This study investigates the relationships among five types of strategic orientations, strategic flexibility, and six dimensions of new service development performance in the B2B service context. Based on a survey of 164 leading Taiwanese-based B2B service firms, the statistical results reveal that market, interaction, and learning orientations are positively related to new service launch, new service success, financial performance, new service innovativeness, market performance, and new service development process efficiency. Not all types of strategic orientations are equally effective on new service development performance. Finally, strategic flexibility strengthens the positive effects of each strategic orientation on all NSD performance indicators.

KEYWORDS: Strategic orientation, Strategic flexibility, New service development

INTRODUCTION

Strategic orientation refers to the strategic directions and emphases implemented by a firm to create the proper behaviors for conducting business through a deeply-rooted set of values and beliefs (Gatignon & Xuereb, 1997; Slater et al., 2006). It provides the strategic advantage of differentiation, and thus sustains a firm's new service development (NSD) performance (Menor & Roth, 2007). In practice, strategic orientation is a multi-dimensional construct that could include various types of orientation, such as market orientation (Ramani & Kumar, 2008), service orientation (Oliveira & Roth, 2012), interaction orientation (Ramani & Kumar, 2008), and learning orientation (Melton & Hartline, 2013). However, most research regarding the effect of strategic orientations on NSD performance has focused primarily on one particular type of orientation, market orientation (e.g., Ellis, 2006; Kirca et al., 2005; Storey & Hughes, 2013). As a result, we have little understanding regarding the relative effectiveness of various types of strategic orientation. In particular, Grinstein (2008) suggests that market orientation should be studied in combination with other strategic orientations to understand how a firm creates superior performance. This is an important knowledge gap because developing strategic
orientation requires significant resource commitment (Voss and Voss, 2000), and a firm must choose, invest in, and develop its strategic orientation with a thorough understanding of the effectiveness of various orientations (Kohli & Jaworski, 1990).

Another gap in the current strategic orientation research is the inconclusive findings on the effect of strategic orientation. While some studies confirm a positive linkage between strategic orientations and innovation performance (e.g., Storey and Hughes, 2013), others find a negative or insignificant relationship (e.g., Zhou et al., 2010). One possible reason for the inconsistent results is the missing of important factors that moderate the strategic orientation–performance relationship. For instance, Grewal and Tansuhaj (2001), and Javalgi, Whipple and Ghosh (2005) suggest that strategic flexibility, the capability that allows firms to change strategic directions quickly to adapt to context changes, be developed and applied in conjunction with a firm’s strategic (market) orientation. It is implied that strategic flexibility enhances the strategic orientation–performance linkage (Javalgi, Whipple & Ghosh, 2005). Hence, it would be critical to examine whether strategic flexibility moderates the relationships between different types of strategic orientations and NSD performance.

The objective of this study is to address the following two research questions: (1) What is the relative efficacy of different strategic orientations on NSD performance? and (2) Can strategic flexibility enhance the effects of different strategic orientations on NSD performance?

For the first research question, this study, based on the literature review, focuses on five types of strategic orientations that have potential to produce superior NSD performance: market orientation, service orientation, interaction orientation, learning orientation, and international orientation.

LITERATURE REVIEW

Strategic orientations and NSD performance

Resource-Based View (RBV) (Barney, 1991; Wernerfelt, 1984) provides the theoretical foundation for this study. RBV suggests that superior firm performance rests on resources and capabilities that are valuable and rare, that strategies based on these resources are costly to imitate, and that procedures and policies are organized to exploit the resources and capabilities (Barney, 1991). Strategic orientation, as discussed earlier, is the business direction and objectives that a firm wants to achieve. It represents how aggressively a firm wishes to explore and develop competencies, products, or services that ensure superior performance for the firm (Hamel & Prahalad, 1994). As such, Barney (1991) indicates strategic orientations as organizational resources that can lead to the success of firms. Teece et al. (1997) and Zhou et al. (2005) also consider strategic orientations to be the firm’s ability to integrate and build internal and external competencies. In summary, strategic orientations represent strategic resources and capabilities that can guide a firm’s strategic actions to produce superior NSD performance (Hult et al., 2005). Empirical research drawing on RBV also points out that strategic orientations can provide a necessary basis for successful new services (e.g., Storey & Hughes, 2013). Storey & Hughes (2013) indicate that a strategic orientation (a prospector) has a significant impact on the contribution of NSD to overall firm performance because the strategic orientation tends to innovate new services on technological grounds, to develop new services to lead markets, and to seek out market opportunities, with a view to acting in advance of competitors (Hughes & Morgan, 2008). There is clear evidence of a positive relationship between strategic orientations and NSD performance.

However, each strategic orientation entails a unique set of organizational resources, capabilities, and focuses (Gatignon & Xuereb, 1997; Deutscher et al., 2013). The choice and development of different types of strategic orientation have implications on resource allocation
and competence. Additionally, the value of strategic orientations may be contingent on the firm’s ability to adapt to environmental changes (Zhou & Wu, 2010). In particular, strategic flexibility, emphasizing the flexible use of resources and reconfiguration of strategic processes, may help firms better reallocate resources and deal with turbulent environments. As a result, strategic flexibility has the potential to strengthen the positive effects of strategic orientations on NSD performance.

**Moderating effect of strategic flexibility**

Strategic flexibility refers to “the ability to precipitate intentional changes and adapt to environmental changes through continuous changes in current strategic actions, asset deployment, and investment strategies” (Nadkarni & Narayanan, 2007, p. 243). Thus, strategic flexibility can be viewed as an organizational capability to adjust strategic actions in response to either internal or external changes in the environment (Grewal & Tansuhaj, 2001). In addition, developing strategic flexibility in organizations may create an organizational principle that supports innovation development (Matthyssens, Pauwels & Vandenbempt, 2005). Yet, while strategic flexibility can serve as an organizing principle for supporting innovation development, it may not affect a firm’s innovation output by itself (Zhou & Wu, 2010). Rather, it can strengthen the value of existing strategic decisions in innovation development (Grewal & Tansuhaj, 2001; Javalgi et al., 2005). In this sense, strategic flexibility is one type of complementary organizational capability (Barney, 1997; Zhou & Wu, 2010) that can help the firm increase the full potential of its strategic orientations on developing new services, when used in combination.

**THEORETICAL DEVELOPMENT/MODEL**

Figure 1 provides an overview of the relationships to be tested, including (1) strategic orientations, comprised of market, service, interaction, learning, and international orientations; (2) strategic flexibility; and (3) the six NSD performance indicators, namely new service launch, new service success, financial performance, new service innovativeness, market performance, and NSD process efficiency.

**Figure 1. The Research Model**

**Hypotheses**

The main concept of market orientation encompasses acquiring, disseminating and using market information (Kohli & Jaworski, 1990). Most empirical studies provide support for the positive effect of market orientation on innovation performance (Atuahene-Gima, 1996; Song et al., 2009). This is because a market-oriented firm can better acquire, disseminate, and use market information to develop innovations that satisfy and retain existing customers, attract new...
customers, and, as a result, achieve desirable levels of innovation performance. Following this line of thought, we expect that B2B service firms with strong market orientations will have better NSD performance, because they are better able to obtain and use information from business partners and take timely action upon this information to develop new services to meet business partner needs.

Service orientation is the extent to which service is an important element of the firm’s strategy (Oliveira & Roth, 2012). From a theoretical perspective, service orientation is related to a new marketing paradigm that places service rather than goods at the center of exchange (Vargo & Lusch, 2004). Lytle and Timmerman (2006) further point out that service orientation is a strategic organizational preference for service excellence. In addition, Camarero and Garrido (2012) indicate that firms are likely to emphasize ongoing organizational and technological innovations that enable them to continually improve existing services to offer customers better quality services, which, as a result, renew customer markets. Following the same logic, in terms of B2B service, service orientation can shape employees’ attitudes and behaviors, which would affect the course of interactions between the firm and its business partners. To enhance the quality of the B2B services, the firm and its business partner will likely strive for developing new service processes that, in turn, lead to positive NSD performance (Oliveira & Roth, 2012).

Ramani and Kumar (2008) indicate that interaction orientation is the fundamental notion of customer engagement. Typically, with strong engagement customers are more willing to co-create value, be involved in new product/service development, determine the competitive strategy, and thus collaborate in service innovation (Hoyer et al., 2010). In the case of B2B service, interaction orientation enables firms to refine their service knowledge about customer preferences and to proactively involve their business customers in developing new services, in order to improve customer satisfaction, strengthen repurchase behavior, and lead to profitable customer relationships (Srinivasan et al., 2002). Therefore, interaction orientation enhances NSD performance.

Previous research has indicated that a strong learning orientation leads to superior service innovation performance because members in a service firm are highly motivated to gather, interpret, evaluate, and share external information about customer needs and competitors, and internal information about organizational conditions, both of which build up advanced new services knowledge (Melton & Hartline, 2013). It is on this basis that B2B service firms with stronger learning orientations can influence employees’ values and behavior to collect useful internal and external information, to interpret, evaluate, and share information, and, as a result to create new services knowledge. This new services knowledge improves their overall capacity to develop superior new services and eventually achieves greater NSD performance.

Firms with stronger international orientations tend to work pro-actively with their international partners to explore and exploit international markets (Dess, Lumpkin, & Covin, 1997). In addition, due to intense competition in international markets, internationally-oriented firms are likely to put more effort into their innovation development (Deshpandé & Farley, 2004). Accordingly, international orientation reflects firms’ overall innovativeness and pro-activeness in pursuit of international markets, both of which facilitate the NSD process and lead to superior NSD performance.

Although the literature supports the direct and positive impact of those five types of strategic orientation on NSD performance, the relative effectiveness of individual types is not properly examined. Each strategic orientation has its own unique characteristics, has different perceptions of the environment, and has different information needs; thus, each engages in different innovation activities (Gatignon & Xuereb, 1997; Voss & Voss, 2000; Zhou & Li, 2007). Olson et al. (2005) indicate that concurrent orientations are naturally and systematically in play in firms, so “the message for managers is not to ignore any of the orientations but rather to prioritize them” (Olson, Slater & Hult, 2005, p.61). Therefore, we posit the following hypotheses:
H1a-e. In a B2B service setting, strategic orientations, including (a) market orientation; (b) service orientation; (c) interaction orientation; (d) learning orientation; and (e) international orientation, are positively related to NSD performance.

H2. In a B2B service setting, there is a difference in NSD performance among market orientation, service orientation, interaction orientation, learning orientation, and international orientation.

Strategic flexibility provides the organizational capability to adapt to environmental changes through the alternation of current strategic actions, asset deployment, and investment strategies (Nadkarni & Narayanan, 2007). The literature indicates that firms with a high level of strategic flexibility can more easily allocate resources for new purposes and more effectively find new market opportunities (Sanchez, 1995). As such, strategic flexibility increases the firm’s strategic orientations in developing new services, because a market-oriented firm can respond more rapidly in the competitive environment and devote resources to generate new services. In addition, with strategic flexibility, a service-oriented firm can better allocate and coordinate resources into its service systems and service delivery processes, both of which help the firm explore new services effectively and efficiently (Gilbert, 2005). Furthermore, an interaction-oriented firm, with a high level of strategic flexibility, can take less time to create profitable relationships with its business clients (Ramani & Kumar, 2008), so that the firm can absorb knowledge from its clients to develop new services. With strong strategic flexibility, a learning-oriented firm is more likely to facilitate the exploration of external partnering opportunities as part of enhancing its competencies (Dess et al., 2003), to enhance developing new services. Finally, international markets have been described as hostile (Deshpandé & Farley, 2004) and especially, the differences among international markets increase the complexity of service operations (Sørensen & Madsen, 2012). Thus, with strong strategic flexibility, an internationally-oriented firm can flexibly adapt its strategic actions (Kurt and Hulland, 2013) to manage its service operations in a unique environment and, as a result, respond to business customers quickly by committing resources to provide new services.

In summary, each strategic orientation appears to benefit from a high level of strategic flexibility, since strategic flexibility strengthens the effects of strategic orientations on NSD performance. Therefore, we propose that

H3a-e. In a B2B service setting, strategic flexibility positively moderates the relationship between (a) market orientation; (b) service orientation; (c) interaction orientation; (d) learning orientation; and (e) international orientation and NSD performance.

Market orientation refers to “the organizational culture that most effectively and efficiently creates the necessary behavior for the creation of superior value for buyers” (Narver & Slater, 1990). The concept encompasses acquiring, disseminating and using market information to respond to market demand (Kohli & Jaworski, 1990; Storey & Hughes, 2013). Service orientation refers to “a distinctive way of implementing the market concept, competing by means of outstanding service to enhance competitive advantage and customer value” (Lytle and Timmermann, 2006, p. 136). It is one of the most important strategic orientations in service business, providing the fundamental service implementation (Oliveira & Roth, 2012). Interaction orientation refers to firms’ abilities to interact with customers and obtain information from them to maintain profitable and long-term relationships (Kumar & Ramani, 2006). It establishes strong personal relationships through social interactions, and acts as an element of service business (Ramani & Kumar, 2008). Learning orientation is defined as “organization-wide activity of
creating and using knowledge to enhance competitive advantage . . . and involves obtaining and sharing information about customer needs, market changes, and competitor actions, as well as development of new technologies to create new products that are superior to those of competitors” (Calantone et al., 2002, p. 516). It encourages the development of new knowledge for developing necessary capabilities to achieve competitive advantage and to counter environmental changes (Day, 1991; Dickson, 1996). Finally, international orientation facilitates innovations in international markets to support international operations (Knight & Cavusgil, 2004; Kleinschmidt & Cooper, 1988). In summary, these five types of strategic orientation represent different strategic emphases a firm seeks in order to develop competitiveness in the marketplace.

We chose to use business-to-business (B2B) service to examine the research questions. B2B refers to a firm providing services to any other firm (Niranjan & Metri, 2008). B2B service is of particular interest for the following reasons. First, B2B service has emerged as one of the fastest growing service business fields. According to a Gartner report (Gartner Research, 2010), the worldwide market for B2B services was worth $58.6 billion in 2009 and is forecast to grow to $148.8 billion by 2014. The rapid growth of B2B service creates complex industrial dynamics that greatly challenge firms' strategic operations. Second, for service firms, the B2B service plays a major role of improving efficiency and productivity gains and creating access to new clients through service platforms. To achieve seamless B2B service collaborations to support the desired level of NSD, strategic orientations play a more critical role for new service success (Asgary & Samii, 2012; Zhou et al., 2005). Third, most studies on strategic orientations build on data from various research settings, such as product innovation (Zhou et al., 2005), end user (Aspara & Tikkanen, 2013), and international marketing (Cadogan, 2012), but little research is conducted in the B2B service industry, despite its economic significance. In practice, B2B services are far more complex operations, involving more parameters, to ensure flawless provision and outcome (Gounaris, 2005). Finally, B2B services offer an excellent platform to investigate the practice of co-creating value between business and customers. The remainder of this article is structured as follows. This study reviews previous studies related to strategic orientations, strategic flexibility, and NSD performance, followed by the development of research hypotheses. Next, the sample is described, the statistical analysis is conducted, and the theoretical relationships among the constructs are assessed. Finally, the statistical findings are presented and the implications of the findings are discussed.

RESEARCH METHODS

Questionnaire development

All constructs are measured by multiple-item scales. Most of the scales are adopted from previous studies and modified for the unique characteristics of B2B service (Lyles & Salk, 2007). For items adopted from previous literature and written in English, a double-translation method is used to translate them into Mandarin. This process includes (1) the authors initially translating the items into Mandarin; (2) two more academics translating the Mandarin version back into English; and (3) this translation being checked by a third academic to ensure conceptual equivalence. A comparison between the original items and the items translated back by a fourth academic demonstrates the desired consistency. Such a process has been successfully adopted in a paper by Cheng and Krumwiede (2012), in which the questionnaire survey is also targeted at Mandarin-speaking respondents.

Once the initial items were developed, two pilot tests were performed to ensure the measurement is reliable and valid (Churchill, 1979). First, this study uses an interview approach, with four academics and 15 experienced practitioners, to detect ambiguous questions, check
the face and content validity of the measurement scales, and certify the wording of the items. Second, refined scales are then tested with a sample of 53 senior managers with work experience in B2B service. Some minor adjustments were made regarding wording and formatting. All items are measured with a 7-point Likert scale, with end points of “strongly disagree” and “strongly agree” (see Appendix).

Measures

Market orientation is assessed using 14 items from Paladino (2007), service orientation with 22 items from Oliveira and Roth (2012), interaction orientation with 13 items from Ramani and Kumar (2008), learning orientation with 10 items from Sinkula et al. (1997), and international orientation with eight items from Knight and Cavusgil (2004). Strategic flexibility is measured by eight items adapted from Nadkarni and Herrmann (2010).

As suggested by previous research, this study measures the NSD activities in B2B service over the last three years (2008-2010) and assesses six dimensions of NSD performance: new service launch, new service success, financial performance, new service innovativeness, market performance, and NSD process efficiency. Specifically, new service launch is measured by the number of new services introduced to the marketplace. New service success is measured by the percentage of new services launched that are classified as successful. Financial performance is measured by the percentage of sales and of profits attributable to new services launched in the last three years. All of these are measured in an objective way, to reduce common method bias (Frambach et al., 2003). In contrast, the measures for new service innovativeness (Salomo, Talke, & Strecker, 2008), market performance (Matear et al., 2002), and NSD process efficiency (de Brentani & Kleinschmidt, 2004) are adapted from previous studies with four, four, and six items, respectively. In this case, the use of subjective performance measures is intended to acknowledge differences between firms and industries in the sample (Miles & Snow, 1978).

As for control variables, this study includes industry, firm age, firm size, B2B service experience, and environmental uncertainty. These factors are viewed as control variables because the effects of these variables on innovation performance have been documented (e.g., Barkema & Drogendijk, 2007; Lu et al., 2010). This study creates dummies to represent the four industry segments, namely, information, finance, retailing, and entertainment. Firm age is measured as the number of years from founding year to 2010. The number of full-time employees is used to measure firm size. B2B service experience is measured by counting the number of years the firm has engaged in B2B service. Finally, environmental uncertainty is measured by three items from Lu et al. (2010).

Data collection

The sampling frame consists of a random sample of 1,500 B2B service firms operating in Taiwan, as compiled by the China Credit Information Service 2011. For the purpose of this study, B2B service industries in Taiwan offer an ideal sample since Taiwanese firms are renowned for their active engagement in B2B service business (Hsu et al., 2013). To ensure the competence of informants, we invited only senior managers as the respondents, since they are the individuals who take responsibility for the NSD and make decisions of strategic orientations and would have the necessary knowledge to fill out the questionnaire. Accordingly, 501 B2B service firms introducing new-to-the-industry/ market services were identified. Using Dillman’s (2000) total design method for mail surveys, a total of 501 questionnaires were mailed. Reminder letters were sent after three weeks. This procedure yielded 164 usable questionnaires and resulted in a response rate of 32.7%. This rate is considered satisfactory, given previous
experience with B2B mail surveys of a similar nature (La et al., 2009). The sample represents six B2B service sectors: information services (25.6%), financial services (24.3%), retailing and logistics services (23.1%), entertainment and recreation services (21.3%), and others (5.7%). The number of firm employees varies between 221 and 7,269, with 79.8% of firms having more than 500 employees. The average experience of respondents is 14.3 years in the B2B service industry, suggesting the subject competence of the respondents.

Non-response bias and common method bias

Non-response bias is assessed by comparing early and late respondents (responses received after a reminder mailing, 31.7%) in terms of the means of all items, firm age, and firm size. Using t-test methodology, the results show that there is no significant difference between these two groups, indicating no systematic differences are found between early and late respondents (Armstrong & Overton, 1977).

In addition, confirmatory factor analysis (covariance structure analysis based on maximum likelihood), using VisualGSCA (Hwang, 2009), is performed to identify and isolate any possible common method bias (Podsakoff et al., 2003). The results indicate that common method bias is not a significant issue.

DATA ANALYSIS AND RESULTS

The data analysis method used in this research is the partial least squares (PLS Graph version 3.00 Build 1130) recommended by Chin (1998). PLS is used because PLS can deal with small sample sizes and the scales with both reflective scales and formative indices. (Chin et al., 2003).

Psychometric properties

This study first computes the kurtosis and skewness of each item to test for nonnormality (Hair et al., 2010). The largest kurtosis value is below the recommended maximum value of 2.00, and the largest skewness value falls below 5.00. Both results suggest all items are within the range of normality. Next, this study employs the Kaiser-Meyer-Olkin (KMO) measure to test sampling adequacy, and Bartlett’s test of sphericity to test correlation matrix (Hair et al., 2010). Both tests yield satisfactory results, with a KMO value of 0.814 exceeding the recommended value of 0.60 (Kaiser, 1974), and the Bartlett’s test reached significance at \( p < .001 \) level.

The reliability is then measured and the results indicate that the Cronbach’s alpha values for all constructs are well above the threshold value of 0.7 that Nunnally (1978) recommended (see Appendix). Finally, to refine the measures, a principal component analysis is conducted with varimax rotation, and evaluation of the eigenvalues is used to identify the number of factors to retain. All initial eigenvalues are greater than one. The remaining items explain 67.2% of the variance, and all items load on the right factor, generally with quite high factor loadings. Throughout this process, the items load as expected.

For the measurement models, the results of factor analysis indicate that all factor loadings are significant \( (p < .01) \) and all are well above the recommended value of 0.5 (see Appendix). To establish construct validity, we examine both convergent and discriminant validity. Composite reliability is an indicator of the shared variance among the observed variables used as an indicator of a latent construct (Fornell and Larcker, 1981). The results of all indicators exceed the usual 0.70 benchmark (Hair et al., 2010).

Discriminant validity is assessed using the procedure suggested by Fornell and Larcker (1981). For each construct the value of the square root of each average variance extracted is
greater than the values of the inter-construct correlations. In addition, the confidence interval does not include 1.0 by plus or minus two standard errors around the correlation between the constructs (Anderson & Gerbing, 1988), and the chi-square test between any two constructs is significant \( p < .001 \). Accordingly, the measures in this study are uni-dimensional and possess convergent and discriminant validity.

**Results**

In the structural model assessment, this study estimates the path coefficients with the \( R^2 \) values, the bootstrapping resampling, and the \( Q^2 \) tests for predictive relevance. Table 1 provides the results of the main effects. The \( R^2 \) values of new service launch, new service success, financial performance, new service innovativeness, market performance, and NSD process efficiency are .453, .509, .407, .568, .481, and .453, respectively. These values are between moderate and high, indicating a satisfactory model (Hair, Ringle, & Sarstedt, 2011).

A bootstrapping resampling procedure with 500 samples is performed to test the statistical significance of each path coefficient using t-tests (Efron & Tibshirani, 1993). The bootstrapping resampling analysis results indicate that all coefficients are statistically significant, except service and international orientations. The examination of the cross-validated redundancy indices (\( Q^2 \) tests) confirms that the structural model has satisfactory predictive relevance for all endogenous variables (Chin, 1998; Hair et al., 2011).

Overall, hypotheses H1a (market orientation), H1c (interaction orientation) and H1d (learning orientation) are supported, while H1b (service orientation) and H1e (international orientation) are partially supported.

<table>
<thead>
<tr>
<th>Table 1. Main Effects (w/o Market performance and NSD process efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSD performance</td>
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<tr>
<td>New service launch</td>
</tr>
<tr>
<td><strong>Antecedents</strong></td>
</tr>
<tr>
<td>H1 MO</td>
</tr>
<tr>
<td>H2 SO</td>
</tr>
<tr>
<td>H3 IAO</td>
</tr>
<tr>
<td>H4 LO</td>
</tr>
<tr>
<td>H5 INO</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
</tr>
<tr>
<td>Industry/information</td>
</tr>
<tr>
<td>Industry/finance</td>
</tr>
<tr>
<td>Industry/retail</td>
</tr>
<tr>
<td>Industry/entertainment</td>
</tr>
<tr>
<td>Firm size</td>
</tr>
<tr>
<td>Firm age</td>
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<tr>
<td>B2B service experience</td>
</tr>
<tr>
<td>Environmental uncertainty</td>
</tr>
</tbody>
</table>

MO: market orientation; SO: service orientation; IAO: interaction orientation
LO: learning orientation; INO: international orientation;
* \( p<.05 \); ** \( p<.01 \); *** \( p<.000 \)

Relative influences of different strategic orientations

We then compare the relative strengths of these five strategic orientations based on a series of chi-square difference tests. Specifically, to obtain the chi-square value of the direct effect of
market orientation, the first model includes the paths (1) market orientation—new service launch, (2) service orientation—new service launch, (3) interaction orientation—new service launch, (4) learning orientation—new service launch, and (5) international orientation—new service launch. Then, the second model is run without the first path in the first model. As such, we obtain a chi-square difference value between these two models. Based on these chi-square values, we again run chi-square tests to compare the difference. The same procedures are repeated for service, interaction, learning, and international orientations. The results show that there are significant differences in six dimensions of NSD performance among five types of strategic orientations, supporting H2. Specifically, learning orientation has the strongest chi-square difference value, followed by interaction orientation, market orientation, international orientation, and service orientation.

Moderating effects of strategic flexibility

Following Chin et al. (2003), the moderating effects of strategic flexibility are tested by including strategic flexibility in the main effects model. Comparing the $R^2$ values for each dependent variable between the main and moderating effects models indicates that the increase in explanatory power is found to be statistically significant at $p < .01$ (see Table 2). This result implies that all six $R^2$ values in the moderating model are significantly higher (Cohen et al., 2003), suggesting H3 is supported.

<p>| Table 2. Moderating Effects (w/o Market performance and NSD process efficiency) |</p>
<table>
<thead>
<tr>
<th>NSD performance</th>
<th>New service launch</th>
<th>New service success</th>
<th>Financial performance</th>
<th>New service innovativeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedents</td>
<td>$R^2 = .613$</td>
<td>$R^2 = .715$</td>
<td>$R^2 = .684$</td>
<td>$R^2 = .762$</td>
</tr>
<tr>
<td>H1 MO</td>
<td>.352*** (4.364)</td>
<td>.411*** (5.106)</td>
<td>.345*** (4.231)</td>
<td>.331*** (4.097)</td>
</tr>
<tr>
<td>H2 SO</td>
<td>.112 (1.317)</td>
<td>.134 (1.742)</td>
<td>.127 (1.657)</td>
<td>.169* (2.119)</td>
</tr>
<tr>
<td>H3 IAO</td>
<td>.446*** (6.476)</td>
<td>.469*** (5.678)</td>
<td>.453*** (5.356)</td>
<td>.408*** (5.083)</td>
</tr>
<tr>
<td>H4 LO</td>
<td>.564*** (6.747)</td>
<td>.531*** (6.476)</td>
<td>.447*** (5.482)</td>
<td>.462*** (5.632)</td>
</tr>
<tr>
<td>H5 INO</td>
<td>.143 (1.852)</td>
<td>.149 (1.864)</td>
<td>.223** (2.804)</td>
<td>.216** (2.773)</td>
</tr>
<tr>
<td>H6 MO × SF</td>
<td>.379*** (4.653)</td>
<td>.424*** (5.293)</td>
<td>.388*** (4.536)</td>
<td>.357*** (4.487)</td>
</tr>
<tr>
<td>H6 SO × SF</td>
<td>.116 (1.335)</td>
<td>.141 (1.834)</td>
<td>.135 (1.816)</td>
<td>.179* (2.232)</td>
</tr>
<tr>
<td>H6 IAO × SF</td>
<td>.457*** (5.563)</td>
<td>.472*** (5.725)</td>
<td>.467*** (5.651)</td>
<td>.432*** (5.302)</td>
</tr>
<tr>
<td>H6 LO × SF</td>
<td>.576*** (6.835)</td>
<td>.557*** (6.652)</td>
<td>.476*** (5.738)</td>
<td>.489*** (5.931)</td>
</tr>
<tr>
<td>H6 INO × SF</td>
<td>.152* (1.984)</td>
<td>.158* (1.993)</td>
<td>.245** (3.014)</td>
<td>.235** (2.866)</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry/information</td>
<td>.065 (.812)</td>
<td>.098 (1.132)</td>
<td>.062 (.799)</td>
<td>.075 (.898)</td>
</tr>
<tr>
<td>Industry/finance</td>
<td>.064 (.809)</td>
<td>.053 (.757)</td>
<td>.037 (.644)</td>
<td>.064 (.811)</td>
</tr>
<tr>
<td>Industry/retail</td>
<td>.073 (.885)</td>
<td>.091 (.974)</td>
<td>.056 (.773)</td>
<td>.036 (.641)</td>
</tr>
<tr>
<td>Industry/entertainment</td>
<td>.061 (.795)</td>
<td>.063 (.803)</td>
<td>.071 (.877)</td>
<td>.073 (.884)</td>
</tr>
<tr>
<td>Firm size</td>
<td>.082 (.953)</td>
<td>.087 (.964)</td>
<td>.083 (.958)</td>
<td>.094 (9.98)</td>
</tr>
<tr>
<td>Firm age</td>
<td>-.064 (-.810)</td>
<td>-.073 (-.887)</td>
<td>.013 (.216)</td>
<td>-.097 (1.127)</td>
</tr>
<tr>
<td>B2B service experience</td>
<td>.053 (.758)</td>
<td>.175* (2.213)</td>
<td>.198** (2.621)</td>
<td>.021 (.398)</td>
</tr>
<tr>
<td>Environmental uncertainty</td>
<td>-.164* (2.143)</td>
<td>-.177* (2.222)</td>
<td>-.125 (1.647)</td>
<td>-.168* (-2.181)</td>
</tr>
</tbody>
</table>

MO: market orientation; SO: service orientation; IAO: interaction orientation
LO: learning orientation; INO: international orientation; SF: strategic flexibility
* $p<.05$; ** $p<.01$; *** $p<.000$

We also examined the robustness of the preceding results by using moderated regression analysis. We created interaction terms by using mean-centered independent variables to reduce multicollinearity (Aiken & West, 1991). For example, Models 1 through 3 are nested models.
Models 1 and 2 include only control and simple effects. We then added the moderating effect into Model 3. Model 3 explained 31% of variance in new service launch. The addition of the moderating effect in Model 3 added an additional 8% ($\Delta R^2 = .08$, $f = 4.72$, $p < .01$) to the explained variance in new service launch. Other NSD performance indicators have similar results. The results indicate that we cannot reject the null hypothesis, and thus the hypothesized relationships in moderated regression models followed the same significance patterns as those in the PLS model.

Finally, in both main and moderating effects models, analyses of the control variables show that industry, firm size, and firm age have no significant direct influence on NSD performance, while B2B service experience and environmental uncertainty have partially significant effects. These results are logical, because B2B service experience would appear to provide firms with an appropriate skill to develop innovations (Hoang & Rothaermel, 2010), while environmental uncertainty could be a factor that determines firms’ choices of strategic orientations (Gatignon & Xuereb, 1997).

**DISCUSSION AND CONCLUSIONS**

The objective of this study is to advance marketing and strategy literature by investigating the complex relationships among five types of strategic orientations, strategic flexibility, and six dimensions of NSD performance in the B2B service context. Based on a survey of 164 leading Taiwanese-based B2B service firms, the results reveal that market, interaction, and learning orientations are positively related to new service launch, new service success, financial performance, new service innovativeness, market performance, and NSD process efficiency. However, service and international orientations are partially related to NSD performance (except new service launch and new service success). In addition, the results show that there is a difference in NSD performance among the five strategic orientations, in which learning orientation has the strongest effect, followed by interaction orientation, market orientation, international orientation, and service orientation. Finally, strategic flexibility strengthens the positive effects of each strategic orientation on all NSD performance indicators.

Overall, the statistical results make several research contributions. First, the findings shed light on the mixed results on the link between strategic orientations and innovation performance from previous literature. Our data suggest that market, interaction, and learning orientations are significantly and positively related to all six indicators of NSD performance, while service and international orientations are partially related to NSD performance. When looking closely at all six NSD performance indicators, we find that both service and international orientations have significant impacts on all three qualitative/subjective indicators of NSD performance (new service innovativeness, market performance, and NSD process efficiency), but not on the quantitative performance (new service launch and new service success). This implies that strategic orientations are positively related to self-perceived performance, but not so with objective performance. Previous work regarding service innovation may have failed to account for this measurement issue (except for the work by Storey & Hughes, 2013 that focuses on objective performance alone), such as market orientation to sales and profit performance (Atuahene-Gima, 1996); market orientation to market and financial performance (Cheng & Krumwiede, 2012); market and service orientations to market performance (Grawe, Chen & Daugherty, 2009); or customer orientation to revenue and profit growth (Ordanini & Parasuraman, 2011). In contrast, this study disaggregates NSD performance into six indicators and each indicator requires different strategic actions. Previous work seems to provide only a partial explanation of the effectiveness of service innovation performance. Thus, with considering both qualitative measures and quantitative measures, we are able to more
accurately predict how strategic orientations influence innovation performance, especially NSD effectiveness. Second, this study adds to the marketing and strategy literature by differentiating five types of strategic orientations in creating service innovations. Specifically, in contrast to the conventional studies that focus mostly on the effects of market orientation on service innovations (Atuahene-Gima, 1996; Grawe, Chen & Daugherty, 2009; Ordanini & Parasuraman, 2011), our research shows that service, interaction, learning, and international orientations also significantly and positively affect NSD performance. In particular, our sample firms show that the effects of learning and interaction orientations are even stronger than that of market orientation. Until now, the relative effectiveness of different types of strategic orientation has not been properly examined.

This study is subject to several limitations and leaves some areas in need of further research. First, this study tests the role of strategic orientations in the B2B service context. Research in other settings (e.g., business-to-customer) could be needed to expand the scope of strategic orientations. Second, the results of this study represent a cross-section of senior manager perceptions. However, the cross-sectional nature of this research into NSD performance allows us to analyze firms’ conduct at only one specific point in time, not over a period of time. Thus, further longitudinal evaluation may be needed. Third, another limitation of this study is that the survey depended upon only one key informant of each firm. Future works could survey more key informants at each firm to increase the accuracy of the survey information. Finally, this study focuses on service firms in Taiwan. Future research may focus on service firms in other countries to help enhance the validity of the results.

REFERENCES


