

# Does training facilitate SME's performance?

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This study explores relationships between small- and medium-sized enterprises (SMEs) foreign direct investment (FDI), FDI-related training programs and organizational performance. To determine if the implementation of training programs mediate the relationship between FDI and SME performance, and if the alignment between training needs and training implementation leads to higher SME performance, we collected large-scale company-level data (N = 816) from within Taiwan. Research results suggest that FDI leads to higher SME performance. This relationship was partially mediated by the implementation of FDI-related training programs. Unexpectedly, the results also suggest that higher levels of training need attenuate the positive relationship between FDI-related training implementations and SME performance. This implies that the alignment between SME training needs and training implementation may be of a more complicated nature than was previously thought. Practical implications and suggestions for future research are also identified.

**Keywords:** FDI; SME; training implementation; training need

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## Introduction

The present global economy offers small- and medium-sized enterprises (SMEs) more cross-border opportunities, and they now have an increasingly important role in international markets (Andersson, Gabrielsson and Wictor 2004; Bacon and Hoque 2005). According to the OECD (2000), SMEs make up 25 to 35% of world export manufacturers, and about one-fifth of manufacturing SMEs earn 10 to 40% of their sales from cross-border activities. Further, SMEs have become significantly internationalized (Andersson et al. 2004; Lu and Beamish 2001) and actively pursue international strategies such as foreign direct investment (FDI) (McDougall and Oviatt 2000; Lu and Beamish 2001; Kalantaridis 2004; Chiao, Yang and Yu 2006). While more SMEs have turned to FDI in an effort to pursue higher overseas performance, as yet little research has investigated the link between FDI and SME performance (Lu and Beamish 2001).

Although FDI offers both an opportunity for off-shore production and a source of resource leverage, potential liabilities do exist in that SMEs must cope with the challenges inherent to being a foreign company in a new market, which may call for different knowledge requirements and capabilities from those they developed in their home country (Lu and Beamish 2001). As such, new knowledge and capabilities are necessary for SMEs to compete in a global market. However, SMEs generally budget comparatively less financial resources to international market expansion (Kalantaridis 2004; Carlson, Upton and Seaman 2006), and therefore rely more on capable international human resources for their overseas operations (Carrier 1999). A number of scholars have suggested that SMEs develop their international capabilities and human resources through effective training programs (e.g. Storey 2004; Beaver and Hutchings 2005; Garcí'a 2005). During the FDI process, training programs such as language training, cross-cultural adjustment training, and host country market orientation may all assist SMEs to cultivate a continuous supply of valuable international human resources, which in turn may enhance SME overseas performance (Lin and Wei 2005). Although the benefits of training programs to SME performance have been continuously emphasized by academics and practitioners alike (e.g. Storey 2004; Bacon and Hoque 2005; Mako' 2005), studies regarding how these training programs facilitate SME overseas performance are still required (Patton, Marlow and Hannon 2000; Ng and Siu 2004). This study attempts to empirically investigate how training programs influence SME performance.

Moreover, training implementation within firms should be tied to training need, as a lack of an adequate

training needs assessment may hamper the effectiveness of training implementation (Sadler-Smith, Sargeant and Dawson 1998; Montesino 2002). To enhance the effectiveness of training programs, firms should pursue a better match between their training needs and training implementation (Semler 1997; Noe 2005). Given that the main strategic goal of SMEs is to develop international capabilities and human resources for successful FDI, it is prudent to examine whether the existing alignment between the needs and implementation of FDI-related training programs strengthens the overseas performance of SMEs. Taken together, we investigated the relationships between SME FDI, SME FDI-related training programs, and SME performance in this study. Specifically, SME FDI was evaluated to ascertain if it leads to higher overseas performance through training implementation, and whether the alignment between training needs and training implementation results in higher SME overseas performance. In addition, this study collected training-related data from SME owners or senior executives, which may assist in assessing a more accurate perception of SMEs decision makers – who have a good understanding of SMEs’ strategic goals, training needs, and the degree of training implementations (e.g. Storey 2004; De Kok, Uhlaner and Thurik 2006). As such, we are more likely to obtain meaningful data for answering our research questions.

Moreover, firm performance is a company-level construct, so it makes sense to explore relationships between training needs, implementation and performance at the same level. Following in this vein, many scholars have reported a need for studies centering on the relationship between SME training programs and performance at the company-level (Patton et al. 2000; Ng and Siu 2004; Lin and Wei 2005). Figure 1 outlines the conceptual model tested in this study, in which the level of analysis was focused on the organizational level.

Finally, there are several advantages to conducting the current study in the context of Taiwan. First, as the majority of Taiwan’s economic growth over the past few decades has been attributed to SMEs that constitute about 98% of Taiwanese business entities (Lin and Wei 2005), Taiwanese SMEs are becoming a major source of economic strength in Asia (McBeath 1999). According to the 2002 Annual Industry Report for Taiwan, the accumulated investment of Taiwanese SMEs within Southeast Asia has already reached US\$41.4 billion. Thus, SMEs in Taiwan should constitute an appropriate sample to test the relationships of interest. Also, this study was originally a section of a large-scale annual survey about SME training needs supported by the Small and Medium Enterprise Administration (SMEA) of the Ministry of Economic Affairs in Taiwan, which enhances the wide application of our research results.

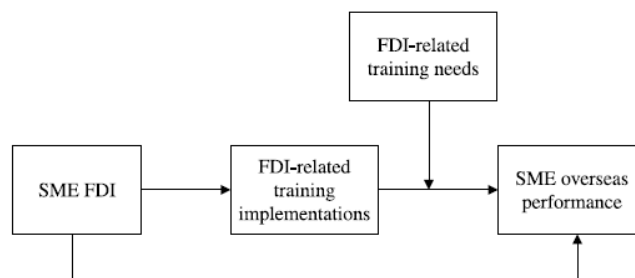


Figure 1. Conceptual model of this study.

## Hypothesis development

### FDI ! Training implementation ! SME performance

In past decades, SME overseas investment has grown at a much faster rate than domestic investment (Andersson et al. 2004). According to Kalantaridis (2004), small firms tend to actively pursue international expansion for organizational survival. With limited financial resources and a relatively small customer base, SMEs are generally restricted in their ability to influence product prices and market trends in comparison to

large domestic companies (Kim, Hwang and Burgers 1993; Aldrich and Auster 1986). Consequently, SMEs often seek overseas market development in response to increasing competition from their external environment (Kalantaridis 2004). From a strategic standpoint, FDI in diversified locations enables SMEs to leverage various location-based advantages (Kogut 1985). Past research specific to Taiwan SMEs has further indicated that they often exploit opportunities to obtain cheap labor and secure critical raw material supplies at a lower cost through FDI in China or other Southeast Asian nations (Lu and Beamish 2001). As a result, SMEs can minimize transaction-related risks by way of internationalizing markets for proprietary asset exchange through FDI in countries evaluated and selected based on appropriateness (Hennart 1982). Therefore, effective FDI should result in better firm performance for SMEs (Lu and Beamish 2001; Andersson et al. 2004). Thus, we propose:

*Hypothesis 1:* SME FDI is positively related to firm performance.

From the contingent and strategic training perspective (Wentland 2003; Noe 2005), training implementation should be consistent with the strategic orientation of a firm so that business strategies can provide the company with a road map to guide specific training and development activities (García 2005; Noe 2005). Tannenbaum (2002) also suggests that organizations should identify and implement specific training and development activities in order to reach their strategic goals. As a result, the strategies organizations adopt influence the type of training implementation (Wentland 2003).

In addition, several scholars have indicated that when managers are determined to achieve certain organizational goals regardless of limited past experience, they tend to resort to training programs to search for potential solutions (Sadler-Smith et al. 1998; Tsai and Tai 2003; Wentland 2003). For companies with global operations, training is implemented in such a way as to prepare employees for temporary or long-term overseas assignments (Noe 2005). Thus, when SME owner-managers choose overseas FDI as a strategic objective, implementation of FDI-related training programs increases. Thus, we propose:

*Hypothesis 2:* SME FDI leads to the implementation of FDI-related training programs.

The importance of training programs to overall firm performance has been emphasized by several scholars (e.g. Delbridge and Lowe 1997; Aragón, Barba and Sauz 2003; García 2005). The human capital theory purports that implementation of training programs can enhance employee skills and competences, which in turn increase their productivity and performance (Snell and Dean 1992; Lepak and Snell 1999). Talented human resources play critical roles in SMEs, especially when SMEs are repositioning their strategies (Kitching and Blackburn 2002). The implementation of various training programs fosters learning and improves the overall competence of organizational members, and it is believed that training implementation leads to higher SME organizational performance (Beaver and Hutchings 2005).

Moreover, notable resource-based theorists propose that the implementation of training programs can be thought of as a strategic intent to ensure lasting competitiveness (Barney 1986; Wernerfelt 1984). If the implementation of training programs is consistent with the overall business strategy, the training programs should foster employees to achieve strategic objectives, and thereby lead to superior firm performance (Arthur 1994; García 2005). Empirical studies also indicate that investment in training implementation helps companies to meet their strategic goals (Dobbs 2000; Noe 2005). Given that past research results have consistently found SME training implementation to result in better company performance, even under different cultural settings such as the Netherlands, Spain, Hungary, and China (De Kok 2002; Ng and Siu 2004; García 2005; Mako 2005), we also expect that implementation of FDI-related training programs will lead to higher firm performance in Taiwanese SMEs. Thus, we propose:

*Hypothesis 3:* The implementation of FDI-related training programs is positively related to SME firm performance.

Finally, the strategic training perspective suggests that linking training implementation with the strategic direction of the company can ensure the achievement of strategic objectives (Tannenbaum 2002; Noe 2005). Furthermore, implementing training programs that match firm strategies is beneficial to improving firm performance (Guest 1997; Wright and Snell 1998). Following in this vein, developing firm-specific human

capital through a series of FDI-related training programs should help achieve the strategic intent of global operations during the process of internationalization (Black and Mendenhall 1990). Hence, we infer that SMEs which implement FDI-related training programs related to their particular firm strategies can achieve better performance, and we propose:

Hypothesis 4: The implementation of FDI-related training programs mediates the relationship between FDI and SME firm performance.

### ***The alignment between FDI-related training needs and training implementation on SME performance***

Although many studies have indicated that a positive relationship between training implementation and SME performance exists (De Kok 2002; Ng and Siu 2004; Garcí'a 2005; Mako' 2005), some studies were unable to demonstrate that the provision of training leads to an improvement in terms of SME performance (Westhead and Storey 1997; Cosh, Duncan and Hughes 1998). Thus, it is possible that the relationship between training implementation and SME performance is moderated by some as yet unconsidered variables (Patton et al. 2000). According to the strategic training perspective, any implementation of training programs should be consistent with organizational training needs (Tannebaum 2002; Noe 2005). If training implementation fails to match company training needs, training may consist of the wrong content and methods, and thereby be incorrectly applied as a solution to some performance problem. In such a case, training would not be effective and would not deliver the expected financial results (Noe 2005). Thus, the relationship between training implementation and successful SME performance depends on the alignment between training needs and implementation.

Human resource (HR) scholars argue that internally consistent HR practices that are aligned with the overall firm strategy result in higher organizational performance (Delery and Doty 1996; Lepak and Snell 1999). Further, implementing strategy-directed training (i.e. implementation of training programs is consistent with training needs) should maximize the effectiveness of training programs (Semler 1997). Specifically, training implementation guided by organizational training needs impacts positively and effectively on business performance (Devins and Johnson 2003). In addition, when SME owner-managers acknowledge the strategic needs associated with FDI training, they commit more resources to implement the training programs (Carrier 1999). As such, better performance can be anticipated (Devins and Johnson 2002; Johnston and Loader 2003; Lin and Wei 2005; Carlson et al. 2006). Taking these points together, we propose:

Hypothesis 5: Alignment between needs and implementation of FDI-related training programs leads to higher SME overseas performance.

## **Methodology**

### ***Samples***

The current study is a part of the 2002 annual SME training needs survey sponsored by the SMEA of Ministry of Economic Affairs in Taiwan. Following a suggestion proposed by Patton et al. (2000), we collected large-scale company-level data regarding our hypotheses to enhance the generalizability of our research findings. Through random sampling and subsequent telephone surveys 1,510 SMEs were selected for interviews. To ensure the quality of the collected data, we adopted Groves and Lyberg's (1988) recommendation to hire experienced telephone interviewers. In this case 10 trained interviewers were recruited from a polling centre. Pilot surveys and interviewer training specific to this research project were conducted by the third author, who was also frequently present on-site to personally supervise the process of gathering information through the telephone survey. Thus we believe that the data collected merited further analyses.

To ensure response appropriateness and sample relevance (Sackett and Larson 1990), we did not consider answers from companies who either refused to provide financial data or those who provided incomplete

data (a common phenomenon in Taiwan where firms fear revealing company secrets). In total, the data provided by 816 companies were analyzed. To check for a possible non-response bias, we found that the providing and non-providing data firms did not significantly differ in terms of their firm size or age. Thus, we believed our sample firms are not biased adversely (Collins and Clark 2003).

Of those companies, 81.7% have fewer than 100 employees, which is typical of SMEs in Taiwan. In terms of company age, 66.3% of the companies are over 15 years old. Over half (55.4%) of the companies are in the manufacturing industry, and the remaining 33.6% are in the service industry. With respect to annual sales, 64% of the companies have sales of less than US\$3 mn, while 21.1% range from US\$3 to US\$10 mn. This is representative of SMEs in Taiwan. Our sample profile is similar to that of McBeath (1999) in regards to which countries receive FDI: over half of Taiwanese SMEs invest in China (54.1%), while many others invest in Southeast Asia (12.6%). The respondents include SME owners/presidents (18%), and senior executives such as general managers, as well as departmental managers of human resources, administration and accounting, who are actually responsible for training in a small company (62.1%). The senior level of the strong majority of data providers justifies the appropriateness of this data set, as they retain a good understanding of SME strategic operations.

### ***Measurement***

**FDI status:** Following Andersson et al. (2004) and Delios and Beamish (1999), we use a dichotomous variable to assess whether a company makes foreign direct investments. The question asked was: 'Does your firm make foreign direct investments?' Respondents answered either 'yes' or 'no', and answers were coded as a dummy variable.

**FDI-related training implementations:** According to Eriksson, Johanson, Majkga<sup>rd</sup>, and Sharma (1997), two questions are used to measure training implementation. Respondents were asked if their company implements FDI-related training programs, and answer based on a dichotomous scale (e.g. 'yes' or 'no'). The specific questions were: 'Does your firm offer training programs on International Expansion (e.g. knowledge about the local markets, industries, laws and politics of foreign countries)?' and 'Does your firm offer training programs on *Expatriate Training* (e.g. local language, customs, or cross-cultural training)?'

Cronbach's alpha for these two items was calculated to be .61. According to Cortina (1993), the magnitude of Cronbach's alpha is influenced by the number of items and the inter-item correlations. For this reason, we calculated the inter-item correlations for the two items. The inter-item correlation for training implementations was .46, which indicates that the low alpha associated with the training implementation items may be due to the small number of items (i.e.  $n = 2$ ) and the relatively low homogeneity between items. However, as Nunnally and Bernstein suggest, 'heterogeneity is a legitimate part of the test if it is part of the domain of content implied by the construct' (Nunnally and Bernstein 1994, p. 312). Therefore, we believe that these items are still meaningful because each of them reflects a unique part of training implementation. To represent the degree of implementation in FDI-related training programs, we computed a composite score from these two items.

**FDI-related training needs:** We adopted three items from Carrier (1999) to measure the training needs. Respondents were asked to evaluate the degree of need for FDI-related training programs on a 5-point Likert scale (1 = not at all to 5 = very much). Items included were: 'Does your firm need training courses on *Foreign Operations* (e.g. expatriate management, international marketing, and international business management)?', 'Does your firm need training courses about International Trade (e.g. contracts and legal issues, foreign exchange markets)?', and 'Does your firm need training courses on *Global Environment Change* (e.g. globalization of economy, new technology developments, international legal issues)?'. Cronbach's alpha for these three items is .72. We also computed a composite score of the three items to represent the degree of FDI-related training needs.

**SME overseas performance:** Based on Ng and Siu (2004), Garcí'a (2005), and Lin and Wei (2005), we used total company sales to represent SME performance. 'Sales' included the total sales recorded in both the home country and overseas. With respect to normality standards, we applied a natural logarithmic transformation to correct the deviation of total sales (Garcí'a 2005). **Control variables:** According to the

resource-based theory, a firm with superior resources can implement unique strategies that competitors cannot imitate easily (Barney 1991). Large firm size and significant firm history imply more financial and networking resources. Thus *firm size* and *firm age* were included as control variables (De Kok et al. 2006; Tzafrir 2006). Firm size was measured using the natural logarithm of a firm's number of employees (Snell and Dean 1992), while firm age was measured using the natural logarithm transformation (Bae, Chen, Wan, Lawler and Walumbwa 2003).

## ***Analysis***

We conducted a hierarchical regression analysis to test our hypotheses (Cohen, Cohen, West and Aiken 2002). As our expectation was that SME FDI would lead to higher overseas performance through proper training implementation (Hypothesis 1 to Hypothesis 4), we followed Baron and Kenny's (1986) three-step procedure to test the mediating effects.

In addition, we also expected that an alignment between training needs and training implementation would result in higher SME overseas performance (Hypothesis 5), so we created an interaction term (i.e. implementations and needs of training programs) to test for this. Concerning multi-collinearity, variance inflation factor (VIF) scores were calculated for the variables and then checked to ensure that all VIF scores were indeed below 10.0 (Hair, Anderson, Tatham and Black 1995).

## **Results**

Table 1 presents the means, standard deviations and correlations among all investigated variables. The correlations between firm age and SME firm performance, and firm size and SME firm performance are .24 and .62, respectively. Moreover, FDI, training needs, and training implementation were all positively and significantly related to SME firm performance ( $r = .36, .25, \text{ and } .40, p < .01$ ).

### ***Hierarchical regression analysis***

Table 2 displays the results of the hierarchical regression analyses. According to Baron and Kenny (1986), there are three steps involved in examining mediation effects. First, the relationships between the independent variable and the dependent variable should be established. Second, the relationships between the independent variable and the mediating variable, and between the mediating variable and the dependent variable should be demonstrated as well. Finally, the dependent variable should be regressed on the independent and mediating variables together to test the mediating effects. Following these procedures, we entered firm age and firm size as control variables firstly (Table 2 model 0), and SME performance was initially regressed on FDI in model 2 (step 1). Then training implementation was regressed on FDI in model 1, while SME performance was regressed on training implementation in model 3 (step 2). Finally, SME performance was regressed on FDI and training implementation together in model 4 (step 3).

In model 2, after controlling for firm age and size, FDI proved to be significantly and positively related to SME performance ( $b = .17, p < .01$ ), hence hypothesis 1 was supported. In model 1, FDI was also significantly and positively related to the implementation of training ( $b = .20, p < .01$ ). Thus, hypothesis 2 was supported. As can be seen in model 3, we found training implementation to significantly and positively predict SME firm performance after controlling for firm age and size ( $b = .18; p < .01$ ), supporting hypothesis 3. Finally, after taking account of training implementation, FDI was still positively related to SME performance in model 4 ( $b = .14, p < .01$ ), though the beta coefficient decreased slightly. That is, training implementation appears to partially mediate the relationship between FDI and SME performance. Thus, Hypothesis 4 is partially supported.

Finally, to test the effects of alignment between training needs and training implementation, we entered training needs then the interaction term in models 5 and 6 separately. Contrary to our expectations, the results of model 6 show that the coefficient of the interaction term was significant but negative ( $b = 2.46, p < .01$ ), which is opposite from what we predicted in hypothesis 5.

To further clarify the form of the interaction, we took one standard deviation above and below the mean of

training needs to show the relationship between FDI-related training implementation and SME performance, following a recommendation of Aiken and West (1991). Figure 2 shows that the slope was positive at a low level of training needs, while it became negative at a high level of training needs. Thus, high training needs attenuated the positive relationship between FDI-related training implementation and SME performance.

Table 1. Correlations and descriptive statistics<sup>a</sup>.

<i>Variables</i>	<i>Mean</i>	<i>S.D.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Firm age <sup>b</sup>	2.85	.65					
2. Firm size <sup>c</sup>	3.36	1.45	.25**				
3. FDI <sup>d</sup>	.24	.43	.12**	.33**			
4. Implementation of training <sup>e</sup>	.25	.44	.09*	.42**	.32**		
5. Training needs	2.55	.79	.16**	.22**	.27**	.30**	
6. Organizational performance <sup>f</sup>	.84	.71	.24**	.62**	.36**	.25**	.40**

Notes: <sup>a</sup>n = 816; \*p < .05; \*\*p < .01; <sup>b</sup>Natural logarithm of the number of firm age (in years); <sup>c</sup>Natural logarithm of the number of firm size (in people); <sup>d</sup>0 = 'no'; 1 = 'yes'; <sup>e</sup>0 = 'no'; 1 = 'yes'; <sup>f</sup>Natural logarithm of the number of total sales (in US\$ mn).

Table 2. Results of hierarchical regression analyses.

<i>Variables</i>	<i>Dependent variables</i>						
	<i>Training#</i>		<i>Performance</i>				
	<i>Model 1</i>	<i>Model 0</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Firm age	-.01	.10**	.09**	.10**	.09**	.09**	.09**
Firm size	.35**	.59**	.54**	.52**	.49**	.48**	.49**
FDI	.20**		.17**		.14**	.13**	.13**
Implementation of training				.18**	.15**	.14**	.54**
Training needs						.05	.14**
Implementation × Needs							-.46**
Total R <sup>2</sup>	.16**	.38**	.41**	.41**	.44**	.44**	.45**
ΔR <sup>2</sup> , each step	.0404**	.38**	.03**	.03**	.06**	.00	.01**

Notes: Standardized regression coefficients (β) are shown in each equation. N = 816; Training# = training implementation; p < .05; \*\*p < .01.

### Supplementary analysis

Based on the finding that firm size seems to have the greatest predicting power, we decided to conduct a more thorough investigation regarding the effects of firm size even though it was controlled for during the hierarchical regression analysis.

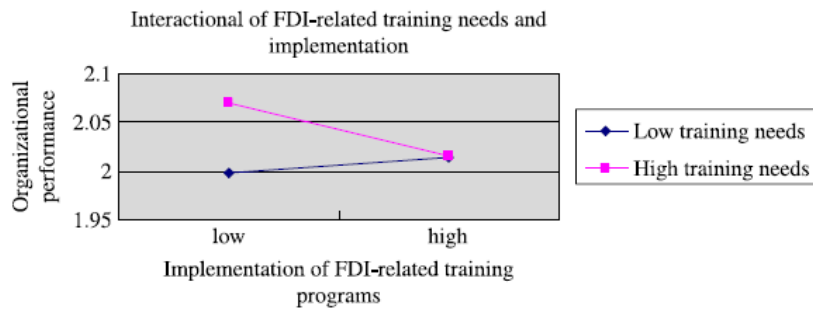


Figure 2. The alignment between FDI-related training needs and implementations on SME performance. We separated the sample firms into two groups based on the median firm size (i.e. 35 employees) and performed a hierarchical regression analysis to assess whether the findings between the groups would differ. However, the findings were unchanged between the two groups: FDI was still positively related to organizational performance in both groups (group 1:  $b = .16$ ,  $p < .01$ ; group 2:  $b = .23$ ,  $p < .01$ ), while the implementation of FDI-related training was also significant in the expected direction (group 1:  $b = .14$ ,  $p < .01$ ; group 2:  $b = .29$ ,  $p < .01$ ). Also, the interaction between needs and implementation of training programs was still negatively related to organizational performance (group 1:  $b = 2.08$ ,  $p < .10$ ; group 2:  $b = 2.12$ ,  $p < .10$ ). Thus, this additional analysis allows us to generalize across the two different-sized groups, and suggests that our findings are stable and valid.

## Discussion

Although the importance of training programs for SMEs has been emphasized by scholars (e.g. Westhead and Storey 1997; Johnston and Loader 2003; Storey 2004; Mako' 2005), the links between SME FDI, SME training needs and implementation, and SME overseas performance have not yet been extensively addressed. Building on the data collected at the company-level and from SME owner-managers, we have attempted to depict a more comprehensive picture regarding these links.

The finding that SME FDI is positively and significantly related to organizational performance together with the sample profile reveals an interesting phenomenon. Consistent with the viewpoints of transaction cost (Williamson 1991; Eriksson et al. 1997; McBeath 1999) and experiential knowledge (Johanson and Vahlne 1977), it appears that many Taiwanese SMEs seek and successfully exploit opportunities to obtain low-cost labor and materials in countries that are close in terms of physical distance and culture – approximately 70% invest in China and Southeast Asia. This also indicates that Taiwanese SMEs not only benefit from Asian overseas investment but also to Asian economics (McBeath 1999).

The result that training implementation partially mediates the relationship between SME FDI and firm performance indicates the importance of human capital construction in achieving SME strategic goals in terms of firm performance (Lepak and Snell 1999; Carlson et al. 2006). In particular, when SME owner-managers decide to make FDI outlays, appropriate FDI-related training programs are required to support a successful internationalization process. This finding is in agreement with the SIHRM (Strategic International Human Resource Management) model proposed by Taylor, Beechler, and Napier (1996), which states that after an international strategy has been determined, the top management team must execute the strategy through HRM practices (i.e. internationalization-related training programs). Once the HRM practices are aligned with strategic goals, their implementation enhances firm performance (Tannebaum 2002; Noe 2005).

Surprisingly, our results state that in situations where the need for FDI-training is high, the slope of the relationship between SME training implementation and SME overseas performance turns negative from an initial position of positive when the need for training is low. There are a number of possible explanations for this unexpected finding. First, as illustrated in Table 1, mean training needs only received a score of 2.55 out of 5, which suggests that a majority of the responding companies do not regard it as important. In addition, the differences between model 4 and model 5 in Table 2 point out that the category 'training



needs' does not exert any influence on organizational performance at all. This may indicate that training needs often fail to reflect SME strategic needs. As such, even for those SMEs that exhibit a higher level of training needs, the implementation of training programs may not lead to higher firm performance. Second, program success relies on effective implementation as well as content relevance (Ford and Wroten 1984). Kirkpatrick (1959) considered training effectiveness as a multi-dimensional concept, including firm performance as well as individual reaction and learning. Different training contents should be introduced under different levels of effectiveness consideration. This study, taking a firm-level perspective that necessarily omits individual-level training needs, may not be capable of displaying the whole picture. Devins and Johnson (2003) also reported that the appropriateness of training content was rarely assessed in SMEs, and suggested that training content has to be refined and improved. In Taiwan, expatriate training was found to be minimal in that both the quality and quantity need improvement (Huang, Jone and Uen 1998; Lin and Wei 2005). In addition, a majority of the training merely focuses on foreign language learning (Lin and Shieh 1998); thus, the content of training programs might fail to align with the specific training needs of firms (Ng and Siu 2004).

## **Implications**

Some practical implications may be derived from these research findings. First, SME FDI benefits their overseas performance. The internationalization of SMEs will continue in the foreseeable future, and SME owner-managers should recognize FDI as a viable strategy in the process of internationalization (Carrier 1999; Lu and Beamish 2001). Accordingly, SMEs should search for appropriate locations in overseas markets and thereby gain access to more resources via FDI.

Second, since training implementation partially mediates the relationship between FDI and performance, the value of FDI-related training should be acknowledged, and all training should be professionally carried out to support the strategic objectives of the firm. Although some SMEs may not have sufficient resources or manpower to conduct their own professional training sessions, they might still take advantage of outside resources such as participating in government sponsored workshops, outsourcing the training sessions to professional consulting companies, or seeking cooperative agreements with nearby universities.

Lastly, SMEs often experience difficulty in terms of identifying training needs (Carrier 1999). For centuries, Taiwanese SMEs have constantly had to strive for survival due to meager deposits of natural resources and political stress (Lin and Wei 2005). Orientations based on 'action' and 'trial and error' have become a way of life and helped formulate the well-known 'speed and flexibility' business style of Taiwan. The finding that training needs in no way predict firm performance (model 5 of Table 2) while training implementation affects firm performance to a large degree (models 3–6 of Table 2) exemplifies the pervasiveness of this 'trial and error' orientation. Given SMEs' owner-managers' value on training is clearly the key to training programs, they should further be aware of the benefits of training programs, recruiting more HR specialists to identify training needs (Bacon and Hoque 2005), and provide support for needed training activities. For HR managers, they should actively participate in strategic planning meetings, realizing the strategic objectives of the firm, and taking account of content relevance and strategic congruence during planning stages (Noe 2005; Chang and Chi 2007).

## **Limitations and future research**

Through a large scale investigation of Taiwanese SMEs, we have drawn a rough sketch of the role FDI-related training plays in the process of SME FDI and performance. However, together with our results, this study also unveiled some research constraints as well as avenues for future research that deserve mention.

The greatest limitation for a SME study is data accessibility, exemplified through a lack of access to publicly available financial data, and SME tight schedules to join an academic research. All of these affected our decision to resort to telephone surveys for data collection. During our telephone survey, some survey items such as those related to FDI and training implementation were simplified into a single item or dichotomous variables (e.g. 'yes' or 'no'). Although the relatively small number of items and these

dichotomous variables both facilitated the telephone survey process, they also led to problems regarding the single-item without reliability and relatively lower liability of the training implementation information (see Cortina 1993). However, Wanous, Reichers and Hudy (1997) and Chapman and Zweig (2005) suggested that single-item measures are adequate if the measured constructs are sufficiently narrow or are unambiguous to respondents. We believe that our single item measures are sufficiently straightforward to capture the factual assessment of FDI. Given that this study employed 816 sets of usable company data, we believe that the data remain both valid and valuable. Nevertheless, future research can make use of in-depth interviews to collect more precise and informative information from SME owner-managers (e.g. Carrier 1999), or use meta-analysis techniques to correct for measurement errors caused by measurement unreliability (Storey 2004). It would also be beneficial for future research projects to add more items related to training implementation to increase scale reliability (Cortina 1993). These suggestions may prove beneficial for further exploration of the relationships between SME FDI, training programs, and firm performance.

The second limitation concerns making causal inferences based on a cross-sectional design: the results of this study should be interpreted as correlational relationships rather than causal ones. Although we believe that our research findings could provide preliminary empirical evidence of the relationships between SME FDI, training programs, and firm performance, it would certainly prove beneficial to clarify this issue through the use of a longitudinal time-lagged design.

Third, due to the previously mentioned issue of data accessibility, our data were all collected from the same source. Nevertheless, the independent variable (FDI) for this study was a fact-based dichotomous variable and the dependent variable (performance) was based on sales figures, which are objective rather than subjective in nature. Only the mediator and moderator variables concerned perceptual items. Thus, we believe that common method variance did not pose a serious problem for our study (Podsakoff, MacKenzie, Lee and Podsakoff 2003). Finally, although the company-level data have value, data collected at the employee-level also have merit. As previously mentioned, training needs and training effectiveness should be assessed both at the firm level and at the individual level (Noe 2005). Future research projects might utilize cross-level studies to capture a more comprehensive view of the various aspects related to FDI training. Furthermore, similar studies in different cultures should prove valuable for comparison purposes.

In summary, SMEs by nature have fewer resources than large firms. Yet, nowadays they have been recognized as major contributors to global economic growth. As global competition is expected to gain in intensity for the foreseeable future, FDI-related training programs are essential for SMEs to keep pace with larger firms in terms of sustainable competitiveness.

## Note

1. To make the results of mediation test more robust, we performed a Sobel test to test the statistical significance of the mediated relationship (see Sobel 1982; O'Driscoll, Pierce and Coghlan 2006). The results of the Sobel test confirmed significant mediating effects of FDI on SME performance via FDI-related training implementation ( $Z = 1.08$ ,  $p < .05$ ).

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