ( $\beta=0.228$ , SE=0.068, CR=2.846, and  $p=0.004$  ( $p<0.005$ )) while group-oriented culture had no significant effect on future interaction ( $\beta=0.080$ , SE=0.067, CR=1.029). Thus, hypothesis H2 is supported while H1 is not supported. For hypothesis connecting between development-oriented culture and both future interaction

( $\beta=0.907$ , SE=0.627, CR=3.635, and  $p<0.001$ ) and collaboration ( $\beta=0.827$ , SE=0.533, CR=3.803, and  $p<0.001$ ), and hypothesis connecting between rationale-oriented culture and both future interaction ( $\beta=0.163$ , SE=0.106, CR=2.432, and  $p=0.015$  ( $p<0.05$ )) and collaboration ( $\beta=0.146$ , SE=0.102, CR=2.224, and  $p=0.026$  ( $p<0.05$ )) had all significant effect each other. Thus, H3, H4, H5 and H6 are all supported. In addition, hypothesis connecting between future collaboration and both future M&A efficiency ( $\beta=0.623$ , SE=0.128, CR=5.761, and  $p<0.001$ ) and effectiveness ( $\beta=0.580$ , SE=0.121, CR=4.832, and  $p<0.001$ ) had significant effect. However, future interaction and future effectiveness ( $\beta=0.042$ , SE=0.109, CR=0.374) had no significant effect while future interaction and future efficiency ( $\beta=0.219$ , SE=0.120, CR=2.108, and  $p=0.035$  ( $p<0.05$ )) had significant effect. Thus, hypothesis H6, H7, H9 and H10 are supported while H8 is not supported.

## IV. DISCUSSION AND CONCLUSION

Since the deregulation of the airline industry in 1978, numerous new airlines have emerged globally. This expansion has led to a significant

Table 6. Path coefficients among variables and hypotheses results

No.	Hypotheses			Coefficient (Standardize)	S.E	C.R.	<i>p</i>	Results
H1	Group oriented	→	Interaction	0.080	0.067	1.029	0.304	Not supported
H2	Group oriented	→	Collaboration	0.228	0.068	2.846	0.004**	Supported
H3	Development oriented	→	Interaction	0.907	0.627	3.635	***	Supported
H4	Development oriented	→	Collaboration	0.827	0.533	3.803	***	Supported
H5	Rationale oriented	→	Interaction	0.163	0.106	2.432	0.015*	Supported
H6	Rationale oriented	→	Collaboration	0.146	0.102	2.224	0.026*	Supported
H7	Interaction	→	F. Efficiency	0.219	0.120	2.108	0.035*	Supported
H8	Interaction	→	F. Effectiveness	0.042	0.109	0.374	0.709	Not supported
H9	F. Collaboration	→	F. Efficiency	0.623	0.128	5.761	***	Supported
H10	F. Collaboration	→	F. Effectiveness	0.580	0.121	4.832	***	Supported

(\* $p<0.05$ , \*\* $p<0.005$ , \*\*\* $p<0.001$ ).

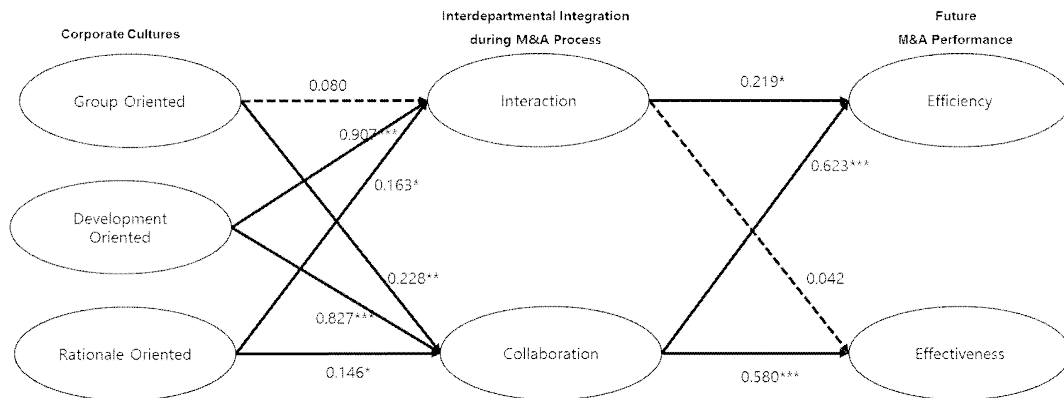


Fig. 2. SEM analysis results (\* $p < 0.05$ , \*\* $p < 0.005$ , \*\*\* $p < 0.001$ )

increase in Available Seat Kilometers (ASKs), however the industry has also been exposed to dynamic market environments characterized by challenges such as war, terrorism, fuel price fluctuations, and global financial crises. In order to secure business sustainability within this demanding landscape, airlines have undergone constant changes to be survived. They have implemented strategic activities aimed at achieving growth and operational efficiency which includes cost reduction, service product enhancement, and environmental sustainability, and one of these strategic activities is airline M&A. However, the interdepartmental integration between the strong rival competitors during M&A process is having various challenges. This is possibly related to the fact that there might be conflicts between two different organizational cultures and service operating systems (Khezrimotlagh, 2022) in the M&A process, and it can possibly influence the post M&A performance. Related to such challenges, understanding, and harmonizing the different corporate cultures within M&A will be one of the essential elements for successful M&A project. Corporate culture plays a pivotal role in the attainment of organizational goals and accomplishments (Youn, 2022).

This research investigated the predictive influence of corporate cultures on the post M&A performance through activities of interdepart-

mental integration within two rival airlines in Korea which are currently awaiting final approval for M&A from competitor markets. To investigate a future outlook of M&A performance by influence of corporate cultures, this research employed the mediations of interaction and collaboration during M&A process, which may be possibly related to the results of M&A performance. Through the empirical results of this research, it presents how different corporate cultures will influence post M&A performance including efficiency and effectiveness based on a current case of Korean air and Asiana airlines.

This research presents five key findings as following.

Finding one: Contrary to a study in non-airline industry that revealed a positive correlation between a group-oriented culture and interaction in cross-functional coopetition [33], a group-oriented culture related to organizational loyalty and trust within two rival airlines had no significant effect on interactions in the M&A process. The possible explanation for this result is that both airlines have been strong rivals in the airline industry in Korea for the past three decades, and their clear mindset as strong competitors still persists. Given the current relationship status, there may be less respect for each corporate culture, leading to conflicts

within individuals and teams during the M&A process. Moreover, it can be challenging to unite as a single entity through a successful M&A. In contrast, a group-oriented culture had a significant effect on collaboration. One possible reason for this result is that collaboration can be considered a task-based area where individuals or teams have responsibility for the outcome, which may reflect the significant effect.

Finding two: Development-oriented culture which is related to business growth and corporate innovation had significant effects on both interaction and collaboration during M&A process. These results can be considered that the employees of both airlines have a positive expectation for the successful M&A even though these airlines were strong rivals in Korean market for past three decades. Also, it can be related to the sustainable life of the employees in both airlines.

Finding three: Rationale-oriented culture which is related to the corporate productivity and goal achievement had significant effects on both interaction and collaboration during M&A process. These results can be considered that the nature of the airline industry which is familiar environment with Key Performance Indicators (KPIs) and target achievement could be reflected in the significant effect.

Finding four: Contrary to a study in the electronics manufacture industry that revealed a positive correlation between interaction and effectiveness (Chen, 2006), interaction which is related to the communication and sharing information for harmonization during M&A process had no significant effect on effectiveness. A possible reason for this result can be considered that the individuals and teams of both airlines have a lack of intention for the active communication as they still have clear mindset as strong competitors each other, or they may be afraid of adapting to a new environment.

Finding five: In contrast, collaboration which

can be exposed as a performance of the individuals or teams had significant effects on both efficiency and effectiveness. As a possible reason for this result can be considered that the employees of both airlines have a positive expectation on their company for the long-term business sustainability through successful M&A.

Additionally, contrasting outcomes were discovered in this study when comparing the airline industry to the manufacturing industry. This research revealed that a group-oriented culture had no significant effect on interaction within the airline industry, whereas the opposite result was observed in the manufacturing industry. Similarly, this research found that interaction had no significant effect on effectiveness within the airline industry, whereas the opposite outcome was revealed in the manufacturing industry. These variances can potentially be attributed to factors such as the business environment and the nature of the products. Airlines primarily provide the service as intangible products such as domestic and international flights, network connectivity, in-flight cabin quality, and entertainment offerings, whereas manufacturing industry is producing tangible products. Thus, it can be inferred that the distinct characteristics of the airline business may lead to divergent research outcomes.

This recent study has significant and meaningful academic and managerial implications. In terms of academic implication, this study contributes to filling the research gaps in previous literature by analyzing the connections between different corporate cultures and the post M&A performance of airlines in terms of efficiency and effectiveness through interaction and collaboration based on interdepartmental integration. While previous studies on airline M&A have focused on various aspects such as airline costs, economy, alliances, and size, this research provides new insights by examining

how different corporate cultures influence post M&A performance through the mediations of interaction and collaboration. Also, the findings from the SEM analysis demonstrated that how different corporate cultures influence the post M&A performance of the airline through mediations of interaction and collaboration.

In terms of managerial implications, this research offers various meaningful messages to the key decision makers leading the current M&A project of Korean air and Asiana airlines. First, understanding and acknowledging the different corporate cultures in each organization is crucial for a M&A completion. Without this understanding, frequent conflicts between organizations, teams, and individuals may arise, negatively impacting post M&A performance which also affect the business sustainability. Second, strong leadership with an open mind-set is required in each unit of the airlines to minimize potential risks associated with internal relationships during the M&A process and to foster harmony among employees from different corporate cultures. Third, it is crucial to implement an internal integration program that facilitates employees' adaptation to the new environment and aligns them with the new vision and organization. Additionally, it is recommended to gradually transform the corporate culture towards a development-oriented and rationale-oriented culture. Considering the long-standing rivalry between Korean Air and Asiana Airlines in the Korean airline industry over the past three decades, it is important to establish a harmonization program for employees from both airlines to facilitate a seamless integration and foster a sense of unity as one team. The findings of this research, as depicted in Table 2, reveal that 49.1% of participants disagreed with the M&A decision of Korean Air and Asiana Airlines, whereas only 17.3% agreed. The remaining 33.6% held a neutral opinion, which can be interpreted as being "undecided" from the employees' standpoint. These figures

convey a significant message to the management of both airlines, highlighting the importance of finding optimal strategies for ensuring a successful M&A while considering the long-term business sustainability and the perspective of their respective employees.

This research has several notable limitations. First, due to lack of previous studies on the corporate cultures and airlines M&A, this study had to rely on limited literature from the other industries, and adopted limited mediators, resulting in limited findings. Second, the survey pool was limited, with only 214 responses, due to the COVID-19 situation and long-term leaves of employees. Many employees are still on long-term leave due to the impact of COVID-19, and the remaining employees at work are carrying extra workload in their respective airlines. This research environment limited the number of survey responses from employees of both airlines. However, this limitation also presents an opportunity for future research with a larger number of respondents from both airlines regarding their M&A process once the current critical COVID-19 pandemic is over. Third, there was a high number of surveys from non-administrative staff (82%), which may limit the generalizability of the findings. During the M&A process, administrative staff are expected to have higher engagement and impact, while non-administrative staff are more involved in implementation. Finally, the current delayed status of the M&A process due to final approvals from competitor markets is also a research limitation. These limitations provide opportunities for future research to investigate new findings from various aspects through comparative studies before (aspiration) and after (real experience) M&A.

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