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Improving on the Kogut and Singh metric of psychic distance

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Improving on the Kogut and Singh metric of psychic distance

Abstract

Purpose – The purpose of this study is to examine the applicability of the Kogut and Singh (1988) index to the psychic distance scales of Dow and Karunaratna (2006). This is in response to recent scholarly articles that have used the Kogut and Singh (1988) index in combination with the scales of Dow and Karunaratna (2006) in order to calculate composite psychic distance scores.

Design/methodology/approach – We review the literature on the measurement of psychic distance, in particular with regard to the empirical usage of the scales of Dow and Karunaratna (2006). In addition, we develop a new approach to calculate aggregate psychic distance scores.

Findings – Our findings indicate that the Kogut and Singh (1988) index is not appropriate to use in combination with the psychic distance scales of Dow and Karunaratna (2006). We propose an alternative methodology for calculating aggregate psychic distance scores which involves standardizing the raw scores of the psychic distance dimensions of Dow and Karunaratna (2006) and establishing summated scales.

Originality/value – The study contributes to the literature by proposing an alternative methodology for the psychic distance scales of Dow and Karunaratna (2006) rather than the Kogut and Singh (1988) index. In light of the prominence of these two influential and widely-cited articles, our commentary challenges the notion of calculating psychic distance.

Keywords psychic distance, Dow and Karunaratna (2006), Kogut and Singh (1988), cultural distance, methodology, index

Paper type Research paper
Introduction

The concepts of psychic distance and its related cousin cultural distance have received considerable attention in the international business literature over the last five decades (Drogendijk and Zander, 2010; Evans and Mavondo, 2002; Tihanyi et al., 2005). According to Dow and Karunaratna (2006, p. 578), psychic distance is “one of the most commonly cited, yet vaguely measured, constructs within the realm of international business research”. Originally coined in the 1950s to explain trade patterns among nations (Beckerman, 1956), Johanson and Vahlne (1977, p. 24) were the first to conceptualize psychic distance in the management literature defining it as the sum of factors preventing the flow of information from and to the market. Examples are differences in language, education, business practices, culture, and industrial development.

The notion of psychic distance is a central aspect in the stages model of internationalization developed by the Uppsala School in the 1970s (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). The stages model has its influences in behavioral theory (e.g. Cyert and March, 1963) and holds that firms generally start to internationalize to “psychically close” countries in order to gain experiential knowledge and avoid risks. As the firms gain more experiential knowledge, they tend to progress to “psychically distant” countries through gradual internationalization starting from exporting operations to establishing a wholly-owned manufacturing subsidiary. The analogy of “rings in the water” has been used to describe this incremental internationalization process (Madsen and Servais, 1997, p. 561). Thus, according to the stages model, decisions are based on bounded rationality, and the concepts of experiential learning and companies’ risk-averse behavior associated with psychic distance shape the internationalization process of firms. It has been argued that psychic distance (and distance, in general) may explain why MNEs
focus on regional rather than global markets due to the increasing costs associated with accessing global competitiveness (Rugman and Verbeke, 2004; Rugman et al., 2012).

Psychic distance has been examined in various contexts to explain international market selection (e.g. Johanson and Vahlne, 1977; Dunning and Bansal, 1997; Ellis, 2007; Hoffman et al., 2008; Sun, 2009), trade flows among countries (e.g. Dow and Karunaratna, 2006), foreign direct investment decisions (e.g. Blomkvist and Drogendijk, 2013), organizational performance (e.g. O’Grady and Lane, 1996; Evans et al., 2008) and entry mode choice (e.g. Kogut and Singh, 1988; Torres et al., 2012). In addition, the relevance of psychic distance has been investigated for different types of firms, such as born globals, which are defined as companies that internationalize early and rapidly after their inception, thereby deriving a large share of their total sales from international markets (e.g. Crick and Jones, 2000; Bell et al., 2004; Rialp et al., 2005; Jones et al., 2011; Freeman et al., 2012). Since Johanson and Vahlne’s (1977) work, various attempts at operationalizing psychic distance have been brought forward by scholars, including objective, macro-level indicators of psychic distance (e.g. Dow and Karunaratna, 2006; Brewer, 2007), subjective, perception-based, individual-level psychic distance scales (e.g. Evans and Mavondo, 2002; Sousa and Bradley, 2006; Evans et al., 2008; Child et al., 2009), and a combination of both subjective and objective indicators (e.g. Jenkins and Mockaitis, 2010). In the context of psychic distance, the literature has tended to predominantly adopt the Kogut and Singh (1988) index in combination with Hofstede’s (1980) cultural values in order to operationalize psychic distance (Tihanyi et al., 2005; Ojala and Tyrväinen, 2007; Dow and Larimo, 2011). To account for the multidimensionality of psychic distance,
Dow and Karunaratna (2006) recently developed scales involving differences in language, religion, industrial development, education and political system.

The key purpose of this study is to propose an alternative methodology for the psychic distance scales of Dow and Karunaratna (2006) instead of using the Kogut and Singh (1988) index. This is in direct response to several recent scholarly articles that have applied the Kogut and Singh (1988) index in combination with the scales of Dow and Karunaratna scales when calculating psychic distance (e.g. Blomkvist and Drogendijk, 2013; Dow and Ferencikova, 2010; Ojala and Tyrväinen, 2009).

The study is organized as follows. The literature review is presented in the next section, followed by the research methodology. Finally, we outline the key conclusions of the study and offer potential avenues for future research.

The concept of psychic distance

The extant literature tends to have equated cultural distance with psychic distance, thus using the two terms interchangeably (e.g. Dow and Karunaratna, 2006; Sousa and Bradley, 2006; Chapman et al., 2008). In doing so, the national-level cultural values by Hofstede (1980) (i.e. individualism, power distance, masculinity and uncertainty avoidance) have often been used in order to operationalize psychic distance (Hakanson and Ambos, 2010; Drogendijk and Zander, 2010).

Kogut and Singh (1988) developed a composite, formative index to calculate cultural distance using Hofstede’s values. Subsequent studies have predominantly used the cultural distance scales from Hofstede (1980) as a proxy for psychic distance and calculated a composite index based on Kogut and Singh (1988). For example, Tihanyi et al. (2005) found that 55 out of 66 reviewed studies have adopted the Kogut and Singh (1988) index of Hofstede’s scales as the single indicator of psychic distance. This is consistent with Dow and Larimo (2011) who found that 87% of their reviewed
papers have used the Kogut and Singh (1988) index as the sole criterion to operationalize psychic distance. However, Hofstede’s scales have been criticized for being too narrow and only capturing the cultural aspect of psychic distance without considering other key areas, such as political and educational issues (Shenkar, 2001). For example, O’Grady and Lane (1996) argued for an expanded definition of psychic distance by including other factors, such as industry structure and the competitive environment. Similarly, Child et al. (2009, p. 202) found support for a multidimensional operationalization of psychic distance arguing that “a uni-dimensional emphasis on culture as an explanatory variable limits our understanding of other cross-national differences and their potential relevance to firm internationalization”. Harzing (2003) suggested including language and institutional differences in operationalizing psychic distance. Arguing that “the operationalization of psychic distance would be better if it were based more broadly on the level of familiarity between firm and country market” (p. 47), Brewer (2007) recommended operationalizing psychic distance by including commercial, political, historic, social, and information ties between countries as well as level of development. Thus, the focus of Brewer’s (2007) operationalization lies in the familiarity of managers with markets rather than perceptions of differences between countries. In this regard, Smith et al. (2011) argued that differences in perceptions of psychic distance may not necessarily equate with “difficulty”, such that managers from a developing country may have a large psychic distance to a developed country; yet, despite its difference, the business environment in the developed country may be more favorable than in the manager’s home developing country. As a result, the perceived level of difficulty that arises from differences leads to psychic distance according to Smith et al. (2011).
Other authors argued that cultural distance may not equate with psychic distance. For example, Nordström and Vahlne (1994) found that cultural and psychic distance may measure different things such that countries which were relatively distant according to Hofstede’s cultural dimensions were interpreted by Swedish managers as psychically close. In this respect, Shenkar (2001) noted several criticisms of cultural distance in terms of conceptual and methodological properties, such as the “illusion of symmetry” (i.e. distance from country A to B is not necessarily equal to distance from country B to A), the “illusion of stability” (i.e. culture is not static, but changes over time), the “illusion of linearity” (i.e. impact of cultural distance on investment, entry mode and performance is not linear, but may be non-linear), the “illusion of causality” (i.e. culture may not be the only determinant of distance in terms of FDI, but there may be other factors, such as market size and political instability), and the “illusion of discordance” (i.e. cultural differences may not always be negatively impacting on investment and performance, but may have complementary and synergistic, positive effects on performance). In a retrospective, Shenkar (2012) reviewed the use of cultural distance and concluded that academic studies have generally not appropriately considered the shortcomings of cultural distance research that were raised in his initial 2001 article. Shenkar (2012) recommended a shift from the concept of “distance” to the notion of “friction” as this captures more suitably the intangible and complex nature of culture. In addition, Shenkar (2012) suggested widening the narrow economic view of institutions by incorporating insights from other areas, such as sociology and political science, as it allows an interdisciplinary approach to studying cultural differences. Ghemawat (2001) broadened the academic discussion on distance by examining issues beyond cultural factors. Adopting exogenous country-level factors,
Ghemawat (2001) developed the CAGE framework which helps to examine distance between countries along multiple dimensions, including cultural, administrative/political, geographic and economic variables. Contrary to “the world is flat” hypothesis popularized by Thomas Friedman (2005), Ghemawat (2001) argued that the world is characterized by incomplete cross-border integration (i.e. “semi-globalization”), a concept which is similar to the regionalization effect advanced by Rugman and Verbeke (2004). Ghemawat (2001) provided ample empirical evidence for “semi-globalization” and concluded that “distance still matters” implying that companies need to explicitly account for it when making decisions to go international (p. 138). This conclusion is in stark contrast to the “flat world” scenario by Friedman (2005) where distance is irrelevant. One key contribution of the CAGE framework is its integrative nature in that it allows the examination of not only unilateral attributes of countries (as used for example by the global competitiveness index of the World Economic Forum), but also bilateral measures of distance. The CAGE framework yields several practical implications, such as a better understanding of the liability of foreignness and a comparison of international markets for companies (Ghemawat, 2001, 2007). In essence, the CAGE framework helps to answer the fundamental IB question of “Why do countries differ?” (Ricart et al., 2004).

Rugman (1981) originally developed the CSA/FSA matrix related to country-specific advantages (CSAs) (e.g. availability of raw material and labor) and firm-specific advantages (FSAs) (e.g. proprietary firm assets and capabilities) which explain an MNE’s outward foreign direct investment (FDI). This matrix was later popularized in Rugman and Collinson (2012). The country-specific advantages (CSAs) are similar to the exogenous country-level factors of Ghemawat’s (2001) CAGE framework, while the firm-specific advantages (FSAs) are consistent with
internalization theory (Rugman, 2010). CSAs interact with FSAs, and MNEs are able to overcome the liability of foreignness in international markets through leveraging their unique FSAs. The CSA/FSA matrix can be partly reconciled with the eclectic paradigm of Dunning (1980) (also known as the OLI-paradigm). One difference is that the CSA/FSA framework is applicable for MNE strategies in both home and host countries, while the eclectic paradigm of Dunning (1980) focuses on outward FDI into the host country only (Rugman, 2010).

In the context of psychic distance, the related notion of institutional distance should be mentioned. Defining institutional distance as “the difference/similarity between the regulatory, cognitive, and normative institutions of two countries” (p. 71), Kostova and Zaheer (1999) proposed that the greater the institutional distance between the home and host country of a multinational enterprise (MNE), the greater the challenge will be for the MNE subsidiary to establish and maintain its legitimacy in that host country. Xu and Shenkar (2002) argued that institutional distance may provide an alternative explanation for MNE behavior. Thus, they suggested that institutional distance complements cultural distance in providing a comprehensive assessment of the environment for MNEs’ foreign market entry strategy and international market selection. Slangen and Van Tulder (2009) raised the issue that governance quality of foreign countries serves as a predictor for the choice of MNE entry mode (i.e. joint venture versus wholly-owned subsidiary). In addition, it has been argued that institutional distance between home and host country of the foreign investor may generate positive FDI spillover effects (Dunning, 2007; Dunning and Fortanier, 2007). Drawing on business ethics and stakeholder theory, Van Tulder (2010) noted that future research on distance in international business would benefit from focusing on “normative” (or “development”) “distance” and “stakeholder
distance”. Van Tulder (2010) proposed that the greater the development distance between the home and host country of a company is, the greater the ethical dilemmas are and, thus, the bigger the need for an integrated approach to managing corporate social responsibilities for the MNE. In terms of stakeholder distance, Van Tulder (2010) noted the diverging interests of a variety of home and host country stakeholders (in particular, owners/shareholders, employees, suppliers, and government), and identified the need for an MNE to appropriately coordinate these often conflicting interests. Consistent with the above-mentioned operationalizations of psychic distance that go beyond cultural factors, institutional distance is generally viewed as broader in scope than Hofstede’s (1980) cultural dimensions.

When reviewing the IB literature, it seems appropriate to comment on the unit of analysis in distance research. The majority of IB scholars have generally focused on the individual country as the main unit of analysis (e.g. measuring the distance of country A to country B). However, according to Rugman and Verbeke (2004, 2007, 2008), this may not necessarily fully reflect the business activities of MNEs which frequently adopt a regional focus (e.g. through regional geographic divisions). Rugman and Verbeke (2008) argued that industry competition increasingly occurs at the regional level rather than the national level. Thus, in order to better account for the regional strategies of MNEs, it may be fruitful to shift research attention away from the individual country and move towards the region as the unit of analysis. For example, examining the regions in the Triad of European Union (EU), NAFTA zone and Asia may improve our knowledge on factors that impact on psychic distance and the regional strategies of MNEs (e.g. Rugman and Verbeke, 2004). Being home to most large MNEs in the world, the Triad region could be a suitable research setting as it is the location where the majority of new business innovations occur and where
there is the core of world demand for knowledge-intensive products and services
(Rugman and Verbeke, 2008; Crick, 2009).

The psychic distance scales of Dow and Karunaratna (2006)

Following a similar rationale as Shenkar (2001), Dow and Karunaratna (2006)
emphasized the importance of the multidimensionality of psychic distance by
developing a range of psychic distance stimuli, including differences in language,
religion, education, industrial development, and political systems. The authors found
empirical support for psychic distance stimuli serving as predictors of trade flows
among 38 nations, whereas cultural distance as operationalized by Hofstede’s
dimensions was not a statistically significant driver. Dow and Karunaratna (2006)
developed their scales based on macro-level indicators, which were sourced from
various, reputable secondary references, such as the United Nations and CIA World
Factbook.

The key strengths of the scales of Dow and Karunaratna (2006) lie in their
scope and comprehensiveness by considering the multidimensionality of psychic
distance instead of solely relying on cultural distance as a proxy of psychic distance.
In addition, the relatively large number of countries (i.e. 120) and the sound research
methodology underpinning the study strengthen the validity of the scales. The scales
of Dow and Karunaratna (2006) have received considerable attention in the literature
(see for example, Blomkvist and Drogendijk, 2013), and have been empirically used
in subsequent studies, often in combination with the Kogut and Singh (1988) index
(Blomkvist and Drogendijk, 2013; Dow and Ferencikova, 2010; Ojala and Tyrväinen,
2009). However, this combination is flawed as we will outline in the following section.
An alternative methodology for the scales of Dow and Karunaratna (2006)

In a recent study on FDI flows into Slovakia, Dow and Ferencikova (2010) applied the Dow and Karunaratna (2006) scales, and used the following aggregate index to calculate the psychic distance scores between different countries:

\[ PD_{DK} = \sum_{k=1}^{5} (I_{ijk})^2 V_k / 5 \]

where \( I_{ijk} \) is the distance between countries \( i \) and \( j \) for the \( k \)th dimension of psychic distance, and \( V_k \) is the variance of the \( k \)th dimension of psychic distance across 120 countries. This formula is consistent with the Kogut and Singh (1988) composite index.

However, we argue that this methodology leads to incorrect results and is, therefore, not appropriate. The following example based on the psychic distance differences between Australia-New Zealand and Australia-Japan illustrates this. The factor scores for each of the psychic distance dimensions of Dow and Karunaratna (2006) are publicly available on Douglas Dow’s research website (Dow, 2013). Table 1 shows the individual psychic distance scores from Dow and Karunaratna (2006) for the two country pairs Australia-New Zealand and Australia-Japan.

Table 1 shows that the level of psychic distance between Australia and New Zealand (2.314) is larger than between Australia and Japan (0.407), which is clearly incorrect. Australia and New Zealand share the same English language, and are generally very similar in terms of their religion, industrial development, education, and political system (CIA World Factbook, 2013). In contrast, the psychic distance
between Australia and Japan is expected to be comparably larger, primarily due to differences in language (e.g. English vs. Japanese) and religion (e.g. Christianity vs. Buddhism) (CIA World Factbook, 2013). The reason for this inaccuracy in psychic distance scores lies in the application of the Kogut and Singh (1988) index to the scores of Dow and Karunaratna (2006). Thus, looking at the individual components of the Kogut and Singh (1988) index, we can shed light on this issue. According to the scales of Dow and Karunaratna (2006), the factor score for language differences for Australia and New Zealand is -3.389 (this negative value suggests relatively low differences between these two countries in terms of language) (see Table 1). The factor score for language differences between Australia-Japan is 0.526 suggesting stronger language differences as compared to Australia-New Zealand. However, if these two values are put in an index following Kogut and Singh (1988), the result is quite different, suggesting a higher positive value for language differences between Australia-New Zealand (i.e. 10.489) than Australia-Japan (i.e. 0.253) [1]. This implies larger psychic distance between Australia and New Zealand than between Australia and Japan, which is inaccurate. The key reason for this discrepancy is that the Kogut and Singh (1988) index expects negative numbers to be meaningless (as they are squared), whereas the scales of Dow and Karunaratna (2006) involve numbers where negative values are meaningful (i.e. the more negative the numbers, the larger the psychic distance between two countries).

To resolve these inaccuracies, we propose a different methodology for calculating an aggregate psychic distance score with regard to the scales of Dow and Karunaratna (2006). As the first step, we check and calculate the means and standard deviations of the factor scores for each of the five dimensions of the psychic distance scales of Dow and Karunaratna (2006). Table 2 shows the results.
As the means and standard deviations differ for each of the five dimensions, we standardize the raw data using z-scores, according to the following formula, in order to allow comparison of the data:

\[ z = \frac{x - \mu}{\sigma} \]

where \( x \) is the raw score, \( \mu \) is the mean of the population and \( \sigma \) is the standard deviation of the population.

The resulting z-scores for each of the five Dow and Karunaratna (2006) dimensions are then summated accordingly for a final, aggregate psychic distance score [2].

**Discussion and conclusion**

This study examined the application of the Kogut and Singh (1988) index to the psychic distance scales of Dow and Karunaratna (2006). The Kogut and Singh (1988) index in combination with Hofstede’s (1980) cultural dimensions is generally viewed as one of the most commonly applied operationalizations of psychic distance (e.g. Tihanyi et al., 2005). The Dow and Karunaratna (2006) scales have also been highly influential in the psychic distance literature, and have often been jointly used with the Kogut and Singh (1988) index in order to calculate an aggregate psychic distance score (e.g. Ojala and Tyrväinen, 2009; Dow and Ferencikova, 2010; Blomkvist and Drogendijk, 2013). Our study indicates that the application of the Kogut and Singh (1988) index to the scales of Dow and Karunaratna (2006) is flawed. The underlying issue is that the scales of Dow and Karunaratna (2006) are based on a range where
negative numbers are meaningful and predicted, while the Kogut and Singh (1988) index expects data to be in a format where negatives are meaningless (as the calculation involves squaring the differences). Therefore, we propose a new methodology to calculate aggregate psychic distance scores. This includes standardizing the raw data of the dimensions of Dow and Karunaratna (2006) and summating the z-scores for the individual psychic distance dimensions accordingly. As shown in the previous section, this approach circumvents the problems associated with the Kogut and Singh-like (1988) index in the context of the scales of Dow and Karunaratna (2006), and, thus, yields more accurate and valid results.

Future research could empirically adopt the scales of Dow and Karunaratna (2006) for various country contexts in combination with our proposed methodology. In addition, further efforts to consider the multidimensionality of psychic distance seem to be a step in the right direction and excellent attempts have been made recently (e.g. Brewer, 2007; Child et al., 2009; Hakanson and Ambos, 2010; Sousa and Lages, 2011). In this respect, consideration of the geographic distance between two countries as an antecedent of psychic distance may be an interesting angle to pursue (Hakanson and Ambos, 2010). The combination of both objective, macro-level as well as subjective, perception-based, individual-level psychic distance indicators may also have strong merits and could lead to more robust results (Jenkins and Mockaitis, 2010). This approach accounts for the importance of managers’ values and how they perceive international markets as well as objective data, such as language differences.

Following Rugman and Verbeke (2008), the examination of psychic distance across regions could be an interesting future research area as it accounts for the regional strategies of many contemporary MNEs. In the context of cultural distance, Drogendijk and Zander (2010) suggested focusing on cultural similarities, overlaps
and complementarities rather than “distance” and “differences”, which are the typical focus in the extant literature. This approach may represent a promising endeavor for psychic distance and ties in with Brewer’s (2007) suggestion to focus on “familiarity” of managers with overseas markets instead of differences.

A key caveat to distance research relates to considering the challenges of measuring distance as raised by Shenkar (2001, 2012), such as over-generalization of complex forces, inability to capture directional effects, and the inherent assumption that greater distance leads to negative effects. Our study attempts to improve the methodological issues related to the Kogut and Singh (1988) index and the psychic distance scales of Dow and Karunaratna (2006).

In conclusion, the notion of psychic distance is a subject that has generated strong interest among the academic community. In addition, psychic distance often yields key practical implications for companies (e.g. in terms of foreign market entry mode choice and international market selection). As discussed earlier, the concept of psychic distance has had a long history of scholarly discourse, and is likely to remain a promising and fruitful area for future research. In light of the prominence of the scales of Dow and Karunaratna (2006) as well as the Kogut and Singh (1988) index, we hope that our commentary can provide fresh insights into the psychic distance debate.

Notes


References


Table I.

Comparison of Australia-New Zealand and Australia-Japan psychic distance scores according to the scales of Dow and Karunaratna (2006).

<table>
<thead>
<tr>
<th>The psychic distance dimensions of Dow and Karunaratna (2006)</th>
<th>Australia-New Zealand</th>
<th>Australia-Japan</th>
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<tr>
<td>Language</td>
<td>-3.389</td>
<td>0.526</td>
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<tr>
<td>Religion</td>
<td>-1.032</td>
<td>1.268</td>
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<tr>
<td>Industrial development</td>
<td>0.035</td>
<td>0.166</td>
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<td>Education</td>
<td>0.082</td>
<td>0.094</td>
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<tr>
<td>Political system (degree of democracy)</td>
<td>0.068</td>
<td>0.186</td>
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<tr>
<td>TOTAL psychic distance score (using the Kogut and Singh-like index)</td>
<td>2.314</td>
<td>0.407</td>
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Table II.


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<th>The psychic distance dimensions of Dow and Karunaratna (2006)</th>
<th>Mean</th>
<th>Std. Deviation</th>
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<tr>
<td>Language</td>
<td>-0.063</td>
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<tr>
<td>Religion</td>
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<td>1.008</td>
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<td>Industrial development</td>
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<td>Education</td>
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<td>0.561</td>
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<tr>
<td>Political system (degree of democracy)</td>
<td>0.817</td>
<td>0.619</td>
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N=14,280