

# **Impact of psychic distance to the internationalization behavior of knowledge-intensive SMEs**

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## **Abstract**

Findings in studies focusing on impact of psychic distance to internationalization behavior of rapidly internationalizing firms have been somewhat conflicting. There has also been a disagreement on should psychic distance be measured at country or at individual level. This paper uses both quantitative and qualitative approaches to investigate how country and individual level psychic distance indicators impact the internationalization behavior of knowledge-intensive SMEs. The findings in this study indicate that the impact of psychic distance should be measured at the level of individuals when analyzing internationalization of knowledge-intensive SMEs. The results indicate also that although psychic distance has impact on the internationalization behavior of knowledge-intensive SMEs, they are able to overcome psychic distance by acquiring relevant knowledge through recruiting.

**Keywords** – Psychic distance, knowledge-intensive firms, SMEs, software firms, internationalization

## **Introduction**

The concept of psychic distance has attracted increasing attention in the international business and management literature since the study of Johanson and Wiedersheim-Paul (1975) popularized it. In their study (Johanson & Wiedersheim-Paul, 1975, p. 308), psychic distance refers to "...factors preventing or disturbing the flow of information between firm and market". However, the concept has been somewhat vague at least what comes to measurement of psychic distance. In addition, studies related to knowledge-intensive SMEs have commonly challenged the impact of psychic distance to internationalization behavior of these firms although the findings in these studies are somewhat conflicting. For instance, several authors (Autio, 2005; Bell, 1995; Oviatt & McDougall, 1994, 1995) have argued that development of communication and transportation channels, homogenization of markets, and international awareness have mainly removed psychic distance between countries. In addition, some studies (Bell, 1995; Coviello & Munro, 1997) have found that small software firms enter first to psychically close countries, but there are other reasons explaining market entry decisions better than psychic distance. In contrary, some studies have found support for the impact of psychic distance in the internationalization process of knowledge-intensive SMEs (Chetty & Campbell-Hunt, 2004; Dow, 2005; Hashai & Almor, 2005). For instance, the study of Dow (2005) found that psychic distance impacted to the internationalization of born global firms, although the impact was less significant compared to non-born global firms. However, because there have been lack of common instrument to measure psychic distance, several authors have employed their own country-specific instrument, expert

panels, or just evaluated psychic distance between countries by using roughly the concept of psychic distance described in the study of Johanson and Wiedersheim-Paul (1975).

Due to this vagueness, this paper investigates the impact of psychic distance in internationalization behavior of knowledge-intensive SMEs in the software industry by testing recently published psychic distance stimuli indicators by Dow and Karunaratna (2006). As highlighted in their study, managerial decisions are consequence of both psychic distance stimuli (macro-level factors) and decision-maker's sensitivity to psychic distance stimuli (micro-level factors). By using these indicators, the following questions are investigated:

1. Are knowledge-intensive SMEs immune to the impact of psychic distance?
2. Should psychic distance be measured at macro-level or individual level in the case of knowledge-intensive SMEs?

Quantitative analyzes are used to investigate macro-level variables between countries whereas qualitative analyzes are applied to find decision-makers' sensitivity to psychic distance stimuli.

### **The concept and measurement of psychic distance**

The concept of psychic distance was first introduced in the study of Beckerman (1956) related to trade-flows between European countries. However, the concept became well known after studies by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977) known as Uppsala internationalization model. These studies define psychic distance as factors which impact the information flow between the firm and the host

market. The factors are related to differences in language, culture, political system, level of education, level of industrial development etc. (Johanson & Wiedersheim-Paul, 1975). Thus, according to the Uppsala internationalization model, firms tend to start their foreign operations in countries with low psychic distance and thereafter subsequently enter to countries with greater psychic distance. In other words, firms favor countries that share similar environment with their home country. These environment related factors described in the Uppsala internationalization model have been difficult to measure and authors have employed several approaches to estimate psychic distance between countries and its impacts to firms' international activities. Most of studies have used Hofstede's (2001) cultural dimensions and the composite index of Kogut and Singh (1988) when they measured psychic distance between countries (see Tihanyi et al., 2005). However, there seems to be a growing agreement that the culture is only one dimension of psychic distance and usage of Hofstede's dimensions as a single indicator to psychic distance is somewhat misleading (Dow, 2000; Dow & Karunaratna, 2006; Evans & Mavondo, 2002; Tihanyi et al., 2005). For this reason, several authors (Brewer, 2007; Dow, 2000; Dow & Karunaratna, 2006; Evans & Mavondo, 2002; Sousa & Bradley, 2006) have developed indicators to estimate psychic distance between countries. The commonly used factors in these studies have been culture, language, religion, political and legal issues, economic conditions, and business practices.

In addition to these macro-level indicators, impacts of individual level indicators have been indicated in several studies. Study of Dow and Karunaratna (2006), for instance, emphasizes importance of education, international experience, and age impacting to a decision maker's sensitivity to psychic distance. Some studies have also used expert

panels and Likert scale ranging solely (Nordström, 1991) or in addition (Dow, 2000; Evans & Mavondo, 2002) to other indicators to capture managers' perceived psychic distance. Several authors (e.g., Petersen & Pedersen, 1997; Sousa & Bradley, 2006) have also argued that psychic distance should be measured only at individual level because it is more related to managers' personal experiences and skills rather than macro-level differences between countries. In their study, Sousa and Bradley (2006, 61) indicate that "psychic distance captures the manager's individual perception of the differences between the home and the host country and is a highly subjective interpretation of reality". Thus, psychic distance is something subjective and does not impact employees within a firm equally (Sousa & Bradley, 2006). For this reason, some employees are more conformable to differences between the home and the target country than others. Also Petersen and Pedersen (1997) criticize empirical studies that try to observe psychic distance based on differences between countries. According to their findings, psychic distance should be estimated based on the perceived psychic distance of the individual firm or decision-maker.

### **Psychic distance and internationalization of knowledge-intensive SMEs**

Due to increasing participation of SMEs in the world markets, several studies have examined appropriateness of concept of psychic distance in the Uppsala internationalization model to explain internationalization behavior of knowledge-intensive SMEs. The studies of Oviatt and McDougall (1994, 1995) related to international new ventures suggested that developed communication and transportation

channels, homogenization of markets, and international awareness have reduced the impact of psychic distance between countries (see also Autio, 2005). They argue that the concept of psychic distance in the Uppsala model is less significant at present, especially what comes to the rapidly internationalizing new ventures (Autio, 2005; Oviatt & McDougall 1994, 1995). However, Zahra (2005) argues that the studies of Oviatt and McDougall (1994, 1995) might give an impression that international new ventures can easily reach opportunities in foreign countries. Although the learning about other cultures is, in many cases, a challenging and time-consuming process (Zahra, 2005). Empirical studies (see e.g., Bell, 1995; Coviello & Munro, 1997; Lindqvist, 1988) have found some evidence that knowledge-intensive firms start their foreign operations by entering to psychically close markets. However, they have proposed alternative factors which explain market selection better than psychic distance between countries. These factors have been, to name of few, niche markets (Bell, 1995), network relationships (Coviello & Munro, 1997), cooperation requirements with foreign clients (Lindqvist, 1988), etc. The study of Crick and Jones (2000) argues that market selection of knowledge-intensive SMEs is more related to growth opportunities for their niche products rather than psychic distance. In contrast, Chetty and Campbell-Hunt (2004) found that New Zealand's born-global firms followed the logic of psychic distance by first entering to psychically close countries and then subsequently to distant ones. However, the major weakness of these above mentioned studies, what comes to the psychic distance, is that they have evaluated psychic distance between countries without using any systematic approach to measure psychic distance in macro-level or in individual-level.

Findings related to impact of psychic distance to the internationalization behavior of knowledge-intensive SMEs are twofold also in the studies applying quantitative research methods. In their studies, Hashai and Almor (2004) and Dow (2005) have found some evidence to the impact of psychic distance in the internationalization process of knowledge-intensive SMEs. The study of Dow (2005), analyzed statistically market entry choices of born global and non-born global firms by using the same Likert scale ranging as the study of Dow (2000). He found that although perception of psychic distance was higher within non-born global firms, internationalization of born global firms was still somewhat related to psychic distance. Hashai and Almor (2004) investigated to internationalization process of knowledge-intensive born global firms. In their analysis, they used country clustering to evaluate the impact of psychic distance. The findings in their study suggest that knowledge-intensive born global firms enter first to the psychically close market in their internationalization process. In contrast, Moen and Servais (2002) found no support for psychic distance or gradual internationalization process in their analysis of small and medium-sized firms' export behavior. The study classified markets by using a scale from one to four based on Hofstede's (1980) cultural dimensions.

Summarizing, as the literature review highlights, the impact of psychic distance to the internationalization of knowledge-intensive SMEs remains unsolved. In addition, authors have applied several approaches to measure the psychic distance. However, there seems to be a lack of studies that capture both macro-level and individual-level elements of psychic distance.

## **Methodology**

Based on earlier studies, market entry decisions are consequence of both macro-level and individual-level indicators. For this reason, we use quantitative and qualitative approaches to find out the impact of psychic distance to internationalization behavior of SMEs in the software industry. Software firms are commonly used as a sample to analyze internationalization of knowledge-intensive SMEs (Bell, 1995; Coviello & Munro, 1997; Zahra & Bogner, 2000) because they use unique know-how in their R&D activities, produces intangible products (Almor & Hashai, 2004), and use highly eligible employees as the main resource in their knowledge work (Prashantham & Berry, 2004). This also answers to Andersson's (2004) call for more research related to psychic distance in specific industries.

The target group of this study consists of small and medium-sized Finnish software firms with foreign operations. Finland was chosen as the country of origin due to its small and open economy with a very limited domestic market (OECD, 1997). In countries, where the domestic market size is small, internationalization is an important growth strategy to guarantee a long-term survival (Sapienza et al., 2006). Although the firms selected for this study originate exclusively from Finland, the research results (Bell, 1995; Coviello & Munro, 1997; Loane & Bell 2006) related to the internationalization of software SMEs originating from Australia, Finland, Ireland, New Zealand, and Norway imply that these firms commonly use similar internationalization strategies. Thus, the results can generalized to larger setting with some caution. Furthermore, Finland is



culturally very homogeneity country that helps us overcome the criticism of Shenkar (2001) related to ‘the assumption of spatial homogeneity’.

### **Quantitative analyses**

The source data used in quantitative analysis is based on secondary data acquired from the Finnish National Software Industry Survey. The source data was collected during 2003 by using a mail questionnaire. Altogether, 165 software firms responded to the survey, indicating a 17% response rate. Although the total response rate of the survey was quite low, the sample covers the target group of this study well, because the firms that responded generated over 80% of the total foreign income of the Finnish software industry. The original survey included the question related to the first three foreign countries that firms had entered. 53 firms responded to this question and 51 of them fulfilled the European Union’s and Finnish government’s definitions for SMEs (OECD, 2003) having 250 employees or less. Thus, the final sample of this study consists of 51 software SMEs (with an average of 27 employees). This sample represents also over 80% of the international revenue generated by the target SME population while the number of companies in the target population (SMEs with international revenue) is unknown to us.

We analyzed impact of psychic distance indicators to the countries entered by using the first three entries to countries as dependent variables. These are calculated from the source data as follows: dependent variables First Target Country, Second Target Country, and Third Target Country correspond to the number of firms entering to country (j) as the first, second, and third foreign market of the firm.

The psychic distance stimuli indicators, developed by Dow and Karunaratna (2006), and validated in later studies by Dow and Ferencikova (2007) and Dow and Larimo (2007), were used as independent variables. These indicators include the following variables: culture, language, education, industrial development, political systems, religion, and time zone. In accordance with the study of Dow and Karunaratna (2006), Hofstede's (2001) four cultural dimensions (Power Distance, Uncertainty Avoidance, Individualism, and Masculinity) were used to evaluate the impact of culture to psychic distance. Thus, we used Hofstede's four cultural dimensions as the first independent variable (Hindex). We calculated the cultural distance score of Finland (f) for each of Hofstede's (2001) four cultural dimensions (i), and thereafter calculated a composite score (Kogut and Singh, 1988) Cultural Distance ( $CD_j$ ) for each country j as an average of the squares of the four factors. Each factor were normalized with the variance of the dimension i ( $V_i$ ) with respect to distance to Finland. Algebraically:

$$[1] \quad CD_j = \sum_{i=1}^4 \frac{(I_{ij} - I_{if})^2}{4 * V_i}$$

The shortcomings of Hofstede's (2001) data concerning the 26 target countries of this sample were mitigated by using generic Arabic values for Arab Emirates and using the average of Poland, Russia, and Estonia for Latvia and Lithuania, based on the distribution of nationalities within the population (The World Factbook 2007) of the latter two countries. Although Shenkar (2001) highlights the importance to use all five dimensions

provided by Hofstede (2001), availability of the values for the fifth dimension ‘Long Term Orientation’ to the countries entered by the firms in our sample was too limited.

We used the five-element composite form of Dow’s psychic distance indicator as the second independent variable. Indicators for language, education, industrial development, political system, and religion used in the study of Dow and Karunaratna (2006) were gathered from the website of Dow (2008). However, we were not able to use political ideology factor, included into the political system variable, due to the missing data for several countries in our sample. In accordance of Dow and Ferencikova (2007), we used the composite index of Kogut and Singh (1988) to convert these five variables into a single index (Dindex):

$$[2] \quad Dindex_j = \sum_{i=1}^5 \frac{(I_{ij} - I_{if})^2}{5 * V_i}$$

The third independent variable (PDindex) is a composite of all seven psychic distance stimuli indicators (culture, language, education, industrial development, political systems, religion, and time zone) proposed in the study of Dow and Karunaratna (2006). As mentioned above, indicator for the culture is developed by using the Hofstede’s four cultural dimensions, and indicators for language, education, industrial development, political systems, and religion were gathered from the website of Dow (2008). The seventh dimension, time zones (TZ), for each target country was gathered from the World Factbook (2007). Finally, we combined all these seven psychic distance indicators to a single composite index (PDindex) accordingly to Kogut and Singh (1988).

$$[3] \quad PDindex_j = \frac{1}{7}(CD_j + 5 * Dindex_j + \frac{(TZ_j - TZ_f)^2}{V_{TZ}})$$

## Case studies

To investigate individual-level indicators impacting to the psychic distance, we selected four Finnish small and medium-sized software firms with direct business operations in the Japanese market for in-depth case analyzes. The case study method enables explaining the significance and cause-and-effect relationships of the phenomena under the investigation (Yin, 1994), which would not be possible by using quantitative research approaches. For instance, it enables detailed investigation of how managers' earlier experiences and education impacts to feelings, awareness, and sensitivity to psychic distance. All the firms qualified size requirement for this study having fewer than 250 employees at the time of their market entry to the Japanese market. Japan was selected as a target country because Japan can be conceptualized as a country relatively distant from Finland (Karppinen, 2006; Peltokorpi, 2007; Ronen & Shenkar, 1985) due to language and cultural differences. In addition, direct business operations require considerably higher amount of knowledge about the target country compared to indirect operations (see e.g. Luostarinen & Welch, 1990). Thus, selecting the psychically distant country as a target market for the case study helps us to analyze possible impacts of individual-level psychic distance indicators to the internationalization behavior at the firm level.

In the case research process, the guidelines suggested by Eisenhardt (1989) and Yin (1994) were followed. The semi-structured open-ended interviews were conducted with a

total of eight managers who had in-depth knowledge of their firms' market entry and operations in Japan. Interviews took approximately 60-90 minutes and were digitally recorded, carefully listened to, and transcribed verbatim with a word processor. The recorded data was listened twice to ensure a correspondence between the recorded and transcribed data. Thereafter, the transcribed case reports were sent back to the persons interviewed to ensure the validity and authenticity of the data. In addition, telephone and e-mail interviews were used to collect further data when needed. The collected data also compared to the websites and annual reports of the case firms. In the data analysis, guidelines proposed by Miles and Huberman (1994) and Yin (1994) were followed. First, all four individual cases were written out as standalone case histories. After that, the unique patterns in each case were identified and similar patterns were categorized under common themes. This helped to organize and summarize the collected data.

### **Findings in quantitative analyses**

In the quantitative analysis we analyzed the impact of psychic distance to market entry using bivariate correlation analysis. The aim was to observe the ability of single independent variables to explain variation of the dependent variables. Table 1 presents the three dependent variables in rows numbered 1 to 3 and the three independent variables in the bottom rows numbered 4 to 6. The columns represent mean (M), standard deviation (SD) as well as minimum (Min) and maximum values (Max) of each of the variables, followed by bivariate Pearson correlation values of all the variables. Statistically significant correlations at level of  $p < .01$  are marked with "\*\*\*" and close to

significant correlations with “\*”. In addition to bivariate correlations we created linear multivariable regression models to explain target country selection (and used the Durbin-Watson test to ensure non-autocorrelation of residuals) but these did not provide much added value compared to the bivariate correlation data.

From Table 1 we can find statistically significant bivariate correlations between all dependent variables 1-3, with the exception that the first countries entered do not correlate significantly with the third countries entered (beta only .179). All the independent variables correlate with each other strongly, although the correlation between Hofstede’s index and Dow’s five-variable indicator is only close to significant. In addition, all the independent variables correlate negatively with all dependent variables, i.e. all high distance indicator values correlate with low probability of market entry to the country. In general, the correlations between independent and dependent variables are at the level of close to significant (beta values from -.38 to -.5), but there exists only weak correlations with the first country entered (beta values from -.08 to -.31).

Table 1. Descriptive Statistics and Bivariate Correlation Matrix

Variable	M	SD	Min	Max	1	2	3	4	5
1. First Target Country	1.96	3.42	0	17					
2. Second Target Country	1.54	1.92	0	7	.514**				
3. Third Target Country	1.23	1.45	0	5	.179	.599**			
4. Hindex	1.49	.94	.04	3.38	-.313	-.465*	-.380		
5. Dindex	2.04	1.53	.77	6.64	-.079	-.413*	-.494*	.463*	
6. PD stimuli	1.81	1.22	0,56	5.61	-.140	-.442*	-.481*	.599**	.975**

Notes: N = 51

\*\* statistically significant  $p < .01$ , \* statistically significant at the level  $p < .05$  (2-tailed)

We also compared the average PD stimuli values of first, second and third countries entered, which were 1.524, 1.162 and 1.145 respectively. These were all smaller than the average PD stimuli of the countries entered ( $M = 1.810$ ,  $N = 26$ ). On the contrary to the common expectation this means that the average PD stimuli of the first countries entered was, on an average, higher than the average of second countries, which were also a bit higher than the average of the third countries entered. T-test for PD stimuli between first countries entered ( $M = 1.524$ ,  $N = 51$ ) and the second countries entered ( $M = 1.162$ ,  $N = 40$ ) show that the difference is close to significant (at the level of .0295). This indicates that in this sample internationalization of knowledge-intensive SMEs does not proceed from psychically close countries to distant ones. Instead, some other factors seem to have higher impact to the choice of the first target/host country than psychic distance or cultural distance. This may be due to the pulling factors such as opportunity seeking behavior (Oviatt & McDougall, 1994) and large host/target country software market size (Ojala & Tyrväinen, 2007, 2008) or the mediating factors, such as competences and networks of the individual firms. Thus macro-level psychic distance stimuli indicators by Dow and Karunaratna (2006) do not trivially measure the impact of psychic distance to the internationalization process of the firms investigated and use of micro-level qualitative analysis at the firm level is necessary.

### **Findings in case studies**

Although the quantitative analysis at the macro-level did not give strong support for the impact of psychic distance, the case studies conducted revealed somewhat different

viewpoint. These in-depth case interviews with managers of Finnish software SMEs operating in the Japanese market highlighted the importance of decision-makers' sensitivity to psychic distance stimuli (Dow & Karunaratna, 2006). The case interviews also revealed that language proficiency, and international experience exactly from the target country were important factors in addition to the indicators (education, international experience, and age) presented in the study of Dow and Karunaratna (2006). All the case firms mentioned that the large size and high market potential for their products were the main reasons for the market entry although they were well aware of differences related to culture, language, business practices etc. between Finland and Japan. Thus, market entry decisions were due to the attractiveness of the market and not directly impacted by psychic distance. However, managers in the case firms understood that they do not have the required knowledge to handle business activities in the Japanese market because of significant differences in language, culture, and business practices. For this reason, all firms were forced to acquire the relevant knowledge by recruiting international experienced managers who had sensitivity to psychic distance between Finland and Japan to handle their operations in Japan. It was also important that selected manager was aware about business environment, culture, language, etc. in both countries, not only what comes to the target country. This was seen primary important because in that way the recruited manager was able to act as a bridge between Japanese and Finnish culture.

The interviewees were aware of the impact of psychic distance and this could be heard on their statements when they described their means to handle it during critical processes,



such as recruitment. One informant at firm C highlighted their recruitment criteria for their manager recruited to manage their operations in Japan as follows:

”Our criterion was that we wanted to have a Finnish manager [to the subsidiary in Japan] because we liked to have a bridge between Finnish and Japanese culture. Although it would be optimal to find Japanese who has been studying and/or working in a Western country. Because in that case he/she would understand Western business culture and speak fluent English, it would be the ideal candidate. But because we are a small firm, it is difficult to get that kind of employee...it was too demanding for us...thus, we thought that let’s find a Finnish person, who has experience from Japan and [who would] understand the local culture there.”

Firm B was also looking for a Japanese employee with experience from Western culture to manage their operations in Japan. However, it was remarkably difficult to find Japanese whose English proficiency was at the required level to work within the firm where English was used as the common language. Firm D focused on mutual cultural understanding and language competence in the recruitment process of their manager for the subsidiary in Japan. One informant from Firm D commented the selection of the manager as follows:

“He had 10 years working experience from Japan information technology industry and especially from data security markets, good knowledge, and of

course the language [Japanese]. We did not select Japanese, we selected a French, with a nationality of as a third country, the reason being that the cultural difference to Finland is lower when there is a person in between, who understands local culture as well as an European culture, and can act as a bridge between Japanese employees and employees of the headquarters in Finland”

All recruited managers for the Japanese operations of the case firms were middle-aged, had university degrees in technology and/or economy, They all had international experience from two to twenty years and working experience from Japan from two to ten years when they were recruited to the firms. Earlier working experience from Japan was also closely related to the same business area and mainly acquired by working at large multinationals as an expatriate. However, manager of firm A’s subsidiary had also some education from Japan and experience from Japanese firms. He explained this as follows:

“I was in practical training here in Japan in my last year of university studies. I really got excited about this country and after my master’s studies I came to do my doctoral studies in Tokyo University. However, quite soon I quit my studies and went working to a Japanese software firm, where I worked as a product developer. I was there about one year and then I came back to Finland and worked here about five years before I moved back to Japan.”

Motivation and interest about foreign cultures was also mentioned to be important. All managers recruited were interested in Japanese culture and language already before they moved to Japan. This helped them to adapt to the local practices and society.

A manager of Firm B subsidiary explained this as follows:

”I have always been interested in Japan...and when my earlier employer offered [me] an opportunity to move to Japan, it was easy [for me] to accept. I was working at that firm about four years, I worked with local customers and with Japanese colleagues, and of course I learned how these things go in Japan. I also studied Japanese language and read literature related to Japan so I got an overall understanding about Japan and how to handle daily things here”

## **Conclusion**

The aim of this study was to investigate the impact of psychic distance to the market selection of knowledge-intensive SMEs by testing psychic distance stimuli indicators by Dow and Karunaratna (2006). For the first research question, the findings give a clear answer. Knowledge-intensive firms are not immune for the impact of psychic distance. Although the quantitative findings do not give a strong support to impact of psychic distance, the findings in case studies indicate that firms investigated were not able to cope with a psychically distant country without recruiting employees with adequate knowledge of the target country. Hence, psychic distance has impact, but these firms were able to

tackle the impact of psychic distance by acquiring relevant knowledge through recruiting. For the managers, this finding proposes that if a firm's capabilities are insufficient to handle the market by using existing knowledge, they have to find a way to acquire relevant knowledge about a target country. In rapidly internationalizing industries, such as software industry, this has to be accomplished through recruiting because firms do not have time for cultural training or learning by doing. As it can be deduced, recruitment of capable employees requires enough financial resources; otherwise a firm might not be able to make use of its market potential in an attractive but psychically distant country.

The absence of the psychic distance in some earlier empirical studies (Bell, 1995; Coviello & Munro, 1997; Crick & Jones, 2000; Lindqvist, 1988) related to internationalization of knowledge-intensive SMEs might be due to the research settings: the market entries have been targeted mainly to the countries with similar business environment, culture, language used in business, etc. In addition, these studies have investigated almost solely to internationalization through exporting, which requires less knowledge about the target country and business practices there. However, as the case findings here indicate, the major market for a firm's products might also be located in a country where culture, business practices, and language differ greatly between the home and the host countries. This is mainly due to opportunity seeking behavior (Oviatt & McDougall, 1994, 1995), as firms try to reach the leading markets for their niche products (Ojala & Tyrväinen, 2007).

For the second research question, the findings propose that psychic distance should be measured at individual level, at least in a case of SMEs in a knowledge-intensive sector. Knowledge-intensive SMEs are forced to enter the leading market very early in their life-

cycle. Thus these firms cannot follow the traditional internationalization process as described in the Uppsala model (Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975) by entering first to psychically nearby markets and, thereafter, gradually to more distant ones. Because several studies (Brewer, 2007; Dow, 2000; Dow & Karunaratna, 2006; Evans & Mavondo, 2002) have developed macro-level indicators trying to capture gradual, stepwise internationalization process, they have not been able to fully address the impact of psychic distance to internationalization behavior of knowledge-intensive SMEs. This is mainly because knowledge-intensive SMEs are able to use external resources (Oviatt & McDougall, 1994) and acquire relevant knowledge for their internationalization purposes. In this study, the case findings indicate clearly that by recruiting managers with sensitivity to psychic distance stimuli, firms were able to minimize or even remove the impact of macro-level factors presented in the study of Dow and Karunaratna (2006). Thus, in rapidly internationalizing knowledge-intensive sectors Dow's and Karunaratna's (2006) individual level factors seem to be more relevant than macro-level factors and managers should focus on these factors in their market entry phase.

As a limitation, this study suffers from small samples used in quantitative and qualitative analyses. However, it offers an interesting starting point for further studies related to psychic distance and knowledge-intensive SMEs. One further research direction would be to investigate how well these firms prepare to the impact of psychic distance in their market entry. In this study, the case firms were well prepared for the impact of psychic distance because the Japanese market is commonly well known about entry barriers and cultural differences (cf. Freeman & Reid, 2006). However, by

analyzing entries to other major markets would give information of impact of psychic distance paradox (O'Grady & Lane, 1996), different strategies applied, etc.

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