Psychic distance and internationalization choices of European SMEs

ABSTRACT

Research on the influence of psychic distance on internationalization choices and performance brings mixed results. The purpose of this paper is to shed light on our understanding of the relationship between psychic distance and SMEs' export strategic choices. Specifically, we analyze (1) the relation between psychic distance and choice of the most significant destination market in SMEs' export strategy, (2) the relation between psychic distance and firm's performance in the most significant destination /export market, (3) the moderation effect of level of export diversification on the relationship between psychic distance and performance in the key destination / export market. Additionally, we contribute to the discussion on psychic distance's operationalizations and their validity, as we examine the influence of psychic distance employing three competing measurements: (i) cultural distance index of Kogut and Singh (1988), based on Hofstede's national culture dimensions, (ii) psychic distance stimuli developed by Dow and Karunaratna (2006), and (iii) psychic distance scale of Hakanson and Ambos (2010). The study sample consists of 2084 European SMEs originating from 31 countries. Hypotheses are tested with a hierarchical linear regression analysis. First, we find that the relationship between psychic distance and the significance of the host market in a firm export strategy is statistically valid (regardless of the PD operationalization). However, the direction of the relationship differs across various operationalizations. Second, the relationship between psychic distance and a firm performance in the host market is actually positive (for all three PD operationalizations). Finally, we observe the moderation effect of export diversification strategy that is pursued by a firm. Our findings reveal that firm performance in the host market increases with the psychic distance between the domestic and destination market, and this relationship is accentuated when a firm export strategy is characterized by low geographic diversification.

Keywords: psychic distance, export strategy, export market significance, export market performance, SME

INTRODUCTION

The concept of distance between the home and the host market has been extensively used to explain the strategic choices related to the international expansion of firms. On the one hand, within macro-level gravity models of foreign trade, geographic distance has been treated as a key variable explaining the trade between two countries (Tinbergen, 1962). On the other hand, theories describing internationalization of business at the microeconomic level, stressed that significant differences between the home and host markets pose an important obstacle to internationalization, described as a *liability of foreignness* (Hymer, 1976).Throughout decades

researchers have examined the influence of various distance dimensions (including geographic, economic, administrative, institutional and cultural dimensions) upon the internationalization process of firms, and in the process the concepts of cultural and psychic distance gained a solid ground in international business theory.

The popularization of research involving psychic distance as one of the focal variables is related to the use of this idea by Uppsala University researchers (Johanson and Vahlne, 1977), who employed the psychic distance concept to explain the dynamics of internationalization process of Swedish firms. Since 1970s the construct of psychic distance has been often applied in research on the process and effects of internationalization. In particular, it has been employed in studies examining the choice of destination market (Johanson and Vahlne, 1977; Dow, 2000; Ellis, 2007; Dow and Ferencikova, 2010); selection of entry mode (Brouthers, Brouthers and Werner, 1996; Drogendijk and Slangen, 2006; Evans et al. 2008, Ojala and Tyrvainen, 2009; Kontinen and Ojala, 2010;); local market adaptations (Sousa and Lengler, 2009); knowledge transfer and ability to learn (Pedersen et al., 2003; Prashantham and Floyd, 2012); internationalization performance (Dow and Larimo, 2011; O'Grady and Lane, 1996; Dikova, 2009; Sousa et al. 2010).

In spite of the popularity of the concept, the measurement of the psychic distance is still triggering an on-going debate. Moreover, research on the influence on psychic distance, internationalization choices and performance, brings mixed results, also due to the application of different psychic distance measures. The purpose of this paper is to shed light on our understanding of the influence of psychic distance on SMEs'export choices, and on the explanatory power of different ways to measure it. Specifically, we analyze how psychic distance influences: (1) the choice of the most significant destination market in SMEs' export

strategy, and (2) the firm performance in the most significant destination /export market. Additionally, we contribute to the discussion on psychic distance's measures and their validity (Shenkar, 2001; Drogendijk and Slangen, 2006), as we examine the influence of psychic distance employing three popular and competing measurements i.e. cultural distance index of Kogut and Singh (1988), based on Hofstede's national culture dimensions, psychic distance stimuli developed by Dow and Karunaratna (2006), and psychic distance scale of Hakanson and Ambos (2010). We focus on SMEs because they are an overwhelming majority of firms in any European economy.

The paper is structured as follows. The first section discusses the theoretical background of the research hypotheses. In the following section, details on the data selection procedure and analytical methods are provided, followed by a presentation of results and analysis. The paper concludes with a discussion of implications and limitations of the findings.

THEORETICAL BACKGROUND

The concept of psychic distance

The concept of "psychic distance" was used for the first time in the analysis of trans-European flow of goods by Beckermann (1956), who noticed that factors such as geographic distance, cost of shipping or price level are not the sole determinants of foreign trade. Beckermann (1956) indicated the need for further definition of distance within the theory of foreign trade, arguing that distance between countries *as perceived* by managers and entrepreneurs, depends *inter alia* on language differences. Nonetheless, the popularization of research involving psychic distance is related to the use of this idea in the 1970s by Uppsala University researchers (Johanson and

Vahlne, 1977), who analyzed the process of internationalization of Swedish businesses. Their seminal article defined the notion of psychic distance and set the foundations for stage theory of internationalization (the Uppsala Model). Psychic distance was defined by several factors disturbing the flow of information between the company and the market, including differences regarding language, systems of education, business practice, culture and level of development of the industry (Johanson and Vahlne, 1977: 24). These differences influence and limit firm's ability to learn and understand foreign markets, impact internationalization choices and decisions, thus helping to explain the final choices of foreign markets and the forms of internationalization (i.e. foreign market entry modes).

Throughout the years, the definition of psychic distance and the operationalization of this construct have evolved. Early definitions of distance stressed the relevance of differences in external environment which limited the flow of information and understanding of conditions within foreign markets. Later on the focus shifted towards the fact that the *managerial perception of differences* between markets rather than external factors *per se* play a key role here (Evans and Mavondo, 2002; Evans et al., 2000; O'Grady and Lane, 1996) (see Table 1).

Table 1 Key definitions of psychic distance

Author (year)	Definition
Johanson and Wiedersheim-Paul (1975: 308)	The sum of factors preventing or disturbing flows of information between firm and market.
Nordstrom and Vahlne (1994:42)	Factors preventing or disturbing firm's learning about and understanding a foreign environment.
Evans et al. (2000:165)	It is the mind's processing, in terms of perception and understanding, of the cultural and business differences.
Evans and Mavondo (2002b: 309)	Psychic distance [can] be defined as the distance between the home market and a foreign market, resulting from the perception of both cultural and business differences.

Source: Own elaboration.

Psychic distance, market choice, performance and firm geographical diversification

The starting point for research on location choice in the process of internationalization (Ellis, 2007), international market entry mode, or internal knowledge transfer (Pedersen et al. 2003) is an assumption that the greater the differences between the foreign and home market of a given company, the more difficult it will be for this company to collect, analyze and correctly interpret market related data. The Uppsala model explains that the managerial choices of particular foreign markets result from an attempt to limit psychic distance through focus on those markets which are easier to understand by the given company. According to the Uppsala model, companies should begin their international expansion in those markets, which are the closest to their home market in terms of psychic distance, and move towards more distant markets as their knowledge and experience of foreign operations increases (Johanson and Vahlne, 1977). Research generally confirm this pattern of choices and decisions - also for firms from emerging economies (Obloj and Wasawska 2012; Ciszewska-Mlinaric and Obloj, 2014; Wasowska et. al., 2015). Pedersen et al. (2003) confirmed that psychic distance decreased the ability to transfer knowledge within a multinational corporation. In line with these assumptions, Dow (2000) found that psychic distance is a significant predictor of early export market selection for Australian SMEs, but its influence declines significantly between the first and second market entry decisions. Ellis (2007) also found that there is no simple pattern of increasing or decreasing psychic distances in the foreign markets choice sequence. Nonetheless, the findings of Dow and Karunaratna (2006) indicate that the intensity of trade between countries is strongly related to the following psychic distance stimuli - differences in education, degree of democracy, religion, while there is also some support for the differences in language, industrial development, and the degree of socialism. Dow and Ferencikova (2010) observed that psychic distance stimuli, applied

to FDI in Slovakia, are still strong predictors of market selection. Similar conclusion in the context of knowledge intensive SMEs provide Ojala and Tyrvainen (2009), indicating that SMEs prefer to internationalize to psychically closer countries. Therefore, we expect, in line with dominant theoretical thinking, that:

> ***Hypothesis 1:*** *The higher psychic distance between the destination and the domestic country, the lower significance of the destination market in a firm export strategy.*

The relationship between psychic distance and performance in foreign markets has also been analyzed within international business research. Traditionally, it has been argued that excessive distance in terms of cultural norms and beliefs affects communication and limits the understanding of local business practices, thus negatively affecting the performance of business operations in long run (Slangen and Hennart 2008; Zeng et al. 2013). However, research results do not consistently confirm the negative influence of psychic distance on firm performance in foreign markets (Ali, 1995; Dikova, 2009). Likewise, there is research suggesting that selecting countries which are close in terms of culture does not ensure success in internationalization (O'Grady and Lane, 1996). Underestimating psychic distance between countries, which are seemingly close in terms of culture, may hinder performance, as the managers' assumption of markets' closeness limits managers' sensitivity to small but crucial differences and their learning ability (Wasawska et.al. 2015). This phenomenon was named a paradox of psychic distance (O'Grady and Lane, 1996). Realizing that research findings offer mixed explanations as to the relationship between psychic distance and performance, we formulate our hypothesis in line with the dominant theoretical view. Thus, we expect:

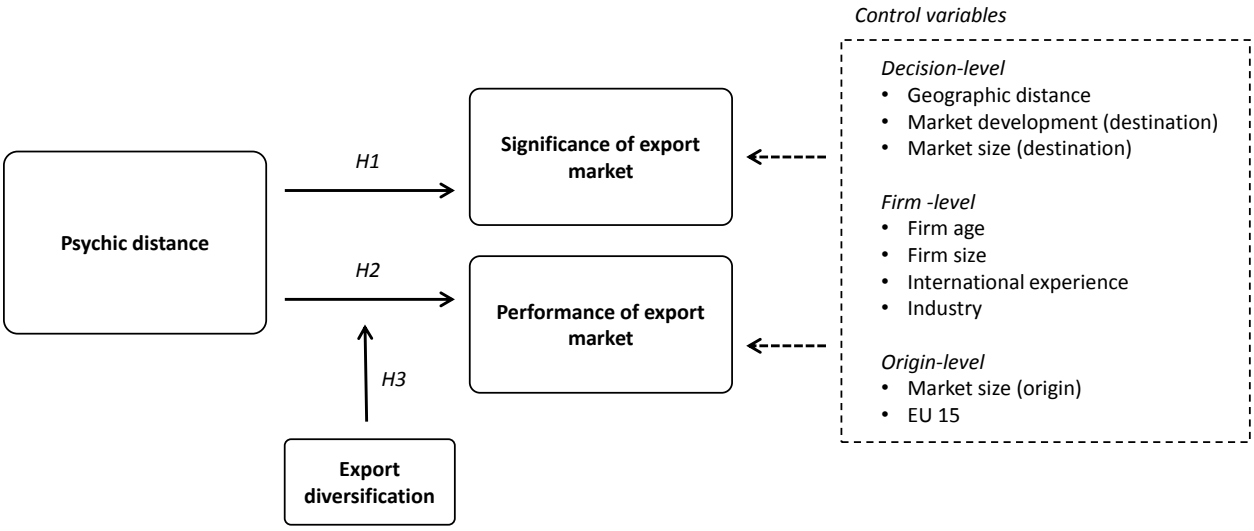
> ***Hypothesis 2:*** *The psychic distance between the destination and the origin country will be negatively associated with the firm performance in the destination market*

It can however be argued that the relationship between the psychic distance to the destination country and the firm performance in the destination country should be moderated by the level of export diversification. Firms that are characterized by lower levels of export diversification (i.e. their reliance on single export market is high) will make great efforts to understand and learn the key foreign market, hence limiting its psychic distance effects. Contrary to these, in case of firms following more diversified export strategy (i.e. one market did not account for vast majority of export revenues), we expect that psychic distance to the key foreign market will decrease the firm performance in the foreign market. We assume that because the SMEs possess limited resources and dispersion of this resources to properly understand and learn all geographic markets can lower learning efforts to understand the key export destination. Thus, we hypothesize that:

> ***Hypothesis 3:*** *The relationship between psychic distance and the firm performance in the host market is moderated by the firm export diversification, so that in case of firms with low export diversification the relationship between PD and export market performance will be positively correlated, while in case of more diversified firms the relationship will be negative.*

The hypothesized relationships are presented in Figure 1.

Figure 1 Conceptual framework



DATA AND METHOD

Data collection and sample

This study is based on the unique in terms of size and reach database that was developed as a result of the research project sponsored by European Commission:: *Internationalisation of European SMEs, European Commission, DG Enterprise and Industry, 2010.* The survey was commissioned by the 'Directorate-General for Enterprise and Industry of the European Commission' and implemented by the Dutch EIM Business & Policy Research. The original database contains data from 33 countries within Europe, which are the 27 EU states, plus Croatia (now an EU state as well), Iceland, Lichtenstein, Macedonia, Norway and Turkey. In total 9480 small and medium sized companies were interviewed during January-April 2009, from which a total number of 4422 (46.6%) reported that they have already exported, cooperated, or invested in a foreign market between 2006-2008. As this study focuses on the export markets, the relevant cases are the 3669 (38.7%) companies which reported that they have exported between 2006 and 2008. The sample, used in this study, is further reduced by companies from Lichtenstein and Macedonia (therefore, the 336 firms were dropped from the analysis), as there are currently no distance measures available. Finally we dropped all observations with missing values which are crucial for this study. This includes companies with missing data about the destination country, and those firms that exported to markets for which the psychic distance measures are not available in the three adopted measurement approaches (i.e. Hakanson and Ambos, 2010; Dow and Karunaratna, 2006; Kogut and Singh, 1988, based on Taras reported values (2006)). Characteristics of the final sample are presented in Table 3.

Table 3 Characteristics of sample

N1 = 861	Mean	S.D.	Min	Max
Firm age (years)	26	15.86	0	63
Firm size (number of employees)	50	58.97	1	249
Firm internationalization	0.29	0.29	0	1
N2 = 2084	Mean	S.D.	Min	Max
Firm age (years)	21.73	14.02	0	63
Firm size (number of employees)	51.06	57.72	1	249
Firm internationalization	0.29	0.3	0	1
N3 = 1479	Mean	S.D.	Min	Max
Firm age (years)	22.46	14.46	0	63
Firm size (number of employees)	51.71	58.18	1	249
Firm internationalization	0.28	0.3	0	1

NOTE:

N1 – number of firms (=observations) for which there is data on psychic distance according to measurement developed by Hakanson and Amboss (2010)

N2 – number of firms (=observations) for which there is data on psychic distance according to measurement developed by Dow and Karunaratna (2006)

N3 – number of firms (=observations) for which there is data on psychic distance according to measurement developed by Kogut and Singh (1988)

Source: own elaboration based on *Internationalisation of European SMEs, European Commission, DG Enterprise and Industry, 2010.*

Dependent variables

Export market significance. Although SMEs in the research sample often reported exports to a number of foreign markets, in our study we focus only on one, the most important, export market in SMEs' export strategy. The most significant export market was selected on the basis of the highest share in a firm exports and is measured as the percentage of export revenues. Therefore, the variable *EXP_SIGij* represents the share of export market (*i*) in total exports of a firm, originating from *i-th* country.

Export market performance (firm performance in the host market). The second dependent variable, export market performance, represents the firm performance in the most significant export market (i.e. the export market with the highest share in the firm exports). To measure the

firm performance in the host market we used a variation of the often used operationalization of firm international performance, which is typically calculated as a ratio of foreign sales to total sales (e.g., Nummela et al., 2004; Kyvik et al., 2013). However, as the focus of our research is the firm performance in a particular foreign market, we adapted the measurement to our study, so that it reflects the share of revenues from the most significant host/export market in total firm revenues (i.e. domestic and foreign). Therefore, the variable *EXP_PERFij* represents the share of export market revenues (from *i-th* country) in total revenues of a firm, which originates from *i-th* country.

Independent variables

Psychic Distance (PD). There is an on-going debate on how to best measure the psychic distance concept. Most often researchers employ one of three methods of operationalization i.e. cultural distance index (Kogut and Singh, 1988, based on Hofstede's national culture dimensions), psychic distance stimuli (Dow and Karunaratna, 2006), or perceptual operationalization of psychic distance developed by Hakanson and Ambos (2010). As one of the objectives of our study is also to contribute to the discussion on operationalization of the psychic distance concept we use all three operationalizations of psychic distance (PD). The following section briefly discusses the three approaches to PD measurement.

(1) Cultural Distance index (CD)

Cultural distance operationalization by Kogut and Singh (1988) is leveraging results of Hofstede (1980) theory of several dimensions of national cultures and uses the differences in the countries scores on those dimensions of national culture. It has been the often used as by researchers as a proxy of psychic distance for the past two decades with mixed results (Dow and Ferencikova,

2010). More recently, the revised estimates of national cultural distance for 76 countries were updated and made available by Taras and Steel (2006). Dow and Ferencikova (2010) found that Taras and Steele's revised estimates of national cultural distance are more appropriate than original Hofstede dimensions values (1980) combined into one single index (Kogut and Singh, 1988). The revised estimates are used in this study (i.e. based on Taras and Steel, 2006), combined into one cultural distance index (CD_{jk}) with the same approach. The differences between the culture scores of the jth and kth country in the ith dimension are calculated. The average of those four values is taken and corrected by the variance (V_i) of the ith dimension.

(2) Psychic Distance stimuli (Dow & Karunaratna, 2006)

Dow and Karunaratna (2006) introduced a new approach to measuring psychic distance and developed an instrument which goes beyond the cultural differences. Psychic Distance stimuli are based on macro-level factors that influence the manager's perception of a foreign market. Those factors are differences in language, educational levels, industrial development, political system and in religion. Subsequent studies validated the higher significance of these factors, compared with the Kogut and Singh index (Dow and Larimo, 2008; Dow and Ferencikova, 2009; Dow et al. 2014). However, Dow and Larimo (2008) stressed that the factors Religion, Education, Industrial development and Degree of Democracy are highly correlated, which lead to the combination of those factors into one (RIED) factor, using confirmatory factor analysis. In this study the same method is applied. The construct has a Cronbach's alpha of 0.754, which indicates high internal reliability (Nunnally & Berstein, 1994). As Cronbach's alpha measure is often criticized, the composite/construct reliability (CR) and average variance extracted (AVE) were calculated as well. With CR equal to 0.855 and AVE = 0.560, the recommended thresholds

are met (CR > 0.6 and AVE > 0.5); thus, construct internal consistency is evidenced (Fornell & Larcker, 1981).

Differences in language. As the four dimensions of the Dow and Karunaratna (2006) stimuli are combined as RIED, the fifth dimension *PDI_Lang* is treated separately as an independent variable, similarly to Dow and Jarimo (2008).

(3) Psychic Distance (Hakanson and Ambos, 2010)

The third representative of Psychic Distance was published by Hakanson and Ambos (2010). While Dow and Karunaratna developed a system of stimuli that influence the perceived Psychic Distance, the Psychic Distance in this study is measured directly. Executive MBA students across 25 countries were asked to assess the perceived Psychic Distance on a scale from 0 to 100. The participants were asked to score the most distant country with 100 and their home country with 0, to anchor the results. As shown by Dow et al. (2014) this approach is superior in predicting IB activities. Even though the measurement of *perceived* Psychic Distance might be the most accurate, the Dow & Karunaratna approach still captures about 80% of the explained variance (Dow et al., 2014).

Export diversification. The export diversification strategy that a firm pursues was measured as a binary variable (0,1) representing the export diversification. The value "1" indicates a higher level of geographic diversification of firm exports (i.e. the export revenues from a single market account for less than 70% of the total export volume). Lower levels of geographic diversification are represented by the value 0 (i.e. export revenues from a single market are equal or greater than 70% of the total export revenues).

Control variables

In order to bring out more clearly the effects of internationalization we control for variables at three different levels: decision-, firm-, and country of origin-level. At the decision level we control for geographical distance, as well as development and size of the key destination market in the firm export strategy. *Geographical distance,* between the country of origin and the destination country, was measured with the natural logarithm of the distance (in kilometers) between the capitals of the origin and destination countries. The data for the geographic distance variable was collected from the Centre d'études prospectives et d'informations internationals (CEPII, 2011). The CEPII is a major research institute in international economy in France and part of the network coordinated by the Policy Planning for the French Prime Minister. *Market Development* and *Market Size* of the destination country are measured respectively with the natural logarithm of the 2008 GDP per capita of the destination country (Market development_destination) and the natural logarithm of the population size of the destination country (Market size_destination). The data about market size and development is collected from the UNCTAD STAT database.

At the firm level we control for firm age, firm size and international experience, as well as the industry in which the firm operates, which are typically used in firm export and international entrepreneurship research (e.g. Zahra et al., 2005, Nummela et al., 2004; Kyvik et al., 2013). The *firm age* is measured with the natural logarithm of the number of years the firm has been operating, and the *firm size* is measured with the natural logarithm of the number of employees. *International experience* is measured by the number of years the firm has been exporting. *Industry is* operationalized with dummy variables. The industries are divided into manufacturing (IND1), wholesale and retail (IND2) and others (IND3).

At the origin level we control the size of domestic (origin) country economy and its membership in EU15. *Market size* of the domestic country is measured with the natural logarithm of the population size (Market size_origin). Additionally, we controlled for the origin country membership in EU15 using a dichotomous variable, which takes the value 1 in case, that the domestic country of the exporting company is a member of the first group of European Union members.

Correlations and descriptive statistics for all variables are shown in Table 4.

ANALYSIS AND RESULTS

In order to test H1 (examining the relationship between psychic distance and the significance of particular market in the firm export operations) we run three regression models that separately test three various operationalizations of the psychic distance concept as an independent variable.

All models (Models 1-3) have two versions: *baseline*, examining only the effects of control variables, and *full model*, after inclusion of independent i.e. psychic distance variable. This approach allows us to see whether the explanatory power of the model increased after adding the proposed independent variable. Model 1 uses the operationalization put forward by Dow and Karunaratna (2006), Model 2 employs operationalization developed by Hakanson and Amboss (2010), and Model 3 uses the Cultural Distance Index of Kogut and Singh (1988) based on the Hofstede scale. All three models are statistically significant ($p<0.001$) and explain respectively 10.9%, 9.7% and 9.4% of the variance of export market significance (Table 5). Additionally, the comparison of *baseline* and *full* models indicates that the inclusion of psychic distance is statistically significant, although the effect (captured by the change in R square) is rather small.

Table 4 Correlations and descriptive statistics

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Psychic Distance *HA*	1														
2	PD stimuli _Lang *DK*	.452**	1													
3	PD stimuli_REID *DK*	.780**	.236**	1												
4	CD *HOF*	.226**	.159**	.162**	1											
5	Geographic Distance	.781**	.283**	.455**	.137**	1										
6	Market development_destination	-.723**	-.110**	-.485**	.004	-.167**	1									
7	Market size_destination	.571**	.157**	.245**	-.029	.535**	-.138**	1								
8	Firm age	-.021	-.038	-.018	.036	.056**	.040	.069**	1							
9	Firm size	.005	.042*	.006	-.027	-.002	.005	.049*	.184**	1						
10	International experience	.028	-.021	-.017	.021	.086**	.090**	.111**	.581**	.123**	1					
11	Export diversification	.094**	.103**	.046*	-.037	.172**	-.020	.136**	.078**	.133**	.189**	1				
12	IND1	-.002	.078**	-.002	.050*	.022	.028	.057**	.069**	.161**	.063**	.077**	1			
13	IND2	-.028	-.069**	-.028	.041	-.071**	-.040	-.109**	.000	-.002	-.005	-.089**	-.364**	1		
14	Market size_origin	.233**	.136**	.124**	.051*	.299**	-.036	.164**	.138**	-.006	.083**	.059**	.059**	-.013	1	
15	EU 15_origin	-.136**	-.218**	-.139**	.007	.142**	.175**	.120**	.268**	-.117**	.294**	.069**	-.020	-.018	.399**	1
	Mean	25.02	-.50	.45	1.53	2.90	4.46	4.41	2.85	3.17	13.99	-.09	.38	.18	4.11	.052
	Std. Deviation	17.86	1.14	1.46	1.42	.45	.36	.63	.72	1.36	11.20	1.00	.48	.38	.63	0.50

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

All three operationalizations of the psychic distance concept are statistically significant. However, contrary to our expectations, the only operationalization that confirms the hypothesized negative relationship between psychic distance and significance of the market in a firm's export strategy (Hypothesis 1) is the one developed by Hakanson and Amboss (Model 2). The other two operationalizations indicate significant, but positive, association between psychic distance and the independent variable. We discuss the implications of this finding in the discussion section.

Table 5 Linear regression results for Significance of Export Market

	Model 1		**Model 2**		**Model 3**	
	Baseline	*Full model*	*Baseline*	*Full model*	*Baseline*	*Full model*
PD stimuli - Lang *DK*		-0.094***		n/a		n/a
PD stimuli - REID *DK*		0.052*		n/a		n/a
Psychic Distance *HA*		n/a		-0.105*		n/a
CD *HOF*		n/a		n/a		0.070**
Geographic Distance	-0.154***	-0.150***		n/a	-0.135***	-0.150***
Market dev_dest	0.007	0.027	0.028	-0.036	0.026	0.026
Market size_dest	-0.029	-0.027	-0.089*	-0.074†	-0.053†	-0.043
Firm_age	0.065*	0.064*	0.069†	0.064	0.036	0.033
Firm_size	-0.126***	-0.126***	-0.094**	-0.097**	-0.100***	-0.097***
International experience	-0.201***	-0.198***	-0.232***	-0.225***	-0.185***	-0.185***
IND1	-0.014	-0.009	-0.015	-0.017	-0.011	-0.016
IND2	0.065**	0.062**	0.061†	0.058†	0.059*	0.053*
Market size_origin	0.015	0.030	-0.019	-0.003	-0.003	-0.004
EU15_origin	-0.087***	-0.111***	-0.146***	-0.160***	-0.084**	-0.082**
Model						
R-square	0.105	0.114	0.103	0.108	0.096	0.101
Adjusted R square	0.101	0.109	0.094	0.097	0.090	0.094
F	24.874***	22.603***	11.077***	10.453***	16.017***	15.337***
Change in R square		0.009		0.005		0.005
F-Change		10.170***		4.442*		7.807**

Cell entries are standardized regression coefficients.
N indicates the number of cases for each model.
†p<0.10; *p<0.05; **p<0.01; ***p<0.001

Among control variables, the three models produce similar results. First, the firm size and international experience are negatively associated with the export market significance, which

indicates that older and more experienced firms tend to have more diversified exports. Second, firms that originate from EU-15 countries (in contrast to firms that do not belong to EU-15 group of countries) are also more likely to rely on one market in their export strategy. Third, greater geographic distance also decreases the likelihood of high significance of the foreign market in a firm export strategy. Geographic distance was not included in Model 2, as Dow, Hakanson and Amboss (2014) argue that geographic distance should be viewed as one of the antecedents of psychic distance.

In order to test H2 (examining the relationship between psychic distance and the firm performance in the host market) and H3 (examining the moderating effect of export diversification strategy on the relationship between psychic distance and the firm performance in the host market) we used a hierarchical regression analysis (Table 6). All models (Models 4-6) have three versions: *baseline*, examining only the effects of other variables than psychic distance, *main effects*, after inclusion of psychic distance variables, and *full model* that includes also the interaction effect (psychic distance X export diversification). The moderation effect exists when the inclusion of interaction term increases the explanatory power of the model, in a statistically significant way (captured by the change in R square) (Cohen and Cohen, 1983). The interaction term (psychic distance X export diversification) was calculated by multiplying the corresponding components that were previously centered (psychic distance variables' values were standardized, while the dichotomous variable of export diversification strategy was recoded into -1,1). To properly understand the nature of the interaction, we plotted the effects of psychic distance for the firm performance in the host market for different levels of export diversification strategy (low vs. high).

Table 6 Linear regression results for Export Market Performance

	Model 4			Model 5				Model 6		
	(A) Baseline	*(B) Main effects*	*(C) Full Model*	*(A) Baseline*	*(B) Main effects*	*(C) Full Model*	*(D)* [d] *Full Model*	*(A) Baseline*	*(B) Main effects*	*(C) Full Model*
PD stimuli - Lang $_{DK}$		.033	.034	n/a	n/a	n/a		n/a	n/a	n/a
PD stimuli - REID$_{DK}$		.105***	.114***	n/a	n/a	n/a		n/a	n/a	n/a
PD$_{HA}$	n/a	n/a	n/a		.065 [a]	.065[b]	.094[c]	n/a	n/a	
CD $_{HOF}$	n/a	n/a	n/a	n/a	n/a	n/a			.093***	.089***
Geographic Distance	.078**	.026	.027	n/a	n/a	n/a		.050	.030	.031
Market development_ dest	.055**	.095***	.096***	-.025	.015	.015	-.012	.104***	.103***	.103***
Market size_dest	.0134***	.136***	.134***	.135**	.126**	.126**	.136**	.112***	.123***	.120***
Firm age	-.179***	-.179***	-.181***	-.161***	-.158***	-.158***	-.140**	-.166***	-.171***	-.169***
Firm size	.017	.018	.018	-.028	-.025	-.025	.026	.038	.042	.041
International experience	.230***	.224***	.226***	.260***	.256***	.256***	.231***	.210***	.209***	.211***
Exp diversification	-.118***	-.118***	-.119***	-.139***	-.140***	-.140***	-.148***	-.117***	-.111***	-.111***
IND1	.121***	.121***	.122***	.115**	.117**	.117**	.141**	.137***	.130***	.128***
IND2	-.055*	-.051*	-.052*	-.075*	-.074*	-.074*	-.060	-.033	-.040	-.040
Market size_home	-.097***	-.108***	-.106***	-.019	-.029	-.028	-.035	-.131***	-.133***	-.135***
EU_15_11	-.169***	-.142***	-.142***	-.132***	-.123***	-.124***	-.150†	-.171***	-.168***	-.168***
REID$_{DK}$ x Exp diversification			.037†							
PD$_{HA}$ x Exp diversification						.000	0.074[e]			
CD $_{HOF}$ x Exp diversification										.045†
Model										
R Square	0.133	0.141	0.143	0.115	0.117	0.117	0.134	0.142	0.150	0.152
Adjusted R Square	0.128	0.136	0.136	0.104	0.105	0.104	0.117	0.135	0.143	0.144
F-value	27.347***	24.722***	23.191***	10.347***	9.558***	8.750***	7.839***	20.867***	20.418***	19.124***
Change in R Square		0.008	0.001		0.002	0.000			0.008	0.002
F-Change		9.044***	2.974†		1.588	0.000			13.428***	3.205†

Cell entries are standardized regression coefficients.

[a] Significance of PD$_{HA}$ equals p= 0.208. [b] Significance of PD$_{HA}$ equals p=0.240. [c] Significance of PD$_{HA}$ equals p=0.153. [d] Model 5D was run on subsample consisting only SMEs (without micro firms i.e. employing 1-9 employees). The coefficient of PD improved, and the interaction term is at the verge of statistical significance. [e] Significance of interaction of PD$_{HA}$ X Export diversification equals p=0.103

†p<0.10; *p<0.05; **p<0.01; ***p<0.001

All three baseline models (Model 4A, Model 5A, Model 6A, Table 6) are statistically significant ($p<0.001$), as well as the main effects models (Model 4B, Model 5B, Model 6B, Table 6) ($p<0.001$). However, the psychic distance variables occurred to be significant in Model 4B (operationalization of PD based on Dow and Karunaratna, 2006), and Model 6B (operationalization of PD based on Cultural Distance Index of Kogut and Singh), while in Model 5B psychic distance (Hakanson and Ambos's operationalization) was not statistically significant ($p=0.208$). Moreover, contrary to our expectations formulated in H2, psychic distance is actually positively associated with the firm performance in the host market. Although in Model 5B, psychic distance (operationalized according to Hakanson and Ambos) was not significant, it is worth to note, that the sign of the coefficient indicates a positive relationship with the firm's performance in the host market as well.

The three full models (Model 4C, Model 5C, Model 6C, Table 6), that include the interaction effect (psychic distance X export diversification), are statistically significant ($p<0.001$). However, only in Model 4C and Model 6C the significance of the interaction effect of psychic distance (operationalized respectively according to Dow and Karunaratna, and by Cultural Distance Index of Kogut and Singh) and the export diversification were confirmed (Model 4c: F-change = 2.974, $p=0.085$; Model 6C: F-change =3.205, $p=0.074$).

In order to better understand the interactive effect, we have plotted a graph (Figure 2), which indicates that firm performance in the host market increases with the psychic distance between the domestic and destination market, and this relationship is accentuated when a firm export strategy is characterized by low geographic diversification.

We discuss the implications of these findings in the next section.

Figure 2 Moderating effect of Export Diversification Strategy on Psychic Distance - Performance relationship*

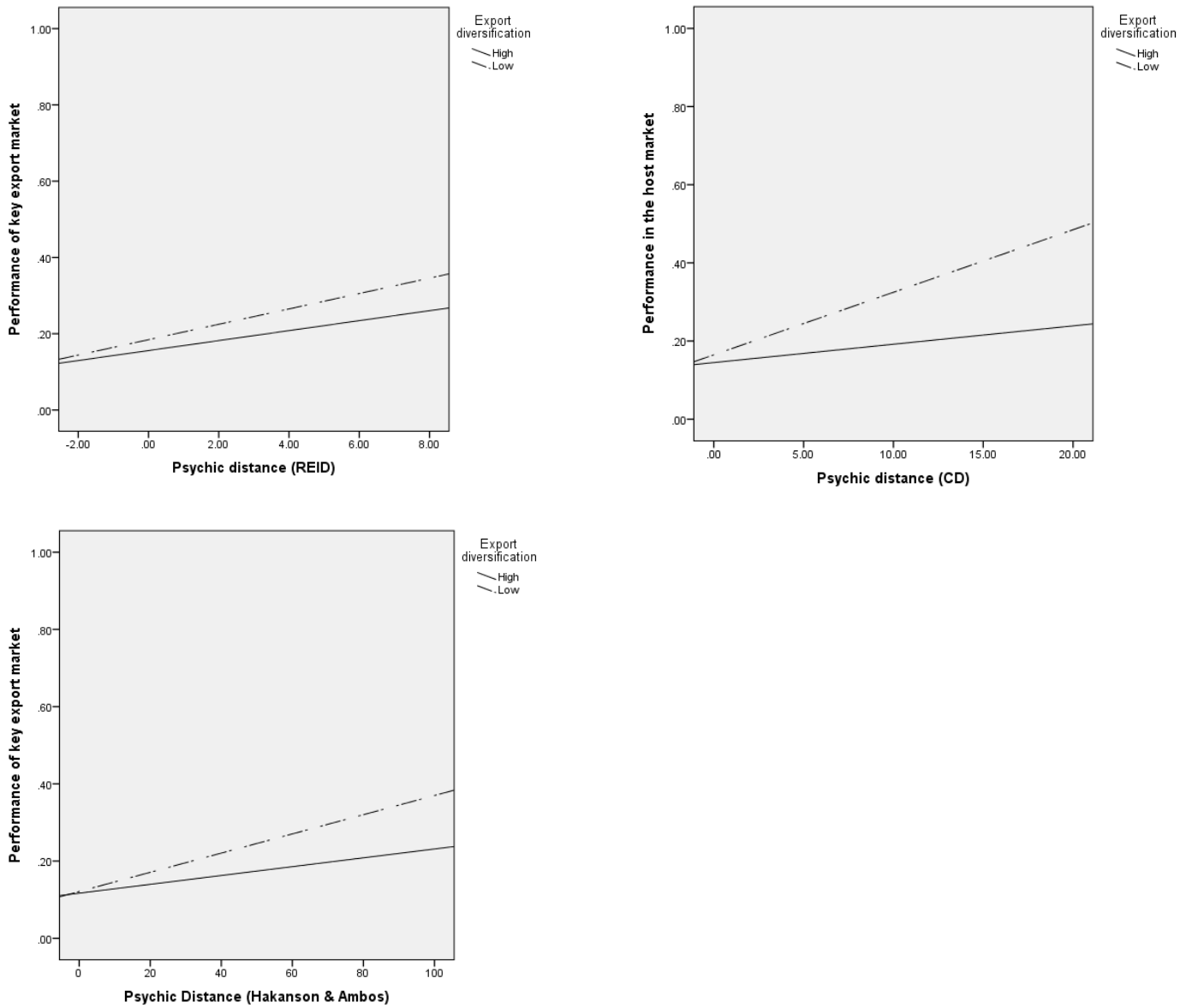


*Figure presenting the relationship between psychic distance (Hakanson & Ambos) and performance of key export market is based on a sub-sample consisting only of 673 SMEs.

DISCUSSION AND CONCLUSIONS

In order to explain the role of psychic distance in European SMEs' export strategy, we examine the influence of psychic distance on the selection of the most important export market, as well as its influence on the firm performance in the key export market. Additionally we examine the moderating role of export diversification strategy in the psychic distance-performance relationship. We control for decision-level variables (that is: geographical distance, market development host and market size host), firm-level variables (that is: firm age, firm size, international experience, industry) and origin-level variables (that is: market size origin and EU 15 membership).

Contrary to our expectations, we find that the relationship between psychic distance and the importance of the host market in a firm export strategy differs across various PD operationalizations. As hypothesized, it is negative when PD is operationalized according to Hakanson and Ambos (2010), but when employing either Dow and Karunaratna's (2006), or Kogut and Singh's (1988) operationalizations, the relationship is positive. This finding indicates that the measures cannot be used interchangeably as the results are significantly different, and thus challenge the notion that psychic distance stimuli can be employed interchangeably with Hakanson and Ambos' perceptual scale (Dow et al. 2014).

Another surprising finding is that the relationship between PD and the firm performance in a key export destination is positive. In other words, the firm performance in an export market increases with an increase of psychic distance. The relationship was found to be positive regardless of PD operationalization, however, its statistical significance was found only for two PD operationalizations (i.e Dow and Karunaratna, 2006; Kogut and Singh, 1988). Generally, these

results support the phenomenon of the psychic distance paradox that needs further explanation as some researchers (e.g. Sousa et al. , 2010) recently found that companies achieve better results on markets which are distant in terms of psychic distance. These new results suggest that even if 'conventional' theorizing indicates that high psychic distance impairs performance, there might be several conditions that neutralize this relation in practice. They can be of technological or economical nature (access to information or incentives offered by the host country), or they can be result of the firms or TMT experience. If the firm operates long enough in a particular even if distant market, the typical theoretical relation between psychic distance and performance can lose its validity, due to the learning and knowledge absorption processes of a firm (Casillas, Barbero and Sapienza, 2015).

Moreover, the obtained results allow us to conclude that the relationship between PD and performance is moderated by the level of export diversification. The relationship is stronger in SMEs pursuing export strategy that reflects lower geographic diversification. Therefore, we may conclude that firms pursuing low export diversification are more prone to focus/concentrate their resources and capabilities on the destination market (e.g. in order to deeply understand and learn the key destination), and avoid at the same time dispersion of resources and capabilities, which is particularly threatening for SMEs as they possess limited resources.

The final conclusion from our study is that the construct of psychic distance clearly requires further investigation and refinement. Our findings do not support clear theoretical relations between psychic distance and strategic choices of the firm. They rather suggest that these relations depend upon the way we measure psychic distance and also can have paradoxical psychic distance dimension if a firm internationalization performance is high. Both issues demands further research at the more granular level.

Our study has clear limitations. It is cross-sectional study, with all related to such studies limitations, and we have to keep the firm-level internationalization choices related variables to a minimum in order to have a parsimonious analysis. Therefore we just focus on the most important export market and its share in firms' revenues as indicators of SMEs export strategy. This approach does not allow us to identify firm level choices and decisions to further examine psychic distance deep impact upon international strategy process.

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