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# Moderating Effect of the Continental Factor on the Business Strategy and M&A Performance in the Pharmaceutical Industry for Sustainable International Business

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**Abstract:** This research analyzed the moderating effects of the continental factor on the relation between the business strategies (cost advantage strategy and differentiation strategy) of the pharmaceutical industry and mergers and acquisitions (M&A) performance. A total of 1303 M&A cases were collected from the Bloomberg database between 1995 and 2016 for the sake of empirical analyses. The independent variables were represented by the cost advantage strategy and the differentiation strategy. The dependent variable was for the M&A performance, which was measured for the changes in ROA (return on assets). The results showed that the cost advantage strategy was advantageous when an Asian firm acquired one in either Asia or Europe. In contrast, when a European company received one in either Europe or Asia, M&A performance also was higher, although the cost was higher. On the other hand, the differentiation strategy was valid only when a European firm acquired one in Asia. The moderating effect of the continental factor was beneficial only in the relation between the cost advantage strategy and M&A performance. These results could help companies make decisions that maximize M&A performance based on continental factors from the perspective of the sustainable international business strategy establishment.

**Keywords:** pharmaceutical industry; cost advantage strategy; differentiation strategy; M&A performance; continental factors; sustainability in international business

## 1. Introduction

Since the mid-90s, mergers and acquisitions (M&A) in the pharmaceutical industry have been used as a way to transform multinational corporations into large companies with economies of scale and substantial synergies by combining the characteristics and strengths of each company in order to secure business sustainability in the international market [1–6]. The expansion has been primarily in the US, Europe, and Japan [7–11].

The finance and strategy literature took an early interest in identifying firm motives concerning M&A, such as increased scale and scope, efficiency, and increased market power [12–15]. Other goals were to identify managerial self-interest for free cash flow and diversification related or unrelated through acquisition and corresponding capital market outcomes of M&A activity [16–22]. Further, research in management has focused to a greater extent on whether an international acquisition is a strategy that increases or decreases value [23–25]. However, the findings from this work have been

equivocal [26,27], in that some researchers have found that the market values of the acquiring firms have increased [28], while others have spotted firms' lost market value [29–32].

Researchers have proposed several ideas of success factors for sustainability in diverse business settings, such as shared services, human resources, platform types, operational skills, and supply chains [33–37]. Meanwhile, Porter [38] suggested that cost leadership and differentiation strategy were the main strategies needed to secure a competitive advantage in the market, as shown in Figure 1. Previous studies have shown that the relation between strategy and performance can allow firms to achieve a competitive advantage and sustainable production for the profit and cash flow by executing the cost advantage strategy or differentiation strategy [39–42]. We argued that the choice between a cost advantage and differentiation strategy as a business level strategy could be a critical strategic choice that would influence post-M&A performance strongly.

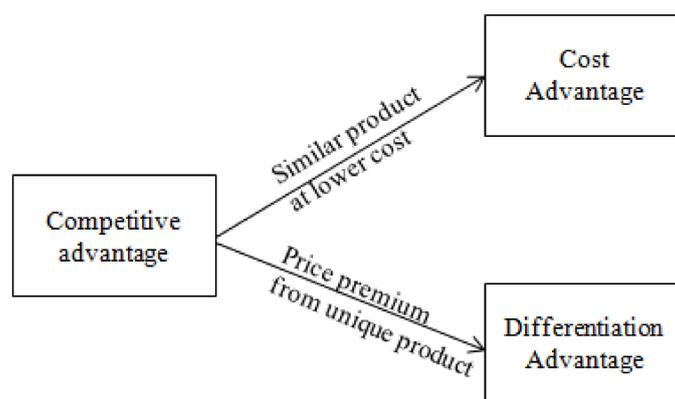


Figure 1. Source of competitive advantage [39].

However, there might also be some factors that could moderate the relationship between cost advantage/differentiation advantage and competitive advantage in the context of M&A. Likewise, researchers in the field of M&A study have argued that factors are affecting M&A. For example, Ahammad et al. [43] suggested that communication had a positive moderating impact on the cross-border M&A, while national cultural distance and organizational cultural difference negatively moderated it. Besides, Uzelac et al. [44] proposed that decision-making preferences had a significant moderating influence on M&A integration speed and performance. In addition, Gomes et al. [45] revealed the moderating effect of dynamic relationships between different perspectives on M&A. Other researchers have also conducted studies on the impact of geographical and location factors, such as continental and nation-specific differences. Mateev [46] compared Europe and the UK, while Bertrand and Madariaga [47] did inside and outside of the UK continent in the context of M&A. However, there is no research that reveals the moderating effect of factors across the continent, such as Asia versus Europe. Therefore, in this study, we focused on the continental element as a moderator to explain the mixed findings of business strategy, such as relationship cost advantage, differentiation strategy, such as R&D expenditures, and M&A performance with the moderating effect of the continental factors. By revealing the topic, this research aimed to fill the gap caused by the limitations from prior research that was unsuccessful in demonstrating consequences in the relations among cost advantage, differentiation advantage, and competitive advantage in the theory of Porter [38], using the continental factor as a moderator. In addition, this study would contribute to providing practical implications to the managers in the field of M&A for them to derive better M&A performance from the perspective of a sustainable international business strategy establishment.

The rest of this paper is formulated in the following way. First, we reviewed relevant literature and developed the research questions in the following section. Next, we provided the data sample used in this research, as well as the methodological approach we used for this research in the third section. In the fourth section, we presented the results from the analyses. The last chapter provides and

suggests academic/practical implications, limitations, and future research topics from the perspective of sustainability in international business.

## 2. Literature Review and Research Questions

A central issue in the M&A literature is whether acquisitions increase value for acquiring firms' shareholders and, if so, how [17,23,48]. The findings to date are mixed in both domestic [12,49] and international settings [27]. Some studies have shown that most international acquisitions decrease, rather than increase, a shareholder's value [50,51], while others have shown that certain such assets do increase the value [26,27]. However, previous studies have not examined continental differences as a moderating factor, which may help provide additional insight into the vital question of M&A value.

Therefore, as the conceptual diagram in Figure 2 shows, the research questions (RQs) proposed in this are pertinent to whether the cost advantage and differentiation strategy as a business-level strategy affect ROA (return on assets) as M&A performance. Accordingly, we examined whether there were differences between continents.

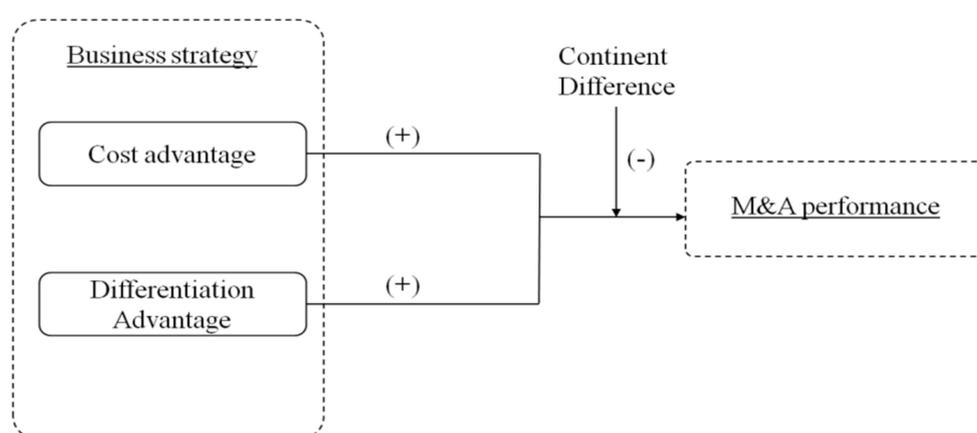


Figure 2. A conceptual framework for studying.

### 2.1. Cost Leadership Strategy and Differentiation Strategy in M&A Performance

Porter [38] proposed that the cost advantage and differentiation strategies were designed to maintain a competitive position in the industry in the long term. A cost advantage strategy is a method that secures a benefit by achieving a low cost with the underlying assumption of an experience curve that would strongly influence the sustainable business strategy of firms [42,52–55]. It is necessary to ensure a facility with an appropriate scale to realize economies of scale and strict cost control for R&D, service, and advertising [56]. According to the empirical evidence [39–57], firms that have implemented a cost advantage or a differentiation strategy have higher performance indicators, such as return on investment (ROI) or revenue.

A company's differentiation strategy is expressed as R&D cost, which is an investment that creates technical ability to increase the company's potential competitiveness that could also be directly aligned with the sustainability of the firms [58–60]. Generally, companies with a high proportion of R&D expenditures have been noted to have superior long-term management performance. When a company with a high investment in R&D acquires a foreign company, the stock market will be environmentally friendly. Companies with high R&D costs tend to be ahead of foreign companies in their technical skills, and the international M&A of such companies will increase the value of the company when the technical ability can be applied in the broader market [61,62]. Thus, we proposed the first research question:

RQ1. How do the cost leadership strategy and differentiation strategy affect firm performance in M&A in the pharmaceutical industry from the perspective of sustainability in international business?

## 2.2. Moderating Effect of the Continental Factor in International Business Strategy Success

If the continental factor moderates between business strategy and M&A performance, there will be differences in the relationship between business strategy and M&A performance by continents from the perspective of sustainability in international business. We used a moderation regression analysis to confirm this effect.

In the case of international M&A, cultural differences between countries/continents affect M&A performance significantly. Because cultural differences refer to a particular country's unique norms and values [28,63], these cultural differences impose costs on enterprises and organizational operations. Besides, because international M&As must integrate not only the national but the corporate culture as well, cultural differences have a significant influence on global M&A performance, and they are said to be significant factors in its failure [64,65].

Cultural differences have a negative effect on M&As [66–68] and result in cultural conflicts and increased integration costs. Thus, to achieve successful M&A, cultural differences must be effectively managed because they affect performance in the M&A process overall [28].

The higher the cultural difference, the more difficult it is to coordinate and integrate the two companies' operations, and the higher is the cost [63]. Employees also are stressed because of their different views and values attributable to cultural differences in mutual exchange and communication, which compromises employee loyalty, cooperation, satisfaction, and productivity. Thus, cultural differences in the international business setting between the acquiring and target companies have a negative effect on intercontinental M&As for the sustainable global business. Hence, we proposed the second research question:

RQ2: How does the continental factor moderate business strategy succeed in the context of the sustainable international business strategy establishment?

## 3. Method

### 3.1. Sampling and Data Collection

According to the literature, the duration of M&A long-term performance varies from 0 to 7 years, from –3 years to 3 years, from 0 to 5 years, from –5 years to 5 years, and from 1 year to 3 years, as Figure 3 shows [69,70]. In this study, to determine which event window appeared in the main findings, the numbers of all cases that could be considered five years after the completion of M&A were analyzed. Thus, we analyzed the timeline as –1 + 1, –1 + 2, –1 + 3, –1 + 4, and –1 + 5.

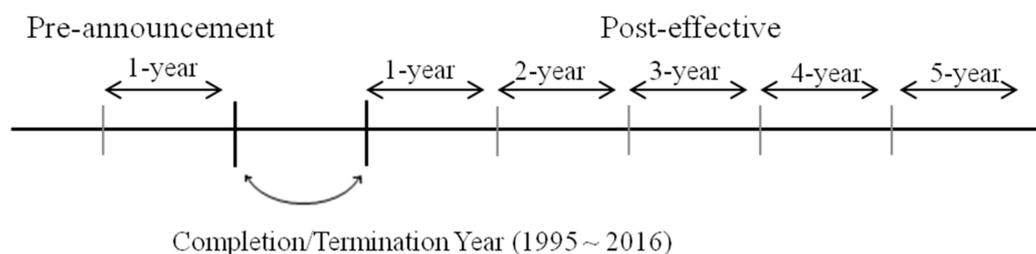


Figure 3. Merger timeline.

The M&A industry target was limited to the pharmaceutical industry because M&A performance varies by industry. For example, a study of 121 industrial and 108 non-industrial acquisitions has demonstrated a significant positive effect on ROA in industrial assets [71].

### 3.2. Data Collection and Descriptive Statistics

International acquisition data were collected from the Bloomberg database, the records in which provide not only real-time financial market data but also an extensive selection of M&A activities worldwide. We focused on acquiring firms listed publicly because their financial information is

accessible. Mergers, with announced acquisition dates between 1 January 1995 and 31 December 2016, were used, as, during this period, the number of international acquisitions in the pharmaceutical industry increased significantly.

We collected the acquiring firm's yearly company financials from COMPUSTAT (<http://www.compustat.com>), a database of financial, statistical, and market information on active and inactive companies throughout the world. Revenue, cost, R&D expenditure, and ROA data were collected. We consolidated the M&A deal list with the company financials, and the total sample comprised of 1303 deals. The technical statistics of the data collected are as follows in Table 1.

**Table 1.** Description statistic analysis of collected data.

Completion/Termination Date	A-A	A-E	E-A	E-E	Total
1995–1999	2	-	-	5	7
2000–2004	105	13	6	77	201
2005–2009	231	41	13	170	455
2010–2014	318	24	10	92	444
2015–2016	144	19	5	28	196
Total	800	97	34	372	1303

Note: A is Asia, E is Europe.

### 3.3. Methods

Multiple regression analysis was performed to examine the effects of the cost advantage and differentiation strategies on M&A performance [72]. In order to check multicollinearity between variables, the VIF (variable inflation factor) was calculated for each variable. In a previous study [73], there was no multicollinearity problem between the variables, and the hypothesis was tested when the VIF value was less than 10. The regression equation used in the analysis was as follows:

$$\Delta \text{EBIT} = \beta_0 + \beta_1 (\text{cost ratio}) + \beta_2 (\text{R\&D expenditure ratio}) \quad (1)$$

$$\Delta \text{ROCE} = \beta_0 + \beta_1 (\text{cost ratio}) + \beta_2 (\text{R\&D expenditure ratio}) \quad (2)$$

$$\Delta \text{ROA} = \beta_0 + \beta_1 (\text{cost ratio}) + \beta_2 (\text{R\&D expenditure ratio}) \quad (3)$$

$$\Delta \text{ROC} = \beta_0 + \beta_1 (\text{cost ratio}) + \beta_2 (\text{R\&D expenditure ratio}) \quad (4)$$

To determine whether the effect of the business strategy (independent variable) on M&A performance (dependent variable) differs depending on the continental factor, the moderating factor, a regression analysis was performed to analyze the R<sup>2</sup> and F variation. Regression analysis is a method used to verify whether the newly-introduced regulatory variable term is statistically significant after applying the regression equation to the new multiplication term of the variables used as the independent variable and the moderating variable in the regression analysis [73].

### 3.4. Dependent Variable

The dependent variable is ROA, expressed as profitability ratios. ROA represents actual company performance measured by its assets and has been adopted as a measure of corporate performance in many studies because it is an excellent way to measure operational performance [74]. The formula used to evaluate the percentage change in performance divides the difference between the performance after M&A and the performance before M&A by the performance before M&A and is used in many studies. It is used not only for M&A but also as a measure of a firm's performance before and after the introduction of an ERP (enterprise resource planning) system [74,75]. The dependent variable was calculated as follows:

$$\Delta \text{ROA} = (\text{ROA}_{\text{post}} - \text{ROA}_{\text{pre}}) / (\text{ROA}_{\text{pre}}) \quad (5)$$

For example, when analyzing one year to four years later, the following calculation was performed:

$$\Delta\text{ROA} = (\text{ROA}_{(t+4)} - \text{ROA}_{(t-1)}) / (\text{ROA}_{(t-1)}) \quad (6)$$

### 3.5. Independent Variable

#### 3.5.1. Background of Independent Variable Selection

Porter's generic strategies describe how a company pursues competitive advantage across its chosen market scope. There are three/four generic strategies, either lower cost, differentiated, or focused. Porter claimed that a company must choose only one of the three, or risk wasting the business' valuable resources [38,76]. Porter [38] stressed the idea that a firm should adopt only one strategy, and failure to do so will result in the "stuck in the middle" scenario. He indicated that practicing more than one approach would lose the entire focus of the organization, and hence, a clear direction of the future trajectory could not be established. The argument is based on the fundamental principle that differentiation will incur costs, which clearly contradicts the basis of the low-cost strategy; on the other hand, relatively standardized products with features acceptable to many customers will not carry any differentiation. Hence, the cost leadership and differentiation strategy will be mutually exclusive. However, several commentators have questioned the use of generic strategies, claiming that they are limited and lack specificity and flexibility.

#### 3.5.2. Cost Leadership

The cost advantage strategy measures a firm's cost divided by total sales [76–80]. Cost competitiveness as an independent variable was calculated as follows. The lower the value, the stronger the cost leadership, while the higher the value, the less the cost leadership:

$$\text{Cost Leadership} = (\text{Cost of Revenue}) / \text{Revenue} \quad (7)$$

#### 3.5.3. Product Differentiation

The differentiation strategy measures corporate R&D costs divided by total sales [77–80]. Product differentiation is a business strategy that enables a firm to gain a competitive advantage when its customers are willing to pay more for its products or services. Product differentiation is a strategy that increases value by setting the cost of a product or service above the enterprise's average price. Companies that implement this strategy successfully are able to reduce environmental threats and capture various ecological opportunities. However, to secure a sustainable competitive advantage, it is necessary to increase values that are difficult to imitate [76]. Product differentiation, as an independent variable, was calculated as follows:

$$\text{Differentiation Strategy} = (\text{R\&D Cost}) / \text{Revenue} \quad (8)$$

### 3.6. Moderators

Chikhouni et al. [81] used direction (emerging to emerging, emerging to developed, developed to emerging, developed to developed) as a moderator to determine the way in which the "direction" mitigated the relation between psychic distance and the choice of equity control in an international acquisition. Further, Malhotra [82] used geographic range as a moderator to determine how geographic distance moderated the relation between cultural distance and the choice of equity control in international acquisitions. However, the continental factor as a moderator has not yet been studied. The continental factor data as categorical data of international acquisition were collected from the Bloomberg database. We studied four sub-group moderators—Europe-Europe, Europe-Asia, Asia-Asia, and Asia-Europe.

### 3.7. Control Variables

As a control variable, the M&A industry target was limited to the pharmaceutical industry. In the case of international M&As, additional costs are incurred because of institutional and cultural differences in the industry by comparison to domestic M&As' transactions. Thus, some systems and cultures apply to each sector in each country, and this difference can be minimized if the acquiring firm and target company have high industrial similarity, in that it is possible to reduce the costs incurred in the integration process because the understanding of the industry is high. However, in the case of international M&As, if the acquiring and target firms are less similar, it is difficult to find commonalities between the two industries, and institutional and cultural differences are more significant. Therefore, the higher the similarity between acquiring and target companies, the greater the company's performance after M&A [71–83]. Thus, this study addressed only M&A transactions in the pharmaceutical industry.

## 4. Results

To analyze how the continental factor affects the relationship between business strategy and M&A performance, we assessed four subsamples: Europe-Europe, Europe-Asia, Asia-Asia, and Asia-Europe. The results showed that M&A performance responded differently, depending on the different business strategies as well as the continental factor.

RQ1 is about how the cost leadership strategy and differentiation strategy affect firm performance in M&A in the pharmaceutical industry from the perspective of sustainability in international business. Table 2 explains RQ1 by showing the correlations between business strategy and M&A performance for each subsample and the results of the multiple regression analysis.

**Table 2.** Multiple regression analysis results between business strategy and M&A performance in the 4 continent groups.

MV	IV	$\Delta$ ROA (−1,1)		$\Delta$ ROA (−1,2)		$\Delta$ ROA (−1,3)		$\Delta$ ROA (−1,4)		$\Delta$ ROA (−1,5)	
		Beta	Sig.								
A–A	CR	−0.008	0.829	−0.113 **	0.007	−0.127 **	0.004	−0.134 **	0.004	−0.206 ***	0
	R&D	0.005	0.897	−0.029	0.490	−0.036	0.409	−0.040	0.386	−0.052	0.287
A–E	CR	−0.208 †	0.073	−0.211 †	0.086	−0.218 †	0.088	0.162	0.224	−0.248 †	0.070
	R&D	−0.070	0.540	−0.065	0.593	−0.061	0.629	0.050	0.708	−0.095	0.485
E–E	CR	0.025	0.680	0.027	0.675	0.642 ***	0.000	0.129 †	0.066	0.091	0.226
	R&D	−0.039	0.527	−0.040	0.524	−0.013	0.791	−0.014	0.837	−0.065	0.389
E–A	CR	0.421 *	0.039	0.463 *	0.029	0.270	0.190	0.086	0.685	0.367 †	0.090
	R&D	0.638 **	0.003	0.548 *	0.011	0.566 **	0.009	0.419 †	0.055	0.475 *	0.030

Note: A is Asia; E is Europe; MV is moderation variable; IV is independent variable; CR is cost ratio; R&D is R&D expenditure ratio; †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

As shown in the cost ratio of Asia-Asia, Asia-Europe, the beta of  $\Delta$ ROA(−1,2),  $\Delta$ ROA(−1,3),  $\Delta$ ROA(−1,5) was negative and significant ( $p < 0.05$  or 0.10). However, when a European company acquired another in Europe, the beta of  $\Delta$ ROA(−1,3),  $\Delta$ ROA(−1,4) was positive and significant ( $p < 0.05$  or 0.10). Further, when a European company acquired an Asian company, the beta of  $\Delta$ ROA(−1,1),  $\Delta$ ROA(−1,2) was positive and significant ( $p < 0.05$  or 0.10). On the other hand, as shown in the R&D expenditure ratio of Europe-Asia, the beta of  $\Delta$ ROA(−1,1),  $\Delta$ ROA(−1,2),  $\Delta$ ROA(−1,3),  $\Delta$ ROA(−1,4),  $\Delta$ ROA(−1,5) was positive and significant ( $p < 0.05$  or 0.10).

As Table 2 shows, when an Asian company acquired another in Asia or one in Europe, the relationship between the cost ratio and M&A performance was negative. In contrast, when a European company received one in Europe or Asia, the relationship between cost ratio and M&A performance was positive.

However, when an Asian firm acquired one in Europe and Europe acquired one in Asia, there was no relationship between R&D ratio and M&A performance. Only when a European company acquired

one in Asia, the R&D expenditure's beta of  $\Delta\text{ROA}(-1,1)$ ,  $\Delta\text{ROA}(-1,2)$ ,  $\Delta\text{ROA}(-1,3)$ ,  $\Delta\text{ROA}(-1,4)$ ,  $\Delta\text{ROA}(-1,5)$  was positive and significant ( $p < 0.05$  or  $0.10$ ).

RQ2 is about how the continental factor moderates business strategy success in the context of the sustainable international business strategy establishment. Table 3 explains RQ2 by showing the moderation regression analysis results that evaluated the significance of the continental factor's moderating effect on the relationship between business strategy and M&A performance. As the table indicates, the impact of the cost ratio on  $\Delta\text{ROA}(-1,5)$  was significant. The variation in the probability that F was less than 0.05 in models 2 and 3 indicated that there was a significant intercontinental difference.

**Table 3.** Moderation regression analysis results.

Statistics	Cost Ratio			R&D Expenditure Ratio		
	1	2	3	1	2	3
R	0.027	0.086	0.142	0.072	0.091	0.101
R-square	0.001	0.007	0.020	0.005	0.008	0.010
Adjusted R-square	-0.001	0.005	0.016	0.004	0.005	0.006
Std. error of the estimate	21.217	21.162	21.039	21.171	21.152	21.147
R-square change	0.001	0.007	0.013	0.005	0.003	0.002
F change	0.518	4.656	9.206	3.611	2.224	1.335
Change statistics	df1	1	1	1	1	1
	df2	700	699	698	700	699
	Sig. F change	0.472	0.031 *	0.003 **	0.058 †	0.136
Durbin-Watson		2.017			2.014	

Note: dependent variable is  $\Delta\text{ROA}(-1,5)$ , Model 1. Predictors: (constant), cost ratio, R&D expenditure; Model 2. Predictors: (constant), cost ratio, R&D expenditure, continent; Model 3. Predictors: (constant), cost ratio, R&D expenditure, continent, cost continent moderation, R&D expenditure moderation, †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ , df is degree of freedom

However, the variation in the significance of F in the effect of the R&D expenditure ratio on  $\Delta\text{ROA}(-1,5)$  was insignificant in models 2 and 3. This result could be interpreted to indicate the difference in investment objectives of international M&As by continents. When a European firm acquired one in Asia, it could be construed that R&D investment cost had a positive effect on M&A performance because it strengthens competitiveness by securing the resources and technology of European companies. On the other hand, when an Asian company took over another in Asia or Europe, or when a European firm acquired another in Europe, R&D investment costs did not seem to have a synergistic association with M&A performance.

## 5. Conclusions

### 5.1. Discussion and Implications

This research conducted analyses on the impact of the continental factor on the relationship between business strategies, such as cost leadership and R&D investment, and M&A performance from the perspective of sustainability in international business. According to the results from evaluating these hypothetical interrogations with four subsamples (E-E, E-A, A-A, and A-E) as moderators, we could discover that M&A performance could be influenced by the diverse cost leadership and R&D investment strategies, as well as the continental factor. These results explained clearly RQ1 and RQ2.

Therefore, academic implications obtainable from the empirical results are as follows. First, this study addressed the limitations of previous studies that failed to show consistent results in the relations among cost ratio, R&D cost, and performance. This study made it possible to interpret the effect of business strategy on M&A performance by explaining the continental factor as one that moderates the relation between business strategy and M&A performance from the perspective of sustainability in international business settings.

Second, this study advanced the prior theoretical concept by demonstrating evidence of 'stuck in the middle' scenario of Porter [38]. According to the results, firms should adopt only one strategy to achieve successful M&A performance for sustainable international business. For example, when an Asian company acquires another in Asia or a European company, it should only adopt the cost leadership strategy to increase M&A performance. On the other hand, when a European company acquires one in Asia, it should also only adopt the differentiation strategy to enhance M&A performance. We found no evidence of successful firms that practiced a hybrid strategy that contained both the cost leadership strategy and the differentiation strategy [84].

Meanwhile, practical implications that contribute to the practitioners in the field of M&A for sustainable global business could be addressed as follows. First, this study could help establish successful M&A strategies based on business strategy and continental factors. Based on the results of this study, management could predict the factors and their effects on M&A performance, and firms could make successful M&A decisions based on these predictions. According to collated research and a recent Harvard Business Review report, the failure rate for M&As is between 70% and 90% [85]. Therefore, practical implications from the research would be fruitful as a guide for field managers of M&A to overcome the risk in M&A and acquire sustainability in international business.

Second, when an Asian company acquired an Asian or European company, the firm that based its competitive strategy on a low-cost approach could achieve significant M&A performance. On the other hand, a company that based its competitive strategy on a differentiation strategy could not perform effectively. These results were drawn because the nature of the pharmaceutical industry necessitates enormous investment in new product development and includes long development times. Thus, concentrating on the low-cost strategy would lead to better success than it would on the differentiation strategy from the perspective of sustainable international business.

Third, when a European company acquired an Asian company, the firm that based its competitive strategy on a differentiation strategy could achieve successful M&A performance even though costs increased. This result was probably because of the synergistic effect of merging the European companies' advanced technologies with that of Asian companies.

Fourth, when a European company acquired another in Europe, even if the costs increased, the performance increased; however, the differentiation strategy was ineffective. The reason for this result was thought to be the lack of synergistic effects in the M&A between European companies.

To summarize, we would like to emphasize that the main focus of our experiment was placed on finding those factors that affect the M&A performance of the pharmaceutical industry. Besides, we analyzed the effects of business strategy on M&A performance from a new perspective by applying the continental factor as a controlling factor in the context of sustainable global business. The results showed that business strategies responded differently to different continents. Asia-Asia and Asia-Europe performed better with a low-cost business strategy, while Europe-Europe and Europe-Asia yielded better results even though the cost was higher. On the other hand, Asia-Asia, Asia-Europe, and Europe-Europe had no significant effect on the differentiation strategy. Only Europe-Asia demonstrated a substantial impact on the differentiation advantage strategy.

These results could be interpreted as a result of the difference in investment objectives of international M&As attributable to the continental factors for business sustainability. When European companies acquired Asian companies, European resources and technology had a positive synergistic effect on the Asian acquisition, explaining these results. Besides, we presumed that European companies had been motivated to enter the local market quickly by acquiring Asian firms, which resulted in high M&A performance even if the costs increased.

## 5.2. Limitations and Suggestions for Future Studies

Despite the academic and practical implications as stated above, this research still has limitations, as well as the future suggestions for other scholars and experts in the field of M&A as follows.

First, we steered this research without the application of risk factors, such as a sudden global crisis like the recent COVID-19 pandemic. Given the fact that such global pandemics had profound impacts on the pharmaceutical industry, it seems necessary to apply variables that are related to disease-crisis to the research model.

Second, there is a need for a more in-depth understanding of the cases analyzed using the more diverse continental factors. This study only concentrated on Asia and Europe, although the pharmaceutical industry in the North American region also has several marketing-leading firms and large market shares. In addition to the above, concerning that the pharmaceutical industry has been continuously globalized to emerging markets, as well [86–90], other regions, such as South America, Africa, the Middle East should be considered as well in terms of sustainability in the complete global business setting.

Third, this research was limited to the pharmaceutical industry, rather than in various industries. Consequently, it would be necessary to expand the range of industry to embrace more general findings, which could be more fruitful implications to managers in the field for establishing enhanced M&A strategy from the perspective of sustainability in global business.

Hence, in future research, it should consider the diverse aspect of risk factors, various industries, and wider scope of the continental factors in order to derive more beneficial implications in M&A that could provide successful strategies for sustainability in international business.

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