



# Understanding the formation of psychic distance perceptions: Are country-level or individual-level factors more important?

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## ABSTRACT

This study investigates individual managers' formation of psychic distance perceptions to foreign countries. Adopting a social psychological perspective, we propose that three social-cognitive mechanisms—social comparison, mere exposure, and social learning—help explain why and how country- and individual-level characteristics affect the formation of these perceptions. Based on an international survey of 1591 managers located in 25 countries undertaken between 2003 and 2008, we find that country-specific international experience, formal education, and the use of common language reduce psychic distance perceptions. Surprisingly, and in contrast to conventional wisdom, managers' international experience and overall work experience do not seem to affect their distance perceptions. Moreover, individual-level antecedents seem to have limited explanatory power relative to country-level factors as predictors of overall psychic distance perceptions, which lends support to the widely-employed practice of operationalizing psychic distances through country-level indicators. In addition to these empirical findings, the study provides a theoretical social psychological framework useful for understanding how psychic distance perceptions are formed.

## 1. Introduction

Few concepts have gained more widespread acceptance in the international business literature than psychic or cultural distance (Zaheer, Schomaker, & Nachum, 2012). Psychic distance and the related concepts of cultural, institutional, and administrative distance have been used to explain foreign direct investment patterns (Child, Ng, & Wong, 2002), the direction and magnitude of trade flows (Brewer, 2007; Dow & Karunaratna, 2006; Ambos & Håkanson, 2014), mergers and acquisitions (Calori, Lubatkin, & Very, 1994; Reus & Lamont, 2009; Yildiz, 2014), and firm performance (Evans & Mavondo, 2002; Morosini, Shane, & Singh, 1998). However, despite the frequent use of distance concepts, there remains a substantial debate both about the conceptual validity of commonly employed distance measures and their empirical operationalization (Zaheer et al., 2012).

One key controversy centers on the question of whether psychic distance can be usefully operationalized at the country-level, as was the case when the concept was first introduced to international business research (Hörnell, Vahlne, & Wiedersheim-Paul, 1973; Johanson & Wiedersheim-Paul, 1975; Beugelsdijk, Ambos, & Nell, 2018; Cuypers, Ertug, Heugens, Kogut, & Zou, 2018)). Some researchers propose that psychic distance perceptions are inherently individual and should be

measured in a way that reflects managers' unique personal experiences, personalities, and cultural backgrounds (Harzing, 2004; Nebus & Chai, 2014; Sousa & Bradley, 2008; Baack, Bacon, Dow, & Parente, 2011). The latter point of view is reflected in Harzing (2004) often-cited review of cultural distance and entry modes:

... most studies in this field have succeeded in completely removing the manager(s) who make(s) the entry mode decision from the equation. ... However, companies do not make decisions, individuals do. (Harzing, 2004, p. 25)

Baack et al. (2011) take this argument one step further by suggesting that as psychic distance is based on perception, it cannot be calculated using hard data.

This study attempts to address and reconcile this conflict in the literature by adopting a social psychological perspective and putting the individual manager at center stage. We propose that three social-cognitive mechanisms—social comparison, mere exposure, and social learning—may help explain why and how antecedents at both the country- and individual-levels influence the formation of managers' psychic distance perceptions.

The empirical basis for our analysis is a unique dataset gathered from 1591 managers located in 25 countries. The data allow us to construct a matrix of more than 30,000 dyadic country-distance

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perceptions, on which we test the relative impacts of country-level and individual-level factors. Our findings highlight the importance of certain individual characteristics, especially country-specific international experience and the use of a common language. However, and more importantly, our findings indicate that the impact of individual-level attributes is minor relative to that of country-level factors, such as economic distance. Therefore, our findings lend support to the widely-employed practice of measuring psychic distance at the country level.

## 2. Theoretical background

### 2.1. *Psychic distance in international business*

The concept of psychic distance was first used by [Beckerman \(1956\)](#), who speculated that trade between countries is affected not only by geographic distance and transportation costs but also by importers' perceptions of the "psychic" distances to potential suppliers. The idea was introduced to international business by a group of researchers at Uppsala University who were studying the internationalization patterns of Swedish firms. These researchers defined "psychic distance" in terms of objectively measurable impediments to the flow of information between buyers and suppliers based in different countries ([Hörnell, Vahlne, and Wiedersheim-Paul, 1973](#); [Johanson & Wiedersheim-Paul, 1975](#); [Johanson & Vahlne, 1977](#)). Thus, whereas Beckerman invoked a micro-level construct—the perceptions of individual managers—to explain the macro-level phenomenon of trade flows between countries, the Uppsala school ([Hörnell et al., 1973](#)) invoked "psychic distance" as a macro-level construct based on the nature of target countries (and their differences from the country of origin) to explain the internationalization patterns of individual firms, which are micro-level phenomena.<sup>1</sup> The resulting tension was the basis for many of the subtle and not so subtle frictions that have characterized the psychic distance concept ever since.

In line with the Uppsala School's approach, the original framing of psychic distance in terms of subjective perceptions gave way to an emphasis on objective information-procurement costs that could be meaningfully measured using macro-level indicators ([Blomkvist & Drogendijk, 2013](#); [Håkanson & Ambos, 2010](#)). Consequently, investigations shifted towards measuring differences between countries (as opposed to managers or firms) and their effects on micro-level outcomes, such as entry-mode decisions and export-market choices. As is well known, approximating and later completely replacing psychic distance with national cultural differences ([Kogut & Singh, 1988](#)) became the dominant approach in international business research ([Ambos & Håkanson, 2014](#); [Beugelsdijk et al., 2018](#)).

A small but significant stream of research has begun to question this approach. For example, [Dow and Karunaratna \(2006\)](#) argue that objective country-level factors are best conceived of as "psychic distance stimuli" and are only antecedents of psychic distances. Consistent with this idea, [Håkanson and Ambos \(2010\)](#) measure perceptions (aggregated to the country level) and show that macro-level distance stimuli influence psychic distance perceptions and, subsequently, outcomes ([Håkanson & Dow, 2012](#)).

A consistent shortcoming in these studies is their failure to acknowledge and account for the role of individuals and differences in individual perceptions, a deficiency that has been repeatedly highlighted over the years ([Dichtl, Koeglmaier, & Mueller, 1990](#); [Harzing, 2004](#); [Nebus & Chai, 2014](#)). While some studies have investigated potential antecedents of perceived psychic distance through case studies, experiments, or theoretical deliberations ([Chapman, Gajewska-De Mattos, Clegg, & Buckley, 2008](#); [Child et al., 2002](#); [Smith, Dowling, & Rose, 2011](#); [Baack et al., 2011](#)), little research has provided

<sup>1</sup> Throughout the manuscript, we use the terms "distance" and "differences" interchangeably.

theoretically founded empirical investigations of individual-level antecedents of psychic distance perceptions. Reflecting on this state of affairs, [Nebus and Chai \(2014\)](#), p. 11 suggest that psychic distance research should comprehend and integrate the "foreign business environment, manager's experiences and familiarity with this environment, managerial decision making, and manager's perceptions of those elements." In line with this advice, this study emphasizes not only the nature of foreign environments and home countries, but also the characteristics of individual managers, including personal experiences and personal context, and the role they play in the formation of psychic distance perceptions.

### 2.2. *How individuals build perceptions*

Perceptions can be seen as constructions that accentuate certain aspects of reality while deemphasizing or suppressing others ([Kiesler & Sproul, 1982](#); [Nebus & Chai, 2014](#)). Perceiving is a pre-structured activity—individuals' inherited mental models constrain how information is collected, filtered, and interpreted ([Maitland & Sarmartino, 2015](#); [Nadkarni & Narayanan, 2007](#)). An understanding of such social information-processing activities requires a mapping of their underlying cognitive mechanisms ([Salancik & Pfeffer, 1978](#)). In the social psychology literature, three complementary social psychological perspectives have gained popularity—the social-cognitive mechanisms of: (1) social comparison ([Tajfel & Turner, 1985](#)), (2) mere exposure ([Zajonc, 1968](#)), and (3) social learning ([Bandura, 1977](#)). Each contributes to the understanding of why people often have different perceptions of the same object or, as in the present study, why individuals have different perceptions of the psychic distance to a foreign country.

In the international business literature, these mechanisms have only recently been adopted to explain the social-psychological underpinnings of psychic distance perceptions ([Håkanson, Ambos, Schuster, & Leicht-Deobald, 2016](#); [Baack et al., 2011](#); [Yildiz, 2014](#)). For example, in their study of trade flows among 38 countries, [Dow and Karunaratna \(2006\)](#) refer to "psychic distance stimuli" and imply that these stimuli influence managers' perceptions (a variable they do not measure), which subsequently influence trade flows between nations. This argument is in line with the social comparison mechanism we propose, as we suggest that managers use observable proxies in their environment (e.g., differences in economic development) as baselines for social comparison processes. [Håkanson et al. \(2016\)](#) add to this by introducing mere-exposure effects as an additional mechanism to explain how individual characteristics, such as country-specific experience, influence differences in psychic distance perceptions among managers.

We draw on these theoretical mechanisms to examine how commonly identified psychic distance stimuli and individual characteristics influence individuals' psychic distance perceptions. The joint examination of these factors and the theoretical mechanisms behind them allows us to answer the question of whether it is appropriate to aggregate individual perceptions to a country average (which would be the case if individuals base their distance perceptions on readily observable and objective comparison variables, such as economic differences) or whether future studies should pay more attention to idiosyncratic individual differences, such as the individual's exposure to a country or level of formal education. [Fig. 1](#) provides an overview of our conceptual multilevel model.

### 2.3. *Social comparisons and psychic distance perceptions*

Social identity theory is among the most important social psychological theories in management research ([Colquitt & Zapata-Phelan, 2007](#)). It builds on the assumption that people create a sense of identity by comparing themselves to others based on social categories, such as nationality, ethnicity, or religious affiliation ([Tajfel & Turner, 1985](#)). Such social comparisons involve not only discrimination between in-groups and out-groups but also value assessments of their relative

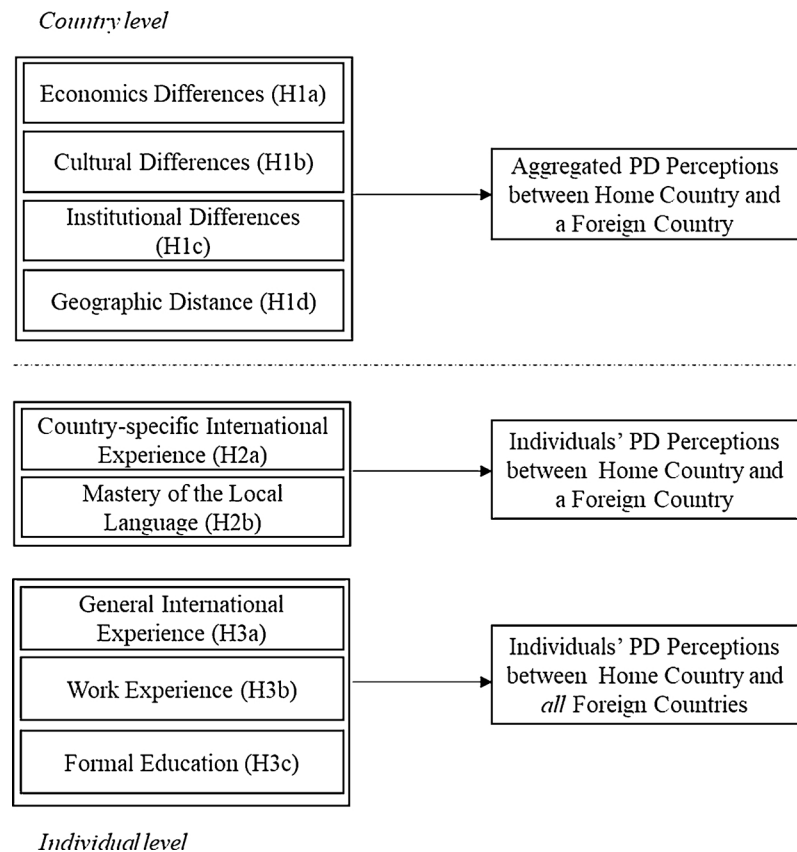


Fig. 1. Conceptual multilevel model of psychic distance (PD) perceptions.

familiarity. Although this has rarely been explicitly recognized, social identity theory provides a theoretical rationale for the generally accepted postulation that individuals form their perceptions of foreign countries on the basis of their assessments of how similar they are to their home countries (Tajfel, 1969).

While the list of variables that can be used to compare two given nations is almost endless (Berry, Guillén, & Zhou, 2010; Brewer, 2007; Dow & Karunaratna, 2006; Ghemawat, 2001; Håkanson et al., 2016), the vast majority of factors can be organized along four dimensions. Geographic distance, which denotes the absolute distance between two countries in geographical terms; cultural distance, which refers to the overall difference in values and attitudes between two countries; institutional (administrative) distance, which refers to the overall distance between institutions (including different levels of corruption, legal system, etc. between two countries); and economic distance, which refers to the overall economic distance (usually measured in terms of GDP per capita differences) between two countries. We argue that not only are these differences the most salient ones in international business research but that they also constitute four of the most observable and salient differences among nations.<sup>2</sup>

We argue that those country-level factors (i.e., geographic distance, cultural distance, institutional distance, and economic distance) are likely to be sources of social comparisons at the country level. As Dow and Karunaratna (2006), p. 581 suggest, it is reasonable to assume that “these macro-level factors create a climate within which a manager’s cognitive processes operate, and therefore frame the conditions within

which managers form their perceptions and make decisions.” Based on the importance of these country-level factors, we assume that individuals’ perceptions of other countries are influenced by the relative similarity of those countries to their home countries.

### 2.3.1. Economic differences

Economic differences have been widely discussed in the psychic distance literature as a potential stimulus of managers’ perceptions (Dow & Karunaratna, 2006; Håkanson & Ambos, 2010; Johanson & Wiedersheim-Paul, 1975; Evans & Mavondo, 2002). Differences in economic development imply different living standards as well as differences in the products that one can afford to buy, housing quality, and infrastructure. GDP differences are also commonly used to classify countries as developed, emerging, or developing nations. In the business world, most multinational firms use economic differences to segment and screen international market opportunities (Schlegelmilch, 2016). Furthermore, Dow and Karunaratna (2006) argue that business norms (i.e., the way we interact and communicate in business), like social norms, depend to a large extent on the nature of the economy and, therefore, the level of economic development. Thus, building on this literature, we assume that differences in economic development serve as a prominent foundation for social comparisons:

**Hypothesis 1a.** The perceived distance between a home country and a target country increases with greater differences in economic development.

### 2.3.2. Cultural differences

In addition to economic differences, culture has repeatedly been identified as one of the most obvious discriminatory factors across countries (Johanson & Vahlne, 1977; Boyacigiller, 1990; Evans & Mavondo, 2002; Kogut & Singh, 1988; Beugelsdijk et al., 2018). The general notion in this regard is that culture influences not only how

<sup>2</sup> Although the making of such comparisons takes place at the individual level, researchers commonly assume that individual judgments can be aggregated to the national level—as managers of common national origin share baseline references and experiences, they tend to hold similar psychic distance perceptions of foreign countries.

managers behave but also how they interpret information and how they communicate. As such, cultural differences between two countries can create additional barriers to obtaining and correctly interpreting information, thereby leading to greater psychic distances (Håkanson & Ambos, 2010). Given the prominence of cultural distance in international business, many commentators have gone so far as to use it as their only proxy for differences among countries (Beugelsdijk et al., 2018). This leads us to the following hypothesis:

**Hypothesis 1b.** The perceived distance between a home country and a target country increases with greater differences in cultural values.

### 2.3.3. Institutional differences

Institutional differences share many of the elements that characterize differences in economic development and culture. An increasing number of scholars have highlighted the importance of institutional differences for perceptions (Ambos & Håkanson, 2014; Dow & Karunaratna, 2006) and for the overall effectiveness of a multinational firm in a foreign country (Berry et al., 2010; Kostova, 1999; Xu and Shenkar, 2002; Ghemawat, 2001; Goerzen and Beamish, 2003). Dow and Karunaratna (2006) point out that most industries are characterized by a substantial amount of government-to-government or government-to-business communication. Therefore, differences in institutions may hinder or smooth the flow of information and create uncertainties in interpreting information. Institutions also help form national identities and, as such, are often instrumental in creating an “us versus them” feeling (Hornsey & Hogg, 2000). We thus propose:

**Hypothesis 1c.** The perceived distance between a home country and a target country increases with greater institutional differences.

### 2.3.4. Geographic distance

Geographic proximity lowers transportation and communication costs, and facilitates personal interaction (Ghemawat, 2001; Johanson & Wiedersheim-Paul, 1975). Consequently, geographic proximity has been linked to lower psychic distance (Beugelsdijk, Kostova, & Roth, 2017; Håkanson & Ambos, 2010; Johanson & Vahlne, 1977; 2018). One would expect increasing digitalization and the general decline in transportation costs to diminish the effect of geographic distance. Interestingly, however, Dow and Karunaratna (2006) and Håkanson and Ambos (2010) find geographical distance to be the strongest predictor of psychic distance. This suggests that geographical proximity influences perceptions (i.e., by building the basis for social comparisons) much more than a mere examination of transportation costs would suggest. Building on this vast body of literature and the arguments above, we propose:

**Hypothesis 1d.** The perceived distance between a home country and a target country increases with the geographic distance between them.

## 2.4. Country-specific international experience and psychic distance perceptions

A second fundamental mechanism through which managers build psychic distance perceptions is the “mere exposure” effect. Mere-exposure theorists posit that individuals’ perceptions of objects in the environment are influenced, in part, by their exposure to them (Zajonc, 1968). The more often individuals are exposed to an object, the more they tend to become fond of that object and view it as attractive (Zajonc, 2001). The underlying psychological processes do not necessarily involve conscious information processing—they also occur when individuals are not consciously aware of stimuli (Zajonc, 2001). Evidence of the mere-exposure effect comes from studies in both laboratories and natural settings that involve both simple and complex stimuli (for a meta-analysis, see Bornstein, 1989).

Management research has used the mere-exposure effect in multiple domains, including organizational behavior and marketing (Kilduff,

Elfenbein, & Staw, 2010; Kouchaki, Smith-Crowe, Brief, & Sousa, 2013; Venkatesan & Farris, 2012). In the international business literature, the mere-exposure effect has been employed to explain asymmetries in psychic distance perceptions (Håkanson et al., 2016).

While country-level factors tend to influence all people from a country in similar ways, the mere-exposure mechanism helps explain differences in individual managers’ psychic distance perceptions. Managers differ, for example, with regard to their experiences with specific countries and in their command of foreign languages. In the literature, there is wide-spread agreement that individuals’ country-specific international experiences are one of the main antecedents of their psychic distance perceptions (Conway & Swift, 2000; Dichtl et al., 1990; Fletcher & Bohn, 1998; Harzing, 2004; Nebus & Chai, 2014; Smith et al., 2011; Sousa & Bradley, 2008; Turnbull & Welharn, 1985).

### 2.4.1. Country-specific international experience

One of the most important factors in exposure is most likely the amount of time a manager has spent in a particular country. When managers have had no or only minimal experience with a specific foreign country, they are less likely to understand its customs, and they are less familiar with its institutions and the rules that guide local behavior (Black & Mendenhall, 1991). Conversely, when managers have extensive experience with a country, they are likely to be more accustomed to its inhabitants’ lifestyles, have more insights into how businesses are run, and to possess deeper knowledge of the principles guiding its citizens’ behavior. Experience with a particular foreign country can therefore be expected to diminish the perceived psychic distance to that country. As such, we posit:

**Hypothesis 2a.** Individuals’ perceived distance to a foreign country decreases with international experience specific to that country.

### 2.4.2. Mastery of the local language

Managers’ psychic distance perceptions are also influenced by their language abilities. Previous studies have argued that commonalities of language (Schomaker & Zaheer, 2014; Williams & Grégoire, 2014) or similarities between languages tend to reduce distance perceptions (Brewer, 2007; Dichtl et al., 1990; Dow & Karunaratna, 2006; Fletcher & Bohn, 1998; Smith et al., 2011).

In contrast to most of the extant literature, we do not consider language distances at the country level (Schomaker & Zaheer, 2014). Instead, we focus on whether individual managers speak the language of the foreign country as a first language. When this is the case, they will tend to feel comfortable conversing in the local language because they have been exposed to it since childhood (Conway & Swift, 2000; Holzmüller & Kasper, 1990). Conversely, when managers do not speak the local language as a first language, their previous exposure to it will be far less and it will feel less familiar, even if they have learned that language well. Hence, we suggest:

**Hypothesis 2b.** Individuals’ perceived distance to a foreign country decreases when they speak the language of that country as a first language.

## 2.5. General international experience and psychic distance perceptions

A third prominent mechanism through which managers form distance perceptions is social learning (Bandura, 1977). According to social learning theory, one of the most established social psychological theories in management research (Colquitt & Zapata-Phelan, 2007), individuals base their behaviors on observations of those behaviors in other people along with the observed consequences of that behavior (Bandura, 1977). According to Bandura (1977), p. 22, “learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions.” Hence, people learn many behaviors by modeling the behaviors of others (Bandura, 1977).

Bandura (1977), p. 49) emphasizes that social learning entails a creative element, as “observers combine aspects of various models into new amalgams that differ from the individual sources.” The associated social learning is not constrained to imitating simple sequences of behavior but involves the formation and adoption of abstract models and complex behavior-guiding principles. Bandura refers to this type of social learning as abstract modeling because in such modeling “people observe others performing various responses embodying a certain rule or principle” (Bandura, 1977, p. 41). Bandura (1986) provides an example: when studying a language, social learning is not limited to copying specific examples of how to use that language. It also includes abstracting from that information and grasping the underlying guiding principles. After learning the guiding principles of certain behaviors, individuals can generate appropriate, situationally adjusted variations (Bandura, 1986).

The social-learning mechanism is important for understanding differences in managers’ perceptions. It explains why generalizable experiences can help build meta-competencies regarding foreign countries, thereby reducing psychic distance perceptions. Due to the meta-character of such learned behaviors, we develop hypotheses regarding the likely effects of different aspects of experience on psychic distance perceptions. For example, international experience should help managers learn how colleagues in a foreign country deal with cultural complexities. This triggers social learning, which results in intercultural meta-competencies generalizable to other foreign countries. Furthermore, general work experience helps managers deal with cultural differences related to foreign countries. This is because managers with work experience can rely on a wide set of professional meta-competencies that can be transferred to a foreign work context. This reduces their feelings of uncertainty and, thereby, perceptions of psychic distance to that foreign work context. Finally, formal education helps them build meta-competencies regarding foreign countries because it helps managers abstract from specific learning situations to more general guiding rules and principle, which should reduce their perceptions of psychic distance to foreign countries.

### 2.5.1. General international experience

While the literature agrees that international experience has an effect on individuals’ psychic distance perceptions (Fletcher & Bohn, 1998; O’Grady & Lane, 1996; Smith et al., 2011; Sousa & Bradley, 2008), most research has failed to unpack experience into the categories of country-specific experience and general international experience. In the related field of international entry-mode decisions, researchers have pointed out that these two types of international experience entail different processes and that they should, therefore, be separated (Dow & Larimo, 2009; Erramilli, 1991). General international experience affects overall skills, while country-specific experience increases familiarity with particular foreign countries (Dow & Larimo, 2009).

In the psychic distance domain, scholars have yet to determine whether the assumed negative correlation between distance perceptions and foreign country experience only applies to perceptions of specific countries, or whether such experience affects perceptions of foreign countries more generally. We draw on social learning theory to hypothesize that the latter is the case. Consequently, when managers gain experience with certain foreign countries, they can be expected to acquire meta-competencies relevant for dealing with foreign environments more generally. We therefore propose the following:

**Hypothesis 3a.** Individuals’ perceived distance to all other countries decreases with greater general international experience.

### 2.5.2. Work experience

We also draw on social learning theory to argue that managers’ general work experience tends to reduce their psychic distance perceptions. Through their work experience, managers build professional

meta-competencies, which reduce their levels of uncertainty when going abroad because they feel competent in the core processes of their work. Although there will always be some level of uncertainty regarding the execution of professional tasks in unfamiliar foreign environments, that uncertainty will be reduced by the meta-competencies gained from performing those tasks in other settings. Therefore, we expect greater work experience to reduce managers’ perceptions of the distance to foreign countries:

**Hypothesis 3b.** Individuals’ perceived distance to all other countries tends to decrease with higher levels of work experience.

### 2.5.3. Formal education

In the literature, formal education is regarded as an important antecedent of psychic distance perceptions (Dichtl et al., 1990; Fletcher & Bohn, 1998; Smith et al., 2011). On the macro level, some studies view differences in national educational levels between countries as an element of psychic distance (Dow & Karunaratna, 2006; Johanson & Vahlne, 1977). On the individual level, the most straightforward mechanism is an education abroad. Studies have shown that managers who undertook some of their education abroad tend to perceive foreign environments as less distant (Child et al., 2002).

We build on the general meta-competence-building effect of formal education. Previous research shows that managers with more formal education tend to be more oriented toward and open to foreign countries (Dichtl et al., 1990; Holzmüller & Kasper, 1990). We extend this idea by suggesting that a formal education contributes to the creation of meta-competencies that help managers maneuver in foreign environments. In this perspective, the content of the formal education is not the decisive factor. Rather, a formal education increases managers’ ability to structure and understand unfamiliar situations and content more generally. This, in turn, leads to less uncertainty and, consequently, to reduced distance perceptions of foreign contexts:

**Hypothesis 3c.** Individuals’ perceived distance to all other countries decreases with higher levels of formal education.

## 3. Methods

### 3.1. Sample

Our analysis builds on questionnaire data collected between 2003 and 2008 by Håkanson and Ambos with the help of collaborators in twenty-five countries. It has been used in a number of recent studies as a reliable proxy for psychic distance (Beugelsdijk et al., 2017; Håkanson et al., 2016). The sample covers Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Denmark, France, Germany, India, Italy, Japan, Mexico, the Netherlands, Norway, Poland, Russia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The respondents were executive MBA students at the universities and business schools of the international business colleagues involved in the project as well as alumni of those institutions. The survey was distributed by email. The email directed participants to a secure data server and ensured them that responses would be treated confidentially (Håkanson & Ambos, 2010). In line with Håkanson and Ambos (2010), we assume that the sample is reasonably representative of the population of managers engaged in international business operations. The ranking method used for the English-language survey helped to mitigate problems associated with differences in response styles and with non-native English speakers (Håkanson & Ambos, 2010). Tests for late-response bias did not give rise to any concerns.

In contrast to earlier studies, we do not aggregate individual responses to national averages but treat each individual respondent as a separate data point. Furthermore, in contrast to Håkanson and Ambos’s original approach, we do not exclude individuals with mixed cultural backgrounds (e.g., bicultural individuals, expatriates, and immigrants),

as our intention is not to build national averages but rather to investigate how specific individual characteristics affect psychic distance perceptions. As a result of this data construction, we have a dataset of  $1591 \times 24$  observations and a total of 36,214 individual distance perceptions.

### 3.2. Dependent variable

Participants were asked to rate their perceived psychic distance from their home countries to each of the other twenty-four countries on a relative scale from 0 to 100. The scale was anchored at two points, with 0 indicating the home country and 100 the most psychically distant one (for details, see Håkanson & Ambos, 2010).

### 3.3. Independent variables

The first set of independent variables corresponds to the first block of hypotheses, which refer to country-level factors (H1a–d). These independent variables focus on country-level differences in psychic distance perceptions between a home country and a foreign country.

#### 3.3.1. Economic differences

Consistent with previous studies (Ellis, 2008; Håkanson & Dow, 2012), we measured economic distances by incorporating the logarithm of the difference in gross domestic product per capita between the two respective countries in 2010. The data were obtained from the World Development Indicators (WDI) provided by the World Bank.

#### 3.3.2. Cultural differences

Cultural differences were measured on the basis of the six value dimensions identified by Hofstede, Hofstede, and Minkov (2010) by constructing a Mahalanobis distance measure (Mahalanobis, 1936). The Mahalanobis distance circumvents several major challenges that are associated with the use of an aggregate index (Berry et al., 2010).

#### 3.3.3. Institutional differences

To measure differences in institutional quality, we used the well-established (Dikova, 2009) six-item construct based on the World Bank's World Government Indicators (Kaufmann, Kraay, & Mastruzzi, 2009). The construct summarizes measures for "control of corruption," "government effectiveness," "political stability," "regulatory quality," "voice and accountability," and "rule of law." A factor analysis suggested that the six components were, in fact, reflective of one common factor. The construct was calculated as the mean of the country differences for the six indicators.

#### 3.3.4. Geographic distance

Geographic distances were collected from the dataset made available by the *Centre d'études prospectives et d'informations internationales* (CEPII), which calculates the distance between country pairs as the distance between the countries' major cities (the capitals in most cases). As these regions are normally the center of economic, political, and cultural activity, research suggests that this is a good proxy for geographic distance (Håkanson & Ambos, 2010). We used the logarithm of geographic distances.

The next set of independent variables corresponds to the second block of hypotheses on managers' country-specific international experience (H2a and H2b). In our analysis, these variables examine differences in managers' perceptions of the psychic distance between their home countries and a specific foreign country.

#### 3.3.5. Country-specific international experience

Country-specific international experience was measured using a dummy variable indicating whether individuals resided in the target country when they completed the questionnaire.

#### 3.3.6. Mastery of local language

Based on respondents' reporting of their mother tongue, a dummy variable was created to indicate whether participants spoke one of the official languages of the target country.

The final set of independent variables corresponds to the third block of hypotheses on managers' general international experience (H3a–c). In our analysis, these variables cover differences in managers' perceptions of the psychic distance between their home country and all other foreign countries.

#### 3.3.7. General international experience

Participants were asked to indicate the number of years they had spent abroad, irrespective of the activity. This variable ranged from 0 to 47, with a mean of 3.8. We used the logarithm to account for the non-normality of the distribution of managers' general international experience.

#### 3.3.8. Work experience

Participants were asked to indicate the number of years of work experience they had gained up to the point of the study. Experience ranged from 0 to 40 years with a mean of 10.6 years.

#### 3.3.9. Formal education

Participants were asked to state the number of years of education they had gained up to the point of the study. The majority had some type of tertiary education, up to and including a p.h.d. The minimum number of years of education in the sample was 6, while the maximum was 34 and the mean was 18.4.

### 3.4. Control variables

To control for factors that have previously been identified as influencing psychic distance perceptions, we included a number of control variables. First, in accordance with previous research, we included dummy variables indicating whether the individual's home country and the foreign country shared a *common border* (Rauch & Trindade, 2002), a *common colonial history*, or *common post-war block membership* (Brewer, 2007; Håkanson & Ambos, 2010). In a similar vein, we controlled for *linguistic distances* between the countries (Dow & Karunaratna, 2006).

Second, we controlled for factors likely to affect nations' exposure to other countries. These factors included the volume of *immigration* from other countries; imports of cultural goods and services, measured in terms of *imports of newspapers, journals, and periodicals*; and whether the foreign country had a considerable *ethnic minority* from the individual's home country (Rauch & Trindade, 2002).

Third, we controlled for a set of individual factors that have been found to relate to perceptions. More specifically, we controlled for the respondent's country of residence using a dummy variable, *home context*, which indicated whether the respondent's country of residence matched his or her nationality. Based on a similar logic, we constructed a *native language* dummy variable to measure whether respondents shared the official or most common language of their country of residence. Furthermore, although we had no clear expectations regarding their effects, we included controls for two demographic characteristics, *age* and *gender*.

### 3.5. Statistical methodology

Given the nested nature of the data, we tested the hypotheses using three-level hierarchical linear modeling (HLM) with maximum-likelihood estimation. Intercepts were set at the dyadic level of psychic distance perceptions (level 1), and at the individual manager and home-country levels (levels 2 and 3, respectively). Intra-class correlations for levels 2 and 3 were 0.17 ( $p < .001$ ) and 0.05 ( $p < .001$ ), respectively, indicating that variations between individual managers

accounted for 17% of the overall variance in psychic distance perceptions and home countries accounted for 5%.

Level 3 variables were grand-mean centered, while those at level 2 were centered on the mean of level 3 (except the dummy variables) to ease interpretation of the coefficients. The Breusch-Pagan/Cook-Weisberg test signaled the need to take heteroscedasticity into account, which we did using robust standard errors. The mean VIF factor was 1.71 with a maximum of 3.73, indicating that multicollinearity was not a serious problem in our analysis (Aiken & West, 1991). The Ramsey RESET test was used to check for potential functional misspecification but provided no indication that this might be a problem. Hypotheses 1a-2b were tested using these three-level HLM models.

Finally, to test Hypotheses 3a-c, we ran an analysis at the individual manager level because the social learning-related effects of general international experience, work experience, and formal education are expected to reduce psychic distance perceptions related to *all* other countries and not only with regard to a particular dyad. Hence, for this analysis, we computed individuals' average psychological distance perceptions using two-level HLM with intercepts set at the levels of individual managers and home countries (levels 1 and 2, respectively).

## 4. Results

### 4.1. Statistical findings

Hypotheses 1a, 1b, 1c, and 1d predicted that the perceived distances between home and target countries will increase with economic differences (H1a), cultural differences (H1b), institutional differences (H1c), and geographic distance (H1d). Table 1 shows the results of the three-level hierarchical multilevel regression analysis. To test our hypotheses, we first entered the control variables (Model 1), followed by economic distance, cultural distance, differences in institutional quality, and geographic distance (Model 2). As shown in Model 2, the coefficients for the latter were all significant, supporting the hypothesized importance of social comparisons for the formation of psychic distance perceptions.

Hypothesis 2a and 2b predicted that individuals' perceived distance between a home country and a target country will decrease with country-specific international experience (H2a) and when those individuals' speak the national language of the target country as a first language (H2b). As shown in Model 3 (Table 1), the coefficients for both variables were significant in the expected direction, lending support to the hypothesized role of individual-level exposure effects in the formation of psychic distance perceptions.

Hypothesis 3a, 3b, and 3c predicted that individuals' perceived psychic distance to foreign countries will decrease as their general international experience (H3a), work experience (H3b), and formal education (H3c) increase. Table 2 shows the results of this two-level hierarchical multilevel regression analysis. To test these hypotheses, we conducted an analysis with mean psychic distance perceptions at the level of individual managers. We first entered all other variables (Model 1). As shown in Model 2 (Table 2), the coefficients for general international experience and work experience were non-significant. Hence, general international experience and professional work experience do not seem to affect individuals' overall perceptions of psychic distance to foreign countries. In contrast, the coefficient of formal education was significant, which supports the hypothesis that formal education reduces psychic distance perceptions.

### 4.2. Country-level versus individual-level factors

Standard impact measures, such as adjusted R-squared, are not applicable in multi-level models (Selya, Rose, Dierker, Hedeker, & Memmelstein, 2012). Therefore, we examined the combined impacts of individual manager (level 2) and country (level 3) antecedents by calculating effect sizes using Cohen's  $f^2$  (Kotlik, Williams, & Jabor, 2011).

The effect size of the combined country-level antecedents is considerably larger ( $f^2 = 0.97$ ) than that of the individual-level antecedents ( $f^2 = 0.04$ ). The small portion of the variance in psychic distance perceptions accounted for by individual-level factors lends support to the prevailing approach of employing country-level factors in the operationalization of psychic distances between countries.

This finding is in line with research on psychic distance stimuli, which argues that individual differences between managers do not have a decisive impact. This research also suggests that to the extent that individual differences in perceptions exist, they will generally be small and tend to balance each other out (Dow & Karunaratna, 2006).

## 5. Discussion

Our results support the suggestion that the cognitive processes of social comparison, mere exposure, and social learning underlie the formation of psychic distance perceptions. The pervasive role of country-level factors can be explained in terms of the social comparison effect. An individual manager's perceptions are decisively influenced by the macro environment of his or her country of origin, and the manager's nationality acts as a shared social category. The familiar environment of the home country serves as a key benchmark for comparisons with foreign countries. The greater the economic, cultural, institutional differences and geographic distance between the manager's home country and a foreign country, the greater the perceived psychic distance will be. Such social comparisons provide the micro-foundations for the observed relationship between objective macro-level antecedents (Dow & Karunaratna, 2006) and subjective individual-level perceptions. The social comparison process can also help resolve the fundamental question of whether the use of country-level antecedents to measure individual-level psychic distance constitutes an ecological fallacy (Brewer & Venai, 2014). We show that individuals with the same baseline information produce similar judgements about country distance. Thus, the standard practices of aggregating these perceptions or using macro-level indicators as a proxy for distance generally seem warranted—even if we acknowledge that many international business decisions are ultimately made by individuals and not by firms or countries (Brewer & Venai, 2014).

While our evidence supports the notion that baseline comparisons hold for all individuals and collectively account for the largest portion of the variance in our data, we were also able to shed some light on individual variances stemming foremost from different linguistic abilities and country-specific experiences. In this regard, our results confirm that exposure and familiarity significantly help reduce distance perceptions (Zajonc, 1968). This effect is well illustrated by the perceptions of individuals whose first language also constitutes the official language in the target country (e.g., German in Germany, Austria, and Switzerland; French in Canada and France; English in the US, Canada, Australia, the UK, and India). A common language increases familiarity with an unknown environment, making it easier to gain and interpret information, and providing a better understanding of foreign business processes. This access to the world of thought and culture in a foreign environment increases exposure and, thereby, reduces distance perceptions. The mere-exposure effect can also help explain the importance of the antecedents from the country-specific set. The more a manager is exposed to a foreign setting, the more he or she tends to perceive that setting as attractive (Zajonc, 2001). Our results confirm the common assumption that personal experience with specific countries reduces the perceived psychic distance to those countries (Smith et al., 2011).

However, the fact that we do not find a significant relationship for general international and work experience is interesting and worth exploring in more detail. In contrast to conventional wisdom, we were unable to find a generalizable or cosmopolitan effect of international and professional experience. This contradicts the proposition that such experience can help build meta-competencies that enable managers to collect and interpret information in foreign environments. The results

**Table 1**  
Three-level hierarchical linear modeling of individuals' dyadic psychic distance perceptions.

Variable	DV: Individuals' dyadic psychic distance perceptions			
	Null model	Model 1	Model 2	Model 3
<b>Level 3</b>				
Controls				
Common border		-.91*** (.000)	-.30*** (.000)	-.30*** (.000)
Colonial past		.28 (.130)	.04 (.641)	.05 (.547)
Post-war block membership		-.73*** (.000)	-.09 (.265)	-.08 (.319)
Linguistic distance		.33*** (.000)	.22*** (.000)	.20*** (.000)
Immigration (log)		-.07* (.019)	-.05*** (.000)	-.05*** (.000)
Import of newspapers, journals and periodicals (log)		.00 (.854)	.00 (.679)	.00 (.635)
Ethnic minority		.25* (.033)	.12 (.131)	.12 (.123)
Predictors				
<i>Economic differences (log) (H1a)</i>			.05*** (.000)	.05*** (.000)
<i>Cultural differences (H1b)</i>			.01* (.035)	.01* (.030)
<i>Institutional differences (H1c)</i>			.20*** (.000)	.21*** (.000)
<i>Geographic distance (log) (H1d)</i>			.31*** (.000)	.31*** (.000)
<b>Level 2</b>				
Controls				
Home context		-.05 (.207)	-.04 (.317)	-.04 (.289)
Native language		-.04 (.267)	-.02 (.568)	-.01 (.666)
Age (log)		.08* (.030)	.07* (.037)	.07* (.035)
Gender ( $\sigma = 0, \varphi = 1$ )		.00 (.901)	.00 (.889)	.00 (.876)
Predictors				
<i>Country-specific international experience (H2a)</i>				-.28† (.051)
<i>Mastery of the local language (H2b)</i>				-.17* (.048)
<i>General international experience (log)</i>				
<i>Work experience (log)</i>				
<i>Formal education (log)</i>				
<b>Level 1</b>				
Intercept	3.65*** (.000)	3.64*** (.000)	3.62*** (.000)	3.63*** (.000)
Variance estimates				
Level 3 residual intercept variance ( $\tau_{100}$ )	.02	.04	.03	.03
Level 2 residual intercept variance ( $\tau_{10}$ )	.09	.11	.11	.12
Level 1 residual variance ( $\sigma^2$ )	.59	.44	.30	.30
Number of observations				
$N_{\text{Level 3}}$	25	25	25	25
$N_{\text{Level 2}}$	1591	1,542	1,542	1,542
$N_{\text{Level 1}}$	36,214	32,815	32,815	32,815
Pseudo $R^2$ <sup>a</sup>		.26	.49	.50
Effect size (Cohen's $f^2$ )		.34	.97	1.02
Model deviance	86182.39	69008.63	57062.91	57003.75

Note: Entries corresponding to the predicting variables are estimations of the random effects, gamma ( $\gamma$ ), with robust standard errors; numbers in parentheses represent standard errors. Italicized variables are hypothesized variables; the other variables are control variables. <sup>a</sup> Pseudo  $R^2$  values were calculated on the basis of the formula from Kreft and De Leeuw (1998). Cohen (1988) identifies  $f^2 = .02$  as small effect, .15 as moderate effect, and .26 as large effect. Model deviance, which is an indicator of model fit, is based on  $2 \times \log$  likelihood; as per the smaller-is-better criterion, the model with the smaller value indicates a better overall fit (Burnham & Anderson, 2002).

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (two-sided).

stress the specificity of international experience—experience as an expatriate in Japan will not necessarily prove useful for working in South America. This finding may have relevance for the design of expatriate training programs and career patterns.

The empirical results on the impact of formal education are in line with prior literature (Dichtl et al., 1990; Smith et al., 2011). They indicate that more formal education tends to reduce distance perceptions. Through education, individuals gain knowledge and information, which reduce uncertainty about foreign environments and enhance the ability to cope with those environments. These mechanisms involve social learning processes in which managers do not necessarily need to experience a behavior themselves but can learn by observing that behavior in others (Bandura, 1986). In so doing, they can build meta-competencies that can help them adopt abstract models and guiding principles relevant for foreign environments (Bandura, 1986).

### 5.1. Limitations and future research

Our study suffers from several limitations that must be kept in mind before generalizing the results. First, our results are only meaningful for

populations that are comparable to our sample, which is composed of English-speaking managers with business experience and exposure to academic education. Although this may be a reasonable sample of individuals who participate in international business activities, it clearly limits the observed variation in individual perceptions in comparison to a sample more representative of nations as a whole.

Second, we only utilize data for the twenty-five largest economies (as measured in terms of their absolute GDP in 2001). Other country samples may show different patterns. However, as these twenty-five countries account for an overwhelming share of the world's international business activity, we believe that our sample serves as a meaningful representation of the international business community.

Third, we only include objectively measurable individual-level antecedents. One could argue that the cognitive processes represented in the maps and schemas of individuals might, in actuality, be more important than demographic factors for the formation of individuals' psychic distance perceptions. While this does not necessarily affect the validity of our findings regarding the relative roles of individual- and country-level factors, it does imply distinct limitations to our understanding of the cognitive processes involved.

**Table 2**  
Two-level hierarchical linear modeling of individuals' average psychic distance perceptions.

Variable	DV: Individuals' average psychic distance perceptions					
	Null model		Model 1		Model 2	
<b>Level 3</b>						
Controls						
Common border			-.40*	(.018)	-.37*	(.017)
Colonial past			.35	(.362)	.42	(.244)
Post-war block membership			.01	(.977)	.04	(.909)
Linguistic distance			.22	(.191)	.24	(.135)
Immigration (log)			.00	(.732)	-.01	(.452)
Import of newspapers, journals and periodicals (log)			.01	(.163)	.01	(.201)
Ethnic minority			.62	(.100)	.63*	(.076)
Predictors						
<i>Economic differences (log)</i>			.02	(.505)	.01	(.815)
<i>Cultural differences</i>			.00	(.698)	.00	(.944)
<i>Institutional differences</i>			-.04	(.101)	-.05†	(.078)
<i>Geographic distance (log)</i>			.18***	(.000)	.18***	(.000)
<b>Level 2</b>						
Controls						
Home context			-.03	(.407)	-.02	(.600)
Native language			.01	(.695)	.01	(.721)
Age (log)			.07*	(.033)	.13	(.202)
Gender ( $\sigma^2 = 0, \varphi = 1$ )			.00	(.851)	.00	(.948)
Predictors						
<i>Country-specific international experience</i>			.98	(.582)	.64	(.760)
<i>Mastery of the local language</i>			-.32	(.301)	-.21	(.509)
<i>General international experience (log)(H3a)</i>					.01	(.446)
<i>Work experience (log)(H3b)</i>					-.02	(.589)
<i>Formal education (log)(H3c)</i>					.11†	(.061)
<b>Level 1</b>						
Intercept	3.64***	(.000)	3.67***	(.000)	3.75***	(.000)
Variance estimates						
Level 2 residual intercept variance ( $\tau_{10}$ )	.02		.00		.00	
Level 1 residual variance ( $\sigma^2$ )	.12		.12		.12	
Number of observations						
$N_{\text{Level 2}}$	24		24		24	
$N_{\text{Level 1}}$	1,556		1,551		1,458	
Pseudo $R^2$ <sup>a</sup>			.01		.03	
Effect size (Cohen's $f^2$ )			.01		.03	
Model deviance	1215.30		1103.57		1036.48	

Note: Entries corresponding to the predicting variables are estimations of the random effects, gamma ( $\gamma$ ), with robust standard errors; numbers in parentheses represent standard errors. Italicized variables are hypothesized variables; the other variables are control variables. <sup>a</sup> Pseudo  $R^2$  values were calculated on the basis of the formula from Kreft and De Leeuw (1998). Cohen (1988) identifies  $f^2 = .02$  as small effect,  $.15$  as moderate effect, and  $.26$  as large effect. Model deviance, which is an indicator of model fit, is based on  $2 \times \log$  likelihood; as per the smaller-is-better criterion, the model with the smaller value indicates a better overall fit (Burnham & Anderson, 2002).

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (two-sided).

Fourth, psychic distance has traditionally been defined as a cognitive concept. Nevertheless, the psychic distance construct most likely has a two-dimensional structure encompassing cognitive aspects (e.g., understanding the language) and emotional aspects (e.g., liking the culture). As such, it would be interesting to more explicitly define the cognitive and emotional dimensions of psychic distance, and map how antecedents of psychic distance load on the cognitive or emotional dimensions of psychic distance.<sup>3</sup>

Fifth, trends in digitalization that emerged after our data collection took place may impact the formation of psychic distance perceptions in ways we could not measure. For example, the increasing sophistication of translation services (e.g., Google Translate), smartphone applications that translate text and read it aloud in foreign languages, e-trade applications, and social media networks have significant potential to shrink our perceptions of geographic and cultural distances while simultaneously reducing the boundaries created by language differences.<sup>4</sup> Thus, future studies may provide fruitful insights by taking a

close look at these potential effects.

## 6. Conclusion

In this paper, we contribute to two ongoing debates in the psychic distance literature. First, we answer calls to put the individual manager at center stage (Harzing, 2004). Second, we contribute to the discussion of whether it is feasible to measure psychic distance, which is an inherently individual construct, using macro-level stimuli (Dow and Karnuaratna, 2006), such as economic, cultural, and administrative differences, and geographic distance. Our results demonstrate that macro-level antecedents have a determining influence on individual distance perceptions and that individual characteristics are of secondary importance. They therefore provide support for the practice of employing country-level psychic distance stimuli as indicators of individual distance perceptions.

In international business research, an understanding of the interactions among objective macro-level antecedents, individual demographic characteristics, and perception processes is key. With such an understanding, we can both comprehend and hope to improve the decision processes that govern international business. To this end, the

<sup>3</sup>, <sup>4</sup>We thank one of our anonymous reviewers for suggesting these valuable research avenues.

present study utilized the social-cognitive processes of social comparison, mere exposure, and social learning to put individual-level psychic distance antecedents to an empirical test. We confirmed that specific international experience, formal education, and command of the local language reduce perceived psychic distances to individual foreign countries. Interestingly, in contrast to the theoretical predictions found in the extant literature, we were unable to find a significant global impact from general international experience or professional work

experience.

In addition, we investigated the relative importance of macro-level psychic distance stimuli and of individual-demographic antecedents. Our results show that macro-level antecedents are powerful determinants of individuals' psychic distance perceptions, while micro-level, personal characteristics explain a relatively small proportion of the variance in individual perceptions.

**Appendix A. Descriptive statistics**

Variable	N	Min	Max	M <sup>a</sup>	SD <sup>a</sup>
Level 3: Country level					
1. Common border (0 = "no", 1 = "yes")	25	.00	1.00	.09	.28
2. Colonial past (0 = "no", 1 = "yes")	25	.00	1.00	.39	.19
3. Post-war block membership (0 = "no", 1 = "yes")	25	.00	1.00	.99	.11
4. Linguistic distance	25	-4.35	0.53	-.07	.89
5. Immigration	25	83.00	12,500,000.00	87,587.92	512,618.50
6. Import of newspapers, journals and periodicals	25	.00	4,848.75	30.01	264.46
7. Ethnic minority (0 = "no", 1 = "yes")	25	.00	1.00	.11	.31
8. Economic differences	25	157.35	84,736.42	24,431.58	18,254.74
9. Cultural differences	25	-2.51	2.56	.07	1.16
10. Institutional differences	25	.02	16.49	6.22	3.35
11. Geographic distance	25	173.03	19,447.35	6,397.86	4,929.66
Level 2: Individual level					
12. Home context (0 = "no", 1 = "yes")	1,591	.00	1.00	.91	.29
13. Native language (0 = "no", 1 = "yes")	1,591	.00	1.00	.79	.41
14. Age	1,546	18.00	64.00	33.54	7.70
15. Gender (0 = ♀, 1 = ♂)	1,581	.00	1.00	.72	.44
16. General international experience	1,582	.00	47.00	3.84	6.75
17. Work experience	1,586	.00	40.00	10.63	6.93
18. Formal education	1,547	6.00	34.00	18.38	2.83
19. Country-specific international experience	1,591	.00	1.00	.00	.03
20. Mastery of the local language (0 = "no", 1 = "yes")	1,591	.00	1.00	.03	.17
Level 1: Dyadic level					
21. Psychic distance perceptions	36,214	1.00	100.00	48.84	29.24

<sup>a</sup>Means and standard deviations at the level of dyadic psychic distance perceptions

**Appendix B. Dyadic level zero-order correlations**

Variable	1	2	3	4	5	6	7	8	9
1. Common border									
2. Colonial past	.05 ***								
3. Post-war block membership	-.22 ***	.02 ***							
4. Linguistic distance	-.22 ***	-.46 ***	-.05 ***						
5. Immigration <sup>a</sup> (log)	.33 ***	.23 ***	-.00	-.29 ***					
6. Import of newspapers, journals and periodicals <sup>b</sup> (log)	-.01	.00	-.03 ***	.01 *	-.07 ***				
7. Ethnic minority	.32 ***	.37 ***	.04 ***	-.76 ***	.28 ***	.00			
8. Economic differences (log)	-.16 ***	.01	.14 ***	.18 ***	.02 ***	-.02 ***	-.08 ***		
9. Cultural differences	-.15 ***	-.10 ***	-.09 ***	.23 ***	-.21 ***	.08 ***	-.10 ***	.14 ***	
10. Institutional differences	-.01 *	-.02 ***	-.04 ***	.04 ***	.32 ***	-.07 ***	-.03 ***	.01 *	-.01
11. Geographic distance (log)	-.46 ***	.04 ***	.02 ***	.09 ***	-.30 ***	.03 ***	-.10 ***	.08 ***	.23 ***
12. Home context	-.01 **	.00	.00	.01	-.10 ***	.09 ***	.00	.01	.00
13. Native language	.00	.03 ***	-.06 ***	.12 ***	-.04 ***	-.05 ***	-.13 ***	-.08 ***	.12 ***
14. Age (log)	-.03 ***	.00	-.00	.01	-.01	.05 ***	.00	.03 ***	-.05 ***
15. Gender <sup>c</sup> (0 = ♀, 1 = ♂)	-.01 *	-.01	.30 ***	-.01 *	-.01	.00	.02 ***	.03 ***	-.05 ***
16. General international experience <sup>d</sup> (log)	.02 ***	.01	.01 **	-.01	.10 ***	-.05 ***	-.00	.00	-.01
17. Work experience <sup>e</sup> (log)	-.03 ***	.00	-.02 **	.02 ***	-.04 ***	.05 ***	-.01 **	.01	-.05 ***
18. Formal education <sup>f</sup> (log)	.01 ***	.02 **	.01	-.05 ***	.00	.02 **	.02 ***	-.01	-.03 ***
19. Country-specific international experience	.01	.00	.00	.00	.01	.00	.01	.00	.00
20. Mastery of the local language	.13 ***	.36 ***	.21 ***	-.65 ***	.17 ***	.03 ***	.49 ***	-.14 ***	-.08 ***
21. Psychic distance perceptions	-.39 ***	-.10 ***	-.01	.31 ***	-.25 ***	.00	-.25 ***	.15 ***	.25 ***

Variable	10	11	12	13	14	15	16	17	18	19	20
1. Common border											
2. Colonial past											
3. Post-war block membership											
4. Linguistic distance											
5. Immigration <sup>a</sup> (log)											



- National Institute of Science of India, 2(1), 49–55.
- Maitland, E., & Sammartino, A. (2015). Managerial cognition and internationalization. *Journal of International Business Studies*, 46, 733–760.
- Morosini, P., Shane, S., & Singh, H. (1998). National cultural distance and cross-border acquisition performance. *Journal of International Business Studies*, 29(1), 137–158.
- Nadkarni, S., & Narayanan, V. K. (2007). Strategic schemas, strategic flexibility, and firm performance: The moderating role of industry clockspeed. *Strategic Management Journal*, 28, 243–270.
- Nebus, J., & Chai, K. H. (2014). Putting the “psychic” back in psychic distance: Awareness, perceptions, and understanding as dimensions of psychic distance. *Journal of International Management*, 20, 8–24.
- O’Grady, S., & Lane, H. W. (1996). The psychic distance paradox. *Journal of International Business Studies*, 27(2), 309–333.
- Rauch, J. E., & Trindade, V. (2002). Ethnic Chinese networks in international trade. *The Review of Economics and Statistics*, 84(1), 116–130.
- Reus, T. H., & Lamont, B. T. (2009). The double-edged sword of cultural distance in international acquisitions. *Journal of International Business Studies*, 40(8), 1298–1316.
- Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 23(2), 224–253.
- Schlegelmilch, B. B. (2016). *Global Marketing Strategy: An Executive Digest*. Switzerland: Springer International Publishing.
- Schomaker, M. S., & Zaheer, S. (2014). *The role of language in knowledge transfer: transfer to geographically dispersed manufacturing operations*, 20, 55–72.
- Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Memmelstein, R. J. (2012). A practical guide to calculating Cohen’s  $f$  squared, a measure of local effect size, from PROC MIXED. *Frontiers in Psychology*, 3(111), 1–6.
- Smith, M., Dowling, P. J., & Rose, E. L. (2011). Psychic distance revisited: A proposed conceptual framework and research agenda. *Journal of Management & Organization*, 17, 123–143.
- Sousa, C. M. P., & Bradley, F. (2008). Cultural distance and psychic distance: Refinements in conceptualisation and measurement. *Journal of Marketing Management*, 24(5-6), 467–488.
- Tajfel, H. (1969). The formation of national attitudes: A social psychological perspective. In M. Sherif, & C. W. Sherif (Eds.), *Interdisciplinary relationships in the social sciences* (pp. 137–176). Chicago: Aldine.
- Tajfel, H., & Turner, J. C. (1985). The social identity theory of intergroup behaviour. In S. Worchel, & W. G. Austin (Vol. Eds.), *Psychology of intergroup relations: 21*, (pp. 7–24). Chicago: Nelson-Hall.
- Turnbull, P. W., & Welham, G. F. (1985). The characteristics of European export marketing staff. *European Journal of Marketing*, 19(2), 31–41.
- Venkatesan, R., & Farris, P. W. (2012). Measuring and managing returns from retailer-customized coupon campaigns. *Journal of Marketing*, 76(1), 76–94.
- Williams, D. W., & Grégoire, D. A. (2014). Seeking commonalities or avoiding differences? Re-conceptualizing distance and its effects on internationalization decisions. *Journal of International Business Studies*, 46, 1–32.
- Xu, D., & Shenkar, O. (2002). Institutional distance and the multinational enterprise. *The Academy of Management Review*, 27, 608–618.
- Yildiz, H. E. (2014). Not all differences are the same: Dual roles of status and cultural distance in sociocultural integration in cross-border M&As. *Journal of International Management*, 20, 25–37.
- Zaheer, S., Schomaker, M. S., & Nachum, L. (2012). Distance without direction: Restoring credibility to a much-loved construct. *Journal of International Business Studies*, 43(1), 18–27.
- Zajonc, R. B. (1968). The attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 92(2/2), 224–228.
- Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science*, 10(6), 224–228.