INDEPENDENT DIRECTORS’ HUMAN CAPITAL AND FIRM INTERNATIONALIZATION

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ABSTRACT
This study examines the effect of independent directors’ human capital (independent directors’ educational level, CEO experience and international experience) on firms’ decisions toward internationalization. Using a panel of electronics firms in Taiwan, the results show that independent directors’ CEO experience and international experience are positively and significantly related to firm internationalization. Independent directors’ educational level is positively, but not significantly, associated with firm internationalization. Boards of directors serve two important functions for firms: monitoring managers on behalf of shareholders and providing resources. By focusing on board human capital for independent directors, this study should provide a more complete understanding of how firms’ internationalization decisions are influenced by board directors who serve as monitors and resource providers.

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Keywords: Internationalization, Independent director, Board human capital, Educational level, CEO experience, International experience, Electronics firms.

JEL Classification: G30, G34.

Contribution/Originality
This study is one of very few studies which have investigated the effect of independent directors’ human capital on firm internationalization and thus should contribute to our understanding of how a firm’s internationalization decisions are influenced by independent directors who serving as monitors and resource providers.

1. INTRODUCTION
Internationalization has become an increasingly important strategic decision for firms seeking sustained competitive advantage (Hitt et al., 2006) because it provides firms with the opportunity for growth, the ability to acquire knowledge, the access to new resources in foreign locations and the achievement of long-run profitability (George et al., 2005). But at the same time, internationalization can be highly risky as it is subject to great uncertainty and complexity deriving
from heterogeneous cultural, institutional and competitive environments, increasing the information-processing demand placed upon firms and their top executives (Sanders and Carpenter, 1998). Accordingly, a classic agency situation emerges and consequently highlights the importance of boards of directors who serve as guardians to protect shareholder interests (Lai et al., 2012).

Additionally, success of internationalization requires abundant and various resources (Fernandez and Nieto, 2005). Directors may provide top executives with on-going advice and counsel as well as facilitate access to essential resources. Given the important roles of directors play as monitors and resource providers, little effort has been made to investigate how they contribute to firms’ internationalization decisions from the aspects of both monitoring and resource-provision functions. This important research gap motivates this research to conduct an in-depth analysis of this critical issue. This study seeks to address this gap in the board influence and international business literatures through an examination of the relationship between independent directors’ human capital and firm internationalization. In practice, directors both monitor and provide resources (Hillman and Dalziel, 2003). Despite directors serve these two important functions for organizations, previous studies investigating the board-internationalization relationship have used certain well-studied proxy variables, such as board composition/structure (Li, 1994; Sanders and Carpenter, 1998; Ellstrand et al., 2002), and have yielded mixed findings.

For instance, Li (1994) finds that the relationship between percentage of outside directors on the board and internationalization is curvilinear. Sanders and Carpenter (1998) document a negative relationship between the proportion of board members who were outsiders and a firm’s degree of internationalization. The inconclusive empirical results contribute to an incomplete understanding of what boards do and how they affect organizational outcomes and emphasize the need to consider independent directors’ knowledge and competence beyond their role of incentives and structures and to examine the human capital inherent to them (Hillman and Dalziel, 2003). Accordingly, to capture both board motivation and ability to monitor and provide resources, this study assesses board human capital for independent directors by following the study of Tian et al. (2011) that suggests that the focus of independent directors can isolate the effect of board human capital (i.e., board ability) that exists beyond that of structural independence (i.e., motivation) variables.

By utilizing a panel data of electronics firms listed on the Taiwan Stock Exchange Corporations during the period 2008-2010, the results show that independent directors’ CEO experience and independent directors’ international experience are positively and significantly related to firm internationalization. Independent directors’ educational level is positively, but not significantly, associated with firm internationalization. This study focuses on independent directors’ human capital and thus should provide a more complete understanding of how firms’ internationalization decisions are influenced by boards of directors who serve as monitors and resource providers.
2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Internationalization

Going internationally enables firms to achieve numerous benefits, including economies of scale, access to new resources, cost reduction, extension of innovative capabilities, knowledge acquisition, location advantages and performance improvements (Hitt et al., 1997; Hitt et al., 2006). However, internationalization is a complex, uncertain and costly process that is accompanied by a great deal of uncertainty (George et al., 2005). Success of internationalization requires implementing more complex structures (Fernandez and Nieto, 2006), integrating foreign operations, adopting new technologies, introducing control systems and ensuring effective coordination (George et al., 2005). These factors raise capital outlays of internationalization, and the payoff from these investments is uncertain. Success of internationalization also requires abundant and various resources. Among these resources, intangible resources, such as knowledge, information, technology and managerial capability, occupy a key place for international expansion (Fernandez and Nieto, 2005). Taken together, the uncertainty and complexity of the process and a lack of resources usually work against international expansion.

2.2. The Effect of Independent Directors’ Human Capital on Internationalization

In practice, directors not only monitor but also provide resources. This study contends that independent directors with human capital have the motivation and ability to effectively monitor top managers’ internationalization actions and provide them with critical information and valuable resources. The following part of the literature review and hypotheses development addresses issues on how independent directors’ human capital (educational level, CEO experience and international experience) affects firm internationalization.

2.2.1. Independent Directors’ Educational Level

Greater educational level is associated with receptivity to innovation, openness to change and tolerance for ambiguity (Kirca et al., 2012). Therefore, independent directors with advanced education are more likely to internationalize that is accompanied by a great deal of uncertainty and requires organizational changes such as adopting new technologies and introducing control systems (George et al., 2005). Additionally, higher levels of education are also characterized by more intelligence (Gottesman and Morey, 2010) and greater cognitive complexity (Wally and Banel, 1992), leading to a better ability to process information, absorb new ideas (Hsu et al., 2013), acquire, use and master knowledge and find creative solutions (Barroso et al., 2011). Hsu et al. (2013) argue that different countries have unique cultural and institutional characteristics, and firms with a high level of internationalization have to learn more about unique national settings. These characteristics associated with high education may heighten independent directors’ awareness of international issues (Hitt et al., 2006) and prepare them to deal with the strategic change that involves internationalization (Barroso et al., 2011). In light of the above arguments, this study proposes the following hypothesis:
Hypothesis 1: There will be a positive relationship between independent directors’ educational level and firm internationalization.

2.2.2. Independent Directors’ CEO Experience

Independent directors with CEO experience can be more effective monitors and advisors (Gray and Nowland, 2013). The internationalization performance depends on firms’ ability to cope with heterogeneous cultural, institutional and competitive environments (Ricks et al., 1990). Independent directors’ broad experience as CEOs of other firms may provide an increased range of perspectives and interpretations that reduce internal biases in the board’s decision-making process (Barroso et al., 2011).

Additionally, these experienced independent directors may bring not only worldviews and information that are vital for identifying the opportunities and threats affecting the firm, but also knowledge and skills that assist management in dealing with the environmental complexities accompanying with internationalization and in the formulation and revision of internationalization strategies (Barroso et al., 2011). Tihanyi et al. (2003) suggest that independent directors who have experience as managers for other firms are more knowledgeable, which is important for firms seeking to enter appropriate international markets. In light of the above arguments, this study proposes the following hypothesis:

Hypothesis 2: There will be a positive relationship between independent directors’ CEO experience and firm internationalization.

2.2.3. Independent Directors’ International Experience

International experience is particularly important at the initial decision to expand and also for the continuation of the firm’s strategy into international markets (Glavas and Mathews, 2014). Previous studies have commonly linked international experience of chief executive officer (CEO) and top management team (TMT) to firm internationalization (Tihanyi et al., 2000; Herrmann and Datta, 2002; Herrmann and Datta, 2005). These works suggest that international experience of working or living in a different country, with different customs and habits may make the perceptions and personality of managers more internationally-oriented.

Such experience may enable managers to integrate the learned culture with their own (Sambharya, 1996), to easily obtain information from their external relations and to garner important insights into overseas markets via contact with foreign entities (Herrmann and Datta, 2005). The above arguments of CEO/TMT international experience may apply to independent directors. Via international experience, independent directors may learn and accumulate greater market knowledge and understanding as well as business practices and their consequences, which better equip them to identify the need for internationalization and reduce environmental uncertainty. Schmid and Dauth (2014) argue that serving on the board of an international firm familiarizes decision makers with different management styles and challenges in foreign markets.
Therefore, independent directors with international experience may effectively monitor managers’ internationalization decisions and provide them with expertise, knowledge and resources. Tihanyi et al. (2003) argue that independent directors who have frequent experience with international diversification as managers for other firms are more knowledgeable, which is important for firms as they seek to enter appropriate international markets. Accordingly, this study proposes the following hypothesis:

_Hypothesis 3: There will be a positive relationship between independent directors’ international experience and firm internationalization._

3. EMPIRICAL SETTING

3.1. Sample and Data

This study focuses on the electronics industry listed on the Taiwan Stock Exchange Corporations to examine the effect of independent directors’ human capital on internationalization during the period 2008–2010. The electronics industry is chosen because Taiwan’s competitiveness comes primarily from the electronics industry. According to Institute for Information Industry in Taiwan, during 2008, many ICT (Information and Communication Technology) products enjoyed the highest share of the global market, including Netbook PC, Notebook PC and motherboard to name just a few products. In particular, the global market share of Netbook PC is as high as 99%.

In the analysis, panel data is employed because the results take both structural changes and cyclical fluctuations into consideration (Frangouli, 2002). Therefore, a three-year time period (i.e., 2008–2010) is employed due to a sharp reduction in the number of firms listed continuously on the Taiwan Stock Exchange Corporations over time (Himmelberg and Petersen, 1994). The final sample includes 150 electronics firms and generates 450 observations (150 firms x 3 years). The financial data (including foreign sales, R&D expenditures, total sales, the number of employees, return on assets and debt ratio), institutional stock ownership, management stock ownership and the number of independent directors of the study sample are taken from the Taiwan Economic Journal (TEJ) Data Bank. Data on independent directors’ education, independent directors’ CEO experience and independent directors’ international experience are manually drawn from company annual reports.

3.2. Variables

3.2.1. Dependent Variable

The dependent variable of internationalization is measured as the ratio of foreign sales to total sales (Tallman and Li, 1996; Autio et al., 2000). According to Sullivan (1994), the ratio of foreign sales to total sales is the most popular and widely used definition in internationalization research. Additionally, this ratio is used in the analysis because Taiwan mainly relies on foreign sales to boost its economic development and growth (Cheng, 2005). Moreover, this ratio may reflect a firm’s reliance on sales to foreign markets (Sullivan, 1994; Sanders and Carpenter, 1998).
3.2.2. Independent Variables

Independent directors’ educational level, CEO experience and international experience serve as proxies for board human capital. First, independent directors’ educational level is calculated by aggregating number of years of schooling for an independent directors and taking the mean (Carpenter and Westphal, 2001). Second, following Tian et al. (2011), experience in CEO positions is applied to an independent director who currently was, previously had been, the CEO of another firm, and independent directors’ CEO experience is measured as the percentage of independent directors with this experience. Third, independent directors’ international experience is measured as the percentage of independent directors with international experience, which is measured as with a dummy variable (i.e., 1 if the independent director has experience of working abroad or has international sales experience, and 0 otherwise) (Herrmann and Datta, 2005).

3.2.3. Control Variables

To control for firm, governance and ownership effects on internationalization, this study includes a series of control variables, including firm performance, innovation, debt ratio, firm size, institutional stock ownership and management stock ownership. Firm performance is measured through return on assets given that past research has documented a positive relationship between firm performance and internationalization (Zahra, 2003). Innovation is measured as the ratio of R&D expenditures to total sales, given that empirical work generally agrees that innovation is an important factor to explain internationalization performance (Fernandez and Nieto, 2006). Firm size represented by natural logarithm of the number of employees is controlled, given the argument that large firms may possess needed resources for international operations (Zahra, 2003).

Debt ratio is measured as the ratio of total debt to total assets, given the arguments advanced in the literature that internationalization requires financing support, which means its likelihood of being undertaken relies on the firm’s financial condition (Tihanyi et al., 2003). Institutional stock ownership is measured as the percentage of ownership by institutional investors, given the arguments advanced in the literature that institutional investors, as equity owners, may have an impact on international investment decisions (Tihanyi et al., 2003). Management stock ownership is measured as the percentage of ownership by managers, given the arguments of previous studies that stock ownership may influence executives’ risk propensity and incentive and consequently their strategic decision-making (Musteen et al., 2009).

3.3. Methodology

This study employs a two-way fixed-effects regression approach to test the hypotheses with longitudinal panel data that involve repeated observations on the same set of cross-sectional units (Hsiao, 1996). The two-way fixed-effects regression approach is preferred because it controls for both the unobservable firm effects and the year effects (Kor and Sundaramurthy, 2009).
4. EMPIRICAL RESULTS

Table 1 presents the means, standard deviations and Pearson product-moment correlations of the variables. The average ratio of foreign sales to total sales (internationalization) is 38.97%. The mean level of education attained by the sample independent directors (18.61) is somewhere between having a master’s degree and a Ph.D. degree. Independent directors’ CEO experience (international experience) of 48.88% (48.03%) indicates that for every one hundred independent directors, nearly forty-nine (forty-eight) have CEO experience (international experience). The matrix shows the modest correlations between independent variables, suggesting that multicollinearity problems are unlikely. To further test for multicollinearity, this study inspects the values of variance inflation factors (VIFs) to assess the data for multicollinearity.

The VIF values range between 1.05 and 1.59 and are all strictly less than 2, demonstrating that the regression models are relatively free of potential multicollinearity problems. Presenting the regression result of Model 2, Table 2 indicates that internationalization is positively, but not significantly, associated with independent directors’ educational level (t-statistic = 1.25). This finding does not lend support to hypothesis 1. Additionally, internationalization is significantly and positively associated with independent directors’ CEO experience (t-statistic = 3.18) and independent directors’ international experience (t-statistic = 2.07). These findings lend support to hypothesis 2 and hypothesis 3, suggesting that independent directors with greater CEO experience and international experience are more likely to go internationally.

Additionally, the Wald test is employed (Agresti, 1990; Polit, 1996) to further test the significance of explanatory variables (i.e., independent directors’ educational level, CEO experience and international experience) in a statistical model (i.e., Model 2). The change in adjusted $R^2$ of 0.78 percent between Model 1 and Model 2 is statistically significant (Wald $\chi^2 = 15.92, p < 0.01$).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internationalization (%)</td>
<td>38.97</td>
<td>22.55</td>
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<td></td>
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<tr>
<td>2. Independent Directors’ Educational Level (years)</td>
<td>18.61</td>
<td>1.70</td>
<td>0.23***</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3. Independent Directors’ CEO Experience (%)</td>
<td>48.88</td>
<td>33.65</td>
<td>0.01</td>
<td>-0.12**</td>
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<tr>
<td>4. Independent Directors’ International Experience (%)</td>
<td>48.03</td>
<td>34.50</td>
<td>0.05</td>
<td>0.14**</td>
<td>0.03</td>
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<tr>
<td>5. Firm Performance (%)</td>
<td>9.66</td>
<td>7.61</td>
<td>-0.23***</td>
<td>0.03</td>
<td>-0.07</td>
<td>0.15**</td>
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<tr>
<td>6. Innovation (%)</td>
<td>4.22</td>
<td>5.07</td>
<td>-0.07</td>
<td>0.08</td>
<td>-0.17***</td>
<td>0.15**</td>
<td>0.02</td>
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<tr>
<td>7. Debt Ratio (%)</td>
<td>40.76</td>
<td>15.76</td>
<td>0.32***</td>
<td>0.01</td>
<td>0.10'</td>
<td>-0.07</td>
<td>-0.25***</td>
<td>-0.43***</td>
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<tr>
<td>8. Firm Size (ln)</td>
<td>7.57</td>
<td>1.41</td>
<td>0.44***</td>
<td>0.12'</td>
<td>0.02</td>
<td>0.16***</td>
<td>0.05</td>
<td>0.24'</td>
<td>0.37***</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Institutional Stock Ownership (%)</td>
<td>39.39</td>
<td>21.82</td>
<td>0.07</td>
<td>0.07</td>
<td>0.10'</td>
<td>0.22***</td>
<td>0.35***</td>
<td>-0.12'</td>
<td>0.12***</td>
<td>0.45'</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>10. Management Stock Ownership (%)</td>
<td>2.32</td>
<td>2.55</td>
<td>-0.16**</td>
<td>-0.06</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.00</td>
<td>0.07</td>
<td>-0.06'</td>
<td>-0.29'</td>
<td>-0.17</td>
<td>--</td>
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</tbody>
</table>

**Note:** Significance level: *P < 0.05  **P < 0.01  ***P < 0.001. Number of observations = 450.
Table 2. Regression Results of Internationalization

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>36.02</td>
<td>14.43</td>
</tr>
<tr>
<td></td>
<td>(2.06)</td>
<td>(0.72)</td>
</tr>
<tr>
<td>Firm Performance</td>
<td>0.12</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(0.89)</td>
</tr>
<tr>
<td>Innovation</td>
<td>0.37</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>(1.67)</td>
<td>(0.92)</td>
</tr>
<tr>
<td>Debt Ratio</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>(1.86)</td>
<td>(1.89)</td>
</tr>
<tr>
<td>Firm Size</td>
<td>-1.22</td>
<td>-1.22</td>
</tr>
<tr>
<td></td>
<td>(-0.55)</td>
<td>(-0.57)</td>
</tr>
<tr>
<td>Institutional Stock Ownership</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(1.17)</td>
<td>(1.19)</td>
</tr>
<tr>
<td>Management Stock Ownership</td>
<td>-0.57</td>
<td>-0.32</td>
</tr>
<tr>
<td></td>
<td>(-0.94)</td>
<td>(-0.53)</td>
</tr>
<tr>
<td>Independent Directors’ Educational Level</td>
<td></td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.25)</td>
</tr>
<tr>
<td>Independent Directors’ CEO Experience</td>
<td></td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.68)</td>
</tr>
<tr>
<td>Independent Directors’ International</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td>(2.07)</td>
</tr>
<tr>
<td>Adjusted R² (in %)</td>
<td>85.46</td>
<td>86.24</td>
</tr>
<tr>
<td>Change in Adjusted R² (in %)</td>
<td>N/A</td>
<td>0.78</td>
</tr>
<tr>
<td>Wald χ² (Hypothesized Variables)</td>
<td>N/A</td>
<td>19.52**</td>
</tr>
<tr>
<td>F-statistics</td>
<td>17.81***</td>
<td>18.59***</td>
</tr>
</tbody>
</table>

Notes:
1. Significance level: *P < 0.05  **P < 0.01  ***P < 0.001.
2. Number of observations = 450.
3. Numbers in parentheses are t-statistics.

5. CONCLUSION

Much of the extant governance literature emphasizes boards’ propensity to engage in decision control without adequately considering whether directors have the ability to enable them to exercise control effectively. To capture both board motivation and ability, this study examines the effect of independent directors’ human capital on internationalization. The results show that independent directors’ CEO experience and independent directors’ international experience are positively and significantly related to firm internationalization. Independent directors’ educational level is positively, but not significantly, associated with firm internationalization.

This study should advance the case that traditional agency theory considerations may not be sufficient for describing the range of potential contributions an effective board can provide when managers pursue internationalization. Agency theory’s prescription for desirable directors on the board addresses factors relevant to vigilant monitoring, but this theory does not elaborate on issues pertaining to directors’ knowledge, skills, information and experience as they impact strategic decisions (Kroll et al., 2008). Tian et al. (2011) contend that the empirical evidence on the link between the proportion of independent directors and board effectiveness has been far from conclusive, and this absence of an empirical link may stem from prior work treating independent directors as a homogeneous group, rather than examining differences among them in terms of their
knowledge and skills. By theoretically arguing for and empirically showing the effect of independent directors’ human capital on firm internationalization, this study should contribute to our understanding of how a firm’s internationalization decisions are influenced by independent directors who serving as monitors and resource providers.

The results also provide a couple of managerial implication and policy suggestion. The findings of the positive relationships between internationalization and independent directors’ CEO experience and international experience imply that independent directors with CEO experience and/or international experience may better monitor top managers and provide them with ongoing advices and counsels as well as critical resources. Therefore, firms wanting to expand internationally may give considerable weight to the nomination of independent directors with richer human capital to the board. To enhance their competitive advantage through internationalization, such firms should strive to use their independent directors’ human capital effectively to access and exploit information, knowledge and resources.

Additionally, such findings suggest the governments to establish laws and regulations to emphasize the capabilities of independent directors (i.e., their human capital), especially when internationalization is particularly important for their countries. For instance, the governments may stipulate that independent directors should have CEO experience and international experience. With such legislations, independent directors with industrial knowledge, international market perspective and abilities are more capable of performing their duties, including making better corporate internationalization decisions.

This paper has some limitations and thereby provides opportunities for further research. The findings are based on the unique context of firms in Taiwan – other useful studies could be undertaken in Asian countries to compare the results with those reported here. Additionally, the findings of this study may hold in some industries better than others. Future studies can be enriched by examining this issue by industry if researchers were able to employ alternative research designs and data-collection methods to obtain more observations for each different industry. Finally, further research could use different measures of international expansion such as entry modes (e.g., wholly-owned subsidiaries and joint ventures), if such data are available.

REFERENCES


