# Customizing competitive strategy to entry timing: Implications for firm performance in the pharmaceutical industry

## Abstract

Our study examines the effect of business-level strategy on performance. Past literature examining the aforementioned effect in the pharmaceutical industry is scarce. Furthermore, there is a lack of studies that analyze how competitive strategy is contingent on firm entry timing. Hence, to explore our understanding in this area, the present study was conducted in the German pharmaceutical industry. 200 valid responses were collected from CEOs. The data were analyzed using SPSS and partial least square (PLS) techniques. The findings indicate a surprising result that, while the differentiation strategy is significantly related to pharmaceutical companies' performance, cost leadership strategy is not.

***Keywords:*** competitive strategy, entry timing, pharmaceutical industry, contingency, multigroup

## 1. INTRODUCTION

Over the last few decades, strategy scholars have developed different theoretical streams, such as Porter's (1980, 1985) competitive strategy framework, the resource-based view (RBV) (Barney, 1991; Day, 1994; Wernerfelt, 1984), and the dynamic capabilities (Teece & Pisano, 1994; Teece, Pisano, & Shuen, 1997) of how managerial decisions lead to superior economic performance and competitive advantages in several different industries and under specific circumstances. The aforementioned views have evolved independently one from the other and the premises on which they are based differ. Despite these differences, researchers have recognized the complementarity between Porter's competitive strategy framework and both RBV and dynamic capabilities (e.g., Ormanidhi & Stringa, 2008; Spanos & Lioukas, 2001), as they explain different dimensions of performance. Not surprisingly, several studies (e.g., Parnell & Brady, 2019; Rashidirad, Soltani, & Salimian, 2014, 2015; Rashidirad, Soltani, & Syed, 2013; Rivard, Raymond, & Verreault, 2006; Ruiz Ortega, 2010; Spanos & Lioukas, 2001) have tried to analyze the links and build bridges between the aforementioned views, being the most prolific line of research the one that tries to find out exactly what the relationship between resources and strategy is (Chatzoglou et al., 2018). Nevertheless, these bridges are sometimes built on – at least to some extent – weak foundations, which provides a research opportunity. To name a few, there are discussions in the scientific literature about the level at which each of the aforementioned views are framed within the firm (Chryssochoidis, Dousios, & Tzokas, 2016; Ormanidhi & Stringa, 2008), the complementarity of the assumptions each of the views makes (Ferrer Lorenzo, Maza Rubio, & Abella Garcés, 2018), the applicability that each of the views may have (Baškarada & Koronios, 2018; Pertusa-Ortega, Molina-Azorín, & Claver-Cortés, 2010) and the context-related effects that may have affected the results (Akpinar, 2020; Bamiatzi et al., 2016), and

the different dimensions of performance these views are able to explain (Ferrer Lorenzo et al., 2018; Spanos & Lioukas, 2001).

This paper is based on Porter's well-established theory of generic competitive strategy as a traditional dominant driver of competitive advantage. The associations between competitive strategies and resulting company performance have been widely explored in the literature, but the empirical evidence is inconclusive (supporting assumptions also outlined by e.g. Leitner & Güldenberg, 2010). Leaving aside the lack of consensus and clarity associated with the dominant paradigm of competitive strategy (see for instance Chaharbaghi, Adcroft, & Willis, 2005; Spieth, Schneckenberg, & Matzler, 2016), the main explanation for the mixed results can be found in the lack of enough contingency approaches that have been conducted to better understand the balance between the differentiation strategy and the cost leadership strategy, which provides a significant research opportunity. Even if the importance of contingency variables in strategy research has been noted long ago (e.g., Ginsberg & Venkatraman, 1985), research is again strongly focused on the contingency approach (e.g., Chen, Eriksson, & Giustiniano, 2017; Oyekunle Oyewobi, Olukemi Windapo, Bamidele Rotimi, & Ajayi Jimoh, 2016; Pertusa-Ortega et al., 2010; Wilden, Gudergan, Nielsen, & Lings, 2013; Yuen, Thai, & Wong, 2017). More specifically, following other authors (e.g., Bordonaba-Juste, Lucia-Palacios, & Polo-Redondo, 2010; Covin, Slevin, & Heeley, 2000; Durand & Coeurderoy, 2001; Fernández & Usero, 2009; Gómez, Pérez-Aradros, & Salazar, 2019; Lee, Koo, & Nam, 2010; Ruiz Ortega & García Villaverde, 2008), we assume that the performance effect of the aforementioned competitive strategies is contingent on the firm's entry timing. We propose hypotheses outlining that the differentiation strategy has a stronger impact on the performance of pioneers than on that of followers, whereas the cost leadership strategy has a stronger impact on the performance of followers than on that of pioneers. We

test the hypotheses using a structural equation modelling approach on a sample of pharmaceutical firms.

By doing the above, we contribute to the extant literature in two ways. First, we generate an in-depth understanding of the effects of the differentiation strategy and the cost leadership strategy on performance. Second, and more important, we provide an understanding of the way Porter's (1980, 1985) typology is contingent on firm entry timing, providing implications for organizations in achieving an effective competitive strategy-entry timing alignment. Therewith, we answer calls for more research on further explorations of the links between entry timing and competitive strategy (e.g., Gómez & Maícas, 2011).

## 2. LITERATURE REVIEW AND CONCEPTUAL MODEL

### 2.1. Competitive Strategy

Porter's (1980, 1985) theory of generic competitive strategy is unquestionably one of the most influential contributions that have been made to the analysis of business strategic behavior, due to this model's well-defined structure, popularity, feasibility, clarity, and simplicity. Building on Porter's widely accepted descriptive scheme (1980, 1985), we refer to two main types of competitive strategies, namely, the differentiation strategy and the cost leadership strategy. The differentiation strategy aims to create a unique – or superior – product or service that attracts buyers looking for these unique benefits to gain a competitive advantage and ostensibly maximize performance (Porter, 1980). Differentiation can take many forms such as customer service, brand image, and innovation, among others (Fernández & Usero, 2009; Luo & Zhao, 2004). Differentiator organizations create customer value by offering high-quality products supported by good service (Akan, Allen, Helms, & Spralls, 2006; Frambach, Prabhu, & Verhallen, 2003), which in turn increases reputation and customer loyalty (see the review in Wang, Yu, & Chiang, 2016). By innovating and upgrading their products, differentiators can gain customer loyalty too (Durand &

Coeurderoy, 2001). Therefore, investing in research and development (R&D) activities (Jung, Jian Wang, & Wu, 2009) is necessary, especially in the pharmaceutical industry (Mahlich & Yurtoglu, 2019), where innovation is crucial (see Bergamini, Navarro, & Hernández, 2009; Cuello de Oro & López-Cózar, 2011) and poor performance is associated with firms that do not focus on innovation (see Barczak, Griffin, & Kahn, 2009; Kim & Park, 2013; Schramm & Hu, 2013).

Although there are some studies (e.g., Bayraktar, Hancerliogullari, Cetinguc, & Calisir, 2017; Felzensztein & Gimmon, 2014) that fail to demonstrate a positive relationship between the differentiation strategy and performance, most studies suggest that acquiring this form of competitive advantage has a positive impact on performance (e.g., Cater & Pucko, 2005; Chen et al., 2017; González-Benito & Suárez-González, 2010; Islami, Mustafa & Topuzovska Latkovikj, 2020; Lei & Ouyang, 2012; Leitner & Güldenberg, 2010; Oyewobi, Windapo, & James, 2015; Panayides, 2003; Parnell, 2011; Yeung, Selen, Sum, & Huo, 2006). We hypothesize on a positive relationship between the differentiation strategy and performance:

*Hypothesis 1: There is a positive relation between the differentiation strategy and performance.*

Conversely, firms can also gain a competitive advantage by following a cost leadership strategy, which would reduce costs and increase efficiency, and therewith performance. When following a differentiation strategy, firms consider costs and prices as well, but it is not the main focus (Allen & Helms, 2006; Hlavacka, Bacharova, Rusnakova, & Wagner, 2001); organizations that have a low-cost leadership mindset can improve their cost structure to preserve higher margins (Porter, 1980) and therewith charging a lower price than their competitors (Akan et al., 2006; Durand & Coeurderoy, 2001; Fernández & Usero, 2009).

Most of researchers defend that there is a positive relationship between the cost leadership strategy and performance (e.g., Cater & Pucko, 2005; Durand & Coeurderoy, 2001; Felzensztein & Gimmon, 2014; González-Benito & Suárez-González, 2010; Islami et al., 2020; Jimenez Moreno, Ruiz Ortega, García Villaverde, & Parra Requena, 2007; Lei & Ouyang, 2012; Leitner & Güldenberg, 2010; Oyewobi et al., 2015; Parnell, 2011; Phongpetra & Johri, 2011; Powers & Hahn, 2004; Ruiz Ortega, 2010; Yeung et al., 2006), yet some fail to find a relationship (e.g., Baack & Boggs, 2008; Bayraktar et al., 2017; Gorondutse & Hilman, 2019; Panayides, 2003). We hypothesize on a positive relationship between the cost leadership strategy and performance:

*Hypothesis 2: There is a positive relation between the cost leadership strategy and performance.*

**2.2. Contingency approach of the competitive strategies on entry timing**

We believe that the degree to which firms benefit from the differentiation or the cost leadership strategy depends on contextual factors that firms confront. Literature defends that entry timing is a factor that warrants attention when explaining differences in performance (see for instance Ruiz Ortega & García-Villaverde, 2011). In fact, studies support the existence of entry timing effects, which influences relationships framed within not only the competitive strategy framework but other theoretical streams too, such as the RBV (e.g., Cui & Lui, 2005; Finney, Lueg, & Campbell, 2008; Niu, Wang, & Dong, 2013). Thus, following other works (e.g., Bordonaba-Juste et al., 2010; Covin et al., 2000; Durand & Coeurderoy, 2001; Fernández & Usero, 2009; Lee et al., 2010; Ruiz Ortega & García Villaverde, 2008), we focus on entry timing to contextualize the competitive strategy-performance relationship.

In particular, the concept of first-mover advantage has attracted much attention (e.g., Covin et al., 2000). Yet, further works started to develop the idea of profiting from a late entry too (e.g., Franco, Sarkar, Agarwal, & Echambadi, 2009), which has given rise to a

prolific debate (see for instance Fosfuri, Lanzolla, & Suarez, 2013). Pioneering firms try to be first-to-market by offering a distinctively new product to the market (Covin et al., 2000; Fernández & Usero, 2009; Ruiz Ortega & García Villaverde, 2008; Zhao & Parry, 2012; Zhao, Song, & Parry, 2014), whereas followers enter late in response to balancing the risks of premature entry and the missed opportunity of late entry (Langerak, Hultink, & Griffin, 2008).

The differentiation strategy is primarily used by pioneering firms (e.g., Frambach et al., 2003; González-Benito & Suárez-González, 2010). More specifically, pioneers normally focus on product developments and service quality (Fernández & Usero, 2009). Yet, this does not mean that followers cannot benefit from the differentiation strategy (see Ruiz Ortega & García Villaverde, 2008; Shamsie, Phelps, & Kuperman, 2004). In fact, in many cases followers are only able to erode pioneers' advantage by innovating (Fernández & Usero, 2009), that is, they need to differentiate themselves from the pioneers, especially in industries where the customers are not very price-sensitive, such as the pharmaceutical industry (López Casasnovas & Puig Junoy, 2000), where the fact is exacerbated by the existence of physicians (see for instance Dave & Saffer, 2012; Ferrara & Kong, 2008). We formulate the following hypothesis:

*Hypothesis 3: The differentiation strategy has a stronger impact on the performance of pioneers than on that of followers.*

On the other hand, even if some works (e.g., Radas, 2005) fail to demonstrate that firms that focus on the cost leadership strategy have a lower level of innovation, we assume that cost leaders are unlikely to engage in developing and launching new products (see Frambach et al., 2003). The cost leadership strategy would be more effective in the case of followers (e.g., Covin et al., 2000; Fernández & Usero, 2009). As acknowledged by Fernández and Usero (2009), followers can enter the market with a low-cost structure that

allows them to undercut pioneer prices. However, this does not mean that pioneers cannot benefit from the cost leadership strategy (Dunk & Kilgore, 2001; Durand & Coeurderoy, 2001; Lee et al., 2010; Ruiz Ortega & García Villaverde, 2008; Zhao & Parry, 2012; Zhao et al., 2014). Hence, early entrants are also able to build a cost advantage (Argyres, Bigelow, & Nickerson, 2015). We hypothesize that:

*Hypothesis 4: The cost leadership strategy has a stronger impact on the performance of followers than on that of pioneers.*

## 3. RESEARCH METHODOLOGY

### 3.1. Sample and data collection

We drew on a sample of 200 German pharmaceutical firms operating under the 2834 SIC code. We focused on the pharmaceutical industry, where differentiation strategy and the cost leadership strategy can be clearly distinguished from one other (see for instance Lei & Ouyang, 2012), the risk of being 'stuck in the middle' is high (Rodríguez Pérez, 2006) and entry timing is particularly important (see Ferrara & Kong, 2008; Leask & Parker, 2007). More specifically, we focused on the German pharmaceutical industry, because of its importance both in terms of number of competitors and performance (Destatis, 2019). This offers us a good worldwide benchmark. Furthermore, by focusing on one industry and country, we do not need to disentangle effects of different industries and countries (Mahlich & Yurtoglu, 2019).

We gathered primary data in mid-2014 by conducting a survey using the computer-assisted telephone interviewing (CATI) procedure. We conducted a stratified proportional sampling procedure on a sampling frame covering 928 firms provided by Dun and Bradstreet and obtained 200 valid responses. The sample was stratified by federal state, turnover, and firm size (measured by the total number of employees). The number of full interviews in comparison to the number of qualified contacts (n = 597) corresponded to a response rate of

33.5% which is deemed as good in light of the one-time contact and specific target of CEOs (see Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008).

### 3.2. Measures

We adapted the existing measurement scales for competitive strategies that have been validated in the literature (e.g., Dess & Davis, 1984; Robinson & Pearce, 1988; Ruiz Ortega & García Villaverde, 2008). We shortened the existing measurement scales to four items for the differentiation strategy and three items for the cost leadership strategy not to have a long questionnaire, which was of special importance with regard to the target of CEOs. The differentiation strategy was measured using four (reflective) items related to having extensive customer service, being process-R&D oriented, having strict quality control procedures and acquiring a prestigious reputation in the industry. The cost leadership strategy was measured using three (reflective) items related to focusing on low-priced markets, achieving the lowest cost per unit and pricing below competitors.

The measurement scale for performance was based on that used by Akan et al. (2006) and Allen and Helms (2006). We have also taken into account the increase in the number of employees following the publication of prior studies (e.g., Davis & Pett, 2002; Durand & Coeurderoy, 2001; Lee et al., 2010).

We distinguished pioneers from followers by adapting the scale developed by Covin et al. (2000), which has been used in several previous studies (e.g., García-Villaverde, Ruiz-Ortega, & Parra-Requena, 2012; Mueller, Titus Jr, Covin, & Slevin, 2012; Ruiz Ortega & García Villaverde, 2008). For grouping purposes, we conducted a cluster analysis (see Subsection 4.1.). The dependent and independent variables were measured using the means of multiple items on 5-point Likert scales, ranking from 1 (“far below average”) to 5 (“far above average”).

## 4. RESULTS OF THE DATA ANALYSIS

First, we used SPSS Statistics software to perform a cluster analysis. This enabled us to obtain two sub-samples. The data analysis was performed using the partial least squares structural equation modeling (PLS-SEM) technique, which is a useful multivariate method for developing and extending existing theory in management research (Richter, Sinkovics, Ringle, & Schlägel, 2016). We also used the SmartPLS 3 (Ringle, Wende, & Becker, 2015). Fig. 1 shows the structural model.

Figure 1. Structural model: Path coefficients and $R^2$

Take in Figure 1

First, we assessed the measurement model (Table 1 and Table 2). Factor loadings ranged from 0.634 to 0.904 (Henseler, Ringle, & Sinkovics, 2009). All the composite reliability (CR) values were well above 0.7 (Henseler et al., 2009; Nunnally & Bernstein, 1994) and Cronbach's α values were above or close to 0.7, as suggested in prior studies (e.g., Hair Jr, Black, Babin, Anderson, & Tatham, 2006; Hair Jr, Hult, Ringle, & Sarstedt, 2016; Nunnally & Bernstein, 1994). All the average variance extracted (AVE) values were above or very close to 0.5 (Henseler et al., 2009). In addition, all measures meet the discriminant validity criteria, evaluated by the HTMT criterion (Henseler, Ringle, & Sarstedt, 2015). Following the practice established by Henseler et al. (2014), we calculated the standardized root mean square residual (SRMR), which is 0.053. This implies that the composite factor model fits the data quite closely, according to Browne and Cudeck (1993). To account for common method bias, survey items related to the dependent and the independent variables were separated and randomized within blocks to reduce a potential bias from their sequencing.

Table 1. Evaluation results: Measurement model

Take in Table 1

Table 2. Discriminant validity assessment: Heterotrait-monotrait ratio of correlations

Take in Table 2

The second step was the evaluation of the structural model (Table 3). As indicated by the $R^2$ value, the model explains 26.1% of the variance in performance. We used the bootstrapping procedure to analyze the significance of the paths. Examining for collinearity, the tolerance of each predictor construct (VIF) value was determined to be greater than 0.2 and less than 5 (Hair, Ringle, & Sarstedt, 2011; Hair, Ringle, & Sarstedt, 2013).

Table 3. Assessment of the structural model

Take in Table 3

Our findings revealed that the differentiation strategy has a positive influence on performance (Table 3: path coefficient of 0.465; $p < 0.01$). Surprisingly, the cost leadership strategy has a negative effect on performance (Table 3: path coefficient of -0.145; $p < 0.05$). Next, we tested for the presence of a moderating effect of the entry timing. Taking into account population heterogeneity, we conducted a cluster analysis.

**4.1. Cluster analysis**

In order to determine heterogeneity, we considered the entry timing as a discrete variable that moderates the effect on the relations among the variables. Conducting a cluster analysis, we obtained two groups, namely, pioneers and followers, which is consistent with some prior studies (e.g., García-Villaverde et al., 2012; Mueller et al., 2012; Ruiz Ortega & García Villaverde, 2008) that are based on Covin et al. (2000). Two items (Likert scales ranging from 1 to 5) associated with the entry timing variable were used in order to determine the group in which each observation should belong. Thus, we obtained two sub-samples (pioneers and followers), consisting of 62 and 138 firms, respectively, both of which are large enough in light of the low complexity of the model used (Chin, 2010; Hair et al., 2011). The results of the cluster analysis are shown in Tables 4 and 5.

Table 4. Results of the cluster analysis

Take in Table 4

Table 5. Results of the cluster analysis (ANOVA)

Take in Table 5

**4.2. Multigroup analysis**

We conducted a partial least squares multigroup analysis (PLS-MGA) using the SmartPLS 3 (Ringle et al., 2015) software to assess whether the differences in the path coefficients were statistically significant (Table 6).

Table 6. Multi-group comparison: Pioneers vs. followers

Take in Table 6

We rejected Hypotheses 3 and 4, since we cannot confirm them at the 5% probability of error level. The differences between Differentiation → Performance and Cost → Performance paths for pioneers and followers are not statistically significant.

**4.3. Predictive validity**

We report both fit validity and predictive validity (Wu, Yeh, Huan, & Woodside, 2014). To test for predictive validity, we split the sample into a modeling subsample (n = 100) and a holdout subsample (n = 100). We compared the path coefficients of both subsamples by running a multigroup analysis (Table 7).

Table 7. Multi-group comparison: Analysis sample vs. holdout

sample

Take in Table 7

At the 5% probability of error level, there were no differences between Differentiation → Performance and Cost → Performance paths for the modeling subsample and the holdout subsample. The coefficient of determination ($R^2$) of the analysis sample and the holdout

sample were 33.7% and 22.4%, respectively. These figures could be considered fairly different. Hence, in this sense, the results should be treated with caution.

## 5. DISCUSSION

Following Porter's scheme, our study contributes to the research investigating the performance impact of competitive strategies. It is important for both theorists and managers to understand the impact of competitive strategy on performance, as there is a general agreement in the literature that it constitutes one of the main sources of sustainable competitive advantage.

The first contribution made by this study lies in highlighting that, without contextualizing the relationships, the differentiation strategy – e.g., creating a unique product or service, gaining reputation, focusing on extensive customer service – is positively and significantly related to performance. This is especially true in the pharmaceutical industry, where innovation is crucial (Somaya, 2016). However, following a cost leadership strategy does not significantly contribute to increasing performance, that is, primarily focusing on costs and prices does not lead to better performance of pharmaceutical companies. In this case, the specific features of the pharmaceutical industry as compared to other sectors appear to play an important role. Cost leadership strategy is more prevalent and effective in stable environments (see Baack & Boggs, 2008), which is far from being the case of high-tech industries such as the pharmaceutical industry (Li & Liu, 2014). More specifically, our results support the idea that underlies the so-called Generic Competition Paradox phenomenon (Regan, 2008). When generic substitutes are commercialized, the prices of brand-name drugs usually increase. In fact, the price differences between the original versions and the generic drugs often increase. In summary, when analyzed separately, our results highlight the appropriateness of the differentiation strategy for pharmaceutical firms but not of the cost leadership strategy.

Second, contrary to expectations, when contextualizing the competitive strategy performance relationship, we find that the differentiation strategy does not have a stronger impact on the performance of pioneers than on that of followers. Furthermore, the differentiation strategy has a stronger impact on the performance of followers than it does on the performance of pioneers. This finding might seem counterintuitive on its own. However, since the impact of the cost leadership strategy on performance is not significant for followers, it is reasonable to claim that these companies need to focus closely on the differentiation strategy if they wish to enhance their performance. In fact, brand-name drugs and their generic substitutes are not considered perfect substitutes in the pharmaceutical industry. Once again, the special features of the German pharmaceutical industry are relevant when interpreting the results. Consequently, followers are urged to create a unique – or superior – product or service that attracts buyers in an industry where prices are largely regulated and the customers are not very price-sensitive. Hence, not only pioneers but also followers should engage in focusing on customer value by offering high-quality products supported by good service.

## 6. LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

This study is not without limitations. First, we analyzed an overall performance construct. In this regard, differentiating between short- and long-term performance or cost- and revenue-related performance figures might be fruitful for future research. Second, we did not ask the respondents for objective measures. Thus, our study suffers from the normal bias associated with subjective measures. Third, since we studied German pharmaceutical companies, it must be acknowledged that the path coefficients could differ significantly across countries and sectors. Finally, this study fails to capture the moderating effects of variables other than the entry timing. In this sense, a multi-contingency framework could be fruitful in future research to further understand the contextual factors affecting the competitive strategy-performance

relationship (e.g., involving aspects such as organizational characteristics –see Oyekunle Oyewobi et al., 2016– manufacturing strategy and manufacturing capabilities –see González-Benito & Suárez-González, 2010–, leadership style –see Chen et al., 2017–, entrepreneurial orientation –see Linton & Kask, 2017–, or environmental sustainability orientation –see Danso et al., 2019–).

Our study establishes new directions for future empirical and theoretical research. First, future research could include additional contextual factors and build solid bridges with other theories (such as the RBV and dynamic capabilities). Second, researchers could conduct similar studies in different industries and countries with a view to analyzing the different results. In this regard, future research might investigate how institutional features affect the relations to give us a greater understanding of the reasons why results differ among industries and countries (Lounsbury & Leblebici, 2004; Mahoney & McGahan, 2007; Shu, Wang, Gao, & Liu, 2015). Third, the proposed model can be expanded in further works by adding the interplay between the differentiation strategy and the cost leadership strategy. Finally, analyzing the relationships in a longitudinal framework would allow for a better interpretation of the results.

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Figure 1. Structural model: Path coefficients and $R^2$

Table 1. Evaluation results: Measurement model

| Constructs/indicators | Loading | Composite reliability | Cronbach's α | AVE |
|---|---|---|---|---|
| *Differentiation strategy* | | 0.798 | 0.663 | 0.497 |
| - Extensive customer service | 0.715 | | | |
| - Process-oriented R&D | 0.720 | | | |
| - Strict quality control | 0.634 | | | |
| - Reputation in the industry | 0.747 | | | |
| *Cost leadership strategy* | | 0.890 | 0.816 | 0.730 |
| - Low-priced market segment | 0.884 | | | |
| - Lowest cost per unit | 0.773 | | | |
| - Pricing below competitors | 0.901 | | | |
| *Performance* | | 0.943 | 0.927 | 0.736 |
| - Growth in number of employees | 0.736 | | | |
| - Total asset growth | 0.899 | | | |
| - Net income growth | 0.849 | | | |
| - Overall performance/success | 0.904 | | | |
| - Total revenue growth | 0.856 | | | |
| - Market share growth | 0.891 | | | |

*Note*: AVE = Average variance extracted

Table 2. Discriminant validity assessment: Heterotrait-monotrait ratio of correlations

| | Cost | Performance | Differentiation |
|---|---|---|---|
| Cost | | | |
| Performance | 0.255 | | |
| Differentiation | 0.230 | 0.619 | |

Table 3. Assessment of the structural model

| Endogenous construct | $R^2$ | $Q^2$ |
|---|---|---|
| Performance | 0.261 | 0.189 |

| Path | Path coefficient | Collinearity (VIF) | $f^2$ | *t*-value | Bias corrected 95% confidence interval |
|---|---|---|---|---|---|
| Differentiation→ Performance | 0.465 | 1.032 | 0.284 | 7.990*** | [0.376; 0.598] |
| Cost → Performance | -0.145 | 1.032 | 0.027 | 2.408** | [-0.289; -0.051] |

*Note*: The cross-validated redundancy measure ($Q^2$) is derived from the blindfolding procedure with an omission distance of 7. The *t*-values are derived from the bootstrapping procedure with 200 cases, 5,000 samples and the pairwise deletion algorithm. VIF = variance inflation factor. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 4. Results of the cluster analysis

| | N | Mean | SD | Minimum | Maximum |
|---|---|---|---|---|---|
| Follower | 138 | 2.40 | 0.876 | 1 | 5 |
| Pioneer | 62 | 4.15 | 0.507 | 3 | 5 |
| Total | 200 | 2.94 | 1.124 | 1 | 5 |
| Follower | 138 | 2.91 | 1.057 | 1 | 5 |
| Pioneer | 62 | 4.29 | 0.637 | 3 | 5 |
| Total | 200 | 3.34 | 1.141 | 1 | 5 |

Table 5. Results of the cluster analysis (ANOVA)

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between groups | 130.507 | 1 | 130.507 | 213.957 | 0.000 |
| Within groups | 120.773 | 198 | 0.610 | | |
| Total | 251.280 | 199 | | | |
| Between groups | 81.149 | 1 | 81.149 | 90.404 | 0.000 |
| Within groups | 177.731 | 198 | 0.898 | | |
| Total | 258.880 | 199 | | | |

Table 6. Multi-group comparison: Pioneers vs. followers

| Path | Difference in path coefficients | *p*-value |
|---|---|---|
| Differentiation → Performance | 0.017 | 0.797 |
| Cost → Performance | 0.110 | 0.634 |

Table 7. Multi-group comparison: Analysis sample vs. holdout sample

| Path | Difference in path coefficients | *p*-value |
|---|---|---|
| Differentiation → Performance | 0.075 | 0.248 |
| Cost → Performance | 0.129 | 0.870 |